Appendix A.

Written comments received during the comment period and transcription for the hearings

From: Schlender, Tim (ECY)
To: Holder, Yolanda (ECY);
Subject: FW: Form results from http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/rule/
Date: Friday, March 13, 2009 8:51:57 AM

Yolanda, forwarding comment from webform.

Tim Schlender
Washington Dept. of Ecology
SEA Program Web and Publications

From: SMTP@apps.ecy.wa.gov [mailto:SMTP@apps.ecy.wa.gov]
Sent: Thursday, March 12, 2009 3:39 PM
To: Schlender, Tim (ECY)
Subject: Form results from http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/rule/

****

firstname:	Randall
lastname:	Pearl
companyorgroup:	Salmon Creek Watershed Council
mailaddress:	4609 NE 142nd St
city:	Vancouver
state:	WA
zip:	98686
phone:	360-885-0510
email:	randall.pearl@salmoncreekwatershed.org
commentpurpose:	rule
sectionname1:	general rule
comment:	The Salmon Creek Watershed Council fully supports the enactment of efficient rules for wetland mitigation banks as a method of gaining support and compliance of the process and rules.
sectionname2:	
comment2:	
B1:	Submit
form_type:	email

From:	Ian Elliot
To:	Holder, Yolanda (ECY);
cc:	Thompson, Kate (ECY); Driscoll, Lauren (ECY); Merten, Christina (ECY); gail.m.terzi@usace.army.mil; kimberley.a.harper@usace.army.mil; Wilcox, Michelle (ECY);
Subject:	Re: Ecology is now accepting comments on the proposed wetland mitigation banking rule
Date:	Friday, March 20, 2009 9:34:34 AM
Attachments:	Roadblock to Salmon Recovery.pdf

Hi Yolanda,
As a former Washington State House Representative (1994-1996) and a potential mitigation banker, I appreciate the opportunity to provide you with some feedback on the proposed mitigation banking rule.

While the rule does an excellent job of clarifying many aspects of the mitigation banking process, there is one section that I believe needs to be revised from its current form: WAC 173-700-303, Section 2.

Given the recent decision by the Skagit County Hearing Examiner on the Skagit Environmental Bank case, it has been brought to light that some areas with ALLCS land use designations do not meet the criteria for "prime farmland". By discouraging the placement of banks in all ALLCS lands (even those that don't meet the criteria), which coincide with virtually all undeveloped land in Puget Sound river floodplains, Ecology's rule essentially eliminates the possibility of mitigation banking (habitat restoration in form and function) in the places that make the most ecological sense and provide the greatest benefit to ESA-listed fish species.

Since ALLCS are established by local jurisdictions (per WAC 365-190-050), there is not a standardized working definition for this land use classification across the State. WAC 365-190-050 suggests that local jurisdictions use the NRCS definition of "prime farmland" soils and associated geographic extent from soil surveys to establish ALLCS. Unfortunately, this is not always the criterion that is used for establishing ALLCS at the local level, as evidenced by overlaying this soils type with ALLCS land use designations in GIS.

I have described this and other issues in the attached op-ed piece that has been circulated among my legislative contacts, the Washington State House Transportation Committee (specifically because a related bill, 5684, has recently reached the House), Puget Sound Partnership contacts, WSDOT contacts, and local press publications.

Given this lack of clarity, and the immense impact that this land use designation has on mitigation bank site selection, I suggest clarifying this definition through the following revision to WAC 173-700-303, Section 2:

(2) Compatibility of banks and agricultural lands of long-term commercial significance (ALLCS)

(a) The department discourages the location of banks in active agricultural areas (exhibiting crop production within the last 5 years) on "prime farmland" soils, as defined by the Natural Resources Conservation Service and mapped by local soil surveys (Note: prime farmland soils do not include those classified as "prime farmland if drained" or "prime farmland if irrigated", or other classifications characterized by stipulations on the agricultural suitability of the soil), due to the important resource and societal values of those resource lands.

(b) If a bank is proposed to be located within an active agricultural

area with "prime farmland" soils:

(i) Impacts to active agricultural areas with "prime farmland" soils both on-site and off-site shall be avoided to the maximum extent possible;

(ii) The bank must be compatible with the purpose of designated ALLCS, to conserve and maintain agricultural production, food sources, and "prime farmland" soils;

(iii) Placement of banks on active agricultural areas with "prime farmland" soils must be consistent with the local agricultural strategy;

(iv) The bank shall be located on nonprime soils to the greatest extent possible; and

(v) The bank shall be compatible with and minimize effects to adjacent and nearby agricultural operations. This includes, but is not limited to: adverse effects on water flows to neighboring farms, shading effects on adjacent farms.

(c) The department shall consult with the local conservation district, the conservation commission, and other agencies and groups to ensure that bank siting is consistent with both local and statewide goals for agricultural land preservation, while balancing these with statewide goals for ESA-listed species habitat restoration, and advances local priorities and goals.

Thank you very much for the opportunity to provide comments on this very important issue and for your consideration. I would greatly appreciate written confirmation that my concerns have been addressed.

Please don't hesitate to contact me with any questions.

Ian Elliot
(509) 859-3564

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Wetland Mitigation Banks,

chapter 173-700 WAC

Rule language is now available for public comment
Ecology is proposing to adopt a new rule for wetland mitigation banks. The purpose of the proposed rule is to provide an efficient, predictable framework to certify, operate and monitor wetland mitigation banks across the state.

The proposal notice will be published in the Washington State Register on March 18, 2009. Ecology is taking public comments on the proposed rule until 5:00 pm on April 23, 2009.

Ecology has issued a Draft Environmental Impact Statement under the State Environmental Policy Act, a Small Business Economic Impact Statement, and a preliminary cost-benefit analysis. Ecology is also taking public comments on these documents.

A copy of all rule documents including rule text can be viewed at:
http://www.ecy.wa.gov/laws-rules/activity/wac173700.html.
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Public workshop and hearing schedule

April 8, 2009 - Spokane, WA

Workshops: 2:00 pm and 6:00 pm. Hearings: 3:00 pm and 7:00 pm

Department of Ecology, Eastern Regional Office

N. 4601 Monroe, 1st floor large conference room

April 9, 2009 - Lacey, WA

Workshop: 6:00 pm. Hearing: 7:00 pm

Department of Ecology, Headquarters

300 Desmond Dr SE, R0A-32 and R0A-34

April 15, 2009 - Mt. Vernon, WA

Workshops: 2:00 pm and 6:00 pm. Hearings: 3:00 pm and 7:00 pm

Skagit Station

105 E. Kincaid, Community Room

April 16, 2009 - Seattle, WA (Must bring photo ID for check-in)

Workshops: 2:00 pm and 6:00 pm. Hearings: 3:00 pm and 7:00 pm

US Army Corps of Engineers, Seattle District

4735 E Marginal Way S, Galaxy Room

How to submit your comments

Comment period ends April 23, 2009. Comments on all documents must be received by 5:00 pm on April 23, 2009.

You can give us your official comments in any of the following ways:

- Testify at a public hearing.
- Visit our website and submit comments electronically at:

http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/rule

- Email your comments to: yhol461@ecy.wa.gov
- Mail comments to: Department of Ecology

Attn: Yolanda Holder

Shorelands and Environmental Assistance Program

PO Box 47600

Olympia, WA 98504-7600

Ecology's response to your comments

All of the comments we receive will become part of the official record (Concise Explanatory Statement). The Concise Explanatory Statement is required by the Administrative Procedure Act (RCW 34.05) and is published after the rule is adopted. You will be able to find your name listed in the document with a reference to where, in the document, Ecology responded to your comments.

Expected adoption date

Ecology expects to adopt this rule by July 31, 2009.

Public workshops

Ecology will conduct a public workshop one hour prior to each hearing. The workshop will begin with a short presentation on the banking rule and finish with an opportunity for the public to ask questions. Informational materials will be available to read or take home.

More information on wetland mitigation banking

The goals of the proposed rule:

· Provide timely review of wetland mitigation bank proposals,

· Establish coordination among state, local, tribal, and federal agencies involved in certifying wetland mitigation banks,

· Ensure consistency with existing federal mitigation rules, and

· Encourage bank sponsors to locate and design wetland mitigation banks to provide the greatest ecological benefits.

Wetland mitigation banking website

http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/index.html

For a printer-friendly version of the schedule and rule information:

http://www.ecy.wa.gov/pubs/0906011.pdf

Sign-up for E-mail updates on wetland mitigation banking

To stay informed about the banking program, join the wetland banking listserv: http://listserv.wa.gov/cgi-bin/wa?A0=WETLAND-MITIGATION-BANKING.

Contact information:

Yolanda Holder

360-407-7186

yhol461@ecy.wa.gov

Overcoming a Roadblock to Salmon Recovery: Balancing Farmland Preservation and Habitat Restoration

By: Ian Elliot, Washington State House Representative 1994-1996

Based on a Department of Ecology (Ecology) news release on February 23, 2009, Ecology is going to be given $3.1 million in federal grants to return more than 350 acres of critical and increasingly rare estuarine and connected fresh water wetland habitat to its natural conditions – Jay Manning is concerned that "70% of the land near the mouths of Puget Sound rivers has been converted to residential, commercial, and industrial uses," stating that "Environmentally, these interconnected near-shore estuaries and upland freshwater areas provide vital nurseries for salmon and other marine life. Wetlands also are crucial for natural flood control, filtering drinking water, and erosion control." (Ecology News Release 09-045: "Wetland preservation projects move Puget Sound recovery forward", February 23, 2009)

The same news release indicated that Puget Sound Partnership (PSP) Executive Director David Dicks has said the region is rapidly losing opportunities to return important wetland habitats to their natural condition.

In addition, the National Marine Fisheries Service (NMFS) concluded that current Federal Emergency Management Agency (FEMA) policy and the management of floodplain areas is threatening the survival of Endangered Species Act (ESA)-protected species in the Puget Sound area. Recently, NMFS prepared a Biological Opinion (BO) identifying effects of certain ongoing elements of the National Flood Insurance Program throughout Puget Sound and concluded that the program is likely to jeopardize the continued existence of certain ESA-listed fish and aquatic mammal species (NMFS, September 22, 2008). This BO has triggered the initiation of a significant overhaul of the FEMA program in Washington State, leading to much more stringent floodplain development regulations and mitigation requirements. This development further bolsters the notion that floodplain and fish habitat restoration within areas of FEMA jurisdiction will become top priority for federal and local agencies.

Given these concerns by federal and state policy makers with regard to the health of our riverine and floodplain ecosystems as well as the strong urgency proclaimed for restoring them, one would believe that restoration projects would be eagerly received by local governments and that implementation would be smooth to expedite the process of returning these habitats to their natural state. Surprisingly, this is not the case.

Within the highly developed lower watersheds of Puget Sound rivers, the majority of undeveloped sites remaining that exhibit the greatest potential to benefit ESA-listed fish species recovery, reestablish floodplain connectivity, and improve water quality lie in areas that have been designated as Agricultural Lands of Long Term Commercial Significance (ALLCS). WAC 365-190-050 states that county and city governments shall use the land-capability classification system of the United States Department of Agriculture, Natural Resource Conservation Service (NRCS), when classifying ALLCS for the production of food or other agricultural products. It also states that they should consider using the classification of prime and unique farmland soils as mapped by the NRCS. Most areas in Puget Sound river floodplains and valleys are classified by the NRCS as "Prime farmland", "Prime farmland if drained", or "Prime farmland if irrigated". Habitat restoration is not an outright permitted use in these areas under the comprehensive plans of most local jurisdictions, and recent lawsuits initiated by members of the agricultural community indicate that resistance to restoring these habitats to their natural state will likely continue to gain momentum.

The Puget Sound region exhibits one of the fastest-growing human populations in the country, accompanied by an increasing need for infrastructure expansion and accommodation for development. Given the high concentration of wetlands in the Puget Sound area, adherence to "no net loss" Clean Water Act (CWA) regulations during development is essential for maintaining healthy water resources, aquatic ecosystem function, and recovery of ESA-listed species populations. The Final Rule on Compensatory Mitigation for Losses of Aquatic Resources issued by the U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (EPA) in June 2008 (40 CFR Part 230), mandates an improved strategy for adhering to the "no net loss" principle, whereby, after sequencing has determined that wetland impact is unavoidable and may be compensated for by mitigation, wetland mitigation banks are now considered the preferred method for

compensation. Of the many virtues of this compensation mechanism, one includes the strict requirements for ecosystem function prior to bank certification and approval of credit sales: proof of compensation via purchase of successful mitigation project credits by a developer is required prior to administration of a CWA Section 404 permit. The Corps and EPA state preference for mitigation banks over other compensation mechanisms (such as In-lieu Fee programs or permittee-responsible mitigation) because with these other methods, wetland impacts are permitted BEFORE adequate compensation is achieved, resulting in risk of violation of "no net loss" principles.

Green, White, and Puyallup River Valleys – A Case Study

Through published guidance, Ecology advocates for a scientific, landscape-based approach to mitigation bank site selection – synthesizing the important elements of restoring historic wetland extent, consistency with watershed-based restoration priorities, protection of ecological processes within the watershed, connectivity with other wetland habitat, protection and enhancement of critical species habitat, aquifer recharge provision, high surface water storage provision, and high alteration/urban use. Based on the published guidance, GIS models have been developed that incorporate all of these factors for the southern King and northern Pierce County areas – the resulting output from this objective analysis identifies the river valleys of the Green, White, and Puyallup Rivers as exhibiting the attributes that collectively comprise ideal mitigation banking locations according to Ecology's guidance. Unfortunately, approximately 80% of open lands suitable for restoration in these areas are occupied by ALLCS land use designations. In WAC 173-700, Ecology states that they discourage the placement of mitigation banks – habitat restoration in concept and execution – on ALLCS lands.

This Catch 22 presents a serious problem for the Corps', EPA's, Ecology's, and PSP's agenda – historic river floodplains have been converted to agricultural lands and are now identified as ALLCS lands where habitat restoration and mitigation banking are not outright permitted uses. If not in the areas historically occupied by floodplain habitats, where would floodplain and fish habitat restoration projects be feasibly implemented!?

As mentioned, the State has delegated the task of identifying and designating significant agricultural areas to individual County and City governments. These jurisdictions, while having established reasonable criteria in their comprehensive plans for these protected lands (characterized by "prime farmland soils", yield requirements, etc.), have land use designations and zoning maps that don't always reflect these criteria (e.g., some properties included in this land use designation likely do not meet the yield requirement criteria because they are inundated for a large portion of the growing season). A recent appeals hearing decision in Skagit County exemplifies this mis-designation of ALLCS lands (Skagitonians to Preserve Farmland and Skagit County Farm Bureau, Inc. and Friends of Skagit County V. Skagit County and Clear Valley Environmental Farm, LLC). The property in question was proposed to be developed as a wetland mitigation bank and was classified by the NRCS as "Prime farmland if drained". The Skagit County Hearing Examiner ruled that the property does not qualify as prime agricultural land, as crop production is limited by the high frequency and degree of flooding experienced by the site (original ruling June 30, 2008, re-confirmed January 23, 2009).

Because preserving our ability to grow crops locally is an essential component of Puget Sound community values, it is understandable that local jurisdictions have often established over-inclusive ALLCS zones. However, if riverine floodplain ESA-listed species habitat restoration is a priority of the State, and if by designating these lands as ALLCS essentially eliminates in perpetuity the ability to restore these areas, there needs to be a more rigorous examination and evaluation of site characteristics prior to placing them under this land use designation. In addition, salmon are one of Puget Sound's most important "crops", and therefore protection and enhancement of "aquaculture" opportunities (i.e., floodplain habitat restoration) should receive as much consideration as traditional agricultural land preservation.

A balance needs to be achieved between farmland preservation and floodplain habitat restoration. Both land uses are essential for maintaining the health and character of the wildlife and human populations of the Pacific Northwest. The current regulations fall short of reaching this balance. ALLCS designations need to be more carefully considered and greater discretion must be used in defining these lands in order for this balance to be achieved.

From: n l
To: Holder, Yolanda (ECY);
Subject: Re: Mitigation Banking Official Comment -addendum-
Date: Tuesday, April 07, 2009 9:49:58 PM

My first paragraph ("1.") is missing a few words; the second to the last sentence should read: "Specific examples need to be codified as law."

Also, please see my two questions at the end of my comments.

Best,

Nolan

Sent from Olympia, Washington, United States

On Tue, Apr 7, 2009 at 9:45 PM, n l <nol.lat@gmail.com> wrote:

> Hello,
>
> Please add these personal comments to the official comments for consideration for rule making:
>
> 1. The term 'avoidable' should be clearly defined. Currently the applicant is referred to federal guidance which is not specific and is not codified as law. All adverse impacts can be avoided: The development can be stopped; a building could be raised above the ground; adaptable architecture can be used to work around sensitive areas; everything is avoidable. A useful term for avoidable needs to be more specific and realistic. A developer can too easily say that if the area to be impacted doesn't fit with the home plans they've bought and are building around, then it's not avoidable. Or they could say that their Return on Investment will be adversely affected and therefore it's not avoidable.
>
> I understand that this issue has come up before and that a new term, "unavoidable" has been defined as "adverse impacts that remain after all appropriate and practicable

avoidance and minimization has been achieved". However the terms "appropriate", "practicable" and "minimization" will mean very different things depending on who the concerned parties are: the developer, the NIMBY neighbor, the state government worker, the concerned citizen, etc. Specific examples codified as law. The term is still ambiguous and open to interpretation, influence and intent.

2. The term 'mitigation sequencing' should be clearly defined, codified as law, given specific examples and enforced. As it stands, mitigation sequencing is defined in Chapter 197-11-768 but it appears that the term is open to interpretation and is optional or discretionary according to research I've done on counties that implement mitigation sequencing. Mitigation sequencing should also be re-thought as it can be arbitrarily applied – terms like "rectifying", "reducing" and "compensating" are not specifically defined. This also leaves room for interpretation, influence and intent.

Projects which are also subject to CWA requirements incorporate the 404(b)(1) guidelines which provide flexibility to mitigation sequencing and the phrase "least environmentally damaging practicable alternative" is open to interpretation.

3. Placement of mitigation banks should not be arbitrary and open to the whims of commerce, entrepreneurs or government. A method should be in place so that mitigation banks can exist in key areas which are lacking or will be lacking guaranteed wild space. An example of a high density growth area is that within the Urban Growth Boundary. As planned, mitigation banks are not required to be within Urban Growth Boundaries and it appears most if not all will not be. Mitigation banks in an Urban Growth Boundary could help provide wildlife corridors in high density growth areas. Wildlife corridors have been shown to be very effective at salvaging

wild populations. This has been a popular and successful method of preservation of wild areas and animal populations in Europe. Moving all wild areas out of an Urban Growth Boundary has several deleterious effects including negative impacts on human health and human morale, decline of certain animal populations and the creation of heat sinks due to large areas of contiguous development.

Though wetland banks are generally going to be located in the area where impacts are to occur this is simply not sufficient. Market forces, whim and convenience cannot successfully dictate true conservation.

4. The Draft EIS (Publication #01-06-022) states on page 20 that “other agencies and local citizens” should be responsible for keeping their county/state/private project in line with regard to mitigation sequencing. This duty should fall to Ecology and there should be enforcement, inspection and investigative capability given to the Department of Ecology to follow-through with this duty.

5. The Draft EIS (Publication #01-06-022) admits to the concern on page 21 that there can be significant impacts from removing wetlands. But the document does not propose solutions to address specific problem such as the following and therefore does not sufficiently address the issue:

“Natural areas are considerably more socially valuable when located within developed areas.”

“These wetlands can provide vital habitat for native amphibians (Richter 1996) and serve as habitat islands for birds and urban wildlife.”

Hydrogeology considerations/compensation watershed considerations/compensation and salmon-stream considerations/compensation will not be sufficient to address this significant quality of life issue.

Nolan D. Lattyak

When and where will I be able to see how the comments are responded to? Will they be aggregated or answered individually?

From: n l
To: Holder, Yolanda (ECY);
Subject: Mitigation Banking Official Comment
Date: Tuesday, April 07, 2009 9:45:59 PM

Hello,

Please add these personal comments to the official comments for consideration for rule making:

1. The term 'avoidable' should be clearly defined. Currently the applicant is referred to federal guidance which is not specific and is not codified as law. All adverse impacts can be avoided: The development can be stopped; a building could be raised above the ground; adaptable architecture can be used to work around sensitive areas; everything is avoidable. A useful term for avoidable needs to be more specific and realistic. A developer can too easily say that if the area to be impacted doesn't fit with the home plans they've bought and are building around, then it's not avoidable. Or they could say that their Return on Investment will be adversely affected and therefore it's not avoidable.

I understand that this issue has come up before and that a new term, "unavoidable" has been defined as "adverse impacts that remain after all appropriate and practicable avoidance and minimization has been achieved". However the terms "appropriate", "practicable" and "minimization" will mean very different things depending on who the concerned parties are: the developer, the NIMBY neighbor, the state government worker, the concerned citizen, etc. Specific examples codified as law. The term is still ambiguous and open to interpretation, influence and intent.

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research I've done on counties that implement mitigation sequencing. Mitigation sequencing should also be re-thought as it can be arbitrarily applied – terms like "rectifying", "reducing" and "compensating" are not specifically defined. This also leaves room for interpretation, influence and intent.

Projects which are also subject to CWA requirements incorporate the 404 (b)(1) guidelines which provide flexibility to mitigation sequencing and the phrase "least environmentally damaging practicable alternative" is open to interpretation.

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Nolan D. Lattyak

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#4

RECEIVED
APR 08 2009
Shorelands & Environmental Assistance Program

STATE OF WASHINGTON

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

1063 S. Capitol Way, Suite 106 • Olympia, Washington 98501
Mailing address: PO Box 48343 • Olympia, Washington 98504-8343
(360) 586-3065 • Fax Number (360) 586-3067 • Website: www.dahp.wa.gov

April 7, 2009

Ms Yolanda Holder
Department of Ecology
Shorelands and Environmental Assistance Program
P.O. Box 47600
Olympia, Washington 98504-7600

In future correspondence please refer to:
Log: 040709-01-ECY
Re: Wetland Mitigation Bank Certification Rules

Dear Ms Holder:

The Washington State Department of Archaeology and Historic Preservation (DAHP) has taken an opportunity to review new rules for the Department of Ecology's Wetland Mitigation Bank certification process as found in Chapter 173-700 WAC. This review was undertaken to assess the effect of the new rules on significant cultural resources (including archaeological, historic, and traditional cultural properties) that may be found within a wetland mitigation bank site. As a result of our review, I am submitting the following comments/recommendations for your consideration:

1. DAHP acknowledges and supports inclusion of cultural resources in section 173-700-222 (Content of the instrument) and in section 173-700-303 (Site selection).
2. DAHP recommends inclusion of a definition for cultural resources in section 173-700-104. Suggested language to include may read something like the following:
   Cultural resources are defined as lands, sites, and structures, that have historical, archaeological and traditional cultural significance are the tangible and material evidence of the human past, aged fifty years or older, and include archaeological sites, historic buildings, structures, districts, landscapes, and objects. Included in this definition are properties that are listed in the National Register of Historic Places, the Washington Heritage Register, properties listed in a local register of historic places, or properties determined to be eligible for listing in any one of these registers.
3. We recommend that the content of the prospectus (section 173-700-211) include at least a preliminary indication of the presence of cultural resources in the project area.
4. In regard to section 173-700-220 (Convening the interagency review team), we recommend that DAHP be included as a member of the IRT when cultural resources have been identified in the prospectus.
5. In regard to section 173-700-222 (13), DAHP recommend that "(A)n evaluation of historic, cultural, and archaeological resources on the bank site" be conducted by cultural

6. resource professionals meeting accepted professional standards and with expertise appropriate to the affected resource(s).
7. We recommend that the new rules identify a process for determining and implementing mitigation measures when significant cultural resources are negatively impacted by a wetland mitigation bank site. Possible sections for including this process would be section 173-700-212 or section 173-700-222.

Thank you for the opportunity to provide the above comments and recommendations. Should you have any questions, please feel free to contact me at 360-586-3073 or greg.griffith@dahp.wa.gov.

Sincerely,

Gregory Griffith
Deputy State Historic Preservation Officer

April 9 - 2009

Dear Sir:

Re: Wetland Mitigation Banking in the Nookachamps Area & all over Skagit County.

The Dept of Ecology is always getting mixed up in things that aren't for the welfare of our way-of-life, our environment & the best for all the people who care about our County. The DOE used to be a worthwhile Organization, but not anymore. It is being run to benefit the "Big Boys" with money, at our expense.

I am against allowing anyone to fool around with our Wetlands. They are there for a purpose & the purpose is not to be tampered with.

The DOE, using our taxpayers' money, gave the million dollar + to allow the PUD to put the waterline up here on Moore & Grip Rds. The waterline was put here & not one person has hooked up to it — talk about a waste of our money. You should be sued for it.

You don't even know what you're doing.

Mildred Herard
22531 Grip Rd
Sedro. Woolley, Wa
98284

Department of Ecology
RECEIVED
APR 13 2009
Shorelands & Environmental
Assistance Program

From: betty batchelor
To: Holder, Yolanda (ECY);
Subject: wetlands
Date: Tuesday, April 14, 2009 11:58:45 AM

Dear Ms. Holderr, I urge that wetland mitigation banks be rejected wholeheartedly. This is an asinine concept that benefits ONLY the developers. I am fortunate to have wetlands on my property & I assure you they did not develop overnight. Each wetland is unique in its own way & cannot be replicated. Skagit County CAN refuse to permit wetland banks & they would be very wise to do so. Betty Miles

Rec'd 4/15/09 @ Mt. Vernon hearing

FRIENDS of Skagit County
110 N. First Street | Suite C
P.O. Box 2632 (mailing)
Mount Vernon, WA 98273
360-419-0988
friends@fidalgo.net
www.friendsofskagitcouny.org

April 15, 2009

Yolanda Holderr
Department of Ecology
P.O. Box 46700
Olympia, Wash. 98504-7600

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Allison Aurand
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Staff
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Director

People dedicated to preserving Skagit County's rural character by protecting the natural environment; supporting sustainable, resource-based economies; and promoting livable urban communities for present and future generations.

Dear Ms. Holderr:

Thank you for the opportunity to present public comment again on the updates to the draft rule for the pilot program proposed by the Department of Ecology under WAC Chapter 173-700 Wetland Mitigation Banking.

Wetland mitigation banking represents one symptom of a failed planning system. The GMA and local planning departments have at their disposal, a range of ways to protect wetlands WITHOUT using wetland banks. Local comprehensive plans are required to identify and protect resource lands, critical areas, public facilities and other land uses and features as a part of their compliance with the WA State Growth Management Act. Wetland mitigation banks are to date, scientifically unproven in replacing the ecological functions of destroyed natural wetlands.

Counties have identified and protected wetlands in the planning process. State agencies that advocate for wetland mitigation banks usurp the local government's decision-making authority for land use planning. Further, the schedule for rule-making does not require at the beginning, consultation with local governments as to how the rule might affect planning, budgets or other local government activities.

The Legislature's creation of a program does not bind the Legislature to appropriate funds for the program. Indeed the draft rule-making process under the Administrative Procedures Act was created so that programs that should not, do not go forward.

The proposed rule states in the Proposed Rulemaking form, that DOE sent to the Code Reviser on March 3, 2009 (WSR 09-06-086) states that: "...The purpose of this rule is to **encourage** wetland mitigation banking...." **(emphasis added).**

The wetland mitigation banking program is not a requirement of any existing program, rule or law of WA State OR of the Federal agencies. It is inappropriate for DOE to advocate, promote and encourage this program if it is ONLY an option. As an option, DOE must make the case that existing laws and administrative rules do not work to protect wetlands. The proposed rule does not do this.

Administrative Procedures Act Compliance Concerns

RCW 34.05.322 *Scope of Rule-making authority* states "...an agency may not rely solely on the section of law stating a statute's intent or purpose, or on the enabling provisions of the statute establishing the agency, or on any combination of such provisions, for its statutory authority to adopt the rule..."

RCW 34.05.328 *Significant legislative rules, other selected rules*, lists actions which agencies must take before adopting a rule.

Section (1)(d) states that an agency must "Determine that the probable benefits of the rule

are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented..."

Section (1)(f) states: "...Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law..."

Section (1)(h) Determine if the rule differs from any federal regulation or statute applicable to the same activity...and determine that the difference is justified by....
(i) A state statute that explicitly allows the agency to differ from federal standards; or
(ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives (of the rule); and
(j) Coordinate the rule, to the maximum extent practicable, with other federal, state and local laws applicable to the same activity or subject matter...."

DOE cannot have complied with these sections as it has not addressed how the GMA and the local comprehensive plans requirements to identify and protect resource lands (farms, forests and mineral) can be met if agricultural lands are converted for banks. It appears to violate the intent of the rule-making process to implement a rule after land use changes that appear to violate GMA and other state laws are finished.

Section (2) states: In making its determinations pursuant to subsection (1)(b) through (h) of this section, the agency shall place in the rule-making file documentation of sufficient quantity and quality so as to persuade a reasonable person that the determinations are justified...."

Reasonable people are not persuaded that the rule has addressed the benefits vs. the costs to public health and safety that it is the least burdensome alternative for the public and local government and that existing land use planning and rules would not provide better outcomes. Further voluntary compliance does not ensure that enforcement of the rule will EVER happen. Nationally the success rate of wetland mitigation is less than 51% and DOE's own report on state success is much less. Reasonable people would not assume that allowing wetland mitigation banks to be developed with voluntary compliance is not going to eventually be a very large public cost.

Pilot Project Concerns

RCW 34.05.313 *Feasibility studies – Pilot projects* list a variety of requirements for participation in the draft rule process.
"Volunteers who agree to test a rule and attempt to meet the requirements of the draft rule, to repot periodically to the proposing agency on the extent of their ability to meet the requirements of the draft rule, and to make recommendations for improving the draft rule **shall not be obligated to comply fully with the rule being tested nor be subject to any enforcement action or other sanction for failing to comply with the requirements of the draft rule." (emphasis added).**

Does this mean that the 7 wetland mitigation banks already developed under DOE's draft rule and the other 10 or more proposed banks have NO obligation to comply with the rule and are not subject to any sanction for the failure of the projects? Bank operators could abandon their projects and leave local governments with the remedy for the failed sites. The public has not been adequately informed about these costs and risks.

Section (2) allows the agency to waive one or more provisions of agency rules during a pilot project, "...if the agency first determines that such a waiver is **in the public interest and necessary to conduct the project. Such a waiver may be only for a stated period of time, not to exceed the duration of the project. (emphasis added).**

In considering the number of small businesses affected by the pilot rule project, DOE has only addressed developers of wetland mitigation banks. The intent of the legislature was to determine the effect of the project on

any small business.

Concerns about the Small Business Economic Impact Statement (EIS)
The Business EIS is required in order to assess the costs of new programs, benefits to the public, market impacts and other issues, which affect whether the proposed activities should go forward. The Business EIS is NOT designed to be used to advocate for a program's acceptance. It is intended to determine the actual costs of implementing the draft rule or pilot project.

Section 3: Construction and Financial Assurance does not mention or address the risk management ratios of failed banks due to flooding, collapse of steep slopes or other catastrophic events which may be increased due to the bank. While the media size may be accurate for the pilot projects, there is no calculation of the increased cost and risk with larger banks. No estimates are provided for the cost of not filling wetlands and/or providing mitigation on-site as opposed to banks.

The Business EIS addresses only person owning or developing wetland mitigation banks. The EIS is designed to factor in ALL costs and should be added to the analysis. For example, on agricultural land the following factors are part of the cost of developing the bank by converting farmland, but are not included in DOE's EIS:

- Long-term loss of the productivity of the farmland being converted. The farmers who have worked the land report it to be some of the highest yields per acre, currently and historically. There is production data for at least the past 50 years for agricultural production from USDA.
- the lost opportunity costs to the farmers, for at least 50 years into the future, both directly on the parcels being converted as well as the impact on the agricultural economy of the county.
- the additional cost of providing transport for food imported to replace the locally produced foods, etc.

In *Section 6: NAICS Codes of Impacted Industries,* DOE did not include farmers, agricultural businesses, supporting businesses such as insurance providers, or any other small businesses related to the Skagit farmland being converted to banks in the NAICS codes for industries it expects to be impacted by the proposed rule.

In *Section 7: Impact on Jobs*, DOE did not accurately estimate job losses from the proposed rule as the jobs lost from current use of the land were not included in the estimate.

The EIS states that DOE included cost-reduction and flexibility provisions in the rule, which include optional financial assurance for construction and monitoring (when bank credits are not released prior to construction and prior to achievement of performance standards)..." respectively.

There is no mention of the failure rate of wetland mitigation and banking on page 1 Mitigation Banking section. Indeed the language DOE used is "...With proper implementation and guidelines, mitigation banking **has the potential to:**

- Increase ecological benefits.
- Save money for project applicants.
- Improve efficiencies in application and permitting processes.

The proposed rule identifies **the criteria necessary for implementing** an environmentally sound banking system in Washington State...." **(emphasis added).**

It is blatantly inaccurate to state that wetland mitigation banks "protect wetlands". This is a market-based tool of developers, presented as having desired ecological values. DOE has provided no evidence that wetland mitigation banks can provide similar ecological values to natural wetlands. There are no scientific standards required for determining the values of the wetland replaced. The data standards for the banks are no longer than 10 years, which are not comparable to the life of natural wetlands.

In 1995, the Legislature stated that one of its fundamental responsibilities is the protection of public health and safety and the "preservation of the extraordinary natural environment with which Washington is endowed;...essential to this mission is the delegation of authority to state agencies to implement the policies established by the legislature; and that the adoption of administrative rules by these agencies helps assure that these policies are clearly understood, fairly applied, and uniformly enforced..."
And "... to ensure that the citizens and environment of this state receive the highest level of protection...."
And "... that state agencies not use their administrative authority to create or amend regulatory programs..."
And when an agency is authorized to adopt rules.... That the obligations imposed are truly in the public interest;...".

DOE has not considered the public interest in its rule-making process. No evaluation has been done of the cost of risk or failure to the public of wetland mitigation banks.

RCW 34.05.328 Public Participation – Concise explanatory statement. (6)(a) Before filing an adopted rule with the Code Reviser, an agency shall prepare a concise explanatory statement of the rule:...
(ii) Describing the differences between the text of the proposed rule as published in the register and the text of the rule as adopted, other than editing, stating the reasons for differences; and
(iii) Summarizing all comments received regarding the proposed rule, and responding to the comments by category or subject matter, indicating how the final rule reflects agency consideration of the comments or why it fails to do so..."

Friends has submitted many of the comments read today in previous letters and testimony. To our knowledge, the requirements of Section 6(a) have not yet been addressed.

In Skagit County the County's Comprehensive Plan at the time the project was proposed had no reference to nor appropriate way to review a commercial wetland mitigation bank. The Shorelines Management Plan did not allow mining. The SEPA rules required avoidance, then on-site and only as a last resort off-site mitigation for wetland destruction. DOE did not first approach the County to determine if the County wished to make the changes required it is plan to accept wetland banks as an option; rather, it began negotiations with proponents of both proposed banks.

We ask that the attached CD of the 8 days of public hearings in the Clear Valley v. FOSC appeal to the Hearings Examiner be included as part of this record and that the agency staff review the information covered in the hearing and consider the issues raised in the review and revision of the draft rule. The concerns brought by both sides have not been included in the draft rule documents to date.

Friends of Skagit County urges the Department to not adopt the rule as proposed, but to follow the APA requirements for including new and corrected information, public comments and full budgetary and economic assessments and appropriate revisions of the rule before adoption.

Yours sincerely,



Ellen Bynum, Director

Attachment: CD Hearing Examiner Record – Clear Valley v. FOSC, 2008
cc: FOSC Board; Governor Christine Gregoire; Legislative Representatives and Senators 10th, 39th & 40th Districts.

Reed 4/15/09 @ Mt. Vernon hearing

Ag Prospects

15 April 2009

Comments regarding Wetland Mitigation Banks, chapter 173-700 ~~RCW~~ WAC

Farmers and agricultural interests have responded each time the Department of Ecology has asked for input and comments on the wetland mitigation banking program and rule. Many have commented in meetings and in writing stressing the importance of reserving agricultural soils for farming – but these comments have been ignored.

Soil is the basis for all terrestrial ecosystems. Soil is to some extent a "renewing" resource as it slowly forms over centuries through the erosion of bedrock. But it is not replaceable once removed from a site. The Department of Ecology has chosen to ignore this.

It's telling that after all the editing and comments made over the last five years, in your rule the definition of "reestablishment" has errors implying a wetland can be "reestablished" when no hydric soils are present. Clearly, the Department of Ecology thinks soil is dirt and that all dirt is the same. The Department has allowed mining of soil and minerals in virtually every bank it has approved.

In a state known throughout the country, affectionately, as "the salmon nation," it is puzzling that avoidance of wetland impacts is not mandated. To allow continuing impacts – and to "plan" for so many more wetlands banks will leave future generations without salmon or clean water. To relegate "avoidance" to a category of lip service and an item on a check list will assure that a low level of environmental quality will serve our grandchildren and their heirs.

These banking programs are simply a continuing manifestation of the same short-sighted greed that has collapsed world economies in the past year. It is the same private building and financial interests that benefit while the public and the environment pay. But when we're turning our heads and refusing to adequately regulate environmental sub-prime banking programs and environmental credit default swaps, it's the planet that is at stake.

Where will the food come from for future generations? You cannot honestly believe that urban gardens in Seattle can replace the Skagit Valley. You are putting pieces of paper – dollars – ahead of future generations.

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maryheinricht@earthlink.net

You want language suggested. I suggest you look to engrossed HB 1967 which will prohibit expansions of urban growth areas into one hundred year floodplains. Use it as a template to prohibit urban development in the form of wetland mitigation banks on agricultural lands of long-term commercial significance.

Do not allow wetland or any other kind of mitigation banks on land set aside – as mandated in the Washington Growth Management Act - to provide food in the future. Ban all mitigation banks from prime agricultural soils – permanent

Thank you,

Mary M. Heinricht

April 23, 2009

Ms. Yolanda Holder
Wetlands Section
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

RE: Chapter 173-700 WAC
Comments on Proposed Rule
Wetland Mitigation Banking Act, chapter 90.84 RCW

Dear Ms. Holder:

G8 farm ministers plot world food strategy

By Svetlana Kovalyova
Reuters
Friday, April 17, 2009 1:47 PM

PIEVE DI SOLIGO, Italy (Reuters) - Farm ministers of the Group of Eight meeting in Italy this weekend aim to forge a strategy to secure food supplies and stabilize prices, ***as rich nations scramble for acreage abroad to feed their people.***

The DOE has again asked for comments on the wetland mitigation banking proposed rule. Many agricultural interests have commented in meetings and in writing regarding prohibition of these regulatory facilities on agricultural lands -- comments that have been largely ignored, even though saving these productive lands is a growing international concern (see above).

We are disappointed to find that this proposed final rule still allows the siting of wetland mitigation banks on agricultural soils of long

term commercial significance. This is in ***direct opposition to mandates set forth in the state's Growth Management Act***.

DOE and federal agencies are also ignoring the federal Farmland Protection Policy Act for a mandatory review of the effects (and especially the cumulative effects) of conversion of farmland to nonagricultural use, although in *WAC 173-700-200 How do other laws and rules relate to banks?* it is stated that "banks certified under this chapter ***must be consistent with existing federal, state and local laws and rules…***" This rule is not consistent with the Growth Management Act.

We note that the Small Business Economic Impact Statement completely ***avoids examination of the potential impacts on existing agricultural businesses that will or may be displaced*** by placement of these regulatory facilities on agricultural lands of long term commercial significance. You have received testimony regarding blockages of rivers in Skagit County and the effects these have had on upstream properties; you are allowing structures that block these rivers to create hydrology for new banking facilities, yet you have not examined the effect it will have on local small agricultural businesses. The report only examines the business of wetland mitigation banking. This is an error of omission that should be corrected. The program is redistributing ecosystem services that may be vital to the long term ecological viability of the watershed and region, which will directly affect the natural resource based businesses in the region. One application in Skagit diminishes the dairy infrastructure in its watershed by 1/3, for example.

Similarly, in the Preliminary Cost Benefit and Least Burden Analysis, there is an absence of examination of the long term effects of reducing the wetland diversity within a watershed and the resulting increased burdens that may place upon others to meet regulatory requirements within the same watershed. This is especially important in agricultural settings in Western Washington where farming operations are under extraordinary regulatory burden and examination because of endangered species issues. ***The effects of this program may be to increase the regulatory burden upon agricultural interests.***

During several meetings of the Citizens' Advisory Group, it was discussed that the state's wetland mitigation law and policy were lacking. Therefore, this rule should ***set new standards to meet the increased expectations in ecological and spatial performance*** you say will be created by the use of mitigation banks. This rule lacks any standards which will increase the performance of these facilities beyond that expected from on-site and individual mitigation projects.

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We find the rule lacking in technical or performance standards. There are references to performance, but no indication what that should be or who and how it will be measured or evaluated. The Department's own analysis of wetland mitigation reports a high failure rate yet this rule makes no attempt to set forth standards to increase performance.

Representatives from the Department admitted at the Public Hearing in Skagit County on April 15, 2009, that the draft rule lacked a process to reject an application. Yet the Department issued a Request for Applications after recognizing this program fault, and for applications which would then come under the regulations for pilot programs, which allow an application to avoid performance up to rule standards. We wonder why this occurred and whether the Department has slipped into the role of advocate rather than regulator. The lack of measurable or delineated standards in the proposed rule seems to reflect that role.

WAC 173-700-104 Definitions:

Although it was stated at the Public Hearing on April 15, 2009, that the rule was written to be consistent with the federal rule, the definitions vary in terminology and contain much less technical detail. We would suggest a closer tracking with the federal definitions, especially where interpretation can affect the ecology integrity of existing watersheds and ecosystems.

We note that DOE has not included a definition of ***"ecosystem services"*** in the *WAC 173-700-104 Definitions.* We suggest this be included as ***"the benefits that human populations receive from functions that occur in ecosystems."*** We also suggest that it be inserted as one of the decision-making factors in the review and permitting process. We note that the term "watershed-based approach to mitigation" references ecosystem processes and functions.

The term ***"threshold value,"*** referenced in "performance standards," should be defined.

The term ***"reestablishment"*** is defined incorrectly; as written it is the definition for "creation." We suggest the definition read, ***"means actions taken to return wetland are, function, and values to a site where wetlands previously existed, but are no longer present because of the lack of wetland hydrology or hydric vegetation. Reestablishment falls under the broader term of restoration."***

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The term ***"wetland(s)"*** is an incomplete definition lacking the necessary hydric soils parameter. A wetland is defined by the three parameters of hydrophytic vegetation, wetland hydrology and hydric soils.

WAC 173-700-200 How do other laws and rules relate to banks?:

We suggest that it be required of the sponsor to coordinate with the local jurisdiction(s) early in the process: "***The sponsor is required to coordinate with the local jurisdiction(s) early in the development of their proposal."***

WAC 173-700-303 Site selection:

Based upon the location of at least two of the pilot banks within river courses, we suggest that language be inserted in this section regarding endangering public safety. We believe these facilities should be "***prohibited from river courses that flood on a frequent basis***."

We do not believe that excavation within a waterway improves flood storage; we believe excavation within a waterway can potentially cause structural changes in the configuration of the waterway that can increase the frequency of flood events and their magnitude, endangering life and property. We believe that allowing structural changes within a waterway can cause instability of the river structure, both up and downstream, and create the potential for bank erosion, sedimentation and other faults.

(2)(a) "***The department prohibits the location of banks on ALLCS due to the important resource and societal values of those resource lands."***

Strike (2)(b).

In (2)(c) move and insert (2)(b) (iv) and (v).

WAC 173-700-331 Credit Release – Preconstruction:

This section should be struck in its entirety. There is no rationale for pre-release of credits. The Department's website states, regarding wetland banks:

"Ecological benefits include:

Ensures greater likelihood of success, since banks must be up and running before a wetland can be affected."

The Department has repeatedly touted, as one of the benefits of mitigation banking, the pre-construction of the replacement wetlands. Pre-construction release of credits would eliminate that "benefit." What occurs if credits are released pre-construction and then the entity owning the facility goes bankrupt or ceases to exist?

WAC 173-700-340 Performance standards:

Chapter 90.84 RCW, Wetlands Mitigation Banking, is the law requiring the preparation of this rule. It directs the DOE to adopt rules for: "…Performance standards;…" The DOE provides only seven (7) lines within the proposed rule regarding performance standards, stating that "performance standards must be based on the bank's objectives and goals as identified in the instrument," and adding that they must be measurable.

As the performance of these facilities is the only thing that actually accomplishes the mitigation for other aquatic resources destroyed, there must be clear language setting forth the required performance to meet the criteria for selling credits.

Given the record of failure in at least half the mitigation projects in state and nationally, the department must have some idea what has been going wrong. Quantification of those features would be a starting point for performance standards.

For example, a density of plantings established and surviving for a specific period might be a measurable standard. Establishment of drainage and hydrology as designed might also be a measurable standard. The way this short section is written, there is no way for a third party to determine if a project meets any "standard" as none are set forth.

WAC 173-700-421 Permanent protection:

In section (1) we suggest striking the word "generally." The last line should read, "***The department shall require a perpetual conservation easement."***

Strike section (2) in its entirety. Move (a) through (f) to under (1), except strike the word "void" in (d) to read, "***Contain a provision requiring a 60-day advance notification to the department before any***

action is taken to modify the mechanism, including transfer of title, or establishment of any other legal claims over the bank site."

We would strongly suggest that either the Department of Ecology or another state agency co-hold the perpetual conservation easement on the bank. This would give the state the advantage of having direct oversight of the long-term management and maintenance of the site and authority to enforce against any violations of the easement.

WAC 173-700-502 Use of bank credits outside of the service area:

There is a great deal of concern that utilization of wetland banks will create deficits of ecosystem services in some areas. Allowing credits to be used outside the approved service area will guarantee this effect. If the Department feels there is a rationale to consider the use of credits outside of the approved service area, the process should hold public hearings in the affected localities to determine public support for this option.

"(1) The department ***shall consult with the signatories, and after public hearings to gather input and a consensus of the signatories,*** may authorize the use of credits to compensate for impacts …"

Thank you.

Mary Heinricht

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Recd 4/15/09 @ Mt. Vernon hearing

FRIENDS of SKAGIT COUNTY
110-North First Street, Suite C.
Mount Vernon, WA 98273
360-419-0988

April 14, 2009

Department of Ecology
P.O. Box 46700
Olympia, WA 98504-7600

To Whom It May Concern:

Friends of Skagit County, (hereafter referred to as *Friends*), has many concerns about the Draft Rule on Wetland Mitigation Banking. We believe it is weak and may violate other State and Federal regulations relating to wetland and critical areas protection, shorelines, SEPA, NEPA, GMA and local comprehensive plans and development codes.

The Proposed Rule Making form CR-102 (June 2004) is required when introducing a draft rule. CR-102 asks whether the rule is necessary and being considered because of a Federal Law, Federal Court Decision or State Court Decision. The DOE answered **"NO"** to all 3 questions regarding the Draft Rule for Wetland Mitigation Banking.

Friends has many questions about the use of Wetland Mitigation Banks for compensating the loss of wetlands. Among those questions are these:

--- In that any wetland mitigation banking program is not a requirement of any existing program, rule or law of Washington State or the Federal agencies, why is DOE encouraging this program if the program is only optional?

---Where is evidence that any market analysis was done by the DOE to determine the actual number of acres of wetlands which may require wetland banking as mitigation? If there was no statewide market demand study, why has DOE plowed ahead with the approval of seven banks which are now operating, with ten additional banks proposed?

Attached find DOE's publication 00-06-016 (Evaluation Study 2001). According to the publication, of the 45 compensatory wetland mitigation sites randomly selected:

- 55% were implemented to plan
- 34 projects had performance standards that could be evaluated
- Of those 34 projects, 12 projects (35%) were meeting all performance standards.

---Attached find DOE's publication 02-06-009 (Evaluating Success 2002). Table 6-2 (**Results of studies examining the success of compensatory mitigation**) has the following "Level of Success" percentages cited:

- 13% fully successful
- 33% moderately successful
- 33% minimally successful
- 21% not successful

From another location in Washington, the results were 3% success on 38 sites. On 17 sites, 65% functioned poorly.

From Table 6-3 (**Level of overall compliance of compensation projects**), under the column **"% of Projects in Compliance with all requirements",** compliance percentages range from 29% to 21% to 18%. With percentages such as these why is DOE apparently wasting the public's time and money on considering wetlands mitigation banking as a solution for anything? The evidence of success or even the chance for success is just not there. The following quote is from that same publication: "While the Federal Corps of Engineers conducts regular compliance site visits, **the Washington State Department of Ecology rarely does."** Why would any undertaking with this dismal track record even be considered by DOE?

Friends has even more questions in terms of the openness and fairness of the process that was used to develop the Proposed Rule:

---Why is DOE touting its public process record? If the process is so open, why does the proposed rule state in the Proposed Rulemaking form, sent to the Code Reviser on March 3, 2009 (WSR 09-06-086) that: "...The purpose of this rule is to **encourage** wetland mitigation banking...." Why is DOE holding these public meetings when it appears DOE has already made up its minds on the issue? This does not appear to be a pattern followed by an agency which is truly concerned with what the public says.

---The draft rule changes are not easily tracked: there is no reference to the other laws that might be affected by the rule. New language that was added was labeled "New Section" with no pages that have the strike-throughs -- a reader friendly method which allows the citizen to compare the new with the old.

---It appears the Mitigation Bank Review Team (MBRT) members were selected to advocate for the program. What was the level of scientific ability or experience in Wetland Mitigation Banks which was required of the members? Why aren't scientific credentials listed? Without qualifications listed, a shadow is cast on the unbiased nature of the process. How can the public have confidence in the quality of oversight that is supposed to be provided?

---. Doesn't the promotion of WMBs for agency mitigation purposes negate the very intention of public input policy? Isn't this more of a signal by DOE that the fix is in: that the final decision is a foregone conclusion? And that this is a promise from DOE to the developer that he/she can sell bank credits? How can anyone, looking at the process, come to any conclusion other than that the DOE definitely appears to be promoting WMBs?

Attached is a study by scientists who are recognized as experts in the field of wetland issues by their peers and other professional entities. The study, "Effects of Wetland Mitigation Banking on People", by Professors Salzman and Rhul of Florida State University contains warnings and skepticism about WMBs. It is only one of many professional scientific studies on the subject. I have checked through several volumes of wetland and wetland mitigation studies published by reputable scientists with respected credentials in both academic and field work. I chose the Salzman/Ruhl study for these comments because it is quite comprehensive and not as lengthy as others. While searching through the works of professionals in the wetland science field, I found no papers published as accepted scientific papers or abstracts by any of the individuals listed on the advisory or oversight teams chosen by DOE. Shouldn't a subject as serious as the consideration of wetland mitigation banks be cause for DOE to place crafting of the rule into the hands of recognized scientists who use facts and data to arrive at conclusions?

---What credible studies regarding outcomes, not predictions, has DOE staff enlisted in their efforts to work through this rule? Where is the data to convince the public taking part in these proceedings that WMBs have a success rate superior to that of a flip of a coin?

Sincerely,



Gene Derig, President
Friends of Skagit County

Washington State Wetland Mitigation Evaluation Study 2001
Phase 1: Compliance

Washington State Dept. of Ecology. Publication No. 00-06-016

In the Phase I study, out of **Forty-five** compensatory wetland mitigation sites randomly selected:

- **Only 23 projects (55%)** were implemented to plan
- **Only 34 projects** had performance standards that could be evaluated
- Of those 34 projects, **only12 projects (35%)** were meeting all performance standards

While the federal Corps of Engineers conducts regular compliance site visits,
the Washington State Department of Ecology rarely does.

Phase 2: Evaluating Success 2002

Washington State Dept. of Ecology. January 2002, Publication #02-06-009

Table 6-2. Results of studies examining the success of compensatory mitigation

Location of Study and Reference No. a	# Projects Evaluated	Level of Success	Evaluation Criteria
Washington State (10)	**24**	13% fully successful 33% moderately successful **33% minimally successful** **21% not successful**	Wetland acreage, performance standards, goals/objectives, contribution to functions, comparison with wetland lost
Washington/King County (16)	**38**	3% successful **97% not successful**	Replacing functions
Western Washington (20)	**17**	23% functioned well ecologically **65% functioned poorly** 12% were not completed	Vegetation diversity, non-native plant dominance, structural diversity, wildlife use, adjacent land uses, vegetation cover vs. open water

Table 6-3. Level of overall compliance of compensation projects.

Location of Study and Reference No. a	#Projects Evaluated	% of Projects in Compliance with all requirements	Evaluation Criteria
Washington (9)	**45**	**29%**	• Project installed • Installed according to plan • Meet performance standards
Washington (10)	**24**	**29%**	• Establish required wetland acreage • Meet performance standards • Meet goals/objectives
Washington/ western (20) b	**17**	**18%**	• Installation of both development and compensatory mitigation projects as required
Washington/ King County (16) c	**29 (38)**	**21% (16%)**	• Meet performance standards (project installed)



THE EFFECTS OF WETLAND MITIGATION BANKING ON PEOPLE

J.B. Ruhl and James Salzman

(This working paper is under submission for publication.)

Florida State University
College of Law

Public Law and Legal Theory
Working Paper No. 179

January 2006

This paper can be downloaded without charge from the
Social Science Research Network Electronic Paper Collection:

http://ssrn.com/abstract=878331

A complete index of FSU College of Law Working Papers is available at
http://www.law.fsu.edu/faculty/publications/working_papers.html

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The Effects of Wetland Mitigation Banking on People

J.B. Ruhl[*] and James Salzman[**]

In the decade since the Corps of Engineers (Corps) and Environmental Protection Agency (EPA) officially blessed wetland mitigation banking for purposes of satisfying mitigation requirements under Section 404 of the Clean Water Act (CWA),[1] the practice has fueled an ongoing debate about its pros[2] and cons.[3] For the most part, however, the debate has focused on the relative advantages and disadvantages of banking programs in terms of administrative efficiency and ecological impact, with little attention being paid to the effects of wetland mitigation banking *on people*. This article presents the first comprehensive empirical study of the demographics of wetland mitigation banking, revealing what has long been suspected—that banking facilitates the redistribution of wetland resources from urban to rural areas, taking with them the important ecosystem service values wetlands provide to human communities.

After an overview of the economic service values wetlands provide, the structural biases inherent in the wetland mitigation banking program, and the lack of information about the effects of wetland banking in general, we present the results of an empirical study of 24 wetland mitigation banks in Florida accounting for over 95 percent of all bank activity. By comparing the demographic attributes of the area around each bank to the areas around the development projects that purchase mitigation bank "credits" to satisfy their mitigation requirements, we show that the loss of wetland resources is concentrated in urban areas, whereas the "compensatory" mitigation provided by wetland banks is concentrated in rural areas, and that the composition of the project area and bank area populations is significantly different. We examine the policy implications of this effect and suggest several steps that can be taken to better understand and respond to its impact on the distribution of ecosystem services associated with wetland resources.

---

[*] Matthews & Hawkins Professor of Property, The Florida State University College of Law, Tallahassee, Florida. This paper would not have been possible without the Herculean research assistance of Adam Schwartz, FSU College of Law Class of 2006. Special thanks are also due to Keith Ihlanfedlt, FSU Eminent Scholar in Economics, and participants in workshops at the University of Minnesota and Georgetown University law schools for project input, and to Kirl Kim and Tom Chapman of the FSU Geography Department for GIS analysis.

[**] Professor, Duke University School of Law and Nicholas School of the Environment.

[1] *See* Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks, 60 Fed. Reg. 58605 (Nov. 28, 1995) [hereinafter Mitigation Bank Guidance]. For a comprehensive explanation of the regulation of land uses in wetland areas under section 404 of the Clean Water Act, see MARGARET N. STRAND, WETLANDS DESKBOOK (2d ed. 1997).

[2] For recent advocacy of the merits of wetland mitigation banking, see Royal C. Gardner and Theresa J. Pulley Radwan, *What Happens When a Wetland Mitigation Bank Goes Bankrupt?*, 35 Envtl. L. Rep. (Envtl. L. Inst.) 10590, 10591-92 (2005).

[3] For a comprehensive discussion of concerns expressed about wetlands mitigation banking, see James Salzman and J.B. Ruhl, *Currencies and the Commodification of Environmental Law*, 53 STAN. L. REV. 607, 657-68 (2000).

Wetland Mitigation and Ecosystem Services

When a land development project involves filling of wetland areas regulated under the CWA or similar state laws, one condition of the permit authorizing the activity usually is to require mitigation for the loss of wetland functions. Permittees can accomplish this themselves directly through creation or enhancement of wetlands on the development site (onsite mitigation) or on an offsite location (offsite mitigation), or by paying a fee to fund wetland mitigation by a third party conservation entity in lieu of providing direct mitigation (in-lieu fee mitigation).[4] Wetland mitigation banking provides a third party variation on offsite mitigation by allowing the developer to compensate for the resource loss by purchasing "credits" from another landowner—the wetland banker—who has created or enhanced wetland resources elsewhere.

