

# Relative Dispersion of Water Masses Near Department of Ecology Long-Term Monitoring Stations in Puget Sound Model

by Albertson, S.L.

**Abstract:** A dispersion study at many of Ecology's long-term monitoring stations occurred at the University of Washington's Puget Sound Model on August 13, 1993. The purpose of this experiment was to approximate the relative dispersion of water masses after several days of tidal action, in different estuaries monitored by Ecology in Puget Sound. Fresh and salt-water dyes were released during periods of neap and spring tides in surface and bottom waters, respectively.

## Introduction

Ecology maintains a total of 16 core and 30 rotation stations throughout Puget Sound, which it samples at monthly intervals. We collect vertical profiles of water quality parameters such as salinity, temperature, density, (dissolved) oxygen, pH, light transmissivity, as well as nutrient and chlorophyll *a* data from discrete depths. The question of how much water is represented at a single station does not have a simple answer, due to the complexity of the circulation. To address the question, however, the Puget Sound Model (Appendix A) at the University of Washington was used to determine the dispersion of dye tracers injected at these locations over several tidal cycles. The model simulates major freshwater inputs, six tidal components (four lunar, two solar), but neglects other forces – notably the wind.

## Methods

One milliliter of freshwater dye was injected at the model's surface at each Ecology location during both full moon (spring tide) and third quarter (neap tide) cycles. One milliliter of saltwater dye was injected at depth in the model at these same locations and periods. The model was "spun up" for a period equivalent to a month (about 37 minutes) prior to each experiment, and multiple observers were used to record results. It can take a year (over 7 hours) of simulation to achieve true baroclinic steady state, but this experiment was designed to be somewhat approximate. After each injection, the observer at each location recorded the shape and extent of the resulting dye patch after 5 minutes of simulation (about four real days).

## Results

The maps in Appendix B contain the sketches of numerous observers from these experiments. They should be approached with some caution, however, and no attempt to interpret them will be given here. Gross observations, such as the ability of water to move from Seattle to Tacoma on a single flood tide have many implications for the region. Wastewater Treatment Plant (WWTP) effluent released at some locations clearly must be considered in loading allocations and Total Maximum Daily Load (TMDL) calculations at considerable distances from the source.

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*This page was re-created by the author on 8/1999*

# Appendix A

## BACKGROUND ON PUGET SOUND MODEL

**Estuaries** are embayments where rivers empty into the ocean. In these inlets, river runoff, tidal fluctuation, channel configuration, and irregular bathymetry conspire to create some of the most complex circulation patterns in the world. These areas are of great scientific interest because they are among the world's most productive environments, and because human interaction with the ocean is concentrated in estuarine regions.

Puget Sound is a large estuary that provides us with an excellent "field laboratory" for studying estuarine circulation patterns. However, the complexity of tidal flow in this area makes a detailed understanding extremely difficult by field observations alone. A physical model of the Sound was constructed in 1950 as a research tool for deciphering the factors that control estuarine circulations here. A small scale model has the advantage of allowing us to observe long-term processes in the space of a few minutes or a few hours. Many of the physical parameters can be controlled to investigate their effects singly or in combination. For example, river discharge can be set to study the consequences of extreme runoff; tidal action can be set for specific epochs; or anomalous conditions can be simulated. Thus, we can predict the circulation patterns that would result from natural or man-made changes in the systems. The Puget Sound Model has been used as a teaching aid for classes in the marine sciences and for basic and applied research, including studies of marine pollution. In addition, based on the great interest to boaters and fishermen who must deal with swift tidal currents, the model was used in preparing Tide Prints, a publication depicting surface tidal flows within Puget Sound.

In this lab, we'll use the Puget Sound Model to:

- explore estuarine circulation in general, and that of Puget Sound in particular
- study the factors considered the most important in controlling the circulation in Puget Sound, which are: physical characteristic of the basin, type of tide, and river flow
- investigate the notable features of the resulting circulation, such as: tidal currents, transport and flushing, eddies, turbulence and mixing, and other phenomena.

## THE MODEL

### A Model Scales

1. **Spatial Dimensions:** In order to achieve realistic (turbulent) flow, the Puget Sound Model was built with a horizontal scale of 1:40,000 and a vertical scale of 1:1,152. Note that the horizontal and vertical scales are not the same. The vertical scale (depth) is exaggerated by a factor of 34.7. This was necessary in order to provide sufficient depth for turbulent flow to occur in the principal channels and to reduce the effect of surface tension in shoal areas such as tide flats.
2. **Time:** In the model, an hour is scaled down to about 3 seconds. Therefore, one tidal day (24 hours 50 minutes) = 76 seconds of model time.

**B. Tides:** Tides in the model are generated by displacement of water in the headbox by a plunger with its vertical movement driven by a tide computer. The tide computer for the model provides summation of six functions representing the six major tidal constituents. Four of these tidal constituents are lunar functions and two are solar functions.

**C. Fresh and Salt Water:** Fresh water is fed into the model through individually controlled "rivers." River flow may be increased to simulate winter high runoff periods, or decreased to simulate summer low runoff periods. A separate tank, labelled "Pacific Ocean", provides the salt water for this system. Salinity is carefully monitored and adjusted in this tank.

**D. Limitations:** No small-scale model can exactly duplicate the behavior of the natural system. One important factor that cannot be simulated in the model is wind, mainly because of the effects of surface tension and land topography. This is an important limitation because winds and waves contribute to mixing, surface transport and water exchange processes. Surface tension cannot be eliminated; thus, water movement in very shallow areas and close to the shoreline is unreliable. Viscosity cannot be scaled, so flow through very small channels is somewhat impeded, and small-scale turbulence is reduced. These factors make it necessary to verify model observations by comparison with field observations made at comparable times and locations.

## PHYSICAL CHARACTERISTICS OF PUGET SOUND

Puget Sound is the southern arm of the inland waterway that include the Strait of Juan de Fuca and Strait of Georgia. The principal entrance from the Strait of Juan de Fuca is at the northern end of Admiralty Inlet, and there is a much smaller connection through Deception Pass. The Sound extends approximately 160 kilometers from Deception Pass south to Olympia, and has 2,144 km of convoluted shoreline. There are small estuaries within the estuary of Puget Sound, formed at the mouths of the 11 principal rivers entering the Sound.

The Puget Lowlands were carved by glaciers that once extended to just south of Olympia, and were inundated by seawater when the ice retreated. Because of this origin, Puget Sound is a complex system of interconnected fjord-like basins.

**A. Basins and Sills:** The four major basins of Puget Sound are:

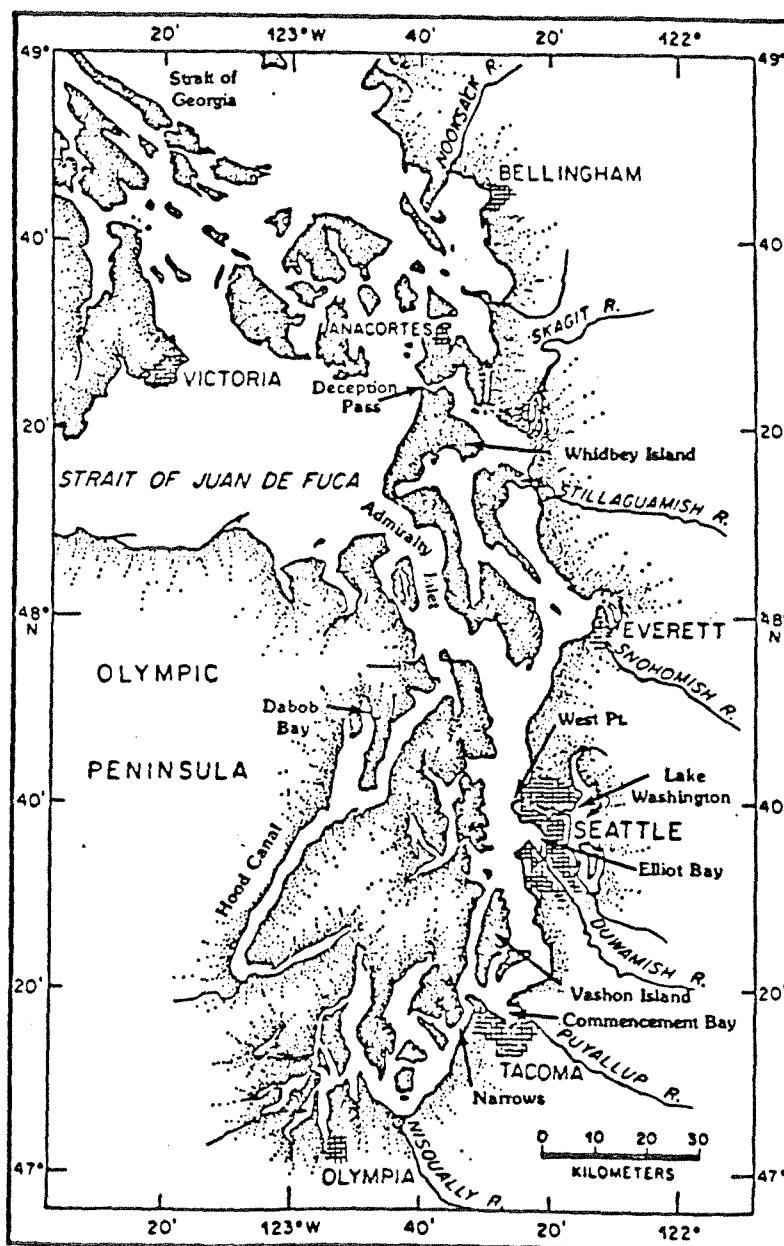
- Main Basin, extending from Possession Sound to Commencement Bay in Tacoma
- Hood Canal and Dabob Bay
- Whidbey Basin (Possession Sound, Port Susan, Saratoga Passage, Skagit Bay)
- South Sound, south of Toliva Shoal, including a large part of Carr Inlet

Three basins are deep and steep sided, 180 meters or greater in depth, with the deepest water (284 m = 930 ft) found in the Main Basin, east of Pt. Jefferson. Whidbey Basin is the exception; it is mostly filled with riverine sediments, and has a shallower profiler than the other basins. At the northern entrance of each basin except Whidbey, there is a shallow sill 60-75 meters deep, which is made up of glacial debris left when the ice retreated. The sills occur at Admiralty Inlet, Tacoma Narrows and at the north end of Hood Canal.

**B. Channels:** Channels connect the basins and are narrow in comparison with their length. Tidal currents are much stronger than those in the basins. Usually, the strongest tidal currents occur during mid-flood and mid-ebb tide, when the water level is changing at its maximum rate. Deception Pass is an exception. Because there are differences in the times of high and low tide on the different sides of Deception Pass, the maximum current there occurs at full high tide and full low tide.

**C. Deltas and Tide Flats:** Deltas are present at the mouths of all the major rivers. They range in size from the large Skagit River Delta, which covers Skagit Bay, to the very small deltas off the mouths of the smaller Hood Canal rivers, such as the Hamma Hamma or Dosewallips

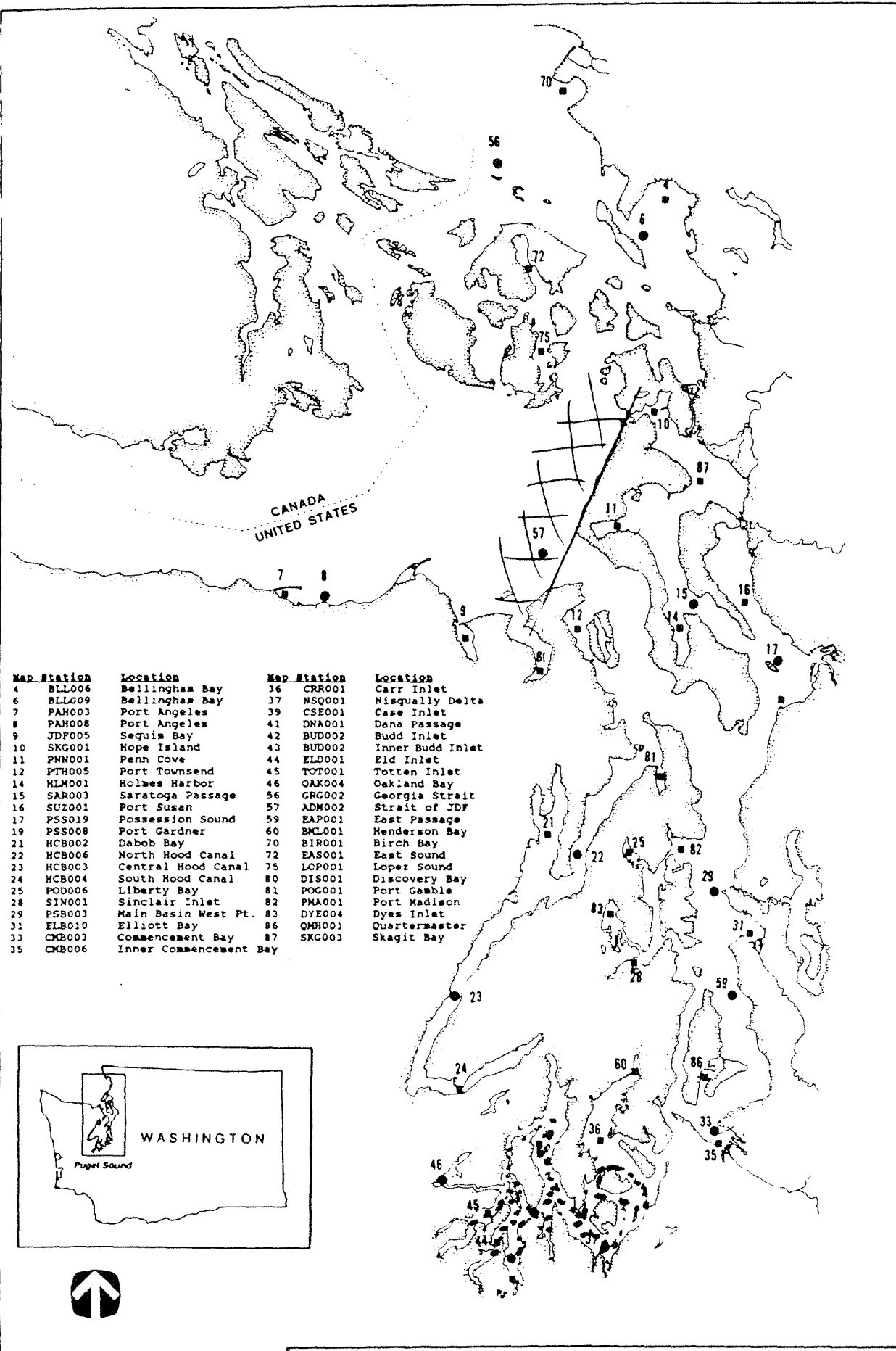
**D. Points:** Numerous points and promontories in Puget Sound influence tidal currents and mixing.



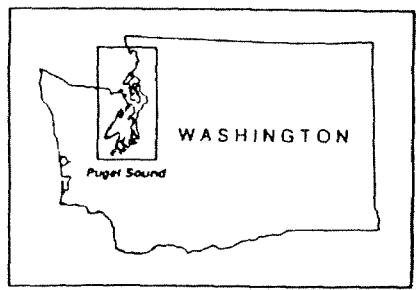
# Appendix B



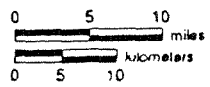
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0.5 ml.  
70 cm. x 60 cm.



Map Station	Location	Map Station	Location
4	BLL006 Bellingham Bay	36	CRR001 Carr Inlet
6	BLL009 Bellingham Bay	37	NSQ001 Nisqually Delta
7	PAH003 Port Angeles	39	CSE001 Case Inlet
8	PAH008 Port Angeles	41	DNA001 Dana Passage
9	JDF005 Sequia Bay	42	BUD002 Budd Inlet
10	SKG001 Hope Island	43	BUD002 Inner Budd Inlet
11	PNN001 Penn Cove	44	ELD001 Eld Inlet
12	PTH005 Port Townsend	45	TOT001 Totten Inlet
14	HLM001 Holmes Harbor	46	OAK004 Oakland Bay
15	SAR003 Saratoga Passage	56	GRG002 Georgia Strait
16	SUZ001 Port Susan	57	ADM002 Strait of JDF
17	PSS019 Possession Sound	59	EAP001 East Passage
19	PSS008 Port Gardner	60	BHL001 Henderson Bay
21	HCB002 Dabob Bay	70	BIR001 Birch Bay
22	HCB006 North Hood Canal	72	EAS001 East Sound
23	HCB003 Central Hood Canal	75	LCP001 Lopez Sound
24	HCB004 South Hood Canal	80	DIS001 Discovery Bay
25	POD006 Liberty Bay	81	POG001 Port Gamble
28	SIN001 Sinclair Inlet	82	PMA001 Port Madison
29	PSB003 Main Basin West Pt.	83	DYE004 Dyes Inlet
31	ELB010 Elliott Bay	86	QMH001 Quartermaster
33	CMB003 Commencement Bay	87	SKG003 Skagit Bay
35	CMB006 Inner Commencement Bay		

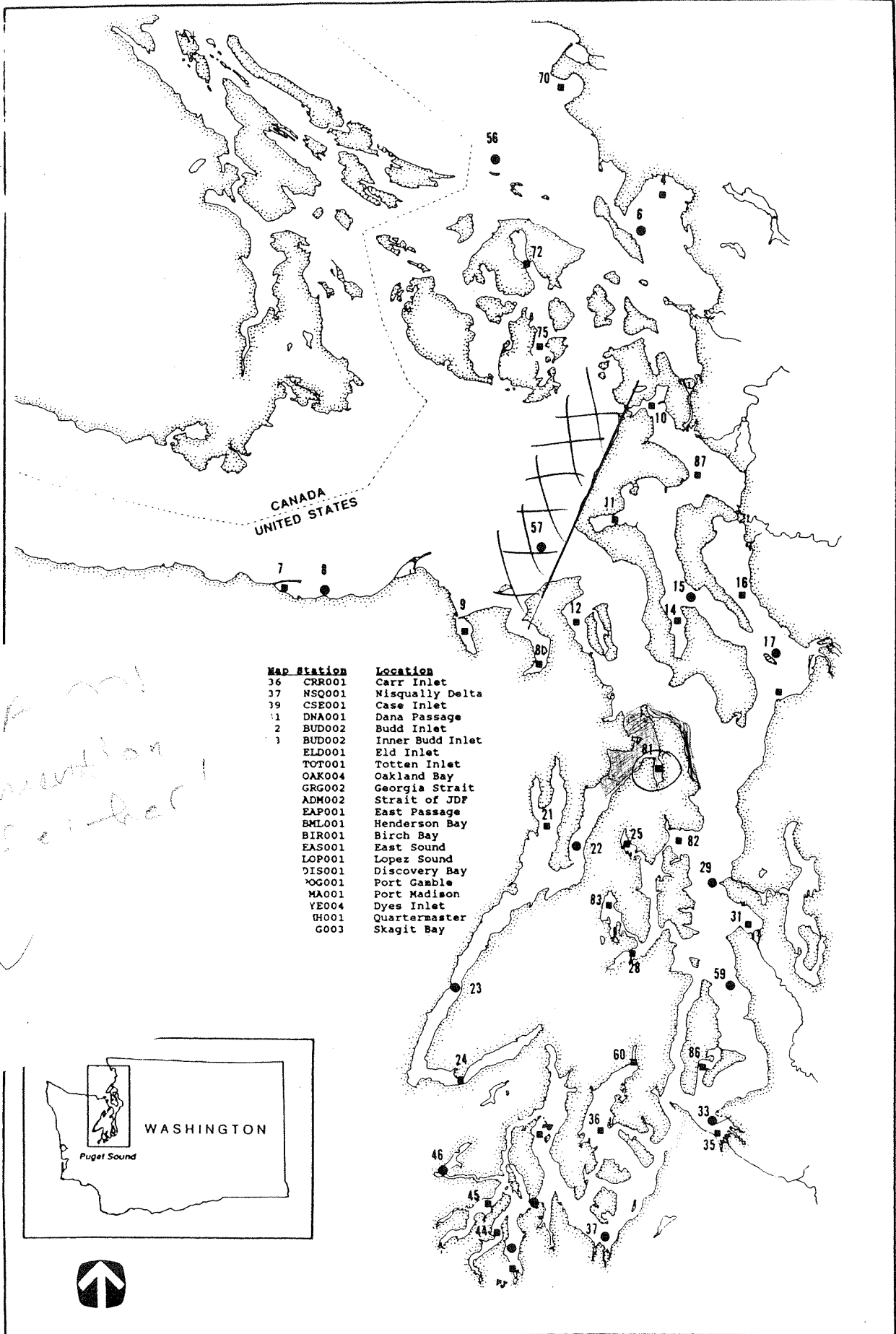


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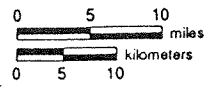
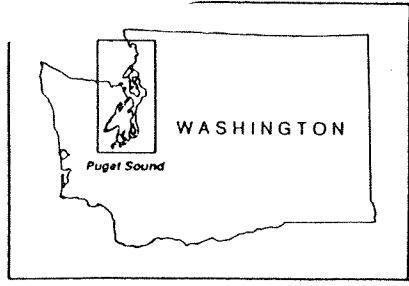


30 cm. x 60 cm.

Surface, HND001/51.

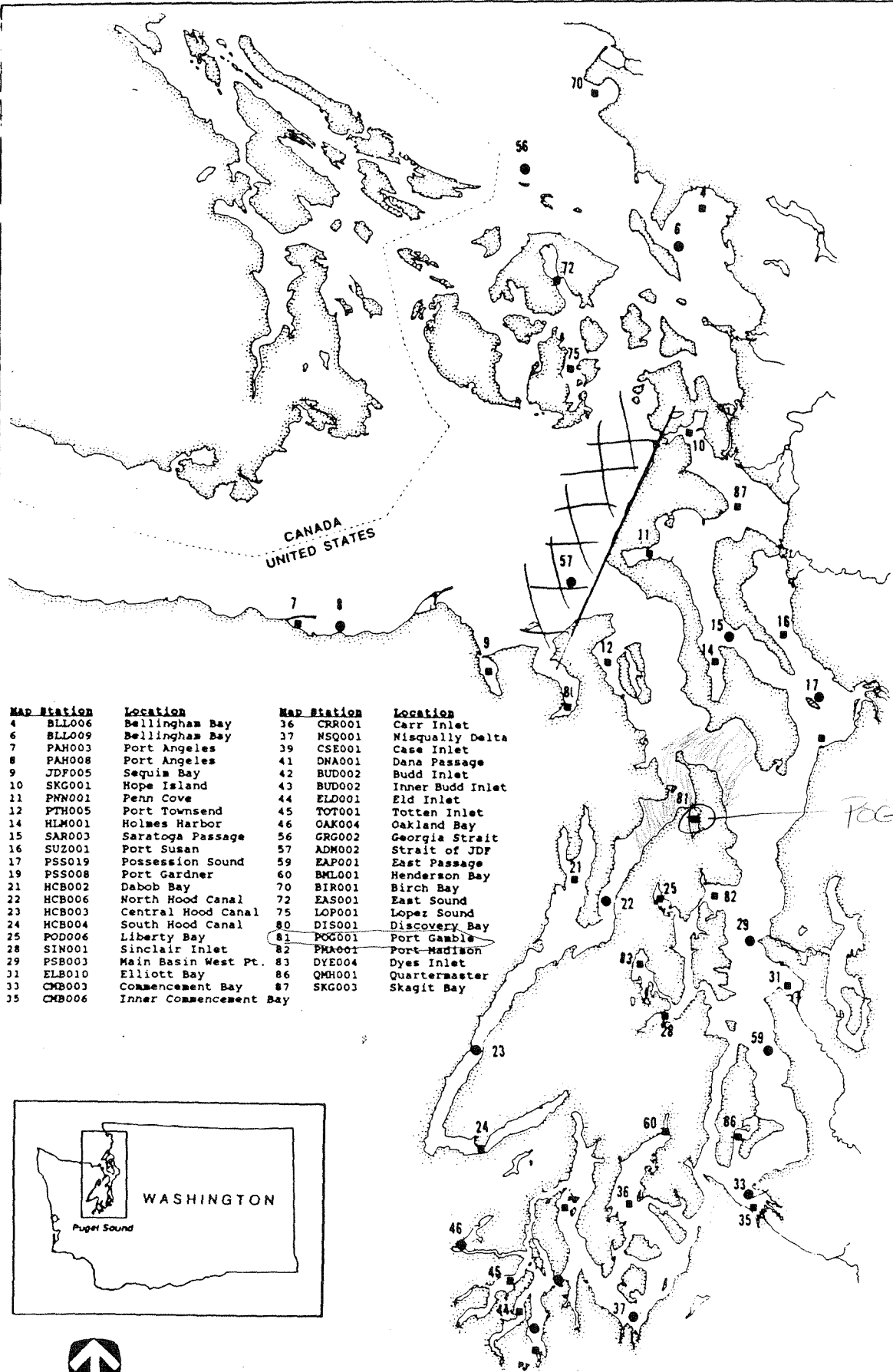


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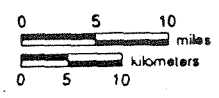
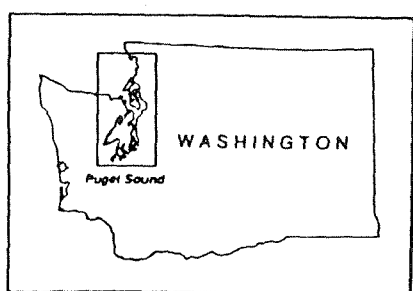


