ANNUAL PRE-TREATMENT PLAN

FOR ZOSTERA JAPONICA CONTROL ON COMMERCIAL CLAM BEDS IN WILLAPA BAY

FOR

LONG ISLAND OYSTER

WAG 993003

Submitted to:

Washington Department of Ecology

April 15, 2021

Author:

David Beugli

WGHOGA

Annual Pre-Treatment Plan

The locations of acreage planned for treatment in 2021, including GPS coordinates of each corner of the area, size in acres of each area and cooperating adjacent land owners are shown in Table 1.

Table 1. Coordinates of the overall area where japonica control will be implemented. Actual acres to be treated will be less than those indicated by the overall bed boundaries.

Bed Name	Parcel	Acres	Corner Coordinates		Cooperating Landowners
			Latitude	Longitude	
20-13594	NA	5	46.4432	-124.0225	
			46.4443	-124.0190	
			46.4413	-124.0217	
			46.4414	-124.0182	
D26 N1/2	79004006026	5	46.4306	-123.9758	Coast Seafood's Co.
			46.4299	-123.9688	
			46.4289	-123.9684	
			46.4291	-123.9759	
D31	79004000031	5	46.4205	-124.0129	Heckes Clams Inc.
			46.4195	-124.0077	Coast Seafood's Co.
			46.0086	-124.0086	
			46.4174	-124.0128	
D32 S1/2	79004000031	5	46.4173	-124.0126	Coast Seafood's Co.
			46.4157	-124.0024	
			46.411	-124.0035	
			46.4125	-124.012	

Annual Pre-Treatment Plan (Maps)

Figures 1-5 show the proposed locations of japonica treatments in 2021. In 2020 Long Island Oyster did not treat commercial clam beds for the control of *zostera japonica.*

Figure 1. Bed 20-13592.