Although wetland mitigation banking began mainly as a means for state highway departments and other government agencies to satisfy their regulatory wetland mitigation needs by establishing their own banks,[5] several hundred entrepreneurial banks now operate in the nation, selling credits within defined "service area" boundaries to private and public land developers needing to satisfy a regulatory wetland mitigation requirement.[6] Mitigation banking today reportedly accounts for [**X**] percent of all regulatory mitigation carried out under Section 404 nationwide.[7] Moreover, as the shortcomings of onsite and offsite compensatory mitigation provided directly by development project permittees has become increasingly apparent,[8] EPA and the Corps

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[4] For a comprehensive explanation of wetland mitigation approaches, see ENVIRONMENTAL LAW INSTITUTE, BANKS AND FEES: THE STATUS OF OFF-SITE MITIGATION IN THE UNITED STATES (2002) [hereinafter BANKS AND FEES].

[5] *See* Dennis Durbin, *Wetlands and the Federal Highway Program*, NAT'L WETLANDS NEWSL., Sept-Oct. 2005, at 7; Lawrence R. Liebesman and David M. Plott, *The Emergence of Private Wetlands Mitigation Banking*, 13 NAT. RESOURCES & ENV'T 341, 341 (1998) (before the mid-1990s, 75 percent of all banks were public agency, single-user banks linked to public works projects).

[6] Office of Wetlands, U.S. Environmental Protection Agency, A Watershed Decade 19 (2001), *available at* http://www.epa.gov/owow/home/accomplishments/wetlands.pdf (last visited Oct. 28, 2005).

[7] See [forthcoming Corps report]. The Corps study is based on the first comprehensive nationwide survey comparing the respective shares of mitigation attributable to individual onsite mitigation, individual offsite mitigation, purchase of credits from mitigation banks, and in-lieu fees. A much lower figure of 10 percent for the mitigation banking share had previously been reported by the National Mitigation Banking Association, though the empirical basis for that estimate was not provided. *See* Craig Denisoff, *Banking and Transportation Projects: Merging Ecological Protection and Economic Growth*, NAT'L WETLANDS NEWSL., Sept-Oct 2005, at 9, 10.

[8] Mitigation provided directly by permittees has been described as resulting in numerous "postage stamp" mitigation sites, making it difficult for the Corps and EPA to monitor the permittees' performance. *See* NATIONAL RESEARCH COUNCIL, COMPENSATING FOR WETLAND LOSSES UNDER THE CLEAN WATER ACT (2001). Members of the NRC Committee that produced the report on wetlands mitigation summarized their findings and the findings of numerous other studies in several other publications. *See* R. Eugene Turner, Ann M. Redmond, and Joy B. Zedler, *Count It by Acre or Function—Mitigation Adds Up to Net Losses of Wetlands*, NAT'L WETLANDS NEWSL., Nov-Dec. 2001, at 5; Joy Zedler and Leonard Shabman, *Compensatory Mitigation Needs Improvement, Panel Says*, NAT'L WETLANDS NEWSL., July-Aug. 2001, at 1. *See also* U.S. ARMY CORPS OF ENGINEERS, NEW ENGLAND DISTRICT, SUCCESS OF CORPS-REQUIRED WETLAND MITIGATION IN NEW ENGLAND (2003); WASHINGTON DEPARTMENT OF ECOLOGY, WASHINGTON STATE WETLAND MITIGATION EVALUATION STUDY (2002); NEW JERSEY DEPARTMENT OF

continue to praise the attributes of wetland banking[9] and federal policy now goes so far as to encourage federal agencies to use mitigation banking as their means of compensating for wetlands losses their projects cause.[10] In its ten short years of official endorsement, in other words, wetland mitigation banking has gone from a novel concept to a government promoted and routinely employed wetland mitigation option.

Not surprisingly, because it simplifies offsite wetland mitigation, and thus arguably simplifies development in wetland areas, banking has attracted both praise and criticism focusing on its purported administrative advantages over "first party" onsite or offsite mitigation provided directly by project permittees,[11] as well as on its overall ecological effects.[12] Remarkably, however, what has been missing from this debate is any attention to the *economic* effects of wetland mitigation banking. Wetlands provide important ecosystem service values to human populations, such as flood mitigation, groundwater recharge, water filtration, and sediment capture.[13] These benefits, while unquestionably of economic value if measured in terms of the adverse impacts were they removed or the cost to replace them with technological substitutes, usually are not valued in the marketplace.[14] Recent natural disaster events, such as Hurricane Katrina, make all too clear that this omission is a case of market failure, suggesting that structural barriers exist to rational economic behavior.[15] In particular, because of the complex ecological and geographic attributes of ecosystem services, landowners cannot easily charge for the

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ENVIRONMENTAL PROTECTION, CREATING INDICATORS OF WETLAND STATUS (QUANTITY AND QUALITY): FRESHWATER WETLAND MITIGATION IN NEW JERSEY (2002).

[9] *See, e.g.*, Office of Wetlands, U.S. Environmental Protection Agency, *Wetlands Mitigation Banking*, http://www.epa.gov/owow/wetlands/facts/facts16.html.

[10] *See* 10 U.S.C. § 2694b (authorizing military agencies to use mitigation banks); Pub.L. 108-136, Div. A, Title III, § 314(b), 117 Stat. 1431 (2003) (requiring the Corps of Engineers to promulgate standards facilitating mitigation banking).

[11] *See* Mitigation Bank Guidance, *supra* note __, at 58,607. There is some recently compiled evidence that agencies have greater success monitoring wetland mitigation banks than is the case for "first party" onsite and offsite mitigation provided directly by the project permittee. *See* U.S. GOVERNMENT ACCOUNTABILITY OFFICE, GAO-05-898, WETLANDS PROTECTION: CORPS OF ENGINEERS DOES NOT HAVE AN OVERSIGHT APPROACH TO ENSURE THAT COMPENSATORY MITIGATION IS OCCURRING 19-20 (Sept. 2005). Some studies show the administrative advantages are not necessarily as great as claimed. See MINNESOTA DEP'T NATURAL RESOURCES ET AL., MINNESOTA WETLAND MITIGATION BANKING STUDY 13 (Mar. 1998) [hereinafter MINNESOTA BANKING STUDY].

[12] The debate over the relative merits of "first party" permittee mitigation versus wetlands mitigation banking continues in often heated dialogue. *Compare* Society of Wetland Scientists, *Wetland Mitigation Banking: Clarifying Intent*, NAT'L WETLANDS NEWSL., Sept.-Oct. 2005, at 5 (response of Society of Wetland Scientists to criticism by National Wildlife Federation that Society's prior report on wetland mitigation banking overstated its proven merits), with Julie Sibbing, *Mitigation Banking: Will the Myth Ever Die?*, NAT'L WETLANDS NEWSL., Nov-Dec 2005, at 5 (reply from National Wildlife Federation)

[13] *See* Sandra Postel and Stephen Carpenter, *Freshwater Ecosystem Services*, in NATURE'S SERVICES: SOCIETAL DEPENDENCE ON NATURAL ECOSYSTEMS 195-211 (Gretchen Daily ed. 1997).

[14] *See* GEOFF HEAL, NATURE AND THE MARKETPLACE: CAPTURING THE VALUE OF ECOSYSTEM SERVICES (2000).

[15] Some wetlands types can absorb over 1.5 million gallons of flood water per acre. Not surprisingly, the most economically destructive flooding in New Orleans was on prior coastal wetland areas that had been drained and developed. *See Nature Destroys, But It Also Can Protect*, THE ENVTL. F., Sept.-Oct. 2005, at 18.

offsite flood or pollutant mitigation benefits flowing from wetlands they own, making the services a positive externality that appears free for the taking to other landowners who benefit from them.[16] Consequently, and understandably, a landowner's decision about whether to convert wetlands to other uses is unlikely to take into account their service value to others. This opens the door to the question whether, if land markets do not adequately take ecosystem service values into account, regulatory programs such as wetland mitigation banking should attempt to fill the gap.

Onsite wetland mitigation, while perhaps administratively cumbersome, is in principle neutral with respect to ecosystem services in the sense that it keeps wetland resources in generally the same location. By contrast, as a convenient "third party" form of offsite mitigation, wetland mitigation banking facilitates moving wetland resources from one location—the development project—to a potentially distant location—the bank site.[17] It may well be that this provides, on balance, a net ecological advantage over onsite mitigation. Even assuming that is the case, however, it *cannot* be the case that the same human population benefits from the ecosystem service values associated with the wetlands when wetlands mitigation banking is the mitigation method of choice. Simply put, if the wetlands move, their ecosystem services go with them.[18] This means that some people inevitably will lose (and others will gain) the economic benefit of wetland ecosystem services when wetland mitigation banking takes hold in a region. On the assumption that people generally object to losing something of value—that is, when they know about it—it seems reasonable to demand that advocates of wetland mitigation banking address the potential the program has to redistribute wetland ecosystem services. Yet the debate over the ecological impacts of wetlands mitigation banking has thus far left out this potential economic impact as a relevant policy concern.

Structural Biases in Wetland Mitigation Banking

To be sure, wetland mitigation banking employs some safeguards designed to ensure ecological performance that can, whether intended or not, also sustain the delivery of ecosystem services to a particular human population. Wetland mitigation banking policy generally requires that the "swap" be for wetlands of similar kind and within a "service area" usually defined by relevant watershed boundaries.[19] Some ecosystem services thus may be provided on the same basis to the human population within the service area

[16] *See* James Salzman, Barton H. Thompson, Jr., and Gretchen C. Daily, *Protecting Ecosystem Services: Science, Economics, and Law*, 20 STAN. ENVTL. L.J. 309, 311-12 (2001).

[17] The propensity for wetlands mitigation banks to be located at significant distances from the development projects to which they sell credits was identified early in the history of banking. *See* MINNESOTA BANKING STUDY, *supra* note __, at 10-11. These early studies did not compile demographic information about the different human populations in the respective locations.

[18] This concern was first raised in Salzman & Ruhl, *supra* note __, at 666-67, and later covered in J.B. Ruhl & R. Juge Gregg, *Integrating Ecosystem Services Into Environmental Law: A Case Study of Wetlands Mitigation Banking*, 20 STAN. ENVTL. L.J. 365 (2001), James Salzman & J.B. Ruhl, *"No Net Loss" and Instrument Choice in Wetland Protection*, NAT'L WETLANDS NEWSL., Jan.-Feb. 2004, at 3, 18, and LEONARD SHABMAN AND PAUL SCODARI, PAST, PRESENT, AND FUTURE OF WETLAND CREDIT SALES 21-23 (Resources for the Future, Dec. 2004).

[19] *See* BANKS & FEES, *supra* note __, at __.

regardless of where the development projects deplete the wetlands and the banks enhance them. But some of the ecosystem services flowing from wetlands are primarily local in terms of who benefits from them, or at least are more pronounced the closer to the wetland one is located. For example, research on the effects of the 2004 Asian tsunami shows that the presence of coastal wetlands significantly mitigated the nearby inland damage caused by the wave forces.[20] Research from Florida has shown that wetlands help regulate local moisture and temperature, which has proven to be of benefit to nearby agricultural lands.[21] Even small wetlands in urban areas, it has been demonstrated, provide important pollutant control services to the local urban population,[22] and clusters of small isolated wetland areas provide important functions as an ecological complex.[23] Hence, moving wetland resources, even within a bank's defined service area, is likely to alter who benefits from the associated ecosystem services.

Indeed, there is good reason to believe that wetland mitigation banking, given its market incentive drivers, will systematically move wetland resources from urban areas to rural areas within a given bank's service area. Entrepreneurial bankers are in the business to make a profit, and thus are likely to seek the least cost land that will produce the desired stream of credits for sale.[24] Land developers are also in their business to make a profit, and are likely to seek the least cost land in the desired development market. It is highly unlikely, however, that bankers and developers will compete for land in the same market—bankers need large tracts capable of wetland restoration, which, if they do exist in a development market area, are likely to be too pricy for the banker to compete with the developers. Indeed, the whole point of wetlands mitigation banking—what makes its economic incentive gears work—is that developers get to wipe out wetland patches in the higher-priced land markets and bankers get to establish wetland banks in the less pricy land markets. One ought not be surprised, therefore, were it to be that development projects using wetlands mitigation banking to satisfy regulatory mitigation requirements are located in urban areas, and that banks are located in rural areas.[25] If so, wetland mitigation banking is likely also to asymmetrically redistribute local ecosystem service values associated with wetlands between those two areas.

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[20] *See* Finn Danielson et al., *The Asian Tsunami: A Protective Role for Coastal Vegetation*, 310 SCIENCE 643 (2005).

[21] *See* C.H. Marshall et al., *Crop Freezes and Land Use Change in Florida*, 426 NATURE 29 (2003).

[22] *See* U.S. ENVIRONMENTAL PROTECTION AGENCY, NATIONAL MANAGEMENT MEASURES TO PROTECT AND RESTORE WETLANDS AND RIPARIAN AREAS FOR THE ABATEMENT OF NONPOINT SOURCE POLLUTION 11-14 (July 2005); Brant Keller, *What We Always Knew: Wetlands Win Hands Down at Pollution Mitigation*, NAT'L WETLANDS NEWSL., Sept-Oct 2005, at 12.

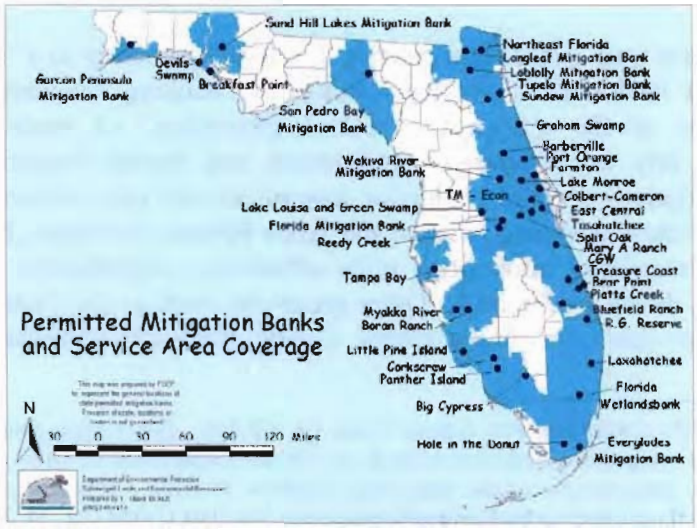
[23] *See* Raymond D. Semlitsch, *Size Does Matter: The Value of Small Isolated Wetlands*, NAT'L WETLANDS NEWSL., Jan.-Feb. 2000, at 5.

[24] *See* MINNESOTA BANKING STUDY, *supra* note __, at 12 (finding that the location of wetland banks is dictated almost entirely dictated by the presence of willing landowners and seldom on ecological or hydrological needs).

[25] A few early empirical studies suggested this urban-to-rural shift effect. *See* Dennis M. King and Luke W. Herbert, *The Fungibility of Wetlands*, NAT'L WETLANDS NEWSL., Sept.-Oct 1997, at 10, 11 (single watershed in Florida); Ann Jennings, Roy Hoagland & Eric Rudolph, *Down Sides to Virginia Mitigation Banking*, NAT'L WETLANDS NEWSL., Jan.-Feb. 1999, at 9, 10.

What We Don't Know about Wetlands Mitigation Banking

The fact of the matter, however, is that we really have no solid empirical foundation on which to assess the impact of wetland mitigation banking on the distribution of ecosystem services, because it is simply not a factor wetland mitigation banking policy has integrated into the decision making calculus or the monitoring protocol. Take Florida's wetland program as an example. Florida's permitted banks include three banks that have sold out of credits, 30 banks actively selling credits, and 10 banks approved for operation but not yet selling credits.[26] So far, over 1000 land development projects have purchased credits from banks in Florida, with over 4800 total credits sold. Credit prices, though not public information, are reported to vary widely, with prices well into the tens of thousands of dollars per credit as the norm.[27] The permitted banks cover over 117,000 acres and have the potential, if they meet all permit conditions, to offer over 36,000 credits for sale. Figure 1 shows the locations of the permitted banks and their combined service areas, which covers about half the land mass of Florida.



That sums up what is known about wetland mitigation banking in Florida. Between the Corps, the Florida Department of Environmental Protection (DEP), and the regional

[26] Florida was an early entrant into wetland mitigation banking, enacting a 1993 statute directing its state wetland agencies to "encourage and participate in the establishment of private and public regional mitigation areas and mitigation banks." Fla. Stat. 373.4135. For information on Florida's wetland mitigation banking program, including the summary information on banks contained in the text paragraph, see Florida Department of Environmental Protection, *FDEP: Mitigation and Mitigation Banking: Questions and Answers*, http://www.dep.state.fl.us/water/wetlands/mitigation/banking.htm (last visited Oct. 28, 2005). Florida operates its state wetlands program, including wetland mitigation banking, in coordination with the federal program the Corp of Engineers administers under Section 404 of the Clean Water Act. *See* OPERATING AGREEMENT BETWEEN THE U.S. ARMY CORPS OF ENGINEERS ET AL., CONCERNING REGULATORY PROGRAMS FOR ACTIVITIES IN WETLANDS AND OTHER SURFACE WATERS, Parts IV – V (1998).

[27] *See* BANKS & FEES, *supra* note __, at __. Liebesman & Plott, *supra* note __, at 371 (one sold out bank in Florida priced its credits at $45,000 per credit in the late 1990s)

water management districts administering wetlands regulation in Florida, none maintains a database of wetland mitigation banking transactions allowing anyone readily to identify the geographic location of land development projects using wetland banks for mitigation or to evaluate the economic, ecological, and demographic impacts of the wetland mitigation banking transactions. Moreover, although Florida, commendably, has recently adopted a uniform method of estimating wetland losses and credits that focuses on wetland functions rather than merely counting acres, the method does not integrate ecosystem service impacts as a factor for approving banks, estimating wetland losses, assigning bank credits, or tracking bank transactions.[28] Overall, nothing about the wetland mitigation banking program in Florida recognizes ecosystem service distribution impacts as a relevant policy consideration, much less provides information with which to evaluate the impacts. Unfortunately, after an exhaustive survey we found that neither the Corps, the EPA, nor any other state administering a wetland mitigation banking program performs any better than Florida in this respect, though the gORM/RIBITS system the Corps and EPA currently are testing would be a significant step forward in wetlands mitigation data management.[29]

This data vacuum is truly ironic for a practice its advocates portray as a "win-win" for the environment and landowners. Wetland mitigation banking frequently is glowingly portrayed as one of the innovative "second generation" of environmental policy instruments that rely on information enrichment and market incentives rather than regulatory proscriptions to guide behavior toward desired environmental management goals.[30] Some of these programs, such as the Toxic Release Inventory, have been shown to collect and disseminate information quite effectively, significantly altering polluter behavior without direct regulation.[31] Other programs, such as the Clean Air Act sulfur dioxide trading program for power plants, closely track environmental behavior and

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[28] *See* Fla. Stat. § 373.414(18)(b); Fla. Admin. Code Ch. 62-345. For a plain English explanation of Florida's impact and mitigation assessment method, see Florida Department of Environmental Protection, *Mitigation Banking: Development of the State-Wide Uniform Wetland Mitigation Assessment Method*, http://www.dep.state.fl.us/water/wetlands/mitigation/uwmam.htm (last visited Oct. 28, 2005).

[29] The Corps and EPA have begun a pilot study in three Corps regional offices of a tracking system, known as Regional Internet Bank Information Tracking System (RIBITS), designed to allow the agency and mitigation banks to monitor bank transactions and ecological performance through an online system. But RIBITS is a restricted access format that limits public access to the information, and it does not track demographic information for a bank or its projects. *See* U.S. Army Corps of Engineers, Engineer Research and Development Center, RIBITS Fact Sheet (June 2005). The Corps and EPA also reportedly are planning to integrate RIBITS with the Corps' GIS-enabled permit tracking data management system, currently under development, called gORM. If successful, gORM/RIBITS will track spatial information associated with all authorized impacts and required compensatory mitigation, including mitigation banks, which will make it much easier to illustrate any spatial redistribution of ecological functions taking place under the 404 permit program.

[30] *See* Gardner & Radwan, *supra* note __, at 10592 (wetland mitigation banking is a "market-based trading system" that creates "economic incentives for mitigation providers to do their jobs well").

[31] *See* U.S. Environmental Protection Agency, *Toxic Release Inventory (TRI) Program*, at http://www.epa.gov/tri (last visited October 28, 2005). For a general discussion of the use and advantages of information disclosure in environmental policy, see Bradley C. Karkkainen, *Information as Environmental Regulation: TRI and Performance Benchmarking, Precursor to a New Paradigm?*, 89 GEO. L.J. 257 (2001).

market trade pricing data to allow evaluation of the program's environmental and economic effects.[32] In sharp contrast, federal and state wetland mitigation banking programs do not assemble data about the land values of development project and bank sites or the price of credit sales, and they do not collect and manage ecological, economic, or demographic data associated with the projects and the banks in any way that makes it easy for landowners, banks, the agencies, or the public to evaluate what is happening. Indeed, if our experience is any indication, it is difficult to obtain even the paper files providing raw data about the projects and banks, much less find an agency that has provided web or archival access to the kind of data compilations that might be useful for evaluating the program.[33]

[32] *See* USEPA, ACID RAIN PROGRAM 2004 PROGRESS REPORT 8-12 (2005) (detailing continuous emission monitoring program).

[33] *See, e.g.*, MINNESOTA BANKING STUDY, *supra* note __, at 14 (finding "there exists a lack of comprehensive, easily-accessible data" on wetlands banking).

Survey of Wetland Mitigation Banking Demographics in Florida

As a first step toward improving the empirical data necessary for opening a dialogue on the ecosystem service effects of wetland mitigation banking, we collected information on all of Florida's active and sold-out wetland banks and all of the land development projects that purchased credits from them to satisfy their regulatory mitigation requirements. Wetland banks are required to maintain paper ledgers documenting their sale of credits.[34] Ledger entries include rudimentary information such as date of sale, number of (but not price of) credits sold, and identification number of the wetland permit issued to the land development project. Taking the 24 banks for which adequate data were available,[35] representing over 900 development projects and over 4000 credits sold, we cross-referenced the permit numbers with other databases to identify the county parcel identification numbers of each land development project location. With parcel identification numbers in hand, we were able to generate the geographic information system (GIS) location, represented as mapped polygon boundaries, for each project and bank. Our first phase of research then focused on mapping each bank and its associated development projects and generating demographic data for all locations to allow comparison of the human populations around them.[36]

Our findings, summarized in Table 1, confirm the hypothesized migration of wetland resources to less densely populated areas, which took place for 19 of the 24 banks studied.

[34] At the time of our research no agency maintained the ledgers in an online form, and ledgers for some banks had not been properly maintained in any form. Obtaining the ledgers form the various state agencies that monitor the banks thus was a surprisingly painstaking process that took over one year and hundreds of telephone and e-mail communications. Of course, we understand that many agency personnel experience heavy workloads and that satisfying our data compilation requests was not in their general job descriptions, and thus are thankful to the many agency personnel who cooperated with our research.

[35] Our study includes 24 of the 33 banks actively selling or sold out of credits. We eliminated banks that had sold credits to five or fewer development projects, on the basis that no demographic pattern has emerged for those banks, and we were unable to obtain adequate data from agencies to compile a sufficiently complete dataset for several of the banks.

[36] Because our focus is on the relocation of ecosystem services wetlands provide locally, we drew demographic data from a relatively close radius around the locations. For the development projects, we used the demographic data for the census tract in which the centroid of the project was located and computed an average for all projects associated with a bank. For the banks, we used an average of the demographic data for any block group touching within three miles of the bank.

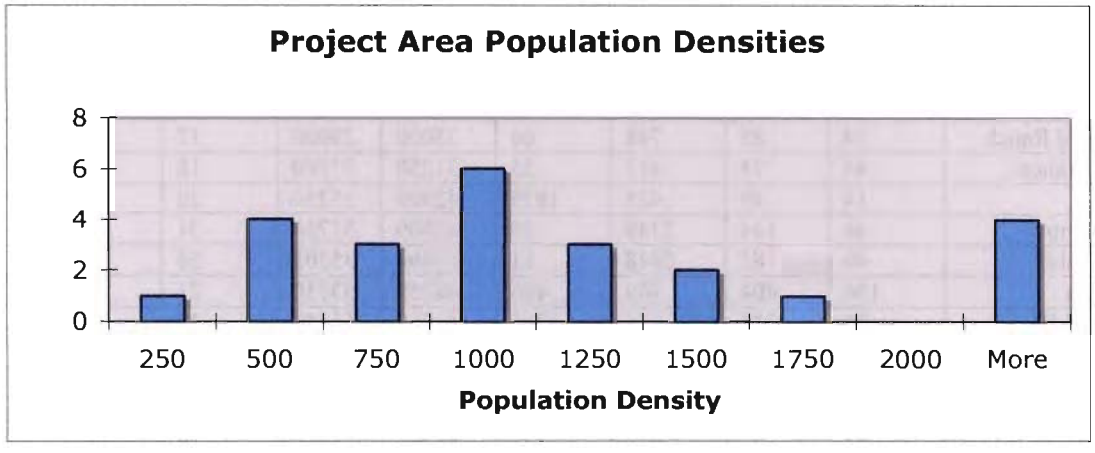
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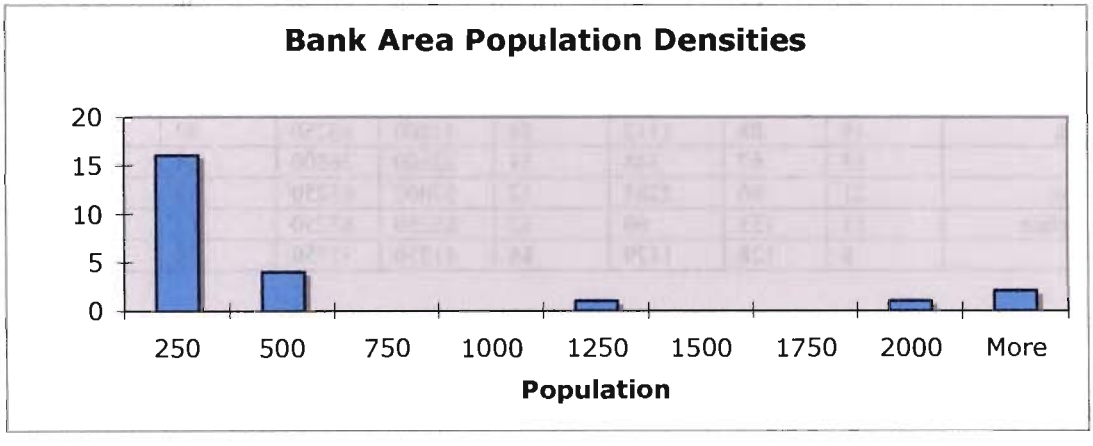
Bank	Projects	Credits sold	Population Density (sq/mi)		Median Income		Percent Minority		Average Distance to Projects (mi)
			Projects	Bank	Projects	Bank	Projects	Bank	
Barberville	15	30	779	34	53750	32250	24	24	21
Big Cypress	20	126	553	4	50500	31250	17	70	35
Bluefield Ranch	24	85	748	66	35000	29000	17	40	17
Boran Ranch	44	74	413	35	31250	37500	18	10	28
CGW	14	40	425	1975	42000	35250	20	29	4
East Central	46	144	2349	39	43500	37750	31	12	16
Everglades	40	182	2448	11	53000	35500	38	42	40
Farmton	136	404	789	486	48250	53750	21	11	20
Florida MB	93	588	1024	1246	41750	64250	37	39	9
Florida Wetlands	63	367	3365	2254	57750	77500	48	41	8
Lake Louisa	25	172	511	116	50000	50000	28	30	19
Lake Monroe	10	233	1713	352	62250	41750	26	18	12
Little Pine	94	97	941	401	44750	37250	18	11	15
Loblolly	20	115	786	211	53500	36250	28	15	11
Loxahatchee	43	157	1376	2469	61250	75750	22	15	13
Mary A. Ranch	18	86	1297	6	39000	66750	28	14	21
Northeast Florida	108	377	987	115	43000	44250	24	21	15
Panther Island	74	935	798	61	55250	35750	12	28	12
Reedy Creek	16	84	460	465	40500	39500	39	40	12
Split Oak	19	88	1112	88	41000	65250	42	10	15
Sundew	13	67	348	31	32500	36500	24	2	18
TM-Econ	21	66	2285	12	57000	65250	39	10	12
Tosohatchee	11	153	60	12	65250	65250	13	10	11
Tupelo	8	128	1179	86	41250	35750	28	13	17

Table 1. This table provides the following information for the 24 mitigation banks in Florida included in our study: (1) number of land development projects that have purchased credits from the bank; (2) total number of credits the bank has sold; (3) the population density of the local populations for the development projects and the bank; (4) the median income of the local populations for the development projects and the bank; (5) the percent minority of the local populations for the development projects and the bank; and (6) the average distance in miles from the bank to its development projects.

The population density distributions in Charts 1 (Projects) and 2 (Banks) illustrate the sharp skewing of project area population density toward the urban end and of bank area population density toward the rural end. For the banks exhibiting this urban to rural shift, the population density around the projects was on average 934 people per square mile higher than for their associated banks. But the pattern for median income and minority population was less clear than for population density. Project area median incomes were higher than bank area incomes for 11 banks, lower for 11, and equal for two. Percentages of minority population were higher in project areas for 15 banks, lower for 7, and within a percentage point for two. Nevertheless, although the directions were mixed, overall there were significant differences in median income and minority populations for project areas and banks. The average difference for median income was $11,750, and the

average minority population difference was 13 percentage points. The majority of banks exhibited higher incomes in whichever area had the lower minority population component.



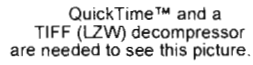


And as shown in Chart 3, the average distance from a bank to its associated project areas was considerable for many banks—over 10 miles for all but three of the 24 banks studied.



When put together, the strong trend of shifting wetlands from urban to rural areas, the significant differences between bank areas and project areas for population density, median income, and percent minority, and the considerable distance between banks and their associated projects all point to the conclusion that completely different populations were winners and losers in terms of locally-delivered wetland ecosystem service values. In many cases, moreover, the projects responsible for filling urban wetlands were tightly clustered, raising the concern that any synergistic effects of an urban wetland complex have been lost. Figure 2, a map showing project and bank locations for the Panther Island bank near Naples in southwest Florida, illustrates this phenomenon.

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Hence, even assuming that wetland mitigation banking is administratively and ecologically superior to onsite mitigation, wetlands mitigation banking as implemented has unquestionably redistributed wetland ecosystem services from one set of human populations to another.

Bringing Wetland Mitigation Banking Back Down to Earth

Our research raises more questions than it answers, simply because so little information is available about the economic effects of wetlands mitigation banking. We cannot say, for example, whether the effect of redistributing wetland ecosystem services is to increase or decrease overall social welfare. Moreover, ecosystem services are just one of the values associated with wetlands and land development, so we also cannot say whether any net loss of wetland ecosystem service values is offset by other considerations such as the economic impact of urban development facilitated by the wetlands banking program. Nor would either of those quantifications, if we could perform them, likely remain static. It is certainly possible, for example, that over time the population around wetland banks could grow, meaning that larger populations would enjoy their associated ecosystem services, and that increased economic development values in urban areas losing wetlands far outstrip the costs associated with the lost wetland services. One conclusion we can firmly draw, however, is that wetlands mitigation banking does redistribute some wetland ecosystem services between human populations, and that nothing in federal or state banking programs is tracking this trend, at least not in any way visible to the public.

The question, of course, is whether this should matter for wetlands policy. It is difficult to approach that question intelligently, however, given the data vacuum that exists about the scope and magnitude of the distributional effects. Wetlands mitigation banking procedures do not perform what would be necessary to test the policy implications of the phenomenon—i.e., track the redistribution of wetlands, estimate the effects thereof on ecosystem service values, notify the affected public, and provide opportunity for public input. The "losers" in wetlands mitigation banking—the people in communities losing wetlands to the banking areas—do not even know that they are losing anything of economic value, much less what and by how much. And given that ecosystem services are economically valuable, one could reasonably expect the "losers" at least to be interested in knowing about their loses, so that they may make an informed decision to about whether they care. It only seems appropriate, therefore, to identify the scope and magnitude of the phenomenon before deciding its policy outcome.

But our study suggests more than just a reason to conduct more research. The redistribution effect calls into question two central foundations of wetlands conservation policy. First, it suggests that the national "no net loss" policy is not enough of an answer to the economic pressure to develop in wetlands. Second, it exposes the soft underside of "market-based" environmental management instruments.

No Net Loss Does Not Mean Nobody Loses

Wetland mitigation banking has no doubt played an important role in pursuing the much-heralded goal of "no net loss" of wetlands, which President George H. Bush's administration first ushered in to federal wetlands policy[37] and every subsequent administration has retained as the overarching theme.[38] Even assuming the policy achieves no net loss of ecological function, when the geographic distribution of wetlands changes, one cannot reasonably assert that there has been no net change in the wetlands universe. Wetland banks may provide greater confidence than have other mitigation approaches that compensatory wetland functions are in fact delivered and sustained. That said, however, our study reveals that no net loss does not mean that nobody experiences a loss of wetland service values as a result of wetland mitigation banking. Even assuming a net gain of wetland resources, the redistribution of wetlands inherent in the banking approach has resulted in significant losses of ecosystem service values for some human populations and gains for others. In other words, some people are bearing most of the loss side of the no *net* loss ledger.

Market-Based Does Not a Market Make

Defenders of wetland mitigation banking might be quick to reply that the redistribution of ecosystem services is not a concern because, as a market-based instrument, banking produces the most efficient allocation of resources and therefore the redistribution is, on balance, not only appropriate but desirable. There are winners and losers in any market, the argument would go, so the fact that some people lose ecosystem service values associated with wetlands while others gain is just a consequence of the market.

The problem with this argument is that wetlands mitigation banking is *not* a market, at least not one that can satisfy the principles of efficient allocation. The only reason wetlands mitigation banking exists as a practice is because federal and state laws restrict development in wetlands and mandate compensatory mitigation in return for authorization. The "market" for wetland bank credits, therefore, is purely a construct of the regulatory program. As such, developers seeking to buy credits and bankers seeking to sell them take into account only what is relevant to the regulation-constructed "market" context, and it is clear that the regulatory authorities have not made distribution of ecosystem service relevant to that setting.

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[37] *See* Memorandum of Agreement Between the Environmental Protection Agency and Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines, 55 Fed. Reg. 9210, 9211 (Mar. 12, 1990). The United States has lost 50 percent of its original wetland base—about 100 million acres—to draining and filling, mostly for conversion to agricultural uses. The national loss rate has declined over the last 40 years, however, from about 460,000 acres to 60,000 acres annually. *See* Office of Wetlands, U.S. Environmental Protection Agency, A Watershed Decade 19 (2001), *available at* http://www.epa.gov/owow/home/accomplishments/wetlands.pdf (last visited Oct. 28, 2005).

[38] *See* National Wetland Mitigation Action Plan, http://www.mitigationactionplan.gov (last visited Oct. 28, 2005).

Location, location, location is the mantra of any real estate broker, but wetlands mitigation banking has left the location of ecosystem services out of the calculus for evaluating bank credits and development project debits. In that sense, nobody can blame developers and bankers for not taking ecosystem service distribution into account, but neither can anyone reasonably claim that the "market" for credits produces the most efficient allocation of wetland resources. So long as federal and state wetlands regulation programs do not acknowledge the geographic distribution of ecosystem service values as a criterion for regulation and a factor in wetlands mitigation policy, the "market" for wetland mitigation credits will not do so either, and we can only expect what has happened thus far—development projects in urban areas purchasing credits from banks located in distant rural areas.

Next Steps and Pathways of Reform

Our research reveals a conundrum for the evolution of wetlands management policy. Onsite compensatory mitigation keeps wetland resources within the local community, and thus would, if it worked, avoid the problem of redistributed ecosystem service values. But onsite compensation has proven to be unwieldy and unsatisfying given its administrative complexities and inherent disfavor among developers. Wetlands mitigation banking presents just the reverse set of conditions—administrative efficiency and private incentives to produce and sustain mitigation wetlands, but an inevitable redistribution of wetlands and their ecosystem service values. The trick will be how to solve the distribution problem in wetlands mitigation banking, if we decide it should be addressed as a matter of policy, without undermining the administrative and incentive advantages of the banking technique. Several approaches being tested in other resource management regimes seem well-suited to the banking program as well.

Steering Behavior through an Enriched Information Base

Programs such as the TRI reveal the power to change environmentally undesirable behavior in response to the dissemination of information into the public policy marketplace. The impact the TRI had in causing sources of pollution to reduce emissions came down to the fact that it provided citizens in the local area around each source readily accessible data about the quantity and quality of emissions to which they were being exposed. It is not unreasonable to expect, were the public given ready access to the kind of information our research assembled on wetland mitigation banking, that agencies, communities, land developers, and prospective mitigation bankers may alter their perceptions of the pros and cons of particular banking arrangements. This might be motivated by purely passive approaches, such as posting real-time versions of tables and maps like those included herein on the web, leaving it to interested parties to use the data in private and public forums to influence short-term and long-term trends. A more active approach could require development projects and mitigation banks to produce and make public an ecosystem services impact assessment to accompany each credit transaction, thus placing the burden of data collection and transmission on the beneficiaries of the program.

Restructuring Banking Incentives

Whereas information-based instruments rely indirectly on consumers of the information to shape policy responses, the information could also be used by agencies to track the "market" behavior of wetlands mitigation banking and identify points at which active intervention may be justified to alter the incentives structure for particular banks. In other words, to change how wetland mitigation banking influences ecosystem service distribution, we could examine changing the incentive structure. For example, when agency monitoring identifies a region in which migration of wetlands from urban to distant rural areas presents concerns, an incentive premium, such as an enhanced credit allotment, could be awarded to banks that locate closer to the urban areas losing wetland resources. Bankers would have an increased expected revenue stream to offset higher land process, and the urban population would benefit from a bank in closer proximity. Such reforms change expected outcomes but keep wetland mitigation banking market-based in orientation.

Adaptive Regulation

Although structural features give rise to an inherent asymmetry between bank and development project locations, it may be difficult to predict where development projects will locate, at what rates, and in what clustered concentrations. The changing distribution of ecosystem services will be at least as dynamic over time as well. Necessarily, therefore, the decision whether to approve a proposed wetland bank location and service area could, at best, be based on only a rough prediction of future ecosystem service distributions. Information enrichment and market restructuring thus are unlikely to ameliorate all instances in which banking appears to be promoting undue redistribution of wetland ecosystem services. Direct regulatory intervention may be justified in such instances, such as through closing affected areas from further trades while an ecosystem services inventory is conducted and other policy responses evaluated.

Of course, just as with information-based and market-based policies, effective regulation of a dynamic program such as wetlands mitigation banking requires a reliable and continuous stream of monitoring data and room for an agency to make informed adaptive responses. The techniques of adaptive management are well-suited to this kind of large-scale, evolutionary landscape management problem. Rather than define a wetland bank location and service area and never look back, adaptive management involves a process of goal setting (e.g., not to promote unduly disproportionate redistribution of wetland ecosystem services), continuous monitoring (e.g., tracking development locations associated with banks in real time), and decision adjustment (e.g., revisiting service areas, adjusting credit allotments, emphasizing onsite mitigation in certain areas, closer examination of future bank locations, etc.). Agency learning, in other words, should not end at the time of bank approval. The gORM/RIBITS GIS-based mitigation tracking system initiative planned by the Corps and EPA[39] thus would be a step in the right direction.

Conclusion

Our research has revealed a potential downside of wetland mitigation banking—and any form of offsite mitigation for that matter—that had been posited in the literature but never empirically demonstrated to be as systematic and pervasive as our findings suggest. Yet the response should not be to rush to abandon wetland mitigation banking or to radically overhaul its structure. Rather, we suggest further research to identify with more precision the magnitude of ecosystem service redistribution and other socioeconomic effects associated with bank transactions. In short, wetland mitigation banking has been touted as a "win-win" program, but unless someone keeps score we really can't know whether it truly fits that billing.

Furthermore, to the extent we find that wetland mitigation banking has overlooked important effects on ecosystem services, reforms should be measured and adaptive. Corrective measures thus should be implemented carefully, requiring that regulatory

[39] *See* note __, *supra.*

authorities be equipped to conduct adequate monitoring and make adaptive responses as bank transactions progress within a bank's service area. Even with such an approach, it is likely that the any administrative and incentive advantages wetlands mitigation banking has over onsite mitigation will become less pronounced once ecosystem service distribution is taken into account. As it stands now, however, we know that at least part of the advantage wetlands mitigation banking enjoys over onsite mitigation is a function of it not taking ecosystem services distribution into account. We do not know how much this advantages wetland mitigation banking, where, when, or who wins or who loses and by how much as a result. We do not know this because, quite simply, the Corps, EPA, and state wetland agencies have not been asking the right questions. We suggest it is time they begin doing so.

Reed 4/15/09 @ Mt. Vernon hearing

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—Margaret Mead

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April 15, 2009

Department of Ecology

Re: Wetland Mitigation Banks in Skagit County

Evergreen Islands opposes Wetland Mitigation Banks (WMBs) in general and Wetland Mitigation Banks in Skagit County, especially. A major flaw in WMBs is Washington State's and the Corps of Engineers' inability to enforce public policy.

The white paper entitled "Developing Defensible Wetland Mitigation Ratios[1]" makes the following observations of the history of wetland mitigation.

- In summary, the root source of the problem with our national wetland mitigation policy is that the rules governing mitigation trading have evolved primarily to keep the cost of mitigation affordable and ***to make our national wetland policy appear to be successful*** (emphasis added). … Despite protests to the contrary, the powerful interests involved in wetland mitigation ***prefer using ad hoc (political) negotiations*** over what constitutes acceptable mitigation to strict (accounting-based) trading rules.[1]

Starting in May of 2005 and running through December of 2006, The St Petersburg Times published "Vanishing Wetlands[2]", an excellent series of investigative articles on the dismal history of Florida's wetland mitigation efforts, which included Wetland Mitigation Banks.

The Times' investigation made the following observation:

- The corps approves more permits to destroy wetlands in Florida than any other state, and allows a higher percentage of destruction in Florida than nationally. Between 1999 and 2003, it approved more than 12,000 wetland permits and rejected one.[2]

[1] Developing Defensible Wetland Mitigation Ratios, King and Price, University of Maryland, Center for Environmental Science.
[2] Craig Pittman and Matthew Waite. Vanishing Wetlands. *St Petersburg Times Special Report* (19 stories over 1-1/2 years) Retrieved from http://www.sptimes.com/2006/webspecials06/wetlands/

Now the Ecology is promoting Wetland Mitigation Banks as the latest patent medicine for making our national wetland mitigation policy appear successful. Getting the horse before the cart, Skagit County already has 2 Wetland Mitigation Banks ***that are being allowed under a draft rule!*** By promoting development, the unparalleled natural beauty and wonder of Skagit County is facing a new axe.

- The Skagit Valley with the purple mountain majesties of the North Cascades.
- The Skagit Valley with spacious skies, and diminishing open space,
- The Skagit Valley with the amber waves of grain, and home of endangered farmers.
- The Skagit Valley coursed by the mighty Skagit River, home of endangered salmon.
- The Skagit River, which flows down to the shining Salish Sea, home of endangered Orca.

Why did Ecology bring us this tool that enables destruction of our natural wetlands and promotes development? Why didn't you bring us a tool of good governance like our wise neighbors to the north? In 1973, British Columbia established Agricultural Land Reserves (ALRs). As of March 2008, the Greater Vancouver ALR included 61,000 acres, and the Fraser Valley ALR included 72,000 acres.

Why didn't Ecology bring Skagit County something that protects this wondrous place? Does God allow WMBs in Heaven?

Respectfully yours,

Tom Glade
President, Evergreen Islands

From: DeForest Arbogast
To: Holder, Yolanda (ECY);
Subject: DOE WMB Draft EIS comments
Date: Saturday, April 18, 2009 9:00:42 PM

Hi Yolanda,

It was good to meet you, Lauren and Kim face-to-face at the Mount Vernon WMB workshop. You all must have an incredible workload keeping up the WMB Program. Unfortunately, I do not share your optimism for such a program. None-the-less, I wish you the best in making that program work.

Here are my comments on the Draft WMB EIS.

The least sound method for determining the status of the nation's wetlands is data analysis of
regulatory and incentive program data. Unregulated wetlands destruction, wetlands destroyed illegally and losses due to natural events, such as coastal Louisiana erosion, are not even counted. So I will not waste your time recounting all the dismal WMB studies I've read.

As I see it, the elimination of our natural wetlands to enhance development is an abomination. Your attempts at creating and maintaining man-made wetlands is not even appropriately funded by the
state legislature, thus dooming all the enhanced regulations in Chapter 173-700 WAC. You are, in fact,
helping to set the stage for further development while at the same time degrading rural communities with the loss of our most valuable farmland.

One of your stated goals is to "Support sustainable communities and natural resources". Your WMB program appears to be at odds with your goals.

DeForest Arbogast
Camano Island, WA

#13

Holder, Yolanda (ECY)

om:	Diane [freeprss@wavecable.com]
Sent:	Sunday, April 19, 2009 10:07 PM
To:	Holder, Yolanda (ECY)
Cc:	OIC Ask Mike; Pearson, Kirk; BoCC (Skagit); Kelly, Carolyn; FOSC; Evergreen Islands; Ranker, Kevin; Haugen, Mary Margaret; Stevens, Val; Sontag, Brian; Shelby, Mike (wwaa)
Subject:	WMB Draft Rule
Attachments:	Ecology - WMB draft rule comments 4.19.09.doc
Importance:	High

Ms. Holder:
Our comments on the Wetland Mitigation Banking Draft Rule/Pilot Projects are attached.
Skagit Citizens Alliance for Rural Preservation
Diane Freethy, Pres.

S C A R P
Skagit Citizens Alliance for Rural Preservation
PO Box 762, Sedro-Woolley WA 98284 | 360-856-2290

April 19, 2009

Department of Ecology
Attn: Yolanda Holder
Shorelands & Environmental Assistance Program
PO Box 47600
Olympia WA 98504-7600

re: Draft Rule Comments: Wetland Mitigation Banking

Ms. Holder:

In 2006 Washington State voters soundly defeated Initiative 933 which would have stripped the Growth Management Act and surrendered our State's resource lands to developers and land speculators. Here in rural Skagit County, over 70% of us rejected the notion that urban sprawl should trump our rural economy and our rural way of life. Now — just three years later — we're battling a similar scheme contrived by developers to sidestep State statutes that protect our GMA rights. The only difference this time . . . we don't get to vote.

— Little Support for Ecology's Experiment —

The *Draft Rule/Pilot Project* will make life easy for creative urban planners and unprincipled real estate investors. For the rest of us, it's a devious game of mitigation monopoly, complete with a set of "get-out-of-jail-free" cards for bankers whose wild-eyed proposals have only a 50/50 chance of success. Frankly, we are stunned by the Department of Ecology staff's enthusiasm and Director Jay Manning's unconditional support of developers' expectations:

> "I am very excited about wetland banking," Jay Manning was quoted as saying in a 2006 *Cascade Land Conservancy* report. "Wetland banking provides a less costly, faster and more predictable process for people to follow in developing their property."

And since compliance and enforcement is apparently not a *Draft Rule* priority, we were likewise surprised to read Lauren Driscoll's unfounded prediction:

> "The bank offers developers restored or replaced wetlands that are already established and will be cared for far into the future."

Of course, knowing the WMB program is sanctioned by the *United States Army Corps of Engineers*, it's easy to ignore environmental risks or any other harm that might come to a bank's neighbors. After all, the Corps is a trusted government entity we can depend upon to protect our water resources ... Right?

Wrong! In reading a 2004 joint report prepared by *Taxpayers for Common Sense* and the *National Wildlife Federation*, we discovered this blunt criticism of "water projects" under Corps management:

> "Across the nation, hundreds of water projects are being planned and constructed by the U.S. Army Corps of Engineers. Many of these projects pose serious harm to wildlife, sensitive natural resources, and our quality of life, often at significant and unnecessary taxpayer expense. These projects continue despite credible and mounting evidence of numerous flaws in project designs and economic justification, and a growing concern that damaging and wasteful proposals continue to receive federal funds. The Corps must cease to be a tool for lawmakers to bring home pork-barrel projects for special interests, and instead become an agency that works towards a more environmentally and economically sustainable America. The only way to reform the Corps is for the public to demand change. The weight of the evidence demonstrates that the Corps will not fix itself."

A year later the *US Government Accountability Office* amplified those findings in its 47-page report on management of wetland mitigation projects under Corps jurisdiction. Here's a tiny sample of the GAO's many complaints:

> "In 1988 and 1993, we reported that the Corps was placing little emphasis on its compliance efforts, including compensatory mitigation, and little has changed. The Corps continues to provide limited oversight of compensatory mitigation, largely relying on the good faith of permittees to comply with requirements. Until the Corps takes its oversight responsibilities more seriously, it will not know if thousands of acres of compensatory mitigation have been performed and will be unable to ensure that the section 404 program is contributing to the national goal of no net loss of wetlands."

— Local Complications —

Unfortunately, enforcement of development regulations at every level of government is lax, and relying on financially strapped local jurisdictions to monitor fundamentally flawed designs is irresponsible. Code enforcement officers are generally first to be laid off during a budget shortfall. Current economic conditions have forced Skagit County Planning & Development Services to lay-off a dozen or more staff members, including one code enforcement employee. Moreover, there is no back-up plan in place.

During a local advisory board meeting earlier this month, an Ecology supervisor remarked that his agency reacts to citizen complaints but doesn't seek out violators. Since the WMBs planned for Skagit County are located on private property, an average citizen's chance of identifying a violation is highly unlikely. But, even if a violation were reported, what recourse exists? In all probability, the developer who purchased credits from a banker would be long gone. With the natural wetland on his property already filled and paved, the damage has been done and the cost of undoing it would be prohibitive.

— Uncertainty . . . Lack of Scientific Evidence —

The sad fact is, the *Draft Rule* permits destruction of natural wetlands and Ecology believes that mitigation banks truly mitigate the loss of those wetlands. In the notice advertising Ecology's public hearings last week, Lauren Driscoll said:

> "When properly guided and carried out, we know wetland mitigation banking can increase the ecological benefits by increasing and protecting wetland functions — and save time for project applicants."

Wetland and shoreline specialists in Florida, where wetland mitigation experiments date back three decades, are not so convinced. In a *Tampa Tribune* report published two weeks ago, former wetlands management officials of the *Hillsborough County Environmental Protection Commission* (Jadell Kerr and Daniel Alberdi) stated:

> "Much of a wetland's full function can only be determined by exhaustive studies not typically carried out within the mandated timeframes of state permitting. This results in the loss of isolated wetlands which alone, or cumulatively, provide management of surface and groundwater."

— Solutions & Conclusions —

Whereas natural wetlands evolve over thousands of years, man-made wetlands provide little more than a facelift — pleasing to the eye, perhaps, but functionally bereft. By insisting on a quick-fix approach, we are gambling with the health of our planet without understanding the long-term impacts. It's a common belief that wetlands of all sizes act as the earth's kidneys, extracting contaminants and pollutants from surface water. So, draining or filling wetlands along rivers, lakes and estuaries reduces the natural ability of our waterway ecosystems to improve water quality as demanded by the Clean Water Act.

Last year the *United States Environmental Protection Agency* gathered together a group of outstanding scientists who, among other things, are working to study mitigation deficiencies and provide alternative solutions. The least Ecology should do at this point is put the *Draft Rule* on the back burner until EPA publishes its findings. Hopefully this will result in some performance standards so Ecology will be able to measure its "investment" in wetland management.

From our perspective, wetland mitigation banking is simply a developer's dream come true and a public nightmare waiting to happen. While the mitigation banks proposed for Skagit County meet the needs of a few special interests, risk to public health and safety has pretty much been ignored. Moreover, replacing priceless agricultural soils with commercial experiments will no doubt lead to unintended consequences — not the least of which is lengthy and costly litigation.

We feel the *Draft Rule* not only fails to serve the best interests of Washington State citizens overall, it has a particularly deleterious effect on the people of Skagit County. Until wetland mitigation banking's anticipated benefits are shown to outweigh the food-producing qualities of Skagit Valley farmland, we believe WMBs should not be permitted in our County. We respectfully request that Skagit County be declared exempt from the *Draft Rule* and related *Pilot Projects.*

Regards,

Diane Freethy, President

cc: Governor Christine Gregoire; Dan Newhouse, Director, Dept. of Agriculture; Attorney General McKenna; Insurance Commissioner Kreidler; State Auditor Sontag; State Senators Stevens, Haugen, Ranker; State Rep. Pearson; Skagit County Board of Commissioners; Skagit Conservation District; Western Washington Ag Assn; Wash State Farm Bureau; Friends of Skagit County; Evergreen Islands

Response to the new draft mitigation banking Rule:

General Comments:
Providing an updated set of rules to improve the process of establishing successful wetland mitigation banks, demonstrating a commitment to large scale mitigation projects and leadership on improving wetland mitigation processes for all jurisdictions in Washington are important benefits to this process.

Ecology must look at the big picture and take responsibility for creating a process that supports the best available science and best solution for mitigation of unavoidable impacts to critical areas in Washington. This process has become a vehicle for special interests to put major hurdles and add additional cost to the process of permitting wetland banks that will hurt the program in the long term. The result will be fewer bank proposals, less options for unavoidable impacts, higher costs for important public projects and a greater overall loss of function in our watersheds.

Some of the key "environmental" lobbyist that participated in this process as they regularly do, were embarrassingly unprepared and unaware of the current rules, the best available science, what is going on in the rest of the country or how existing banks in Washington are doing. They had the same ideas, positions and comments they learned in the 70's and 80' and showed very little current knowledge of rules relating to mitigation banks verses applicant sponsored on site mitigation. There is an attitude that the Northwest is so green already yet many are pathetically behind the times and unaware of the best available science being used in the rest of the country. They did a very poor job in evaluating and contributing to making these rules effective for the State of Washington going forward.

Farmers and landowners were not represented in the process. Activists' wanting to preserve what is left of the Skagit valley after much of it has been paved and turned into shopping malls and freeway sales yards high-jacked the process through their paid lobbyist, for their special interest. Farmers and landowners that don't want their options taken away when they have to sell their land will be shocked at the restrictions applied by these rules to land outside of urban areas by the adoption of the land zoning catch all designation "lands of long term commercial significance".

These rules increase the initial and up front cost of proposing, permitting and constructing a mitigation bank. At the same time they increase the risk that a proposal will be rejected since they give opponents many more opportunities to tie up, delay, harass, litigate etc. proposals that really make sense. These rules do not do enough to help the goal of creating more and better mitigation banks, they will cause bankers to go to other states or avoid the wetland mitigation banking process and wait for other mitigation programs from other regulatory agencies in Washington.

Specific comments:

The new rule should clearly address that Bank proposals in the Departments pilot banking program get some relief so that there is not a question if they have to go through certain steps again: The Instrument as defined should be required after July 21, 2009 or whenever the rule is actually adopted. Site selection, content of prospectus, public notice, public hearings, service area, credit generation and release, these issues once agreed upon in the pilot banking program should not be reopened by the new rule as long at the final Instrument is consistent with the rule.
Site selection-
303-1.C.IV "Historical land" use is irrelevant if the site was historically wetland. How it was abused since then is not relevant if you are trying to restore functions to the watershed. If it was farmed or was a chemical plan is irrelevant if it can be returned to a high value wetland that has high value to the watershed. Once being a farm is not more significant than other previous uses.
303-2.C. This section is completely contradictory, wetland mitigation banks are not designed to conserve and maintain agricultural production. If you make this a requirement no bank can be approved in these areas. Compatible with the local agricultural strategy, who decides this and when is this issue resolved for a Sponsor and his proposal? This opens up one objection after another with no clear cut way to resolve the questions. This is just language to kill banking statewide, put in by the clever activists that Ecology should reject on the basis that it is not in the best interest of the public. This takes away farmers and other landowners property rights. Let the local jurisdictions decide these issues, if you put this type of language in the State rule you just make it more difficult.

Long Term Management Plan – The instrument must identify **potential** long term stewards – What responsible organization is going to commit 10-15 years in advance, before a project is even built and matures that they will commit to long term stewardship?

Limit what is required in the Long Term Management Plan to what is required by the State for other mitigation sites. The IRT cannot add additional requirements at their own will to the third party Steward like performance standards and annual reports. Once the Bank operational period is over the long term stewardship must be limited by the rules to what is reasonable not what IRT staff comes up with on a bank by bank basis.

Bankers should be able to sell available credits to customers without a specific permit number yet issued if that customer wants to insure that they have access to mitigation credits for a planned project. (Refusal could be considered an illegal restraint of trade) Credits sold to a customer and reported as sold by the Sponsor to the IRT cannot be suspended. The State will very likely get sued if they try to control commerce this way. How can you release a credit for sale by a banker and then deny it's use by a customer that has legitimately purchased it? If a credit is released to a sponsor for sale how can you say it cannot be sold to whoever wants to buy it?