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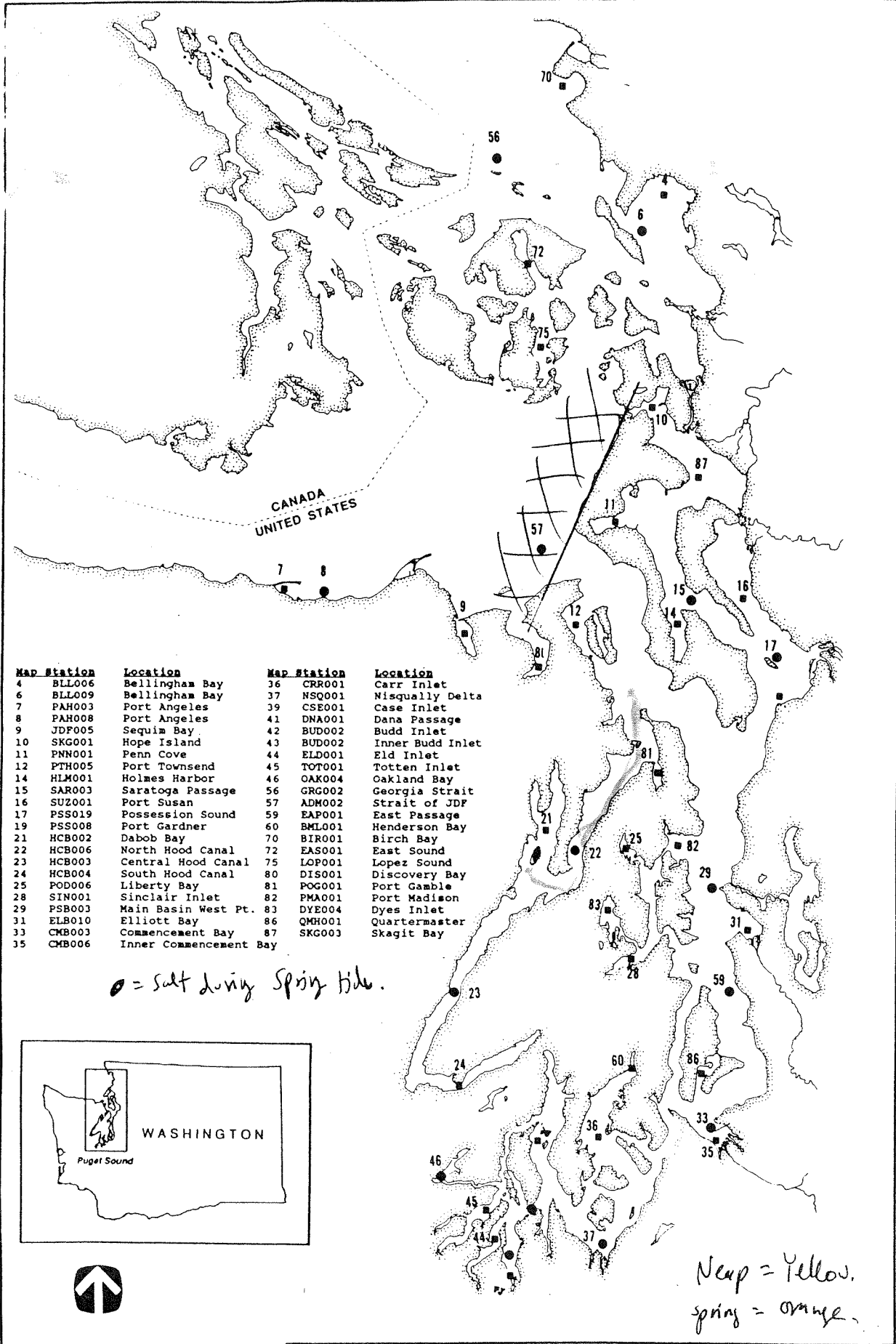




| MAP Station | Location                      | MAP Station | Location                |
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| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNH001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CHB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CHB006 Inner Commencement Bay |             |                         |

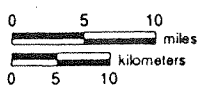
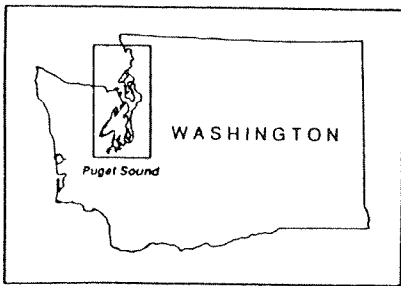


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| Map Station | Location                      | Map Station | Location                |
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| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNH001 Penn Cove              | 44          | ELD001 Eld Inlet        |
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| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
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| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
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| 35          | CMB006 Inner Commencement Bay |             |                         |

○ = salt during Spring tide.

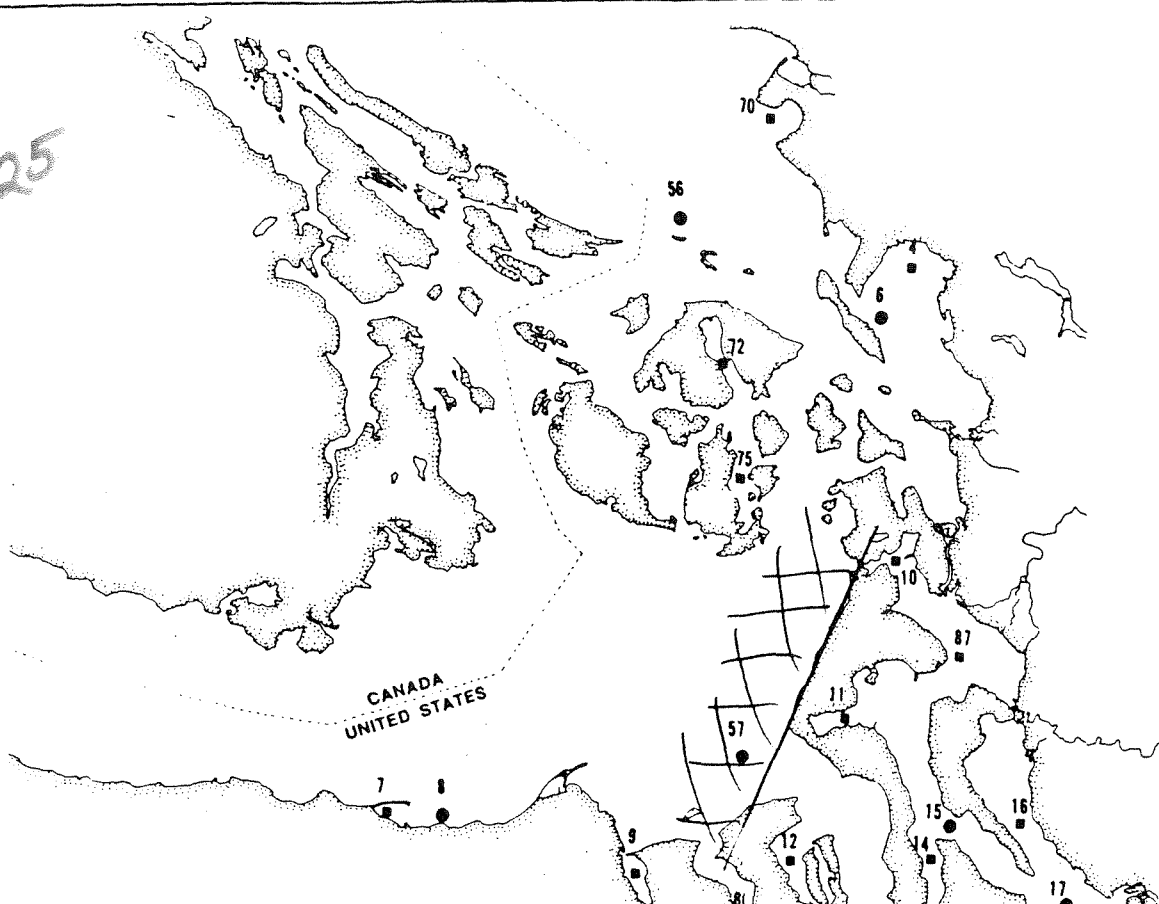


Dosewallips River / 49.  
SURFACE.

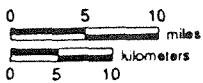
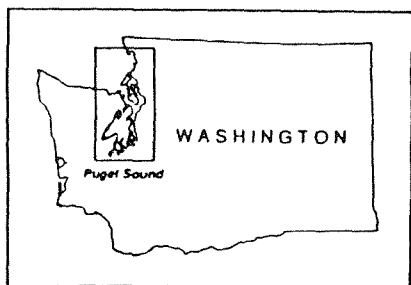
Neap = Yellow.  
spring = orange.

NEAP  
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140 x 30

87



| MAP Station | Location                      | MAP Station | Location               |
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| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet      |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet      |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage    |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet      |
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| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet       |
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| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet      |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster   |
| 33          | CMR003 Commencement Bay       | 87          | SKG003 Skagit Bay      |
| 35          | CMR006 Inner Commencement Bay |             |                        |



SURFACE Int




GRAND TIDE  
 Grand Tide  
 Grand Tide

CAUTION  
 Small craft should stay clear of tug commercial and government vessels, even if they craft have the right-of-way. All craft should avoid areas where the white stripe is displayed.

ASTDM

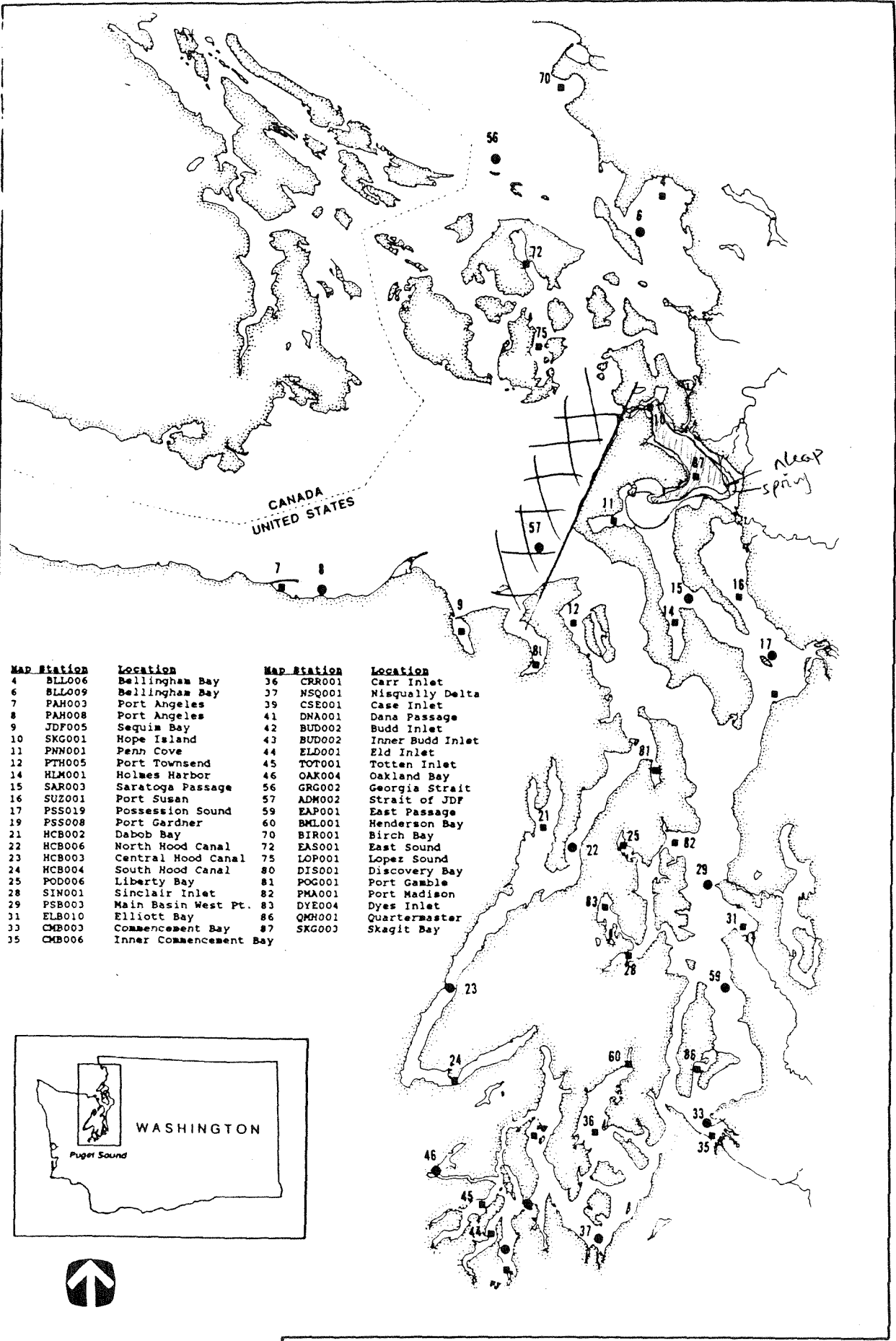
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Neap 

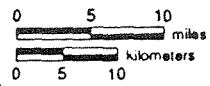
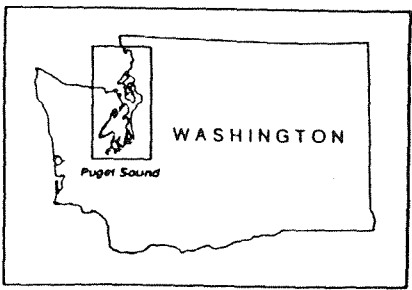
44 x 30 cm

spring

45 x 44 cm



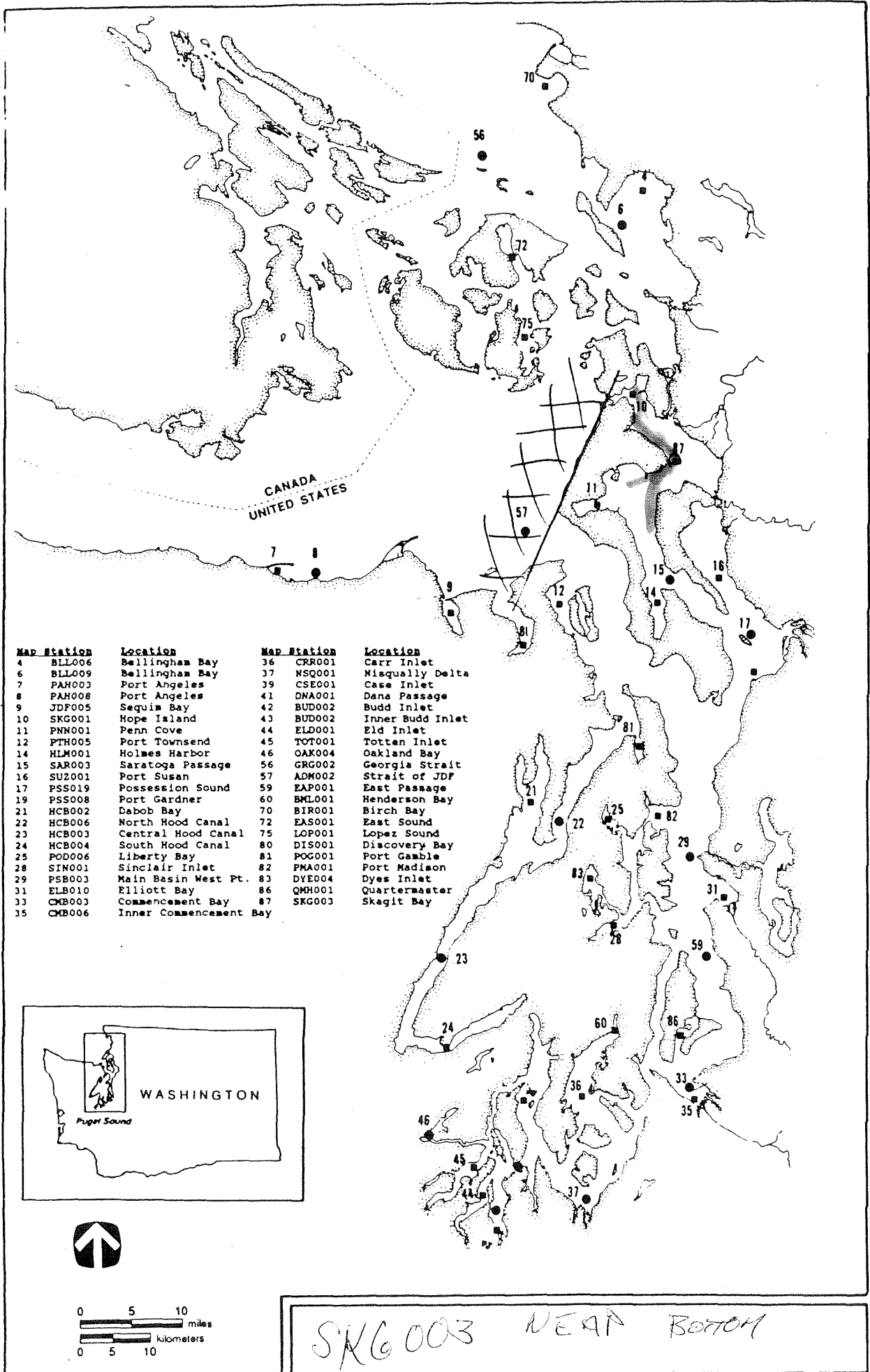
| MAP Station | Location                      | MAP Station | Location                |
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| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
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| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



SKG003 surface.

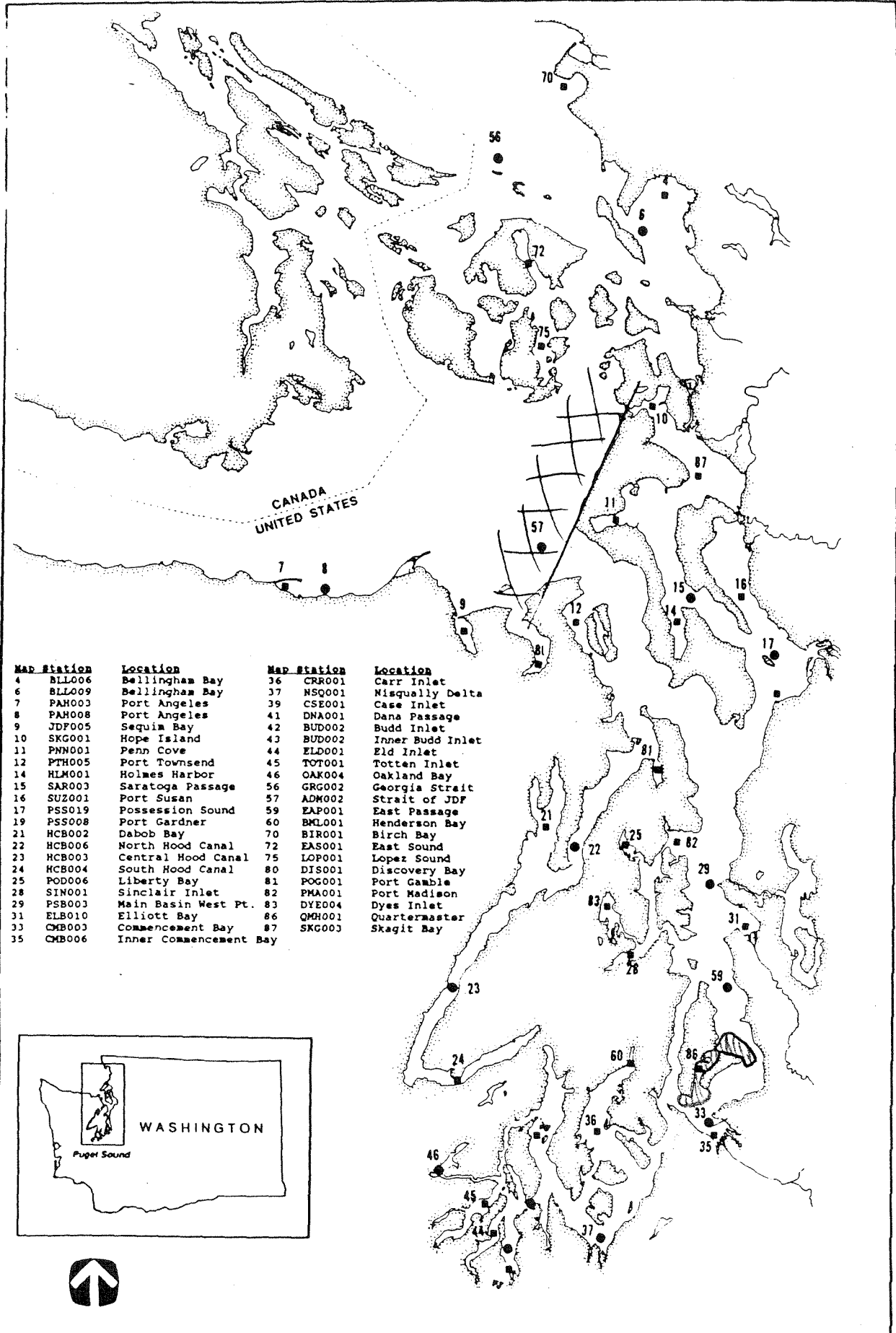
NEAP  
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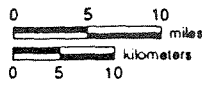
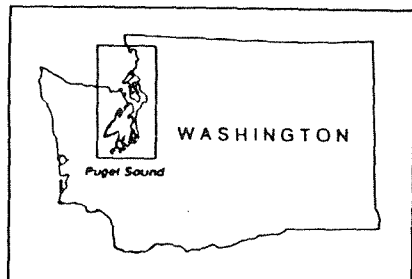


SKG003 NEAP BOTTOM

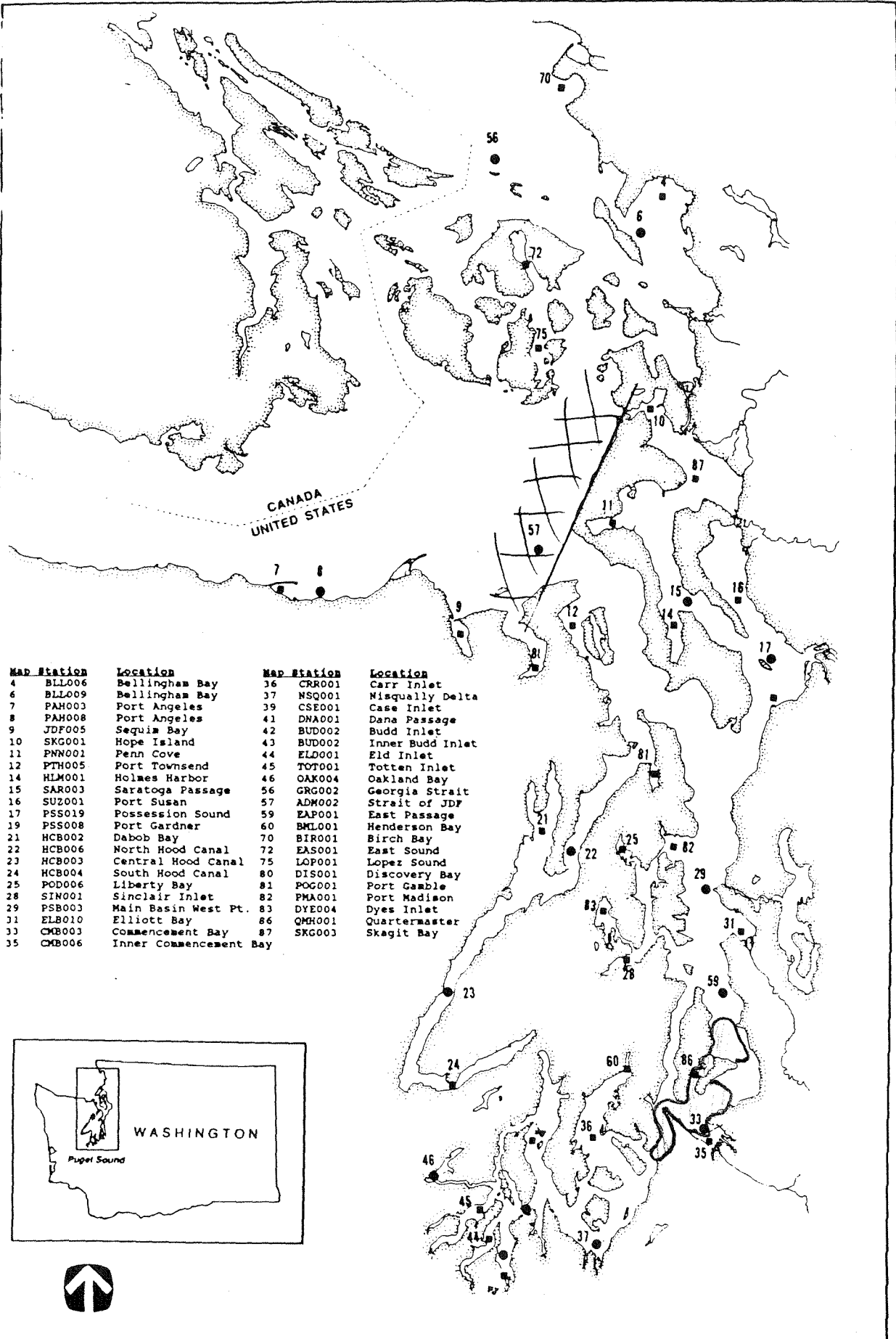
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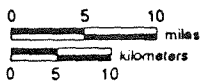
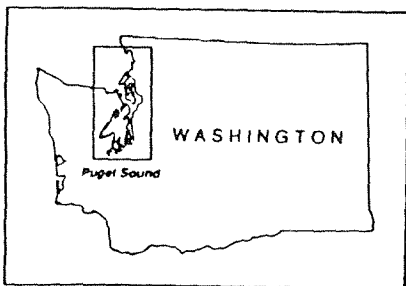
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|-------------|-------------------------------|-------------|-------------------------|
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| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
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| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