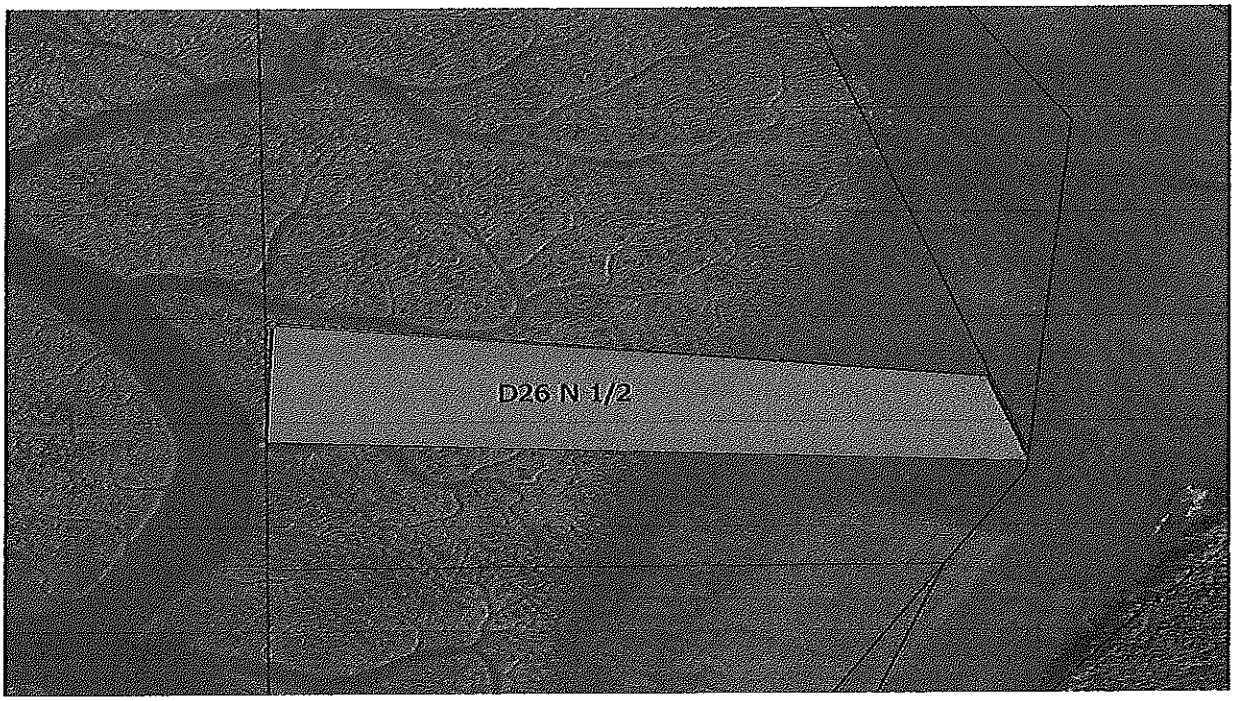

Figure 2. Parcel 79004006026.

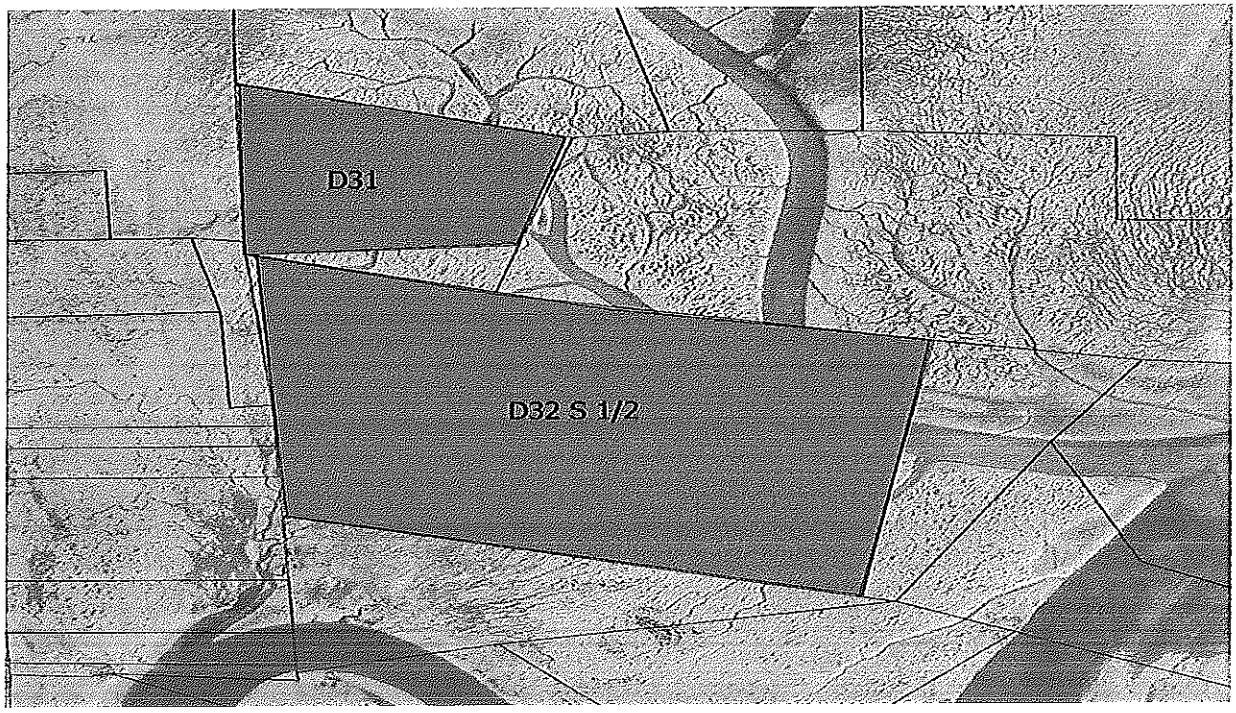

Figure 3. Parcel 7900400003.

Signature Requirements

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of those persons directly responsible for gathering information, the information in the Pretreatment Plan is, to the best of my knowledge and belief, true, accurate, and complete and will be updated as necessary. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment of knowing violations.