Victor Woodward



Naturam Expellas Furca *Tamen Usque Recurret*

WISE USE MOVEMENT

P.O. Box 17804, Seattle, WA 98127

April 20, 2009

TO: Yolanda Holder
Department of Ecology
P.O. Box 46700
Olympia, WA 98504-7600
<yhol461@ecy.wa.gov>

RE: Wetland Mitigation Bank Rule and DEIS Comments

The Wise Use Movement has reviewed the proposed rules for Wetland Mitigation Banks (Chapter 173-700 WAC) and submits the following comments on the draft rule and on the draft environmental impact statement (DEIS).

Comments on the DEIS

The Wise Use Movement strongly objects to the inadequate DEIS. Nowhere does the DEIS comply with the basic requirements of the SEPA rules to "describe the existing environment that will be affected by the proposal." *WAC 197-11-440 (6)(a).* No information is provided to the public concerning the State's historical amount of wetlands or the amount of remaining wetlands which would be filled due to the adoption of the draft rule. Nor does the DEIS provide any appreciation for the age of most of the state's remaining wetlands, which likely date to thousands of years.
We request that the FEIS provide this information.The DEIS is inadequate unless the FEIS is revised to include this information.

The DEIS is also inadequate because it fails to analyze the requirements of the Growth Management Act (RCW 36.70A.060) to protect critical areas, including wetlands. *RCW 36.70A.030(5).* The GMA does not authorize wetland mitigation banks. The Attorney General has already issued an AG Opinion (2008 No. 1 – January 03, 2008) stating that a certification of a wetland mitigation bank by Ecology does not require a County to issue permits for such a bank. In addition, the purpose of the Growth Management Act is to identify land suitable for development in urban growth areas. RCW 36.70A.110.

Therefore, development should be directed to upland areas within urban growth areas, not to remaining wetlands.

We request that the FEIS address how wetland mitigation banks meet the goals and policies of the GMA to protect critical areas, including wetlands.

We request that the FEIS address how wetland mitigation banks meet the goals and policies of the GMA to direct development to upland areas within urban growth areas.

We request that the FEIS address how wetland mitigation banks meet the goal of a net increase in wetland acreage and functions.

Comments on the Draft Mitigation Bank Rule

Overall, the Wise Use Movement is strongly opposed to the adoption of these rules. They fail to protect our remaining existing wetlands. They fail to support the goals and policies of the Growth Management Act or advance the goal of a net increase in wetland acreage and functions. As noted above, the DEIS for the proposed rules is inadequate. In addition, the proposed rules are riddled with loopholes and more weasel words than one typically finds even in Corps of Engineers regulations.

Ecology's News Release dated March 11, 2009, states that Ecology has already certified seven wetland mitigation banks with another seven in the certification process. The Wise Use Movement is strongly opposed to Ecology certifying wetland mitigation banks in the state in the absence of any certification regulations. We request that Ecology decertify all existing banks.

In addition to the wetland mitigation bank problems already listed in the DEIS (p. xiii), there are additional reasons why Ecology should oppose wetland mitigation banking:

- Banking could promote impacts to wetlands through avoiding mitigation sequencing requirements.

- Banking is very risky because compensatory mitigation doesn't work and banks will result in larger-scale failures.

- Banks could result in the net loss of wetlands in some sub-basins.

- Use of riparian and upland areas and preservation to generate credits would result in net losses of wetland area and function.

- Banks will result in the loss of wetlands in urban areas and their replacement in rural and agricultural areas resulting in a redistribution of wetlands on the landscape and a loss of productive agricultural lands.

- Banks could result in the loss of small, isolated wetlands and their replacement with large, contiguous wetlands.

- Concerns over listed salmon species could result in banks focusing on fish benefits with resulting losses to non-fish-bearing wetlands.

- The public will not have adequate opportunity to provide input on the design and requirements for banks.

- If the bank approval process is not reasonable (i.e. it takes too long) then the environmental benefits of banking will be decreased due to the shorter time frame between bank construction and use of credits.

Wetland Mitigation Banks also compete for wetland restoration sites. According to a 1996 US Geological Survey report:

> "Estimates of presettlement wetland acreage in Washington range from 1.17 to 1.53 million acres, depending on the historical information and research assumptions used (Canning and Stevens, 1989; Dahl, 1990; Washington State Department of Ecology, 1992b). Based on a 1988 estimate by the FWS, about 20 to 39 percent of Washington's wetlands, have been lost during the past two centuries. Other estimates place the total loss as great as 50 percent, and some urbanized areas of the Puget Sound area have experienced losses of from 70 to 100 percent. Estimates of continuing wetland loss range from 700 to 2,000 acres per year. In addition, most of the State's remaining wetlands have been significantly degraded (Washington State Department of Ecology, 1992b,d)." http://wa.water.usgs.gov/pubs/misc/wetlands/

Unfortunately, potential wetland restoration areas such as those where draining can be stopped or dikes breached are the low hanging fruit sought after by mitigation bankers. So instead of having a net increase in wetland area and function, wetland mitigation banking allows these same areas to be used to mitigate for wetland losses elsewhere.

In addition, given the historical loss of wetlands in the state of Washington, there is a critical need to restore wetlands, especially in urbanized areas of Puget Sound. What remains are often isolated wetlands, which still provide needed wetland habitat in a mosaic across the landscape. The filling of isolated urban wetlands doom wildlife that cannot read the map to locate the wetland mitigation bank far away.

Centralized wetland mitigation at a distant wetland mitigation bank site may also doom wildlife at existing wetlands proposed for filling, such as amphibious species that rely on shallow wetlands to avoid fish predation.

Wetland mitigation banks shut out the public from notice and comment on release of credits from such banks. Ecology proposes to allow public comment on the certification of banks, but not on the release of credits. Because the Corps of Engineers has issued nearly 50 nation-wide permits which allow wetland filling without public notice, the public has little to no opportunity to comment on wetland filling in the state of Washington. The Corps will be even less likely to require individual permit applications (which do require public notice and comment) knowing that the applicant can meet nationwide permit mitigation requirements through phony wetland mitigation bank credits.

Wetland mitigation banks substitute wetland preservation or wetland creation for the loss of wetlands which may be thousands of years old.

As noted above, wetland mitigation banks appear to be contrary to the Growth Management Act's requirements to protect critical areas, including wetlands.

Specific comments on the proposed rule are as follows:

***WAC 173-700-100 Background and purpose.** Subsection (2) does not specify that banks will provide mitigation in advance of "unavoidable" impacts to wetlands. By dropping the word "unavoidable," Ecology is signaling that the real purpose of the proposed rules is not wetland avoidance first, but rather, as wetland bankers know full well, to provide mitigation for projects which have no business filling wetlands in the first place. Subsection (3) is also faulty because banks do not prioritize restoration of wetland functions on site. After wetland filling occurs, those wetland functions are destroyed. Restoration of wetland functions should be a priority, but not at the expense, as these rules allow, if filling natural wetlands elsewhere. Subsection (4) is also faulty because it fails to include any role for the public in bank certification.

***WAC 173-700-201 Decision-making procedure.** This section is worthless because Ecology need only "consider" Interagency Review Team, tribal, or public comments submitted to Ecology as part of the certification. Ecology should be required to respond in writing to all substantive comments received.

***WAC 173-700-211 Content of the prospectus.** The proposed rule fails to protect existing wetlands because this section fails to include a requirement disclosing how the bank will alert the public when a credit has been "debited."

***WAC 173-700-212 Submittal of the prospectus.** Subsection (8) should be amended to require that Ecology respond in writing to all substantive comments submitted on the prospectus.

***WAC 173-700-220 Convening the interagency review team.** This section should be amended to include public notice of all IRT meetings.

***WAC 173-700-221 Purpose of the instrument.** Subsection (1) should be amended to include public participation as a purpose of the instrument.

***WAC 173-700-222 Content of the instrument.** This section should be amended to include public participation as an element in the instrument.

***WAC 173-700-223 Preliminary review of the technical elements of the draft instrument.** This section should be amended to clarify that sponsor meetings with the IRT are open to the public.

***WAC 173-700-230 Submittal of the final instrument.** Subsection (4) should be amended to require that the sponsor respond in writing to all substantive public comments.

***WAC 173-700-232 Dispute resolution process.** This section is completely unacceptable. Ecology has shown itself to be a biased agency, incapable of independent judgment. Ecology cannot function as both a signer and a dispute resolution decider. Any dispute must go through an independent dispute resolution process.

* **WAC 173-700-301 Service area.** The proposed rule fails to protect existing wetland because there is no ecological or biological basis for the establishment of banks with a service area in an adjacent WRIA. This option should be deleted.

***WAC 173-700-302 Considerations for determining service area size.** This section fails to account for historical wetland filling in the service area. The higher the wetland loss, the less desirable off-site out of kind mitigation.

***WAC 173-700-303 Site selection.** This section fails to address how allowing the filling of wetlands that may be thousands of years old can be mitigated by banks which can not be guaranteed to be self-sustaining.

***WAC 173-700-312 Default method for determining credits.** The proposed rule fails to protect existing wetland functions by allowing the area of a wetland to function as the default credit unit.

* **WAC 173-700-313 Wetland credit conversion rates.** The proposed rule fails to protect existing wetlands by allowing a 1:1 ratio for wetland creation, the least likely mitigation technique to succeed. The proposed rule fails to protect existing wetlands by allowing preservation of other existing wetlands to substitute for wetland mitigation.

***WAC 173-700-315 Considerations for determining credit conversion rates for wetland preservation.** This section should be deleted, as preservation of existing wetlands does not mitigate for wetland filling elsewhere.

***WAC 173-700-317 Considerations for determining credit conversion rates for banks in urban areas.** This section should be deleted because in urban areas, wetland restoration should take place without tradeoffs for other wetland filling.

***WAC 173-700-318 Credit conversion rates for uplands and other habitats.** This section should be deleted because uplands cannot provide mitigation for filling wetlands elsewhere.

***WAC 173-700-319 Considerations for determining credit conversion rates for uplands and other habitats.** This section should be deleted because uplands cannot provide mitigation for filling wetlands elsewhere.

***WAC 173-700-320 Exceptions to credit conversion rates.** This section fails to protect wetlands by allowing a gigantic loophole and weasel words to allow Ecology to set a conversion rate outside of the ranges previously specified. This section should be deleted.

*** WAC 173-700-321 Using an alternative method to determine credits.** This section fails to protect wetlands by allowing a gigantic loophole and weasel words to allow Ecology to use alternative methods to determine credits. This section should be deleted.

***WAC 173-700-330 Schedule for the release of credits.** This section fails to protect existing wetlands because it allows for release of credits without any public notice of comment. Public notice and comment on proposed release of credits should be provided.

***WAC 173-700-331 Credit release--Preconstruction.** This section fails to protect existing wetland by allowing credits to be released prior to construction of a bank and without public notice or comment. This section should be deleted.

***WAC 173-700-332 Credit release--Postconstruction.** This section fails to protect existing wetland by allowing credits to be released without public notice or comment. Public notice and comment should be provided.

***WAC 173-700-333 Credit release--Attainment of hydrologic performance standards.** This section fails to protect existing wetland by allowing credits to be released without public notice or comment. Public notice and comment should be provided.

***WAC 173-700-334 Credit release--Final release.** This section fails to protect existing wetlands by allowing credits to be released without public notice or comment. Public notice and comment should be provided.

*** WAC 173-700-335 Additional credit releases.** This section fails to protect wetlands by allowing a gigantic loophole and weasel words to allow Ecology to release credits early. This section should be deleted.

***WAC 173-700-410 Obtaining credit releases.** This section fails to protect existing wetlands by allowing credits to be released without public notice or comment. Public notice and comment should be provided.

***WAC 173-700-500 Use of bank credits.** This section fails to protect wetlands by failing to limit wetland filling to "unavoidable" impacts. Just because an impact is authorized does not been that it is not avoidable. In addition, no bank credits should be released without public notice and comment.

***WAC 173-700-502 Use of bank credits outside of the service area.** This section fails to protect wetlands by allowing a gigantic loophole and weasel words to allow Ecology to approve credits outside of the service area. This section should be deleted.

***WAC 173-700-800 Appeals process.** This section should make clear that any citizen may appeal a final certification or the approval of a bank credit to the Pollution Control Hearings Board.

Conclusion

In summary, the Wise Use Movement remains strongly opposed to the adoption of these rules, because they will likely accelerate wetland loss in the State of Washington.

John de Yonge

John de Yonge
President

From: andrea xaver
To: Holder, Yolanda (ECY);
Subject: FW: Wetland Mitigation Banks
Date: Wednesday, April 22, 2009 1:11:59 PM
Attachments: Wetland Mitigation Banks - letter to DOE Y. Holder 4-09.doc

---

Yet another try. Without my glasses (shame on me), I put in yho1 instead of yhol, so we'll see if this works.

-----Original Message-----
From: andrea xaver [mailto:dancer@fidalgo.net]
Sent: Wednesday, April 22, 2009 1:06 PM
To: 'yho1461@ecy.wa.gov'
Subject: FW: Wetland Mitigation Banks

Another try.

-----Original Message-----
From: andrea xaver [mailto:dancer@fidalgo.net]
Sent: Wednesday, April 22, 2009 1:01 PM
To: 'yho1461@ecy.wa.gov'
Subject: Wetland Mitigation Banks

Please see attached. Thank you.
It was sent earlier, but was rejected. I asked a friend to forward it also, so you may get 3 or 4 of the same letter from me!

Andrea Xaver
19814 State Route 9, Mount Vernon, WA 98274 (360-422-8922)

April 22, 2009 (Sent on this date via e-mail to yhol461@ecy.wa.gov)

Re: Wetland Mitigation Banking (WMB) – Chapter 173-700 WAC

Attn: Yolanda Holder, Shorelands and Environmental Assistance Program
PO Box 47600, Olympia, WA 98504-7600

Dear Ms. Holder:

I have comments specific to the chapter as well as general comments of concern.

How many natural, effective wetlands exist in Skagit County and in Washington? It would seem prudent to do extensive research to determine how much, if any, can be sacrificed to WMBs. I'm told there is no inventory of Skagit's wetlands.

How can you have a rule without knowing what it might effect?

There is a huge risk for the use of WMBs, and potential placement of same on agricultural lands, forest lands, and existing habitat. There is a high failure rate (as stated by both DOE and the Army Corps of Engineers). The soils in Skagit County are mainly all prime lands of some kind – they've always grown crops or trees. These soils are rare and are being eradicated world-wide. With a world population increasing annually by about 90,000,000 people, these lands and successful habitat will be crucial.

How can WMBs for the public good be compared to WMBs for private gain? Why should Skagit County or Washington State have to lose any of its resources to enable the increased financial gain of a developer? How is personal financial gain "unavoidable?"

Please explain "unavoidable permitted losses" as they relate to private gain. Why would a (typically it's a developer) person absolutely <u>have</u> to build a development that cannot avoid a wetland area? I've found, in recent years, that whatever is supposed to "save" habitat seems to end up benefiting developers instead – or in large part.

Who in DOE is mindful of the wildlife that will be eradicated in one wetland so that credits can be sold from one that is created? Will someone come in and move the wildlife from one place to the other – especially if personal gain is "unavoidable?" Frogs and other amphibians are facing mass extinction, from a fungus, around the globe – rampant in the U.S., according to the April, 2009 National Geographic. Who in DOE cares if there are enough places for them to re-establish and survive?

It would seem that we should keep all our natural, effective wetlands that we have, instead of trying to lump them together. Even C. Gregoire, DOE Director in 1990, said every acre of wetland was important. What's changed? (Pg. l of 2)

Who is concerned about contaminated water affecting the wetlands? DOE gave a $250,000.00 grant to Skagit County to study the feasibility of discharging Big Lake's partially treated (will not remove pharmaceuticals) into Nookachamps Creek. If this is approved by the county, then little, but important, Nookachamps Creek will receive an average of 150,000 gallons of pharmaceutically-laced water daily. One would think that if this water is intended for fish survival, the water should be free of contaminants - pharmaceuticals forever is a very long time.

It's odd that DOE cringes over cows watering from a creek or passing through it to reach the other side, yet sends money that would promote adding pharmaceutically-laced water seemingly forever to a small, important creek. (Speaking of fish, the April 18, 2009 edition of the Skagit Valley Herald featured an article about how, after 16 years, sports fishermen will once again be able to fish, along with the Tribes, for Chinook because the amount is so strong this year – 23,000 expected.)

As stated earlier, WMBs for the public good (such as bridges or highways) is one thing; private gain is totally another. DOE is helping to create a monopoly within a county. A WMB could be so big that no others are "necessary." So, likely one private entity gets rich while leaving the county's natural resources at high risk.

Given the economy and the scaling back of county and state personnel, who will be keeping track of WMBs? What will they do if something is found to be wrong? How long will it take to correct anything? Who will be doing any long-term protection? Will government agencies have conflicting control/advice? Where does the money come from and is it guaranteed - if the sponsor leaves, and easement holders go bankrupt, what then?

I worked for DNR for almost 32 years. I know pretty well how state government and money operate – or not, as the political case may be. It seems as though DOE has been infiltrated by some developers; and by people who call themselves environmentalists – but, they way they operate, I call them "ecopreneurs" – they always make a lot of money while saying they're saving the environment. After all, their experts profess to know more than anybody else's experts – and the same with their legion of attorneys.

Earlier, by regular mail, I sent the following to you; maybe they will be of interest:
The April, 2009 National Geographic, drawing attention to the amphibians' plight.
A copy of a Letter to the Editor I wrote recently about this same subject and how loss of natural, effective wetlands could aid in their demise.
A Washington State map highlighting Skagit County, as with just over 1.1 million acres, it is a bit larger than all the wetlands remaining in the entire state.
A soils map of Skagit County. We've had too many people here who don't know one type from another, and yet they feel free to say certain soils are inferior when they're not.

Thank you for the opportunity to comment.

From: andrea xaver
To: Holder, Yolanda (ECY);
Subject: RE: Wetland Mitigation Banks
Date: Thursday, April 23, 2009 4:20:41 PM

Thank you. By the way, I just opened my May, 2009 Scientific American and there's an article talking about "Could Food Shortages Bring Down Civilization?" It mentions how important top soil is and Skagit Co. has great soils. The article says (various quotes) –
"Water shortages, soil losses and rising temperatures from global warming are placing severe limits on food production."
"Rising hunger in the world's 70 least developed countries."
"Arable Land is Disappearing. Topsoil, another vital factor in maintaining the world's food supply, is also essentially a nonrenewable resource; even in a healthy ecosystem supplied with adequate moisture and organic and inorganic material, it can take centuries to generate an inch of topsoil...Arable land is also threatened by roads, building and other non-farm usage."
"Anxious to ensure future grain supplies, several nations are quietly making deals with grain-producing countries for rights to farm there. The practice tightens supplies for other importing nations and raises prices."
"The scope of the second worrisome trend – the loss of topsoil – is also startling. Topsoil is eroding faster than new soil forms on perhaps a third of the world's cropland…very foundation of civilization, took long stretches of geologic time to build up, yet it is typically only about six inches deep."
Food for thought. It may have nothing to do with the pending rule, but DOE should be aware of impacts of its actions. It should look beyond the rush to help those who likely could care less about the long-term effects of the environment and anything that's in it. You may find the article of interest if you happen to take (or buy) this magazine.
Thanks again for your response re my previous attempts to send you info.

> -----Original Message-----
> **From:** Holder, Yolanda (ECY) [mailto:YHOL461@ECY.WA.GOV]
> **Sent:** Wednesday, April 22, 2009 1:14 PM
> **To:** andrea xaver
> **Subject:** RE: Wetland Mitigation Banks
>
> Your comments have been received. I will add this comment letter to the information received from you in today's mail.

> **From:** andrea xaver [mailto:dancer@fidalgo.net]
> **Sent:** Wednesday, April 22, 2009 1:11 PM
> **To:** Holder, Yolanda (ECY)
> **Subject:** FW: Wetland Mitigation Banks

Yet another try. Without my glasses (shame on me), I put in yho1 instead of yhol, so we'll see if this works.

-----Original Message-----
From: andrea xaver [mailto:dancer@fidalgo.net]
Sent: Wednesday, April 22, 2009 1:06 PM
To: 'yho1461@ecy.wa.gov'
Subject: FW: Wetland Mitigation Banks

Another try.

-----Original Message-----
From: andrea xaver [mailto:dancer@fidalgo.net]
Sent: Wednesday, April 22, 2009 1:01 PM
To: 'yho1461@ecy.wa.gov'
Subject: Wetland Mitigation Banks

Please see attached. Thank you.
It was sent earlier, but was rejected. I asked a friend to forward it also, so you may get 3 or 4 of the same letter from me!

From:	Jeremy Freimund
To:	Holder, Yolanda (ECY);
cc:	Leroy Deardorff; Driscoll, Lauren (ECY); Laurie, Tom (ECY); jwweber@nwifc.org; Ralph C. Jefferson Jr.; Mary M. Neil; Johnsen, Harry (ATG);
Subject:	Lummi Natural Resources Department Comments on Proposed Rule - Wetland Mitigation Banks Chapter 173-700 WAC
Date:	Wednesday, April 22, 2009 2:03:26 PM

Ms. Holder,
Please add a reference to the statutory definition of "Indian Country" (i.e., 18 USC 1151) to the new Section WAC 173-700-102 so that people will not be left wondering what is meant by the term. This suggested edit is shown in **BOLD AND UNDERLINED** text in the draft rule language below.

NEW SECTION

WAC 173-700-102 Applicability to tribal banks. (1) For

proposed tribal banks which are located exclusively in Indian

Country **(18 USC 1151),** the following section applies:

(a) If the tribal bank has been approved by the U.S. Army

Corps of Engineers (Corps) and the Environmental Protection Agency

(EPA) under existing federal rules, the bank will be deemed state

certified, solely to allow the use of credits for projects under

state jurisdiction, provided that:

(i) The department was a member of the IRT for the proposed

bank;

(ii) Any concerns raised by the department, through the IRT

process, have been resolved to the department's satisfaction; and

(iii) The department has notified the Corps and EPA in writing

that it concurs with their approval of the bank.

(b) The department shall determine whether to allow the use of

bank credits for projects under state jurisdiction on a case-bycase

basis.

(c) Certification under this section does not imply any

extension of state jurisdiction or authority by the state on tribal land use activities.

(2) Proposed tribal banks which are located outside of Indian Country and partially or wholly on lands under state jurisdiction are not covered under this section and are subject to the requirements of this chapter.

Thank you for your attention to this matter.

Kind Regards,
Jeremy

Jeremy R. Freimund, P.H.
Water Resources Manager
Lummi Natural Resources Department
2616 Kwina Road
Bellingham, WA 98226-9298
jeremyf@lummi-nsn.gov

(tel) 360-384-2212
(fax) 360-384-4737

From: SMTP@apps.ecy.wa.gov
To: Holder, Yolanda (ECY);
Subject: Form results from http://apps.ecy.wa.gov/verifyform/verify.aspx
Date: Wednesday, April 22, 2009 3:02:27 PM

****

firstname:	Carolyn
lastname:	Kelly
companyorgroup:	Skagit Conservation District
mailaddress:	2021 E. College Way, Ste 203
city:	Mount Vernon
state:	WA
zip:	98235
phone:	360-428-4313
email:	carolyn@skagitcd.org
commentpurpose:	rule
sectionname1:	173-700-222
comment:	"invite representatives from appropriate federal and state regulatory and resource agencies" It should be specified which agencies will be included.
sectionname2:	173-700-303
comment2:	Ste Selection, Section (2) Ecology discourages siting of banks on ALLCS - How will this be done? There are no means identified for Ecology to discourage. The project proponent should have to show strong justification as to to why the site is the ONLY option, not merely ways to mitigate for the mitigation on prime soils. On the plus side, having the local conservation district and Conservation Commission review and comment is a good way to solicit input. It is still unclear, however, who makes and what are the criteria for final decision on whether banks can be sited on ALLCS?
B1:	Submit
form_type:	email
submit:	Submit

From: Ann Cheryl Dannhauer
To: Holder, Yolanda (ECY);
Subject: Draft Rule for Wetland Mitigation Banks
Date: Wednesday, April 22, 2009 10:04:50 PM

To:
Yolanda Holderr
Department of Ecology

Dear Ms. Holderr:

I am opposed to having wetland mitigation banks.

I think they will result in the loss of farmland. In the future, local farmland may become all the more important, as the long-distance importation of foods may become environmentally and economically unfeasible. Farmland is also important for Skagit Valley's quality of life and tourism base.

By providing the option of mitigating wetland destruction rather than avoiding it altogether, I think they will result in the loss of wetlands. Developers may very well choose the mitigation option rather than preserving wetlands on their property.

I have concerns about the effectiveness of mitigation. According to the Washington State Wetland Mitigation Evaluation Study of 2001 and 2002, most mitigation wetlands were not successful at replacing wetland functions. Wetlands researchers point out that wetlands are dependent on the surrounding landscape, especially contiguous water systems. They state that mitigation banking "ignores the tight associations between certain wetland functions and their watershed." (1)

The further loss of wetlands in Washington State will mean more stormwater and pollution being dumped into Puget Sound, further loss of wildlife habitat, and further endangerment of species. Let's halt the practice of "mitigating" wetland loss and work instead to save the ones we have.

-Ann Dannhauer

1. Kusler, Jon A, Mitsch, William J. and Larson, Joseph S. "Wetlands." Scientific American, January 1994.



April 23, 2009

Ms. Yolanda Holder
Shorelands & Environmental Assistance Program
Washington State Department of Ecology
300 Desmond Drive
PO Box 47600
Olympia, WA 98504-7600

Re: Comments to Wetland Mitigation Banking Rule:
Chapter 173-700 WAC: Wetland Mitigation Banks

Dear Ms. Holder:

Thank you for the opportunity to review and provide comments on the Draft Wetland Mitigation Banking Rule Chapter 173-700.

We appreciate the efforts of the Department of Ecology (department) to continue to improve the mitigation banking program in the state, and that it has begun to embrace the concepts we have been promoting as an industry group. Unlike most regulatory programs that focus on compliance actions to limit harm associated with project impacts, participation in the mitigation bank program by Sponsors represents a voluntary commitment to commit to a substantial investment which delivers a high quality environmental asset. These front-loaded investments carry substantial risk in terms of financial and regulatory uncertainty for all concerned agencies, stakeholders and Sponsors. The concept of an interagency review team is vital to ensuring the program is successful in providing a clear and efficient process for all parties to follow, and for giving Sponsors a fair opportunity to succeed. In order for these efficiencies to thrive, a regulatory program must be constructed that is, first and foremost, consistent with other regulatory programs and easy to follow.

We see substantial improvements in this version of WAC-173-700 which we attribute to the experience of the pilot program and the involvement with the mitigation banks approved to date. Nevertheless, there remains considerable uncertainty in the process which, we believe, could be avoided by inclusion of the following provisions which are also contained and defined further in the comments to specific rule sections that follow.

128 Chestnut Avenue
PO Box 1088
Washington Grove, MD 20880-1088

phone: 301-977-4311
fax: 301-977-4363

1) **Adoption by Reference of Federal Rules**: In particular, 33 CFR Parts 325 and 332 (Department of the Army, Corps of Engineers); 40 CFR Part 230 (Environmental Protection Agency) – "Compensatory Mitigation for Losses of Aquatic Resources: Final Rule) as published (73 Fed. Reg. 70, 19594-19705, April 10, 2008) should be adopted by reference in the WAC. These rules codify and specify requirements that were previously subject to guidance and draft policy. The rules level the playing field for banks, in lieu fees, and all other forms of permittee responsible mitigation. In particular, the rules reflect an acknowledgement that mitigation banks offer the best available option for meeting no net loss of wetlands and ensuring that higher standards are maintained in all forms of mitigation. Further, by establishing an interagency review team (IRT) and clearly defining the roles of member agencies, a clear and predictable process is outlined for all to understand and follow. To create an additional regulatory program that is consistent, yet not fully integrated with the Federal Rule leads to uncertainty for all parties concerned and results in several ill-defined "gray areas" that will be consequently subject the banking process to potentially inconsistent interpretation and application. For this reason, we propose incorporating by reference all of the Federal Rules, as a basic cornerstone of a state-regulated banking program. The intent of the state rulemaking process should be to simply provide additional clarification on state requirements beyond what is fundamentally required by the Federal process and define that the intent of the state rule is to provide a process for the state to co-administer the IRT process. It should **not** be used to construe or create a separate and potentially inconsistent process that may not agree with the Federal process.

2) **Rebuttable Presumption of Approval:** If properly constructed, a state-regulated rule should be implemented to allow a rebuttable presumption of approval whereby, if a bank Sponsor successfully follows the process, as defined, the result will be that a bank project will be approved. As currently written, there are requirements that do not reflect the overall state regulatory landscape, and there are potential fatal flaws that could effectively kill a mitigation bank application at a point in the process where a Sponsor has incurred considerable expense to develop a bank. We would like to see a process that provides greater predictability such that if a Sponsor follows the process, the bank will be approved.

3) **Ecological Incentives:** A key limitation of the state's rule is that it does not allow for the full value of restored ecosystems to be realized in mitigation credit values. By limiting credit currencies to a "wetland centric" regulatory framework, Sponsors are not properly incented to take on projects that truly create multiple environmental benefits in a landscape context. For example, developing projects that benefit Agricultural Lands of Long-term Commercial Significance through creation of flood storage and conveyance capacity, and/or projects that benefit listed fish species through restoration of natural river processes and creation of improved riparian areas are unable to receive the "full" mitigation values based on reducing the currency to a wetland-centric equation. Additional consideration must be given to multiplying or compounding mitigation ratios to account for these other necessary ecological values; or, if full values cannot be realized in this rule, the credit ratios applied to projects that

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fax: 301-977-4363

do not offer a full suite of environmental benefits, as suggested above, should not be eligible for the most favorable credit generation ratios in order to encourage the development of projects that address multiple environmental goals – not just related to wetland functions alone. Given the limitation of other state rules, we recognize that this may not always be possible. We request that where possible, however, these bonuses or compounded benefits should be quantified and included within the rule. In cases where full values still cannot be sufficiently recognized in these ratios, we further request that rather than trying to control these facets of multi-resource banks, that the state step aside and allow for alternative crediting to occur through other regulatory programs. In such cases, the department's role is simplified and the potential for confusion and delay is greatly reduced. By creating a program that neither rewards full value, nor provides adequate flexibility for banks to realize these values by trading in other regulatory frameworks, the rule provides several disincentives to bank Sponsors who take on large-scale, multi-resource opportunities that truly create watershed benefits.

4) **Dispute Resolution Process:** Creating a dispute resolution process for IRT (group) issues by granting sole authority to a single party is not a well conceived process. For example, the state is not in a position to resolve disputes involving federal policy. This creates potential for uncertainty and conflict. The proposed dispute resolution process overlooks that other regulatory authority exists and that other agency concerns must also be factored in deciding disputes. For this reason, we propose an IRT-based dispute resolution process whereby a collective of senior co-lead agency personnel would respond to dispute resolution claims and provide a single decision reflective of both federal and state concerns. Likewise, offering the ability to elevate concerns made at the staff level of the IRT to an IRT-based dispute resolution process provides a clear and predictable process for decisions to be made that are consistent with the combined interests of the group. Further, the bank Sponsor should have the ability to participate in the dispute resolution process for elevating bank Sponsor concerns in the event of a disagreement with decisions made by IRT staff. Extending the opportunity to bank Sponsors to elevate concerns to the dispute resolution promotes accountability that bank Sponsors feel will improve predictability and ensure fair consideration of their concerns.

SPECIFIC COMMENTS TO RULE LANGUAGE

WAC 173-700-100 Background and Purpose:

Adopt by Reference all of the following:
33 CFR Parts 325 and 332 (Department of the Army, Corps of Engineers); 40 CFR Part 230 (Environmental Protection Agency) – "Compensatory Mitigation for Losses of Aquatic Resources: Final Rule) as published (73 Fed. Reg. 70, 19594-19705, April 10, 2008)

128 Chestnut Avenue
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WAC 173-700-104 Definitions:

[Added language]:

"Debited credit:" means an available credit which has been withdrawn from the bank to meet specific regulatory requirements [for an approved permit requiring mitigation].

[Added language]:

["Non-debited credit:" means an available credit that may be obtained by prospective credit users for a planned debit project, but that has not yet become a "debited" credit because final approved permits requiring mitigation have not yet been issued. Non-debited credits may be credits purchased in anticipation of the issuance of final permits at a user's sole risk, but are not yet recorded on the Master Ledger and are not officially "debited credits." (see 173-700-311,411)].

WAC 173-700-200 How do other laws and rules relate to banks?

Reiterate that the Federal Rule is adopted by reference and that all sections of WAC 173-700 are intended to clarify the Department's role as a co-chair of the IRT and offer additional clarification to state requirements under the IRT review, approval, and implementation process for mitigation banks approved under this Chapter.

WAC 173-700-232 Dispute Resolution Process.

There needs to be a similar dispute resolution process for Sponsor to seek clarification and/or relief from decisions or delays resulting by action of the IRT and the Department. Sponsor should have the same right and ability to elevate concerns to the Department head as other non-concurring IRT member agencies are entitled to do under this section. Further, the deciding authority needs to be comprised of co-chair authorities that are able to weigh, interpret and prioritize often competing program requirements from among the IRT agency(s) constituents.

WAC 173-700-300 Ecological Design Incentives

Additional incentives need to be applied to projects that contain multi-resource based mitigation plans. For example, projects that include direct benefits to Agricultural Lands of Long Term Commercial Significance by promoting flood relief and providing additional flood conveyance to protect nearby area properties and infrastructure, and projects that address limiting factors affecting salmon recovery by restoring natural processes need to receive additional incentives. Rather than retro-fitting these projects into a wetland-centric regulatory framework and in some cases penalizing Sponsors with decreased credit ratios for not increasing total wetland area, additional consideration should be given to increasing the total number of credits these sites generate. Likewise, projects that do not have the same suite of benefits should not be eligible for "full" credit generation ratios simply based on total area of wetland created. By limiting the award of credits to wetland-only activities, there is a significant disincentive for Sponsors to take on restoring higher-quality environmental systems that create maximum benefits in a watershed.

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In cases where full ecological values simply cannot be realized in increased credit generation ratios due to limitations in department policy, the department should allow Sponsors to develop alternative currencies to attempt to capture these values without additional involvement required by the department. When such alternative currencies are developed to meet the requirements of other non-department requirements, such currencies should be developed free from interference by the department and governed by the primary agency with jurisdiction over the resource in question.

WAC 173-700-303 Site Selection

2)(c)…add [the department shall not approve projects that have been found to be inconsistent with both local and statewide goals for agricultural land preservation and where local priorities and goals are not able to be advanced through the establishment of a mitigation bank on Agricultural Lands of Long Term Commercial Significance.]

In addition to addressing criteria contained within this section, we recommend adding the following "minimum criteria" for siting mitigation banks:

Add:

3) The department requires that all mitigation banks must meet the following set of minimum criteria:

- Mitigation banks should be implemented in accordance with landscape-scale and watershed planning to promote the maximum possible benefit to identified needs to sustain proper ecological function within the basin.
- Mitigation projects must not negatively or adversely affect water quality, or contribute to degradation of water quality in any way. Mitigation projects should be designed, constructed and maintained and monitored to provide improvements to water quality whenever possible.
- Mitigation projects should not negatively affect floodplain storage or conveyance function, and should provide net-gain in floodplain function whenever possible as floodplain areas are known to have direct benefits (or effects) to listed fish species.
- Mitigation projects must be selected, designed, constructed, maintained and monitored with an appropriate level of scientific review, engineering, regulatory review and be secured with adequate financial assurances to secure the risk of failure in constructed wetlands, streams and associated habitats. The implementation of mitigation plans must be constructed and implemented only by qualified firms with proven success in the delivery of successful mitigation projects.

Add:

4). The department requires that all mitigation banks located in watersheds containing threatened and endangered fish species and associated habitat must meet the following set of minimum criteria:

- Mitigation banks must be able to demonstrate a direct benefit to listed fish species and associated habitat.

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- Mitigation banks should address identified limiting factors affecting the recovery of listed fish species. In most cases this requires including key elements for the proper function of essential fish habitat commonly found in riverine, riparian and floodplain areas to reduce barriers to fish passage and to promote the maximum possible benefits to fish habitat usage including, but not limited to spawning, rearing, foraging and overwintering activities.
- Mitigation projects should be sited along key salmon passage and spawning areas and reduce barriers to fish passage whenever possible. In most watersheds, this means that mitigation projects should establish and maintain a direct hydrologic and hydraulic connection to river systems and tributaries to promote the re-establishment of riparian areas containing high quality habitat for listed fish species.

WAC 173-700-311 Types of Credits

Add:

4) Non-debited credits are available credits that may be obtained by prospective credit users for a planned debit project, but that has not yet become a "debited" credit because final approved permits requiring mitigation have not yet been issued. Non-debited credits may be credits obtained in anticipation of the issuance of final permits at the user's sole risk, but are not yet recorded on the Master Ledger, and are not officially recognized by department (or IRT) as "debited credits."

WAC 173-700-313 through 320 Credit conversion rates (generally)

Following from the discussion at WAC 173-700-300 – Ecological Design Incentives, we suggest adding a bonus table for either compounding or increasing credit generation ratios that provide multiple benefits to other resources. Likewise, statements should be included that limit the application of the most favorable credit generation ratios to projects that provide multiple environmental benefits, not just based on total wetland area.

WAC 173-700-321 Using an alternative method to determine credits:

Except as may be provided for through the use of compounded/improved mitigation credit generation ratios and/or discounted credit generation ratios for projects that do not provide multiple environmental benefits (as discussed in the preceding section(s)) that are within the departments authority to offer and authorize, allowing the use of an alternative currency should be permitted generally by the Instrument approved under WAC 173-700. However, in cases where a defined alternative currency exceeds the regulatory authority of the department, or in cases where the department is unable to award "full" credit for multi-resource based currencies, there is no need to document the alternative method in a department-approved Instrument. Further, by requiring alternative currencies to be contained within a department-approved Instrument creates uncertainty as to the department's role and regulatory authority for the review, approval and administration of

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other currencies and possibly serves to diminish the potential values that could otherwise be obtained absent the department's involvement.

For example, the approval of flood storage credits could be administered by the county or municipality(s) within the bank's service area that actually regulates flood hazards. Unless additional bonuses are provided for within credit generation ratios to fully capture the potential value offered by a bank, the ability of a bank Sponsor to separately negotiate a separate trading mechanism for the award and use of flood storage credits should occur outside the scope of a department-approved instrument, thus allowing a bank Sponsor the ability to fully capture the values associated with increased flood storage. The same is true for the development and use of "fish credits" in areas of banks that are not able to receive full credit generation bonuses from within a department-approved instrument. The potential for "double dipping" is eliminated under this approach, whereby only partial values are approved and traded under each regulatory program by agencies having jurisdiction to review and approve these values (i.e. percentages of sites having full wetland values are traded under department-approved instrument and percentages of sites having full values for other functions (flood benefits, fish credits) are traded under another program).

WAC 173-700-350(3) Financial Viability: (not considering economics…)

Current language:

"3) The department may not consider the economic standing of a bank when implementing mitigation sequencing, determining unavoidable impacts, or evaluating compensation alternatives for debit projects."

We appreciate the department's position that "lowest cost to the user" cannot be a deciding factor in considering mitigation options. However, when evaluating compensation alternatives for debit projects, consideration should be given to the hierarchy of mitigation alternatives under Federal Rules which specify a preference for the use of mitigation banks in large part due to the financial assurances offered by bank Sponsors to secure the performance of mitigation banks. If the hierarchy of options contained in the Federal Rules is adopted by reference in WAC 173-700, and if standards are maintained to fully provide replacement for lost function, as compared to cost considerations, the language of 173-700-350(3) is otherwise acceptable.

WAC 173-700-351 Financial assurances.

Clarifications are needed to describe the process and criteria for accessing financial assurances maintained by Sponsor. We suggest a simple statement stating that the Instrument must contain clear provisions for when the department (in cooperation with the IRT) may direct disbursement from the Sponsor's financial assurance(s), except as provided for in the following sections.

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WAC 173-700-352 Financial assurances for construction:

When defining in the Instrument (as suggested above), financial assurances for construction should be accessed only when:

a) All site work has ceased and Sponsor has not completed construction, according to the approved construction schedule; and,
b) No official amendment to the approved construction schedule has been sought by Sponsor nor approved by IRT; and
c) The department (and IRT) has provided a notice of default to Sponsor indicating that construction must be completed; and,
d) Sponsor does not remobilize to complete construction, or sufficiently respond to the notice of default.

Additional comments regarding requirement of financial assurance "to stabilize site" are contained below:

Current language:

"5) If the first release of credits will occur after construction is completed and the department has approved the as-built plans, the department may require a financial assurance that would be adequate to stabilize the bank site in the event of default by the Sponsor."

This statement is unnecessary and duplicative of other remedies available to approving agency(s) for violating permit conditions for failing to stabilize the bank site. Sponsor must comply with all permit conditions for the approved construction plan regardless of the terms of the Instrument. If Sponsor fails to complete work, it is still bound by permit conditions to stabilize the site to avoid any adverse environmental risk and to minimize any risk to public safety. Requiring an additional financial assurance to secure permit conditions when no other consideration has been given (i.e. credits awarded) to applicant is a duplicative, excessive and unfair financial burden on the Sponsor.

WAC 173-700-353 Financial assurances for monitoring and maintenance:

When defining in the Instrument (as suggested above), financial assurances for monitoring and maintenance should be accessed only when:

a) Monitoring has shown the site is not meeting performance standards; and,
b) Adaptive Management has been implemented by Sponsor and such activities have not brought the site into compliance; and,
c) The department (and IRT) has provided a notice of default to the Sponsor regarding the need for remedial action; and,

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d) The Sponsor fails to conduct such remedial action, or otherwise bring the site into compliance

WAC 173-700-402 Monitoring and Maintenance

The department should review and approve, but not determine the monitoring schedule for mitigation banks.

The "general ten year" requirement is excessive and unnecessary. The industry standard for monitoring and maintaining mitigation bank sites is typically five years. Problems that typically affect the long-term viability of a bank site are typically witnessed very early on post-construction. Problems with poor hydrology and plant survival will typically be seen within the first one to two years of a "typical" cycle. Longer periods may be warranted in exceptional circumstances when there is an increased risk of failure, in which case the bank site may not be a suitable site for banking purposes to begin with. However, "generally" requiring ten years of monitoring and maintenance, particularly when credits are also withheld during this period, is excessive.

WAC 173-700-403 Adaptive Management

We suggest adding a fourth item generally stating that the failure to bring the site into compliance through adaptive management may constitute grounds for requests for specific remedial action by the department (IRT).

WAC 173-700-411 Ledger tracking and reporting

Regarding the submission of a complete copy of the ledger at the following times:
3(b): … "This requirement also applies to other resources available at the bank."

We suggest limiting ledger submissions only for department-approved credit currencies as stated above in our comments at WAC 173-700-321.

WAC 173-700-412 Master Ledger

We suggest adding an item reflecting when bank debits are officially recognized by the department (and IRT):

Specifically, available credits, and non-debited credits shall not appear on the Master Ledger. Only transactions for debited projects that have permits issued that require mitigation shall be recognized by the department as official bank transfers. Clarifications must be provided such that "non-debited" credits (available or otherwise) are not officially recognized as bank transfers. This is critical to protect the integrity of the banking program and to avoid circumstances in which a user assumes a right to the use of credits simply because credits have been obtained prior to permit issuance.

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WAC 173-700-421 Permanent Protection:

d) Notice to department: transfer of title issues or the establishment of other legal claims to the bank site should not require notice to the department. In most cases, title transfers and other lien rights that may be granted are subordinate to the permanent protection of the bank site. Notice to the department should only be required in the exceptional case(s) where the potential for transfer or legal claim would subordinate the permanent protection provisions of the conservation easement to any new claim.

WAC 173-700-500 Use of bank credits

We reiterate our comments about adopting Federal Rules by reference, and in particular, in modifying the language of this section to accurately reflect the hierarchy of preference for the use of bank credits as a first option. (See 33 CFR 332(b)(2)--(6) [§ 230.93(b)(2)--(6)]).

5) Concerning double dipping: [new language]

"Under no circumstances may the same credits be debited for a different impact authorized under [the same] regulatory program [where different credit currency values are otherwise maintained separately under different regulatory programs]." This statement is intended to strengthen the protection to avoid double dipping, while also allowing for the trading of other currencies outside the framework of a department-approved instrument. This comment also is reflected at 6) below.

6) "Some debit projects may require authorization under more than one regulatory program….banks may be designed to holistically address requirements under multiple programs and authorities for the same activity." Add [In cases where department-approved credits cannot be used to satisfy all of these requirements, alternative credit currencies which may be developed under a separate regulatory program may be used to satisfy these requirements, as subject to approval by the approving agency(s)"]

WAC 173-700-501 Mitigation ratios for debit projects

We suggest language that contains an acknowledgement that mitigation ratios determined by the department (and IRT) for debit projects should serve as the primary mitigation ratio for projects receiving a department (or IRT member agency) permit, and that the use of these ratios is consistent with the points in the subsections below (1-3).

We suggest adding a fourth item that acknowledges that the replacement mitigation ratios also considers the reduction in risk of temporal loss of function associated with the use of mitigation credits that are established in advance of permitted impacts.

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WAC 173-700-601 Remedial Actions:

This section needs to have references included that relate to when remedial action provisions take effect. Specifically, Remedial Actions should take effect after adaptive management activities have been implemented as described in WAC 173-700-402 and there is still "a persistent failure to achieve performance standards." (See earlier comment about adding WAC 173-700-402(4) that would refer to this section). The intent of remedial action should be for the department (in cooperation with the IRT) to direct action after the Sponsor has had an opportunity to address failures under adaptive management and has still been unable to meet performance standards.

Items 5 and 6 appear to occur out of order and may lead to confusing requirements to Sponsor. The department should first coordinate with the IRT signatories and gain concurrence on the remedial action request prior to sending notice to Sponsor, rather than sending a request for remedial action to Sponsor and then giving IRT signatories an opportunity to provide comments/objections.

WAC 173-700-602 through 604:

We suggest separating Compliance with Remedial Action from default provisions, and adding a new, section dedicated to Default. Sponsor should have the ability to respond to requests for remedial action (generally section 602 (1-3), and in the event Sponsor does not comply, the Sponsor shall be found to be in default. Generally speaking, a notice of noncompliance should be sent after adaptive management has failed to meet performance standards.

Default provisions should be contained under a new heading (currently Subsections 4-6). Default should occur after adaptive management has failed to result in the attainment of performance standards, the Sponsor has been given a notice of noncompliance, and Sponsor fails to remedy the situation by implementing the requested remedial action. Rather than relating this to approving a schedule (as currently contemplated in subsections 4 and 5), this should be related to either action or inaction by the Sponsor. If Sponsor responds to remedial action requests, there is no need for default proceedings. If however, Sponsor fails to conduct remedial action (for any reason, including, but not limited to schedule), Sponsor should be found in default, and the remedies contemplated by subsections 5 and 6, and WAC 173-700-603 suspension of credits would take effect.

WAC 173-700-603 Suspension of credit use

[added language]

2) "The suspension shall include all available [and non-debited] credits at a bank."

4) "If credit use is suspended by the department, the department must notify the Sponsor by certified mail with return receipt requested that further sale [, use, or transfer of all available, and/or non-debited] credits has been suspended."

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[new section]

5) [Upon notice to Sponsor, the department shall publish a public notice containing the notice of suspension and identification of all remedial criteria].

[renumbered section, formerly 5]

6) "The department shall maintain the suspension until compliance with all remedial criteria has been achieved. [Upon cancelation of the suspension, the department shall publish a public notice containing the cancellation of suspension and providing a statement that all remedial criteria have been met or addressed to the satisfaction of the department.]

WAC 173-700-700 through 701 Roles and Responsibilities

If adopted by reference, the Federal Rules provide roles and responsibilities sections that should be maintained, and generally applied to the department consistent with its role as co-chair of the IRT. However, elimination of the roles of the Sponsor and other IRT members suggests a two party agreement in developing (only) a "department-approved" Instrument. In order for a bank to be eligible to provide full regulatory benefits, the roles and responsibilities need to be defined based on their inter-agency relationships to the overall IRT process.

Thank you again for the opportunity to review the proposed language for WAC 173-700: Wetland Mitigation Banks. If you have any questions concerning our comments, please do not hesitate to contact me at 301-977-4311.

Sincerely,



Eric D. Gleason
Project Manager, Skykomish Habitat, LLC

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SPOKANE COUNTY

UTILITIES DIVISION
N. BRUCE RAWLS, P.E., DIRECTOR
A DIVISION OF THE PUBLIC WORKS DEPARTMENT

April 23, 2009

Ms. Yolanda Holder
Department of Ecology
P.O. Box 46700
Olympia, WA 98504-7600
Submitted via email to yhol461@ecy.wa.gov, April 23, 2009, hard copy to follow via USPS

Subject: Comments on draft wetland mitigation banks rule, Chapter 173-700 WAC

Ms. Holder,

Thank you for the opportunity to review and comment on the draft wetland mitigation banks rule, Chapter 173-700 WAC. We appreciate the purpose of wetland mitigation and how mitigation banks can be used as a tool in the process. To date, Spokane County has not attempted to use or develop a wetland mitigation bank, but the draft chapter seems to provide a logical, straight forward approach for development and use.

Our comments are on section 300, bank establishment, and section 400, bank operation, and are presented below.

Comments and Questions (in reference order)

- **WAC 173-700-314 Considerations for determining credit conversion rates, (8)** *Public access and education opportunities, where appropriate, as determined by the department.*

Please describe in the rule the criteria that will be used to determine if public access is viewed as a benefit or detriment during credit determination? Project developers might seek to include public access for education and recreation, especially projects developed by local governments. The rule is not clear how that access will be considered during review of the project and for determination of credits.

- **WAC 173-700-403 Adaptive management plan**

Can on-going management activities be altered following bank certification? The draft rule refers to a required "*management strategy to address unforeseen changes*," but does not describe how on-going management actions are defined and if they can be changed. For example, can

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new management actions be implemented in a certified bank if they are viewed as providing a "net environmental benefit" for the wetland system?

Specifically, if a wetland bank is certified with existing natural hydrology, can reclaimed water be added, as allowed for natural wetland enhancement under *Water Reclamation and Reuse Standards,* publication #97-23, Departments of Health and Ecology? It is understandable that wetland banks need to be sustainable with existing site hydrology. But following site certification, can reclaimed water be added to enhance the hydrology, even if that new water source might be diverted at some unknown later date?

- **WAC 173-700-420 Long-term management plan (4)** *The owner of a bank may not complete any conveyance of title...without adequate and complete provision for the continued management of the bank in a natural state.*
  and
  WAC 173-700-421 Permanent protection (1) *Bank sites must be permanently protected and preserved in their natural state.*

Both sections refer to maintaining banks in their "natural state." The phrase "natural state" may not be appropriate in what may be highly modified systems, which are no longer what would have occurred naturally. The phrase could be replaced with reference to the agreed upon site conditions outlined in the banking instrument.

Again, thank you for allowing review and comments on the draft rule. Please direct any question regarding this letter to me or Ben Brattebo, Water Resources Specialist, at (509) 477-7521 or bbrattebo@spokanecounty.org.

Sincerely,

N Bruce Rawls

N. Bruce Rawls, P.E.
Director

CC: Files

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April 22, 2009

Washington State Department of Ecology
Attn: Yolanda Holder
Shorelands & Environmental Assistance Program
P.O. Box 47600
Olympia, WA 98504-7600

Dear Ms. Holder:

This letter provides my comments for your consideration with regard to rulemaking on WAC 173-700 (Wetland Mitigation Banks).

I believe it is essential that our wetland banks be capable of fully supporting State efforts at species restoration, specifically including endangered salmon. Certain banks are likely to be situated within Watershed Resource Inventory Areas, and those areas may be home, in turn, to species that have been identified as endangered. It is my hope that the Department will include in its rules provisions to require that such wetland banks be designed and engineered to support the habitat needs of such species, not only at the time of the creation of the bank, but in the years to come.

Achieving this goal will clearly require high standards both of water management and of habitat monitoring. From my perspective, having served on the Senate Natural Resources, Ocean & Recreation Committee, and presently as Chair of the Senate Environment, Water & Energy Committee, I am convinced that the significant investment of taxpayer dollars to qualify wetland banks to serve as replacements for indigenous wetlands demands that we sustain the value of such investments. So, too, does consideration of the need for sustainability of habitats that are intended to mitigate for the loss of natural ecosystem functions and services.

Finally, I urge the Department explore ways to ensure that the rules hold accountable both developers, as well as those agencies purchasing credits, for the effectiveness and preservation of wetland bank habitat.

Sincerely,

Phil Rockefeller
State Senator
Washington's 23rd District

cc: Jay Manning, Director, Washington State Department of Ecology

From:	Crystal Elliot
To:	Driscoll, Lauren (ECY); "kimberley.a.harper@usace.army.mil"; Holder, Yolanda (ECY); Thompson, Kate (ECY); Merten, Christina (ECY);
cc:	"gail.m.terzi@usace.army.mil";
Subject:	Comments on Proposed Mitigation Banking Rule (WAC 173-700-303)
Date:	Thursday, April 23, 2009 11:11:40 AM

Hi Lauren, Kim, Yolanda, Kate, and Christina –
Good to chat with you at the public meeting and hearing last week. I really appreciated the opportunity for a combination of informal and formal avenues for discussion of these issues. My two comments on WAC 173-700-303 are as follows:

1.) Pertaining to section WAC 173-700-303, Section 2, Compatibility of banks and agricultural lands of long-term commercial significance (ALLCS):
As I mentioned in the public meeting, I completely agree with the need to include protection for our local farm base in State laws regarding land use, including mitigation banking. However, as currently written, the rule's use of ALLCS designations to define prime farmland potentially threatens the ability for mitigation bank siting in areas where they are the most ecologically appropriate – river floodplain areas. Puget Sound river floodplains have historically been converted from floodplain wetlands complexes and riparian habitat to agricultural land, and now most large tracts of undeveloped land in these areas fall under ALLCS land use designations. These are the areas where large-scale restoration projects would provide the most benefit to ESA-listed fish recovery, regional water quality improvement, wildlife corridor enhancement, and flood abatement through increased floodwater storage capacity. Since we all value local farmland and simultaneously understand the need for river floodplain restoration to achieve restoration of these critical ecological functions, a balance needs to be achieved between these two objectives.

ALLCS are established by local jurisdictions (per WAC 365-190-050), and consequently there is not a standardized state-wide working definition for this land use designation. In WAC 365-190-050, it is provided that local jurisdictions utilize the NRCS definition of "prime farmland" soils and associated geographic extent from soil surveys to establish ALLCS. Unfortunately, local jurisdictions do not always use this criterion for establishing ALLCS areas, as evidenced by overlaying this soils type with these land use designations in GIS.

While there are "prime" farmland areas within ALLCS, this designation also encompasses sub-prime areas with soils described by the NRCS as "prime farmland if drained" – areas often exhibiting flooding during the growing season and requiring modification to support conventional crops. These are areas that often

provide optimal conditions for wetland restoration projects. Unfortunately, ALLCS designations do not make this distinction – and it is this over-inclusive and nebulous definition that provides substantial grounds for caution in using it as a restriction for mitigation bank siting. I strongly recommend using scientifically-based definitions, as in WAC 173-700-30, such as the "prime farmland" NRCS soil classifications (excluding "prime farmland if drained" and other modifiers of "prime") and requirements for documented current and on-going crop production.

2.) Pertaining to section WAC 173-700-800, Appeals Process:
As currently written, this section provides an open-ended avenue for any opposition, whether founded on scientifically- or policy-based grounds or not, to a given mitigation bank to appeal the certification process and indefinitely obstruct an otherwise approved project from moving forward.

There should be some sort of language in WAC 173-700-800 that provides assurance to a mitigation bank developer that appeals for final certification will only be entertained if they are based on non-compliance with the terms and conditions of the certification as specified in the banking instrument and in WAC 173-700-600.

Thanks again for providing the opportunity to comment on these very important issues,
Crystal

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From: Mike Rundlett
To: Holder, Yolanda (ECY);
cc: Mike Shelby;
Subject: WMB Proposed Rule Comments
Date: Thursday, April 23, 2009 11:36:25 AM
Attachments: WDOE WMB Proposed Rule Comments 4-22-09.doc

Ms. Holder,

Please find attached our comments in regard to the proposed WMB program rule. The signed original comment letter is being forwarded by U.S.Mail.

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April 22, 2009

Ms. Yolanda Holder
Wetlands Section
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

RE: Wetland Mitigation Banks Rule
Review Comments

Dear Ms. Holder,

Thank you for the opportunity to review the proposed administrative rules for the Wetland Mitigation Banks, Chapter 173-700 WAC. We have also reviewed the accompanying documents including the Environmental Impact Statement (EIS), Small Business Economic Impact Analysis Statement, and the Preliminary Cost Benefit and Least Burden Analysis.

Our comments will focus on the principal concern our organization has consistently expressed to the department concerning the development of the Wetland Mitigation Bank Program. The question is 'Aren't we fixing one problem…the loss of important wetlands, by adding to another…the loss of prime farmlands'.