QMH 001 SURVEY NEAP

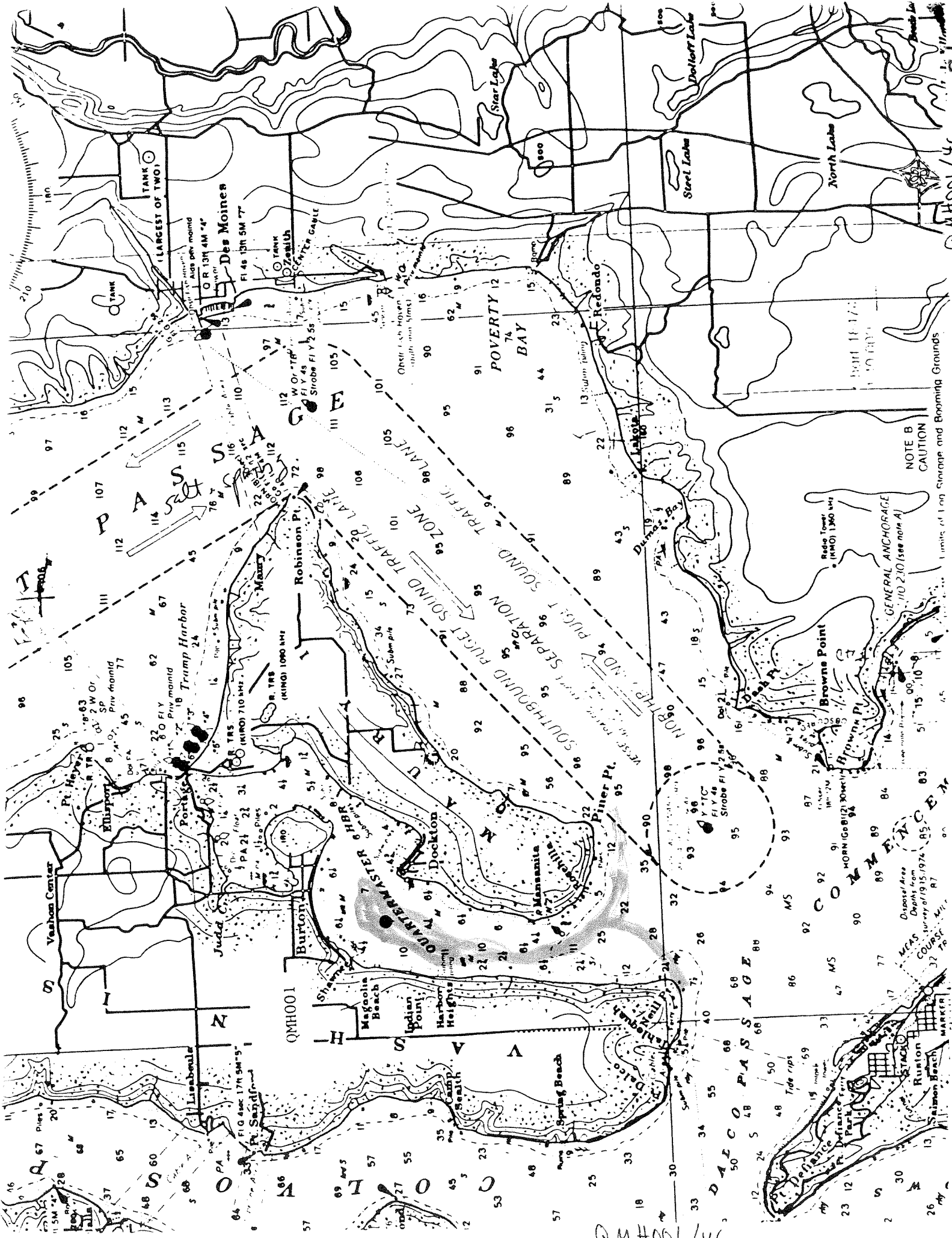


| Map Station | Location | Map Station            | Location |        |                  |
|-------------|----------|------------------------|----------|--------|------------------|
| 4           | BLLO06   | Bellingham Bay         | 36       | CRR001 | Carr Inlet       |
| 6           | BLLO09   | Bellingham Bay         | 37       | NSQ001 | Nisqually Delta  |
| 7           | PAH003   | Port Angeles           | 39       | CSE001 | Case Inlet       |
| 8           | PAH008   | Port Angeles           | 41       | DNA001 | Dana Passage     |
| 9           | JDF005   | Sequim Bay             | 42       | BUD002 | Budd Inlet       |
| 10          | SKG001   | Hope Island            | 43       | BUD002 | Inner Budd Inlet |
| 11          | PNN001   | Penn Cove              | 44       | ELD001 | Eld Inlet        |
| 12          | PTH005   | Port Townsend          | 45       | TOT001 | Totten Inlet     |
| 14          | HLM001   | Holmes Harbor          | 46       | OAK004 | Oakland Bay      |
| 15          | SAR003   | Saratoga Passage       | 56       | GRG002 | Georgia Strait   |
| 16          | SUZ001   | Port Susan             | 57       | ADM002 | Strait of JDF    |
| 17          | PSS019   | Possession Sound       | 59       | EAP001 | East Passage     |
| 19          | PSS008   | Port Gardner           | 60       | BML001 | Henderson Bay    |
| 21          | HCBO02   | Dabob Bay              | 70       | BIR001 | Birch Bay        |
| 22          | HCBO06   | North Hood Canal       | 72       | EAS001 | East Sound       |
| 23          | HCBO03   | Central Hood Canal     | 75       | LOP001 | Lopez Sound      |
| 24          | HCBO04   | South Hood Canal       | 80       | DIS001 | Discovery Bay    |
| 25          | POD006   | Liberty Bay            | 81       | POG001 | Port Gamble      |
| 28          | SIN001   | Sinclair Inlet         | 82       | PMA001 | Port Madison     |
| 29          | PSB003   | Main Basin West Pt.    | 83       | DYE004 | Dyes Inlet       |
| 31          | ELB010   | Elliott Bay            | 86       | QMH001 | Quartermaster    |
| 33          | CMB003   | Commencement Bay       | 87       | SKG003 | Skagit Bay       |
| 35          | CMB006   | Inner Commencement Bay |          |        |                  |



QMH 001 SWM SPRING

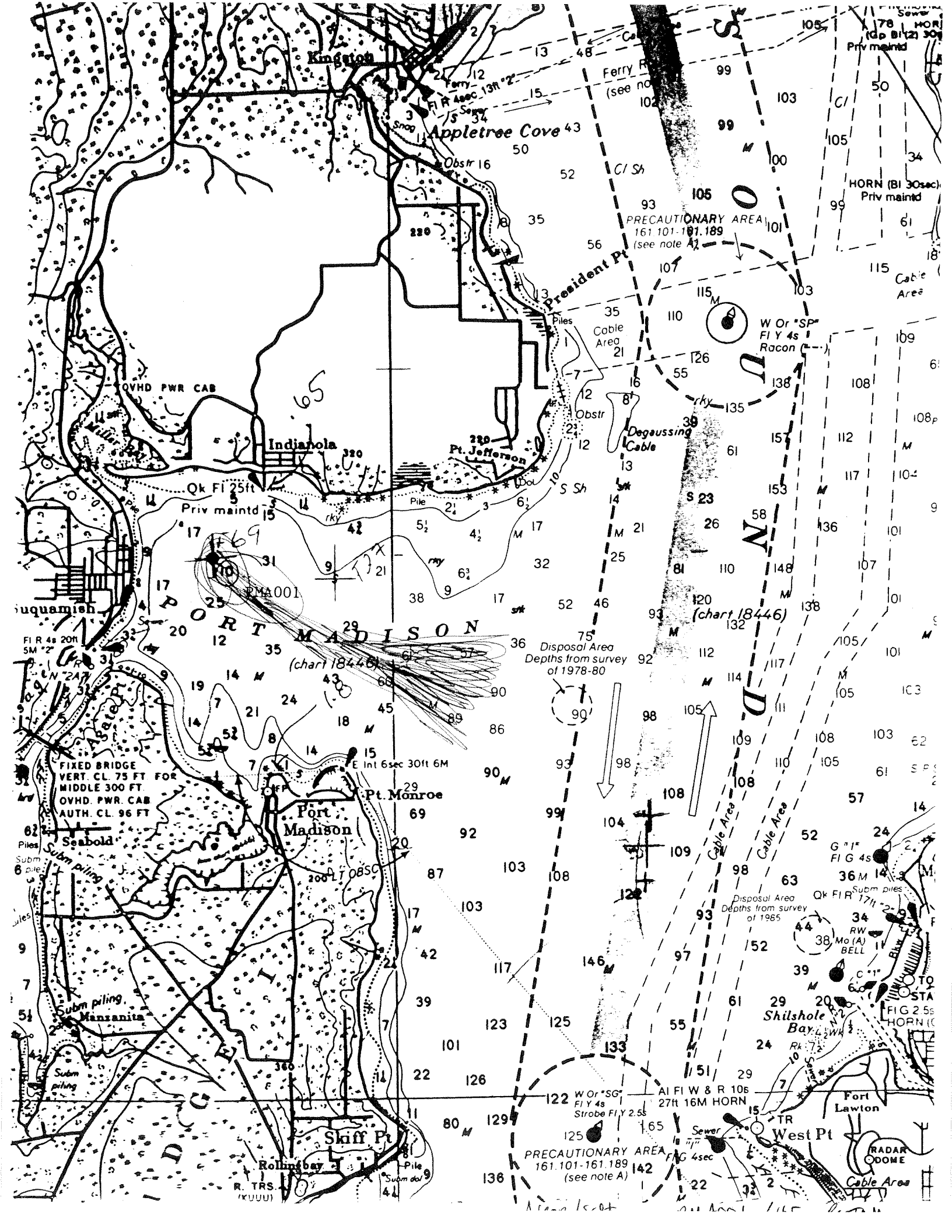




NOTE B  
CAUTION  
Limits of Log Storage and Brooming Grounds

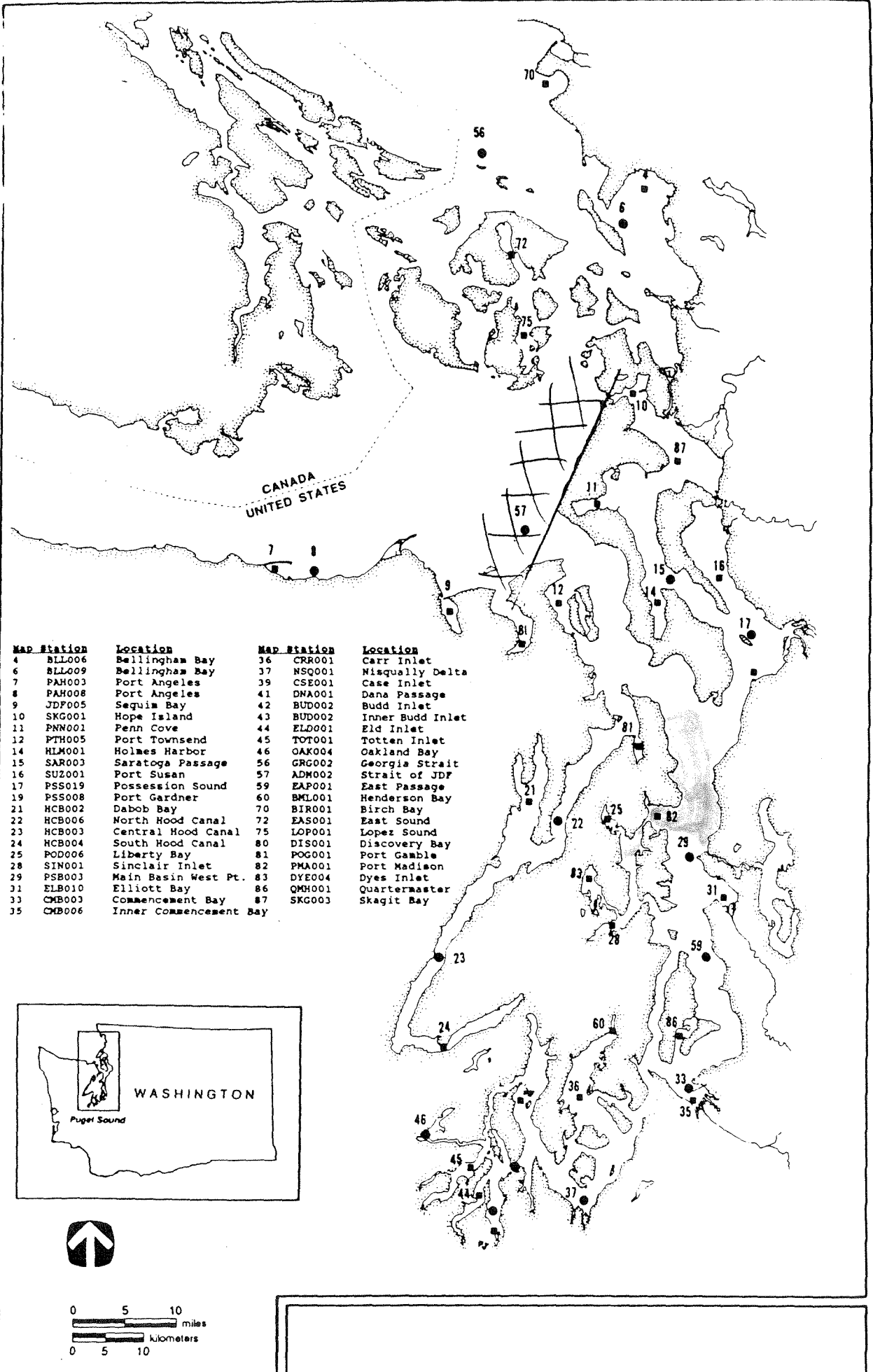
QMH001/4C

QMH001/4C

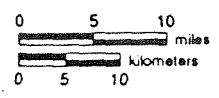
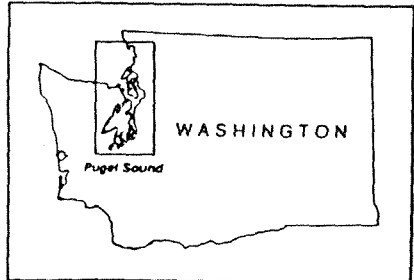


PMA 001  
 Neap  
 Fresh  
 K.D.E.

54



| MAP STATION | LOCATION                      | MAP STATION | LOCATION                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgis Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

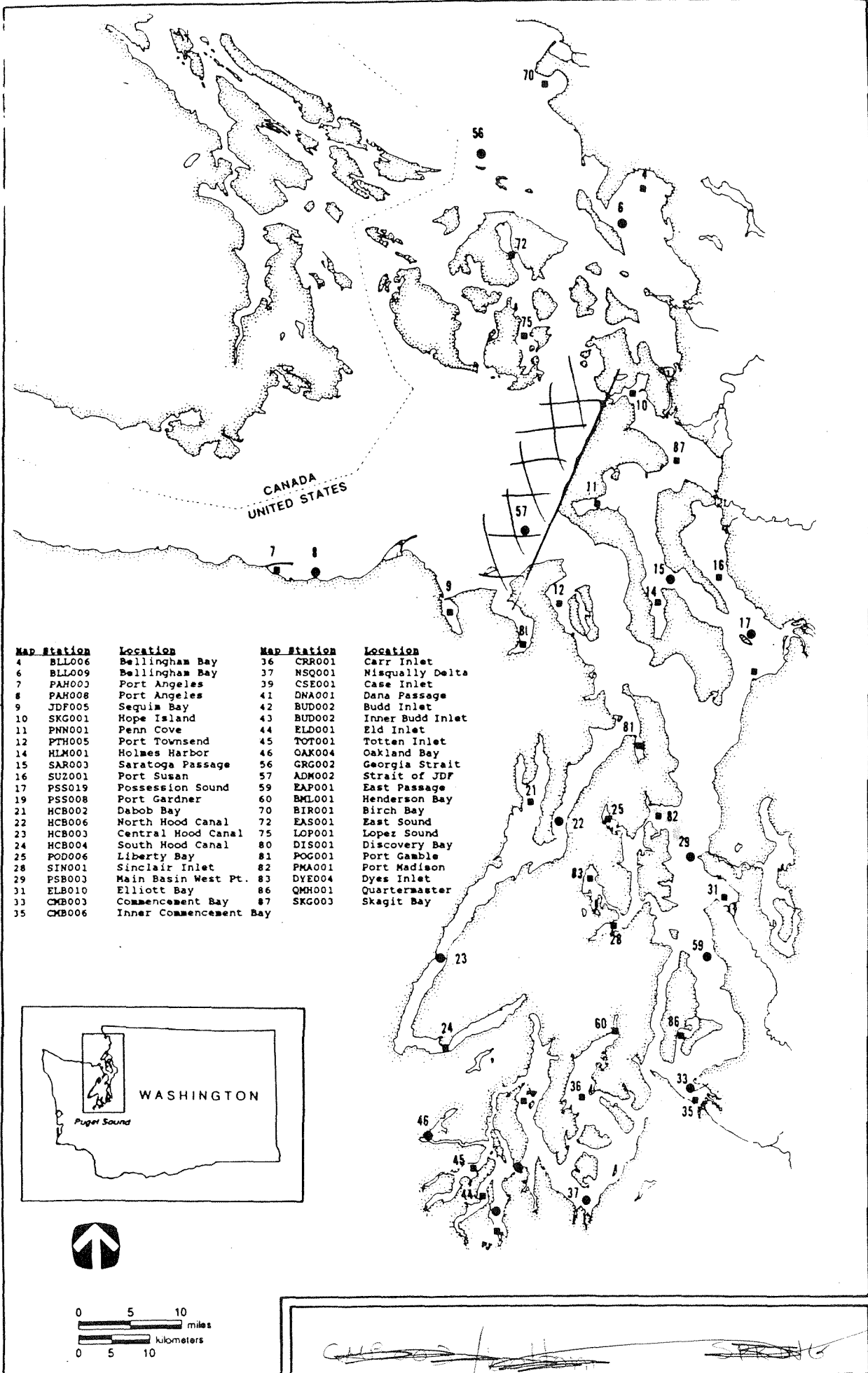


PMA001

Spring  
Salt

R.D.B.

45

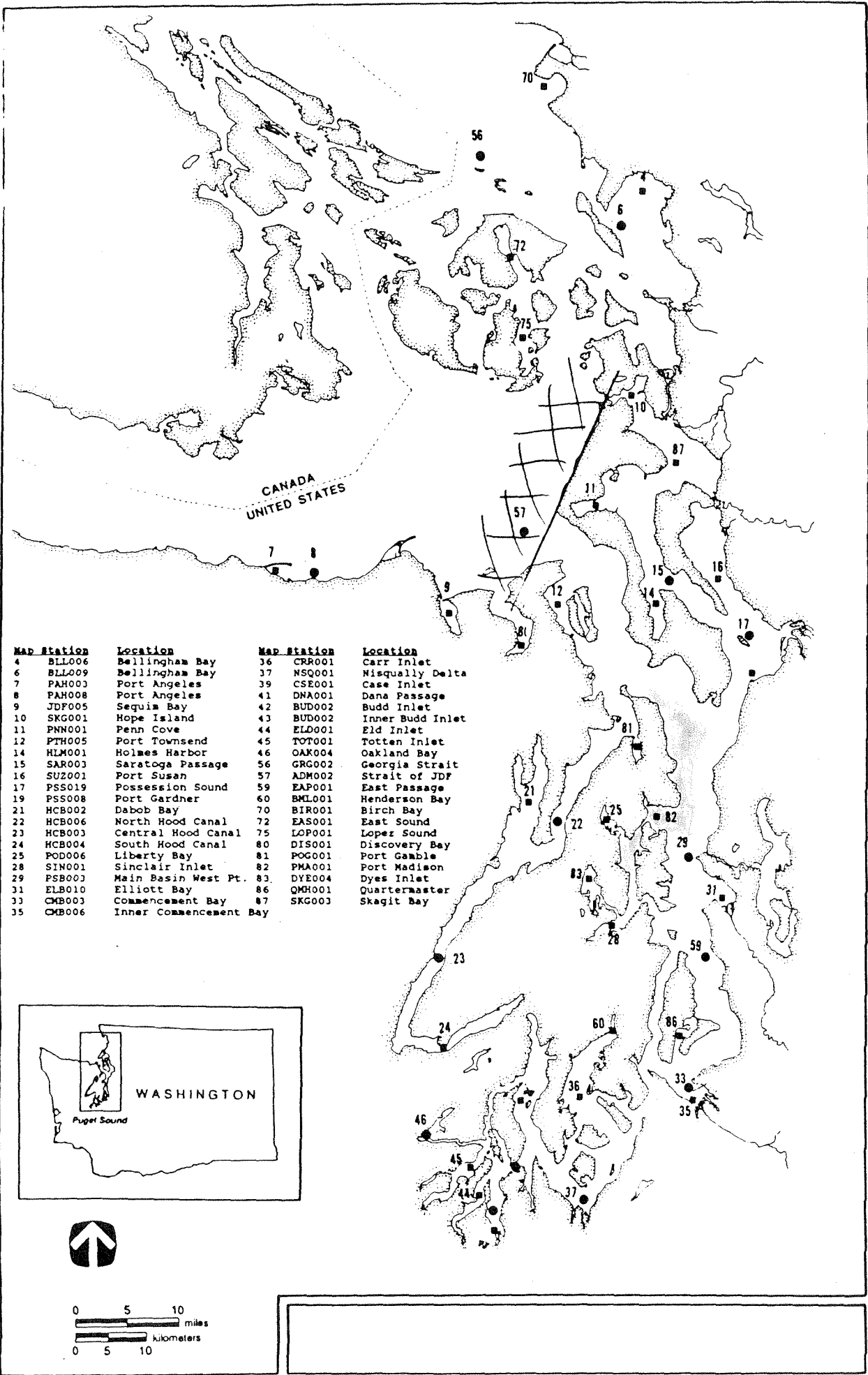


PMA 001

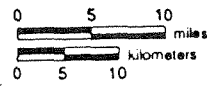
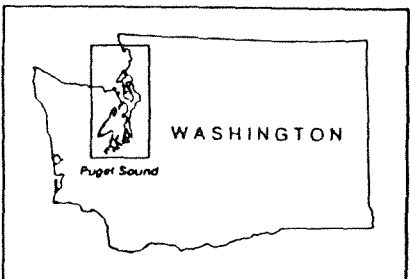
~~At~~  
Spring  
Fresh

Ken Jr.