3-30-24

Signature *Date*

DEPARTMENT OF ECOLOGY
State of Washington

Transfer of Coverage Form

Aquatic Plant and Algae Management General Permit

Both the original Permittee and the new Permittee(s) must sign this form. Provide the date the new applicator will assumes responsibility for permit coverage. Once both parties sign this form, the new Permittee becomes responsible for permit compliance and permit fees.

I. Original Permittee

Permit Number: WAG 993003		
Permittee's Name: Warren Cowell		
Company: Willapa Bay Shellfish		
Mailing Address: P.O. Box 43		
City: Ocean Park	State: WA	Zip: 98640
Phone Number: 360-751-2034	Fax:	
In order to ensure compliance with permit Section S1.A.2.a.ii.3, the Original Permittee must supply with New Permittee with a copy of a map that shows the areas covered under permit, and the areas that have been treated.		
Signature: Warren Cowell 4-15-21		

II. New Permittee

Name: Chase Metzger		
Company: Coastal Ag LLC		
Mailing Address: 12507 Y Place		
City: Long Beach	State: WA	Zip: 98631
Phone Number: 206-276-9115	Fax:	
Email address: chasecoastalag@gmail.com		
WSDA Aquatic Pesticide License Number: 65552		Expires: 12/31/2021
Will assume responsibility and liability for coverage on: April 15, 2021		
Signature: 3-30-21		

III. Permit Contact (if different from New Permittee above)

Name:		
Company:		
Mailing Address:		
City:	State:	Zip:
Phone Number:	Fax:	
Email address:		

DISCHARGE MANAGEMENT PLAN
FOR ZOSTERA JAPONICA CONTROL ON COMMERCIAL CLAM BEDS IN WILLAPA BAY

Long Island Oyster

WAG 993003

Submitted to:

Washington Department of Ecology

April 2, 2014

Amended:

March 25, 2021

Author:

David Beugli

WGHOGA

Table of Contents

Discharge Management Plan Team

The management of the Zostera japonica control project for the Willapa-Grays Harbor Oysters Growers Association (WGHOGA) will be conducted by the Project Coordinator, David Beugli-360-642-2031. The Project Coordinator will also be responsible for the developing and revising of the Discharge Management Plan (DMP) as well as revising and implementing corrective actions and other permit requirements. The contact information for the persons responsible for the application of the herbicide are listed in the Notice of Intent (NOI), see Appendix A.

Problem Identification

For a complete discussion of the problems caused by the growth of Z. japonica on commercial clam beds refer to the Environmental Impact Statement (EIS): Management of Zostera Japonica on Commercial Clam Beds in Willapa Bay, section 1.1 Introduction and Problem Formulation on pages 7-11. All commercial clam beds within Willapa Bay that are affected by Z. japonica are within the general geographic boundaries to which the plan applies. Figures 1-1 and 1-2 starting on page 8-9 show areas with known and proposed Z. japonica presence. Maps highlighting the proposed treatment locations are included with the signed NOI and are updated in the Annual Operations Plan (AOP). Zostera japonica is a highly invasive species and listed as a noxious weed by the State of Washington, any level exceeds action thresholds and could result in treatment. Ongoing visual monitoring will be used to determine when the action threshold has been met.

Zostera japonica Management Options

When the management options were compared consideration was given to the impacts to water quality, impacts to non-target organisms, feasibility of implementation, and cost effectiveness. The following management options including a combination of management options have been evaluated and considered for the control of non-native Z. japonica in the EIS.

Management Options

1. No action - refer to 2.7.1 Alternative 1: No Action - Continue Existing *Z. japonica* Management Practices of the EIS on pages 41-42
2. Prevention – Due to the size of Willapa Bay and Z. japonica's methods of reproduction, continued recruitment will occur. Refer to the EIS 3.1.2 Life History of *Zostera Japonica* on page 71. For this reason ongoing visual monitoring will be used to assess infestation levels and any presence could trigger action thresholds.
3. Mechanical or physical methods – refer to the EIS on pages 41-42 and 2.7.4 Other Alternatives Considered and Eliminated on pages 45-48. Implementing only mechanical control methods was deemed unfeasible and not cost effective due to the ineffectiveness of mechanical and physical methods, and their high costs to implement.