The Wetlands Mitigation Banking statute and implementing rules are the primary regulatory framework that drives wetland mitigation bank project location and design, and ultimately authorizes the construction of these projects. We firmly believe that the proposed rule, in its present form clearly conflicts with the vision and mandate of the state's Growth Management Act (GMA) to protect and preserve farmlands. The GMA calls for the designation of agricultural lands of long-term commercial significance to assure the conservation of agricultural land for their continued use for agricultural purposes. The GMA clearly expresses its desire for the conservation of agricultural lands in order to maintain and enhance the agricultural industry and to discourage incompatible uses. The Wetland Mitigation Banking Program administrative rule must be constructed so as to not defeat the purpose or intent of the GMA or any other state statute that speaks to protecting prime agricultural lands for the long-term interest of growing food, fiber and alternative fuels.

The environmental impact statement provides a reasonable discussion of the agricultural land issues related to siting of wetland mitigation bank projects on farmland. However, we must note that both the economic impact analysis and cost benefit analysis document fail to analyze and quantify loss of farming opportunity or adverse economic impacts related to the agricultural industry affected by the incremental loss of available production farmlands that will result from projects authorized by this program. We were especially discouraged to see a specific statement in the cost benefit analysis which recognizes that "development happens in areas that are being developed, driving up land prices." "While WMB does not allow the mitigation bank to be too far from the impact location, it is likely to be in a significantly more rural area where land is cheaper." The cost benefit analysis acknowledges that development benefits from the program include reducing costs for developers. As we have said before most of the prime agricultural lands in western Washington have already disappeared due to unrestrained growth, development and other land use conversions**. Our remaining farmland base cannot be asked to continue carrying the burden of accommodating these other land uses including developer's wetland mitigation banks**. Our increasingly scarce farmland resources must be preserved, or otherwise protected through mitigation, to assure the sustainability of the few remaining viable local agricultural communities and their economies. For too long we asked ecological systems to subsidize development. Now we are transferring that subsidy to our agricultural natural resource lands. These few remaining prime farmland areas are, like wetlands once were, now the disappearing critical natural resource lands.

As you know, from our conversations and ongoing involvement in the development of this rule proposal we have strongly advocated for the absolute avoidance of authorizing such non-agricultural uses as wetland mitigation banks on prime farmland soils, i.e. those lands designated as "agricultural lands of long-term commercial significance." We will again emphasize our desire to see this exclusion placed in the final adopted rules. To fully address our concerns we would offer the following revisions to the proposed rule language in WAC 173-700-303(2):

(2) Compatibility of banks and agricultural lands of long-term commercial significance (ALLCS).
(a) ~~The department~~ This program discourages the location of banks on prime agricultural soils ~~within~~ designated ALLCS due to the important resource and societal values of those resource lands.
(b) If a bank is proposed to be located within an area designated as ALLCS:
(i) ~~Impacts to ALLCS both on-site and off-site shall be avoided to the maximum extent possible;~~The project applicant shall provide a showing of 1) extraordinary circumstance and need for the bank project; 2) that there is a local market demand for the bank services; 3) that it will provide significant ecological benefit for the area; and, 4) demonstrated steps for avoidance, minimization and mitigation of the project impacts to the agricultural lands.

(ii) ~~The~~ A bank proposed to be located on designated ALLCS ~~bank~~ must be compatible with the intent and purpose of the designated ALLCS, to conserve and maintain agricultural production, food sources, and prime agricultural soils;
(iii) Placement of banks on ALLCS must be consistent with the local government's agricultural ~~strategy~~ natural resource lands goals, comprehensive plan, and zoning and development code;
(iv) ~~The bank shall be located on nonprime soils to the greatest extent possible~~The applicant shall demonstrate that the project cannot be sited elsewhere, and will be located on marginal non-prime soils, not as suitable for agricultural purposes, within the designated ALLCS; and
(v) The bank must be sited, designed and constructed to be compatible with and not adversely affect adjacent and nearby agricultural operations. This includes, but is not limited to: Adverse effects on water flows to neighboring farms, and minimizing shading effects on adjacent farms or inflate agricultural land values in the area.
(c) It shall also be demonstrated by the applicant that the wetland mitigation bank, if located on agricultural lands, will not set a precedent for other similar projects that taken together could cumulatively create substantial adverse impact to the designated agricultural lands of long-term commercial significance.
(d)The department shall consult with the local conservation district and the conservation commission to ensure that bank siting is consistent with both local and statewide goals for agricultural land preservation and advances local farmland protection and preservation priorities and goals.

We respectfully request that the department consider the proposed changes recommended above which will provide the necessary provisions to insure that wetland mitigation bank projects will be sited, designed and operated to avoid, minimize and mitigate for the adverse affect of these projects on farmlands. We believe, with the changes recommended, that the program can move forward in a manner consistent with the mandates of the state's Growth Management Act. If the rules remain as proposed we fail to see how they have been reconciled with the intentions of the GMA. And, we are certain that the program will continue to undermine and damage the state's public interest and policy framework enunciated for the protection and conservation of our disappearing prime western Washington farmlands.

Again, thank you for the opportunity to comment on this proposed rule making action. If you have any questions regarding our review, or if you would like to discuss our comments with us, please give me a call (360) 424-7327.

Sincerely,

Mike Shelby
Executive Director

bcc: Sen. Mary Margaret Haugen
Rep. Barbara Bailey
Rep. Norma Smith
Allen Rozema, SPF
Ellen Bynum, FOSC
Dianne Freethy, FOSC
Caroline Kelly, SCD
Kendra Smith, SC-FLP
Don Stuart, AFT
Jay Gordon, WADF
John Stuhlmiller, WFB
Dan Newhouse, WSDA
Mark Clark, WSCC

#24A

Western Washington Agricultural Association

Department of Ecology
RECEIVED
APR 24 2009
Shorelands & Environmental
Assistance Program

April 22, 2009

Ms. Yolanda Holder
Wetlands Section
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

RE: Wetland Mitigation Banks Rule
Review Comments

Dear Ms. Holder,

Thank you for the opportunity to review the proposed administrative rules for the Wetland Mitigation Banks, Chapter 173-700 WAC. We have also reviewed the accompanying documents including the Environmental Impact Statement (EIS), Small Business Economic Impact Analysis Statement, and the Preliminary Cost Benefit and Least Burden Analysis.

Our comments will focus on the principal concern our organization has consistently expressed to the department concerning the development of the Wetland Mitigation Bank Program. The question is 'Aren't we fixing one problem…the loss of important wetlands, by adding to another…the loss of prime farmlands'.

The Wetlands Mitigation Banking statute and implementing rules are the primary regulatory framework that drives wetland mitigation bank project location and design, and ultimately authorizes the construction of these projects. We firmly believe that the proposed rule, in its present form clearly conflicts with the vision and mandate of the state's Growth Management Act (GMA) to protect and preserve farmlands. The GMA calls for the designation of agricultural lands of long-term commercial significance to assure the conservation of agricultural land for their continued use for agricultural purposes. The GMA clearly expresses its desire for the conservation of agricultural lands in order to maintain and enhance the agricultural industry and to discourage incompatible uses. The Wetland Mitigation Banking Program administrative rule must be constructed so as to not defeat the purpose or intent of the GMA or any other state statute that speaks to protecting

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Mike Shelby, Executive Director • (360) 424-PEAS (7327) • FAX (360) 424-9343
Email: wwaa@fidalgo.net

prime agricultural lands for the long-term interest of growing food, fiber and alternative fuels.

The environmental impact statement provides a reasonable discussion of the agricultural land issues related to siting of wetland mitigation bank projects on farmland. However, we must note that both the economic impact analysis and cost benefit analysis document fail to analyze and quantify loss of farming opportunity or adverse economic impacts related to the agricultural industry affected by the incremental loss of available production farmlands that will result from projects authorized by this program. We were especially discouraged to see a specific statement in the cost benefit analysis which recognizes that "development happens in areas that are being developed, driving up land prices." "While WMB does not allow the mitigation bank to be too far from the impact location, it is likely to be in a significantly more rural area where land is cheaper." The cost benefit analysis acknowledges that development benefits from the program include reducing costs for developers. As we have said before most of the prime agricultural lands in western Washington have already disappeared due to unrestrained growth, development and other land use conversions. **Our remaining farmland base cannot be asked to continue carrying the burden of accommodating these other land uses including developer's wetland mitigation banks.** Our increasingly scarce farmland resources must be preserved, or otherwise protected through mitigation, to assure the sustainability of the few remaining viable local agricultural communities and their economies. For too long we asked ecological systems to subsidize development. Now we are transferring that subsidy to our agricultural natural resource lands. These few remaining prime farmland areas are, like wetlands once were, now the disappearing critical natural resource lands.

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(2) Compatibility of banks and agricultural lands of long-term commercial significance (ALLCS).

(a) This program discourages the location of banks on prime agricultural soils designated ALLCS due to the important resource and societal values of those resource lands.

(b) If a bank is proposed to be located within an area designated as ALLCS:

(i) The project applicant shall provide a showing of 1) extraordinary circumstance and need for the bank project; 2) that there is a local market demand for the bank services; 3) that it will provide significant ecological benefit for the area; and, 4)

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demonstrated steps for avoidance, minimization and mitigation of the project impacts to the agricultural lands.

(ii) A bank proposed to be located on designated ALLCS must be compatible with the intent and purpose of the designated ALLCS, to conserve and maintain agricultural production, food sources, and prime agricultural soils;

(iii) Placement of banks on ALLCS must be consistent with the local government's agricultural natural resource lands goals, comprehensive plan, and zoning and development code;

(iv) The applicant shall demonstrate that the project cannot be sited elsewhere, and will be located on marginal non-prime soils, not as suitable for agricultural purposes, within the designated ALLCS; and

(v) The bank must be sited, designed and constructed to be compatible with and not adversely affect adjacent and nearby agricultural operations. This includes, but is not limited to: Adverse effects on water flows to neighboring farms, and minimizing shading effects on adjacent farms or inflate agricultural land values in the area.

(c) It shall also be demonstrated by the applicant that the wetland mitigation bank, if located on agricultural lands, will not set a precedent for other similar projects that taken together could cumulatively create substantial adverse impact to the designated agricultural lands of long-term commercial significance.

(d)The department shall consult with the local conservation district and the conservation commission to ensure that bank siting is consistent with both local and statewide goals for agricultural land preservation and advances local farmland protection and preservation priorities and goals.

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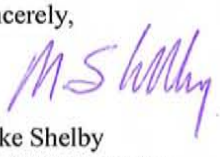
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We respectfully request that the department consider the proposed changes recommended above which will provide the necessary provisions to insure that wetland mitigation bank projects will be sited, designed and operated to avoid, minimize and mitigate for the adverse affect of these projects on farmlands. We believe, with the changes recommended, that the program can move forward in a manner consistent with the mandates of the state's Growth Management Act. If the rules remain as proposed we fail to see how they have been reconciled with the intentions of the GMA. And, we are certain that the program will continue to undermine and damage the state's public interest and policy framework enunciated for the protection and conservation of our disappearing prime western Washington farmlands.

Again, thank you for the opportunity to comment on this proposed rule making action. If you have any questions regarding our review, or if you would like to discuss our comments with us, please give me a call (360) 424-7327.

Sincerely,



Mike Shelby
Executive Director

From:	Darcey Miller
To:	Driscoll, Lauren (ECY); "kimberley.a.harper@usace.army.mil"; Holder, Yolanda (ECY); Thompson, Kate (ECY); Merten, Christina (ECY);
Subject:	Comments on Proposed Mitigation Banking Rule (WAC 173-700-303)
Date:	Thursday, April 23, 2009 1:54:58 PM

Hello,

I wanted to share my comments regarding the proposed mitigation banking rule (WAC 173-700-303).

1.) Pertaining to section WAC 173-700-303, Section 2, Compatibility of banks and agricultural lands of long-term commercial significance (ALLCS):

Protecting land for our local farms is very important. However, as currently written, the proposed rule's use of ALLCS designations to define prime farmland potentially threatens the ability for mitigation banks to be located where they are the most ecologically appropriate: river floodplain areas. Puget Sound river floodplains have historically been converted from floodplain wetlands complexes and riparian habitat to agricultural land, and now most large tracts of undeveloped land in these areas fall under ALLCS land use designations. These are the areas where large-scale restoration projects would provide the most benefit to ESA-listed fish recovery, regional water quality improvement, wildlife corridor enhancement, and flood abatement through increased floodwater storage capacity. Because we all value local farmland and simultaneously understand the need for river floodplain restoration to achieve restoration of these critical ecological functions, a balance needs to be achieved between these two objectives.

ALLCS are established by local jurisdictions (per WAC 365-190-050), and consequently there is not a standardized, state-wide working definition for this land use designation. In WAC 365-190-050, it is stated that local jurisdictions should utilize the NRCS definition of "prime farmland" soils and associated geographic extent from soil surveys to establish ALLCS. Unfortunately, local jurisdictions do not always use this criterion for establishing ALLCS areas, as evidenced by overlaying this soils type with these land use designations in GIS.

While there are "prime" farmland areas within ALLCS, this designation also encompasses sub-prime areas with soils described by the NRCS as "prime farmland if drained" – areas often exhibiting flooding during the growing season and requiring modification to support conventional crops. These are areas that often provide optimal conditions for wetland restoration projects. Unfortunately, ALLCS

designations do not make this distinction – and it is this over-inclusive and nebulous definition that provides substantial grounds for caution in using it as a restriction for mitigation bank siting. I strongly recommend using scientifically-based definitions, as in WAC 173-700-30, such as the "prime farmland" NRCS soil classifications (excluding "prime farmland if drained" and other modifiers of "prime") and requirements for documented current and on-going crop production.

2.) Pertaining to section WAC 173-700-800, Appeals Process:

As currently written, this section provides an open-ended avenue for any opposition, whether founded on scientifically- or policy-based grounds or not, to a given mitigation bank to appeal the certification process and indefinitely obstruct an otherwise approved project from moving forward.

I would recommend that there be language included in WAC 173-700-800 that provides a level of assurance to a mitigation bank developer that appeals for final certification will be entertained only if those appeals are justified. The appeals should be based on a clear argument that there is non-compliance with the terms and conditions of the certification as specified in the mitigation banking instrument (MBI) and in WAC 173-700-600.

Thank you for providing the opportunity to comment on these issues.

Darcey Miller
Ecologist, PWS

Herrera Environmental Consultants
2200 Sixth Avenue, Suite 1100
Seattle, WA 98121
(206) 441-9080 / (206) 441-9108 FAX
www.herrerainc.com

From:	Carolyn Sutton
To:	Holder, Yolanda (ECY);
cc:	carolyn sutton;
Subject:	Draft Rule of state"s pilot wetland mitigation bank program
Date:	Thursday, April 23, 2009 2:03:09 PM

Dear Ms Holder:

To create wetland mitigation banks on ANY piece of farmland is unacceptable. There is NO marginal farmland as Skagit County developer Mr.Mitzel states. Any farmable land in Skagit County must be preserved. IT GROWS FOOD! Something the world needs.It is too rapidly being chipped away by developers. Skagit County should say "NO" to wetland mitigation banks. This is a destructive money grabbing scheme for a few. And 51% of all wetland mitigation, including banks, fail to work in providing the environmental functions they promise.

Scientists tell us, nature television programs show us, that wetlands and estuaries are essential nursery grounds for fish and wildlife and therefore essential for us as well. When they go they go forever. Repeatedly voices are heard against the destruction of wetlands and the preservation of farmland but money and greed continue to threaten. Let the developers build "up" and "away" from wetlands increasing infrastructures instead of sprawl and decimation of fragile ecosystems that wetlands provide.

Moreover, why doesn't DOE strengthen the State Environmental Policy Act asking local governments to strengthen THEIR critical areas BEFORE developing any off-site wetland mitigation banking. This makes more sense and would allow more public input and education about this issue.

Thank you,
Carolyn

Comments on the Proposed Rule for Wetland Mitigation Banks

Comments by:
Michael Murphy
King County Department of Natural Resources and Parks
201 S. Jackson St. Suite 600
Seattle, WA 98104
206-296-8008
michael.murphy@kingcounty.gov

WAC 173-700-104 Definitions
Define "Landscape position". I would suggest landscape position is related to landuse (e.g. zoning, residential density, road density, etc.) and "watershed position" would be related to stream order, elevation, watershed strata, etc.

WAC 173-700-211 Content of the prospectus
Page 9, (7)e: also include watershed position – e.g. headwaters/1st order, middle watershed strata, lower watershed (mainstem), etc.

Page 9, (7)j: change from "adjacent land uses" to "land uses in the contributing basin" (or maybe catchment or sub-basin).

WAC 173-700-222 Content of the instrument
Page 12, 3(d): also include watershed position

WAC 173-700-225 Review of the draft instrument.
How will unresolved disputes about the content of an instrument be resolved? Reference 173-700-232.

WAC 173-700-230 Submittal of the final instrument
Page 15, (6) & (7) What if the local jurisdiction is also the bank sponsor? Does this review still occur?

WAC 173-700-301 Service area
Page 19: Consider whether paragraph (3) is flexible enough to accommodate an estuary or nearshore system bank. Could there be cases when it would make ecological sense to sell credits to offset impacts in non-adjacent WRIAs?
173-700-502 might allow this flexibility. Might be good to reference this section in 700-301.

WAC 173-700-312 though -315
Begin on page 23: Clarify that all areas related to credits are measured in acres.

WAC 173-700-317 Considerations for determining credit conversion rates for banks in urban areas
Page 25: How are "urban areas" defined?

From:	Barrentine, Marianne
To:	Holder, Yolanda (ECY);
cc:	Brattebo, Ben; Curalli, Kelly; "Vincent Barthels";
Subject:	Wetland Mitigation Banks - Comment
Date:	Thursday, April 23, 2009 3:58:56 PM

Yolanda Holander,

Below are a couple of comments from our office regarding the wetland mitigation banking program fee structure most specifically as they apply to local governments and public agencies and Eastern Washington:

1. Consider waiving the processing and review fees for public agencies – these projects provide overall public benefit, e.g. water storage and water quality improvements and reduced cost for public transportation project mitigation. Additional cost to the state could be justified with greater public benefit than multiple on-site mitigation areas.
2. Consider reduced processing and review fees for public and private projects in Eastern WA as only smaller sites are going to be financially and in many cases ecologically viable. Overall economic viability of wetland banks in Eastern Washington even larger ones is now borderline at best.

Thank you for the workshops and the opportunity to learn more about wetland mitigation banking options.

Sincerely,

Marianne Barrentine, PE
Environmental Programs & Special Projects Manager
Spokane County Div. of Engineering and Roads
1026 W. Broadway Ave.
Spokane, WA 99260-0170
Phone: 509-477-7443
Fax: 509-477-7478
Email: mbarrentine@spokanecounty.org

From:	Gehret, Kathryn C. (Kate) (Perkins Coie)
To:	Holder, Yolanda (ECY);
cc:	Dial, Ellen Conedera (Perkins Coie); Whitaker, Laura (Perkins Coie); Schneider, Mark W. (Perkins Coie);
Subject:	Comments on Proposed Wetland Mitigation Bank Rule, Chapter 173-700 WAC
Date:	Thursday, April 23, 2009 4:05:01 PM
Attachments:	CRANE Comments.pdf Wetland Bank References.pdf GatewayHCMP.pdf

---

Dear Ms. Holder,

Attached please find comments on the proposed Wetland Mitigation Bank rule (WAC 173-700), submitted on behalf of the Columbia River Alliance for Nurturing the Environment ("CRANE"). Additionally, the "Gateway Parcels 4-5 Habitat Creation and Mitigation Plan" is attached and referred to in the comment letter. Finally, a list of pertinent references is attached. Thank you for your consideration of our comments.

Sincerely,
Kate Gehret

<<CRANE Comments.pdf>> <<Wetland Bank References.pdf>> <<GatewayHCMP.pdf>>

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April 23, 2009

VIA E-MAIL

Department of Ecology
Attn: Yolanda Holder
Shorelands and Environmental Assistance Program
P.O. Box 47600
Olympia, WA 98504-7600
Email: yhol461@ecy.wa.gov

Re: CRANE Comments on Department of Ecology Proposed Wetland Mitigation Banks Rule, Chapter 173-700 WAC

Dear Ms. Holder:

On behalf of the Columbia River Alliance for Nurturing the Environment ("CRANE"), this letter comments on the Department of Ecology's ("DOE's") proposed adoption of a Wetland Mitigation Bank rule, chapter 173-700 WAC ("proposed rule").

A. Background

DOE previously issued a draft Wetland Mitigation Bank rule for public comment in 2001, formally adopting the draft rule language under a pilot rule program on June 13, 2004. To date, five wetland mitigation banks have been certified under the pilot rule program, and others are currently under consideration for certification. More recently, DOE issued a notice of proposed rulemaking on March 3, 2009. The comments in this letter apply to the updated Wetland Mitigation Bank rule currently under consideration.

B. Comments

CRANE does not object to wetland banking per se, and notes that the proposed Wetland Mitigation Bank rule contains some admirable goals and objectives. CRANE takes issue, however, with certain provisions of the proposed rule, summarized here and discussed in greater detail below:

- The certification process fails to provide DOE, bank sponsors, or the public with sufficient guidance as to how several of the rule's goals and objectives are to be achieved. Specifically, the proposed rule should be amended to require identification of quantitative benchmarks in adaptive management plans, define particular terms more clearly, require sponsors to develop quantitative performance standards, permit direct credit generation based on buffer areas, require integration of bank sites into watershed management plans, mandate the use of quantitative hydrological models, and provide more specific guidance on proper methods for wetland function assessments.

- DOE is granted excessive discretion to alter standard application of the rule. The rule should be amended to provide concrete standards to guide DOE's decision-making.

- The rule fails to consider potentially harmful effects on endangered and threatened species and their habitat. Analysis of these effects should be conducted, and the rule should be amended accordingly.

- No further bank certifications should be granted under the pilot rule, and pending bank certifications should be delayed until the final rule is adopted.

1. Requirements Applicable to Bank Certification, Establishment, and Operation:

a. The rule provides inadequate guidelines for development of Adaptive Management Plans.

The goal of an effective adaptive management plan is to manage the environment optimally by incorporating flexibility into management institutions to address unforeseen change. (Lee 1999). Adaptive management occurs within a range of acceptable outcomes rather than through a fixed set of management actions, and thereby avoids catastrophic and irreversible negative effects. (Johnson 1999a). An adaptive management plan recognizes a level of ecological uncertainty that inherently exists in any habitat management action, and reduces that uncertainty in the process of conducting the management action. (Walkerden 2005; Walters et al. 2000; Walters and Holling 1990). Additionally, effective adaptive management plans should address problems associated with incomplete or anecdotal data, lack of baseline data, temporal and spatial variation of measured parameters, and the inadequacy of models. (Walters 2002, 1997; Ralph and Poole 2000; Sit and Paylor 1998; Houlahan 1998; Rogers 1998; Holling 1978).

An adaptive management plan should state the expected outcomes of activities associated with the creation of a wetland mitigation bank, assess possible changes to the predicted condition of the site, and recommend alternatives if the activities do not achieve benchmarks that are themselves explicitly defined and quantified in the plan. An example of an effective adaptive management plan, the "Gateway Parcels 4-5 Habitat Creation and Mitigation Plan," was

developed by CRANE to create and manage significant sandhill crane habitat along the lower Columbia River in southwest Washington and is submitted with these comments.

Section 403 of the proposed rule requires a sponsor to submit an adaptive management plan for a bank site, but fails to guide the sponsor's development of monitoring protocols or effective adaptive management solutions at an appropriate level of detail. Instead, the rule's adaptive management provision is extremely general and appears to rely almost entirely on Section 402 (entitled "Contingency Plan") of the pilot rule. The proposed rule fails to provide sufficiently specific guidelines for development and implementation of a "management strategy" to ensure that certified banks have measures in place to not only implement "contingency actions" in the face of unforeseen change, but to gather and process data to adjust future management activities on the site in response to both changed circumstances and evolving best management practices. The proposed rule should be revised to require that adaptive management plans establish quantitative benchmarks that represent desired site conditions and require monitoring plans to employ methods that can detect statistically valid changes in benchmarks and identify the cause of the change. Additionally, the rule should more fully integrate the required monitoring and adaptive management plans to ensure that monitoring results effectively guide future management activities.

b. The rule's goal of producing wetland banks that result in "ecological benefit" is inadequately defined, as are a number of similar terms used throughout the proposed rule.

The proposed rule includes the goal of "provid[ing] incentives to encourage bank sponsors (sponsors) to locate and design banks that provide the *greatest ecological benefits*." WAC 173-700-100(4)(d) (emphasis added). The rule also provides more favorable credit conversion rates and larger service areas in exchange for banks that are sited and designed to "provide *significant ecological benefits*..." WAC 173-700-300(1) (emphasis added). The proposed rule fails, however, to define bank characteristics that qualify as "ecological benefits" and further fails to quantify characteristics constituting "greatest" or "significant" benefits. In the absence of a more detailed and thorough definition of terms, the rule's emphasis on, and support of, "ecological benefits" has little meaning. Without providing more specific decision-making criteria that are scientifically based, exercise of agency discretion under the proposed rule has no scientifically based standard against which it can be measured and therefore risks the appearance of being arbitrary and capricious.

In addition to the term "ecological benefit", the proposed rule relies on a number of other undefined terms to describe both general goals and concrete requirements for wetland mitigation banks. As has been noted by Goldstein and others, such "ecological buzzwords" are not effective management concepts because their use avoids development of concrete regulatory processes and requirements, fails to adequately inform, and fails to assist in prioritizing management

decisions. (Goldstein 1999). Such "ecological buzzwords" utilized throughout the proposed rule include "ecological functioning";[1] "ecological functions";[2] "ecological processes";[3] "ecological benefit(s)";[4] "ecological suitability";[5] "ecological sustainability";[6] "ecological gain";[7] "ecologically appropriate";[8] "ecological appropriateness";[9] and "environmentally desirable."[10] DOE's reliance on undefined terms as the basis of crucial management decisions is inappropriate. Concepts and processes described in reliance on their use should be revised to implement – with greater clarity and more detail – the rule's goals.

c. The rule should require that performance standards are quantifiable.

The proposed rule defines "performance standards" as:

> measurable criteria for determining if the project goals and objectives are being achieved. Performance standards document a desired state, threshold value, or amount of change necessary to indicate that a particular function is being performed or structure has been established as specified in the design.

WAC 173-700-104. The sponsor is required to provide "performance standards" in the bank instrument in order to determine the success of the bank, WAC 173-700-222(15), and the proposed rule further states that the schedule for the release of bank credits should be "tied to the attainment of performance standards," WAC 173-700-330(1).

The proposed rule requires that "performance standards" be based on the goals and objectives identified in a bank instrument, but fails to provide further guidance to assist bank sponsors in developing and assessing what should be quantitative measures. The operation of the wetland mitigation bank under the proposed rule, including release of bank credits, monitoring, and remedial measures, all rely on a bank's attainment, or failure to attain, required performance standards. DOE should clarify the language in the rule to require that these "measurable" standards are quantitatively-based to ensure that the proposed rule meets its own stated goal "to encourage banking by providing an efficient, predictable statewide framework for the certification and operation of environmentally sound banks." WAC 173-700-100(4).

---

[1] WAC 173-700-315(2)(a); *Id.* § 318; *Id.* § 319, *Id.* § 421.
[2] *Id.* § 302(1); *Id.* § 310.
[3] *Id.* § 303(1)(a)(ii); *Id.* § 314(2).
[4] *Id.* § 100(2), 4(d); *Id.* § 300(1); *Id.* § 501(2); *Id.* § 601(4).
[5] *Id.* § 303(1).
[6] *Id.*
[7] *Id.* § 330(3)(a).
[8] *Id.* § 211(3), (10); *Id.* § 212(8)(a), (b); *Id.* § 222(4), (9); *Id.* § 301; *Id.* § 700.
[9] *Id.* § 212(8).
[10] *Id.* § 502(1).

d. The rule understates the importance of buffers.

Buffers are defined in the proposed rule as "those areas on the perimeter of a bank site that enhance and protect a wetland's functions and values by maintaining adjacent habitat and reducing adverse impacts from adjacent land uses." WAC 173-700-104. Buffers have the essential ability to increase proper functioning of wetland habitat as well as to protect additional species habitat.

The proposed rule fails to emphasize adequately the importance of buffer areas by not sufficiently encouraging their creation or protection. The rule currently provides that buffers may generally contribute to DOE's determination of credit conversion rates for the wetlands they surround. WAC 173-700-304. Instead, the rule should be amended to allow buffers themselves to generate credits directly on an area basis.

e. The rule should require integration of bank sites into applicable watershed management plans.

The proposed rule currently states that a bank's restoration of wetland functions "should be complementary to the restoration of ecosystems and ecosystem processes as identified in state or locally adopted science-based watershed management plans." WAC 173-700-100(3). Rather than ensuring that a bank proposal is "complementary" to processes identified in a watershed management plan, the proposed rule should call for *integration* of the bank into the plan itself, in order to reflect and monitor accurately its impacts on the surrounding watershed. To accomplish this, the proposed rule should also require DOE to coordinate with the state or local agency responsible for developing and adapting the applicable watershed management plan to ensure effective integration of the bank site.

f. The rule should require quantitative hydrological assessments of the wetland mitigation bank site both before and after construction.

The proposed rule should require a detailed quantitative assessment of the pre- and post-construction hydrological conditions of the wetland mitigation bank site. The rule currently requires that a bank prospectus include a "description of alterations to hydrology," when discussing conceptual site design. WAC 173-700-211(8)(d). While alterations to site hydrology are important to approximate in the conceptual design stages of the bank, such estimations are useless without actual and quantifiable evaluations of the particular site conditions. The proposed rule also refers to attainment of "hydrologic performance standards" (*see* WAC 173-700-333, 340) without providing any guidance as to how these standards should be developed and achieved.[11] The proposed rule should explicitly require the use of quantitative models to

[11] *Also see* Section B.1.c of these comments.

assess the hydrological impacts of development of each wetland mitigation bank both before and after bank construction.

g. The rule provides inadequate guidance for assessment of wetland functions and should not permit bank sponsors to use their "best professional judgment" as a substitute for scientific method.

The proposed rule states that a wetland function assessment requires "the use of scientifically based quantitative and qualitative methods developed for assessing functions, as well as the use of best professional judgment." WAC 173-700-104. The rule does not provide any indication as to what these quantitative and qualitative methods are and should be amended to include specific function assessment methods or provide sponsors with other appropriate guidance documents. Furthermore, the provision as it is drafted can be interpreted to allow bank sponsors to substitute their "best professional judgment" for the use of more standardized methods to assess wetland function. The proposed rule should also be amended to indicate that "best professional judgment" is a last resort (Lackey 1997a, 1997b), and should not be equated with the use of tested scientific methods.

2. The rule grants an inappropriate level of agency discretion to provide exceptions.

The proposed rule gives DOE excessive discretion to grant exceptions to its requirements. For example, under WAC 173-700-320, DOE has the authority to grant exceptions to the range of credit conversion rates stipulated in the rule, only requiring that DOE make these determinations on a "case-by-case basis," and base exceptions on "ecological considerations." This provision essentially authorizes DOE to permit *any* wetland mitigation bank to violate requirements of the rule as long as DOE is able to demonstrate that the decision was based on *some* ecological consideration.

Additionally, WAC 173-700-321 authorizes DOE to exempt a bank sponsor from compliance with the proposed rule's required credit determination method if DOE approves of a sponsor's alternative method. The provision does not include substantive parameters that an alternative credit determination method must meet, instead allowing DOE to grant an exception so long as the alternative method is documented in the instrument, is "appropriate for the Pacific Northwest;...[and] applicable for use on projects debiting from the bank." WAC 173-700-321.

Finally, WAC 173-700-300 gives DOE the authority to "make decisions regarding the application of specific incentives on a case-by-case basis." The rule notes that specific incentives *may* include more favorable credit conversion rates and larger service areas, but authorizes DOE to develop other incentives as the agency sees fit. Other than requiring that DOE use incentives to "encourage the siting and designing of banks that provide significant

ecological benefits," the rule does not provide any parameters to indicate when DOE's use of incentives is warranted.

The proposed rule gives DOE the authority to grant exceptions to its provisions without requiring adequate justification. As a consequence, DOE's exercise of discretion has no scientifically based standard against which it can be measured and therefore risks the appearance of being arbitrary and capricious. The proposed rule should list specific criteria that a bank sponsor must meet in order to qualify for an exemption to provide DOE with a standard on which to base its decision making and against which its decisions can be reviewed.

3. The rule ignores possible negative impacts of bank construction on endangered species and their habitat.

Under Section 9 of the Endangered Species Act, wetland mitigation banks are prohibited from "taking" or harming any listed species. 16 U.S.C. § 1538. Both the U.S. Fish and Wildlife Service and the National Marine Fisheries Service have interpreted the term "harm" to encompass "significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering." 50 C.F.R. §§ 17.3, 222.102. CRANE recognizes that under WAC 173-700-211, a bank sponsor is required to demonstrate how a proposed project will comply with applicable federal, state and local rules before the bank can be certified. However, as evidenced by the language in Section 303 of the proposed rule, DOE has deemed it necessary to consider "[w]hether the process of establishing the bank at the site will *protect or enhance*...habitat for threatened, endangered, or candidate species," in determining whether the proposed bank is "ecologically suitable" for certification. The rule does not conversely require DOE to consider the risk that construction of a proposed bank will *negatively* impact a species or its habitat. Construction of a wetland mitigation bank can involve the conversion of diverse types of wetland habitat into more uniform, forested wetlands. While it is true that some endangered or threatened species might hypothetically benefit from the creation and protection of a specific type of wetland habitat, others which may already be using the habitat in its pre-banked form could be harmfully affected when habitat that is critical for their survival is substantially altered to construct a wetland mitigation bank. If the proposed rule considers benefits to listed species and their habitat in determining site selection, the rule should be amended to recognize the fact that the creation of a wetland mitigation bank could harm listed species and their habitat, and further inquiry into the nature and scope of the impacts of the bank should be required.

4. DOE should delay all pending bank certifications until the final rule is adopted.

Some wetland mitigation banks were certified and are currently operating under the pilot rule program. However, DOE continues to review proposed bank instruments under pilot rule requirements *after* issuing revised rule language for consideration and adoption. DOE initiated the pilot rule program to develop regulations "to provide compensatory mitigation in an efficient, predictable, and economically and environmentally responsible manner." RCW 90.84.005(1); *see also* WAC 173-700-100. Certifying bank instruments drafted to meet requirements of a pilot rule that DOE has since rejected in favor of recently proposed rule language will create a system of mitigation banks that is inefficient and unpredictable. For example, DOE has changed the applicable wetland credit conversion rates for various mitigation activities. WAC 173-700-313. The potential number of credits listed in a bank instrument certified under the pilot rule might fall outside the acceptable range for the same type of mitigation activity dictated by the proposed rule. DOE should discontinue the certification process under the pilot rule at this time and require bank instruments currently under review to conform to the provisions of the final rule when it is adopted.

Thank you for your consideration of our comments.

Sincerely,

Kathryn C. Gehret

KCG:kcg

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Gateway Parcels 4-5 Habitat Creation and Mitigation Plan

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Gateway Parcels 4-5 Habitat Creation and Mitigation Plan

I

Mission Statement

The mission of the Gateway Parcels 4-5 Habitat (the "Habitat") is to provide a significant, managed feeding, loafing (including day-roosting), and possible night-roosting area for the coastal flock (the "Flock") of the Pacific Flyway population of sandhill cranes, which stage and winter along the lower Columbia River. The Habitat intends to help redress the loss of foraging habitat in the Vancouver lowlands, by providing for sandhill crane staging and overwintering habitat needs. It will supplement foraging and roosting habitat currently present on adjacent federal refuges and state wildlife areas, as well as privately owned areas.

The sandhill crane is designated as an endangered species by the state of Washington. Only about twenty pairs nest in the state. The Flock currently numbers about 3000-4000 birds. This population appears to be a unique segment of the larger overall western crane population, nesting wholly on the islands and near shorelines of British Columbia and southeast Alaska. The Flock stages during migration along the Columbia River in southwest Washington and Northwest Oregon, in the bottomlands at and near Ridgefield National Wildlife Refuge, Sauvie Island, and Vancouver Lake. About a thousand cranes stay through the winter; the remainder winter in the Central Valley of California. (Littlefield and Ivey, 2002; Ivey *et al.*, 2006.)

Sandhill cranes prefer a mix of wet meadows and open, low-lying uplands with feeding opportunities and long vistas. The Habitat will create and enhance these conditions. They are increasingly rare in the Pacific Northwest: east of the Cascades, conditions are often too dry; west, increasingly, land not forested is developed for human use. Thus, while designed primarily to serve cranes, the Habitat will also be advantageous to diverse other wildlife species with similar needs, which are also at risk of losing their preferred habitat types.

Staging and wintering sandhill cranes have further needs that the Habitat will address. For loafing, the birds favor large, relatively shallow wetlands, secure and undisturbed; the Habitat will include these. For foraging, the Habitat will provide extensive agricultural crops and also suitable wetlands and wet meadow. Cropping will require irrigation but will have minimal need for other human intervention. So that the birds will not be disturbed, there will be visual buffers of native trees and shrubs along roads and trails, and fencing and posting to close the area to public use. There will need to be an agreement with an agency with law enforcement authority to enforce the closure. To reduce mortality, power lines will be buried or marked, and threatening

fencing will be marked as well.

This Habitat Creation and Mitigation Plan (HCMP or "Habitat Plan") has been developed by the Columbia River Alliance for Nurturing the Environment (CRANE) with the ongoing assistance of Dr. Robert Dillinger, Coast Range Environmental Services. CRANE would also like to acknowledge extensive advice from (alphabetically): Jed Barzen, Director of Field Ecology for the International Crane Foundation; Joseph D. Engler, U.S. Fish and Wildlife Service; and Gary Ivey, Western Crane Conservation Manager, International Crane Foundation.

Following construction, the Habitat will be administered by a private nonprofit organization.

II

Background

This background material derives largely from Littlefield and Ivey (2002), which is the source of all quotations here. Within these quotations, citation references are not included.

Population and Migration Patterns. "The sandhill crane has been listed as an endangered species by the state of Washington since 1981. Sandhill cranes are represented in Washington by a small number ... that breed in Klickatat and Yakima Counties, about 23,000 ... that stop in eastern Washington during migration, and 3000-4000 ... that stop on lower Columbia River bottomlands." These last make up the Flock.

"Up to 1,000 sandhills have wintered on lower Columbia bottomlands in recent years, but most of the cranes [that stage in western] Washington winter in California." "[W]intering cranes regularly move back and forth between [the Vancouver Lake lowland and Sauvie Island] areas."

Sandhill cranes "marked at Ridgefield ... and Sauvie Island ... [migrated in spring] along the coastline northward to Cape Flattery and the British Columbia and Alaska coasts."

It thus appears that the Flock is isolated during breeding and migrating seasons. During the winter, Flock cranes that proceed to California mingle there with other sandhill cranes from the Pacific Flyway and Central Valley populations.

Feeding, Loafing, and Roosting. Wintering and staging sandhill cranes "feed in a variety of habitats; security from disturbance and tradition are key factors in selection of areas during migration and winter. Birds generally concentrate in agricultural regions which have extensive areas of small grain crops. However, associated wetlands are still used for some feeding, as well as for nighttime roosting and mid-day loafing. Cranes usually leave roosting locations in the early morning and fly to nearby grainfields, where they feed until mid-morning. ... At Ridgefield ..., sandhill cranes use areas with agricultural crops, pasturelands, hayfields, and wetlands."

"Sandhill cranes forage by probing, surface gleaning, and occasionally by spearing. Generally, the species can be categorized as an opportunistic omnivore. ... In spring, cranes primarily eat macroinvertebrates. ... In autumn and winter sandhills feed on waste grains to help meet their high energy demands during migration and for survival through the winter period. Migrational staging sites are important for conditioning cranes for migration. Principal grains consumed are milo, corn, wheat,

oats, barley... Cranes using the Ridgefield - Sauvie Island area have [also] been observed feeding on ... chufa (nutsedge) tubers."

"Sandhill cranes migrating and staging within the lower Columbia ... roost [at] Ridgefield ... and on Sauvie Island... Those using the refuge roost primarily on Campbell Lake ... [and also] in small numbers on shallow managed units of Bachelor Island, the River 'S', and Carty units when water levels are low and/or management practices have reduced the emergent vegetative cover and provided shallow mudflats." Some birds roost on private wetlands such as Canvasback Lake on Bachelor Island. Cranes at Sauvie Island primarily roost at Sturgeon Lake.

Habitat Status. "The lower Columbia bottomlands staging area is the only sandhill crane use-area in the United States adjacent to a major metropolitan area, and habitat will continue to be threatened. ... Few, if any, alternate migrational stopover sites are available between northern California and southeastern Alaska for birds which migrate west of the Cascade Range. Habitat in the area needs to be protected if this crane flock is to continue to survive."

The planned restoration of Shillapoo Lake "would flood agricultural fields and pastures and restore native wetland vegetation. ... The effects on cranes of this change are not clear. Some seasonal foraging area for migrants may be lost, but roosting sites and native foods may increase."

"The Port of Vancouver owns the 1,011 ac[re] 'Columbia Gateway' property. It is agricultural, woodland and wetland, and perhaps 75% receives a high level of use by cranes. ... [Planned development] would use fill ... to raise [much of] the area above seasonal flooding" and convert it to industrial uses.

"Other habitat losses in this region are anticipated. Former row-crop agricultural land on Sauvie Island has recently been converted to tree nurseries. Additional agricultural lands on Sauvie and Woodland bottoms have been planted to cottonwood plantations. Other uses that have been responsible for incremental losses of crane habitat include tulip production, berry crops, smaller industrial developments, residential development, and public recreational development."

The federal and state refuges in Clark County, Washington and on Sauvie Island, Oregon do not presently list the sandhill crane as a priority species in their mission statements. While some consideration is presently given cranes at these refuges anyway, that consideration cannot be ensured into the future. (For example, Ridgefield's mission statement presently mentions only dusky Canada geese, for which the refuge was established. It is possible that sandhill cranes will be singled out in the next refuge plan, but of course what can actually be done for them year to year is dependent on budget.) And, hunting at and near the refuges can disturb cranes even

when secure areas have been set aside for them.

"On the wintering grounds in the [California] Central Valley, agricultural lands traditionally used by cranes are being lost to urban expansion, as well as conversion to incompatible crops such as vineyards and orchards." This loss of traditional winter habitat may be motivating increased crane overwintering in the Columbia bottomlands.

Until recently there has been no systematic monitoring of sandhill crane use on Parcels 3, 4, and 5, although there is anecdotal evidence of extensive sandhill crane use there for many years.

Cranes use the upland areas for foraging and loafing. Surveys of Management Units 5A and 5C in fall 2003 and winter 2003-04 also reported flocks of as many as 400 cranes around the area of ponded water known as wetland 5g. When ponding was extensive, cranes used the area for midday roosting as well as for loafing between forays into uplands.

In spring 2007 and from fall 2007 through spring 2008, CRANE retained Coast Range Ecological Services systematically to monitor sandhill crane use of the Gateway properties, with additional monitoring at the Shillapoo wildlife area just north of Gateway and on Sauvie Island, Oregon. The monitoring also included Canada geese, which forage along with cranes, particularly where there is grain to be gleaned.

There was extensive crane and goose use of Gateway in fall 2007 during and immediately following corn harvest there, from early October through mid-November. Cranes numbered from several dozen to over 900 per day, while 2000 to 8000 geese used Gateway daily. After that, use declined somewhat but was still moderate until mid-January, when crane use virtually disappeared, though daily goose numbers were still around a thousand. Interpolating crane and goose numbers on days without observations, CRANE estimates that from October through January there were approximately 17 thousand crane days and 367 thousand goose days on Gateway, with goose use thus some 22 times as common as crane use, reflecting the magnitudes of the local populations. (A "crane day" or "goose day" is the passage of a daytime by one crane or goose.) Since a Canada goose's calorie consumption is about two-thirds that of a sandhill crane, we may say that there were a total of 278 thousand "calorie-equivalent crane days" at Gateway during the four-month period. This is very roughly consistent with the amount of forage material available to the birds over the period, emphasizing that both species, especially geese, were consuming more than only waste corn.

During the periods February through mid-April of 2007 and 2008, thousands of crane and goose days are summarily approximated as follows:

	2007	2008
Thousand crane days	1.7	1.1
Thousand goose days	161	111
Ratio	95:1	104:1

The numbers are broadly consistent. Of course, there was no corn available during this period. As noted above, during this time of year, cranes were likely foraging for invertebrates, small vertebrates and perhaps tubers. Geese, on the other hand, are likely eating new grass. Thus the species are not in direct competition for food; indeed, at this time of year cranes and geese were often seen in different parts of Gateway and other bottomlands. Correspondingly, the ratio between them may reflect the relative abundance on Gateway of the types of food.

In summary, the Flock spend roughly 20 thousand crane days per year at Gateway. Because they are greatly outnumbered by Canada geese, which consume the same food during the period of most intensive crane use, several dozen times as much crane food is required to support the Flock in practice than would be needed in the absence of geese.

III

The Gateway Parcels 4-5 Project

In November 2003, the Port of Vancouver USA (the "Port"), CRANE, Paul L. King, and the Port of Portland, Oregon, agreed in a recorded contract (the "Settlement Agreement"), *inter alia,* to devote Gateway Parcels 4 and 5 to habitat for sandhill cranes. The loss to cranes of use of Parcel 3, which will largely be devoted to industrial purposes, will be redressed by improving habitat on Parcels 4 and 5 to "include feeding and loafing habitat for Sandhill Cranes ... that provides the same functions and values as the habitat that currently exists on Parcels 3, 4 and 5 together. Improvements ... may include, but are not limited to, excavation and grading of [Parcels 4 and 5], improvement of soils, establishment of new wetlands, improvement and enhancement of existing wetlands, and plantings of trees, shrubs, grasses, crops and other plant life" on the parcels. (Settlement Agreement, paragraph 4.1(a).) As noted above, the Parcels 4-5 habitat required by the Settlement Agreement is referred to here as the Habitat.

The Habitat will be constructed before any development may take place on Parcel 3 (except for placing dredge spoils in a particular area). This construction includes all grading, any soil modification needed at the outset, planting and establishing wetlands, constructing the irrigation system for agricultural units, initial planting and establishing of upland flora. (Settlement Agreement, paragraph 4.3.)

The Habitat will be administered by a private nonprofit organization selected by CRANE and the Port and holding conservation easements on Parcels 4 and 5 suited to the conservation and maintenance needs of the Habitat (the "Easement Holder"). The Easement Holder's administration of the Habitat will include, without limitation, the maintenance, agricultural operation, adaptive management, and general oversight of Parcels 4 and 5. In advance of accepting the easements and assuming administrative responsibility, the Easement Holder will determine the ongoing cost of administration. The Port will establish a fund sufficient to maintain and protect the habitat status of Parcels 4 and 5 ongoing, which will be managed, administered, and used by the Easement Holder. The Easement Holder will accept the administration of Parcels 4 and 5 and receive the easements and the funds prior to any development on Parcel 3 (except for the placing of dredge spoils previously noted).

In administering Parcels 4 and 5, the Easement Holder will follow a Habitat Maintenance Plan as specified by the Settlement Agreeement. (See, for example, paragraph 4.1(b).) That Habitat Maintenance Plan is included here as the Adaptive Management and Monitoring Plan, Section IX.

Given the requirements of this Habitat Plan, the Easement Holder will need to have or be able to contract for expertise in wetland and upland management and maintenance (including, without limitation, ponded areas, wet meadows, upland grasslands, wetland and upland forests), irrigated agricultural operations, wildlife monitoring and analysis of data generated, sandhill crane biology, and adequate expertise in the biology of other native fauna. The Easement Holder will also need expertise in the stewardship and defense of complex easements on a significant parcel of land and its habitat.

IV

Layout of Gateway Parcels 4-5

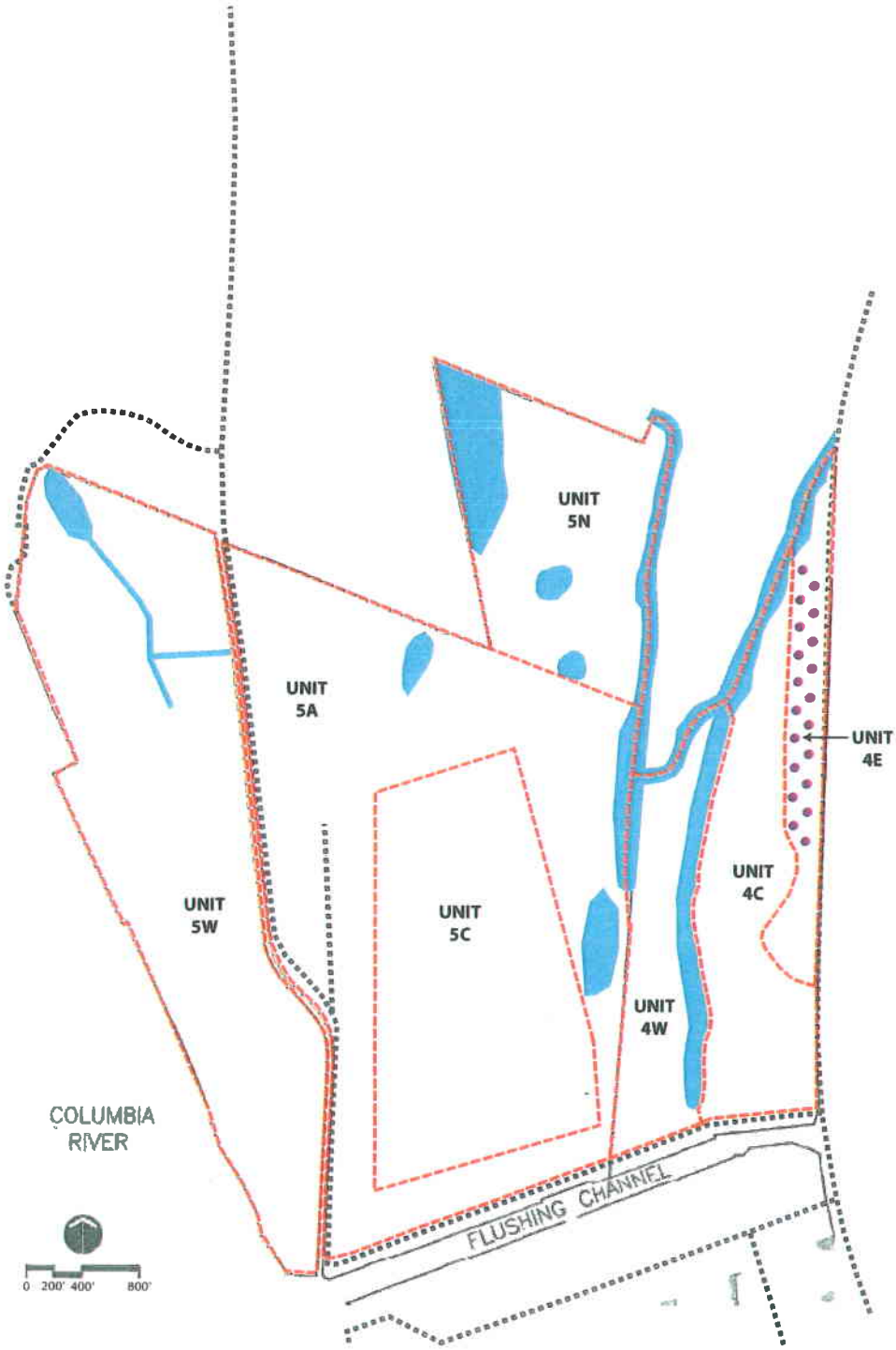
Map IV-1 shows the layout of Gateway Parcels 4 and 5.

Gateway Parcel 4 is bounded on the south by Lower River Road, on the west by Buckmire Slough and Parcel 5, on the north by Washington Department of Fish and Wildlife (WDFW) land (the Shillapoo Wildlife Area), and on the east by Rieger Road. It totals about 113 acres.

This Habitat Plan designates three management units on Parcel 4. Unit 4E (about 20 acres) runs along Rieger Road, from the northeast corner of the parcel to the small grove of cottonwoods a few hundred yards north of Lower River Road. It includes the area of a possible future well field as well as the grove. Unit 4C is a long strip of about 70 acres between 4E and the slough. Unit 4W is the area of about 23 acres including the slough and the area between it and the western boundary of Parcel 4.

Parcel 5 is bounded on the south by Lower River Road, on the west by a dike separating it from the Columbia River, and by part of Frenchman's Bar Park, on the north by Frenchman's Bar Park and WDFW land, and on the east by Buckmire Slough and Parcel 4. Lower River Road turns northward near the southeast corner of Parcel 5 and transects the parcel south to north. Parcel 5 totals about 430 acres.

Parcel 5 comprises four management units. Unit 5W is the part of Parcel 5 lying west of Lower River Road, about 125 acres. Unit 5C is a roughly trapezoidal area initially planned for about 70 acres, lying in the center of the part of Parcel 5 east of Lower River Road. Unit 5N is the part of Parcel 5 jutting to the north at the eastern side, comprising about 50 acres of upland and wetland. Unit 5A is the large, annular portion of Parcel 5 (approximately 185 acres) east of Lower River Road, surrounding Unit 5C, and south of Unit 5N.



Existing Wetlands
City of Vancouver Water Wells
Parcel Boundaries
Roads

Gateway Site, Parcels 4 and 5

Map IV-1

V

Habitat Creation Overview

Cranes prefer long vistas and relatively short vegetation (less than eighteen inches) in order to be able to see potential predators in time to defend themselves. The conversion of Parcel 3 will eliminate significant acreage with this topography and vegetation. In redress, Parcels 4 and 5 will be regraded to create long vistas to the extent practicable. Native flora established in loafing and roosting areas will be short enough for crane comfort, even when mature, or will be maintained during cranes' absence at less than eighteen inches.

The Parcel 3 conversion will also eliminate wetlands useful to cranes for loafing and some foraging. In redress, Parcel 5 will have a large ponded-wetland/wet-meadow complex established along the west side and maintained to include depths suitable for crane loafing (including roosting) and foraging during their staging and overwintering. In addition, smaller seasonal wet areas will be established in Parcel 4 and other parts of Parcel 5, suited to crane foraging and loafing. (A slough in Parcel 4 will be enlarged too. This will not benefit cranes directly, but will increase wetlands in the area and contribute to overall vegetation and wildlife diversity.)

All of Parcels 3, 4, and 5 have been devoted to agriculture for many years, primary to pasture or planted to corn, sudangrass, or sorghum. The loss of food from the elimination of crop and pasture sources on Parcel 3 will be redressed, in part, by establishing about 190 acres of irrigated cropland on Parcels 4 and 5, rotating crops best suited to cranes and managed for them. Since Canada geese eat all the row crops that cranes do, particular management will be carried out to minimize crop consumption by geese in order to make more food available for cranes.

The Flock strongly prefers isolation from human disturbance. Most of Parcel 3, which will be lost to cranes, is now well isolated from humans during much of the cranes' staging and overwintering period (from mid-September to late April). As well, the only industrial activities abutting Parcels 3, 4, and 5 have been an aluminum smelter and a waste transfer station, both of which are reasonably quiet. Parts of Parcels 4 and 5 are also relatively isolated from humans; still, a variety of human uses currently can disturb cranes on other parts of these parcels. These include, but are not restricted to, motorized traffic on Lower River Road and Rieger Road, nonmotorized recreation paths along these roads and also on the dike on the west side of Parcel 5, and hunting on Washington state land abutting the Habitat to the north. In addition, there will be the potential for disturbance from industry on Parcel 3 once it is developed. Any further development of other land abutting Parcels 4 and 5 could also disturb the Flock.

A variety of measures will be undertaken to reduce present and expected disturbances. Forested or thick shrubbery buffers will be created to shield Parcels 4 and 5 from current human disturbances. Additional buffers will be constructed on Parcel 3 between the industrial area and Parcels 4 and 5, and on Parcels 4 and 5 themselves. To increase the overall extent of wetlands, some of these buffers will be forested wetlands. In addition, some fencing may be needed to preclude trespass by humans or pets; if so, it will be well marked to avoid crane collisions. The Port and CRANE will both work as necessary to prevent any further disturbance to Parcels 4 and 5 arising from any other development of proximate lands. Finally, to the extent practicable, all maintenance of Parcels 4 and 5 will be carried out during times of year when cranes are not present (roughly, late April through mid-September). There will be some exceptions here to prepare mature crops for crane use; this activity will be timed appropriately to minimize crane-human interaction.

Collisions with power lines are a major cause of sandhill crane death and injury. To the extent practical, power lines on or near Parcels 4 and 5 will be buried. Where burial is not practical, lines will be marked frequently with devices that will alert cranes (and other birds) to their presence and the need to avoid them.

V.1 Wetlands

The purpose of the created wetlands in the Habitat (aside from the slough enlargement and forested wetland strips) is to provide foraging and loafing (including roosting) opportunities for the Flock. The wetland on the western side of Parcel 5 will be designed to accommodate these "depth-critical" activities throughout the staging and wintering seasons. Depth variation within these wetlands will be gradual. The water-holding capacity of the soil will be tested and the soil will be adjusted as necessary to be able to contain water at proper depth. Above-water areas will be level enough to preclude burrowing by predators. Submergent flora suitable for crane feeding will be established in the deepest areas, while appropriate emergent plants will be at the water's edge and upland. There are a variety of options for these flora, and experiment, experience, and the use of adaptive management protocols will indicate which are best suited for the area and for the birds.