45

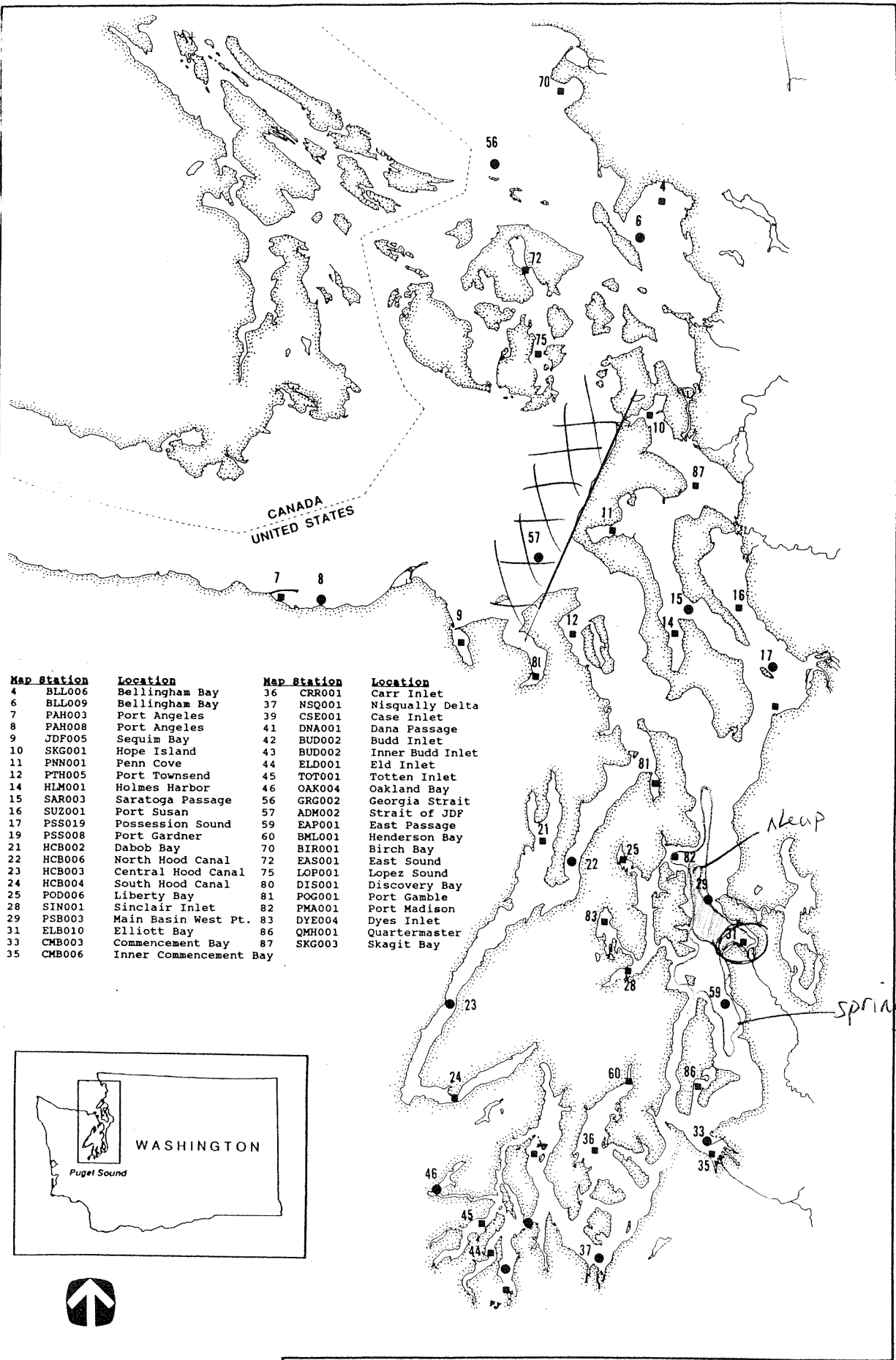


| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequia Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRC002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

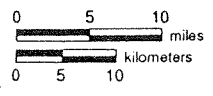
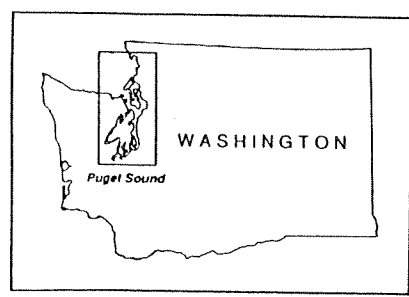


Neap  
39 x 30 cm

44.



| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



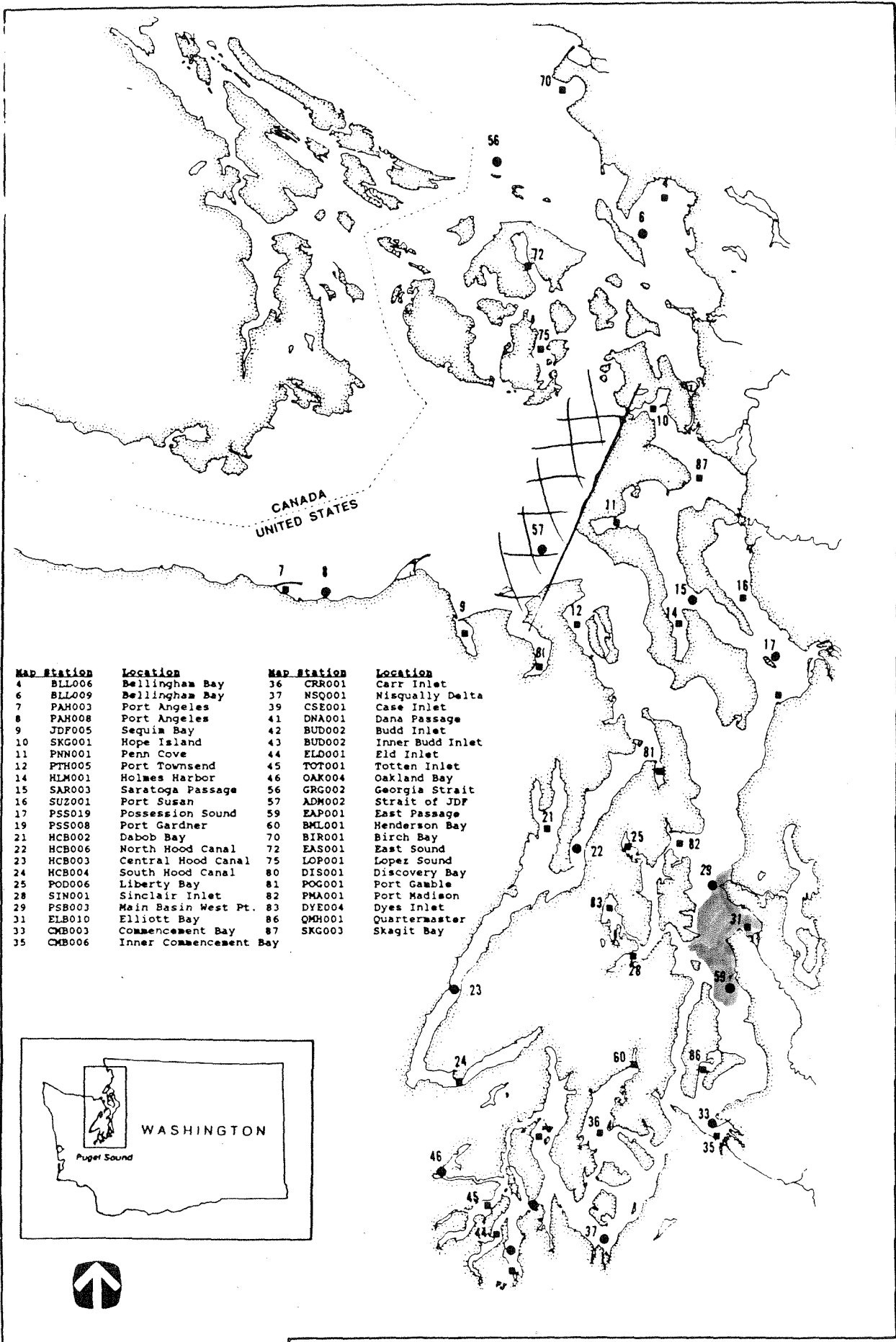
ELB 015 / 44. (See detail in Elliott Bay).  
SURFACE.

spring

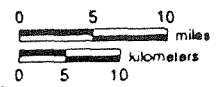
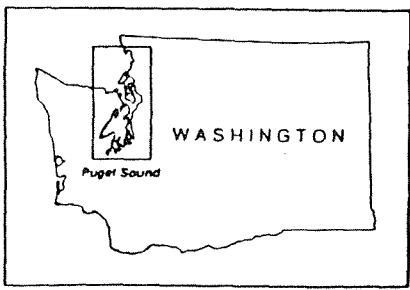
NEAP

SPRING  
55x20

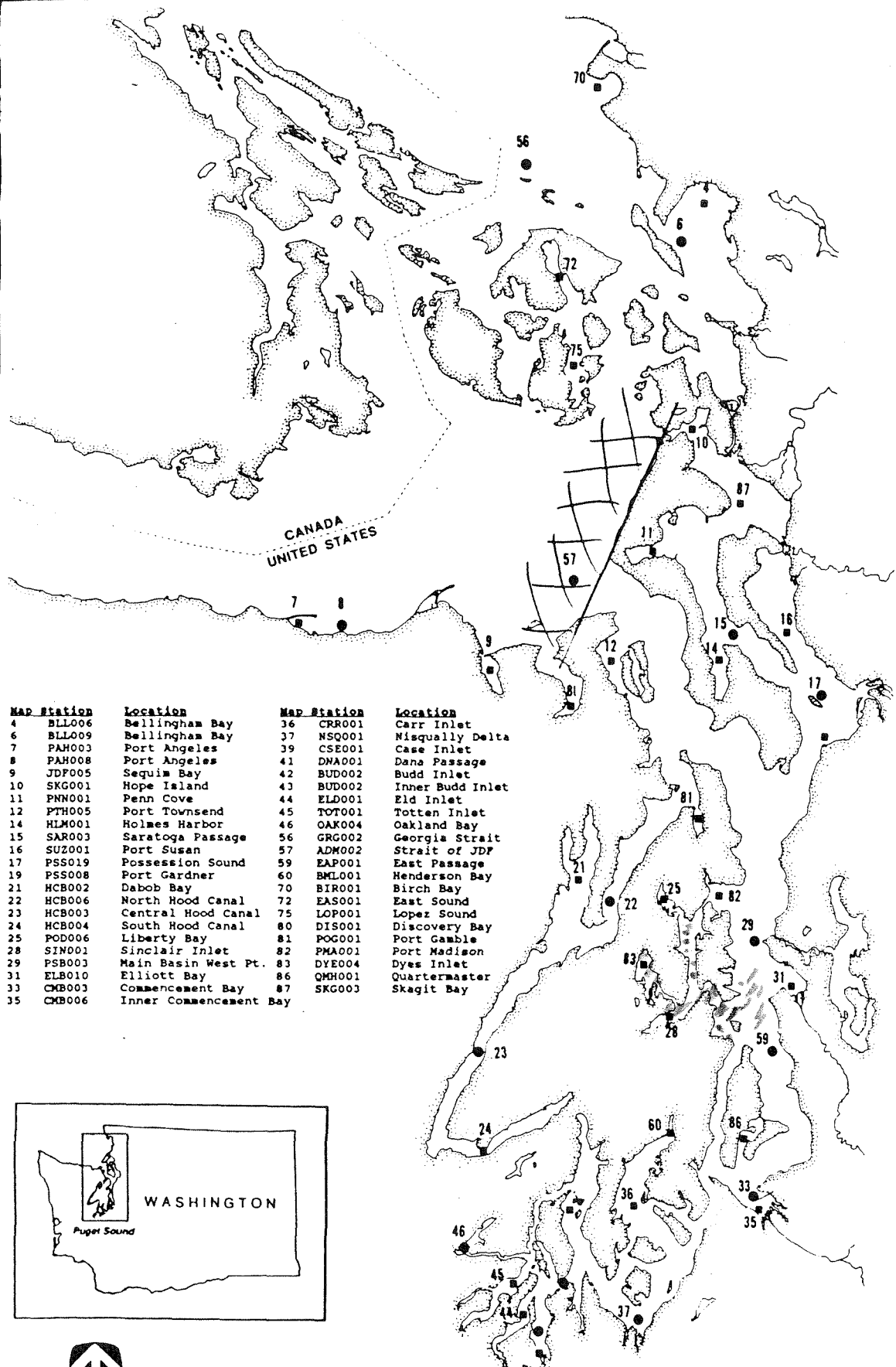
hh



| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequia Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



ELB 015 DEEP 1m/

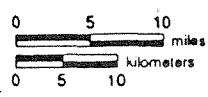
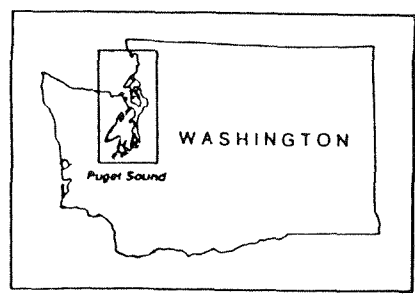


| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

SPRING  
FW  
DYE004

50cm x  
channel  
width.

1ml.

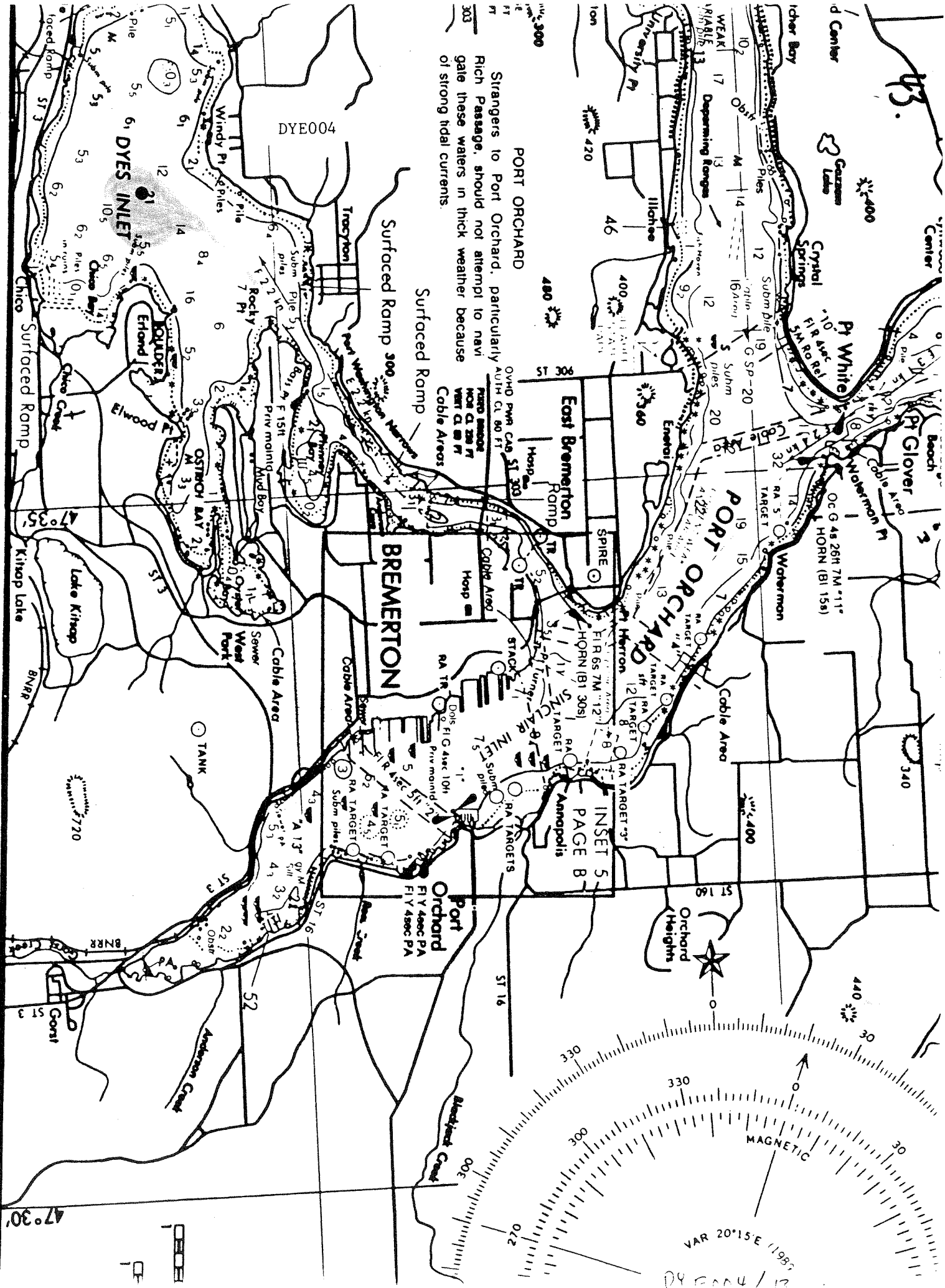


50cm. x  
channel  
width.

surface DYE004/43.

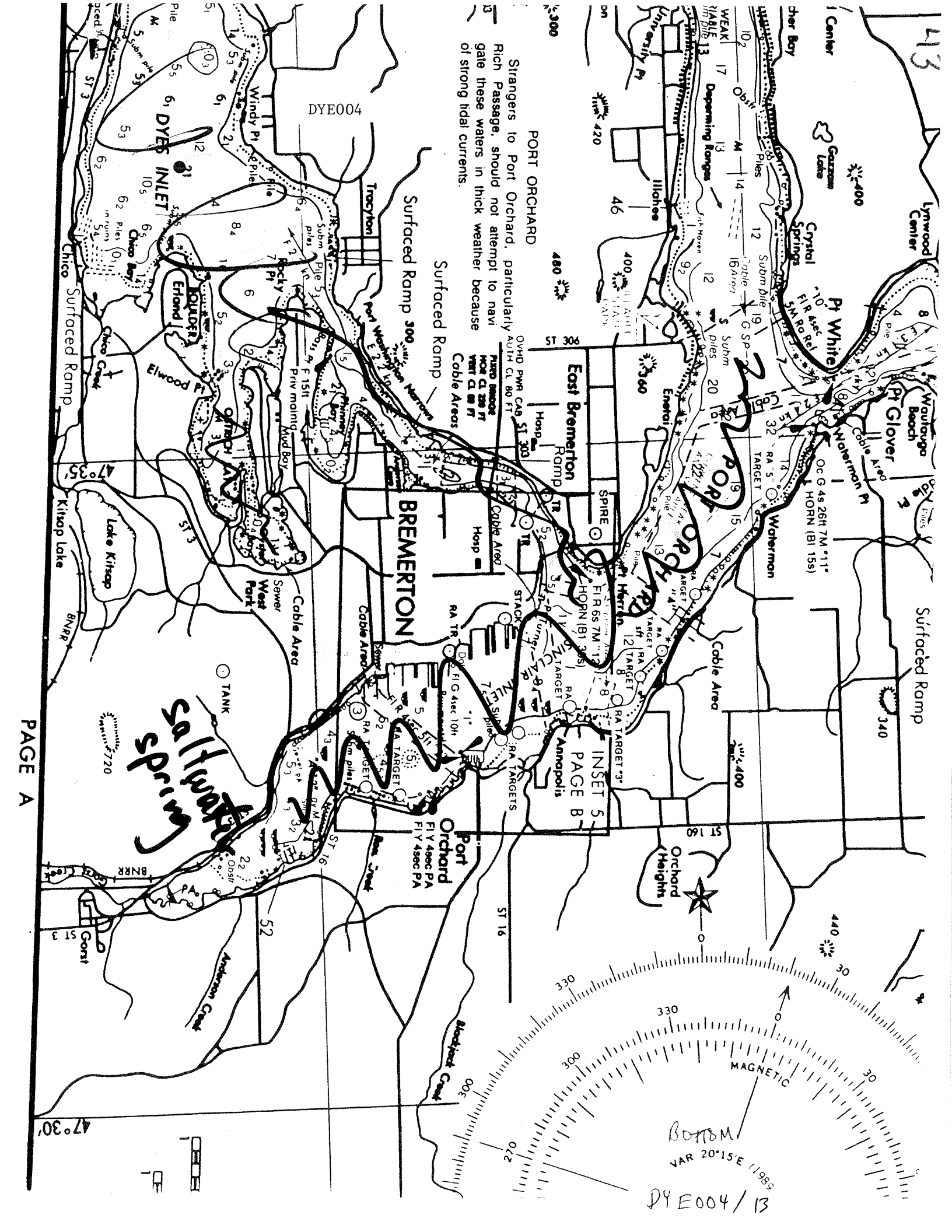


43.



**PORT ORCHARD**  
 Strangers to Port Orchard, particularly Rich Passage, should not attempt to navigate these waters in thick weather because of strong tidal currents.

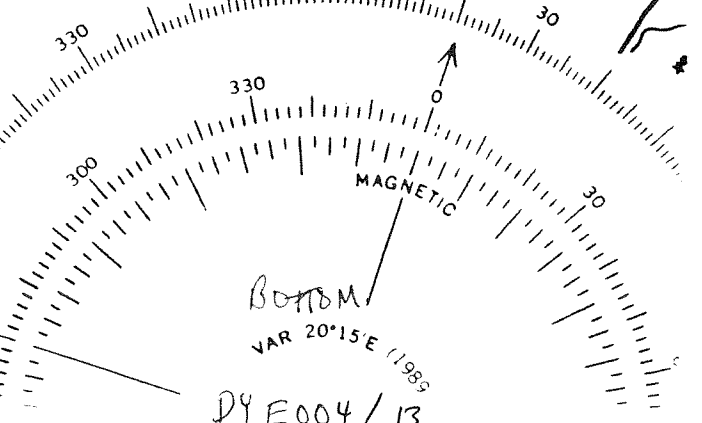
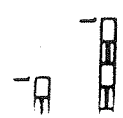
VAR 20°15' E (1985)  
 09 0000 / 12

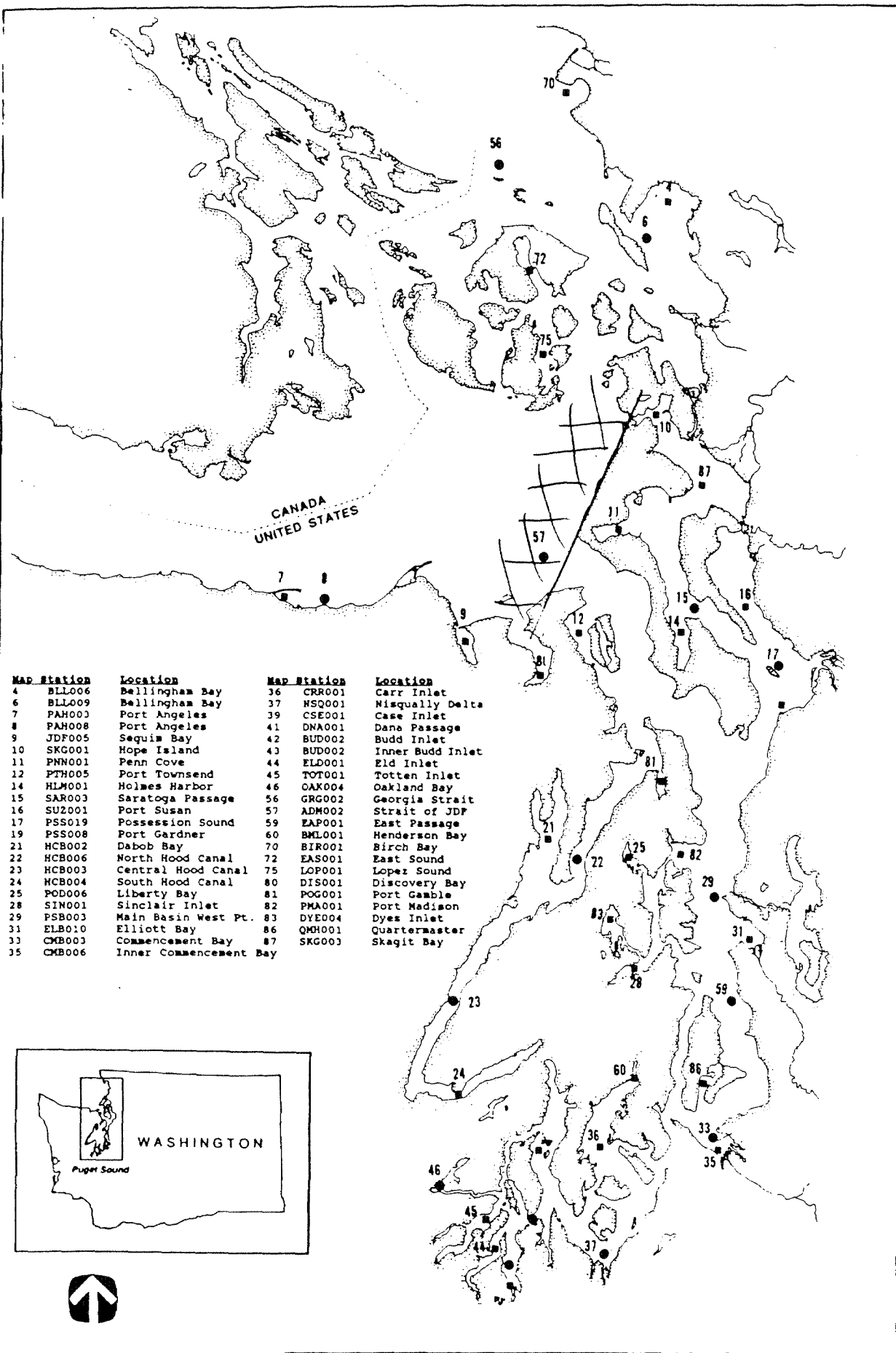


Strangers to Port Orchard, particularly Rich Passage, should not attempt to navigate these waters in thick weather because of strong tidal currents.