4. Cultural method – refer to the EIS on page 41 for a discussion on Cultural Control Methods.
5. Biological control agents – refer to 2.7.4 Other Alternatives Considered and Eliminated: Biological Control on page 48 of the EIS.
6. Herbicides – refer to 2.7.2 Alternative 2: Chemical Control Methods Only on pages 42-44 of the EIS.

Herbicide Use

Action Threshold

Zostera japonica grows rapidly and will achieve 100% cover within one to two seasons. A few seedlings per 0.25m2 can result in close to 100% coverage by the end the growing season. A typical clam production cycle is 3 to 5 years. During the first 3 years an infestation of Z. japonica will reduce clam growth by at least 15% per year. To continue to profitably farm Manila clams, control of Z. japonica will be required on an on-going basis (Patten 2013).

Due to the fact that Z. japonica is a highly invasive species and listed as a noxious weed by the State of Washington, any presence of Z. japonica will be considered as meeting the action thresholds and could result in treatment. To determine when the action threshold has been met visual monitoring will be used to determine presence. For the control of Z. japonica on commercial clam beds the action threshold will be set at presence.

Treatment Efficacy

Efficacy will be observed as part of the planning phase for subsequent treatment seasons. Participants will visually observe beds treated in prior years to determine if the past treatment resulted in reducing japonica presence.

Non-target Impacts to Native Eelgrass

If treatment up to the buffer boundary occurs, the monitoring protocol will follow the procedures outlined in the National Pollutant Discharge Elimination System (NDPES) and State Waste Discharge General Permit: *ZOSTERA JAPONICA* MANAGEMENT ON COMMERCIAL CLAM BEDS IN WILLAPA BAY GENERAL PERMIT, under section S5. Monitoring pages 11-13. Some WGHOGA members are providing support for a research project titled: Evaluation of Sampling Design for Monitoring Impacts of the Control of Exotic Eelgrass on Native Eelgrass in Willapa Bay, Washington. The research is being led by Dr. Christian Grue of the Washington Cooperative Fish and Wildlife Research Unit at the University of Washington. Information gathered from this monitoring project may be used to help guide future buffer practices. Refer to the EIS section 3.2.4 Plants 92-96 for more discussion on possible impacts.

Response Procedures

Compliance with labeled Rates

The Permittee will possess a Washington State Department of Agriculture issued Pesticide Applicator License and will have or will be supervised by someone with an Aquatic Certification. Herbicide applications will be in accordance with all label requirements including compliance with labeled rates, equipment calibration and maintenance. The Clearcast® label EPA Reg. No. 241-437-67690: For Control of Japanese Eelgrass (Zostera japonica) specifies use directions and application procedures, refer to Appendix B.

Spill Response

To reduce the risk of spills the Permittee will adhere to guidelines contained in the NPDES permit titled: *Zostera Japonica* Management on Commercial Clam Beds in Willapa Bay permit under section S.4.E Spill Prevention.

References

Grue, Grassley, and Conquest. (2013). Evaluation of Sampling Design for Monitoring Impacts of the Control of Exotic Eelgrass on Native Eelgrass in Willapa Bay, Washington

Patten, Kim. (2013) [Field Survey]. Unpublished raw data.

Washington State Department of Ecology. The Environmental Impact Statement: Management of *Zostera japonica* on Commercial Clam Beds in Willapa Bay, Washington. March 26, 2014

Washington State Department of Ecology. National Pollutant Discharge Elimination System and State Waste Discharge General Permit: *ZOSTERA JAPONICA* MANAGEMENT ON COMMERCIAL CLAM BEDS IN WILLAPA BAY GENERAL PERMIT. Issued April 2, 2014

Signature Requirements

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of those persons directly responsible for gathering information, the information in the DMP is, to the best of my knowledge and belief, true, accurate, and complete and will be updated as necessary. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment of knowing violations.

3-30-21

Signature *Date*

Appendix A. Notice of Intent

Appendix B. Clearcast Label