In addition to the large wetland on western Parcel 5, smaller, seasonal wet areas will be established elsewhere on Parcel 5 to provide loafing and some foraging opportunities. Soils will be tested and modified as needed to hold water. Retention capacity will be particularly important in these areas, which will lie above the natural water table. Flora will be species useful for crane food and not too tall for crane comfort; again, experiment, experience and the use of adaptive management will determine the most suitable vegetation mix.

Because water depths are designed for crane comfort, they may not always be ideal for the control of noxious weeds. To the extent this is so, human intervention in the interest of weed control can be carried out during seasons when cranes are not present.

V.2 Agriculture

Three locations within Parcels 4 and 5 will be established for irrigated row crops. The two locations in Parcel 5 will be about 50 and 70 acres and the one in Parcel 4 about 70 acres. Each location will be rotated through several crops suited to cranes. Possible choices include corn, sorghum, wheat, and field peas. The crops will be grown for the birds and not for human use. In the case of corn, the plants will be maintained for crane rather than goose consumption when mature, by leaving most of the corn stalks standing at a level that cranes can use but geese will avoid. (This can be achieved by "bumping" the corn down with a bar behind a tractor and leaving crane stalks about one meter high.) In the case of wheat, it is possible that early goose consumption will make the crop impractical or inefficient for cranes; experience will tell. Other crops may prove apt as well. It is also possible that it will prove appropriate to subdivide one or both of the larger fields and plant more than one crop in them. The adaptive management plan (Section IX) provides guidance for making such judgments.

The simplest mode of irrigation uses a system of pipes and sprinklers. This requires substantial human labor (and attendant supervision) during the growing season. While that labor would not interfere with crane use, it may or may not be possible to find. If it is not, then more capital-intensive but less labor-intensive means may be necessary. Whatever irrigation method is used, the exact arrangement of irrigation water sources will be laid out during Habitat construction planning - though it may need modification if the choice of irrigation method proves impractical. The amount of water used will be determined by the needs of the individual crops. The water rights appurtenant to the land should be sufficient to provide for the irrigation water needed.

Agricultural practices will be designed to maintain the landscape as friendly to wildlife. Minimum-till methods will be used as appropriate, in particular to leave enough litter on the ground for use by small animals and birds. Insecticides will be avoided.

Crane experts have identified that at present, adequate food in congenial habitat is the most critical issue for the Flock while staging and wintering in the Columbia River bottomlands. The situation could worsen if and as crop patterns change on Sauvie Island, at Shillapoo Lake, or at Ridgefield. Accordingly, the initial Habitat scheme calls for about as large an agricultural expanse as practical in Parcels 4 and 5, with

necessarily less area for loafing as a result. Should conditions evolve so that appropriate food is more readily available elsewhere and other crane needs are less well met, then the Habitat can be modified in the future to address such developments.

V.3 Privacy from Humans

Coastal Northwest sandhill cranes have generally been very skittish of people. Regularly, they shun people they see as far away as a quarter mile or more.

Protection from new sources of industrial or commercial disturbance. The Port will create a forested buffer on Parcel 3, designed under CRANE leadership, to help block disturbance that might be caused by development there. (See the Planting Plan, Section VIII) As well, building and some other activities will be kept out of an additional setback area on Parcel 3, as stipulated in the Settlement Agreement. The Port also agrees not to participate in any form of commercial, industrial, or residential development north of the Flushing Channel and south of Ridgefield, between the Columbia River and Vancouver Lake, as detrimental to cranes' opportunity for peaceful enjoyment of the Habitat guaranteed by the Settlement Agreement.

Protection from disturbance by nearby motor vehicles. Vegetative buffers (forested and/or thick shrubbery, as designed by CRANE; see the Planting Plan) will be established along roadsides in Parcels 4 and 5.

Protection from disturbance by nearby nonmotorized human uses. Additional vegetative buffers and/or fences will be established where parts of Parcels 4 and 5 abut recreational trails or Washington state lands open to people (including hunters during certain times when cranes are also present). The buffers and fences will keep people and pets from entering the parcels and also diminish visual and vocal disturbances by humans or pets to cranes and other wildlife in the Habitat. In addition, the city/county parks department has agreed to close the recreation trail along the dike on the west side of Parcel 5 during crane season, until such time as vegetation will render access to Parcel 5 impossible from the trail and also will make trail users invisible and nearly inaudible to Parcel 5 wildlife. [*Verbal communication with David Judd, at the time the director of Vancouver/Clark County Parks.*]

Protection from overhead power lines. Collision with overhead lines is a major cause of death for sandhill cranes. To help avoid these collisions, power lines at and near the Habitat will be buried to the extent practical, and when above ground will be well marked so as to increase visibility to cranes and other birds adequately to avoid collisions.

Protection from disturbance by maintenance activities in the Habitat itself. The

City of Vancouver may establish a limited number of water wells within the northeast part of Parcel 4. The city has agreed to a design that is unobtrusive to wildlife use of the parcel; the city has also agreed that all non-emergency maintenance of the well field will take place during times of year when cranes are not present. (See Appendix 2.)

Farm, landscape, and wetland maintenance of the parcels will also largely take place during times of year when cranes are not present. Practices that must take place during crane staging and wintering seasons, such as maintaining mature crops for crane consumption, will be undertaken at times of day when cranes are not present.

Observation by people. The city/county parks department has expressed interest in constructing observation blinds on city park property abutting Parcels 4 and 5, from which people could view cranes and other wildlife using the Habitat. To that end, elevated blinds could be established between the Flushing Channel and Lower River Road, or at parts of Frenchman's Bar Park, which would allow viewing the Habitat, especially through binoculars or spotting scopes. Informative signs or brochures could be available as well. When open for use, blinds must be attended, perhaps by Audubon Society volunteers, as at Ridgefield. When unattended, the blinds must be locked to prevent misuse detrimental to Habitat wildlife.

Sources cited:

Ivey, G.L., C. P. Herziger, and T.J. Hoffmann. In press. Annual Movements of Pacific Coast Sandhill Cranes. Proc. North American Crane Workshop 9:000-000.

Littlefield, C.D., and G.L. Ivey. 2002. Washington State Recovery Plan for the Sandhill Crane. Washington Department of Fish and Wildlife. Olympia, Washington. 71pp.

VI

Physical Site Description and Grading Plan

VI.1 Description of Current Situation

Most of Parcels 4 and 5 is rather flat at about 20 feet elevation. Following are the exceptions.

The northwest corner of Unit 5A drops away to about 15 feet elevation as it approaches Lower River Road. The west side of Unit 5N varies from 10 to 15 feet elevation; part of it is wetland. Between Parcels 4 and 5 is Buckmire Slough, part of which lies in the Habitat (some in each parcel). Its elevation is 10 feet or less. On the east edge of the slough, the land rises quickly to the 20-foot level. On the west, the elevation rises quickly to a plateau at about 15 feet, then rises quickly again to about 20 feet. Much of the slough area is wetland. Much of the northern end of unit 5W has elevation around 15 feet, dropping into a ditch around 10 feet. Part of this area is also wetland.

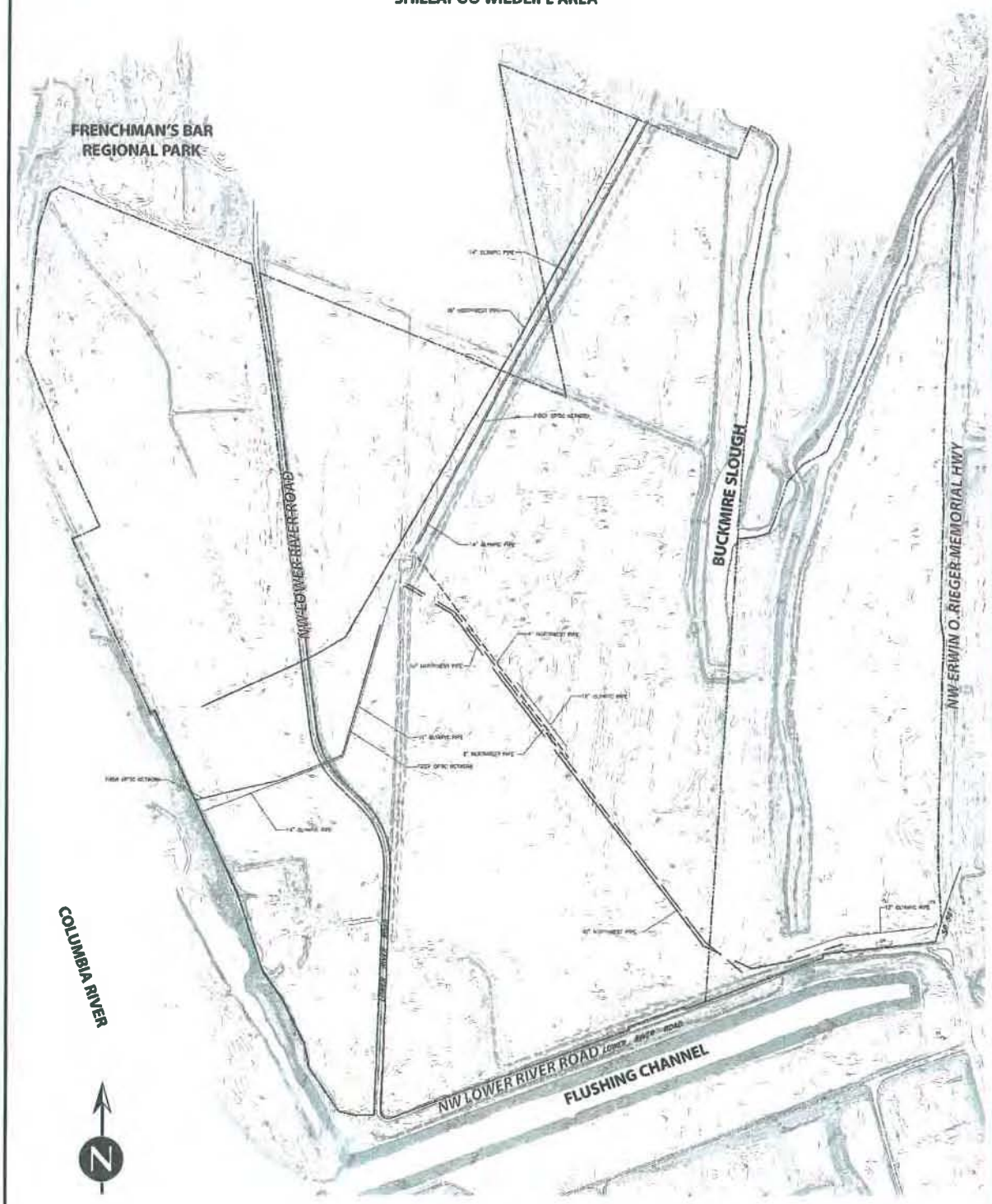
Several berms (originally established to contain dredge spoils) rise to 25-30 feet elevation. One of these is along the southern edge and part of the western edge of Unit 5A. Others run N-S, NNE-SSW and WNW-ESE within Units 5A and 5C. On Unit 5N and part of northeastern Unit 5A, there is fill deposited from Vancouver Lake, bringing the elevation above 20 feet and up to around 23 feet in places.

Map VI-1 shows the current topography of the site.

The soil of Parcels 4 and 5 is rather consistently silty loam, with varying amounts of sand and clay. This make-up characterizes both the original Sauvie Island silt-loam soils and also deposits of dredge spoil from Vancouver Lake.

There are several farm buildings on Unit 5W and a gas pipeline control station on Unit 5A. A gravel road runs north in Unit 5A from Lower River Road to the control station.

There is a paved path for human recreation along the eastern edge of Unit 5W (next to Lower River Road) and also along part of the south edge of Unit 5A, all of the south edge of Parcel 4, and part of the east edge of Unit 4E.



Gateway Parcels 4 and 5 Current Topography

Map VI-1

VI.2 Grading Plan

The Grading Plan will be carried out by the Port at its expense, consistent with this HCMP, as overseen and approved by CRANE. CRANE and the Easement Holder will satisfy themselves that the Grading Plan has been accomplished prior to the Easement Holder's accepting easements and management responsibility as part of this HCMP. No development of Parcel 3 (except for limited placement of dredge spoils) may occur before this and other prerequisites are fulfilled.

Existing wetlands on-site will be protected using geotextile silt fences downslope of any excavation (placed prior to advent of any earth moving), construction fences for limiting disturbance, and stabilization of soils using native grass seed.

CRANE and the Port will create an Erosion Control Plan prior to grading, which will be followed in the grading process. In particular, tackifier will be added to soils at slopes of 5:1 or greater, to cohere the soils and retard erosion.

Soils will be amended where needed to produce the organic materials necessary for wetland soils and the subsequent growth of wetland plants. These amendments include organic matter in the form of aged woodchips and sawdust tilled in at a rate of approximately 0.2% by volume (0.2 ft^3 per ft^3 of site soils) and slow-release nitrogen fertilizer (sulfur coated urea) at a rate of 0.25 pounds per 1,000 ft^2. At present, no plan exists for salvage of wetland soils from Parcel 3, as these contain a seed bank heavily dominated by reed canarygrass (*Phalaris arundinacea*).

The buildings on Unit 5W will be removed. The control house on Unit 5A will remain. The gravel road leading to it will be modified to be made of untreated .25-inch (#4 sieve) gravel. The power line leading to the control house will be buried.

The recreation trail along the southern edge of Unit 5A and Parcel 4 and along the eastern edge of Unit 4E will be relocated, in part across Lower River Road and in part across Rieger Road.

The City of Vancouver has the right to locate a well field in the northern end of Parcel 4. The design of the well field is memorialized by agreement among the city, CRANE, and the Port and is reproduced elsewhere in this report. (See Appendix 2.)

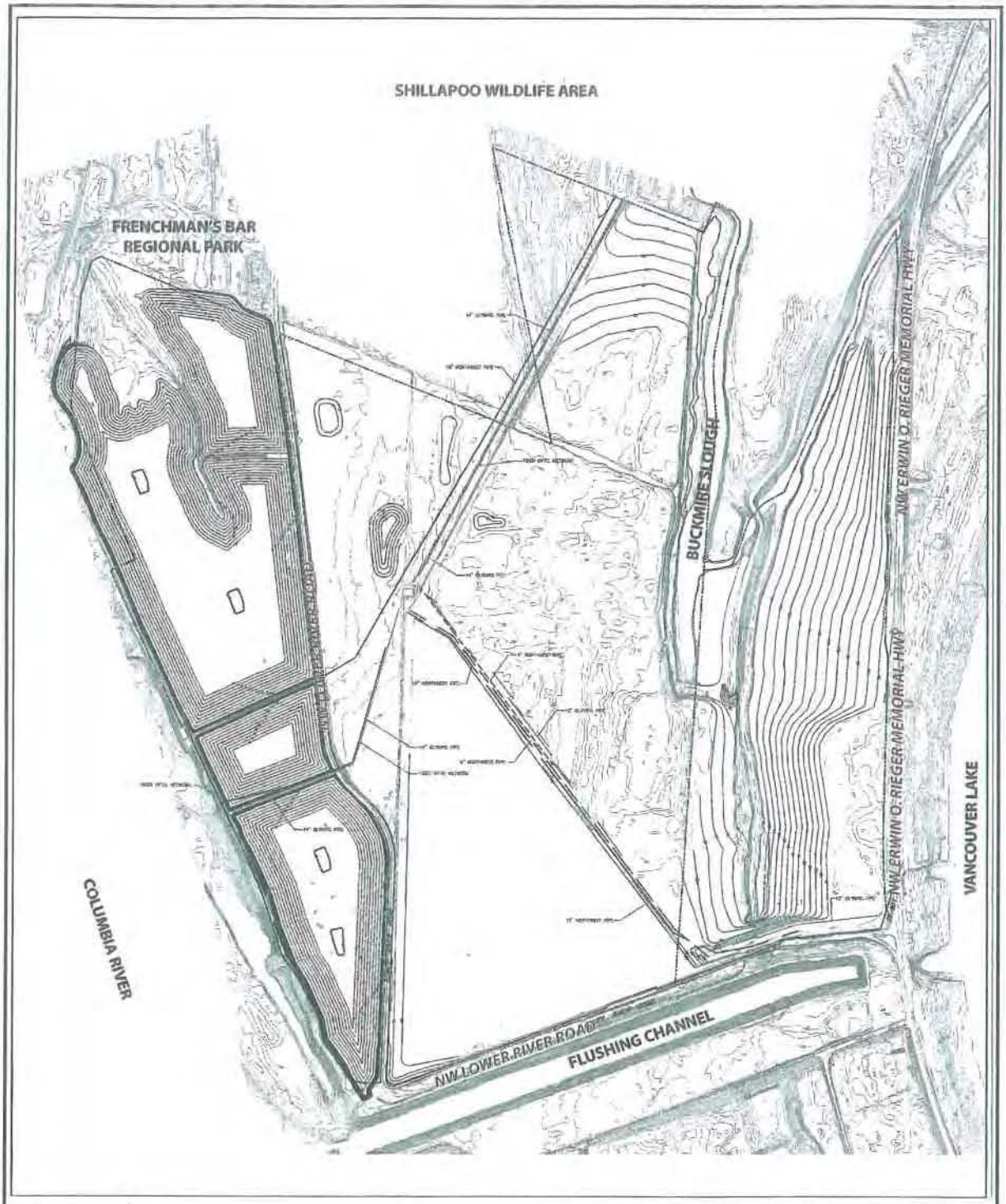
The interior berms on Parcel 5 will be leveled. The filled parts of Units 5N and 5A will be graded gradually downward from 23 feet to 15 feet. (The extreme north end of the filled area is WDFW land. The state has informally agreed that fill may be removed from its land here in order to complete the uniform grading. [*Verbal agreement between Brian Calkins, Washington Department of Fish and Wildlife, and Paul L. King, representing CRANE.*]) The existing tree snags on Unit 5N will be maintained, and the

site graded down from them. The forested wetland adjacent to Buckmire Slough will be enlarged by removing the plateau currently at about 15 feet elevation and lowering the elevation there to about 10 feet. The berms along the edges of Unit 5A will be retained. The southeast corner of the unit will be leveled at 20 feet elevation. Finally, a few shallow indentations will be excavated in the northwest part of Unit 5A to create seasonal wet areas.

In Unit 5W, the current wetlands will be left alone. The upland bulk of the region will be excavated to create several shallow ponds with some small internal islands. The ponds will be designed to fulfill goals enunciated in the Mission Statement (Section I) and Implementation Overview (Section V). The exact elevations and contours are dependent on the results of a hydrological study to be completed by the Port, which was not ready as of May 2008.

All the grading plan is compatible with the soils on the parcels. The drainage of the soils is also believed consistent with the establishment of wetlands and seasonal wet areas as shown.

Map VI-2 shows a topographic map after grading is complete. Please note that the excavated areas in the western region are subject to modification if required by the hydrological study mentioned above.



HCMP Grading Plan for Gateway Parcels 4 and 5

Map VI-2

VII

Agricultural Plan

The Easement Holder will raise and manage crops on Unit 5C, about 70 acres, Unit 4C, about 70 acres, and the plateau portion of Unit 5N, about 50 acres. The selection of fields for specific crops is a complicated, yearly decision, based on soil characteristics and rotations for maintaining fertility and weed controls.

The Agricultural Plan in this section first considers general agricultural issues for the Habitat (irrigation, crop rotation, and general field preparation), then addresses issues for each of the specific crops that will be grown (corn, sorghum, field peas, wheat).

VII.1 Irrigation

Units 4C, 5C, and 5N will be irrigated. The irrigation system will be designed by CRANE and the Port once the depths needed for wells and the labor available for operation are known. Drilling wells, acquiring irrigation equipment, and establishing the system as operational will be carried out by the Port as part of the construction of the Habitat.

VII.2 Rotation

Each field will be rotated through several crops. Crops chosen for rotation are corn, sorghum, and field peas. Wheat may be attempted; however, experience in this region shows that wheat is consumed early and thoroughly by Canada geese, and therefore may not be useful for cranes. Any wheat planting will be done in conjunction with other crops, and will consist of up to the first 10 rows of a field.

The initial planting rotation will be as follows:

	Year								
Field	1	2	3	4	5	6	7	8	9 (re-starts Year 1)
5C	C	C	C	P	C	C	C	P	C
5N	C	P	C	C	S	P	C	C	C
4C	C	C	P	C	C	S	P	C	C

C = corn, S = sorghum/sudangrass, P = peas

Crop rotations will be arranged to maximize value to sandhill cranes, while sustaining the productive capability of the site. Other rotations (including other crops) may be tried to maximize the nutritional benefit for staging and overwintering cranes. Any alteration of the primary crop plan will be made consistently with the adaptive management plan (see Section IX).

VII.3 General Field Preparation

The cultivation and preparation of soils for planting (field tillage) greatly influences present and future yields. The Habitat agricultural operation will use a combination of conservation tillage and no-till methods, where possible.

Tillage

Tilling begins by clearing the field of weeds and any crop residue. Plowing represents the most expensive and most complete method of tilling. It lifts and turns over the soil deeper than does disking, while also incorporating crop residue into the soil, aerating the soil, controlling weeds, and preparing the seedbed. The expense results from the high power requirement and slow speed of the narrow plows. Disk harrowing chops and rolls the upper soil 6 to 8 inches deep, burying crop residues and weeds. This technique requires large and powerful equipment, which must take wide turns to offset its slow speeds. Ripping uses long steel shanks to lift the soil. While this helps aerate and reduce compaction, it does not turn the soil over, leaving crop residue on the soil surface. The use of smaller, faster equipment makes this approach less expensive than disking.

In no-till farming, the soil is left intact and crop residue remains on the field. Variations involve some working of the field, but attention is paid to methods of reducing soil compaction and carbon loss. Specialized equipment is necessary to plant seeds into undisturbed soils. Other methods of conservation-oriented tillage leave as much as 30% of the crop residue on the field.

Other approaches to tilling and managing the crop residue on the field include chopping and chiseling. Chopping cuts and chops residue near the ground and leaves it on the soil as a mulch. Chopping facilitates decomposition of the crop residue on the soil surface, minimizing the need for tillage such as plowing and disking to incorporate a large amount of residue. Chopped crop residues also help suppress weed growth by restricting the amount of light reaching the soil surface. This also reduces cost over that involved in disking in the residue. Using a heavy imprinter or incorporator to roll chopped fields in spring, following the departure of sandhill cranes and prior to planting,

will push remaining residues beneath the soil and corrugate the soil surface.

Chiseling uses a chisel plow to penetrate and break up the compacted soil surface by vibration. It leaves crop residue on the soil surface. Changing chisel point shapes and sizes can vary the degree of soil aeration. Chiseling is cheaper than tilling or chopping, but fails to turn over the soil.

Whatever the tillage methodology, crop residues will be left on the fields. These residues provide food for cranes and other wildlife. They also contribute nutrients and organic matter to soils through decomposition. Chopped residue also serves as food for vertebrates and invertebrates, which in turn represent food sources for wintering cranes, raptors and other birds, and mammals. The residue also provides a protection from wind or water erosion.

Herbicides

Because of the exceptional moisture-holding capacity of the Habitat's existing soils, weed control will be a major challenge to growing a successful crop. The intent of the Habitat cropping plan is to use as little insecticide or herbicide as possible, if any; however, this simply may not be practical. In particular, pesticides may be precluded near created jurisdictional wetlands. The Easement Holder will determine the precise regimen.

The alternative option to herbicides is mechanical control (*e.g.*, disking or hand methods). Disking also presents a problem if a field remains wet for too long, precluding the use of heavy equipment.

Any herbicide mixes and rates will vary according to the weeds targeted. Use will be determined yearly to ensure compliance with regulatory constraints. Pre-treating corn seed with systemic insecticides eliminates the need for further use at planting.

VII.4 Corn

A number of varieties of corn are suitable for growing in southwestern Washington. Thorough, detailed soil analysis should be done prior to seed selection. Each variety will be evaluated, using the methodology outlined in the adaptive management plan, for yield characteristics in each field.

Specific Planting Requirements

Prior to planting, the soil should be tilled as needed to form a smooth, level seed bed. Planting on well-drained soils ensures an early planting and healthy crop growth;

well-drained soils warm faster and are less likely to have soil-borne diseases. This requirement may delay planting on the Habitat site, at least initially. Once soils develop, this should no longer be an issue. According to guidelines for corn production, seeds should be planted 1-2 inches deep, 8-10 inches apart within the row, and with rows 36 inches apart. Plant populations will likely range between 17 and 22 thousand plants per acre.

Corn should be planted in late April through early June in western Washington. Most years at the Habitat, planting should occur in early to mid-May. Floating row cover, an agricultural grade fabric, can be used to protect emerging seedlings from bird damage and advance maturation by as much as two weeks. The row cover should be placed loosely over the newly seeded field and secured every 10 feet along all sides with soil. The row cover can be removed after corn plants reach a height of 4 to 6 inches. Removing the row cover also facilitates weed control activities.

Fertilizers

In the spring, prior to planting, a soil test to determine lime and fertilizer requirements will be conducted. The optimum pH range for good corn growth is 5.8-7.0. If indicated by soil test results, agricultural lime will be applied in the spring at the recommended rates. Most laboratories recommend lime application rates based on a soil SMP (Shoemaker-McLean-Pratt) buffer test that takes into account soil textural class and soil organic matter. Phosphorus (P) and potassium (K) fertilizer should be applied at planting, based on the results of soil field tests. Potassium may be applied in a band at planting; however, no more than 60 pounds per acre should be banded. Also, to avoid seedling damage, the total potassium plus nitrogen (N) in the band should not exceed 90 pounds per acre. If necessary, potassium will be broadcast and incorporated prior to planting.

Nitrogen is difficult to quantify in the soil. A fall soil test is not an accurate measurement of nitrogen west of the Cascades because winter rains leach nitrogen from the soil. A spring soil test is also problematic, as cool spring temperatures prevent organic matter decomposition and nitrogen mineralization. It is the mineralized nitrogen that is measured in the soil test; thus, a spring test will result in artificially low nitrogen levels. If needed, 30–50 pounds of nitrogen per acre should be applied at planting in a band along with the phosphorus and potassium fertilizer. The total nitrogen plus potassium in the band should not exceed 90 pounds per acre, or seedling damage will occur.

If fertilization is deemed necessary, broadcasting and incorporating potassium should take place prior to planting to avoid excess amounts of fertilizer in the band. The remaining nitrogen should be applied in a band 6 inches from the plants when the plants are 1 to 1½ feet tall, approximately 6 weeks after planting.

Irrigation

Irrigation is beneficial for growing corn in the Pacific Northwest, where the seasonal precipitation from May through September is 4-6 inches. The seasonal water requirement for corn is 12-14 inches. Precipitation plus irrigation should equal a rate of 2 inches of water four times from mid-June till late August, for a total application of 8 inches. If rainfall accumulates during the growing season or the soil receives sub-irrigation, it may not be necessary to irrigate.

Weed Control

Weeds should be suppressed until corn plants have reached a height of 2 feet. Early weed competition delays corn maturity and reduces yield. During the growing season, weed control will consist of mechanical cultivation between corn rows and hand cultivation within the row. Propane flaming can also be effective against weeds. At least two weedings will likely be necessary.

As the season progresses and the plant canopy closes in, the demand for weed control will drop. See the earlier discussion for specifics on herbicide types and their use. Herbicides should be applied when corn plants and weeds are at the size and/or leaf stage described on the herbicide label.

VII.5 Peas

As in the case for corn varieties, thorough and detailed soil analysis should be done prior to seed selection of peas. This will then be used to select varieties for planting. Each variety will be evaluated for yield characteristics in each field, using the methodology outlined in the adaptive management plan (see Section IX).

Peas grow best in fields with uniform fertility, soil type, slope, and drainage. The best soils are silt loams, sandy loams, or clay loams, which are prevalent on the Gateway site. Peas require a good supply of available soil moisture, but yields may be reduced by over-irrigating as well as under-irrigating. Peas grown on wet soils develop shallow root systems which cannot supply the plant's water requirements when the soil dries out later in the season. Root rot is often a problem in wet soils.

Specific Planting Requirements

A soil test will be used to establish corrective lime and fertilizer needs. The pH will be adjusted to 6.5 or higher for maximum yields. The land will be harrowed, and a cultipacker used lightly to ensure a firm seed bed. Care must be exercised to avoid subsurface compaction as this contributes to limited aeration and rooting and

predisposes roots to a number of root pathogens.

Peas tolerate cool soil temperatures but respond poorly to the flooded or excessively wet soils associated with early spring planting in western Oregon and southwestern Washington. Germination occurs at 40 to 85 degrees F, ideally 50-75 degrees F. Planting will be as soon as the soil can be worked in the spring (typically mid-May at the Habitat). Seeds will be drilled at a uniform depth of 1½ to 2 inches, dropping 3 to 6 seeds per foot of row, with rows 6 to 8 inches apart. This should produce plant populations per acre of 350,000 for standard varieties to 480,000 for small seeded varieties, which tend to have lower emergence.

Any small-seeded varieties must be planted shallowly in order to obtain the best stands. These peas are less vigorous than the standard types, and so need to be planted where moisture is close to the surface, and in the more fertile fields. If moisture is adequate and not excessive, a light rolling may be advantageous. Heavy rolling or packing is likely to reduce root growth, fertilizer uptake and pea root nodulation, and to increase the number of plants affected by root rot.

Fertilizers

Pea seeds will be inoculated with *Rhizobium* bacterium in a planter box treatment immediately before seeding when planted on soils not previously planted to peas (the initial planting for each of the Gateway fields).

Fertilizer application for vegetable crops should ensure adequate levels of all nutrients. Optimum fertilization is essential for top quality and yields. Rates of 20 to 30 lb nitrogen per acre at planting time are suggested, banded with phosphorus and possibly potassium. Peas have the capacity to fix atmospheric nitrogen, and have been shown to use this nitrogen more effectively than applied nitrogen. The application of nitrogen at rates higher than those indicated may be detrimental to nitrogen fixation by the plant and also to yields.

Phosphorus is essential for vigorous early growth of seedlings. Preferably phosphorus, nitrogen, and, where required, potassium in quantities up to 60 lb K20 per acre, should be applied in a band 2 inches to the side and 2 inches below the seed at planting time. When banding equipment is not available, 20 to 30 lb nitrogen per acre and 40 to 80 lb P205 per acre can be drilled with the seed. If required, additional P205 and K20 can be broadcast and plowed down prior to planting. Potassium should be applied and plowed down before planting or banded at planting time as described above.

Potassium should not be included with nitrogen and phosphorus when fertilizer is drilled with the seed. In a 2" x 2" band application of nitrogen, phosphorus, and

potassium, the potassium rate should not exceed 60 pounds K20 per acre. Where required, additional potassium should be broadcast and plowed down prior to planting. Plants absorb sulfur in the form of sulfate. Fertilizer materials supply sulfur in the form of sulfate and elemental sulfur. Elemental sulfur must convert to sulfate in the soil before the sulfur becomes available to plants. The conversion of elemental sulfur to sulfate is usually rapid for fine (less than #40 mesh) materials in warm, moist soil.
Sulfur in the sulfate form can be applied at planting time. Some sulfur fertilizer materials such as elemental sulfur and ammonium sulfate have an acidifying effect on soil. Sulfur is sometimes contained in fertilizers used to supply other nutrients such as nitrogen, phosphorus, and potassium, but may not be present in sufficient quantity.

When the soil test value is below 0.5 meq Mg/100g or when calcium is ten times more than magnesium, an application of 10-15 pounds Mg per acre, banded at planting, will be needed. Magnesium can also be supplied in dolomite, which is a liming material and reduces soil acidity to about the same degree as ground limestone. Dolomite should be mixed into the seed bed at least several weeks in advance of seeding and preferably during the preceding year. An application of dolomite is effective for several years.

Peas are fairly sensitive to soil acidity and are responsive to liming of acid soils. Lime application will occur when the soil pH is 6.0 or below, or when calcium levels are below 5 meq Ca/l00g of soil. Lime should be applied at least several weeks before seeding and preferably the preceding year and mixed with the surface 5 to 6 inches of soil.

Some soils may have a fairly high SMP buffer value (over 6.5) and a low pH (below 5.5), caused by the application of acidifying fertilizer. In this case, the low pH value is temporary and the pH of the soil will increase as the fertilizer completes its reaction with the soil. This temporary "active" acidity from fertilizer is encountered following recent applications of most nitrogen fertilizer materials. Acidifying fertilizers also have a long term acidifying effect on soil that is cumulative and leads to lower SMP buffer readings.

Sandy soils to which fertilizers have not been recently applied sometimes record low pH and high SMP buffer values. In such cases, a light application of I to 2 T lime/acre should suffice to neutralize soil acidity. For acid soils low in magnesium (less than 0.8 meq Mg/100g of soil) 1 ton per acre dolomite lime can be used as a magnesium source. Dolomite and ground limestone have about the same ability to neutralize soil acidity.

Irrigation

Peas should not be irrigated before flowering unless the ground is very dry and

germination would not otherwise occur, or unless the crop is severely wilted. Irrigation before flowering may actually decrease yield.

Irrigation is proper when flowers are first opening. This is when peas are most responsive to irrigation because root growth ceases and demand for moisture is high.

Peas do not generally respond to irrigation after flower petals begin to fall, and irrigation at this stage may increase disease incidence.

VII.6 Sorghum

Sorghums (*Sorghum bicolor*) are summer annual grasses characterized by rapid growth in the late spring and summer. Those grown for forage in the United States include grain sorghum, grass sorghums, and sudangrass (*S. bicolor*; formerly *S. sudanense*). All can survive considerable drought stress and provide a valuable addition to year-round forage systems where summer production of quality forage is often a problem. Sorghums and sudangrasses also produce cyanogenetic glucosides. This plant product decomposes under certain conditions to form toxic hydrocyanic (HCN) or prussic acid. Normally, the intact glucoside is present, and this is not harmful. However, wilting and frost damage cause the formation of HCN.

Various sorghum hybrids are available. These are often called sorghum-sudangrass hybrids. These hybrids are generally produced by crossing a male-fertile sudangrass parent with a male-sterile female parent of sudangrass, forage sorghum, or grain sorghum. Commercially available hybrids are low in HCN. The sudan-sorghum hybrids, like sudangrass, can be cut or grazed twice in one season. Also available are taller types (8 to 10 feet) that are harvested once for green chop or silage.

Specific Planting Requirements

Good seed germination of sorghum requires warm soil temperatures (above 55 degrees F). Cool soil temperatures result in much poorer germination. Planting should occur in late spring or early summer, after the time when corn is first planted. Cool temperatures in the fall also reduce production; a compromise must be reached between soil temperature and length of growing season.

A well-prepared, firm, moist seed bed is best, although good stands have been made using stubble or reduced tillage planting machinery. Seed will be drilled from 3/4 to 1½ inches deep, depending on soil moisture and texture. Row spacing has little effect on yield, but rows too far apart result in plants with large stems and reduced forage quality.

Some compaction of the seed bed is desirable to improve soil-seed contact, especially where soil moisture is marginal. Broadcast seeding can also be made with seeding rates somewhat higher than those for drilled planting. Cover seed after seeding by disking or using a harrow or drag.

Fertilizer

Sorghum will grow in low-fertility soils or moderately acidic soils. but it grows best when adequately fertilized in soils ranging from pH 5.7 to 7.0. Moderate amounts of soil salinity will not reduce yields significantly. Generally, the summer annual grasses are fertilized with 30-60 pounds of phosphorus and 60-120 pounds of potassium per acre. Yield responses, however, have not been demonstrated on soils with medium amounts of phosphorus or potassium. Linear yield response to nitrogen fertilization has been demonstrated for applications up to 200 pounds of nitrogen per acre. Split applications of nitrogen are essential for uniform growth and balanced plant nutrition.

VII.7 Winter Wheat

Any winter wheat planting should occur at the Habitat from the end of August to early September, which avoids planting activities during the time that cranes will be arriving on-site. Planting after a period of cool weather is preferred, as this results in reduced aphid population and less possibility of aphid damage to young wheat plants. However, avoiding disturbing cranes is paramount. If planting is delayed until after cranes arrive, it must be carried out at times of day when they are not expected in the fields.

Specific Planting Requirements

A conventional seed bed is prepared while the soil is still dry. It is important to avoid excess pulverization. Planting should use 100-120 pounds of seed per acre (25 to 30 seeds per square foot). Seed may be saved by plugging the drill rows in areas immediately above the furrows. Use normal calibration to adjust the seeding rate.

A flexible roller, packer, or harrow that follows the contour of the ridge and is pulled behind the drill will firm the ridges or beds, enhance germination, and reduce the possibility of herbicide injury to wheat seedlings. Beds must have a crown to encourage surface water runoff.

Surface drainage is important as wheat is likely to be killed if water stands on fields for more than a few days during the vegetative growth stage. Planting wheat on ridges will improve survival on poorly drained valley floor soils. Since most poorly drained lands are infested badly with annual ryegrass, fall weed control is imperative.

Ridging of poorly drained fields can be effective only if the water collecting in swales and the lowest portions of the fields is drained by temporary ditches or waterways. If excess surface water is allowed to pond over the ridges, this method of planting will fail.

Fertilizer

Soil sampling and testing procedures for phosphorus, potassium, and lime will be used to estimate fertilizer and lime needs. Many poorly drained soils are acidic. Winter wheat tolerates moderately acidic (pH 5.4) soils. An application of lime to raise the pH to 5.6 or more is beneficial. It is advantageous when 20-25 pounds per acre of nitrogen as a mixed fertilizer is banded with the seed. Wheat yields probably will not be increased by liming above pH 5.7. Lime application is not suggested if the soil pH is 5.8 or higher. Lime should be mixed into the seed bed before seeding. Lime applications are effective for several years.

Banding phosphorus, potassium, sulfur, and some nitrogen fertilizers with or near the seed at planting has proven to be an effective method of fertilizer application for small amounts of nutrients and immobile nutrients such as phosphorus and potassium. Fertilizer placed with the seed can delay emergence and reduce stands during exceptionally dry years.

Wheat sulfur requirements can be provided by an application of 10 to 15 pounds per acre sulfate at planting time or 30 to 40 pounds per acre of finely ground elemental sulfur the preceding year.

Wheat response to magnesium has not been observed in western Washington. Trial applications of magnesium are suggested where soil test levels are below 0.5 meq magnesium per 100 g soil. Magnesium can be banded at 10-15 pounds per acre at planting as Su1Mag or K-Mag. Magnesium also can be supplied as dolomitic lime applied to neutralize soil acidity. Mix dolomite into the seed bed before seeding.

Wheat in western Washington has not been observed to respond to applications of micronutrients such as boron, manganese, and zinc.

VIII

Gateway Parcels 4-5 Planting Plan

The Planting Plan covers those parts of Gateway Parcels 4 and 5 (and a section of Parcel 3) not covered by the Agriculture Plan (Section VII). The installation and initial establishment of basic assemblages (as described below) will be carried out and paid for by the Port under the oversight and with the approval of CRANE, as part of the Habitat construction, prior to the Easement Holder accepting easements related to the HCMP and assuming administration of the Habitat. Subsequent management of these assemblages will be carried out by the Easement Holder consistent with this Planting Plan and the Adaptive Management Plan (Section IX). In particular, in the event of initial failure of parts of this Planting Plan, the Planting Plan and Adaptive Management Plan guide the Easement Holder in flexibility it might use to establish appropriate flora in the non-cultivated units of Parcels 4 and 5.

VIII.1 Basic Assemblages

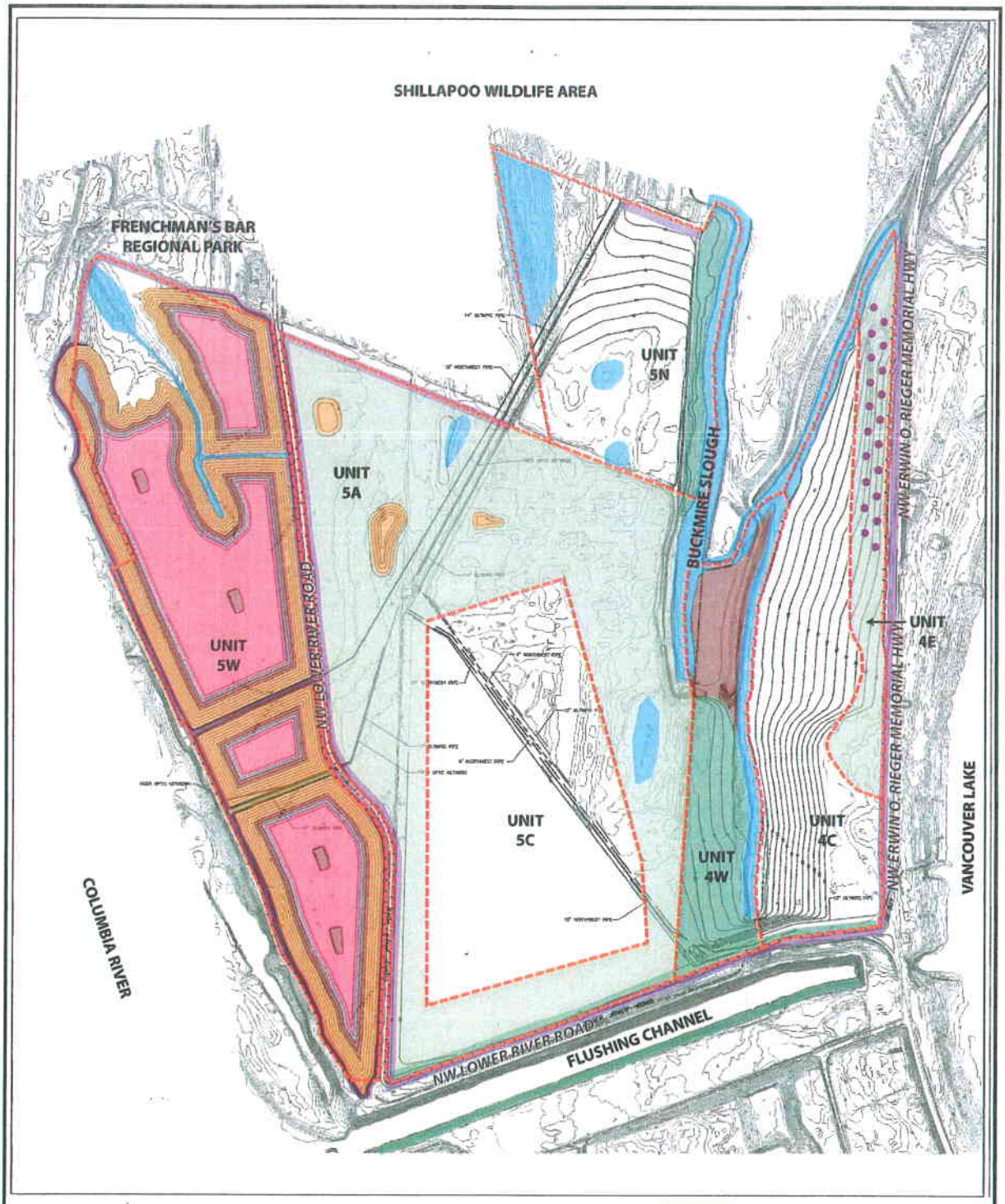
The Planting Plan for Parcels 4 and 5 comprises seven different assemblages of plants (outside the agricultural Units). The locations for each assemblage are shown on Map VIII-1. The assemblages are as follows:

Pond Assemblage 1 (6-8 feet elevation)

Species	Common Name	#/Acre
Naja flexilis	slender water nymph	1300
Isoetes occidentalis	western quillwort	1300
Scirpus acutus	hardstem bulrush	2000

Pond Assemblage 2 (7-8 feet elevation)

Species	Common Name	#/Acre
Sagittaria latifolia	wapato	1300
Potamogeton pectinatus	sago pondweed	1300
P. zosteriformis	flatstem pondweed	500
Alisima plantago-aquatica	water plantain	1000



HCMP Planting Plan for Gateway Parcels 4 and 5

Map VIII-1

Figure 3 Planting Plan 2008-08-11 (rev. 8/11/2008)

Pond Assemblage 3 (8-10 feet elevation)

Species	Common Name	#/Acre
Carex stipata	saw-beaked sedge	1500
C. obnupta	slough sedge	1200
C densa	sedge	1200
Scirpus microcarpus	small-fruited bulrush	2000
Sparganium emersum	burreed	1500
Juncus ensifolius	swordleaf rush	1400

For all pond assemblages, individual plants should be two inches apart within clumps of 30 to 50, spaced 1-2 feet apart.

Wet Meadow Assemblage (10-15 feet elevation)

Species	Common Name	#/Acre
Deschampsia caespitosa (divisions)	tufted hairgrass	2700
Glyceria elata (bare root plantings)	manna grass	1000
Carex spp. (lower elevations)	sedges	4500

For these species, individual plants should be two inches apart within clumps of 30 to 50, spaced 1-2 feet apart.

Plus seed mix at 10 pounds live seeds per acre:		Percent of Mix
Deschampsia caespitosa	tufted hairgrass	35
Carex spp.	sedges	25
Grindelia integrifolia	Puget Sound gumweed	10
Eryngium petiolatum	Oregon coyote thistle	10
Plagiobothrys figuratus	fragrant popcornflower	10
Downingia elegans	blue calicoflower	10

Scrub-Shrub Assemblage
(for berms and surrounds at 15'+ elevation)

Scrub-Shrub Story

Species	Common Name	#/Acre
Sambucus racemosa	red elderberry	200 18-24" saplings
Rosa nutkana	Nootka rose	200 18-24" saplings
Spireae douglasii	Douglas spireae	200 18-24" saplings
Salix fluviatalis	Columbia River willow	200 1-6' tall bare root saplings
Crataegus douglasii	Douglas hawthorn	100 1-6' tall 2-gallon container plants

Each species should be planted in clusters of 3 to 5, 6 feet apart.

Berberis nervosa	dwarf Oregon grape	8000	bare root plants, 6" apart

Native Grass Understory

Seed mix at 20 pounds live seeds per acre:

Species	Common Name	Percent of Mix
Festuca rubra	red fescue	20
Elymus glaucus	blue wild rye	20
Beckmannia syzigachne	slough grass	15
Bromus carinatus	California brome grass	20
Agrostis exarata	spike grass	10
Glyceria sp.	manna grass	10
Other upland grasses and forbs		5

Other upland grasses and forbs include such plants as *Galium parisiense*, yarrow (*Achillea millefolium*), and wall bedstraw *(Eriophyllum lanatum*).

Forest Assemblage

For both forested wetlands and uplands, also for the Vegetative Buffer on Parcel 3.

Tree Story

Species	Common Name	#/Acre	Planting Specifications
Thuja plicata	western red cedar	12	30' tall, 25' apart
Picea sitchensis	Sitka spruce	12	30' tall, 25' apart
Cratetegus douglasii	Douglas hawthorn	24	5-12' tall, 6' apart

Fraxinus latifolia	Oregon ash	100	30-60' tall, 25' apart
Malus fusca	Pacific crabapple	15	15-35' tall , 25' apart
Populus balsamnifera	black cottonwood	160	80-140' tall, 25' apart
Prunus emarginata	bitter cherry	6	20-50' tall, 25' apart
Rhamnus pushiana	cascara	18	20-40' tall, 25' apart
Quercus garryanna	Oregon white oak	12	40-60' tall, 25' apart
Salix fluviatilis	Columbia River willow	210	20' tall, 25' apart
Salix lasiandra	Pacific willow	9	30' tall, 25' apart

Scrub-Shrub Story

Species	Common Name	#/Acre	Planting Specifications
Sambucus racemosa	red elderberry	200	18-24" saplings
Rosa nutkana	Nootka rose	200	18-24" saplings
Spireae douglasii	Douglas spireae	200	18-24" saplings
Crataegus douglasii	Douglas hawthorn	180	1-6' tall 2-gallon container plants

Each species should be planted in clusters of 3 to 5, 6-8 feet apart.

Berberis nervosa	dwarf Oregon grape	8000	Bare root plants, 6" apart

Native Grass Understory

Seed mix at 20 pounds live seeds per acre:

Species	Common Name	Percent of Mix
Festuca rubra	red fescue	20
Elymus glaucus	blue wild rye	20
Beckmannia syzigachne	slough grass	15
Bromus carinatus	California brome grass	20
Agrostis exarata	spike grass	10
Glyceria sp.	manna grass	10
Other upland grasses and forbs		5

Other upland grasses and forbs include such plants as *Galium parisiense,* yarrow (*Achillea millefolium*), and wall bedstraw *(Eriophyllum lanatum*).

Upland Prairie Assemblage

Seed mix at 20 pounds live seeds per acre:

Species	Common Name	Percent of Mix
Festuca rubra	red fescue	20
Elymus glaucus	blue wild rye	20
Beckmannia syzigachne	slough grass	15
Bromus carinatus	California brome grass	20
Agrostis exarata	spike grass	10
Glyceria sp.	manna grass	10
Other upland grasses and forbs		5

Other upland grasses and forbs include such plants as *Galium parisiense,* yarrow (*Achillea millefolium*), and wall bedstraw *(Eriophyllum lanatum*).

VIII.2 Enhancement of Existing Wetlands

Non-native species will be removed from all existing wetlands.

There are four perched wetlands on Parcels 4 and 5. Perched wetlands 5a and 5b (on Unit 5N) will continue to be farmed, as in the past. Perched wetland 5c (on Unit 5A) is basically a cottonwood grove and will be left alone beyond removal of any non-natives. Perched wetland 5g (also on Unit 5A) will receive enhancement plantings to help mitigate years of agriculture and grazing. This area will receive a seed mixture of approximately 10 pounds live seeds per acre containing:

Species	Common Name	Percent of Mix
Deschampsia caespitosa	tufted hairgrass	35
Carex spp.	sedges	25
Grindelia integrifolia	Puget Sound gumweed	10
Eryngium petiolatum	Oregon coyote thistle	10
Plagiobothrys figuratus	fragrant popcornflower	10
Downingia elegans	blue calicoflower	10

VIII.3 Planting Specifications

Plant materials will be installed in accordance with standard landscape practices. Recommended time for planting is early spring (March to May), but this will not occur until after the sandhill crane migration through the area is over, usually late April.

Woody plant species having a ball and burlap root structure will be planted in a hole two feet greater than the diameter and depth of the root ball.

The planting of bare root stock requires that a hole be dug twice the diameter and approximately 5-6 inches deeper than the root spread or root depth. This will accommodate the roots without restriction.

Plants will be located within the excavated hole such that the root mass is at the same elevation as the ground. The hole will then be backfilled with the previously excavated soils.

All plants will be watered at the time of planting, with supplemental watering throughout the dry season. To prevent weed growth, mulch will be applied in a radius of 3 feet around the plant.

Seeding of groundcover will commence immediately following the completion of grading. Seeding will use a broadcast hand spreader. No hydroseeding will be permitted. Mulch will be spread at the standard rate of 2000 pounds per acre. All seeds planted throughout the site will satisfy any handling requirements (stratification and/or scarification) prior to planting.

IX

Adaptive Management and Monitoring Plan

The Adaptive Management and Monitoring Plan (the "AMP") laid out in this section begins, after this introduction, with a general description of adaptive management. It then describes in some detail the adaptive management procedures for the Gateway Parcel 4 and 5 wetlands. This is followed by a somewhat less detailed discussion of upland Habitat adaptive management. Each of these lengthy segments includes discussions of managing habitat flora (generally and in particular units or wetland areas), crane use, and use by other fauna. The wetland segment also includes a discussion of managing water. The AMP concludes with a description of analytic and reporting requirements.

IX.1 Introduction

The primary goal of Gateway Parcels 4 and 5 is to be a major, active feeding, loafing (including day-roosting), and possible night-roosting area for the coastal flock of Pacific Flyway sandhill cranes. These birds stage during migration and in some cases overwinter in the bottomlands at and near Ridgefield National Wildlife Refuge, Sauvie Island, and Vancouver Lake along the Columbia River in southwest Washington and northwest Oregon. The improvements to habitat on Parcels 4 and 5 should provide all the benefits to cranes once provided on Parcels 3, 4, and 5 altogether, and redress the loss to cranes of the use of Parcel 3, the result of anticipated industrial development. This AMP is designed to foster and assess the success of the habitat enhancement, and modify the enhancement plan if and as needed.

The AMP describes actions to be taken should the goals described in this HCMP not be met once this HCMP is implemented. The AMP also includes the monitoring and statistical protocols necessary for evaluating the outcomes of the initial and subsequent actions. When possible, a quantitative measure will be specified for each goal (Ehrenfeld 2000, Tear et al. 2005). All monitoring points should have established parameters, with sufficient spatial and temporal sampling replication to establish and assess trends, and the statistical power to determine any change (Kraemer and Thiemann 1987).

All non-crane surveys will be carried out at times of the day, during seasons, or in locations where there no cranes, to avoid disturbance.

IX.2 Adaptive Management

Because adaptive management is often misunderstood and in particular oversimplified, we begin with a short description of the process.

Adaptive management states the expected outcomes of the habitat enhancement activities, assesses any changes to the predicted condition, and recommends alternatives if the enhancement activities do not achieve explicitly defined and described benchmarks and/or mileposts. It uses the principles of adaptive environmental assessment and management to establish and predict outcomes, reduce the uncertainty about variability, and conduct sensitivity analyses.

Central concepts of adaptive management are the incomplete nature of existing ecological knowledge and the elusiveness of many attempts to increase understanding. Limitations of time and/or financial resources serve to restrain scientific inquiry. The added problems of resource scarcity, potential irreversibility, and growing demands compound the problem. Agencies and regulatory/management entities try to avoid more and more expensive scientific studies that delay the implementation of apparently necessary actions, and seem never to resolve uncertainty sufficiently to proceed with confidence.

Adaptive management provides a structured process for learning which management actions best meet management objectives, and for reducing resource management uncertainty. In its most effective form, an experimental approach tests clearly formulated hypotheses about important but uncertain components of a system (Walker et al. 2002). Adaptive management has proved itself as the best approach for complex problems (Holling 1978, Walters 1997, Dawe et al. 2000, Walters et al. 2000, Marmorek and Peters 2001, Lal et al. 2002, Wilson 2006, and many others), and also has great potential to replace more traditional management structures in smaller systems (Johnson 1999b). While expensive to initiate, the payoff comes with its potential for less expense in the long term (Johnson 1999a).

Adaptive management, done properly, reduces uncertainty while conducting management actions. An effective program deals with three groups of uncertainties:

> Those which cannot be eliminated or reduced, but whose magnitude and relative importance can be estimated. These comprise the "unknowable responses" or "true surprises" that arise from the ever-changing character of ecosystems and their response to unprecedented perturbations.
>
> Those arising from lack of understanding and principles. These comprise such elements as control and replication and the difficulties associated with non-linearity and spatial scaling, which make transferring results difficult.

Data quality, which includes determining which parameters are most relevant, and monitoring program design. (Hilborn 1987, Walters 1997).

Other factors include incertitude, errors in certitude (quantitative departures from the truth), incomplete data, anecdotal data gathered with no statistical design ("best professional judgment"), inappropriate extrapolation, temporal and spatial variation of measured parameters, and the inadequacy of models. All of these need identification, assessment, and action as part of any adaptive management program. (Holling 1978, see also Walters 1997, 2002, Houlahan 1998, Rogers 1998.)

Adaptive management has as its goal developing the capability for optimally managing the environment in question. It does this by maintaining the ecological resilience of the system, allowing it to react to stressors. It also creates flexibility in the management institutions and the system's social stakeholders (Johnson 1999a, Walker et al. 2004, Walkerden 2006). Management then occurs within a range of acceptable outcomes, while still seeking to avoid catastrophic and/or irreversible negative effects (Johnson 1999a).

The well-documented and well-established ecological value of the species involved and the important role of the Habitat in the overall Columbia lowlands ecological subregion, combined with the expenditures involved, make this an important process to assess. The lack of any baseline data suitable for assessing the outcomes of the proposed actions makes even more critical the use of the adaptive management approach to creating a monitoring plan. This lack of data also means that each activity carries with it the role of being its own "experiment."

IX.3 Overall Goals and Objectives for this HCMP

The goals and objectives of this HCMP have been described in the preceding sections. In their broadest categories, they comprise goals of wetland mitigation and of habitat creation. While the wetland mitigation specified does have elements of habitat creation included in it, the mitigation goals are sufficiently independent to warrant consideration in their own right. They are considered first. Adaptive management of created or enhanced upland habitat is then considered.

Adaptive management will be carried out by the Easement Holder, consistent with this section.

IX.4 Wetland Mitigation

This HCMP specifies several types of wetland on Parcels 4 and 5: extensive

ponds and wet meadow on Unit 5W and seasonal ponds on Unit 5A; part of Buckmire Slough, lying in Units 5N, 5A, and 4W; forested wetlands on Units 5N and the Parcel 3 buffer; a few additional pre-existing wetlands on Units 5N and 5A.