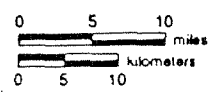
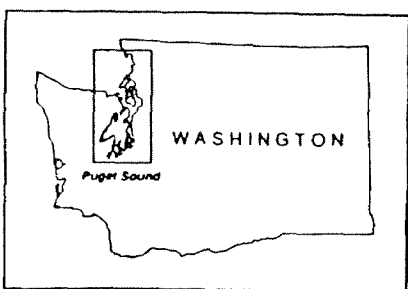
MAGNETIC  
VAR 20°15' E (1985)  
DYE004/13

*Boysen Springs*

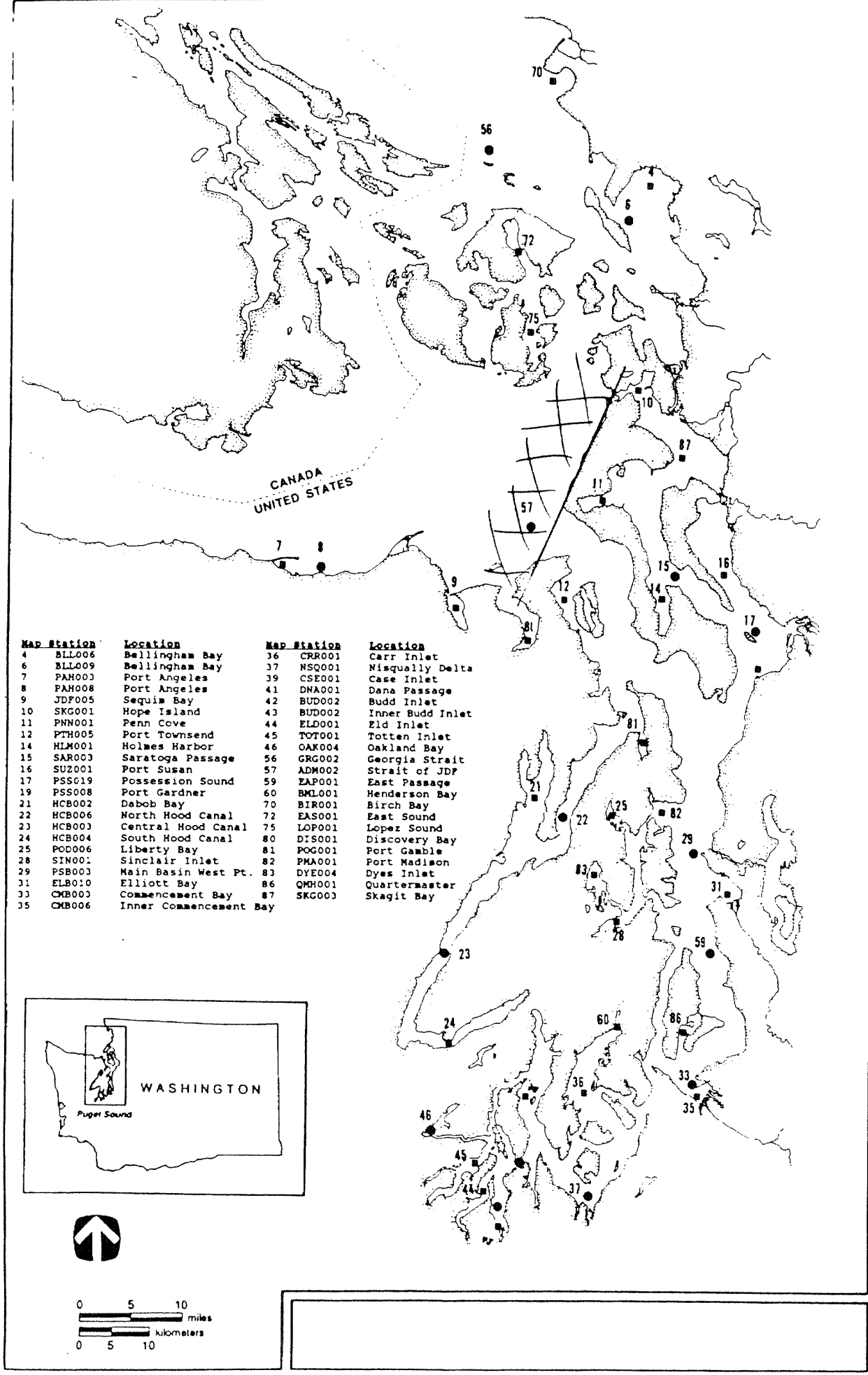




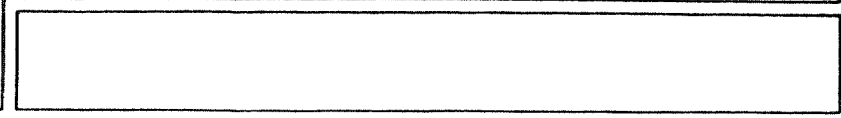
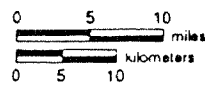
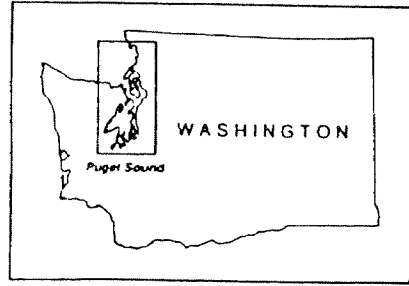
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYED004 Dyes Inlet      |
| 31          | ELB0:0 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

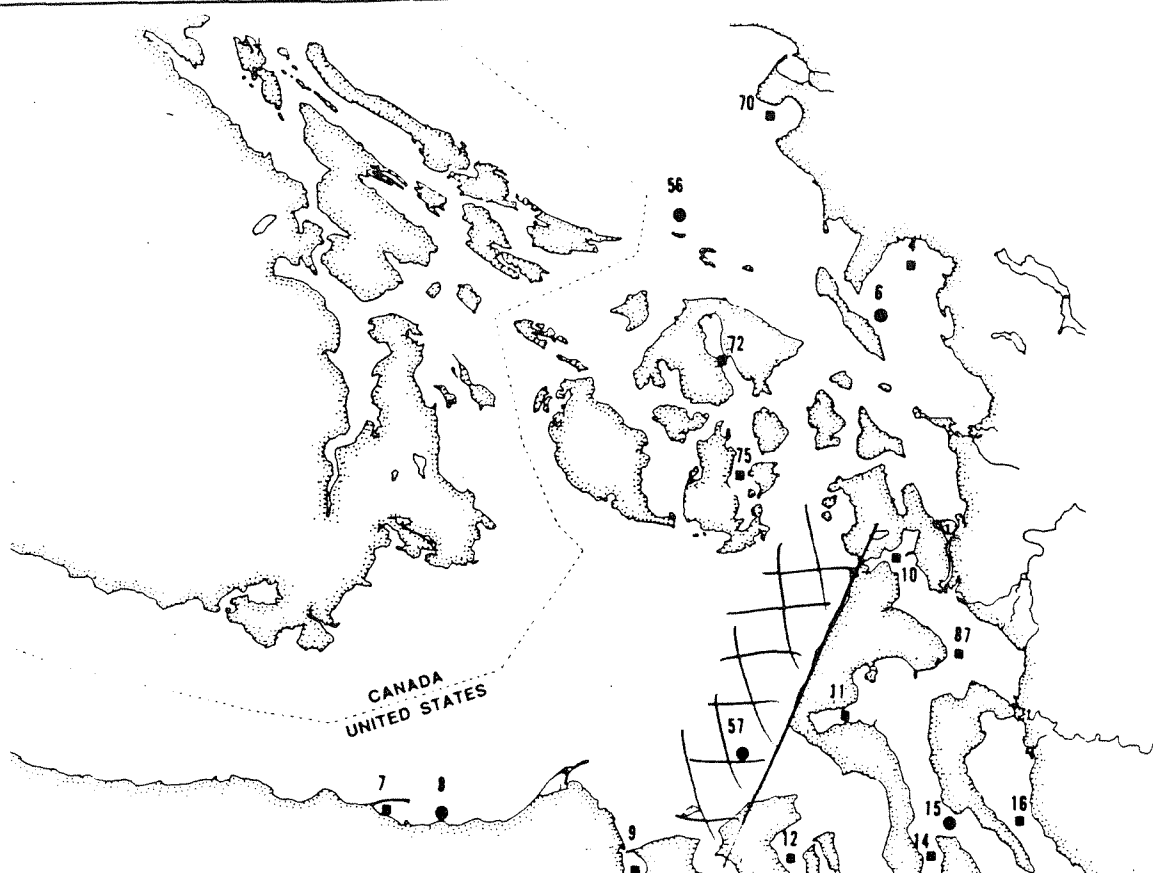


Totten, Fresh, Spring. TOT 001

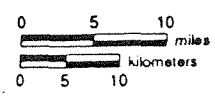
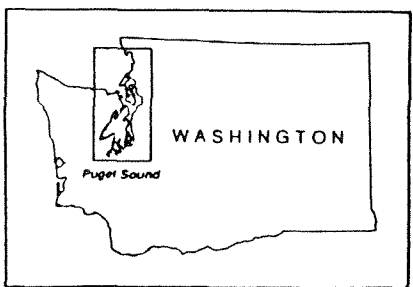


| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | PCD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

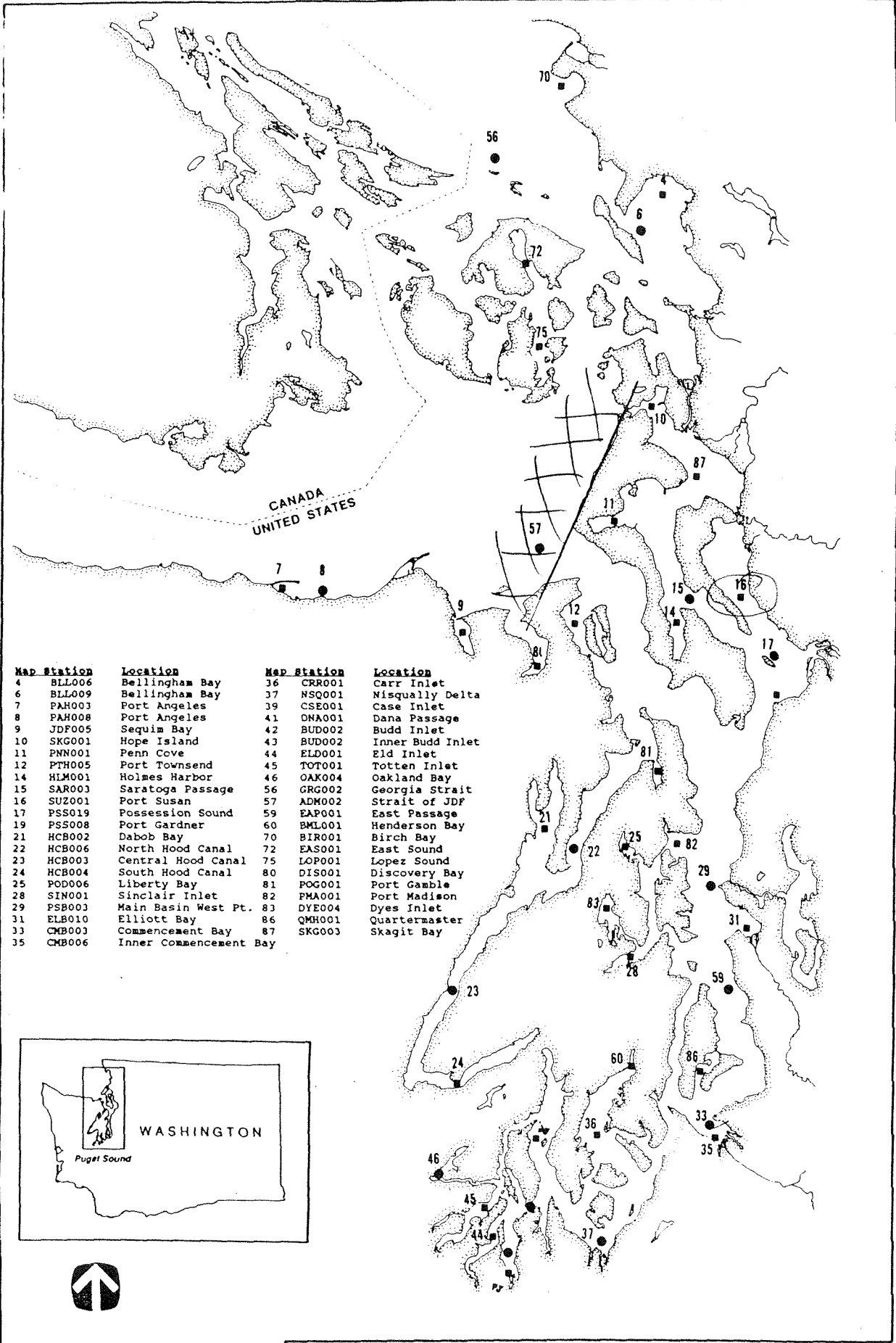




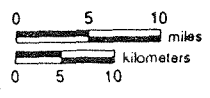
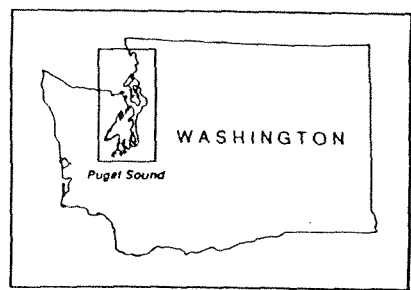
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLLO06 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLLO09 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNW001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



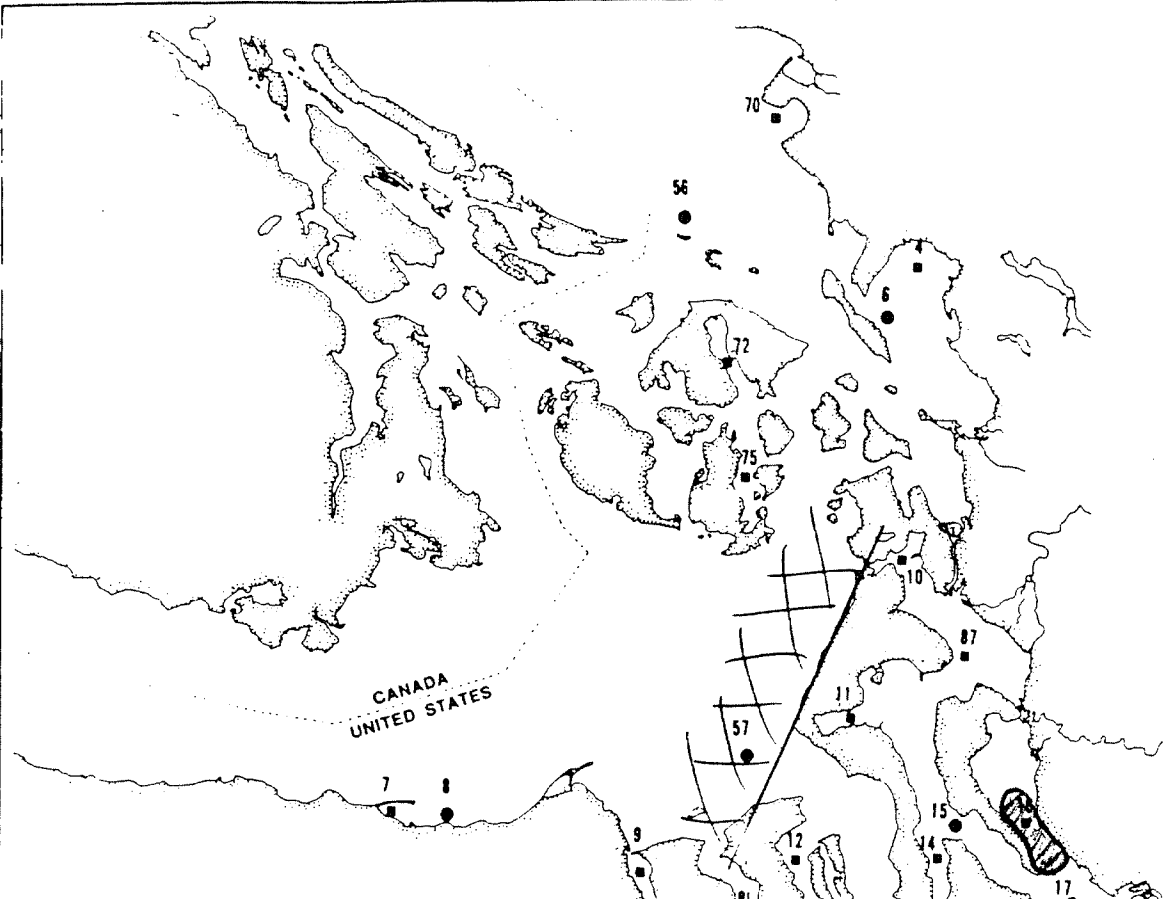
TOT 001  
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30cm. Map.



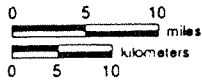
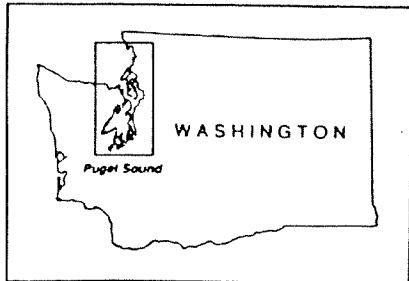
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



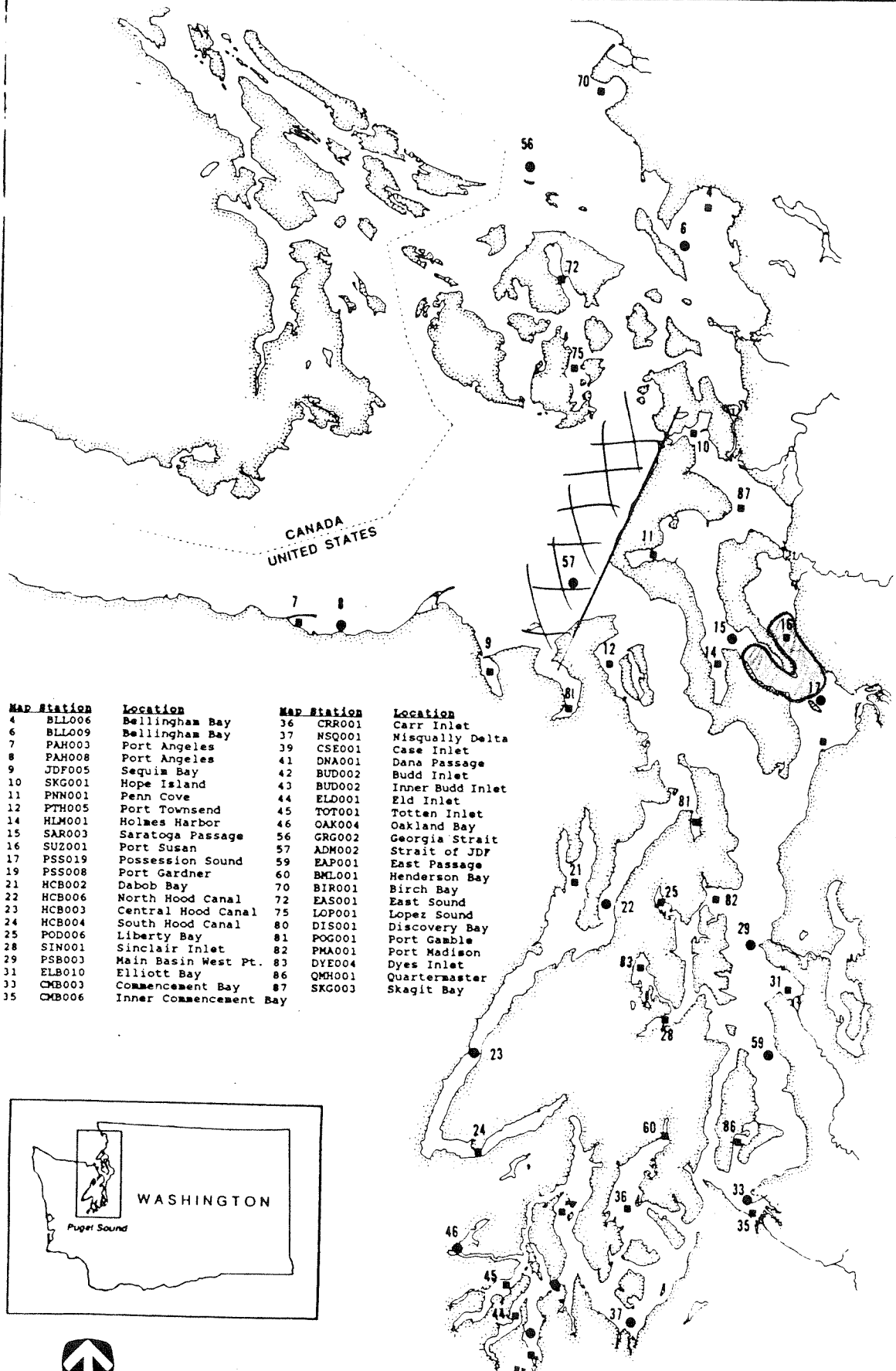
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BOTTOM.



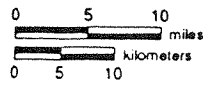
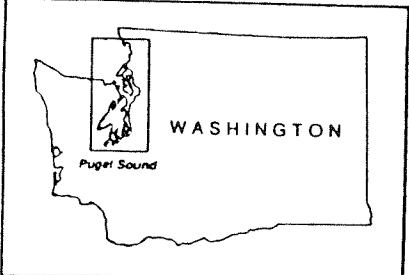
| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequia Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMR001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



SUZ001 SUR NEAR 100



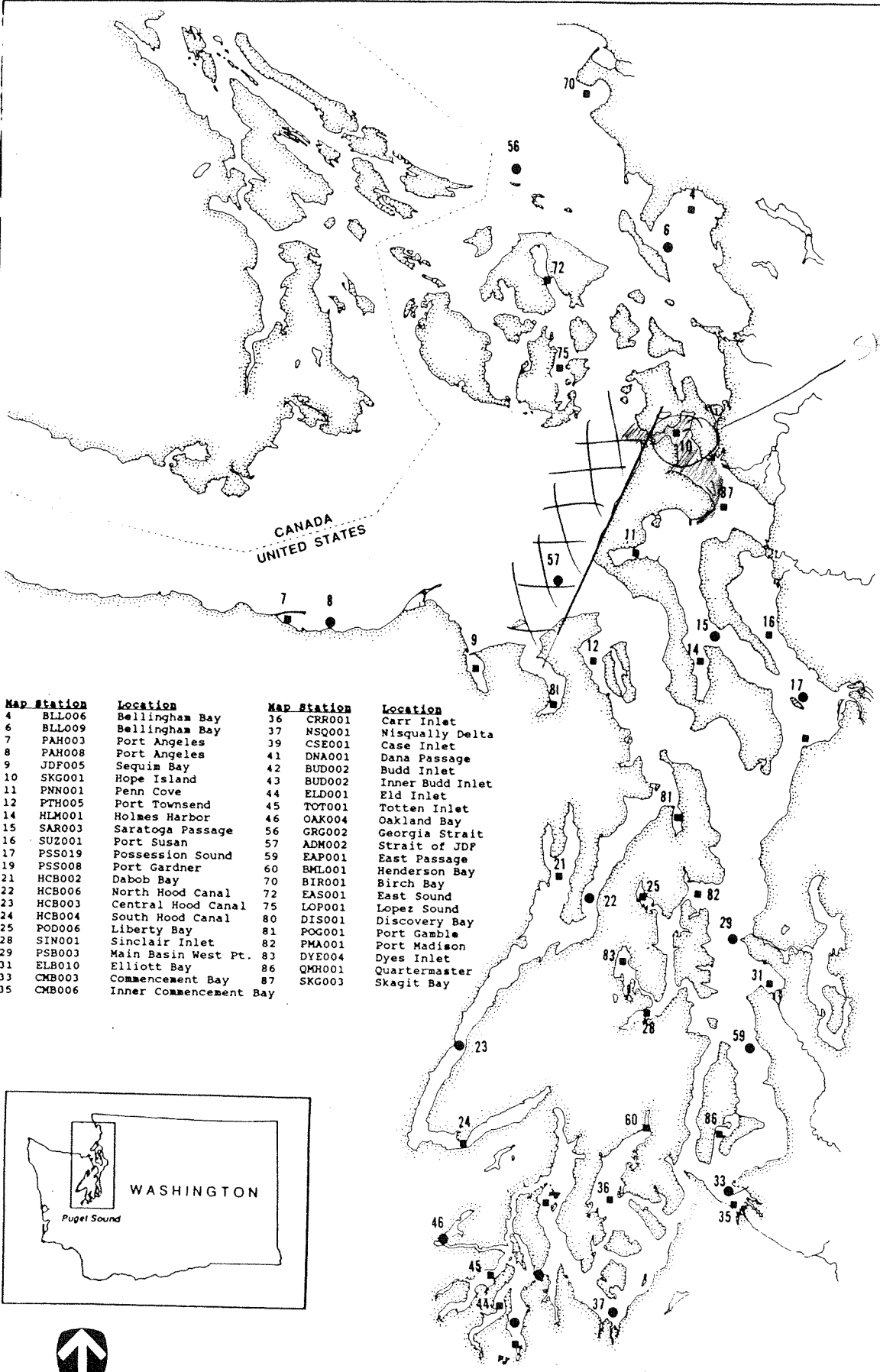
| MAP Station | Location                      | MAP Station | Location                |
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| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