The success of the mitigation lies in the ability of the soil to hold water and/or accept slow infiltration, to the point that wetland plants, such as *Sagittaria*, can flourish. Success also depends on the appropriate interaction of the soil and groundwater table for a significant period of the year. Generally, submerged plants need permanent inundation, though water levels above the soil surface can vary. The critical soil-monitoring elements consist of the following: sand/silt/clay ratios, amount and duration of soil saturation, and percentage of organic matter. The starting assumptions of this AMP are the mineral ratios established during construction, and assume no change in constituents during that time (36% sand and 64% silt and other fines, at the surface down to about 6 inches). Retention of the Sauvie Island silt-loam soil subsurface structure in the northern sections of the wetland will provide sufficient sand to ensure that groundwater will penetrate to the surface, while the higher silt content surface soils will retard precipitation infiltration, as these soils perform in this fashion both in the northern portion of the Habitat and in many locations on Parcel 3 to the south.

The Easement Holder will conduct soil-characteristic sampling yearly. Soil moisture, however, should be determined weekly (and more frequently as appropriate at times of significant precipitation or river height change) during the wetland growing period (February to June). Organic matter levels should increase over the construction baseline with the growth of vegetation and the subsequent deposition of autochthonous plant materials. Analysis should assume negligible input of organic matter and/or minerals from the groundwater or Columbia River. An increase in histic (plant organic) materials demonstrates the further development of wetland soil characteristics within the system, and adds to the amount and duration of soil moisture retention and saturation.

Failure to retain water in the wetland will necessitate the mixing of clay, or clayey soil, into the extant soil. Water will then be pumped in, and the water retention capabilities assessed, until confirmation of the desired holding capacity. At this point, wetland replanting will reoccur, if needed.

Insufficient organic matter formation resulting in the nonsupport of wetland plants will necessitate augmentation of the existing soil to produce a thicker layer. This will occur during the summer, low-water season. Replanting will follow soil augmentation, if necessary.

Monitoring will be conducted using the Soil Monitoring Protocols outlined in Appendix 1.

Development of Suitable Native Wetland Plant Communities

The successful establishment of wetland vegetation will require, in addition to the appropriate moisture and soil conditions described above, the survival of a sufficient density of vegetation. The baseline data should include the plant species ratios from the initial Planting Plan. The AMP goal is first-year survival of 80% of planted vegetation and five-year survival of 70%. Should survival of any one species drop below these levels, but get replaced naturally by individuals from another of the planted native species, this would also meet the survival goal.

The AMP also has certain benchmarks not necessarily related directly to individual plant survival, focusing on "community" or vegetative assemblages. These include such summary statistics for the wetlands in general as species richness, diversity, and evenness. Diversity calculations will use Simpson's Diversity Index. This non-parametric index tends to focus more on common species rather than rare ones, as do other common indices (*e.g.*, Shannon-Wiener). The Planting Plan (Section VIII) includes the data for calculating the initial diversity indices.

Simpson's Diversity Index, with its emphasis on common species, produces a more appropriate picture of the relationship between planted species and invasive forms. Diversity should decrease in the first few years, then level out (absent any human interference). The values will likely fluctuate spatially and temporally as competitors establish themselves, depending upon the stability of the abiotic conditions. Dramatic fluctuations in water level will likely cause most of the fluctuations.

Failures in the first year will necessitate replanting the failed species, along with an assessment of soil conditions, depending upon the percent failure for that species in the site. Should the failure rate rise above 30%, the AMP assumes this species' autecology may be incompatible with site conditions. Subsequent failures will require the evaluation of adjacent plant success, and replanting with those species (unless the failures relate to soil conditions and show a similar pattern for all species; this will trigger the changes cited in the Ponded Area Performance section of the AMP). Increased numbers of invasive species will result in active, human-centered control measures.

Diversity-related community and assemblage goals, as mentioned above, enter less into the success of this wetland than simply the establishment and survival of native wetland vegetation. As a result, the AMP sets no diversity targets, but rather assumes the analytical trend described above will establish the expected values. Thus, the AMP calls for no action upon departures from these targets unless other design goals fail to be achieved.

For monitoring, use Wetland Plant Monitoring Protocols, Appendix 1, Section 2.

Invasive Noxious Weed Deterrence and Eradication

See Invasive Noxious Weed Goals and Actions, Appendix 1, Section 3

Specific Adaptive Management Monitoring on Unit 5W Wetlands

In the ponded areas of Unit 5W, in addition to other soil characteristics, the wetland needs an organic layer that supports the growth of submergent wetland plants. This requires supplementing the present soils to increase their organic content, in addition to the expected continued enhancement produced by the planted vegetation itself.

This HCMP calls for maintaining a depth of no greater than 12-18 inches in some part of the ponded area during the period of crane occupation. Staff gauges should be installed and maintained at a number of locations to provide water level information. Reading these gauges using binoculars or a spotting scope should limit any disturbance to cranes using the area. If not, readings should be taken at hours when cranes are not present.

Forested Wetland

Aerial photos taken prior to road construction and the dredging of the Flushing Channel show Buckmire Slough extending not only to the bottom of Parcels 4 and 5, but further south into present-day Parcel 3. Wetland soils and hydrology, therefore, may still exist on the site under the fill deposited from the dredging of Vancouver Lake in the early 1980s; this was confirmed by Natural Resource Planning Services, Inc.'s (NRPS) soil sampling in spring 2004. This may facilitate the successful creation of forested wetland adjacent to Buckmire Slough.

The Settlement Agreement also provides for a vegetative buffer 50 feet wide, and approximately a mile long, along the northern edge of Parcel 3, to be specified by CRANE. (The buffer vegetation is described in the Planting Plan, Section VIII.) The Port has indicated it plans to widen this buffer to feet. Lowering the land to groundwater level and constructing a dense riparian forest of trees and shrubs in that area will create a forested wetland of approximately twelve acres. This HCMP intends this buffer not only to create high quality wetlands, but also to reduce disturbance to the Habitat from industrial activities on Parcel 3.

Forested wetland soil conditions present a situation somewhat different from those of the ponded areas. As implied by the Grading Plan (Section VI), current soils, consisting almost exclusively of silty-clay dredge material (from Vancouver Lake) or

remnant Sauvie Island silt-loams, will be removed in most locations, or significantly enhanced in order to improve both drainage and nutrient levels. Enhancements will consist of sand and organic matter, likely in the form of aged wood chips or sawdust or other plant mulches. (See the Planting Plan (Section VIII) for details.)

Monitoring will use similar techniques and parameters as the wetland mitigation soil analysis, with the opposite purpose in mind. Soil development mileposts will be an increase in organic matter, the "A" horizon, but increased drainage (except in areas of seasonal ponding) will form the major focus. The soil ratios established during the construction period will serve as the baseline against which monitoring will occur. Further mileposts are expected to include a continued dominance of sand as the major mineral constituent, followed by silt and clay. As the soils develop, soil saturation should decrease, as drainage improves.

For monitoring, use also Upland Tree and Shrub Monitoring Protocols, Appendix 1, Section 9. Place transects approximately three meters apart within the major vegetation assemblages, using a stratified random study design.

Failure to establish and maintain the flora at the levels designated in the Planting Plan will result in replanting. Failures in the first year will necessitate planting the same species, along with an assessment of soil conditions at the site. Should the failure rate rise above 30%, the AMP assumes that this species' autecology may be incompatible with conditions at the site. Subsequent failures will require the evaluation of adjacent plant success, and replanting with those species. Increased numbers of invasive species will result in active control measures, quite likely manual ones.

Sound and Light

The AMP also assesses the effectiveness of the buffer at reducing or eliminating sound and light impacts from the adjacent Parcel 3 development. The baseline will be the projected noise and light levels from the Parcel 3 development plans. The target values comprise the daytime and nighttime pre-development noise and light levels.

The Port measured pre-development noise levels at the site of the former farmhouse on Unit 5W, finding the following averages: L_{eq} = 55, L_{min} = 31, L_{max} = 78, $L_{2.5}$ = 62, $L_{8.3}$ = 56, L_{25} = 50. (Here each measurement is given in A-weighted decibels (dBA), a weighting which approximates the human ear and is used in many environmental standards. L_{eq}, L_{min}, and L_{max} are the average 24-hour average, minimum, and maximum dBA levels. L_x is the dBA level exceeded x percent of the time.)

For the AMP, monitoring will consist of measuring the levels of each parameter following buffer installation. Sites for noise (and light) monitoring should be in lines of monitoring stations stretching S-N across Units 5A, 5C, and 5N, three east-west

transects, 100 meters apart, across Units 4C, 4W, 5A, 5C, and 5W, and an initial monitoring transect on the north side of the buffer. Noise-level monitoring will occur twice weekly from mid-September through April. Monitoring will use a Bruel and Kjaer (B&K) 2238 Mediator noise monitor or its equivalent, with a B&K acoustical calibrator type n4231. Monitoring will last 60 minutes at each station.

Light and glare do not presently affect crane use of Parcel 5, since crane activities now occur only in daytime. However, light and glare could influence other, more crepuscular or nocturnal, animals, and could also influence cranes' willingness to roost overnight at the site. They can also act as a surrogate for assessing the effectiveness of the buffer in reducing visibility, an issue of great importance to cranes.

Prior to any construction on Parcel 3, baseline ambient nighttime light-level measurements will be made at the same sampling sites as for noise monitoring. These levels will represent the post-development nighttime light targets. Illumination should be measured in photons per square meter per second across a range of light wavelengths present. The AMP calls for monitoring nighttime light levels twice weekly from mid-September through April at each of the monitoring stations. Monitoring will last for 60 minutes at each station.

This AMP considers the buffer to have failed should noise or light levels exceed the targets at any of the three transects across Parcel 5. Failure to achieve noise and light buffering on Parcels 4 and 5 will require planting more and larger trees and shrubs in the buffer. Assessment of the effectiveness of the replanted buffer will continue yearly until the noise and light levels return to pre-project conditions. Continued failure of the buffer to effectively screen the site may necessitate the construction of a wall to block sound on the south side of the buffer.

Other Pre-Existing Wetlands

On Unit 5N there are two small perched wetlands (designated as 5a and b in the wetland delineation) at an elevation of about 20 feet, and a third wetland (wetland 5d/e), which is the extension into Unit 5N of a slough north of the Habitat, at elevations of 15 feet and below.

The nature and structure of wetlands 5a and b, plus observations of their condition following the initial (2000) wetland delineation, suggest strongly that they survive only as the result of large amounts of ponded water on the site, resulting from and varying with rainfall. Observations to determine the successional status and trajectory of these wetlands should use the protocols established for the created wetlands.

Observations of these two isolated wetlands since fall 2003 have detected considerable decreases in their size and in the proportion of wetland plant species since their original delineation in 2000. As these wetlands receive their water solely from precipitation, decreased rainfall and increased permeability of their soils has resulted in the observed changes. There is no reason to assume that these wetlands will not continue their trajectory of deterioration and eventual conversion to upland plant assemblages, subject to local rainfall conditions. The removal of grazing from the site may slow this, however.

Unit 5A has two pre-existing jurisdictional wetlands:

Wetland 5c, until recently a grove of cottonwood trees established following the 1996 flood but harvested in 2007; and

Wetland 5g, a ponded area just above Buckmire Slough on the eastern border of Parcel 5.

This AMP calls for monitoring the fate of these wetlands.

Sandhill Crane Use of Unit 5W Wetlands

The desired primary habitat outcome on Unit 5W is use by sandhill cranes. The design is intended for a variety of crane uses, especially feeding and loafing (including day-roosting). Surveys will determine use, and record the number of birds and amount of time spent at each activity.

On Unit 5W, anecdotal reports of crane use date from the mid-1990s. In the late 1990s and early 2000s, however, there was little crane use of the unit, despite the substantial use nearby. Then, in the fall of 2008, hundreds of cranes started visiting the unit daily. This history, combined with the availability of other foraging and loafing sites nearby on the Habitat and elsewhere, makes it difficult to project any initial number as "success" in crane use of the new habitat at Unit 5W. Therefore, it seems only scientifically prudent to set the initial goals directed toward long-term use of the site, and measure ultimate success by the patterns of use comparable to historic ones at Parcels 3-5 wetlands.

Thus, this AMP defines success as (1) achieving stable or increasing crane use over the first five years following completion of the development; (2) having a peak count of at least 400 cranes on Unit 5W at some point in a given year; (3) within five years, at least 17,000 crane use days throughout Parcels 4 and 5 during the period October through mid-April.

In case of failure to achieve these goals, the AMP prescribes assessing the data collected during the observation periods, and correlating it with observations from other sites, to establish trends and determine causes. These might include: use of other Habitat units, success of and availability of adjacent foraging crops, success of wetland plant types, amount and extent of ponding, and disturbance from humans and other animals (either directly) or from hunting at nearby Shillapoo Wildlife Area. Remediation will, of course, depend upon the establishment of a cause.

Use Crane Monitoring Protocols, Appendix 1, Section 4.

Sandhill Crane Use of Unit 5A Wetlands

The primary desired habitat outcome for wetlands on Unit 5A is use by sandhill cranes. The design is intended for a variety of crane uses, especially feeding and loafing. Surveys will determine use and record the number of birds and amount of time spent at each activity.

As noted in Section II (Background), surveys of Units 5C and 5A in fall 2003 and winter 2004 reported flocks of as many as 400 birds around the area of ponded water known as wetland 5g. Additional crane use was noted in subsequent years. In the absence of extensive baseline data, however, and understanding that the configuration of the unit will have changed, it seems only scientifically prudent to set the initial goals directed toward long-term use of the site, and measure ultimate success by the patterns of use comparable to historic ones at Gateway wetlands.

Thus, this AMP defines success as (1) achieving stable or increasing use over the first five years following completion of development; (2) having a peak count of at least 400 cranes on or near Unit 5A seasonal wet areas at some point during each year; and (3) within five years, at least 17,000 crane use days throughout Parcels 4 and 5 during the period October to mid-April.

In case of failure to achieve these goals, the AMP prescribes assessing the data collected during the observation periods, and correlating it with observations from other sites, to establish trends and determine causes. These might include: use of other Gateway units, success of and availability of adjacent foraging crops, success of wetland plant types, amount and extent of ponding, and disturbance from humans and other animals (either directly) or from hunting at nearby Shillapoo Wildlife Area. Remediation will, of course, depend upon the establishment of a cause.

Use Crane Monitoring Protocols, Appendix 1, Section 4.

There are power lines along the south and west boundaries of Unit 5A. Power

lines are known to be a hazard for many birds, including sandhill cranes. This HCMP calls for burying the power lines if possible, or failing that, marking them suitably to avoid collisions. Forested wetland also will lessen power line effects.

At present, no data exist for collisions of cranes, or other birds, with power lines. These data will form part of the crane use observation protocols. The observers will note any collisions, or avoidance actions, as well as the outcome. Weekly surveys will be made under all power lines.

Other Wildlife Use of Wetlands

Other wildlife expected to use the Parcels 4 and 5 wetlands include waterfowl and other birds, mammals, reptiles, and amphibians. At present, there exists no consistent documentation of use of the area by any of these groups, with the exception of passerines and relatively small numbers of geese. Bird counts will occur as part of the crane surveys, and will operate with the same assumptions of the absence of a baseline prior to the habitat creation. The protocols used for these counts will include counts made as part of the crane surveys.

Other Bird Use

See Other Bird Monitoring Goals and Actions, Appendix 1, Section 5.

Use Other Bird Monitoring Protocols, Appendix 1, Section 5.

Amphibian Use

NRPS detected no amphibians in any of the surveys conducted in 2003-2004. The construction of the ponded area, and its relatively shallow depth, should provide a considerable increase in Pacific chorus frog populations for the site. The shallow depth should discourage any bullfrog occupation. As with birds and other wildlife, amphibians, while considered extremely important in the ecological system of the Habitat, remain a secondary goal of the HCMP. Monitoring of these species will follow the basic protocols outlined below, with analyses similar to those proposed for these other species.

See Amphibian Monitoring Goals and Actions, Appendix 1, Section 6.

Use Amphibian Monitoring Protocols, Appendix 1, Section 6.

Reptile Use

A single juvenile yellow-bellied turtle (*Chrysemys scripta scripta*), found in

Buckmire Slough during the 2004 amphibian surveys suggests that nesting of various turtle species likely occurs in the Habitat. The islands in this wetland, and the intent to maintain water levels in the area following the departure of sandhill cranes in April, should provide turtles both nesting areas and rearing opportunities.

See Reptile Monitoring Goals and Actions, Appendix 1, Section 7.

Use Reptile Monitoring Protocols, Appendix 1, Section 7. Monitoring should take place on the islands and commence following departure of the cranes.

Small Mammal Use

See Small Mammal Monitoring Goals and Actions, Appendix 1, Section 8.

Use Small Mammal Monitoring Protocols, Appendix 1, Section 8.

IX.5 Upland Wildlife Habitat Creation and Enhancement

This HCMP specifies three types of upland on Parcels 4 and 5: agricultural areas, upland prairie, and tree and shrub buffers.

Agricultural Areas

For crop productivity and monitoring, use Crop Productivity Goals, Actions and Monitoring Protocols, Appendix 1, Section 10.

Upland Prairie

Current soils, consisting almost exclusively of silty-clay dredge material (from Vancouver Lake) or remnant Sauvie Island silt-clay loams, may require enhancement to improve both drainage and nutrient levels. This will consist of sand and organic matter, likely straw or other plant mulches.

Monitoring will use similar techniques and parameters to those of the wetland mitigation. Soil mileposts in these areas include an increase in organic matter, the "A" horizon, but will focus primarily on increased drainage (except in areas of seasonal ponding). The soil ratios established during the construction period will serve as the baseline against which to monitor. Further mileposts include a continued dominance of sand as the major mineral constituent, followed by silt and clay. As the soils develop,

soil saturation should decrease, as drainage improves.

See Upland Prairie Actions, Appendix 1, Section 11.

See Upland Prairie Monitoring Protocols, Appendix 1, Section 11.

Tree and Shrub Buffers

Boarder areas of several units are specified as tree and/or shrub buffers. These are intended to provide privacy and noise abatement for cranes and other wildlife in the Habitat. Near walking-jogging-bicycling paths, this intent specifically includes being a people- and dog-exclusion buffer.

If observations suggest the insufficiency of the buffer, additional plantings will occur. Additional actions include bike-path closures or other human-use management, in cooperation with the city/county parks department.

Diversity-related community and assemblage goals enter less into the success of this buffer area than simply the establishment and survival of sufficient native vegetation to provide an effective screen. As a result, the AMP sets no diversity targets, but rather assumes the analytical trend mentioned above will establish the expected values. The AMP calls for no action upon departures from these targets other than for design goals (above).

For monitoring, use Upland Tree and Shrub Monitoring Protocols, Appendix 1, Section 9.

Invasive Noxious Weed Deterrence and Eradication

See Invasive Noxious Weed Goals and Actions, Appendix 1, Section 3.

Sandhill Crane Use of Uplands

The primary desired outcome for these management units is enhanced use by sandhill cranes. The design is intended for a variety of crane uses, especially feeding and loafing. Surveys will determine use and document the number of birds and the time spent at each activity. Surveys will also compare crane locations with field edges and compare these data with similar information for other parts of the Habitat and, to the extent possible, other nearby areas of crane use.

In the past, portions of the upland units have been used for grazing and also for row crops. Surveys in fall 2003 and winter 2003-4 reported cranes in both areas, especially in areas of seasonal wetness. Surveys in October 2007 reported over 600 cranes per day during the time of the corn harvest on Unit 5C. The HCMP direction of cropping designed for crane use hopes to increase the unit's attractiveness to these birds. Still, and especially with other foraging and loafing sites nearby, it seems only scientifically prudent to set the initial goal to be crane use of the site at all.

Thus, this AMP defines success as (1) crane use of the Gateway 4-5 upland units during the initial crane residency season following completion of the development; (2) crane use stable or increasing over the first five years following completion of development; (3) having a peak count of at least 800 cranes on the uplands at some point in a given year; and (4) within five years, at least 17,000 crane use days throughout the Habitat during the period October to mid-April.

In case of failure to achieve these goals, this AMP prescribes assessing the data collected during the observation periods and correlating it with observations from other sites, to establish trends and causes. These might include: use of other Gateway units, success of and availability of adjacent foraging crops, success of wetland plant types, amount and extent of ponding, and disturbance from humans and other animals (either directly) or from hunting at nearby Shillapoo Wildlife Area. Remediation will, of course, depend upon the established causes.

If observations suggest the insufficiency of the Unit 5A buffer, additional plantings will occur.

For monitoring, use Crane Monitoring Protocols, Appendix 1, Section 4.

Other Wildlife Use of Uplands

Other wildlife expected to use the Parcels 4 and 5 uplands include raptors, waterfowl and other birds, mammals, reptiles, and amphibians. At present, there exist no baseline records of use of the uplands by any of these groups, with the exception of some bird species. Waterfowl counts will occur as part of the crane surveys, and will operate under the same assumption as for cranes, that of no use prior to the construction.

Other Bird Use

See Other Bird Monitoring Goals and Actions, Appendix 1, Section 5.

Use Other Bird Monitoring Protocols, Appendix 1, Section 5.

Amphibian Use

See Amphibian Monitoring Goals and Actions, Appendix 1, Section 6.

Use Amphibian Monitoring Protocols, Appendix 1, Section 6.

Small Mammal Use

See Small Mammal Monitoring Goals and Actions, Appendix 1, Section 8.

Use Small Mammal Monitoring Protocols, Appendix 1, Section 8.

IX.6 Analysis and Reporting

Data analysis will consist of calculation of species presence and abundance, as well as spatial and temporal habitat use. Analyses include time spent in various activities and location of these activities for the species of interest, and how these relate to the landscape characteristics, along with descriptions of the physical and biotic characteristics of each location. Adaptive management assumes that wildlife use of the areas and consequent identification of landscape characteristics depend on species-specific niche requirements, and the analysis will reflect this. The Easement Holder will produce a narrative summarizing species of interest, distributions in space and time, population sizes or densities, and use patterns for each parcel, including a series of maps illustrating this analysis.

The Easement Holder will recommend any necessary habitat improvement actions for Parcels 4 and 5, based on the results of the above studies, not only to ensure that species use of all potentially affected areas on all parcels gets replicated, but also that these actions enhance the value of these areas for the identified uses.

Adaptive Management and Monitoring Reports

The work elements for accomplishing this task will include the following:

Determination of crane use of the various habitats

Assessment of the success of irrigated agriculture and evaluation of individual crop types and locations

Photo-documentation from fixed, permanently marked sites, and result of the field observations on vegetation

Assessment of individual plant condition

Assessment of wildlife use in space and time

Assessment of actual use as compared with predicted species use

Data analysis

Report writing and editing

Compiling photographs, maps, and tabular data as Appendices to the report

Incorporating comments and preparing the final report. Following this review, report revision, and submission of the final (one copy in electronic pdf format).

Products

The project will produce a draft and final report for each year of monitoring.

TABLE 1: HABITAT CREATION BY MANAGEMENT AREA

MANAGEMENT AREA (ACREAGE)	HABITAT			
	WETLANDS	CROPS	UPLAND PRAIRIE	BUFFER
5W (125 ACRES)	CONSTRUCT PONDED WETLAND AND WET MEADOW COMPLEX OF APPROXIMATELY 125 ACRES.	NONE	NONE	FORESTED BUFFERS ALONG WEST BOUNDARY, HEDGEROW NORTH AND EAST
5N (70 ACRES)	MAINTAIN EXISTING ISOLATED WETLANDS 5a&b AND SLOUGH WETLAND 5d/e.	CREATE APPROXIMATELY 60 ACRES OF TILLED AGRICULTURAL LAND.	NONE	NONE
5C (90 ACRES)	NONE	CREATE APPROXIMATELY 90 ACRES OF TILLED AGRICULTURAL LAND.	NONE	NONE
5A (140 ACRES)	MAINTAIN EXISTING ISOLATED WETLANDS 5c&g. CREATE FORESTED WETLAND BUFFER OF APPROXIMATELY 9.5 ACRES ON SOUTHERN AND WESTERN BOUNDARIES.	NONE	140 ACRES INCLUDING SEASONAL WET MEADOW/WET PRAIRIE	FORESTED WETLAND ON SOUTHERN AND WESTERN SIDES.. HEDGEROW ON NORTHERN SIDE
4W (24 ACRES)	MAINTAIN EXISTING WETLAND SLOUGH 4a/5f. CREATE APPROXIMATELY 24 ACRES OF FORESTED WETLAND TO WEST AND SOUTH OF IT	NONE	NONE	NONE
4C (70 ACRES)	CREATE APPROXIMATELY 2 ACRES FORESTED WETLAND AT SOUTHERN AND EASTERN END.	CREATE APPROXIMATELY 70 ACRES OF TILLED AGRICULTURAL LAND.	NONE	FORESTED WETLAND AT SOUTHERN END
4E (30 ACRES)	NONE	NONE	CREATE 30 ACRES OF UPLAND PRAIRIE AROUND THE CITY OF VANCOUVER WATER WELLS TO THE NORTH.	HEDGEROW ALONG RIEGER ROAD
3-BUFFER ONLY (12 ACRES)	FORESTED WETLAND BUFFER (APPROXIMATELY 12 ACRES)	NONE	NONE	FORESTED WETLAND

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Appendix 1

Goals, Actions, and Monitoring Protocols

A1.1 Soil Characteristic Determinations

This requires the collection and analysis of a series of soil samples from the identified major vegetation assemblages on transects across the established wetland area. Soil sample collection will follow a systematic study design along each transect, taking a minimum of five samples along each transect.

Parameters to analyze are soil organic and mineral characteristics, pH, horizon identification, soil moisture, and presence of organic matter. Analysis focuses on soil moisture levels throughout the sampling period, developing correlations with large scale climactic and river fluctuations.

A1.2 Wetland Plant Monitoring Protocol

The HCMP includes a number of criteria associated with wetland monitoring and success. These focus primarily on such summary descriptive statistical analyses as plant diversity and richness, as well as survival, and will relate to the project as-built specifications. The monitoring plan fulfills the state and federal regulatory requirements for this information, and also provides data for evaluation as part of the larger adaptive management plan.

The monitoring plan establishes permanent transects, along which quadrat sampling will occur, to assess the survival of planted vegetation. Transects should be spaced about 20 meters apart and extend through the wetland. Monument points for photo-documentation should be established on each transect.

Randomly select at least three transects along which to choose sample quadrats. Use a stratified random study design along each transect to select quadrats. The strata will consist of the 2-foot depth/topographic contours. Select at least five sample quadrats ($1m^2$) from each stratum along each transect. Quadrat sampling data include plant species percent cover within the quadrat and will assess plant health, determine any causes for losses, and using the soil conditions assessment, prescribe appropriate replacement plantings.

A1.3 Invasive Noxious Weed Goals and Actions

The monitoring plan calls for assessments of the amount and extent of reed canarygrass and other invasive wetland plants, as well as the measurement of the effectiveness of each method used for deterrence and eradication.

The evaluation of each method will determine the most efficient and effective technique to apply to wetland areas across the site, consistent with the goals of the HCMP. Resource management agencies in Minnesota and Wisconsin have done extensive, well-designed experiments to test various methodologies for eradicating reed canarygrass from wetland areas. The report in Appendix 3 summarizes their findings, and provides a detailed description of the life history and phenology of this invasive plant. It also provides the methodologies that the Washington State Department of Transportation (WSDOT) and the Washington State Department of Ecology use in their guidance concerning reed canarygrass control.

Basically, the most efficacious control methods involved burning and treatment with an herbicide. Mowing, grazing, and deep-tilling did not affect the growth of this plant. This may present a problem, as managers probably cannot use burning and may find use of herbicides severely restricted on this site. This restricts control to anthropogenic removal, using hand–weeding techniques. Removal will occur during the summer, prior to seed set. Other potential noxious weed control faces similar restrictions, and likely similar solutions.

Reed canarygrass removal will follow these protocols. In spring (April to mid-May) early shoots and roots will require hand-pulling or hand-cutting. In mid- to late summer (July and August) herbicide should be applied, if permitted, after hand-cutting and removal of old stems. Any remaining shoots should be removed by hand-cutting in late August. In late September or early October, if no cranes have arrived on-site, control will consist of another herbicide application, following cutting and removal of old stems and leaves. Application of herbicides may occur during the time of crane occupation, but when cranes are not present at the site, and will be topical.

In 2004, WSDOT, in assessing the success of its wetland mitigation, stated that the presence of reed canarygrass on a site, at cover percentages as high as 50%, does not necessarily indicate a loss of function, and recommended a more flexible approach to setting standards associated with its presence and eradication. These recommendations include taking into account the presence and abundance of reed canarygrass in surrounding sites.

Other invasive forms include Himalayan blackberry, thistle, and teasel. Removal of blackberries requires hand cutting and grubbing, using brush cutters, power saws, axes, machetes, loppers and/or clippers to remove the above-ground growth, then

hand-digging to remove rootstocks. Hand-digging will occur either in spring, before new growth, or in the fall, after leaf die-back. During periods of crane occupation of the site, activities will occur when cranes are not present.

Thistle control requires mowing that cuts the head, but leaves some growth of mature stems and leaves (20 cm of stem or 9 leaves per stem) to inhibit new growth. If large-scale mowing is impractical or not permitted, hand mowing will be required to carry out this control.

Teasel control will consist of digging up the rosettes using a dandelion digger and removing as much of the root as possible to prevent resprouting. Alternate methods include cutting the flowering stalks, which will result in the plant's dying. (Cutting before flowering will result in the plant's sending up a new flowering stalk.) Any herbicide application will occur in summer, but could also take place with equal effectiveness in late fall or early spring, depending again upon crane residence.

Invasive noxious weed monitoring uses the previously established permanent transects, along which quadrat sampling will occur. The techniques are described above.

Each eradication technique will have samples collected using a similar methodology, although transects will have closer spacing and the plan will select a higher number of quadrats.

A1.4 Crane Monitoring Protocols

Establish field-observation sites on each area of interest to determine spatial and temporal use by sandhill cranes. Monitoring will use the following protocols:

Observations should take place weekly in September and May (in order to encompass the possibility of early arrival or late departure). During the time of expected crane occupation (late September through April), observations will occur daily and will cover the entire habitat area of Parcels 4 and 5. The selection of observation time segments during each day should follow a systematic sampling design to ensure that assessment will take place each day of the week, as monitoring will occur in other portions of the habitat enhancement area during the same time.

Field observations should occur in one-hour observation periods, ranging from dawn to dusk, chosen on the basis of the following stratified random sampling schedule: 50% of surveys conducted during morning (before 10 a.m.) and evening (after 3 p.m.; 25% during midday loafing (10 a.m. to 3 p.m.) and 25% during evening roost arrival (one hour before dusk to dark). This schedule is based on documented crane use

patterns from other locations. Should no roosting occur, that time will be divided among the other time periods based on existing percentages. The observer will record the physical conditions for the day and sampling period, as well as any disturbances and their effect on sandhill cranes.

Species-use parameters measured will consist of presence, location, and activity of sandhill cranes. During all periods, the observer makes and records qualitative observations when feasible. This allows the use of repeated measures techniques to analyze the data gathered. Typical statistical procedures, such as analysis of variance, assume independence of counts and observations. Should the data from observation periods establish specific times of crane use of the site, the survey plan will change, if possible, from a random approach to a stratified random one, to optimize the amount of observation time during these periods.

A1.5 Other Bird Monitoring Goals, Actions, and Protocols

The lack of any systematic, long-term data makes the monitoring of any changes in species population size difficult. As with any migratory species, the bird populations face mortality from various causes outside the Habitat. For this reason, as well as for numerous statistical study design problems associated with using population means not replicated properly as the baseline for outcome determination (Stewart-Oaten et. al. 1986, 1992, Stewart-Oaten and Bence 2001, Underwood 1992, 1994, Ambrose et al. 1996, Osenberg 1996, Osenberg et al. 1996), the totals obtained by NRPS during their surveys in 2003-2004 will serve as benchmarks, with at least one other year of surveys to follow prior to modification.

The monitoring will determine changes in population size using a BACIP (Before-After, Control-Impact Paired) study design, which uses changes in the variance of samples taken before an action and after, rather than means, to assess actual changes (Griffiths et al. 1993). Underwood (1991) pointed out that any location-specific temporal difference occurring between the treatment and control strata gets interpreted as an impact even if it has nothing to do with human disturbance, an insufficiency of BACIP designs. To reduce the chance of covariation between treatments and chance variation among units, Underwood suggested an asymmetrical design comparing the temporal change in a potentially impacted location with those in several randomly selected control locations. These asymmetrical designs assess natural variability of an ecosystem over several control sites and provide a more representative picture of natural variability in the affected area. While CRANE recognizes the benefits of such an approach, multiple control sites presently do not exist on Parcels 3, 4 and 5, as all the parcels have undergone modification, either as part of the industrial plan or the enhancement activities. The potential exists to use sites in the Shillapoo Wildlife Area as control sites, based on proximity and perceived similarities in major vegetation

assemblages.

Data collection will use the protocols outlined below. The statistical analysis will calculate densities and their variances. Changes in the patterns of variation will determine the success of the HCMP in meeting the ancillary goal of enhancing use by these species.

The Habitat Plan has no specific guidance related to use of the site by wildlife other than sandhill cranes, although this certainly has great importance to the HCMP as a whole. Therefore, while data gathered during the monitoring form an important assessment of the overall success of the HCMP, if it meets the primary objective of sandhill crane use, changes in use by other birds, or for that matter other wildlife, will not necessarily result in changes to the HCMP. As with cranes, the lack of use of the site by other birds will trigger assessment of the site conditions, and an analysis of any causal mechanisms determined.

The HCMP uses point count surveys to determine actual habitat (vegetation assemblage) use. Point counts require fixed locations, and provide both relative and actual population information. Location selection uses a systematic sampling design to eliminate the potential for "double-counting." Observers walk to the station, wait for a short period of time to ensure "settling-down" after this disturbance, then count for a fixed time period (generally 5 to 10 minutes). The observer records the numbers of birds seen or heard, and notes their approximate location. Selection and location of points, and timing, number, and duration of visits will use the information available on each vegetation assemblage patch within both landscape and matrix (Gibbons et al. 1996, Hayek and Buzas 1997, Huff et al. 2000). The AMP requires the calculation of density and abundance using appropriate statistical measures, including, if feasible, distance methods to obtain actual abundances.

Modifications to the point count methodology to better census "charismatic megafauna" such as cranes, ungulates, and carnivores will include the expansion of the sight distance from the transect out to a maximum of 400 yards. This also expands the distance between transects to at least that amount, as well, to avoid double counting. In this area, this will result in the use of a single transect.

A1.6 Amphibian Monitoring Goals, Actions, and Protocols

The HCMP, with its construction and encouragement of ponded areas, expects considerable increase in Pacific chorus frog populations for the site. The shallow depths should discourage bullfrog occupation. As with birds and other wildlife, amphibians, while important in the ecological system of the Habitat, remain a secondary goal of the HCMP. Monitoring of these species will follow the basic protocols outlined

below, with analyses similar to those proposed for other species.

The lack of any amphibian activity in the first few years will not necessarily represent a failure, given the points raised above. Failure to occupy a site after the first three years may necessitate the "seeding" of the site from other locations in the Habitat, as this would indicate the possibility of no source population sufficient to overcome obstacles to immigration, or sufficiently unsuitable and/or unstable conditions for establishing a source population. Monitoring will then resume following the introductions.

The Habitat Plan has no specific guidance related to use of the site by other wildlife, although this is important to the HCMP as a whole. Therefore, while data gathered in monitoring are an assessment tool of the overall success of the HCMP, if it meets the primary objective of sandhill crane use, changes in use by amphibians will not necessarily result in changes to the HCMP. This does not preclude, however, palliative actions as described above, should the data suggest, for instance, lack of a suitable source population as the likely cause for the findings.

Assessment of amphibian habitat use includes the following elements: Adult call surveys will be done weekly during January and February around all wetland areas. Shoreline surveys will be done weekly to identify egg masses in both locations in February, March, and April. Surveys to collect and identify tadpoles in ponds during May will include funnel trapping and dip-net sampling. Procedures will include the following physical parameter descriptions:

Identify and map aquatic habitat types.

Identify and map areas characterized by water regimes, habitat classes/subclasses, and community types that occur between mean shoreline and open or deep (>1.5 m) water. Tadpoles and adult frogs seldom venture into deep or open water, where risks from predation by fishes may be greater. Habitat types vary by wetland classification (e.g., Cowardin et al. 1979) and desired level of detail and may include:

Hydrology, especially permanently and semipermanently flooded areas;

Vegetation by major types of plant communities and including open areas; and

Type of bottom material (gravel, silt, sand) cotones, the 1 m edge area where two different communities meet (see Richter and Adams 1997).

Pitfalls will be used to capture adult frogs, toads and salamanders. Detailed

census protocols are found in the document "#12 Using Amphibians in Bioassessments of Wetlands" found at http://www.epa.gov/waterscience/criteria/wetlands/12Amphibians.pdf.

Repeat censuses during spring will maximize capturing the diversity of species migrating from upland hibernation habitats to wetland breeding sites. Censuses should commence at similar periods of yearly weather conditions. Amphibian movements are inhibited by freezing nighttime temperatures and enhanced by warm temperatures in the 40s with rainy nights. Therefore, sampling periods may vary slightly from year to year based on annual phenology. Late winter censuses should be established for ambystomatid salamanders and early breeding anurans; early spring censuses for tree frogs, bufonids, and some ranids; and mid-spring to early summer censuses for other ranids.

The AMP also calls for the use of cover boards in areas away from the wetland, adjacent to Frenchman's Bar State Park. Cover boards are placed at random locations, in proportion to habitat types along transects on the grassland floor. Covers are lifted to count the species of amphibians living there and their numbers. Captures are released at the edge of the board so they can crawl back under. The HCMP calls for monthly surveys in damp, cool spring and autumn weather to determine the presence of terrestrial breeders, provide indicators of densities, and establish ongoing habitat use.

A1.7 Reptile Monitoring Goals, Actions, and Protocols

A single juvenile yellow-bellied turtle (*Chrysemys scripta scripta*) found in Buckmire Slough during the 2004 amphibian surveys suggests that turtle nesting may occur in the Habitat. The islands in this wetland, and the intent to maintain water levels in the area following the departure of sandhill cranes in April, should provide nesting areas for turtles of various species and also excellent rearing opportunities.

Should no turtles occupy the site, this may simply reflect the operation of a metapopulation, *e.g.,* source-sink dynamics, as cited above for amphibians. A proactive action may involve "seeding" again, much as for amphibians, as this would indicate the possibility of no source population sufficient to overcome obstacles to immigration, or insufficient and/or unsuitable conditions for establishment and maintenance of a population on-site.

The HCMP has no specific guidance related to use of the site by reptiles, although this is important to the HCMP as a whole. Therefore, while data gathered during the monitoring form an important assessment of the overall success of the HCMP, if it meets the primary objective of sandhill crane use, changes in use by reptiles will not necessarily result in changes to the plan.

Transect surveys will determine the presence of turtle nests. Transects will extend through or parallel to the habitat patches, spaced approximately 10 meters apart. The actual transect structure will consist of two or more modified belt transects, no more than 10 feet wide, identified as near and far. Observers will identify and count turtles (and nests) in each belt while walking the transect lines. The AMP will calculate densities and abundances using appropriate statistical measures. If nests are found, efforts will be made after hatching to make population censuses in the area and assess nest success, using similar transect counts (Blomberg and Shine 1996).

A1.8 Small Mammal Monitoring Goals, Actions, and Protocols

One of the more interesting aspects of changes in wildlife use of the site involves small mammal populations. Small mammals have been hypothesized to use Parcel 5, but surveys conducted prior to the enhancement activities detected no use. Therefore, assessing small mammal use of the site takes on a more critical importance than expected.

Presently, no usable small mammal data exist for the site, as pre-enhancement surveys were of short duration and suffered from predator disturbances to the traplines. Therefore, these efforts are considered unsuccessful. Thus, the new sampling conducted will be the baseline condition. The AMP calls for monitoring populations in each of these systems to observe immigration rates and trends in population size. The monitoring will begin with the assumption of no stable small mammal populations occupying the existing areas of Parcel 5, treating these locations, due to the intensity of grazing and cultivation, as "sinks" for species in the adjacent Shillapoo Wildlife Area.

Populations on the newly created habitat areas would be regarded as "metapopulations," and their size monitored accordingly. Initially, the area would likely act as a sink, with populations winking in and out of existence, and repopulation coming from the source area off-site (Shillapoo Wildlife Area). The distinction comes from persistence, rather than population size, as sink populations very often have larger sizes than sources. Eventually, as the grassy uplands develop further, stable source populations may form on-site, although the mowing necessary to deter the growth of exotic, invasive plants may negatively influence this.

Small mammal abundance and habitat use determinations consist of a series of live-trapping grids established in the vegetation assemblage patches and the surrounding matrix. Sampling will use Sherman trap captures during autumn (mid-October to mid-November) to determine distribution and abundance. The plan calls for installing traps along two 250-meter transects on opposite sides of the study area, using 25 Sherman traps set at 10-meter intervals. Traps will operate for a total of six days.

Observers will close and remove traps vandalized or disturbed by dogs, cats, raccoons, and other mammals and continue trapping after several days, when predators are no longer expected at traps. Each trap point will contain three live traps. Three traps allow the continued operation of a trap point in the event of one or more captures. Observers will check traps twice daily, and allow them to run overnight. Observers will identify all small mammals to species, using tail length to distinguish deer mice and forest deer mice (deer mice adults have tails exceeding 96 mm, forest deer mice less than or equal to 96 mm). Observers will also determine age and sex for all deer mice species (adults and subadults using coarse-brown versus soft-gray pelage, and weight). Marking will consist of toe-clipping or the use of passive integrated transponder (PIT) tags. Data from trapped and tagged mammals will consist of species, sex, length, and weight. Abundance determinations will use Schnabel's repeated-sampling, closed-population models, assuming no violation of model assumptions. If this occurs, population size determinations will use a Jolly-Seber open population model. Habitat use will consist of an assessment of home range size and temporal and spatial habitat use, as determined through capture-recapture analysis.

A1.9 Upland Tree and Shrub Monitoring Protocols

The monitoring plan establishes permanent transects, along which quadrat sampling will occur, to assess the survival of planted vegetation.

Transect sampling will assess parcel-level tree and shrub abundance. Transects will extend through or parallel to the various habitat patches, spaced at least 20 meters apart. The actual transect structure will consist of two or more modified belt transects, 10 feet wide, identified as near and far. Observers will identify and count trees and shrubs in each belt while walking the transect line, then calculate densities and abundances using appropriate statistical measures.

Select a number of sample quadrats (1 m^2), along transects placed approximately 3 meters apart, using a stratified random study design, within the major vegetation assemblages. Randomly select at least three transects, then sample five quadrats from each stratum. Quadrat sampling will determine plant species percent cover within the quadrat.

Monitoring of vegetation in the scrub-shrub/upland areas will include photo-documentation from fixed points. Vegetation cover determination will use m^2 quadrats sampled along transects in each site, with a general appraisal of the condition of the vegetation at each site. The calculation of summary statistics will use data from these surveys. The assessment will also include an estimate of the percent cover of nuisance vegetation (*e.g.*, invasive grasses and forbs).

Finally, monitor the success of the overall planting effort by determining the survival of individual scrub-shrub plants. Use the permanent transects, along which quadrat sampling occurs, to assess the survival of planted vegetation.

A1.10 Crop Productivity Goals, Actions, and Monitoring Protocols

The goal is providing food sources for sandhill cranes. The limited, purely anecdotal data for the success of various crops on Parcels 4 and 5 come from before any modifications to improve production. Therefore, the adaptive management study design incorporates blocking, that is, dividing the agricultural area into roughly equivalent sections, to test how various crops perform under the prescribed agronomic regimes. This randomized block design incorporates the likely variability in productivity associated with differences in the physical environment. Blocking facilitates the use of analysis of variance techniques to establish suitability, both within and among crop types. The field or plot gets divided into "blocks," with random assignment of crops to blocks. When properly designed, blocking removes differences associated with productivity of the soil, and/or other physical characteristics of the site. Yield assessments will occur prior to the time of arrival on-site by sandhill cranes, and the associated crop management strategies. It may prove necessary, given the results of these analyses, to shift the areas of cultivation, or perhaps increase or decrease the total area under cultivation. This shift would occur when yields dropped below a desirable level (85%). The AMP establishes transects through each plot. Using quadrat sampling along the transects, the data collected include plant growth and output.

A1.11 Upland Prairie Goals, Actions, and Monitoring Protocols

Transect sampling will determine parcel-level tree and shrub abundance. Transects will extend through or parallel to the various habitat patches, spaced at least 20 meters apart. The actual transect structure will consist of two or more modified belt transects, 10 feet wide, identified as near and far. Observers will identify and count trees and shrubs in each belt while walking the transect line, then calculate densities and abundances using appropriate statistical measures.

Select a number of sample quadrats (1 m^2) along transects placed approximately 3 meters apart, using a stratified random study design, within the major vegetation assemblages. The AMP calls for at least five quadrat samples per stratum. Quadrat sampling data will consist of plant species percent cover within the quadrat.
The monitoring plan establishes permanent transects, along which quadrat sampling will occur, to assess the survival of planted vegetation.

Monitoring of vegetation in the mitigation upland areas will consist of photo-documentation from fixed points. Vegetation cover determination will use meter-square quadrats sampled along transects in each site, with a general appraisal of the condition of the vegetation at each site. The calculation of summary statistics will use data from these surveys. The assessment will also include an estimate of the percent cover of nuisance vegetation (*e.g.*, invasive grasses and forbs).

Appendix 2

Well Field Design and Operation on Parcel 4

MEMORANDUM

TO: Ted Gathe, City Attorney

FROM: Victor Ehrlich, City Engineer

CC: Brian Carlson, Pubic Works Director

DATE: June 16, 2005

SUBJECT: Interlocal Agreement with Port of Vancouver

Ted,

Attached is the essence of an agreement with the Port of Vancouver for the establishment of a well field on Port property.

These points have received concurrence from Patty Boyden, Port Environmental Manager and Paul King who is party to the CRANE agreement.

The next step is to transform these items into an Interlocal Agreement. Your help to provide a draft is appreciated. I will then carry the draft agreement back to the Port and Paul King.

As no time frame has been set for the agreement, I would say that it is important but not urgent. However, I would like to meet with them in August

DISCUSSION NOTES

FOR

GATEWAY PARCEL #4 WELL FIELD ESTABLISHMENT

The City of Vancouver (City) and the Port of Vancouver (Port) support the development and use of water supply facilities within certain Gateway property owned by the Port.

Whereas the Port is a major property owner in the Vancouver Lake Lowlands and,

Whereas certain properties are rich in habitat value and,

Whereas such property contains water rich aquifers suitable for development of community drinking water supplies and,

Whereas certain Port properties provide access to development of such water supplies and,

Whereas the City requires new water supplies to support community growth, industrial and economic expansion, and secure redundant water supply, and

Whereas the Port and City mutually benefit from protection of this valuable habitat and from a sound, secure, and plentiful water supply system, the parties hereby agree to the development and use of such new water supply and treatment systems in accordance to the following generally described conditions:

1. Habitat value will be a primary consideration in the approach to well field design, operation and maintenance in Gateway Parcel #4.
2. Wells will be located in the northerly portion of Gateway Parcel #4 between Buckman Slough and the Erwin Rieger Memorial Highway.
3. A maximum total of 18 wells will be constructed configured in two rows of wells. One row will be approximately 110 feet west of and parallel to the highway right-of-way. The 2nd row will be approximately 250 feet west of and approximately parallel to the highway right-of-way as generally shown on Exhibit 'A'.
4. Wells will generally be spaced 200 feet apart and wells will be at least 200 feet from Buckman Slough.
5. Wells will be built to minimize their above ground presence in Parcel #4. No above ground well houses, water treatment and electrical structures will be built in parcel #4. Well casing no larger than 38 inches in outside diameter may be extended above ground to one-foot above the 100 year flood plain. All piping and electrical service will be underground. A concrete vault adjacent to the well will be flush with the ground.
6. Wells will be designed to use submersible motors and pumps. The above ground casing will be a coned flange maintenance access.

7. Electrical switch gear will be housed outside of Parcel #4 and most likely in the Vancouver Lake Park property.

8. Vehicle access to wells will be limited to a 15 foot wide gravel road from the highway which provides an internal loop road to each well casing. A back-in hammer head 15 foot wide gravel driveway will connect the road to each well casing to allow for well development and maintenance. The gravel road will be made less visible with a thin soil layer to promote natural ground cover growth and appropriate low natural ground cover set in place.

9. Construction, operations, and maintenance activities will be limited to those times which are least disruptive to the migratory and over wintering Sand Hill Cranes, which is that period from April 15th to September 15th.

10. Annual inspection visits to water facilities on parcel #4 after construction will be during the period April 15th through September 15th. Major maintenance to pull the pump, motor, or valves will be completed during the period April through September. Exceptions to these limitations can only be made through written permission from the Port and CRANE (Columbia River Alliance for Nurturing the Environment).

11. Exhibit 'A' provides a preliminary schematic of facilities for wells, piping, and support structures.

12. The Port will provide an agreement to the City to comply with State of Washington wellhead protection to limit land use in the areas which are within 100 feet of each wellhead. The limitations are as specified in WAC 173-160-171 (attached) and WAC 246-290-135.

13. Raw well water will be pumped out of Parcel #4 through underground pipes to a central treatment facility.

14. A suitable site for the water treatment facility and pumping is needed on industrial property outside of Parcel #4. The size of the parcel is subject to the results of further testing but should be approximately 4-5 acres. The City and Port will review possible locations. See Exhibit 'A' for possible location options.

15. Hydrologic, geologic, and water quality information is needed to advance well field and treatment facility design requirements. Initial work on the site would include one full scale production well and two monitoring wells. Long-term pumping is needed to gain the science data. Right of entry from the Port is needed for this work to begin.

These notes represent key points in good faith discussions between City and Port staff. These notes are intended to clarify and document concepts discussed and begin a basis to widen the discussion to Clark Public Utilities, other stakeholders and the respective elected officials.

Victor R Ehrlich City Engineer City of Vancouver	Date	Patty Boyden Environmental Manager Port of Vancouver	Date

Appendix 3

Reed Canary Grass Control

Best Management Practices for the Invasive *Phalaris arundinacea* L. (Reed canary grass) in Wetland Restorations

Final Report

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CHAPTER 1

Introduction

Overview

This report summarizes the research performed at the University of Minnesota in conjunction with technical support from DOT, DNR, and RWMWD on best management practices for the invasive grass *Phalaris arundinacea* L. (reed canary grass) in wetland restorations. This research was implemented from 1999 to 2004 by Carrie Reinhardt and SusanGalatowitsch. This document serves as the final technical document for the project.

Background of the research problem

More than a two decades ago, Bradshaw (1) wrote that "the successful restoration of a disturbed ecosystem is the acid test of our understanding of that ecosystem." Although he drew attention to the need for rigorous study of barriers to restoration, little research in restoration ecology been designed to address biotic factors that affect the rate and direction of recovery.

There are several key barriers to ecological restoration. The most obvious barrier is physical site conditions, e.g. hydrology and topography, which must be altered to resemble that of the target ecosystem. Although not perfectly understood, this barrier is perhaps the most researched and easily overcome for some ecosystems. Given the proper site conditions, the next most logical barrier to restorations is the establishment of native species that are present in the natural target ecosystem. For vegetation, colonization requires that refugial populations exist on site (e.g. the seed bank) or that colonization will result by dispersal from remote propagule sources. However, even if propagules are available for colonization, successful establishment of those target species faces another barrier: if weeds (or invasive species) are present at the restoration site, colonization of native target species becomes much less likely.

Weeds have historically had major impacts on agricultural systems and currently continue to reduce yields of agricultural crops, although to a lesser degree due to weed control efforts. Weed control research has addressed how to eliminate weeds from agricultural systems for well over a century. A need to achieve crop yields spurred the development of agricultural weed control research, and similarly, the conservation and restoration of natural areas has led to a need to understand the control of invasive species, or environmental weeds. Weed impacts in natural areas progress beyond loss of habitat and biodiversity to regional changes in landscape processes (2, 3, 4).

Experience with the control of agricultural weeds must be applied with caution to the control of environmental weeds (2). For instance, agricultural weed control strategies can often be applied yearly in conjunction with annual cropping practices. One of the challenges presented by environmental weeds is the need for more long-term control strategies, as the ultimate goal for natural and restored ecosystems is to minimize management intervention and create the most self-sustaining ecosystem possible. It follows that perennial environmental weeds are particularly problematic, as these species tend to be persistent. Control efforts are most successful if aspects of the biology of the invader suggest that control techniques employed might be effective (5).

Control of invaders has proven to be costly, emphasizing that effective control strategies must be researched. Mack et al. (5) point out that if we fail to implement effective strategies to control the damaging impacts of environmental weeds, we risk impoverishing and homogenizing the ecosystems on which we rely to supply us with irreplaceable natural services.

In his review of a special feature on ecological invasions, Kareiva (6) noted that progress in developing a predictive ecology for invasions would speed up if field research on invasions adopts an experimental approach. The proposed research addresses this need by presenting a series of experiments that will contribute to the predictive understanding of perennial weeds in restored ecosystems. This research suggests the role of an invasive perennial grass in restored prairie pothole wetlands as a model system for understanding environmental weeds.

The model environmental weed, *Phalaris arundinacea* (reed canary grass), is a cool season perennial grass which has been bred primarily for forage purposes throughout the temperate zone. This species preempts the establishment of target native species in prairie pothole restorations. Although some information on the biology and ecology of *P. arundinacea* has been addressed by agronomic breeding research, little attempt has been made to apply this knowledge to investigating possible control techniques and strategies for this species. Incorporating and supplementing this knowledge of the species and applying it to the search for effective control techniques suggests a route for identifying successful control techniques for other environmental weed species.

Restoration ecology deals with management practices aiming at the re-establishment of plant species that are not present at the restoration site. For revegetation to occur, propagules must be available on site (in the soil seed bank), or propagules must disperse to the site by some vector, e.g. wind, water, animals (8). Target species may not effectively colonize (e.g. sedge meadow species in restored prairie pothole wetlands (9, 10, 11), and target grasses in restored species-rich grasslands (8)). Failure to colonize may be due to variable persistence in the seed bank. Some wetland plants (emergent perennials and mud flat annuals) produce abundant and long-lived seed that can persist as viable propagules in the soil for up to twenty years of drainage and

cultivation (12). Other species may not survive drainage and cultivation, or may have naturally transient seed banks (13, 14). The natural limitations to dispersal may prevent the availability of propagules to the site, as the dispersal of propagules is essentially random, and there is no certainty that species capable of being established will do so (15). Also, as dispersal corridors are disrupted by anthropogenic barriers, dispersal might not be as reliable as it has been in the past (8, 15).

However even with proper site conditions and availability of propagules, the presence of environmental weeds may prevent natives from establishing. For instance, in North America, environmental weeds severely limit ecosystem recovery of restored wetlands with adequately restored hydrology (11, 16).

Invasion in restored wetlands

Since Elton's book, *The Ecology of Invasions by Animals and Plants* (1958), ecologists have struggled to understand what makes some invasions so damaging and other invasions have negligible effects. The past decade of research has focused on developing a predictive understanding for ecological invasions. Only relatively recently have ecologists focused on two important questions: 1) what makes a community prone to weed invasion? and 2) what are the characteristics of successful invader?

Life history characteristics of the invader undeniably play a crucial role in understanding the mechanisms of invasion. Several life history characteristics have emerged as typical of weed invaders, perennial species may be more likely to be successful invaders because they tend to be more persistent (17, 18). Examples of problematic perennials abound in the literature. For example, Australian Northern Territory wetlands are threatened by several clonal perennial pasture grasses that escape from pastoral to conservation areas (2), and the inland wetlands of
North America have been impacted by several perennial aggressive taxa (18).

There is abundant evidence for the assertion that disturbed communities (e.g. a newly regarded restored wetland) are more invasible than intact ecosystems (19, 20, 21). Disturbance creates many unoccupied physical or ecological niches that are "safe sites", or opportunities, for invasion (22). Additionally, because wetlands (and restored wetlands) are high fertility and high moisture environments, they are more susceptible to weed invasion (23). These two factors combined suggest that the recovery of restored wetland ecosystems is particularly susceptible to limitations posed by invasion of environmental weed species. Indeed, dominance by invasive species, which prevents the establishment of target species, is listed as a common barrier to restoration success by many studies of multiple wetland restoration attempts (Kusler and Kentula 1990, McKinstry and Anderson 1993).

P. arundinacea life history and invasiveness

Phalaris arundinacea (reed canary grass) is an invasive perennial grass that is

problematic to prairie pothole wetland restorations, particularly because many restoration sites are dominated by it prior to reflooding. Establishment by *P. arundinacea* often precludes colonization by sedge meadow vegetation in restored prairie pothole wetlands (18, 24, 25).

P. arundinacea is a tall, sod-forming, cool season perennial grass that ranges in height from 60 to 240 cm(26). *P. arundinacea* has been an important cultivated forage grass in northern temperate regions of the world for nearly two centuries and within North America since the 1830's (18). Early cultivation has made its pre-agricultural distribution uncertain, although *P. arundinacea* is considered indigenous to the temperate regions of all five continents (26).