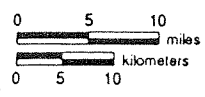
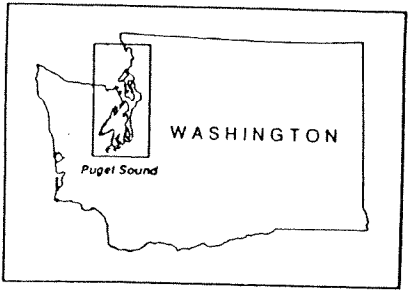
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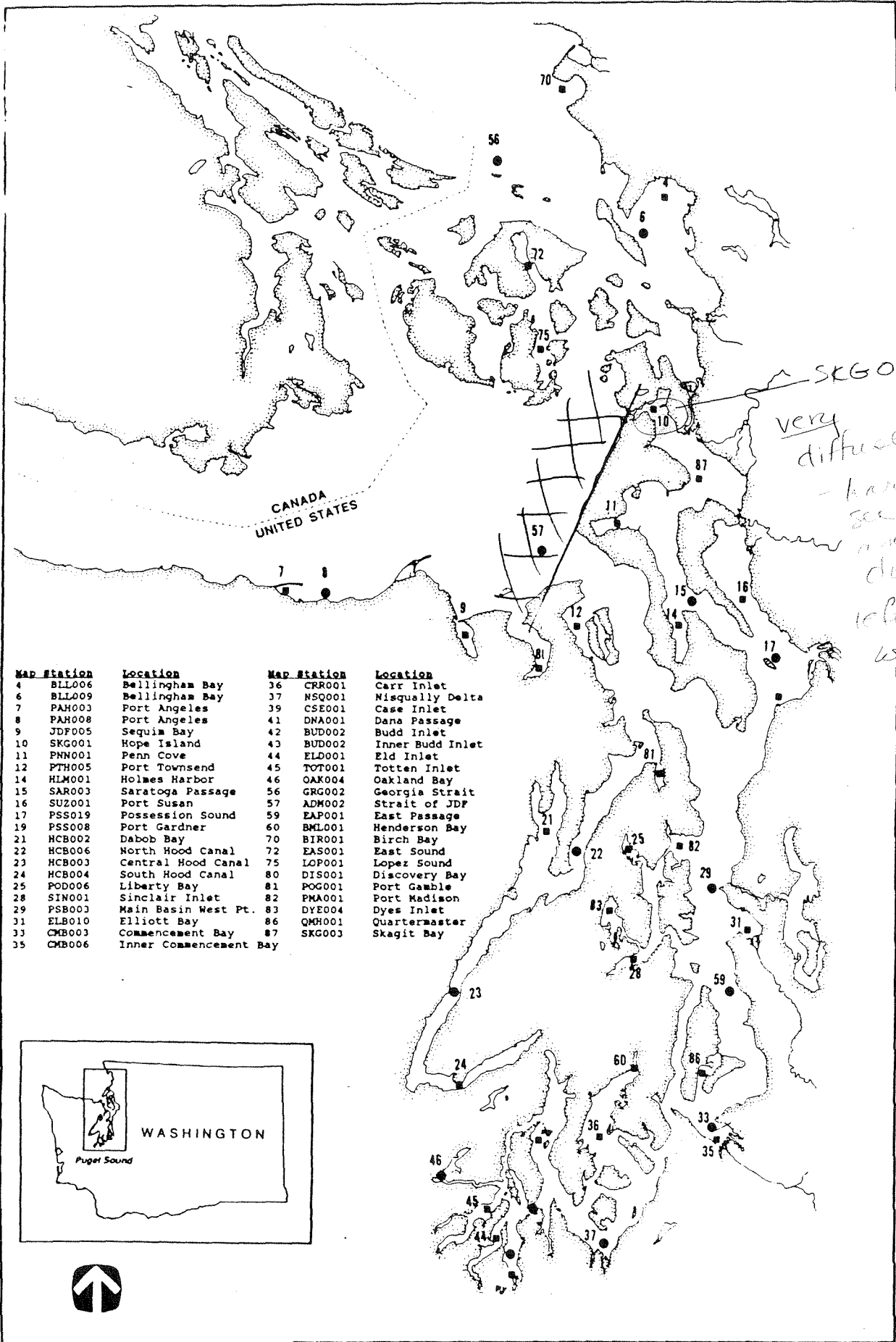
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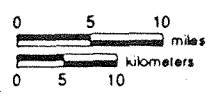
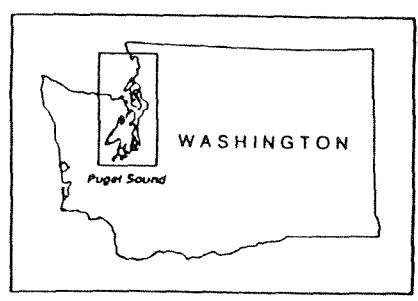
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



SKG001/40.  
SURFACE. NEAP



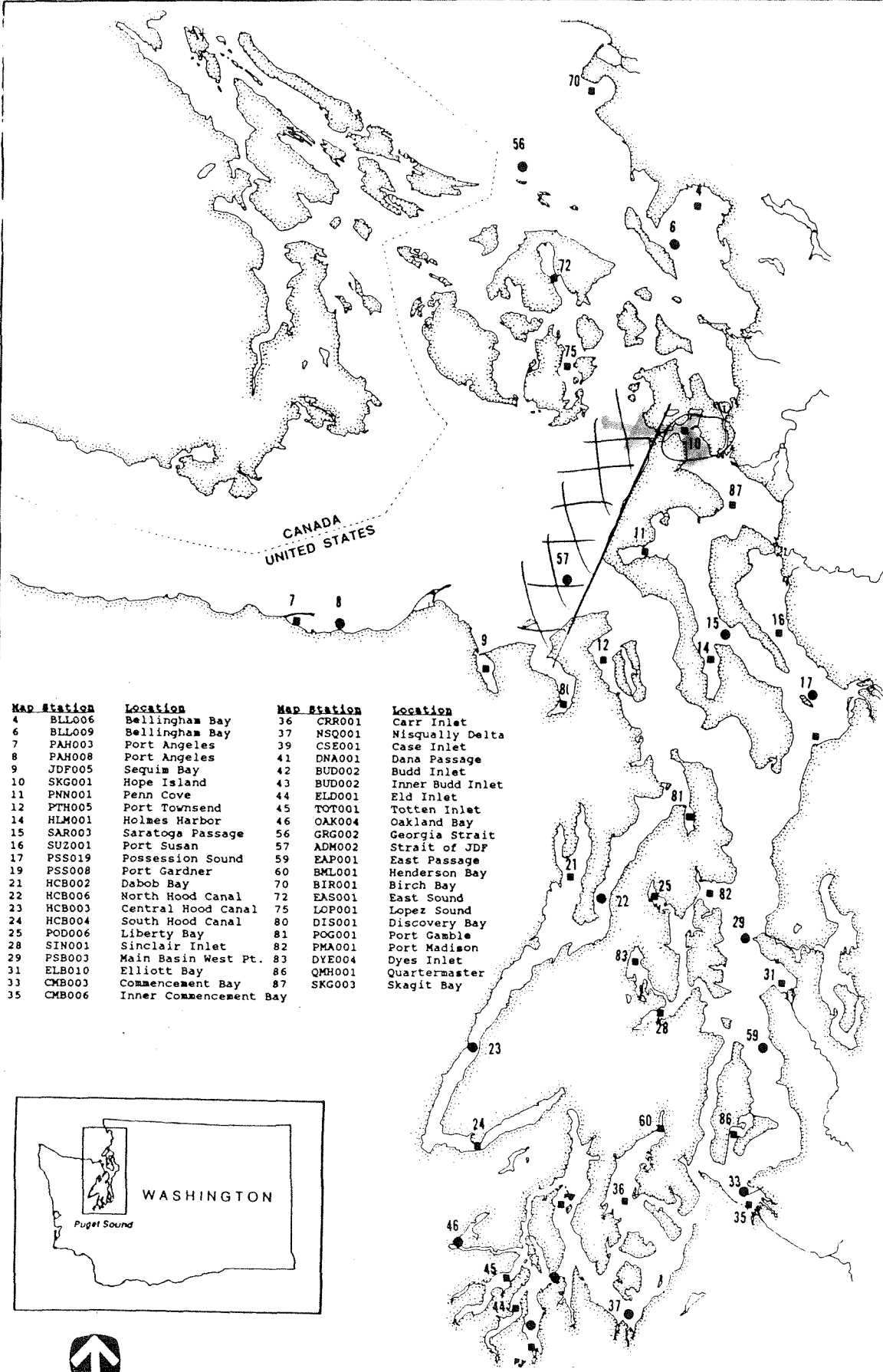
SKG001  
 very difficult  
 - hard to see many dipole lobes in water



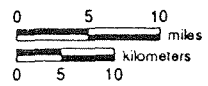
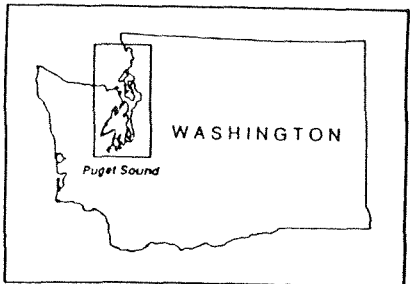
SKG001 / 1/22 SP = 1/3

WEAD  
60 x 10

40



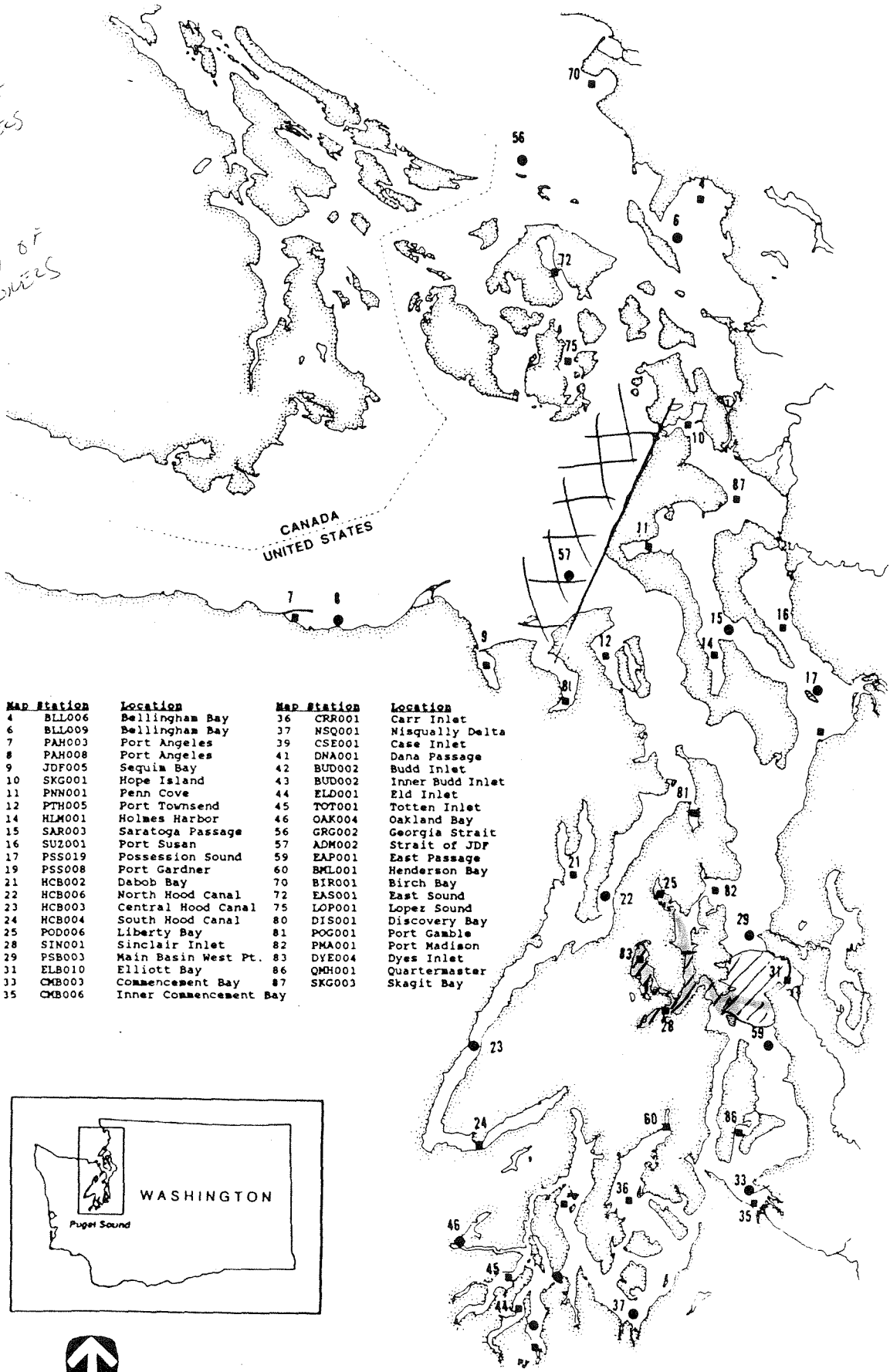
| Map Station | Location                      | Map Station | Location               |
|-------------|-------------------------------|-------------|------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet      |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet      |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage    |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet      |
| 10          | SKG001 Hope Island            | 43          | BUD002 Budd Inlet      |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet       |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet    |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay     |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait  |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF   |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage    |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay   |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay       |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound      |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound     |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay   |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble     |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison    |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet      |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster   |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay      |
| 35          | CMB006 Inner Commencement Bay |             |                        |



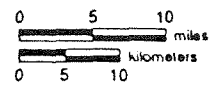
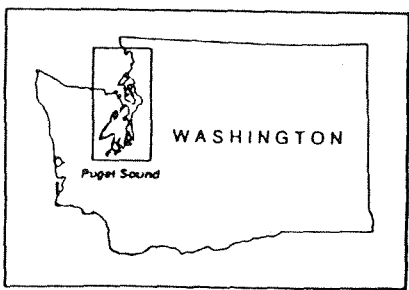
SKG001/40.  
BOTTOM. | ml

NEAR  
67 x WIDTH OF  
CHANNELS

SPRING  
68 x WIDTH OF  
CHANNELS



| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequia Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



SIN001 SURFACE 1m/

Map 18 x 2 cm

40'

35'

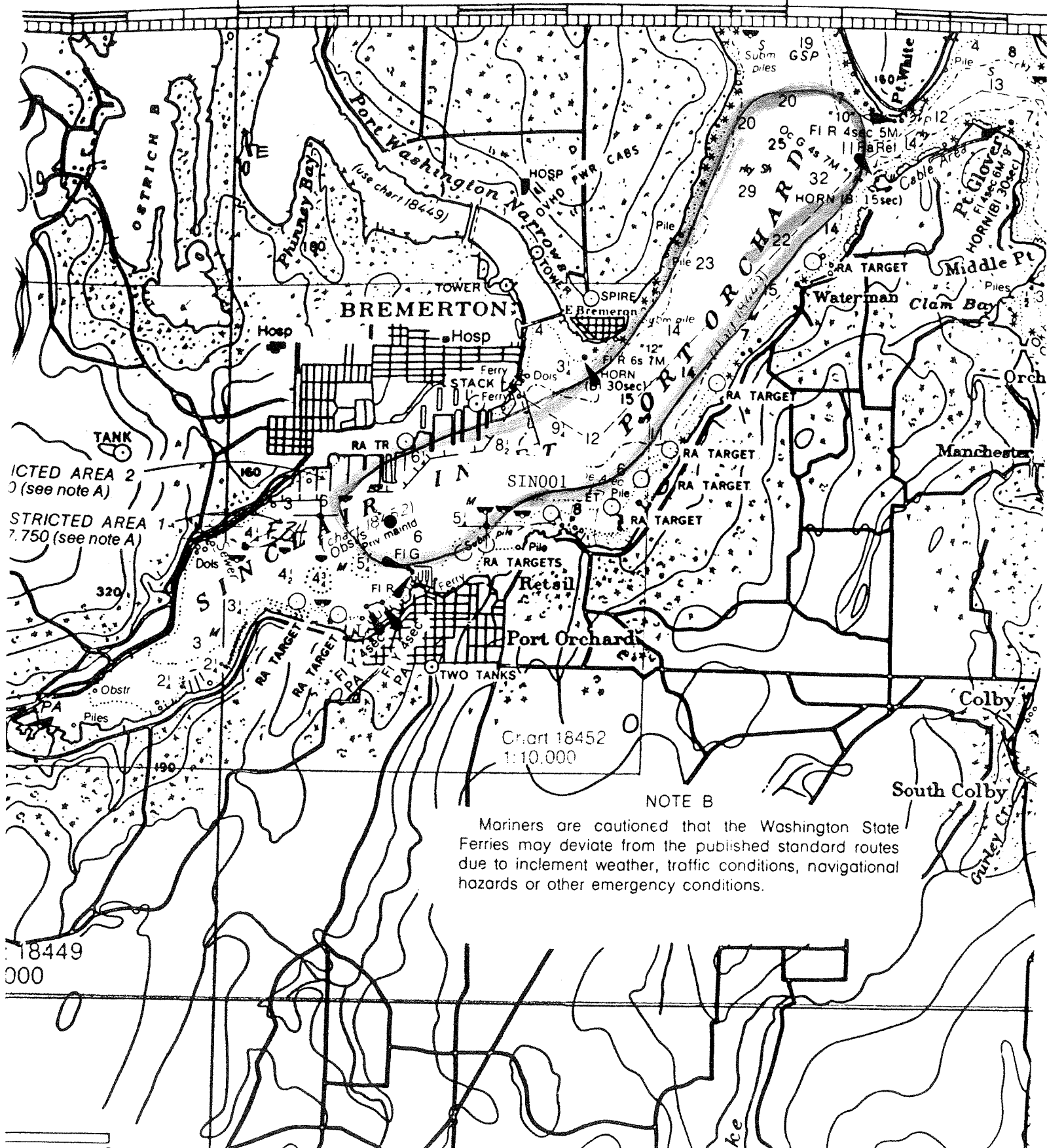


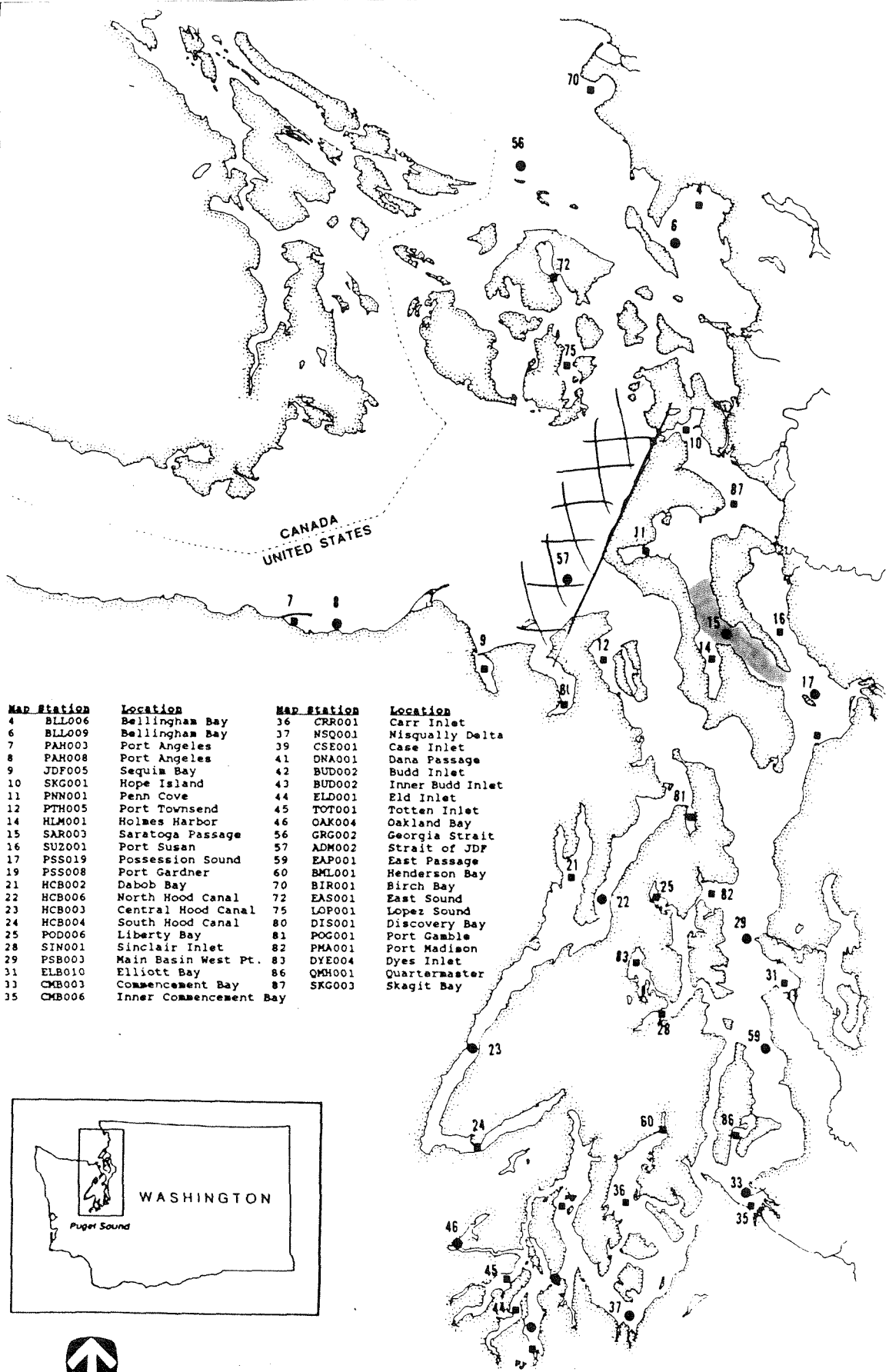
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NOTE B

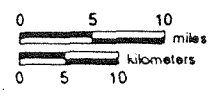
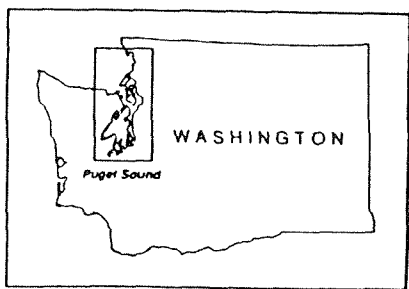
Mariners are cautioned that the Washington State Ferries may deviate from the published standard routes due to inclement weather, traffic conditions, navigational hazards or other emergency conditions.

BOTTOM SIN001/39.

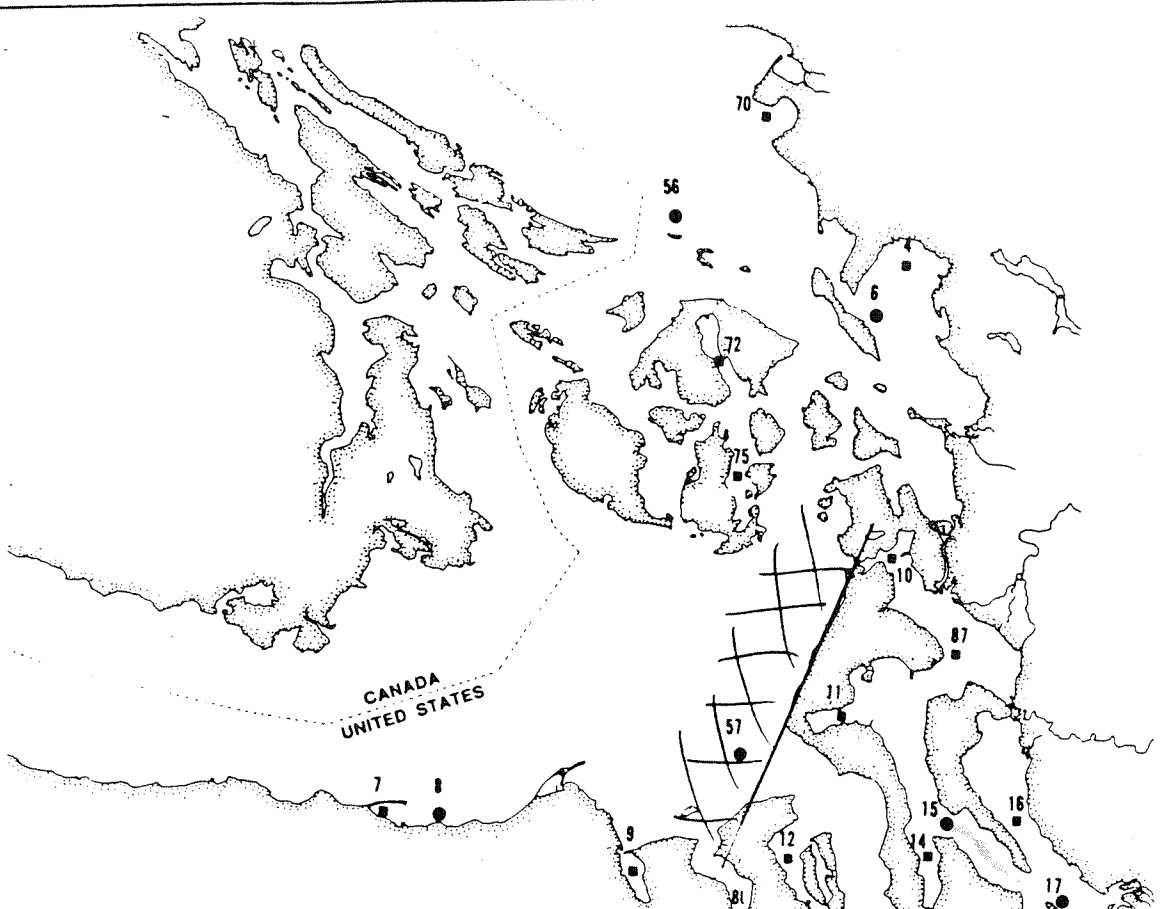
SPR 66  
50 x 10



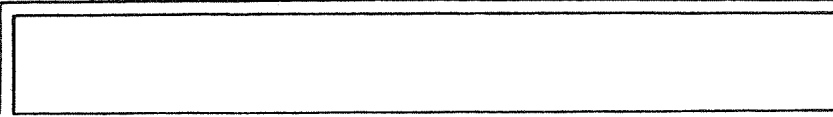
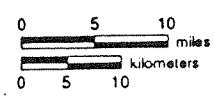
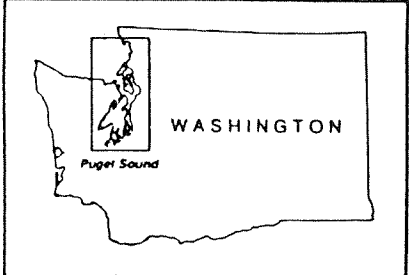
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMR001 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMR006 Inner Commencement Bay |             |                         |



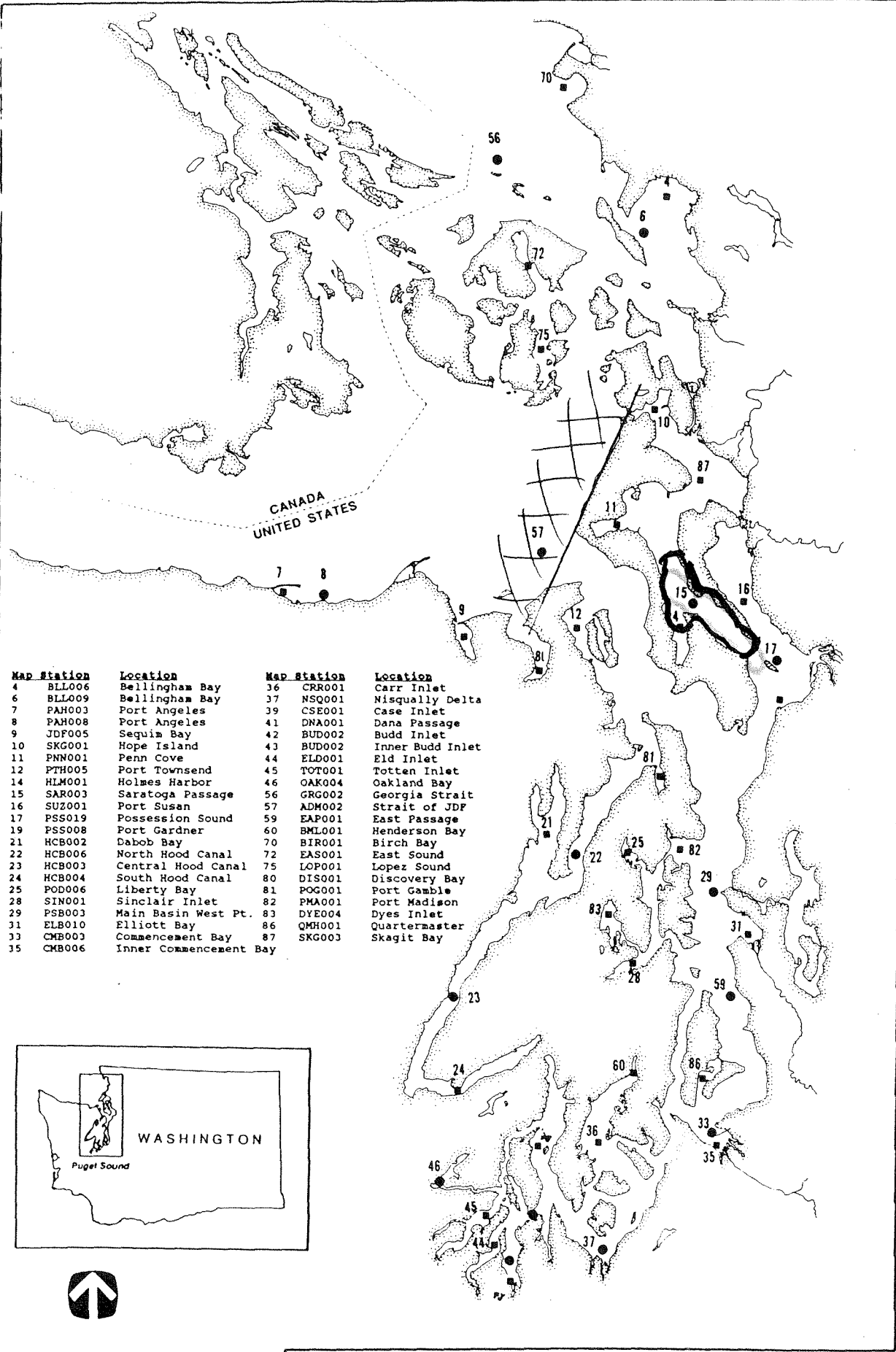
SAR003 BOTTOM Int



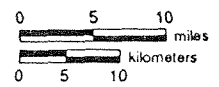
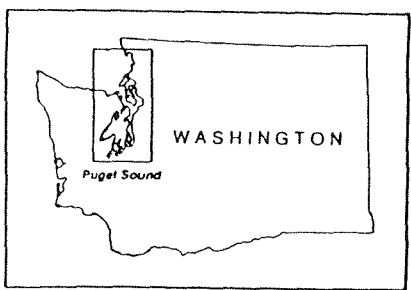
| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BHL001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



NEAP  
48x12  
SPRING  
50x13



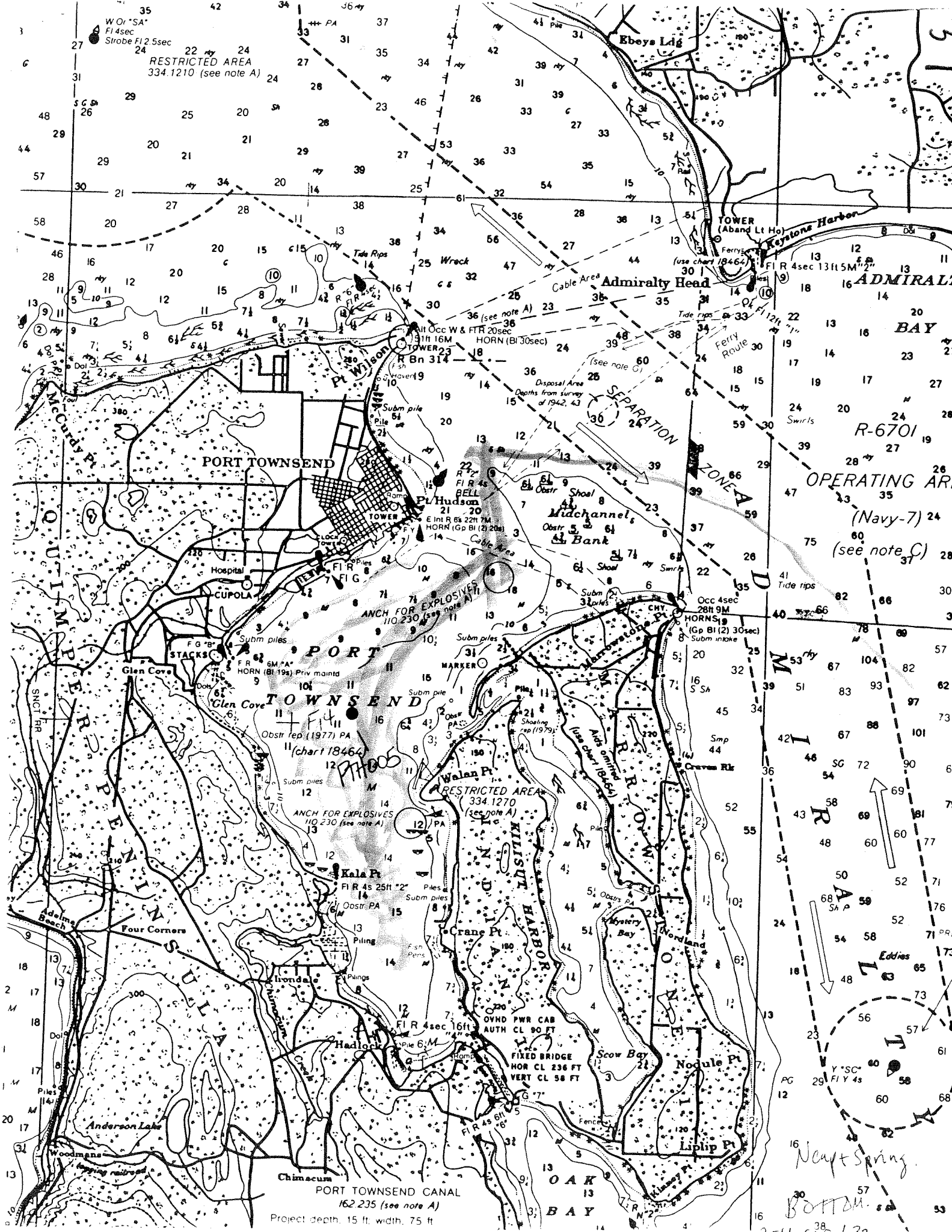
| Map Station | Location | Map Station            | Location |        |                  |
|-------------|----------|------------------------|----------|--------|------------------|
| 4           | BLL006   | Bellingham Bay         | 36       | CRR001 | Carr Inlet       |
| 6           | BLL009   | Bellingham Bay         | 37       | NSQ001 | Nisqually Delta  |
| 7           | PAH003   | Port Angeles           | 39       | CSE001 | Case Inlet       |
| 8           | PAH008   | Port Angeles           | 41       | DNA001 | Dana Passage     |
| 9           | JDF005   | Sequim Bay             | 42       | BUD002 | Budd Inlet       |
| 10          | SKG001   | Hope Island            | 43       | BUD002 | Inner Budd Inlet |
| 11          | PNN001   | Penn Cove              | 44       | ELD001 | Eld Inlet        |
| 12          | PTH005   | Port Townsend          | 45       | TOT001 | Totten Inlet     |
| 14          | HLM001   | Holmes Harbor          | 46       | OAK004 | Oakland Bay      |
| 15          | SAR003   | Saratoga Passage       | 56       | GRG002 | Georgia Strait   |
| 16          | SUZ001   | Port Susan             | 57       | ADM002 | Strait of JDF    |
| 17          | PSS019   | Possession Sound       | 59       | EAP001 | East Passage     |
| 19          | PSS008   | Port Gardner           | 60       | BML001 | Henderson Bay    |
| 21          | HCB002   | Dabob Bay              | 70       | BIR001 | Birch Bay        |
| 22          | HCB006   | North Hood Canal       | 72       | EAS001 | East Sound       |
| 23          | HCB003   | Central Hood Canal     | 75       | LOP001 | Lopez Sound      |
| 24          | HCB004   | South Hood Canal       | 80       | DIS001 | Discovery Bay    |
| 25          | POD006   | Liberty Bay            | 81       | POG001 | Port Gamble      |
| 28          | SIN001   | Sinclair Inlet         | 82       | PMA001 | Port Madison     |
| 29          | PSB003   | Main Basin West Pt.    | 83       | DYE004 | Dyes Inlet       |
| 31          | ELB010   | Elliott Bay            | 86       | QMH001 | Quartermaster    |
| 33          | CMB003   | Commencement Bay       | 87       | SKG003 | Skagit Bay       |
| 35          | CMB006   | Inner Commencement Bay |          |        |                  |



**SURFACE SAR003**

1/2 ml





RESTRICTED AREA  
334.1210 (see note A)

ADMIRALTY HEAD

PORT TOWNSEND

PORT TOWNSEND

RESTRICTED AREA  
334.1270 (see note A)

ADMIRALTY BAY  
R-6701  
OPERATING AREA  
(Navy-7)  
(see note C)

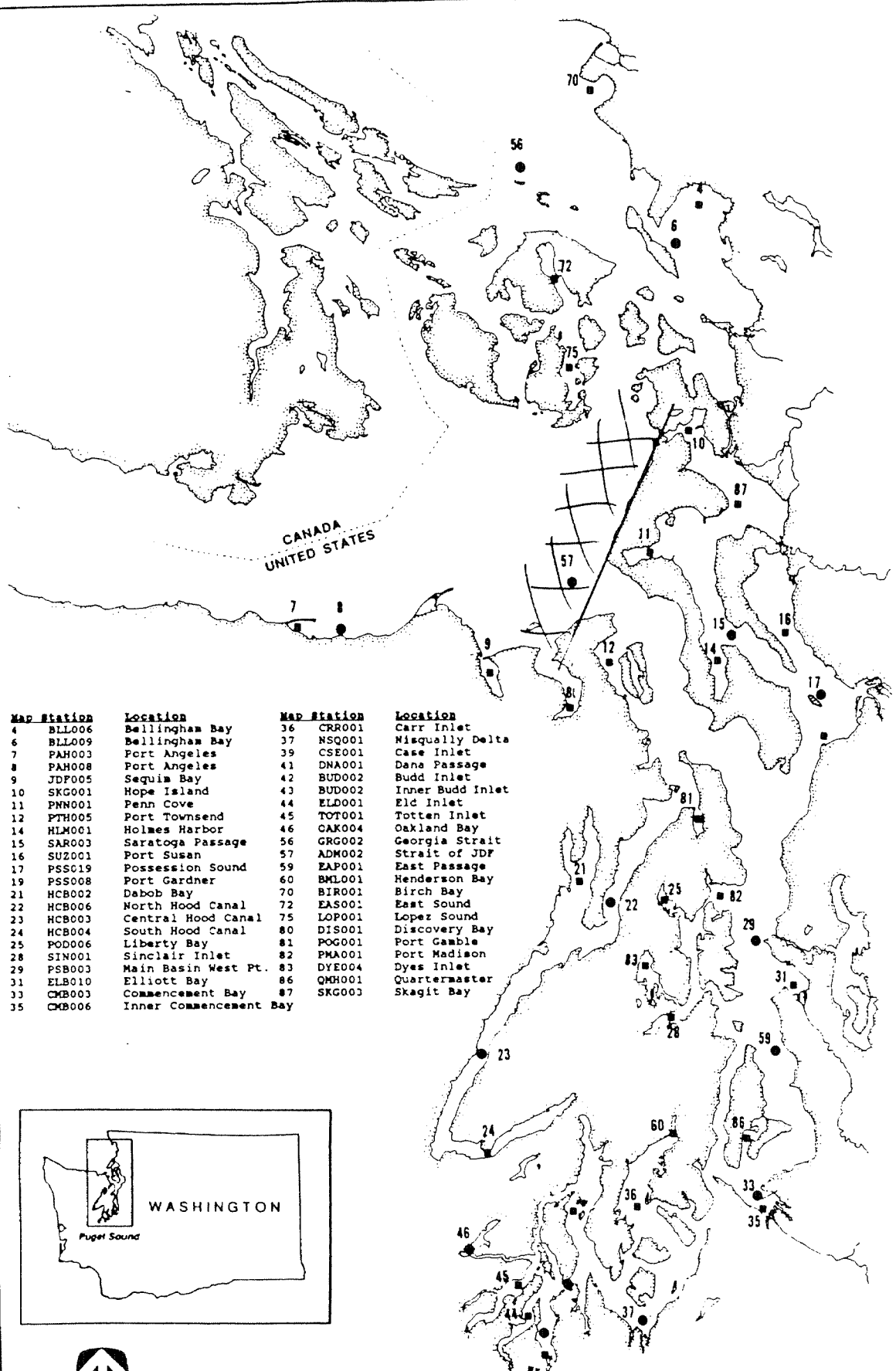
PORT TOWNSEND CANAL  
162.235 (see note A)

Project depth, 15 ft, width, 75 ft

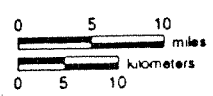
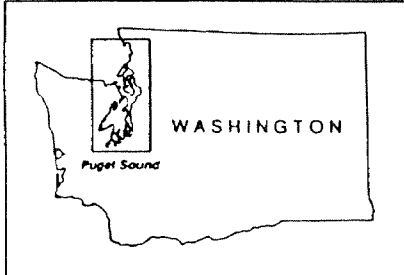
Neapt Spring

BOTTOM

244 137



| Map Station | Location | Map Station | Location |
|-------------|----------|-------------|----------|
| 4           | BLLO06   | 36          | CRR001   |
| 6           | BLLO09   | 37          | NSQ001   |
| 7           | PAH003   | 39          | CSE001   |
| 8           | PAH008   | 41          | DNA001   |
| 9           | JDF005   | 42          | BUD002   |
| 10          | SKG001   | 43          | BUD002   |
| 11          | PNW001   | 44          | ELD001   |
| 12          | PTH005   | 45          | TOT001   |
| 14          | HLM001   | 46          | CAK004   |
| 15          | SAR003   | 56          | GRC002   |
| 16          | SUZ001   | 57          | ADM002   |
| 17          | PSS019   | 59          | EAP001   |
| 19          | PSS008   | 60          | BML001   |
| 21          | HCB002   | 70          | BIR001   |
| 22          | HCB006   | 72          | EAS001   |
| 23          | HCB003   | 75          | LOP001   |
| 24          | HCB004   | 80          | DIS001   |
| 25          | POD006   | 81          | POG001   |
| 28          | SIN001   | 82          | PMA001   |
| 29          | PSB003   | 83          | DYE004   |
| 31          | ELB010   | 86          | QMH001   |
| 33          | CMB003   | 87          | SKG003   |
| 35          | CMB006   |             |          |



Port Townsend; Surface.  
Map.  
1.5M. PTH005

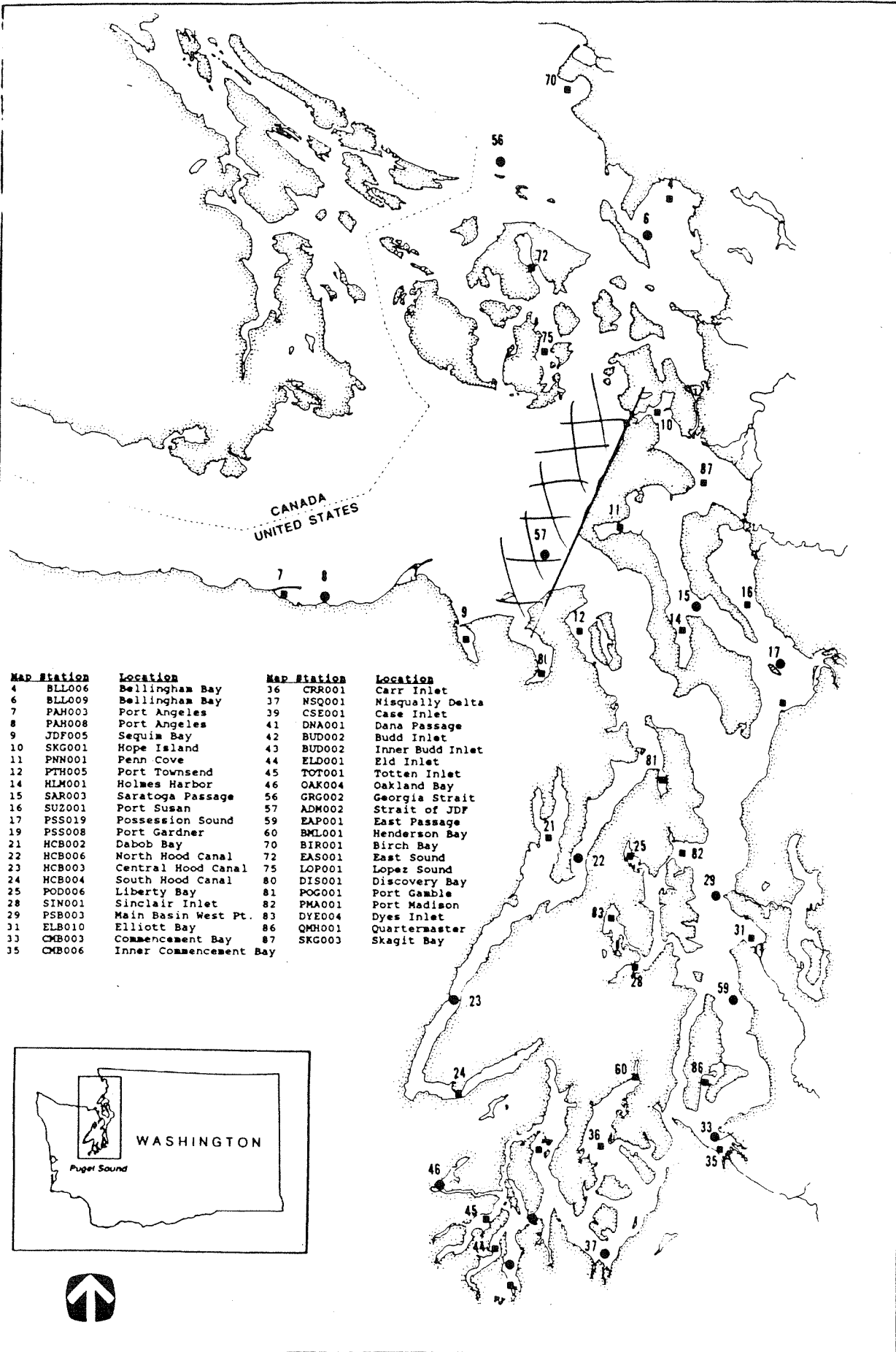
PSS019

Spring

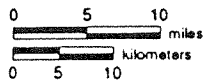
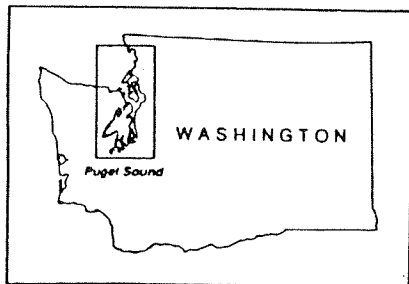
Salt

K.D.Z.

59

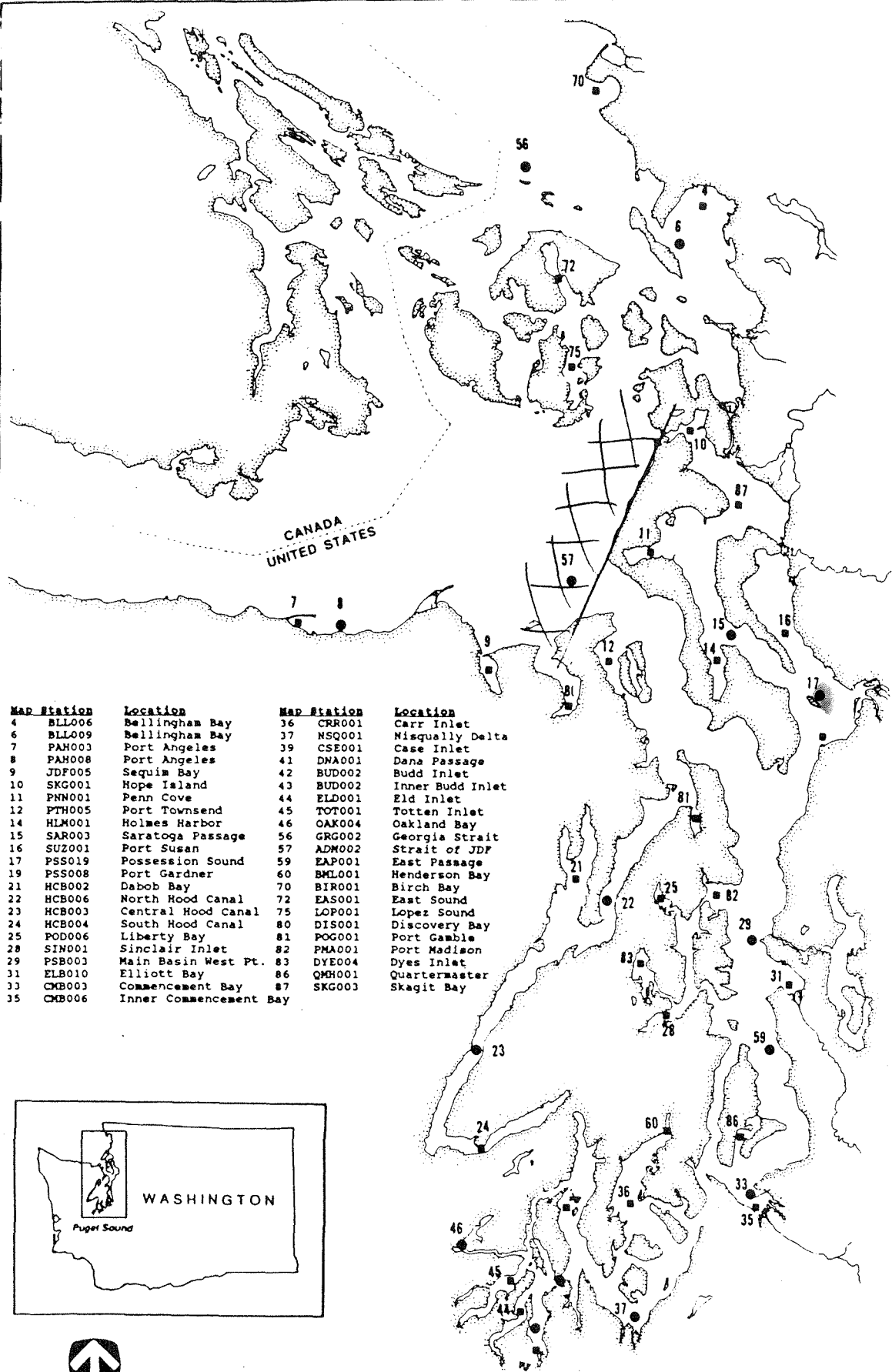


| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLLO06 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLLO09 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNM001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYED04 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

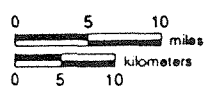
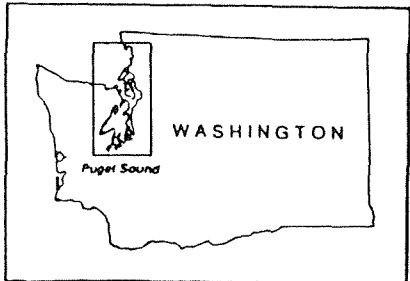


PSS019  
Neap  
Salt  
R.Dz.