Although the timing of phenologic events in perennial grasses varies with species, general growth dynamics are consistent across species. Perennial grasses typically form short shoots made up of unelongated internodes and leaves in the early spring. Inflorescence initiation occurs later in the spring when a young meristematic shoot apex begins to differentiate into a reproductive structure, and the bottom ineternode of the apical shoot begins to elongate to elevate the inflorescence above unelongated shoots. Then the inflorescence begins to emerge from the uppermost leaf collar (this is sometimes called the boot stage). In the early summer the inflorescence begins to flower, and the anthers of the floret are exposed and visible during certain periods of the day (anthesis). The embryos in the florets of the inflorescence mature into\ seeds during mid-summer (27).

Cool season perennial grasses produce numerous vegetative buds and rhizomes during late summer and early fall that live over winter. Only these overwintering rhizomes will produce shoots with inflorescences the next spring, and an overwintering requirement (cold temperatures or short day lengths or both) must be satisfied for shoot production to occur the following spring
(28).

The phenology and morphologic development of *P. arundinacea* was described extensively by Evans and Ely (29), who studied stands in northern Ohio, USA (Lat. 42N). *P. arundinacea* was found to exhibit the general growth dynamics of a typical perennial cool season grass. They found that *P. arundinacea* growth begins in the early spring, initiating from shoots with growing points beneath the soil surface. These shoots have begun growth the previous fall from apices of underground rhizomes that turn upward, and require winter conditions to break dormancy. Stem elongation begins in April, and inflorescences begin to develop from growing points of shoots about mid-April. Flowering begins in early June, and seeds mature in June and early July. Evans and Ely (29) also noted that *P. arundinacea* rhizomes (which are short and fleshy) originate chiefly throughout May, June, July, and August. When these rhizomes begin to accumulate carbohydrates for storage is not clearly understood.

P. arundinacea thrives in areas with frequent and extreme fluctuations in water levels and is simultaneously more drought-resistant than many upland grasses (30, 31, 32, 33). For this reason, *P. arundinacea* cultivars are widely planted for irrigated and non-irrigated forage msystems and for land disposal of wastewater (34). *P. arundinacea* is also widely used as a forage crop.

Studies have highlighted characteristics that contribute to *P. arundinacea*'s dominance in wetland restorations. In addition to drought-tolerance and flood tolerance, *P. arundinacea* is winter hardy (26). This species has shown impressive environmental plasticity (18, 25), e.g. allocating more resources to seed production in unflooded conditions, and allocating more resources to below-ground vegetative production in flooded conditions (35). *P. arundinacea* and is strongly clonal and sod-forming (30).

P. arundinacea forms dense seed banks that are believed to be persistent for at least one year and most likely more (36, 37). Even after *P. arundinacea* standing vegetation and vegetative propagules have been eliminated from the site, *P. arundinacea* may continue to dominate the site vegetation through recruitment from the seed bank (16). No studies have addressed the *P. arundinacea* seed bank density as it relates to competition between *P. arundinacea* and other desirable wetland species.

Altered environmental conditions due to anthropogenic disturbance may be responsible for *P. arundinacea* increased dominance (18, 38). Several consequences of landscape modification create conditions that favor *P. arundinacea* over other species, including increased nitrogen availability (25, 39, 40), fluctuating water levels (32, 41, 42), and high light availability following disturbance (43, 44). Also, the aggressive growth of *P. arundinacea* in wetland restorations may be the result of a lack of competition in areas with bare soil, as *P. arundinacea* grows poorly in densely vegetated areas (42, 45). Although the theory behind *P. arundinacea* invasiveness is not yet clearly understood, the negative impacts of its dominance on the native wetland plant community are well-documented (18, 36, 46, 47).

P. arundinacea control

The starting condition for many wetland restorations is a basin dominated by *P. arundinacea*, and reestablishing wetland hydrology does not diminish its persistence (46). Even if *P. arundinacea* is only present as seeds in the seed bank (but not in the existing vegetation) prior to reflooding, it can germinate and rapidly spread as native vegetation is recolonizing and severely limit survival and growth of these species (16).

Mowing and grazing are ineffective at reducing *P. arundinacea* populations (46, 48). Some control success has been achieved with a combination of repeated controlled burns and herbicide treatments (glyphosate) (37, 46, 49, 50). No studies have been

published that consider the timing of various treatments relative to the growth dynamics of *P. arundinacea*. Additionally, treatments to reduce seed bank populations have not been reported.

Control techniques for *P. arundinacea* have been researched in the Pacific Northwest US, where the species establishes along irrigation canals, limiting channel capacity with vegetative growth by trapping silt (51, 52, 53). In one study addressing control along irrigation canals, *P. arundinacea* was effectively controlled for three months with amitrole-T, dalapon, and paraquat
(53). In a field study in Prosser, Washington, USA, *P. arundinacea* seedlings were found to be effectively controlled with glyphosate at 5 to 10 weeks after seedling emergence (52). Control, however, in these studies lasted only for a few months, and then reapplications of herbicide were necessary. For wetland restoration, where the goal is to minimize management intervention, multiple continuous herbicide applications are not a feasible control technique.

More recently, several studies from Minnesota and Wisconsin in the northern US have documented *P. arundinacea* control attempts. From their study of a *P. arundinacea*-dominated wetland in Minnesota that had historically been cultivated, Preuninger and Umbanhowar (36) recommend periodic applications of glyphosate herbicide within one growing season, continued for multiple growing seasons, in order to control well-established *P. arundinacea* populations. In a degraded oak savannah in Wisconsin, efforts to control *P. arundinacea* were successful only when supplemented by hand weeding of newly germinating *P. arundinacea* over multiple growing seasons (50). A 5% solution of glyphosate provided 100% control of *P. arundinacea* in a small wetland in Minnesota, but control was not assessed beyond 3 weeks (37). In their review of *P. arundinacea* control methods, Apfelbaum and Sams (46) suggested that mechanical removal using heavy equipment did not provide long-term control, as *P. arundinacea* reestablished quickly from rhizomes and seeds remaining in the soil.

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April 23, 2009

Yolanda Holder
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Dear Ms. Holder,

Thank you for providing me the opportunity to comment on the state's proposed rules for Wetland Mitigation Banks, Chapter 173-700.

I'd like to make some broad general comments, and will then provide specific comments to the state's proposed rules on Wetland Mitigation Banks (rules). Wetland mitigation banking is a subset to wetland policy generally. Several studies have cited the use of wetland mitigation banking nationally, and the proportional use of wetland mitigation banking as compared to standard compensatory mitigation. The statistic that I've heard most often is that it is estimated that 10% of all mitigation could be reasonably accommodated by wetland mitigation banks. This sets a general context for the scope and scale of wetland mitigation banking at a national level. However, in Washington State, we do not track the number of acres of wetland fill permitted annually. For this reason we cannot accurately gauge the intended scope and scale of the proposed mitigation banking rules on a state level. For the sake of discussion, if we presume that the national average of 10% represents an educated guess, and we suppose that 100 acres of wetland fill is permitted each year in Washington, then we could, by extension, estimate that it would be reasonable to assume that 10 acres of wetland fill could be accommodated by wetland mitigation banks. (Having worked in wetlands policy, permitting, and mitigation in Washington State for the last 20 years I think the estimate of 100 acres of permitted wetland fill per year vastly over-estimates the amount actually permitted, but it makes the discussion easy).

The proposed rules somewhat mirror the new federal rules on compensatory mitigation in that they are intended to provide greater efficiency and predictability in the process. The proposed rules raise the bar on requirements specific to maintenance, monitoring, performance standards, and financial assurances. These are necessary and valid improvements given the failure of compensatory mitigation based on past studies. I would like it to be clear that I support that Washington State limits the amount of wetland fill permitted on an annual basis and think this should not change as a result of adopting a wetland mitigation banking as a 'tool in the mitigation toolbox'. My concern is that unlike the federal rule, the state's proposed rule fails to provide a regulatory framework

or context within which to understand how wetland mitigation banking relates to the standard compensatory mitigation process. This comprehensive mitigation framework is critical to make it clear that wetland mitigation banking is just one of several tools available. To set rules only for banks, and not for other mitigation options, establishes at least the perception of a very un-even playing field; one in which the bankers will be held to high standards above and beyond the standards for other mitigation options. As a result, I am concerned that most projects will use the standard sequencing process, and standard mitigation ratios per local critical areas ordinances. I'm concerned that banks simply won't be used.

Furthermore, the state's proposed rules seem to be geared towards private sector wetland mitigation banks in that they assume that to reach a feasible economy of scale, in regard to credits, monitoring, and release rates, that most banks will be at least 50 acres in size. Most private sector banks currently in the process range between 100-300 acres in size. It is enormously costly to design and permit such sites, and it takes tremendous capital to get through the permitting process, let alone the monitoring, reporting, maintenance, and on-going use process. To be successful, bankers must have strong financial incentives in the form of advantageous credit ratios, and predictability, and certainty of costs over time. The proposed rules undermine these incentives by providing a sliding scale of ratios that makes it nearly impossible for a banker to predict what a reasonable credit ratio and return on investment might be. As an ecologist I do not argue with monitoring periods which extend up to 12 years from the date of Mitigation Bank Instrument (MBI) signature. However, as a policy analyst I cannot help but note that when our state's proposed monitoring, maintenance, financial assurances and stewardship requirements are more than twice that required elsewhere in the nation it is extremely unlikely that private sector bankers will choose to pursue the process in Washington State. That represents a significant loss of private capital invested in natural resource restoration ($15 million estimated private capital contributed to date towards four private sector wetland mitigation banks in Washington), and a significant loss on improving the wetland mitigation banking process for Washington State residents and regulators.

Wetland mitigation banking is intended to create a tool by which temporal losses associated with compensatory mitigation can be avoided, and credits can be released incrementally over time as ecological performance standards are met, thus increasing the regulatory certainty towards the policy goal of 'no net loss of wetland function and acreage'.

Public agencies are in a position to anticipate unavoidable impacts to wetlands. Both Pierce and Clark counties have tried to establish wetland mitigation banking programs. Both were unsuccessful at least in part because agency staff reviewing their proposals deemed the counties' proposed sites too small to be appropriate as wetlands mitigation banking sites. The counties had both made efforts to match their proposals to their mitigation needs, had both identified sites in proposed umbrella instruments, in multiple locations, throughout multiple watersheds, with the intent of mitigating in advance for unavoidable impacts to wetlands resulting from Capital Improvement Projects. It's hard to disagree with the conclusion of the regulatory agencies when each of these sites would

only have provided minimal amounts of wetland mitigation and credit over time (5 plus credits per site over a ten to twelve year time-frame – meaning fractions of credit released if performance standards are met on time, in addition to an extremely costly 'cost-per-credit' as compared to larger, private sector proposals). However, these public agencies still have mitigation needs, although on a smaller scale than contemplated as feasible by the state's proposed rules. Both Pierce and Clark County pursued wetland mitigation banking as a policy in an effort to plan in advance for their needs. Given their experience (both agencies spent well over $2 million and more than 5 years before abandoning their efforts to establish banking programs – though their mitigation needs remain) it is hard to contemplate how a publicly sponsored bank could be successfully established in Washington State. And yet, public agencies need to plan progressively for their mitigation needs.

If the private sector incentives have been removed and the public sector has tried, and failed to implement banks, who would establish banks? I am concerned that the promulgation of these proposed rules, in the absence of a broader regulatory context for wetland mitigation (and mitigation generally) will result in the following:

1) Failure to implement any banks;
2) Continuation of the existing compensatory mitigation process – project-by-project – which is ill-suited to a comprehensive, watershed-based approach to mitigation coordinated with watershed planning and broader ecosystem restoration goals;
3) The rise of the In-Lieu Fee program – simply because by being less clearly defined (or not defined at the state or local level) it becomes more appealing.

By specifying exactly what the standards are for the theoretical 10% of wetland mitigation which could be accommodated by wetland mitigation banks I am concerned that the use of wetland mitigation banks as a policy in Washington State will be seriously compromised, if not eliminated from use as a tool in the toolbox. Having worked with you over the years I know that this is not your intent, but I would encourage you to rethink promulgation of these proposed rules without looking at the wetland mitigation rules as a whole. You are absolutely correct in raising the bar on all mitigation across the board, but to raise the bar on only one tool in the toolbox, in isolation from its broader context, risks the loss of that tool overall.

In that regard, if promulgated, these rules should have direct links to the good work that you have been doing, such as the Mitigation that Works group, the watershed characterization process, and the guidance on siting mitigation within a watershed context. All of these resources would help in providing a broader perspective and context within which wetland mitigation banking could be implemented.

Thank you for always working in good faith towards the goal of making wetland mitigation in Washington State more successful by use of better site selection, design, performance standards, maintenance and monitoring. We have made a lot of progress over the last 20 years. Thank you for your continued efforts at improving the process.

Respectfully,

Jennifer Thomas
Senior Wetland Ecologist
Parametrix
411 108 Avenue NE, Suite 1800
Bellevue, WA 98004

Specific comments to rule by section:

WAC 173-700-100(3) Good. Excellent part of background and purpose statement in setting the broader context.

WAC 173-700-001 (3) and © - these are both good additions from the draft – thank you.

Definitions: Watershed-based approach to mitigation – excellent to have this here, but differs from federal definition and is very subjective as written.

WAC 173-700-200
Good to add more info here.

Page 9, (7)(e) The landscape position of the site…
Language should add 'basin' following WRIA and prior to sub-basin.

WAC 173-700-212 Submittal of Prospectus (8) in re: "The department makes an initial evaluation on the ecological appropriateness…."

In re: siting or design or both? There is very little detail at this stage, except for landscape setting. This seems to create a very subjective determination. Could it be strengthened by tying it more closely to the statutory goals? See also (b) "If the department determines that the proposed bank is not ecologically appropriate…."

WAC 173-700-222 content of the Instrument in re: (3) (d) add Basin? In re: (e) and (g) seems as though wetland delineation should be specified at this stage.
In re: (l)(ii) location, size and # of existing **wetlands based on wetland delineation in accorandance with state standard.**

(6)(e) in re: 'the functions to be provided [**on site and within the landscape?]** by the bank….

WAC 173-700-241 (3)(b)
Isn't this duplicative of local notice requirements? Why would the department duplicate an existing requirement? Please clarify.

WAC 173-700-300 Ecological design incentives. Good to have this section.

WAC 173-700-302 (10) + What about considering sustainability and ability of the site to meet the goals of the Clean Water Act by restoring and protecting our nations waters (or maybe more appropriately the state's growth management act) by improving on the success and quality of mitigation.

WAC 173-700-316 Considerations for determining high quality wetland systems.
This section seems to be out of place – can you please clarify why it is where it is in the proposed regulations?

WAC 173-700-318. Excellent to provide conversion rates for associated upland habitat protected and restored via banks.

An overall comment:
I think I counted 38 pages on bank establishment, and 2 pages on bank use. In contrast the federal rules prioritize use of banks.

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April 22, 2009

Lauren Driscoll
SEA Program
Department of Ecology
PO Box 47600
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RE: WSDOT's comments on the draft state rule for wetland mitigation banking

Lauren,

Thank you for providing WSDOT the opportunity to comment on the proposed state wetland mitigation banking rule. WSDOT's comments are presented in three sections. In the first section we strongly suggest that the state should adopt the definition and use of terms pertaining to using a "Watershed Approach" provided in the recent federal rule on compensatory mitigation. We feel doing this would reduce the potential for confusion about language and terms, and would help insure consistency with the joint federal rule on compensatory mitigation. The second section addresses specific concerns we have with the sale of mitigation bank credits, requirements for listing transactions in official ledgers, and credit availability. The third and final section presents comments on the specific reference sections in the order of presentation in the WAC. These comments have been numbered but these numbers are provided for referencing and do not reflect the relative importance of our remarks.

The Watershed Approach

The proposed state Mitigation Banking Rule discusses the use of a "watershed characterization" process for mitigation bank site selection as well as using a "watershed-based approach to mitigation" site design. There are numerous references to watershed approach, watershed-based approach to mitigation and watershed characterization in the proposed rule in the following sections: WAC 173-700-104 Definitions, WAC 173-700-211 (3) Content of the Prospectus, WAC 173-700-300 (1) Ecological Design Incentives, WAC 173-700-302 Considerations for determining service area size; and WAC 173-700-303 Site Selection.

The watershed approach is an important concept. The definition and use of this concept in the state rule should be consistent with the definition and considerations of the watershed approach in the federal rule *Part 332 Compensatory Mitigation for Losses of Aquatic Resources*. In section 332.2 the watershed approach is defined as:

> *"Watershed approach means an analytical process for making compensatory mitigation decisions that support the sustainability or improvement of aquatic resources in a watershed. It involves consideration of watershed needs, and how locations and types of compensatory mitigation projects address those needs. A landscape perspective is used to identify the types and locations of compensatory mitigation projects that will benefit the watershed and offset losses of aquatic resource functions and services caused by activities authorized by DA permits. The watershed approach may involve consideration of landscape scale, historic and potential aquatic resource conditions, past and projected aquatic resource impacts in the watershed, and terrestrial connections between aquatic resources when determining compensatory mitigation requirements for DA permits."*

In section 332.3 (c)(2)(i) the rule states that:

> *"A watershed approach to mitigation considers the importance of landscape position and resource type of compensatory mitigation projects for the sustainability of aquatic resource functions within the watershed. Such an approach considers how the types and locations of compensatory mitigation projects will provide the desired aquatic resource functions, and will continue to function over time in a changing landscape. It also considers the habitat requirements of important species, habitat loss or conversion trends, as well as the requirements of other regulatory and non-regulatory programs that affect the watershed, such as storm water management or habitat conservation programs. It includes the protection and maintenance of terrestrial resources, such as non-wetland riparian areas and uplands, when those resources contribute to or improve the overall ecological functioning of aquatic resources in the watershed. Compensatory mitigation requirements determined through the watershed approach should not focus exclusively on specific functions (e.g., water quality or habitat for certain species), but should provide, where practicable, the suite of functions typically provided by the affected aquatic resource."*

We recommend that the definition quoted above (332.2) and the description of considerations in applying the watershed approach (332.3(c)(i)) be incorporated into the state rule. The state rule should mirror the definition of watershed approach found in the federal rule and the considerations of how the watershed approach is applied that are listed in detail in section 332.3 (c)(2)(i). Where possible the State rule should use the same language to provide clarity.

Mitigation Bank Credits and their Availability

Another area of concern for WSDOT relates to the sale of mitigation bank credits and requirements for listing transactions in official ledgers and credit availability. The proposed rule identifies ledger tracking requirements in 173-700-411. Ledger entries are required for every credit release approved by the Department. Credits are debited from the ledger when

they are approved to satisfy mitigation requirements for a permit. These debits are associated with the permit number authorizing the credit use.

In practice, WSDOT must have a plan to secure mitigation options well in advance of the time that permits are issued. Because considerable time may be required for planning and securing mitigation sites, projects must anticipate how they plan to satisfy mitigation requirements well before agencies reach decisions about approving mitigation.

To date, WSDOT's practice has been to work with agency staff to understand where bank credits are likely to be an appropriate mitigation strategy for specific project impacts. Based on that information and specific coordination with regulatory agency staff, project teams can identify which projects are likely to be suitable candidates for using mitigation banks. With this kind of information at hand, WSDOT has chosen to secure credits by purchasing them in advance of permits. This ensures that credits are available when needed. These decisions have been carefully considered to minimize the risk that an unapprovable mitigation proposal, discovered late in the process, would disrupt the project schedule.

Under the current proposed rule, credits purchased from the bank sponsor in advance of permits would still be in the official ledger as part of the available balance of credits at the bank. This balance of available credits may be subject to suspension in circumstances where the bank sponsor is not in compliance with the bank instrument and the department chooses to implement suspension per WAC 173-700-603. If there is a suspension of credit use, no credits may be debited from the bank until the suspension has been lifted by the Department.

This means that credits purchased in advance and belonging to WSDOT would not be available to be used to satisfy permit requirements until the suspension is lifted. This creates a significant risk to project planning and scheduling that may be an unacceptable risk from a business perspective. The effect of this risk could limit WSDOT's use of private mitigation banks.

To resolve this issue we suggest the following adjustments be made to the relevant sections of the draft rule:

1) All credits released to bank sponsors will be given unique identifier numbers based on 0.01 credit units.
2) All entries in official tracking ledger will reference the unique identifying numbers.
3) Available credits that have been purchased from the bank sponsor and recorded with the County Auditor will be listed in the official ledger as 'reserve credits' and include as reference their unique identifying numbers.
4) Reserve credits will be subtracted from the ledger balance showing available credits at the bank.
5) Available credits or reserved credits may be used to satisfy mitigation requirements of permits.
6) The seller is required to record any sales of reserved credits with the County Auditor and report the sale to the Department. The report will reference the unique identifying

numbers for those credits along with the name and contact information of the purchaser.

7) The total credits in reserve status will be noted in the reserve column in the official ledger.
8) If a regulatory agency approves use of 'reserve' credits to satisfy required mitigation for permit impacts, then an entry will be made in the official ledger noting the reserve credits as debited using their unique identifying numbers..
9) The purchase of bank credits and/or the recording and posting of 'reserve' credits to the ledger do not provide any assurance to purchaser that credits will be approved to meet mitigation requirements associated with any specific permit.
10) Reserve credits will not be subject to any suspension actions the Department may choose to take against the bank's sponsor in the case of non-compliance per section 173-700-603.

WSDOT Comments on Definitions and WAC Reference Sections

WAC 173-700-104 Definitions:

1. The term "significant modification" is not described yet it is used in many sections of the rule. Please clarify and/or define.

2. The term "Creation" is no longer used by the US Army Corps of Engineers (Corps). Instead they use "Establishment". This revision should be made throughout the entire document.

3. The definition of "Credit" states "a unit of trade representing the increase in the ecological value of the bank site as measured by acreage, functions, or by some other assessment method". If credits are established for other resource types, the unit used to measure that credit should be consistent with the Federal Rule on Compensatory Mitigation.

4. The distinction between remedial actions and contingency actions should be clarified.

5. The term, "Watershed-based Approach to Mitigation" is not clearly defined. As previously stated, the definition used in the Federal Rule on Compensatory Mitigation is more complete and inclusive. We recommend using the language stated in the Federal Rule on Compensatory Mitigation "Watershed Approach" in Definition, section 332.2 and Considerations, section 323.3 (c) (2).

Comments by WAC section

6. WAC 173-700-211 (6), include legal description for the property.

7. WAC 173-700-211 (7) (f), include "wetland size and rating."

8. WAC 173-700-211 (8), include existing and potential invasive species and invasive species control measures.

9. WAC 173-700-211 (8) (a), revise to state, "Proposed types, classifications, ratings, and approximate sizes of wetlands."

10. 173-700-212 (3). Is there a timeline for the notification to the affected tribes and the local jurisdiction planning department? Also, include the tribes and local jurisdictions within the service area not just the bank location.

11. 173-700-212 (7). Is the comment period mentioned that same comment period mentioned in 173-700-212 (4)? What is the length of this comment period?

12. 173-700-212 (8) (b) (i). If the sponsor submits a revised prospectus when does the process re-start? This should be clarified. We suggest that the rule language mirror the Federal Rule on Compensatory Mitigation language 332.8 (d) (5) (iii).

    We suggest the following language: *"If the sponsor submits a revised prospectus, the department will provide a revised public notice in accordance with 173-700-212 (6)."*

13. 173-700-220 (1). The local jurisdictions and tribes within the service area should be included in the IRT not just those where the bank is located.

14. WAC 173-700-222 (2), include legal description for the property.

15. 173-700-224 (4) states "Once a modified draft instrument is submitted, the department must notify the sponsor as soon as it determines that the draft instrument is complete." This language is consistent with language in the federal rule but does not specify timelines. There should be a timeline associated with the response from department after the submittal of a modified draft instrument per section 173-700-224 (4).

    We suggest the following language: "…*department must notify the sponsor within 30 days of modified draft instrument submittal.*

16. 173-700-230 (6) states that local jurisdiction(s) notify the department in writing of whether it concurs with certification. We recommend there be a timeline identified for this written notification to the department.

17. 173-700-241 (1) states that local jurisdictions where the bank site is located will be notified of the prospectus and proposed certification. This should be changed to include all local jurisdictions within the bank service area.

18. 173-700-300 (2) states that more favorable credit conversion rates and larger service areas may be allowed as incentives for banks that provide significant ecological benefits and are sustainable. Does this mean conversion rates better than those defined in 173-700-313 to

173-700-319? And does this mean larger service areas than those identified in 173-700-302? This section need to be clarified.

19. 173-700-303 (2) (a) includes the term "prime soils" yet does not provide a definition. Please include a definition of this term in 173-700-104 or provide references to where this term is defined.

20. 173-700-304 (4) states that buffers do not generate credit on an area basis. Please clarify that buffer credits may be established to meet the requirements of local jurisdiction regulatory codes.

21. 173-700-317. If there is a significant benefit to aquatic resources, then a bank located in an urban area should be able to generate credit conversion ratios at the full range identified in WAC 173-700-313 and 173-700-319. It is not appropriate to make it more difficult to develop a mitigation bank solely because it is located in an urban area. There may be important aquatic resources in the local area that a bank could contribute to sustaining or providing.

22. Sections 173-700-331 (d), 172-700-351 and 173-700-351 all address mechanisms for providing financial assurances for banks including assurances related to the needs of long term management and maintenance. Please amend this text to include other approved mechanisms for providing long-term management and maintenance funding.

23. 173-700-332 (2) (a). By what time must the as-built plans be submitted following completion of construction?

24. 173-700-332 (3). What is the timeline for approval of the as-built plans by the department?

25. 173-700-332 (4). We suggest that this section be modified to allow the sponsor to propose changes to the bank design that will address difficulties they encounter during construction. The department in consultation with the sponsor and signatory agencies will determine if the proposed changes to the bank design will be approved. If the proposed changes are not approved the department may follow with the remedial actions outlined in the remainder of section 173-700-332 (4)."

    Provide clarification of the statement that "substantive changes to the bank design needs approval." Does this refer to changes in finish grade elevation, proposed resource type and area, and/or proposed function?

26. 173-700-334 (2) (c). Include the statement, *"…, or in the case of banks developed by public agencies, a letter of commitment identifying a suitable long term funding mechanism has been approved by the department*."

27. 173-700-335 (2) indicates that a sponsor may perform approved actions not identified in the MBI to increase the functions of a bank and that the department may release credits earlier based on these actions.

    We suggest that earlier credit releases should be based on earlier attainment of performance standards associated with credit releases (i.e., structural development/ biomass increases in natural vegetation).

    In a separate process, the bank sponsor should be able to propose that objectives and performance standards be revisited if information becomes available that suggests that the site design will not be achievable. This revisiting should look at the remaining credit releases, the best ecologically appropriate, sustainable and practicable alternative for design changes.

28. 173-700-351. Add a section that allows for public entities to provide financial assurances through a formal documented commitment as identified in 332.3 (n) of the Federal Rule on Compensatory Mitigation.

29. 173-700-351. Where Financial Assurances are provided through a mechanism for approved commitment, public agencies should not be required to pay for contract administration for department.

30. 173-700-403. The Adaptive Management Plan text is too general and not specific. It needs more specificity to situations where potential for site failure requires changes in management strategies. Actions planned and implemented to address unforeseen site development problems that may affect success of the site should be called '*Adaptive Management Plans'* and '*adaptive management actions'*. Delete the use of the word 'contingency'.

31. 173-700-403 (b). We suggest the following language: "*An adaptive management strategy that identifies actions to be taken if unforeseen site conditions or results of monitoring indicate that the site will not achieve performance standards. The adaptive management plan will identify the process for evaluating, reporting and implementing specific adaptive management actions that may be needed to address site conditions*."

32. 173-700-403 (c). We suggest the following language: "*The sponsor's responsibility in reporting adaptive management plans and activities in annual monitoring reports and implementing adaptive management plans and actions*."

33. 173-700-403 (3). We suggest the following language: "*The sponsor shall, notify the department within 90 days if adaptive management actions not previously identified in annual monitoring reports are implemented to address additional unforeseen problems with site conditions*."

34. 173-700-410 (4). There should be a timeline for the department review of the bank's compliance of the performance standards and subsequent credit releases.

35. 173-700-500 (1) states that the bank attain performance standards before credits can be used. This is not consistent with release of administrative credits for signed MBI, FA and CE. This language should be adjusted to incorporate administrative credit releases.

36. 173-700-601 (2). Add the following, **"***The sponsor may propose changes to the bank design that will address the difficulties in achieving performance standards. The department in consultation with the sponsor and signatory agencies will determine if the proposed changes to the bank design will be approved. If the proposed changes are not approved the department may follow with remedial actions per section 173-601 (4).*"

37. 173-700-602 (6) should reference subsection (5), not subsection (4).

38. 173-700-603 (1). The department may suspend the sale of credits to bring a bank into compliance. If the department suspends the sale of credits, available credits may not be debited until the department lifts the suspension and notifies the sponsor in writing that credit use may be resumed.

39. 173-700-603 (1a). A review of the monitoring reports as well as an on-site inspection by the IRT shall be conducted to determine the level of success prior to a suspension of credit use.

40. 173-700-603 (2). The suspension shall include all available credits held by the bank. Credits that have been previously purchased and transferred to a customer will remain eligible for approval as compensation for authorized impacts.

Thank you for taking the time to consider these comments and suggestions.

Sincerely,

Ken L. Risenhoover
Ecological Mitigation Program Manager
Environmental Services Office

CC: Paul Wagner
Gretchen Lux

From:	Josh Wozniak
To:	Driscoll, Lauren (ECY); "kimberley.a.harper@usace.army.mil"; Holder, Yolanda (ECY);
Subject:	Comments on Proposed Mitigation Banking Rule (WAC 173-700-303)
Date:	Thursday, April 23, 2009 4:40:51 PM

Hi there,

I've reviewed the proposed mitigation banking rule and have a few comments/ suggestions:

WAC 173-700-303, Section 2, Compatibility of banks and agricultural lands of long-term commercial significance (ALLCS):

As currently written, the rule's use of ALLCS designations to define prime farmland potentially threatens the ability for mitigation bank siting in areas where they are the most ecologically appropriate – river floodplain areas. Puget Sound river floodplains have historically been converted from floodplain wetlands complexes and riparian habitat to agricultural land, and now most large tracts of undeveloped land in these areas fall under ALLCS land use designations. These are the areas where large-scale restoration projects would provide the most benefit to ESA-listed fish recovery, regional water quality improvement, wildlife corridor enhancement, and flood abatement through increased floodwater storage capacity. Since we all value local farmland and simultaneously understand the need for river floodplain restoration to achieve restoration of these critical ecological functions, a balance needs to be achieved between these two objectives.

ALLCS are established by local jurisdictions (per WAC 365-190-050), and consequently there is not a standardized state-wide working definition for this land use designation. In WAC 365-190-050, it is provided that local jurisdictions utilize the NRCS definition of "prime farmland" soils and associated geographic extent from soil surveys to establish ALLCS. Unfortunately, local jurisdictions do not always use this criterion for establishing ALLCS areas, as evidenced by overlaying this soils type with these land use designations in GIS.

While there are "prime" farmland areas within ALLCS, this designation also encompasses sub-prime areas with soils described by the NRCS as "prime farmland if drained" – areas often exhibiting flooding during the growing season and requiring modification to support conventional crops. These are areas that often provide optimal conditions for wetland restoration projects. Unfortunately, ALLCS designations do not make this distinction – and it is this over-inclusive and nebulous definition that provides substantial grounds for caution in using it as a restriction for mitigation bank siting. I strongly recommend using scientifically-based definitions, as in WAC 173-700-30, such as the "prime farmland" NRCS soil classifications (excluding "prime farmland if drained" and

other modifiers of “prime”) and requirements for documented current and on-going crop production.

Section WAC 173-700-800, Appeals Process:

As currently written, this section provides an open-ended avenue for any opposition, whether founded on scientifically- or policy-based grounds or not, to a given mitigation bank to appeal the certification process and indefinitely obstruct an otherwise approved project from moving forward.

There should be some sort of language in WAC 173-700-800 that provides assurance to a mitigation bank developer that appeals for final certification will only be entertained if they are based on non-compliance with the terms and conditions of the certification as specified in the banking instrument and in WAC 173-700-600.

Thanks for your time,

Josh Wozniak

Josh Wozniak
Biologist, PWS

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April 23, 2009

Washington Department of Ecology
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RE: Proposed Rule on Wetland Mitigation Banking

Dear Ms. Holder,

The Northwest Indian Fisheries Commission appreciates this opportunity to provide comments on the Washington Department of Ecology's proposed rule governing wetland mitigation banks, WAC 173-700. The Commission recently prepared comments on a proposal for a Puget Sound-wide in-lieu-fee mitigation program. Those comments are relevant here, due to the similarities between in-lieu-fee mitigation. The Commission's comments included eight principles, which we reiterate here:

A mitigation bank should have the following characteristics:

1. Is watershed specific – that is, the bank is developed for a specific watershed and all key decisions are made by the relevant entities in that watershed;

2. Improves the quality of mitigation;

3. Limits decision-making to watershed entities with jurisdiction (including WDOE and the Corps of Engineers). Affected tribe(s) must be engaged in and concur in decision-making (including mitigation priorities, sites, and the decision to conduct off-site mitigation);

4. Eligible/type of impacts to be mitigated would be limited to those that are tribally-approved;

5. Does not inhibit the tribes' ability to interact with federal agencies on permit mitigation issues;

6. Has accountable contract administration that is developed within the watershed, either with a tribe or another approved entity;

7. Has funding identified for accountable long-term maintenance and monitoring;

8. Does not confuse mitigation with restoration. The mitigation banking program must not facilitate impacts that ultimately prevent achievement of the level of watershed restoration needed to provide treaty fisheries.

Banks Must Be Watershed-Specific

There are very few situations where it is appropriate to allow impacts in one watershed and mitigate them in another. Consequently, it is difficult to foresee when it would be appropriate to allow the service area of a mitigation bank to go beyond the WRIA in which the bank is located. (*See* proposed WAC 173-700-301(3)). The proposed rule would allow such an expansion when to do so is "ecologically appropriate and defensible." The term "defensible" may not be the best choice for rule language. A better approach would probably be to allow such a service area expansion when it is ecologically appropriate, consistent with watershed restoration objectives, and affected state, federal, local, and tribal governments agree. This would also apply to the provision addressing the use of bank credits outside of the bank's service area. (Proposed WAC 173-700-502).

The question of whether impacts in one drainage can be mitigated by commensurate restoration activities in another drainage can become complicated quickly and the answer varies based upon local conditions and restoration objectives. This underscores the importance of assuring that the siting of mitigation banks and the use of mitigation bank credits must be consistent with watershed restoration objectives and agreed to by affected tribes.

Role of Tribes

As conveyed by the eight principles, the Commission's member tribes have important roles in assuring that mitigation activities are consistent with and do not undermine tribal fish and wildlife restoration goals. Decisions regarding service areas, ecological design incentives (proposed WAC 173-700-300); wetland credit methods, rates, and exceptions (proposed WAC 173-700-312 through 321); remedial actions (proposed WAC 173-700-600 and 602) should be made with the concurrence of affected tribes. Due to their unique treaty-secured interests and roles within watersheds, affected tribes should be accorded the same participation rights as signatories,[1] (proposed WAC 173-700-701), regardless of whether a tribe chooses to be an actual "signatory."

[1] This would include, among other things, the right to receive "as-builts" and monitoring reports. Affected tribes should also be able to review a bank's credit/debit ledger.

Affected tribes include more than just a tribe within a bank's proposed service area; affected tribes include at least those tribes with ceded interests within the WRIA in which a bank would be sited. (*See* proposed WAC 173-700-241(2)). We recommend replacing the term "tribal governments" in proposed WAC 173-700-241(2) with the term "affected tribes."[2]

Finally, tribes should be accorded at least the same courtesy as that given to local jurisdictions – if an affected tribe does not concur with certification of a proposed mitigation bank, then the Department of Ecology shall not certify the bank. (*See* proposed WAC 173-700-230(6)(a)-(b)).

The Proposed Rule Appears to Confuse Mitigation and Restoration

The purpose of a wetland mitigation bank is mitigation, not restoration. The very first sentence of the proposed rule makes this point: banks are "an important regulatory tool for providing compensatory mitigation for unavoidable impacts to wetland...." (proposed WAC 173-700-100(1)). To the extent that a bank "restores" habitat in a watershed, it does so, at most, temporarily. The purpose of a bank is to generate a profit by essentially providing advance mitigation for future development activities. If a bank fully realizes its purpose, at best, it provides for "no net loss" of wetland resources within its service area.

An example of where the proposed rule appears to confuse mitigation and restoration is contained in proposed WAC 173-700-211(3). It provides that a prospectus must contain "a statement of how the bank meets any watershed restoration needs...." (*See also* proposed WAC 173-700-222(4)). Again, by definition, a mitigation bank does not restore; it mitigates. At best, it nets out impacts. What the rule should require of proposed bankers, instead, is a demonstration of how the proposed bank will neither impair, limit, or hinder achievement of watershed restoration goals. For example, a bank that proposes to restore habitat that is very limited (and consequently of high value) within a given watershed may be taking habitat that is needed for watershed restoration and allocating it to mitigation of future impacts. In such a situation, the bank would be impairing watershed restoration goals and the bank should not be certified.

There are a number of other examples of confusion between restoration and mitigation. One is found at proposed WAC 173-700-300. Again, it is unclear how a bank can "restore" critical watershed processes when its entire purpose is to provide appropriate mitigation for future impacts. *See also* proposed WAC 173-700-302 (evaluating service area size on the basis of the degree to which a proposed bank would "restore" processes within the watershed); *see also* proposed WAC 173-700-314 (degree to which bank restores ecological processes previously altered by human activity in a watershed); proposed WAC 173-700-500 (encouraging local agencies to use mitigation banks as tools for implementing restoration plans). Mitigation banks are for mitigation and provisions need to be included to make sure that the mitigation actions being

[2] It would likely be helpful to include a definition of "affected tribes." It would be appropriate to use the same definition as that used in the SEPA regulations (WAC 197-11-710).

implemented by banks do not interfere with restoration plans being implemented by others.

Excess Solicitude Towards Protecting Lands Designated for Commercial Agriculture Will Likely Interfere with Salmon Restoration

The Commission recognizes that retention of properly managed commercial agricultural lands is an important tool in salmon restoration and flood protection. However, agriculture has been a very significant source of watershed impacts harmful to salmon. The National Marine Fisheries Service's recent biological opinion finding that FEMA's implementation of its National Flood Insurance Program jeopardizes Puget Sound Chinook contains numerous citations to the scientific literature documenting the impacts of agriculture on salmon. *See e.g.,* NOAA Fisheries, ESA Section 7 Final Biological Opinion regarding Implementation of the NFIP State of Washington – Puget Sound Region – Phase One Document. NMFS Tracking No. 2006-00472 (September 22, 2008) at 29, 30, 42, 54, 58, 59, 63, 64, 65, 66, 67, 69, 70, 71, 102, and 114. Being able to conduct restoration actions on some lands currently slated for agricultural use will be essential to restoration of Puget Sound salmon.

As currently drafted, the proposed rule constitutes a significant hindrance to voluntary actions between willing buyers and sellers who seek to reconnect or return lands slated for agriculture to a more salmon-friendly use. *See e.g.*, proposed WAC 173-700-303(2). The rule essentially places any lands zoned for commercial agriculture as being off-limits for mitigation banks. If the Department believes that the proposed rule does provide an important watershed restoration function,[3] then it needs to recognize that mitigation banking should be allowed on agricultural lands of importance to salmon. As currently drafted, the proposed rule fails to reach any accommodation between protecting commercial agriculture lands and recovering ESA-listed salmon. Instead, the proposed rule may create a significant obstacle to salmon recovery.

Definitions

Some of the definitions are not as clear or helpful as they could be. For example, the second sentence in the definition of "consensus" states: "While the primary goal of consensus is to reach agreement on an issue by all parties, unanimity may not always be possible." This truism has no place in the definition. There is either a consensus or there isn't and conveying the impression that the term "consensus" equals "partial consensus" does not promote clarity or understanding.

The definition of "enhancement" also needs work. The final sentence states: "Enhancement actions typically focus on structural improvements to a site and generally do not address environmental processes, either at the site scale or at a larger scale." This raises far more questions than it answers.

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[3] If a mitigation bank located on former agriculture land was used to provide credits for out-of-kind [non-agricultural] impacts, arguably the bank may serve a restoration function by erasing the impacts caused by the previous agricultural use.

The term "unavoidable" refers to "adverse impacts that remain after all appropriate and practicable avoidance and minimization have been achieved." It would be helpful to cross-reference the mitigation sequencing requirement to assure that it is clear that a mitigation bank cannot shelter a permittee from the requirement to first avoid impacts. The Mitigation That Works Final Report (Recommendation 1.1) recognizes that additional guidance is necessary on how to implement the avoidance and minimization portions of the mitigation sequencing process. The bar for what constitutes "unavoidable" impacts needs to adequately reflect the value of the resources at risk. This will vary from watershed to watershed and should be done in consultation with affected tribes.

Additional Assorted Concerns

It is not clear how WDOE site selection decisions (proposed WAC 173-700-303) will be communicated to affected tribes or other agencies, for that matter. In addition, it would be helpful if revised prospectuses were sent to affected tribes. (See proposed WAC 173-700-212(8)(b)(ii).

Proposed WAC 173-700-242(2) refers to written requests for a public hearing prior to the end of the comment period. It is not clear which comment period is being referred to.

Proposed WAC 173-700-304 appears to give credit to existing buffers, including those already regulated under a Critical Areas Ordinance required by the Growth Management Act. It seems inappropriate to give credit at mitigation banks for these regulated buffers if they are forested. Credits should be for buffers that exceed critical area regulatory regulations.

There is a concern that proposed WAC 173-700-314 would allow for mitigation banks to receive credit for trails within them. This was a significant problem for a tribe involved in the Springbrook Creek wetland mitigation bank where Renton was authorized to put a 10 foot wide public trail within 25 feet of Springbrook Creek, a salmon-bearing water. The trail's location precluded any future opportunity to remove the existing berm and reconnect the stream to its adjacent floodplain and wetlands and create a fully functional riparian area.

Conclusion

The Commission recognizes that mitigation banking provides an opportunity to significantly improve the quality of compensatory mitigation. We support that. Tribes have also recognized and encouraged mitigation bankers who are working hard to create good programs. *See e.g.*, Letter from Terry Williams, Tulalip Tribe, to WDOE (February 27, 2009) (supporting Skykomish Habitat Mitigation Bank). To the extent that future development impacts affecting wetlands are reasonable, necessary, and "unavoidable,"

mitigation banks arguably provide an effective source of compensatory mitigation. Thank you again for this opportunity to provide comments.

Sincerely,

Gary Graves,
Fisheries Program Director

Port of Vancouver USA

April 23, 2009

Yolanda Holder
Department of Ecology
Shorelands and Environmental Assistance Program
PO Box 47600
Olympia, WA 98504-7600

Dear Ms. Holder:

The Port of Vancouver has partnered with Clark County Mitigation Partners to establish the Columbia River Wetland Mitigation Bank on approximately 158 acres of port property. The bank is in the final stages of approval and we are striving for Interagency Review Team (IRT) certification of our bank by fall 2009. As an organization that has been involved in the banking process for over three years, the port offers the following comments on the Department of Ecology draft 2009 Wetland Mitigation Bank rule (Chapter 173-700 WAC):

1. **Timeline for IRT review**

   As the port has moved through the bank certification process, there has been significant uncertainty regarding review timelines of the participating IRT agencies.

   Six agencies sit on the IRT for the port's wetland mitigation bank, and every revision of this banking instrument has gone through review by each of these six agencies. Prior to the new draft rule, no deadline was imposed for these reviews, and it could be several months before comments from each agency were received and forwarded to the bank sponsor. We are now over three years into our bank approval process, and it is still unclear when we can expect a signed banking instrument.

   A mitigation bank provides both ecological and economic benefits. As a port, we have numerous projects, such as the West Vancouver Freight Access project, that stand to benefit from establishment of a mitigation bank, but without reasonable and enforceable timelines for IRT review and ultimate bank certification, it is difficult to incorporate the mitigation bank into our project planning process. Mitigation for development impacts may have to be relocated to a site less desirable for the port, both ecologically and economically.

   Review timelines have been proposed in the draft rule, however, there are some rule sections that do not clearly define these timelines. For example, under WAC 173-700-230(6), there is no timeline imposed by the department to ensure local jurisdictions respond to the department's intent to certify.

The port requests there be an established timeline for <u>all</u> review processes necessary for certification of a mitigation banking instrument.

2. **Long term management of the mitigation bank**

In WAC 173-700-420 of the draft rule, it states "the instrument must identify the party responsible for the ownership and long-term management of the bank". This includes development of a long-term management plan that "should include a description of long-term management needs, annual cost estimates of these needs, and identify the funding mechanism that will be used to meet these needs". It is unclear from this language if a final long-term maintenance plan (LTMP) is required prior to the bank being certified. Given that the establishment period of a mitigation bank extends a minimum of ten years, it is not reasonable to require a specific LTMP be developed prior to bank certification

The banking instrument serves to outline the standards that must be met for establishment of a successful bank, but there may be very different site conditions between certification of the bank at Year 0 and transfer to a long-term steward at Year 10. Natural site conditions may not closely follow those contained in the banking instrument, and it is impractical to predict at Year 0 what should be included in a successful LTMP. A general outline of an LTMP would be a more logical requirement for the banking instrument. Development of a specific LTMP later in the establishment process would ensure the plan fits the needs of the completed bank.

The port asks the language in WAC 173-700-420 be amended to specify that development of an LTMP is not needed prior to bank certification. As a condition of the instrument, submittal of an LTMP would be required later in the bank establishment period, at a year defined by the IRT.

The port appreciates the opportunity to comment on the draft rule. We hope to continue our positive relationship with members of the IRT as we move forward with our mitigation bank approval.

Sincerely,

Jessi Belston
Environmental Specialist
Port of Vancouver

Cc: Patty Boyden, Port of Vancouver
Victor Woodward, Clark County Mitigation Partners

From: Driscoll, Lauren (ECY)
To: Holder, Yolanda (ECY);
Subject: FW: Wetland Mitigation Banking
Date: Friday, April 24, 2009 12:31:09 PM

Oops, another comment

Lauren

From: Manning, Jay (ECY)
Sent: Wednesday, April 22, 2009 2:58 PM
To: White, Gordon (ECY); Driscoll, Lauren (ECY)
Cc: Summerhays, Jeannie (ECY); Baldi, Josh (ECY)
Subject: FW: Wetland Mitigation Banking

Jay J. Manning
Director, Department of Ecology
(360)407-7001

From: Nancy B. Johnson [mailto:nbj@ponderroses.com]
Sent: Wednesday, April 22, 2009 12:50 PM
To: Manning, Jay (ECY)
Cc: info@agr.wa.gov; kristiansen.dan@leg.wa.gov; pearson.kirk@leg.wa.gov; haugen.marymargaret@leg.wa.gov; stevens.val@leg.wa.gov; commissioners@co.skagit.wa.us
Subject: Wetland Mitigation Banking

April 22, 2009

Department of Ecology
Attn: Yolanda Holder
Shorelands & Environmental Assistance Program
PO Box 47600
Olympia WA 98504-7600

re: Draft Rule Comments: Wetland Mitigation Banking

As a private citizen in rural Skagit County, I strongly feel that I need to share my concerns in reference to the proposed Wetland Mitigation Banks (WMBs) under consideration at this time. I think that there are too many unknowns to make these projects viable.

My major concerns are for the loss of farmland- not just that for the banking area but for the land paved over through purchase of credits, and for wildlife habitat destruction that wouldn't occur without WMB credits available.

I also feel that WMB's will encourage sprawl - a violation of the Growth Management Act.

With the current economic problems, the possibility of future abandonment of WMBs should the credits not sell is another worry. I would not want to see an abandoned WMB site full of Japanese Knotweed or Scotch Broom.

Finally, I wonder if this the best use of Department of Ecology and Army Corps dollars at this critical time. This may be your only opportunity to realize that our environment is in peril and that we cannot continue to expend our limited resources to pave over habitat and farmland so that a few individuals can profit while ordinary citizens suffer the consequences.

Please don’t let this happen.

Sincerely,

Nancy B Johnson
58062 SR 20
Rockport, WA 98283

Wetland Mitigation Banks Rule Hearing
April 8, 2009, 3:00pm

Let the record show it is 3:05 p.m. on Wednesday, April 8, 2009 and this hearing is to hear testimony for the proposed State adoption of Wetland Mitigation Banks Rule, Chapter 173-700 WAC.

It's being held at the Washington State Department of Ecology building at 4601 North Monroe Street, Spokane, WA 99205.

Notice of this hearing was published in the Washington State Register on March 18, 2009. A listserv notice was sent to interested parties, and a news release was issued. More information can be located on the Dept of Ecology website at www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking

Other hearings on this subject have been or will be held as follows: April 8, 2009, that's today, here at the Dept. of Ecology, Eastern Regional office at 4601 North Monroe Street, Spokane, WA at 6:00pm. One was held at 2:00pm, that is this one. April 9, 2009 at Dept of Ecology, Headquarters building, 300 Desmond Drive SE, Lacey, WA at 6:00pm. April 15, 2009 at the Skagit Station, Community Room, 105 East Kincaid, Mount Vernon, WA at 2:00pm and 6:00pm. April 16, 2006 at the United States Army Corps Seattle district, Galaxy Room, 4735 East Marginal Way South, Seattle, WA at 2:00pm and 6:00pm.

Anyone change their mind for testimony?

You may submit written comments to Ecology. They must be received by 5:00 p.m., Thursday, April 23, 2009. And, you can submit your comments in the following three ways. This information is written on the white board. I will put up the screen. It's also in one of your handouts if you picked up the handouts in the back.

- Electronically at http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/rule
- Email comments to: Yolanda at yhol461@ecy.wa.gov
- Written comments mailed to:

  Department of Ecology
  Attn: Yolanda Holder
  Shorelands and Environmental Assistance Program
  PO Box 47600
  Olympia, WA 98504-7600

  For further Questions: You can also contact Yolanda Holder at (360) 407-7186.

All testimony received, I shouldn't say at this hearing because there isn't any, at the following hearings from today on and with all written comments received by 5:00pm on April 23, 2009 will be part of the official hearing record for this proposal.

After today's hearing, Ecology will respond to all comments received during the public comment period and future hearings in a concise explanatory statement.
All of the public comments will help Ecology make a decision about the final rule text which will be adopted for wetland mitigation banking. All parties of record will receive notice when Ecology's concise explanatory statement is available.

On behalf of the Department of Ecology, thank you for coming this afternoon. I appreciate your cooperation and courtesy.

Let the record show that it is now 3:07pm and this hearing is officially closed.

Wetland Mitigation Banks Rule Hearing
April 8, 2009, 6:00pm

This is to Start the Second Hearing on April 8, 2009 at 6:00pm

Let the record show it is 7:03p.m. on Wednesday, April 8, 2009 and this hearing is to hear testimony for the proposed State adoption of the Wetland Mitigation Banks Rule, 173-700 WAC.

It's being held at the Washington State Department of Ecology building at 4601 North Monroe Street, Spokane, WA 99205.

Notice of this hearing was published in the Washington State Register on March 18, 2009. A listserv notice was sent to interested parties and a news release was issued. More information can be located on the Dept of Ecology website at www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking

Other hearings on this subject have been or will be held as follows: April 8, which is tonight. One was held earlier this afternoon at 2pm at the Dept of Ecology, Eastern Regional office at 4601 North Monroe Street, Spokane, WA. One will be held tomorrow, that is April 9, 2009 at Dept of Ecology Headquarters building, 300 Desmond Drive SE, Lacey, WA at 6:00pm. One will be held April 15, 2009 at the Skagit Station, Community Room, 105 East Kincaid, Mount Vernon, WA at 2:00pm and 6:00pm. April 16, 2006 at the United States Army Corps Seattle District, Galaxy Room, 4735 East Marginal Way South, Seattle, WA at 2:00pm and 6:00pm.

There were no attendees at this hearing and therefor no comments will be recorded.

All testimony received and comments received by 5pm on April 23, 2009 will be part of the official hearing record for this proposal.

Since there are no attendees I will not read the rest of it. On behalf of the Dept. of Ecology let the record show that it is now 7:05pm and this hearing is officially closed.

Wetland Mitigation Banks Rule Hearing
April 9, 2009, 7:00pm

Let the record show its 7:11pm on Thursday, April 9, 2009, and this hearing is to hear testimony for the State adoption of Wetland Mitigation Banks Rule, 173-700 WAC.

This hearing is being held at the Washington State Department of Ecology building at 300 Desmond Drive SE, Lacey, WA 98503.

Additional hearings were being held on - there was one on April 8, 2009 in Spokane, WA at the Department of Ecology, Eastern Regional Office. There was one at 3:00 and another at 7:00pm. The address there was North 4601 Monroe, the first floor conference room. There is another one scheduled for April 15, 2009, in Mount Vernon, WA again at 3:00 and 7:00pm. That's at the Skagit Station at 105 East Kincaid, Community Room. And then these last two will be held at April 16, 2009, in Seattle, WA at the US Army Corps of Engineers' Seattle District, 4735 East Marginal Way South, the Galaxy Room.

Notice of this hearing was published in the Washington State Register on March 18, 2009. Additionally, a listserv notice was sent to interested parties, and a press release was issued. The State Register number is 04-15-045.

So, it looks like we don't have anyone who wants to testify today. So, I am going to ask if there is anyone else who wants to testify today. Looks like that is a no.

So, we're going to just cover and let you know that you can submit written comments to Ecology. They must be received by 5:00pm on April 23, 2009. Adoption of the rule is currently scheduled for July 31 and if adopted - that - and filed with the code reviser, it will go into effect 31 days later.

If you'd like to submit the written comments there are three different ways you can do so and there is a sheet at the back of the room where you can get those addresses, e-mail, snail mail, etc., etc.

After tonight, Ecology will respond to all comments received during the public comment period in a concise explanatory statement. All of the public comments will help Ecology make a decision about the final rule. All parties of record will receive notice when Ecology's concise explanatory statement is available.

For further questions Yolanda Holder here at 360-407-7186 and on behalf of the Department of Ecology, I thank you for coming and I appreciate your cooperation.

Let the record show that is it now 7:14 and this hearing is officially closed.

Wetland Mitigation Banks Rule Hearing
April 15, 2009, 3:00pm

Please let the record show that it is 3:43 on Wednesday, April 15, 2009. And this hearing is to hear testimony for the State adoption of Wetland Mitigation Bank Rule, 173-700 WAC.

This hearing is being held at the Skagit Station, 105 East Kincaid, the Community Room in Mount Vernon. Additional hearings were held in Spokane, WA on April 8. Another was held on April 9 in Lacey, WA. And another will be held in Seattle on April 16.

Notice of this hearing was published in the Washington State Register on March 18, 2009. Additionally, a listserv notice was sent to interested parties, and a press release was issued. The State Register number is 04-15-045.

OK, Barbara take it away.

COMMENTER #37
Barbara Jackson from Mount Vernon.

We've talked today about the big picture. We are facing a huge picture. As we face water crises globally, too much water from global warming and not enough water where it's gone - where it's disappearing underground. We must do this kind of work so carefully that we do not put ourselves more in jeopardy. It's not we who are alive now but for generations to come. And everything we do in terms of making decisions of this kind of sets a precedence as to how we will proceed in the future.

So, I am - I am just asking us to be very, very careful as we proceed, it - that - sounds like you are learning and I thank you for all you are doing. We need to learn even more. A suggestion, one of the reasons why people come from California to this little Skagit County Nookachamps Creek is for money. It is a business, billions, millions of dollars being made this way. Maybe if all the money that is made that way could be turned back into environmental health of our global community and our local areas.

Maybe there wouldn't be a misuse of the land quite so blatantly as we are seeing it done. Maybe that would slow people down from traveling so far from an area where they are probably not allowed to do this to a little community who doesn't know enough yet to say no.

So I am saying, let's use the money to promote health of Ecology rather than to make some people very wealthy and other people suffer the consequences. We have agricultural land, we have mountain land, none of which can be misused and abused for ourselves and for generations to come.

So, I'm hoping we will call a moratorium on mitigation banks here, in this county, and hope that the rest of us all learn how to do that too. Thanks.

Thank you, Barbara. Alright, we have Janet. Let me, I did not mention, I do need you to state your name and affiliation, if any, for the record so that we know who to address in our response to comments. Sorry about that.

COMMENTER #38
I am Janet McCray. I don't know, I guess my affiliation would be cattleman. Well, member of the cattleman's association. Also, am a supervisor for the Skagit Conservation District.

And you said earlier that the Conservation Districts were involved in the deciding or something. I know you can't talk back; but, conservation districts look at the soil test just like everybody else. If that soil is the same soil that is out in the flats, its prime farm land it just lacks drainage. And, DOE, among other people, will not let them drain it any longer. So, I guess maybe it won't be farmed anymore.

I think what we really need here instead of a Wetland Mitigation Bank is a Farmland Mitigation Bank. We are losing farmland faster than you can shake a stick. Personally, I still like to eat and I would rather eat something that was raised on the ground instead of something that was picked out of the mud.

You mentioned that you have got limited funding. When your funds are cut, who is going to monitor these banks? Will the fox then be watching the hen house? I mean, it's…you also mentioned forested wetland. Forested wetland, to me, just is not a term that works. If you ever see what happens when a beaver builds a dam, the timber that's behind it soon dies. It's no longer a forested wetland, it's a bunch of dead snags down there because of roots have drowned.

If you flood this area out there - it is going to affect the adjoining property owners. The water table will come up. Water has a tendency to go to a level point and it will affect the neighbor's soil. Water table may not stand on…the water may not stand on top of the ground but it will be under it so they will not be able to get on it with their tractors and farm it.

That soil out there raises anything that you can raise out in the flats. That is not marginal farm ground, it is good farm ground. You can live anywhere, but you cannot farm anywhere. You can only farm on good soils. And, we need to save all the soils that we have because Mother Nature is not making any more of it.

Once in awhile we have a flood and she brings more down the valley, but she is not making more of it. She is repositioning it, that's all. So, we have to save the farm land that we have if we want to continue to eat. And, I think we all want to eat and I want my kids and my grandkids to also be able to eat and we want to save as much farm ground as we can. I don't think wetlands should be allowed on agricultural ground. Thank you.

Thank you. Next we had a 'maybe', a Jennifer Thomas. Jennifer still available? After Jennifer we would have Ginny.

COMMENTER #39
I will just keep my comments really brief. I am going to submit written comments. My name is Jennifer Thomas. I work for a Parametrix, which is a consulting firm in Bellevue.

I wanted to thank you for all the work that you have done on the rules - over the rules. And, Gail, Kim, Lauren, Yolanda in particular.

I think the work that you have done is really important and it shows trying to raise the bar on wetland mitigation. I think these rules should apply to all mitigation. I think all mitigation should be in the ground before the impact.

I have concerns that the rules may have gone too far given where we are with wetland mitigation generally. My biggest concern is that I know that you bent over backwards to incorporate all stake holders in the rule process and I applaud you for that. I don't think that these rules can be effectively implemented by local government because I think that the bar is set too high. I think local governments need smaller sites and I think what you are seeing is there is a sort of a move and a push towards other forms of compensatory mitigation that actually advanced compensatory mitigation. Because, I don't think public sector banks can meet. They're not going to go out and build 200, 300, 400 acre bank sites. They don't need that kind of mitigation. They need smaller sites. But they still have mitigation needs and we still need a way to pay effectively for unavoidable impacts resulting from capital improvement projects and other public projects.

So, I am concerned that these rules, while I generally support overall where they are going in terms of raising the bar, having longer monitoring periods, and really strict performance standards. That is critical to the success of mitigation overall. I am concerned that they won't have great applicability for local governments. Of course, I couldn't tell you that because for most of the last 5 years, while you have been working on these, I was representing the private sector. I wasn't representing the local government. But ,and then for private sector - I think the reason that the private sector participates in wetland mitigation banking is because of the incentives. And, I think these rules may have gone too far in undermining the financial incentives.

So, I will provide written comments before the 23rd; but, mostly I just wanted to thank you and acknowledge all the work that you have done over the years. That's it.

Thank you.

Ginny?
Yeah, she had to leave.

Oh, OK.

Next we have Tarn. And then after Tarn, we have – is it Tom Glade?
OK. Make sure my tape is still rolling.

COMMENTER #40
Tarn [Mower]

God forbid the tape stop rolling.

It is our official record.

Indeed.

Again, just like your previous speaker, I would like to thank the Department of Ecology for coming down here to little old Skagit County and having a couple of workshops and public comments periods. Because it is inonerous and difficult for a lot of us to make it down to say Lacey or Seattle or even Spokane. And there are so many people here in Skagit County that have a lot of feeling and passion about land use issues and knowledge thereof.

First, in my comments I would like to address the proposed section 173-700-314. I would like to see mitigation banking conversion rates take into effect like for like trades. Say, I believe in western WA specifically, sloping and sloping forested wetlands are the most endangered form of wetlands in most of the WRIA's on this side of the mountains. And if the mitigation banks that are being proposed are estuarine in nature or riverine in nature they may not be addressing those same habitat or species conservation needs they would like to have in conference -------- mitigation.

That may be a little more difficult to deal with than just in that one section 314 it would also have to deal with mitigation banking credits being issued and traded, so I don't know. I don't really have any real suggestions on actual language you can use to address that. But, I would think that would be a real step forward in addressing the loss of certain types of wetlands in certain areas, certain watersheds.

Then, also very strongly in section 303, specifically section C, subsection 2 - addressing agricultural lands of long term commercial significance. Wetland mitigation banks have the capability of, in essence, creating critical areas of habitats on natural resource lands such as ag lands and under the state's growth management act there is no ability to say that there is more need to have these wetland habitats on ag lands then it is to conserve our agricultural resource lands. So, I think that the draft rule needs to address in even stronger terms this need to work with the growth management act instead of possibly being an end run around the growth management aspects that we have under state law. In essence, in some cases it could be seen under certain circumstances that wetlands are being destroyed in urban growth areas or urban areas. And, that urban land pressure is being shunted onto rural areas and we are now taking up the brunt of those land pressures and prices and we are seeing losses.

I just think that there could be a lot stronger protections for resource lands under this draft rule. Never say never. I think that ag lands should be specifically exempt from having wetland mitigation banks put on them due to the growth management act. Thank you.

Tom and after Tom we have Alan and after Alan looks like… is it Dan? OK - excellent. Thank you.

COMMENTER #41
Good afternoon, my name is Tom Glade. I am from Anacortes, WA. I am president of Evergreen Islands, which is an environmental group, that's been in existence for over 30 years. And, we have done a lot of work in Skagit County.

Evergreen Islands opposes wetland mitigation banks in general. And wetland mitigation banks in Skagit County especially.

A major flaw in WMB's is Washington State's and the Corps of Engineers' inability to enforce public policy. The white paper entitled developing - which is a paper done for NOAA - "Developing Defensible Wetland Mitigation Ratios" makes the following observations of the history of wetland mitigation. In summary, the root problem with our national wetland mitigation policy is that the rules governing mitigation trading have evolved primarily to keep the cost of mitigation affordable and to make our national wetland policy appear to be successful.

Despite protest to the contrary, the powerful interest involved in wetland mitigation prefer using adhoc political negotiations over what constitutes acceptable mitigation to strict trading rules. And what this boils down essential is Wal-Mart calls their senator says we need this wetland mitigation project approved so that we can build our big parking lot.

Starting in May of 2005 and running through Dec. of 2006 the St. Petersburg Times published "Vanishing Wetlands"; an excellent series of investigative articles on the dismal history of Florida's wetland mitigation efforts, which includes wetland mitigation banks. The Times' investigation made the following observation: the Corps approves more permits to destroy wetlands in Florida than any other state, and allows a higher percentage of destruction in Florida than nationally. Between 1999 and 2003 it approved more than 12,000 wetland permits and rejected only 1.

Now, Ecology is promoting wetland mitigation banks as the latest patent medicine for making our national wetland mitigation policy appear successful. Getting the horse before the cart, Skagit County has already approved or is in the process of approving 2 wetland mitigation banks that are being allowed under a draft rule. By promoting development the unparallel natural beauty and wonder of Skagit County is facing a new ax. The Skagit Valley with the purple mountain majesties of the North cascades. The Skagit Valley with the spacious skies and diminishing open space, the Skagit Valley with the amber grains - and the amber waves of grain and home of endangered farmers, the Skagit Valley coursed by the mighty Skagit River, home of endangered salmon, the Skagit River which flows down to the shining Salish Sea, home of endangered Orcas.

Why did Ecology bring us this tool that enables destruction of a natural wetland and promotes development? Why didn't you bring us a tool of good governance, like our wise neighbors to the north? In 1973, British Columbia established agricultural land reserves, ALR's. As of March

2008, the greater Vancouver ALR includes 61,000 acres and the Frazer Valley ALR included 72,000 acres.

Why didn't Ecology bring Skagit County something that protects this wondrous place? Does god allow WMB's in heaven? Thank you.

Thank you very much. So, next we have Ellen and again then Dan you'll be after Ellen. Again making sure we still have tape.

COMMENTER #42
Thanks. I am Ellen Bynum. I am the director of Friends of Skagit County, Mount Vernon. Friends of Skagit County is a group of citizens, who for more than 16 years has monitored land use and we come to this hearing to bring comments that would address the efficiency as well as the effectiveness of using a draft rule that we have some very serious questions about.

Mitigation banking represents one symptom of a failed planning system. The local GMA process and the process of identifying critical areas and the local planning departments have a range of ways to protect wetlands without using wetland banks. And, local comp. plans are required to identify and protect resource lands, public facilities, other land uses as a part of the compliance with GMA.

And wetlands banks are to date, in our opinion, not scientifically proven to replace the ecological functions of destroyed natural wetlands. I will be happy to read any papers that you have that say differently.

Counties have identified and protected wetlands in the planning process in the state agencies that advocate for wetlands planning usurp the local government's decision making authority for land use planning by advocating. And, I understand that in the pilot rule making process that the legislature requested that Ecology have a rule, develop a rule. In that process, Ecology has to do certain things. And, those are enumerated in the comments that I will turn in. I don't want to go over all.

But, one of the things that Ecology has the option of doing is saying that the rule for this particular program is too expensive, is not in the public interest, or conflicts with another state law. And, I've cited all those in terms of the administrative procedures act compliance. So, an agency can't rely upon a section of the law that just says we want to do this program as a reason to do it. And they also cannot use requirements of their statutory authority to adopt the rule.

So, they have to determine the probable benefits of the rule and the benefits have to be greater than the costs taking into account both the quantitative and qualitative aspects of benefits of cost. Section 1-F states "the agency must determine that the rule does not require those whom it applies to to take an action that violates a requirement of another federal or state law".

Okay, we have a GMA law - it says "identify and protect farmlands of long term significance in Skagit County". Skagit has determined a certain set of its land to be agricultural. And we are

now considering, through this rule, a violation of GMA. Section 1-B says "determine if the rule differs from any federal regulation or statute applicable to the same activity and determine that the difference is justified". And it gives a criteria of how it can be justified.

DOE cannot have complied with these sections as it has not addressed how the GMA and the local comprehensive plan requirements to identify and protect resources lands can be met if ag lands are converted for banks. It appears to violate the intent of the rule making process to implement a rule after land use changes that appear to violate GMA and other state laws are finished or completed.

You have to summarize quickly there.

Probably not…but, I will give it to you in writing. I am and I will speak again tonight.

The draft, one of the concerns is under the Pilot project RCW 34.05.313 under feasibility studies. That draft rules shall not be obligated to comply fully with the rule being tested nor be subject to any enforcement action or other sanction for failing to comply with their requirements of the draft rule.

Does this mean that the 7 wetland mitigation banks already developed under DOE's draft rule and the 10 others proposed have no obligation to comply with GMA or the wetlands mitigation rule and are not subject to any sanctions for the failures of the projects? So, I'll skip that part. I already asked about the fact that there is no process to decertify banks, we suggest that you look at that - putting that into the rule. We have concern about the small business economic impact not including the entire business area of Skagit County. That would be true for any county. You would want to include all small businesses. Not just the people who were doing the development of the bank.

The construction and financial assurances section does not mention or address the risk management ratios of failed banks due to flooding, collapse of steep slopes or other catastrophic events which may be increased due to the banks activities.

Section 6, the codes of impacted industries did not include farmers, agriculture business support systems, insurance providers, other small businesses, etc. Section 7, the impact on jobs, DOE did not accurately estimate job losses from the proposed rules - from this proposed rule - as the jobs lost for current use of land were not included in the estimate.

I will beg the point that it is blatantly inaccurate to state that wetlands mitigation banks quote "protect wetlands". It's a market based tool that developers use. Present as having desired ecological values and we know that we don't have any evidence of what regular mitigation does per your comment. We don't have any evidence that banks are any better or worse.

The public participation requires a concise explanatory statement of the rule that describes the differences between the text of the proposed rule as published in the register and the text of the rule as adopted. And, I had called and asked about that. That's under RCW 34-05-340. I noticed that you did do a 2 page paper that says the differences, but what I was after was a

marked up copy that you could actually read through and see where the changes had been made and see when the language had been added.

And lastly, we've attached a CD of the 8 days of the public hearings in the Clear Valley verses FOSC Appeals to the hearings examiner to be included as part of this record. And, we request that the agency staff review the information covered in the hearings and consider the issues raised in the review and revision of the draft rule. The concerns brought by both sides have not been included in the draft rule documents to date. And, in 1995 the legislature stated that one of its fundamental responsibilities is the protection of public health and safety in the preservation of the extraordinary natural environment with which Washington is endowed.

And essential to this mission is to implement the – is for the state agencies to implement the policies that are established by the legislature. And the adoption of the administrative rules by this agency has helped assure that these policies are clearly understood, fairly applied, and uniformly enforced. And to ensure that citizens and environment of the state receive the highest level of protection. And that state agencies not use their administrative authority to create or amend regulatory programs.

And it also gives information about when an agency is to adopt rules. And that these obligations imposed are truly in the public interest. I question whether wetlands mitigation banks are truly in the public interest at this time, in our economy, and our state. Thank you.

Dan? Yes, if you want to leave a copy of the letter right there. Okay, excellent. That's no problem, thank you.

COMMENTER #43
My name is Dan Mitzel. I am a partner in Nookachamps, LLC Mitigation Bank project with a company from California, by the name of Wildlands. Steve Morgan is the gentleman who owns Wildlands and is co-sponsor with me on the bank.

We have been working on the Nookachamp's bank for going on 7 years. And recently have completed our permitting process and are close to being able to start actually using credits that we look to be issued to us shortly.

I want to talk to about the rule, in particular the section 303 on agricultural lands of long term commercial significance. Unfortunately, in Skagit County we have not classified our ag lands into different kinds of ag lands. And, I think it's something that would be a better planning tool if we could actually take a look at our ag lands and determine those that are commercial significance and those that are secondary significance. And then secondly, to actually take a watershed analysis study of those areas within a county that are undiked and are hydrologic connected to our major stream resources where enhancement of habitat, in particular wildlife and salmon, could be feasibly restored and enhanced.

If you look back, turn the clock back about 150 years, when this county was first settled and it's hard to imagine what our valley looked like. But, the kind of habitat that existed at that time was

unbelievable. We had salmon runs and other wildlife available that was uncomparable anywhere else in the county frankly and typically on aquatic side. And, unfortunately the original developers who took land, and drained it, and filled it, and changed water courses, and diked it were the farmers. And they had a very noble cause in mind and that was to create land that would become productive for the production of food. And, it is the basis by which our county was originally developed.

If you think about why Skagit County was settled, it was two things, it was timber and it was the potential for the harvesting of the forested wetlands including Cedar forests and Doug Fir forests and other species of trees that help build the expansion of the United States. That timber was used for that purpose.

The conversion of these lands to farm lands went on for generations. And it was required in order to develop the farm land necessary to start producing the food that the nation needed. And as time went on, the practices of farming became more industrialized and more intense and as a result more and more land was converted from what would have been called habitat to ag use. So, ag use is, I think, a very important resource in this county, but I think there has to be a recognition that there are some areas - that some of our watersheds - particularly in the upper part of the Skagit area and on those undiked portions of tributaries to the Skagit and the Skagit itself that lend themselves very well to returning just a fraction of that habitat that was taken.

There is a lot of money being spent on Salmon restoration and I think that the wetland banking process can be a major part of that process of developing our fishery again. And, if you look at the location of the two existing banks - Nookachamps Bank and the Clear Valley Bank they exist on undiked portions of the Skagit. I think a preservation of our ag lands of long-term commercial significance is a very important part of a plan going forward. And, I look forward to the County better defining what that means. And start identifying those watersheds that were restoration of habitat is where we should be putting our habitat dollars. As far as a success rate of mitigation banking, the whole reason for mitigation banking is that it is much more successful than individual projects. I have developed projects and I have had individual mitigation sites where I have struggled to make them work and keep them hydraulically functioning. It is a battle because when you start changing the character of an area and then you want to leave a little half acre piece and say okay this is our mitigation site, to keep the functions in place is a very difficult task. When you do a much longer view of this look at the bigger areas that are 2 or 300 acres the functional value of those types of habitat creation is much higher.

I think that that is one of the major reasons why the federal government has mandated that mitigation banking be a preferred method of mitigating and that mitigation banking should be available to mitigate and fax (?). I look forward to working with the county and the state and I know all of the hard work that these people have put into this program is paying off. I think in 10 years when we maybe do a little tour of some of the banks out there that have been built and be able to look at the habitats been created and the success of that habitat and creating a very positive net result. I think some people are skeptical about mitigation banks will change their mind. Thank you.

Thank you very much. Is there anyone else that's changed their minds and would like to chat? Public testify? No…going once, going twice…Okay.

So let me just remind you that you guys can submit written comments to Ecology. They must be received by 5pm, Thursday, April 23, 2009. Right now the adoption of the rule is currently scheduled for July 31, 2009. If it is adopted that day and filed at the code reviser it will go into effect 31 days later. There are 3 ways again that you can submit those comments before the 23 or by the 23 I guess - that is - and again they are on the back of this yellow sheet. There's plenty in the back of the room if you would like to take those with you. And then all testimony received at this hearing along with written comments received by 5pm on April 23, 2009, will be part of the official hearing record for this proposal.

I guess I should let you know that if anybody has written comments that you want to leave with us instead of mailing them in or e-mailing them, you can do that as well. Or anyone who testified wanted to submit a written version of their testimony that's always helpful as well 'cause our technology is a little low grade. So, written comment of that would be helpful but not necessary.

After tonight's meeting, Ecology will respond to all comments received today and throughout the entire hearings, all the several hearing that we have done, in a concise explanatory statement. I always call it a response to comments, but I think the official term is the concise explanatory statement. All of the public comments will help Ecology make a decision about the final rule text, which will be adopted for wetland mitigation banking. All parties of record will receive notice when Ecology's concise explanatory statement is available.

So if you did not give your address on that blue card and you want to be sure to receive the concise explanatory statement make sure that you ask us for that card back to put your address on it so that we can mail you notification when that is done. And then, I guess on the behalf of the Department of Ecology and the Corps, we thank you guys for coming today and asking questions and taking time out of this day and appreciate it.

So, let the record show that it is now 4:19 and this hearing is officially closed. Thank you.

Wetland Mitigation Banks Rule Hearing
April 15, 2009, 7:00pm

So, let the record show that it is 7:56pm on Wednesday, April 15, 2009. And this hearing is to hear testimony for the State adoption of Wetland Mitigation Bank Rule, 173-700 WAC.

It's being held at Skagit Station, 105 East Kincaid in the Community Room in Mount Vernon, WA. Additional hearings were and are being held at - on April 8 there was a hearing in Spokane, WA. On April 9 there was one in Lacey, WA. On April 15, we have 2 here in Skagit in Mount Vernon. And then on April 16 there will be 2 in the Seattle area.

And, let's see, a notice of this hearing was published in the Washington State Register on March 18, 2009. Making sure I'm rolling here…And additionally, a listserv notice was sent out to interested parties, a press release was issued and the State Register number on this is 04-15-045 if anybody wants that down.

Ok, so when I call your name go ahead and step up to the podium, state your name, address, and affiliation, if you have one, and we'll go ahead and get started.

So John, come on down.

COMMENTER #44
John Mower, Sedro Woolley, WA, nature and farming aficionado.

I remain steadfastly opposed to wetland mitigation banking. There is no way to justify filling in wetlands for any reason. But the term 'unavoidable impacts' is like opening season on wetlands - which in turn then opens season on farmland because that's where, no matter what anybody says, that's where these wetland banks go because that's where the water is. And anyway, thank you.

Thank you. So, Diane? Careful of our cords here.

COMMENTER #45
I am Diane Freethy. I am the president of Skagit Citizen's Alliance for Rural Preservation based in Sedro Woolley.

The sad fact is Ecology draft rule permits wetland destruction. Belaying that mitigation banking truly mitigates the loss of small wetlands. And Ecology's public notice about today's event Lauren was quoted as saying "when properly guided and carried out, we know wetland mitigation banking can increase the ecological benefits by increasing and protecting wetland functions and save time for project applicants".

In Florida, where wetland mitigation experience dates back 3 decades, wetland and shoreline specialists recognize the obvious. In a Tampa Tribune report published just 2 weeks ago Jaydell

Kurr and Danial L Burdie, former wetland management officials of the Hillsborough County environment protection commission, stated “much of wetlands full function can only be determined by exhausted studies not typically carried out within the mandated time frames of state permitting. This results in the loss of isolated wetlands which alone or cumulatively provide management of surface and groundwater. Natural wetlands evolve over thousands of years. By evolutionary standards, man-made wetlands provide little more than a facelift. Pleasing to the eye perhaps but functionally bereft.

By insisting on a quick fix approach, we are gambling with the health of our planet without understanding the long term impacts. Last year the United States Environmental Protection Agency gathered a group of outstanding scientists who among other things are working to provide solutions to unanswered questions about wetland mitigation banking.

The least Ecology could do, at this point, is to put this draft rule on the back burner until EPA publishes its findings, so we will all know what type of returns to expect from our state’s investment in wetland mitigation banking. Thank you.

Thank you.

I have Andrea with a maybe.

Yep.

Ok.

I want to hear you pronounce my last name.

Is it…

Xaver.

Oh, OK.

Everybody screws it up.

Well, I couldn’t tell if it was actually an ‘a’ or not. X-a-v-e-r.

COMMENTER # 46
My name is Andrea Xaver. I live near the south end of Big Lake. I represent my farm and my frogs.

A DOE booklet that was published in 1986, and then revised in 1990, was really alarmed at the loss of wetlands in Washington State. It said comprehensive state land regulations to address these problems are not in place. This 1990. Here we are now in 2009 and we still don’t have anything in place. I mentioned this little chart, I call it the failure chart I guess - absent anything

else – but, hopefully a chart will be kept to some degree in any wetlands in the future and how they might you know even those as a compensatory thing maybe something will be established for wetlands or established around the state.

I see this creation of wetland mitigation in Skagit County, this bank – it's a state sponsored monopoly. Because, typically - probably what's going to happen - this guy will come in or a guy, let's say, I don't want to be specific. But, some guy will come in and put in a huge wetland mitigation bank and that will take care of it 'cause that will wipe out most of the wetlands that we have or a good share of them. And then nobody else will come in, but if they do, of course than that will reduce the value of the credits and so that might then lessen the impetus to even take care of some of these banks.

It's been my observation in my lifetime of living here, what seems to help habitat and specifically in recent years has been fish habitat. Whatever seems to help the habitat for maybe fish, also seems to help the developers. And, usually it's at the expense of the farmers.

In 1990, Christine Gregoire when she was the Director of the Department of Ecology, she talked about how all the wetlands, these wetlands are irreplaceable. Every acre we lose is significant. I would like to know what's changed now that she's governor and seems to think that maybe - possibly - that these wetland mitigation banks are just fine and dandy.

The National Geographic, I mentioned that earlier in the question and answers statement, the amphibians are facing mass extinction on a global basis. And it's rampant in the United States. The western third of the United States and the Eastern third of the United States it's covered with this fungus that is wiping out our amphibians.

I would hope that the Department of Ecology takes into consideration wildlife when they are doing these wetland mitigation banks. I know you do, but things happen. And there seems to be always a question of control and who's minding the store. In the April 13 Skagit Valley Herald, here's the talk about fish stocking in the North Cascades Lake's is about to end. And, nobody can decide whether it should end or if shouldn't end. But if it does end they are going to poison all the stuff in these lakes. I don't think that is very responsible. And these are officials that theoretically say they know what they are doing; but, it doesn't make me feel very comfortable and it isn't you folks here today representing DOE or Army Corps. I know that you have higher calling or higher entities say that you have to report to. So, I know that your influence is limited but still it's not very encouraging.

Who fixes the problems and how fast? I mentioned in the question and answer thing about that water that was on my farm and never seen anything like it in my life. And, what would happen? Would I be faced with something for a year, six months, two years, five years, what's the deal? Don't know.

Then another thing is the DOE gave a quarter million dollar grant to the County to study the feasibility of dumping Big Lake's partially treated effluent into Nookchamps Creek. Nookchamps Creek is going to potentially run into these wetland mitigation banks. One would think that this water should be clean, but 'no' it will have pharmaceuticals in them, in this water.

I think that is egregious. And yet this will go on for eternity because nobody is going to stop it, likely. Right now it's pumped to the Skagit River, but its set to go into Nookchamps Creek and I just find that astonishing. And why is that? You would think the water should be clean. If we're trying to protect the environment; thus, the Department of Ecology, and we are trying to protect the animals within, why are we doing something of this nature?

And then, I would like ask the question that I brought up in the question and answer series and that is, how many functioning wetlands are there in Skagit County? Until that question is answered, I don't know how that any person can eradicate any of the functioning wetlands that we have. That seems to me that would be a primary question that I certainly would like to have that answered.

Am I done? OK.

Perfect timing.

Mike Hulbert? Thank you Andrea, excellent Andrea.

COMMENTER #47
Mike Hulbert, Farmer. 23104 Highway 534, Conway.

I don't have any prepared statements. I guess my comments would be to your wording, your language, on these locations - locating these on agricultural lands of long-term commercial significance. I think any lawyer could give put a bag with this wording, the way it is. The department discourages the location of banks. I think it just needs to - just be stronger wording. I think we need to keep ourselves at the top 3% in the world. The location of Skagit Valley with the Olympics in the front and the Cascades in the back is some of the most prime farm ground in the world. It's a limited resource.

It kills me to see what's going on in the one bank where they are aggravating all the dirt out and what long term effects that's going to have. I would like to put a moratorium on any future banks until we can analyze how these banks perform…long term affects, long term liabilities to neighboring lands around them.

To me, this is just a new type of development in Skagit Valley. That I have a passion for saving ag grounds in Skagit Valley and this is just a new type of development we are going to have to watch out for. In one other comment, a lot of people think of mitigate, I have heard wetland mitigation banks and I have heard mitigation banks. I think the term now is wetland mitigation bank. It will be mitigation bank - I think there are groups out there that want to mitigate everything. They want to mitigate the way I farm, the way I do maintenance around my farm. And at someday once these banks are up and running to keep the river in its banks will be a mitigation process. To where we are just going to need more, it's kind of 'build it and we will come', because we will be regulated to use them. That's all I have. Thank you for your time.

Next we have Susan Hughs-Hayton.

I am going to pass.

Okay. And then we have Arnold J. Byron.

COMMENTER #48
Thank you, my name is Arnold Byron. I am a citizen from Burlington, WA.

I have witnessed here tonight and I am sorry to say that we are here because the government has decided to have mitigation banks - to go this route. My witness here tonight has been an exercise in everything to do with mitigation banks - talking about credits and bankers and owners and assurances and regulations. The thing that we haven't been talking very much about is the way that the human element is supposed to work with the natural element. And that's something that I think is actually the more important. We did speak about frogs for a moment.

But we have not taken into consideration the idea that it's a human element that needs to curtail its passions and it's wants in order to allow nature to take the priority. And, I am sorry as hell that our government has chosen to put humans ahead of everything else. You don't have to respond really to that comment.

Next we have Nancy Swalling. Am I mispronouncing the last name, do we have a Nancy in the room. Yeah, she was here but I think she may have left. Okay I will set her aside so we can make sure to give her an opportunity.

So, Mary Heinricht.

And I will just remind you guys to state your name at the very least.

Thank you.

COMMENTER #49
Mary Heinricht, Camano Island.

A number of years ago, I made up a saying and it became a bumper sticker, it said "it's not farmland without farmers". I think it's time to say a new one that says "it's not farming without land". I would like the Department of Ecology to listen to the March 17 hearing that the Skagit Board of County Commissioners had when they approved the permit for the Nookachamps Bank.

Where the commissioners said they felt they had no choice, but to approve that, that the only reason they could vote 'no' was if something illegal had been done. They hoped that nothing bad was going to happen from approving a bank in the channel of the Skagit River where excavation of huge amount of soil is taking place. And breaching of natural banks on that river, where downstream we have thousands of people who will be put at risk and hundreds of millions of dollars in improvements. I think you should hear that. You should hear the drainage

commissioner say that he felt that they were forced to support the project. And yet at all the times that you have been out in public hearings you have said that local government has the choice to say 'no' on these. Well they clearly felt that they did not have the choice to say no.

I think you need to look at your rules since you have made it less able for them to say no. You repeatedly refer to these as land use and they are regulatory facilities. Regulatory facilities should not vest upon application. If they vest upon application then there is no reason for you to go through any review or evaluation. You should just write the permit.

Farmers and agricultural interest have responded each time the Department of Ecology has asked for input and comments on wetland mitigation banking and the rule. Many have commented at meetings and in writing stressing the importance of reserving agricultural soils for farming but these comments have been ignored.

Soil is the basis for all terrestrial eco-systems. Soil is to some extent a renewing resource in that it slowly forms over centuries through erosion of bedrock. But it is not replaceable once removed from a site. And you stated earlier this evening that every bank you are familiar with has excavated soil and none have replaced it.

The department is ignoring the fact that this is not a replaceable resource. And it's particularly telling that after all the editing and comments that have been made, that your rule - the definition for re-establishment has errors in it and implies that a wetland can be re-established when no hydric soils are present. Clearly, the Department of Ecology and the state of Washington think soil is dirt and that all dirt is the same. The department has allowed mining of soils and minerals on virtually every bank it has approved.

And a state known throughout the County affectionately as the 'Salmon Nation' - it is puzzling that avoidance of wetland impacts is not mandated. To allow continuing impacts and to plan for so many more wetland banks will leave future generations without salmon and without clean water. And to relegate avoidance to a category of lip service in an item check list will assure a low level of environmental quality for our grandchildren and their heirs.

These banking programs are simply a continuation of the manifestation of the same short-sighted greed that has collapsed the world economies in the past year. It is the same private building and financial interest that benefit while the public and the environment will pay.

But when we are turning our heads and refusing to adequately regulate environmental sub-prime banking programs and environmental credit default swaps - it's the planet that is at stake. Where will food come from for future generations? You cannot honestly believe that urban gardens in Seattle can replace the Skagit Valley.

You are putting pieces of paper, dollars, ahead of future generations. You want language suggestions, I suggest you look to engross House Bill 1967 which will prohibit expansion of urban growth areas into 100 year flood plains. Use it as a template to prohibit urban development in the form of wetland mitigation banks on agricultural lands of long-term commercial significance.

Do not allow wetland or and other kind of mitigation banks on land set aside as mandated in the Washington Growth Management Act to provide food for the future. Ban them all permanently.

Thank you.

So we have…is it Lyle Wesen?

COMMENTER #50
My name is Lyle Wesen, we operate a dairy farm in the Bow Edison area on land that my grandfather cleared over a 100 years ago.

Following up a little bit on what Mary said. This mitigation bank almost seems like a complete conflict with the growth management act because the growth management act said you are supposed to preserve farmland.

And why is preserving farmland so important? If we don't have enough agriculture in the county to maintain our service industry that goes along with it, the tractor dealers, the fuel dealers, and all of this type of stuff - you pretty soon don't have farming.

The Olympic peninsula around Sequim used to have quite an active farm thing and they eventually didn't have enough farming there that they lost their suppliers, and then houses were worth more per square foot than farmlands, so it all disappeared.

And, I am old enough to remember the Kent Valley being a nice strut garden and nice area and it certainly isn't now. And I would certainly hate to see Skagit County with its tulips, vegetable seeds, dairies disappear because land being taken away for things like wetland mitigation.

There's a wetland that was developed out in our area and I was close enough to it to know what the cost was to develop it and it was required because the railroad had to extend their line for their longer trains - it's just worthless. At one time, I farmed that piece of ground. It's not farmable any more. Thank you.

Oh, watch the cord. We just don't want you to trip. Thank you.

Randy Good. Just don't want you to trip. This is sort of a precarious setup up here. It is our high tech equipment.

So, we can't turn this to talk to the people we are suppose to be testifying to?

I can turn it for you if you would like.

That is fine.

Is that good?

Yes

COMMENTER #51
My name is Randy Good, 25512 Minkler Road, Sedro Woolley. I am speaking on behalf of the president of the Skagit County Cattleman's and also my personal farm.

First, the Department of Ecology comes to Skagit County telling farmers they need large tree shaded buffers to cool the water along our creeks and rivers. Then our agricultural groups in Skagit County instituted true field testing monitoring to determine if there really is a pollution problem. Monitoring data proved DOE wrong, that shade does not cool water.

Now, the Department of Ecology is changing their policy to show that what true field science tested has proved. Now DOE comes to Skagit County telling the farmers that they need wetland mitigation banks. The proposed banks are not compatible with working farms. Proposed banks will remove thousands of acres of prime farmland from production.

And on your handout it says they have to address key issues addressed through the proposed rule. The proposed rule identifies the criteria necessary for implementing an environmentally sound banking system and also describes the certification process.

Department of Ecology has no true field tested signed criteria to determine that. Once again, DOE is assuming their science is right, even after study after study is showing no benefit from man-made wetlands. In fact, Department of Ecology claimed land and soil disturbances can release fecal coli form bacteria's into creeks and streams.

Man-made wetlands cannot be a surrogate for good steady and documented knowledge about the form and functions of wetland processes. Department of Ecology has trained people to work on wetlands but not researchers.

The proposed DOE language will have drastic effects on required drainage and flood control projects throughout Skagit County requiring another bureaucratic hurdle making flood control drainage projects even more cost prohibitive. Thus, ruining thousands more acres of more farmland.

This proposed language will require our Henson Creek flood control zone to pay up-front an enormous cost for mitigation and leave no money to do a project. Wetland mitigation banks are another government pork barrel spending program and power take over not using field tested science.

Our ancestors worked hard to craft this beautiful agricultural valley to make it one of the best in the world for agriculture and for fish and humans. Now DOE, along with the tribes, want to destroy the whole ecosystem, ignoring real science for their power grab and financial gains.

Removing valuable agricultural land from production and polluting the waters of our creeks and rivers, destroying the fish populations. This wetland mitigation rule language needs to be dropped. The whole wetland mitigation program needs to be dropped.

True science proves man-made wetland banks function at mediocrity, and are not needed, will ruin thousands of acres of farmland, and will hurt fish populations. Can our future generations afford this loss due to Department of Ecology's and Tribes' financial gains? Thank you.

Yep.

Ellen.

COMMENTER #51
Ellen Bynum, Friends of Skagit County, Mount Vernon.

I testified earlier in the day and I won't go over everything that I said. But essentially, 'Friends' considers wetland mitigation banking a symptom of failed planning. The GMA and the local planning department have at their disposal a range of ways to protect wetlands without using the banks. And the local comp. plan requires to identify and protect resource lands, critical areas, and other land uses, and features as part of their compliance with GMA.

So, wetland mitigation banks are to date, scientifically unproven in replacing the ecological functions of destroyed natural wetlands. So, I wanted to start with that. And, then I just wanted to say that when the legislature creates a program it doesn't actually - it's not bound to appropriate funds for that program.

So, the draft rule making process under the administrative procedures act was created so that the programs that should not go forward do not go forward. One of the options under the rule making process is that Department of Ecology decides that it might be too expensive, not in the public interest, or a violation of a law to continue developing and promoting wetlands mitigation banks across the state.

In one of the sections of the administrative procedures act, the agencies that are proposing new rules have to determine the probable benefits, that the probable benefits are greater than the probable costs of the rule.

Section 1-F states that the agency must determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law. I consider the growth management act another state law. I consider that this rule making process is requiring the county officials and the planning department to violate the growth management act by permitting wetland mitigation banks.

And, I would like to request that the department revisit that part of the rule, especially for ag lands, but probably for other parts of the rule. Because there may be other places where you are violating growth management act and you don't even know it.

So, my second statement is that I would like to request that the Department of Ecology remove agricultural lands from possible consideration for a wetlands mitigation siting across the state. You've said that you have four banks or five banks that have been sited on ag lands. If you use the definition of agricultural soil that has been used to identify the lands in Skagit County as prime ag soils, you would be able to identify by soil type all places in the state that you would not want to put a bank. And, I would highly suggest that you consider taking the rule and amending the rule to say that, rather than to say that it is permitted. And, I would say that you need to do that until you determine if that ag land is not going to be used to feed people. Because, despite the fact that it's not your job to feed people, it's everybody's job to work in the public interest. So, I would like that that to be seriously considered.

The other thing is that pilot projects are pilots. They are tests, they were supposed to have ends, in the beginning rule that was applied for the pilot program ended in one year. There were no wetlands banks built, I presume, during that one year test project pilot. The agency has the discretion to extend that. They have now extended it for 8 years. How long do you have a pilot that is still a pilot? That's just a question?

Because under the pilot rule making under Feasibility Studies and I assume that is what these are. It says that the draft rule shall not be obligated to comply fully with the rule being tested, nor be subject to any enforcement action or other sanction for failing to comply with the requirements of the draft rule. So, what I am hearing from you is that we have the ability to make these bankers comply and what I am reading in this law is that the bankers don't have to comply because it's a draft rule. Now that is a huge problem because I don't want to pay for that as a tax payer and as an individual. I don't want to call upon the farmers to pay for something that was done because somebody didn't read the law correctly.

The last thing I wanted to say is, the agency has a duty to uphold what's in the public interest. And, there is a concern that wetland banking is going to favor certain developers, destroy other resource lands, and leave the tax payers paying for the cleanup. And one of the fundamental responsibilities that the legislature stated under this regulatory responsibility act, regulatory reform act in 1995 was that they wanted to insure that the citizens and the environment of the state receive the highest level of protection from the state agencies. And the agencies do not use their administrative authority to create or amend regulatory programs.

So, I have other concerns about public participation, but I will rest my case.

Are you done?

Yeah.

Next we have…

[Mumbling]

Oh yes, careful of the cord.

I was wondering what that was.

Jocelyn is the tape still going?

I believe the tape should still be running. And it looks like we have Gene Derig. Yes, we still have about half an hour on the tape.

OK, I just wanted to make sure.

I think we should be good. After Gene, it will be Doris, followed by Ross.

I had this read out to about six and a half minutes. I didn't know about the 5 minute cut off.

Um, if you could summarize and then you can submit them for…..

Well, if it's only 5 minutes let me know when I have about 30 second left because this last part is the part I want to make sure I get in.

Okay. I'll give you a wave.

COMMENTER #52
My name is Gene Derig. I am president of Friends of Skagit County. I live in Anacortes and these are comments on behalf of the board and our membership of over 300.

Friends of Skagit County, here after referred to as 'Friends', has many concerns about the draft rule on wetland mitigation banking. We believe it is weak and may violate other state and federal regulations relating to wetland and critical areas protection, shoreline, SEPA, NEPA, GMA, and local comprehensive plans and development codes.

The proposed rule making form CR-102 is required when introducing a draft rule. CR-102 asked whether the rule is necessary and being considered because of a federal law, federal court decision, or state court decision. The DOE answered 'No' to all three questions regarding the draft rule for wetland mitigation banking.

'Friends' has many questions about the use of wetland mitigation banks for compensating the loss of wetlands.

Among these questions are: in the many wetland mitigation banking program is not a requirement of any existing program, rule, or law of Washington state or the federal agency, why is DOE encouraging the program, if their program is only optional? Where is evidence that any market analysis was done by the DOE to determine the actual number of acres of wetlands which may require wetland banking as mitigation? If there was no state wide market demand study, why has DOE plowed ahead with their approval of seven banks which are now operating and 10 additional banks proposed?

Attached to this report is a publication with some percentages published by the DOE itself. According to the publication of the 45 compensatory wetland mitigation sites randomly selected 55 were implemented to plan, in other words this stuff was planted. 34 projects have performance standards and could be evaluated. Of those 34 projects, 12 projects or 35% were meeting all performance standards.

And another publication, "Evaluating Success 2002", another DOE publication, results and studies examining the success of compensatory mitigation has the following level of success percentages sited: 13% fully successful, 33% moderately successful, 33% minimally successful, 21% not successful. From another location in Washington the results were 3% success on 38 sites. On 17 sites 65% function poorly. This stuff goes on like this. I am going to skip some of these percentages. They are all really dismal. 'Friends' has even more question in terms of the openness and fairness of the process that was used to develop the proposed rule.

Why is DOE touting its public process record? If the process is so open, why does the proposal rules state in the proposed rule making form sent to the code reviser on March 3, 2009, "the purpose of this rule is to encourage wetland mitigation banking". Why is DOE holding these public meetings when it appears DOE has already made up its mind on the issue?

This does not appear to be a pattern followed by an agency which is truly concerned with what the public says. The draft rule changes are not easily tracked. There is no reference to the laws that might be affected by the rule. New language that was added was labeled 'new section' with no pages that have the strikethroughs, a reader friendly method which allows the citizen to compare the new and the old. At least I went through it and I didn't see anything like that. It appears the mitigation bank review team, MBRT, members were selected to advocate for the program. What was the level of scientific ability or experience in wetland mitigation banks which was required of the members? Why aren't scientific credentials listed? Without qualifications listed, a shadow is cast on the unbiased nature of the process.

How could the public have confidence of the quality of oversight that is supposed to be provided? Doesn't the promotion of WMBs for agency mitigation purposes negate the very intention of public input policy? Isn't this more of a signal by DOE that the fix is in. The final decision is a foregone conclusion. And that this is a promise from DOE to the developer that he/she can sell bank credits?

How can anyone looking at the process come to any conclusion other than that DOE definitely appears to be promoting WMBs? Attached to this, is a study - it's the best study you will find on wetland mitigation banks. This is what it says, attached is a study by scientists who are recognized as experts in the field of wetland issues by their peers and other professional entities. These guys are the real thing. Study effects of wetland mitigation banking on people by professors Salzman and Ruhl, Florida State University, contain warnings and skepticism about WMBs. It is only one of many professional scientific studies on the subject. I know we have got a buzzer over here.

You're OK.

Alright, I'm going to finish it up.

I have checked through several volumes of wetland and wetland mitigation studies published by reputable scientists with respective credentials in both academic and field work. I chose the Salzman-Ruhl study for these comments because it is quite comprehensive and not as lengthy as others.

While searching through the works of professionals in the wetland science field, I found no papers published as accepted scientific papers or abstracts by any of the individuals listed on the advisory or oversight team chosen by DOE.

Shouldn't a subject as serious as the consideration of wetland mitigation banks be cause for DOE to place crafting of the rule into the hands of recognized scientists, who use facts and data to arrive to conclusions? What credible studies regarding outcomes - not predictions - has DOE staff enlisted in their efforts to work through the rule?

Where is the data to convince the public taking part in these proceedings that WMBs have a success rate superior to that of a flip of the coin? Those are my comments, should I give these to you?

Absolutely, thank you so much.

Oh, cord.

Oh, yes. I'm sorry. Doris. I will have to have you come around this way, sorry.

COMMENTER #53
Hi, my name is Doris Brevoort. I live in Mount Vernon. I teach middle school, and so I am here to talk about the future for the kids that we work so hard to try to educate and who trust us to give them something that they can work with in their future.

And, I really appreciate the energy and the candid conversation that we've had, and your abilities, and attempts to answer all our questions. It's very appreciated.

Basically, I am not in favor of offsetting small wetland laws with centralized wetland laws because it's just turning the problem over to another higher power. You know it's another place where things can fail on a bigger level.

And, I also belong to a group called the 'Bioneers', which tries to look at ecological solutions for many different disciplines. And when we look at just something like the wetland enabling legislation - whatever it is. I would just urge the state to try to be - have a more holistic point of view towards development because a wetland is way down the feeding chain. What we really need to do is look at the building standards for development and require the highest standards of sustainable development in the first place, good land use.

There is very smart ways that you can put a lot of people on a small piece of land. We don't require that kind of thing, but then later on we have to take our most treasured land and put water on it, because these guys had to have, you know, a concrete pad there. So, that's obvious, but I just wanted to say it.

We're in a state of accelerated global warming right now. I have a science credential and you know I just look out the window every morning and look at the water flowing around and we are a very fragile valley here. There is all kinds of controversy about how to maintain what we do have when the water starts coming through. And I don't know if the state has taken into account all of the different changes that might happen that we have no idea what is going to happen. Look at the way the weather has changed just in the last two years. In the valley, you know peoples properties flooding that have never flooded before.

So, what we've got is something that no one can predict. How the climate change is going to affect the hydrology of a fragile place like this valley or anything in western Washington. I mean, you can still just bring the newspaper of the Chelan flood and just when I saw that, I went like this - you know here comes our own flooding. So, just let's look at that kind of thing. I wish that the state would take those kind of futures into account.

There's just two comments that I had about the actual change in Part IV of the bank operation that I read from looking around here. The changes - changing the monitoring period for a bank from a five to generally ten years, just seems like kind of laughable. I think that they should be monitored, you know 50 years, or in 100 years, or in perpetuity because changes are going to change, but you know the cats out of the bag, it's all gone we have no more jurisdiction over something that we enable in the first place.

So, you enable a tragedy to happen or you enable a problem to happen and then you don't monitor it anymore. That seems like kind of short sided to me. The other thing is that I am just looking here and I don't know of course exactly the details of it, but specifies the bank sponsor shall notify Ecology within 90 days adaptive management activities are implemented at the banks site to address unforeseen problems with site conditions. I think it is a typo, didn't you mean 90 minutes? You know - this is require a manager to send an email to a someone. 90 days, I mean there is so much damage, everything could be gone. You know Lake Missoula can come on down here and just flood it out by then. So, anyway, I just think that there should be a lot more management than that. And it comes back to the issue of oversight that has been mentioned quite a few times here. These just seem like small questions about the large issue of oversight that the public will have no control over after this is done.

And so, I just think that the oversight needs to be much more stringent for the public good and that there is real consequences for the mismanagement, and I don't know what those consequences should be. But that should be very well documented and people should know in the first place when they start to speculate their money on something like a mitigation bank what they are getting into and what it is really going to cost. Thank you.

Thank you very much. And our last testifier, Ross Barns. If you can state your name for the record. I'll check and make sure the tape is still going here for you. We are good.

COMMENTER #54
My name is Ross Barns. I am associated with my own business, Rosario Geo Science Associates and also with Evergreen Islands, a local environmental group. And, I live on Fidalgo Island.

I am a professional Biologist and Earth Scientist. I have a degree in Biology and a PHD in Earth Science including hydrogeology and I was involved extensively in one of the local permitting hearings, that was with regard to the Clear Valley project. I attended and participated in nine days of hearings and spent many, many hours outside the hearing room going through the record with a fine tooth technical comb and also becoming an independent expert on many issues of the site. Which I had to do, because I could not possibly understand the site through the extensive and biased documentation provided by the proponent. There are so many problems with - I discovered - through the practical process of how this is going to operate that I can only hit some of the high points right now. One, I guess is, I noticed that because there is because much of the permitting and approval for a proposed wetland mitigation bank is handled by the agencies.

[End of tape.]

[Tape two.]

I'm sorry, I thought we had it. Ok, we are good.

So, again whatever the regulations are, I think locally, they see the experts as being within the agencies so there - for there is a tendency not to pay attention to issues that are brought up locally, even when they are done expertly.

In terms of the effect of the wetland mitigation banking, I am very concerned that this will facilitate the loss of the systems of distributed wetlands and their associated open spaces and buffers that currently occur in developed areas. They have a very important function, in fact, because they are protected critical areas sometimes they are the only open space areas that remain along with parks and so on. And they often perform some interconnected system within urban or developed areas. Wetland mitigation banking will facilitate the total destruction of that system. That impact, I do not believe, has been adequately considered by those people who are attempting to develop appropriate regulations for wetland mitigation banks.

I also believe that what you now call the water resource inventory area is far too large an area for considering mitigation credits. There are 62, I presume these are major river systems and major stream systems in the state of Washington, there are only 62 of them. I know the appropriate WRIA for the Clear Valley was considered, I believe the whole of the lower Skagit River watershed. That means that the very important wetland systems associated with individual streams - watersheds within that whole area can be totally destroyed in return for creating some kind of a wetland in one concentrated area within that area. So, in other words, you are apparently allowing the large scale destruction of wetland areas associated with straight

individual stream systems that may be extremely important for those stream systems in return for placing some concentrated wetlands somewhere within this large scale river watershed. I think that's totally inappropriate and unjustified scientifically and technically.

I discovered that the failures of the permitting and regulatory system that mean that the site by site attempt to protect, enhance, create wetlands and their so said ecological systems. I think there is an admission that that system is to a large extent failing. I mean its written right into your mitigation bank documents. I discovered that the same failures in that system are present in the one regarding permitting and regulating wetland mitigation banks, because nothing has changed, the same development pressures, the same bias's that have been edited in terms and technical problems, in terms of designing and developing site by site wetland mitigation are all present just on a larger scale within wetland mitigation banks. Instead of the impacts when they occur and the problems occurring on say an acre scale, they are now going to occur on a scale two to three orders of magnitude larger. Because typically wetland impacts are on the order of an acre or less and now we are dealing with areas that are generally larger than a hundred acres.

I started out my process not knowing very much about wetland mitigation banks and with an open mind I finished my involvement very, very disappointed that this process is not going to work because it's the same regulatory process that has failed on site by site mitigation, nothing has changed. Thank you.

Thank you, sir. Is there anyone who has changed their mind and would like to comment?

I would.

Absolutely, come on up we have a fresh tape for you guys. Thank you. I just want to make sure we have got the right - you're Susan Hughs-Hayton?

Right.

If you could just state that for the record that would be great.

COMMENTER #55
I am Susan Hughs-Hayton. And I represent myself in the Skagit Valley, as well as my farm, Hayton Farms. My children are fifth generation on this family farm.

I just want to state for the record that I think it is tragic that unavoidable impact to an entity such as a housing development should be prioritized over totally avoidable destruction of irreplaceable prime farm land.

I read that today there are fewer than 90,000 acres in ag production in our valley. The two proposed mitigation banks will permanently destroy 1,100 acres of prime farm ground. If my math is right, that is one 1/90 of all that we have left. What kind of an answer to any problem is that? Thank you.

Anyone else care to testify? OK, I seem to have loss my sheet of paper. Did anyone happen to pick it up with you, hide my script..ha-ha. I have some official comments I have to say back into the… Oh that's fine. I must have another copy somewhere. I just have official words I have to put on tape. I think we are good.

So no one else would care to testify at this time? Okay, so I do want to remind everybody than that you have other options as far as submitting comments if you change your mind, if you get home and you go man I wish I said that. The back side of this yellow sheet has all of those addresses, web addresses, email addresses, hard copy addresses.

You have until 5:00pm on April 23 to get those comments in to Yolanda. Let's see. Again, adoption of the rule is currently scheduled for July 31, but Ecology will put out a concise explanatory statement prior to that date. And, I think if nobody else wants to comment then let the record show that this is - oh, you know what, let me do tell you this -all parties will receive, I may have mentioned this, all parties will receive record when the concise explanatory statement is available. And sorry I am all over the place here.

Okay, so let the record show that it is now 8:51 and this hearing is officially closed. Thank you so much for coming everyone.

Wetland Mitigation Banks Rule Hearing
April 16, 2009, 3:00pm

Start our recorder here. So let the record show that is it 3:08 on Thursday, April 16, 2009. And this hearing is to hear testimony for the State adoption of Wetland Mitigation Banks rule, 173-700 WAC.

The hearing is being held at the US Army Corps of Engineers, Seattle District. That is at 4735 east Marginal Way South in the Galaxy Room. Additional hearings were held on April 8 in Spokane there was two held at the Department of Ecology's Eastern Regional Office on the 8th. There was one hearing held in Lacey on April 9, and another two hearings were held on April 15 in Mount Vernon, and then the two hearings for today, here at the Army Corps of Engineers in Seattle. Tonight's hearing will begin at 7:00pm.

Ok so, let's see. Notice of this hearing was also published in the Washington State Register on March 18, 2009. Additionally, a listserv notice was sent to the interested parties, and a press release was issued. The State Register number is 04-15-045.

So, when I call your name please go ahead and step up to the microphone. And again, state your name, address, and affiliation for the record. So, we have Salina who said maybe.

I don't.

Are you good? Okay. So, then that leaves us with Ian Elliot.

Looks like we are running down there, so you can go ahead.

Okay, great. Thank you very much.

COMMENTER #56
For the record, my name is Ian Elliot. And, I live in Ellensburg, WA and I am unaffiliated - I think - with, as anybody can be I guess at this point. So, I am retired. But as a preface, I was in the Washington State House of Representatives and I spent significant time putting together the original rule that the department used for off-site, in-kind mitigation with Jerry Alb and so I have been at this for awhile.

And, so my biggest point here has to do with the issue of definitions of what can be acceptable real estate to use for mitigation banking. Because, I think, ultimately the courts are going to decide that the fishing - fish issue - and the no net loss issues are going to be the trumps, kind of the black queens in the deck, as far as where we are going with this. And, I think that the department needs to carefully assess the rules that they put out for developers of wetland mitigation banking. So, they can be done certainly and it can be done so that people aren't out there spinning their wheels and spending money and can ultimately come up with some success.

You guys know better than I do the numbers of failures of wetland banks nationally and locally, on in-site, in-kind and this will continue, and so the no net loss thing becomes kind of a sham if that continues. Again, ultimately we'll never solve the problem of the endangered species, especially the salmon which is important to this area, if we don't get serious about saying there is a criteria that we're going to be able to use and it will be definable and it will be achievable. And, with rules that someone can't navigate at least in their head prior to starting, you won't have many people step up to the line and do what you want.

So, my advice, if you will, to you would be to rethink that and especially from the stand point of soil types and how they relate to agricultural lands of significance. That is such an open-ended and nebulous thing especially when you are saying that the Corps and everyone else is going to look at the developer for years on liability from the standpoint of performance. That if you cannot go to properties and soil types that will give you performance, the people who are going to do that are just going to pass. They will say I won't take the risk because the risk, the liability, goes for too long and it is too high given the fact that I can't rely on where the wetlands would succeed naturally. And everybody has got their serfdoms and of course agriculture has there serfdom and they don't want any net loss. It doesn't matter if it was a wetland before they started, if they drained it, or if it wasn't a wetland but they filled it and then they irrigated it. But, all those things now are depending on the local jurisdiction prime farmlands. And, we need a rule that says this is the soil that's there naturally, that soil is the one that is a prime farmland and other soils aren't and therefore are open for use in mitigation banking.

So, thank you very much for your time. I appreciate you coming out and listening.

Thank you. Did anyone change their mind and would like to provide testimony at this point? Yes - no? Oh, I thought I saw a hand. Okay, overly excited. Okay, well I guess let's see so I have got a couple more things to go ahead and read into the record.

So, again just to remind you, you can submit comments to Ecology. They must be received by 5:00pm on April 23, 2009. And, like Yolanda said, the adoption of the rule is currently scheduled for July 31, 2009. Anyone who signed into this meeting; well, I guess it is actually the commenters, we'll notify when the concise explanatory statement is available, which is essentially a response to the comments that we have received during the public comment period. We'll let folks know when that's available; you'll put it up online I think you said, there will be a listserv notice, all sorts of notifications that that is available.

Oh, written comment, yes, absolutely.

I forgot to mention that. I brought a copy for everybody.

Perfect.

So let's see, so all the testimony received at this hearing, along with all the written comments received by 5:00pm on the 23rd will be part of the official record and will be part of that response, concise explanatory statement that those folks will issue. So after today's meeting yep, they will get that. Let's see, I said that already. You will receive notice. Okay, so, on behalf of

the Department of Ecology and the Corps of Engineers, thank you guys for coming. I think we can say that let the record show that it is now 3:15 and this hearing is officially closed. Thank you.

Wetland Mitigation Banks Rule Hearing
April 16, 2009, 7:00pm

Ok, let the record show that it is 7:04 on Thursday April 16, 2009. This hearing is to hear testimony for the State adoption of Wetland Mitigation Bank rules, 173-700 WAC.

This hearing is being held at the US Army Corps of Engineers, Seattle District, 4735 East Marginal Way South in the Galaxy Room. Additional hearings were held on April 8, 2009 in Spokane, Washington. There was a workshop at 2:00 and 6:00 and hearings at 3:00 and 7:00. On April 9, 2009 in Lacey, WA, we held a workshop at 6:00 and a Hearing at 7:00. April 15, 2009, two workshops and two hearings again at 2:00 and 6:00 and 3:00 and 7:00. And, then today, April 16, we held a 2:00 workshop and a 6:00pm hearing. I am sorry a 2pm workshop and 6pm workshop and 3:00pm hearing and a 7:00pm hearing. That is at the Army Corps of Engineers, Seattle District Galaxy Room.

Notice of this hearing was also published in the Washington State Register on March 18, 2009. Additionally, a listserv notice was sent to interested parties and a press release was issued. The state register number is 04-15-045.

Is anyone present that would like to testify? Let the record show that no one is in attendance and wanting to testify.

Written comments can be submitted through April 23, 2009 they must be received by 5:00pm on the 23rd. Adoption of the rule is currently scheduled for July 31. You may submit comments in three ways, the addresses are available on the yellow sheet of paper in the back of the room for submitting those comments. All testimony along with [Tape cut's off/ restarts] the official hearing for this proposal will be part of the official record for the proposal. After tonight's meeting, Ecology will respond to comments received and anyone who signed up to testify will receive notice that the concise explanatory statement is available.

On behalf of the Department of Ecology, thank you for coming this evening. I appreciate your cooperation and courtesy. Let the record show that is it now 7:07pm on April 16, 2009, and this hearing is officially closed.