35

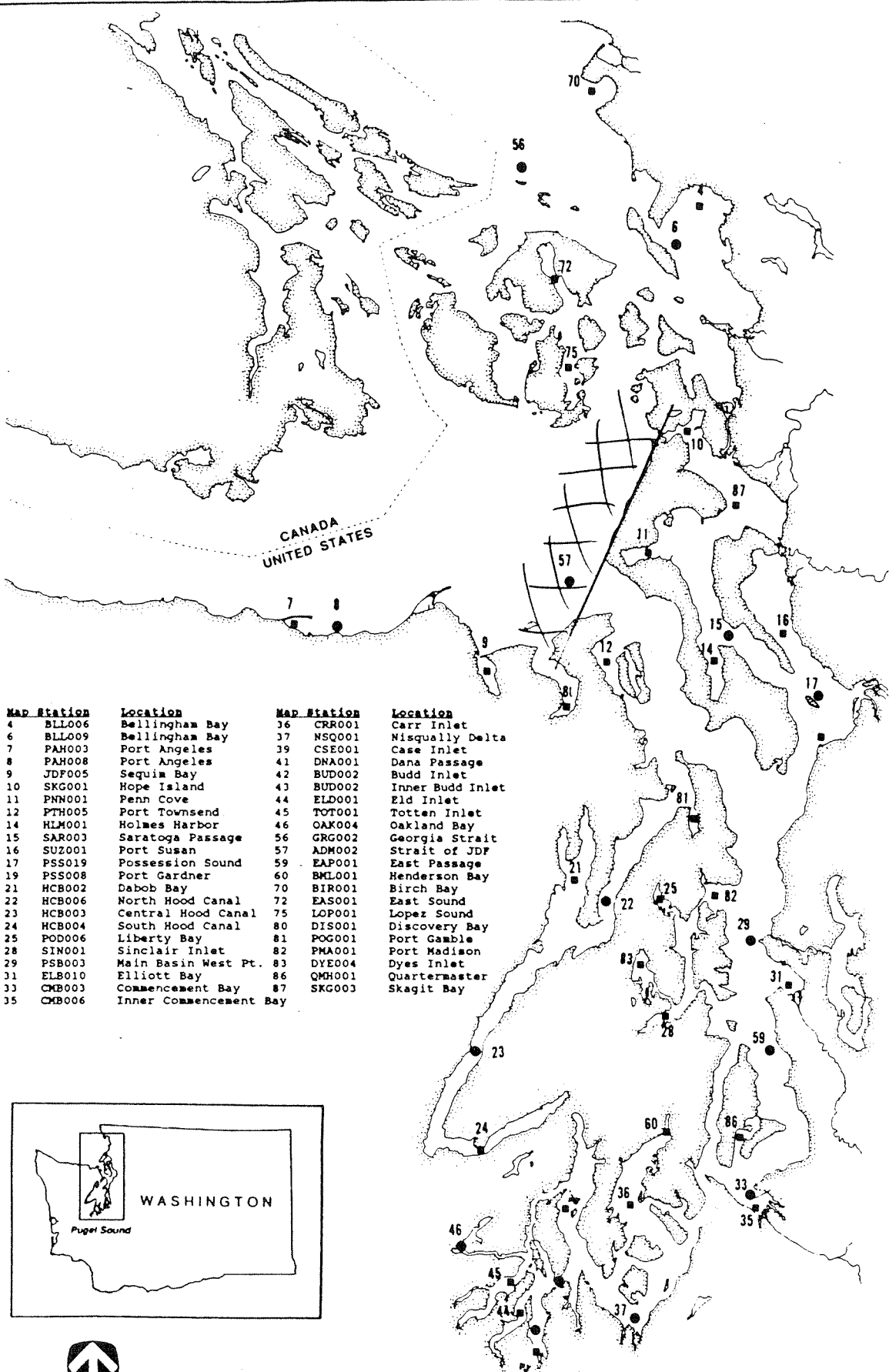


| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

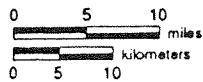
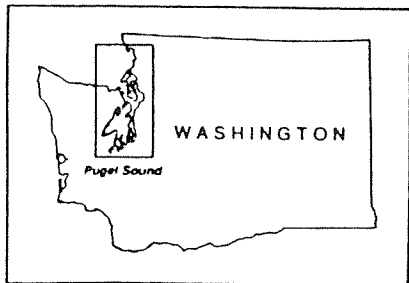


PSS 009  
 Neap  
 Fresh  
 K.D. 7

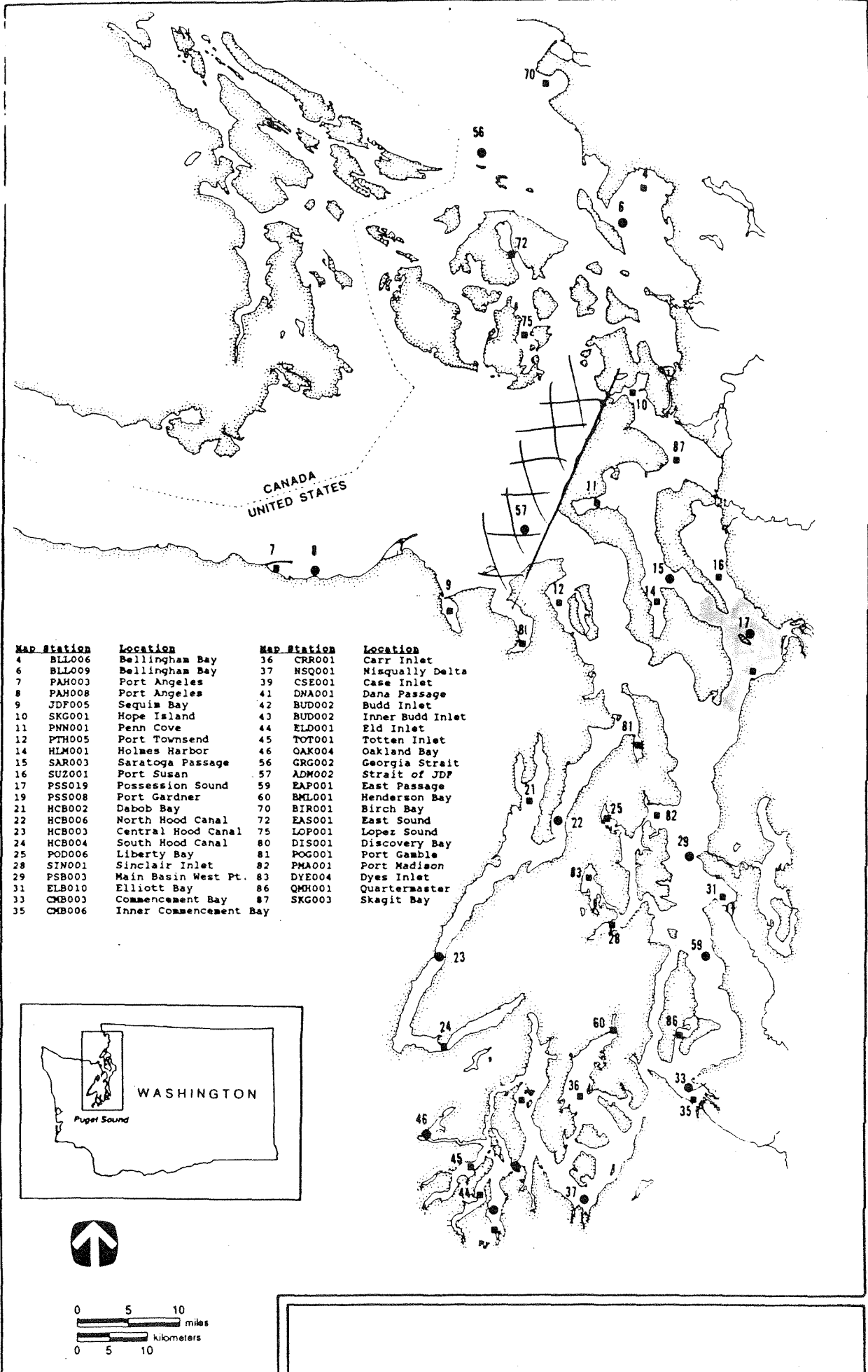
55



| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PHA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



PSS 019  
 Spring  
 Fresh  
 K.D.Z.

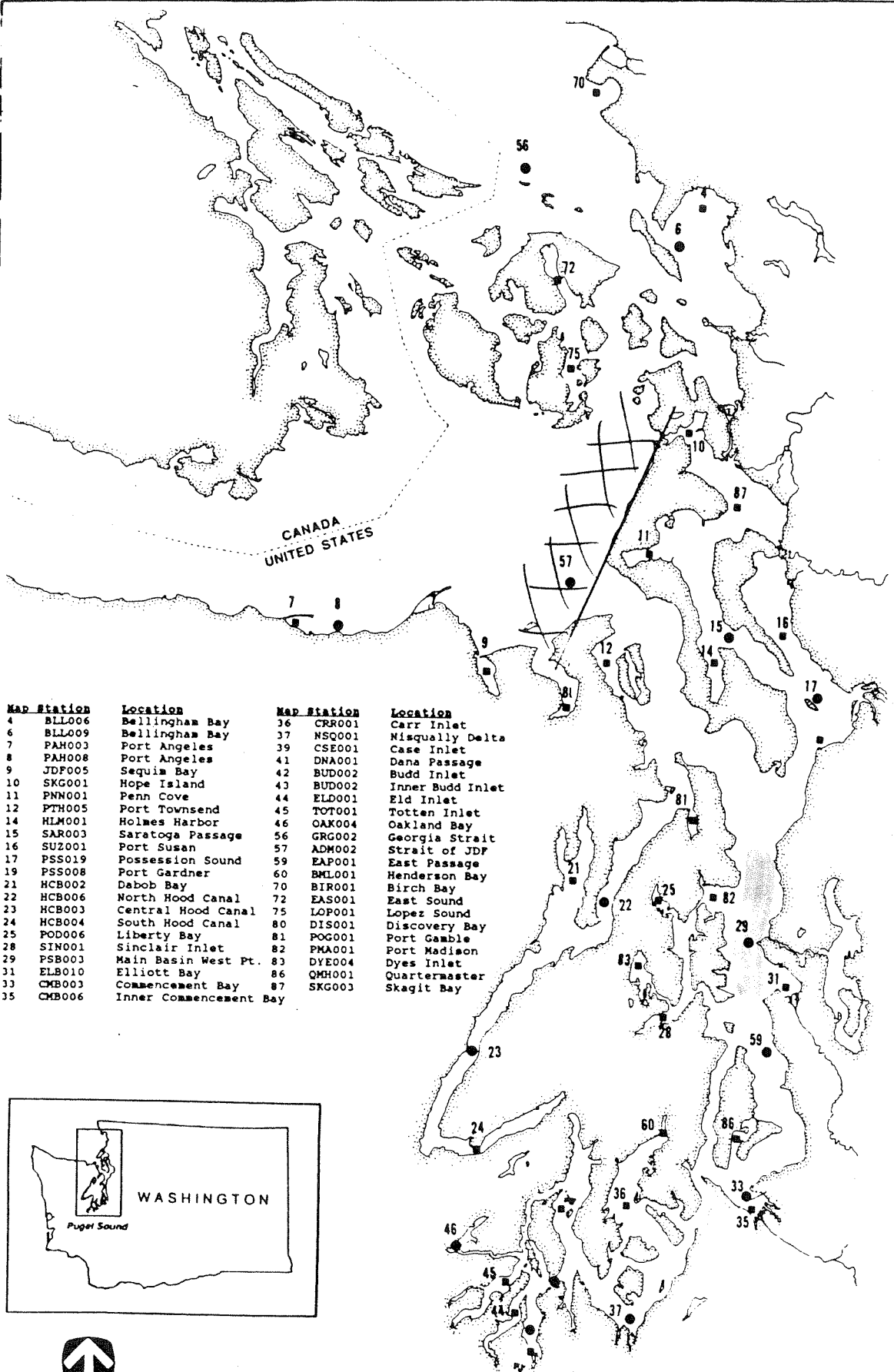


PSB003

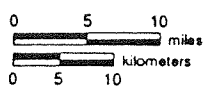
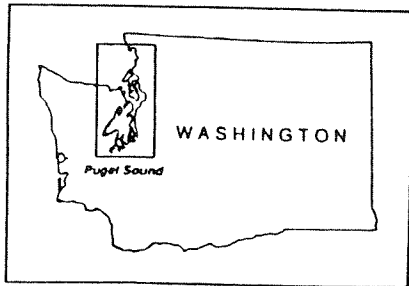
Neap  
Salt

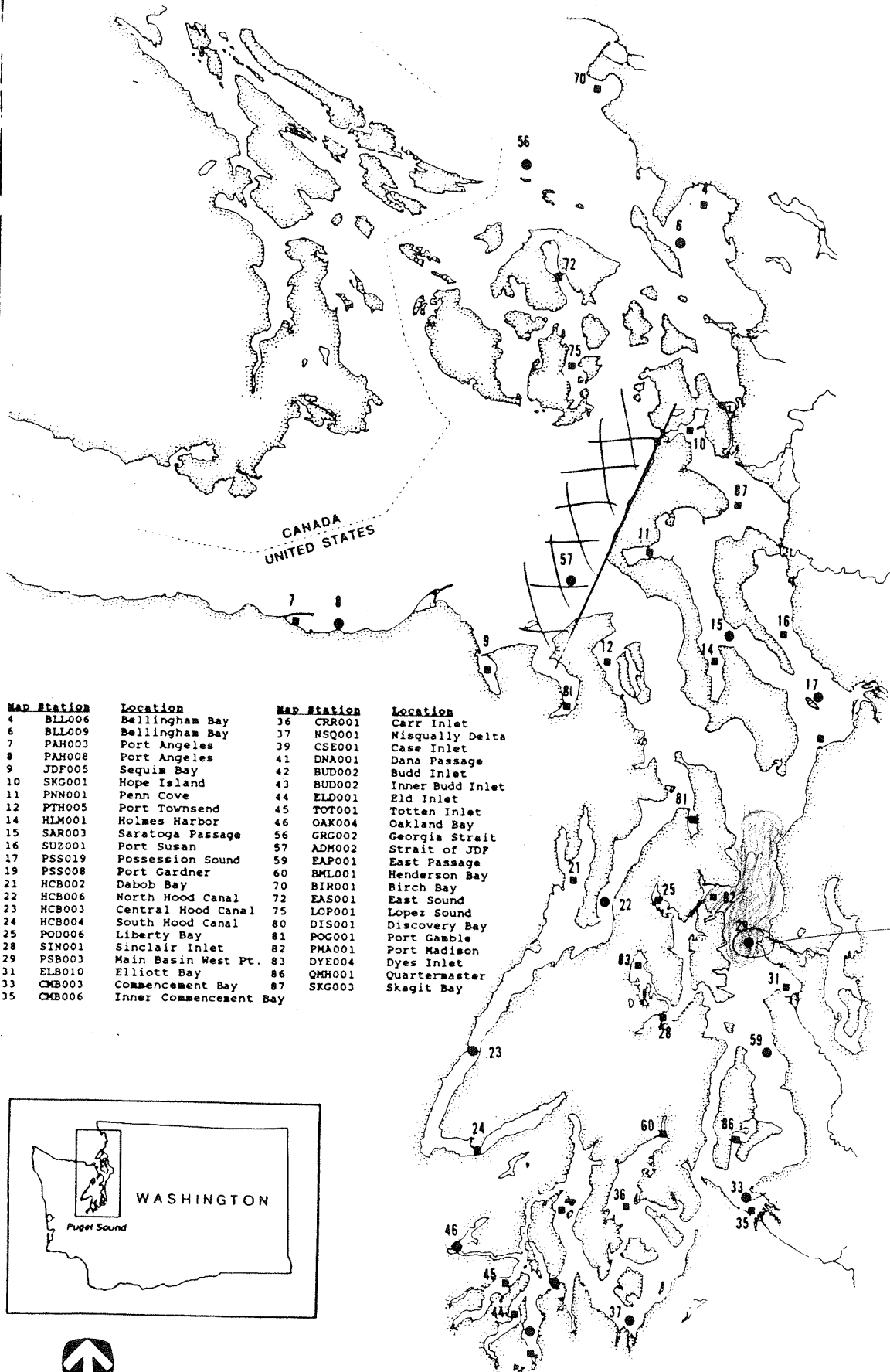
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79

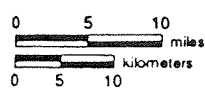
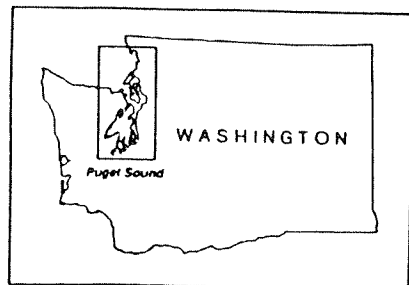


| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLLO06 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLLO09 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequia Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



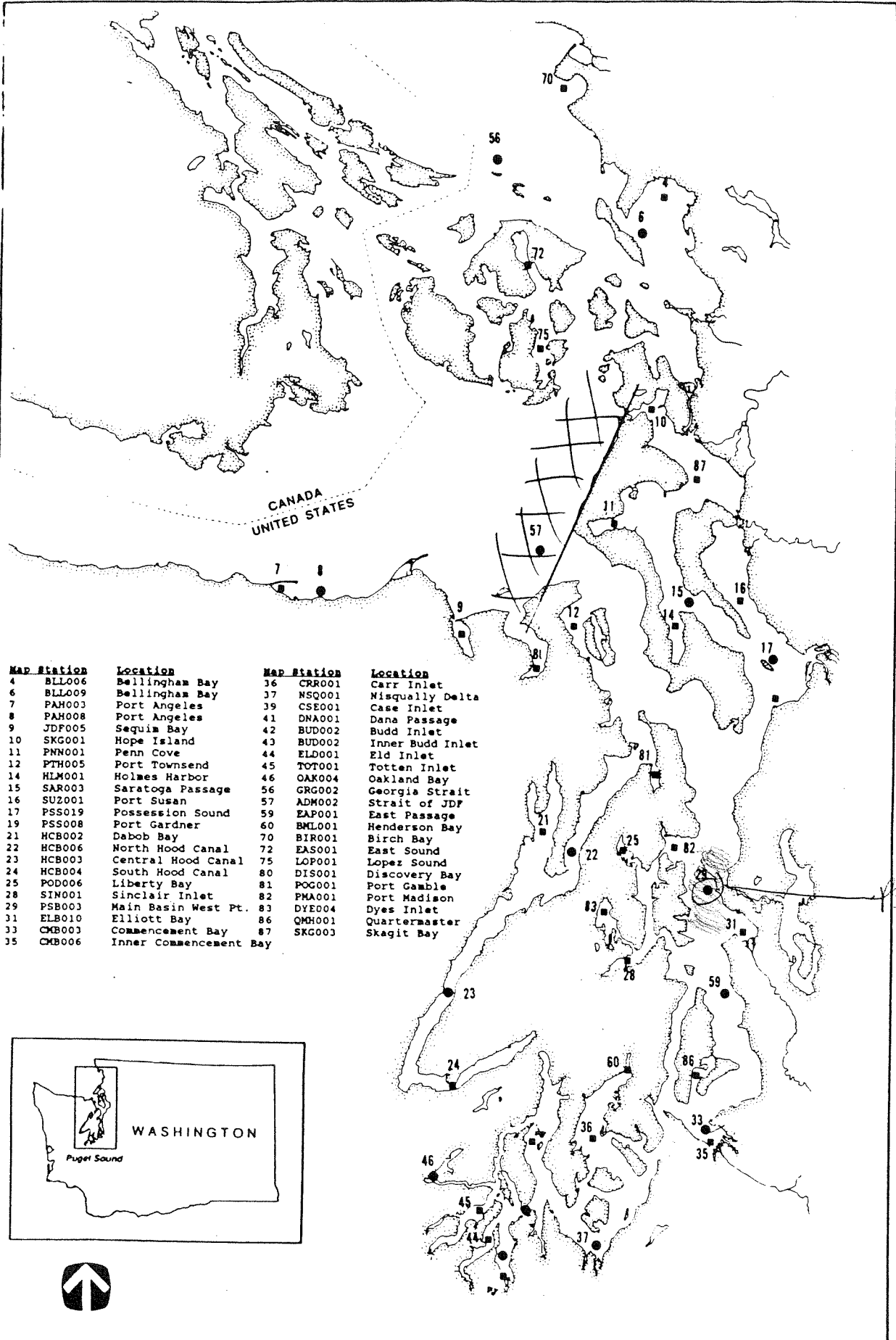


| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequia Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | EL0001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

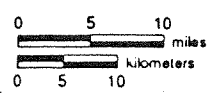
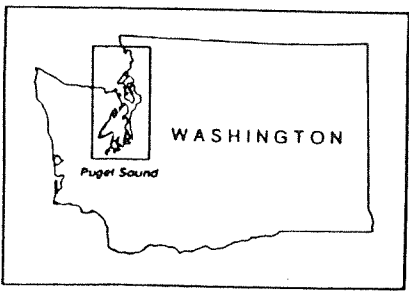


PSB003/SE SPRING

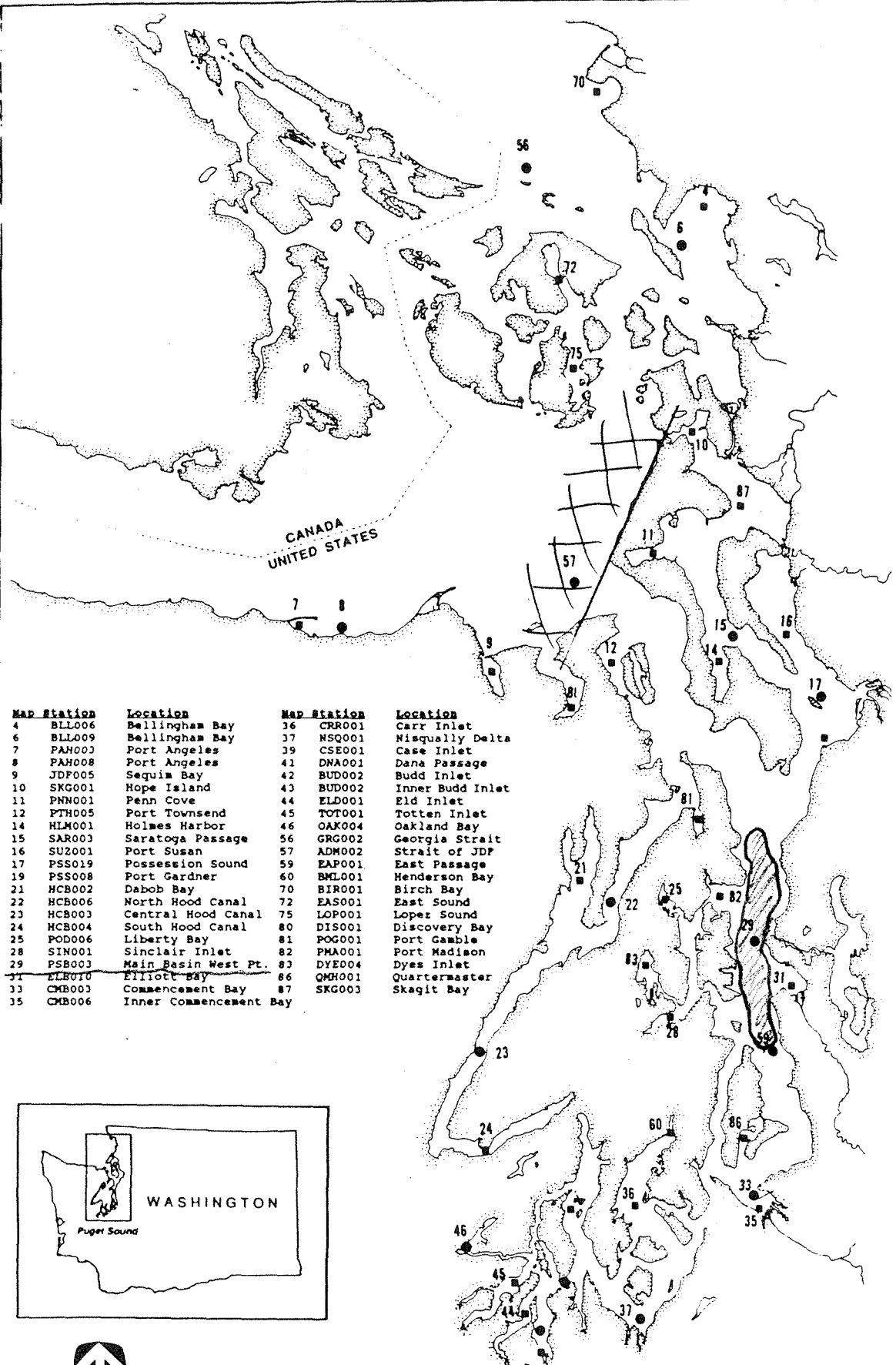




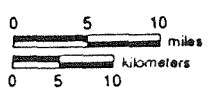
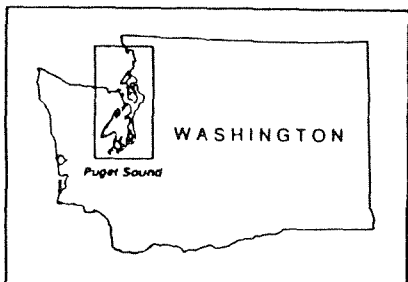
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



PSB003/sfc NEAP

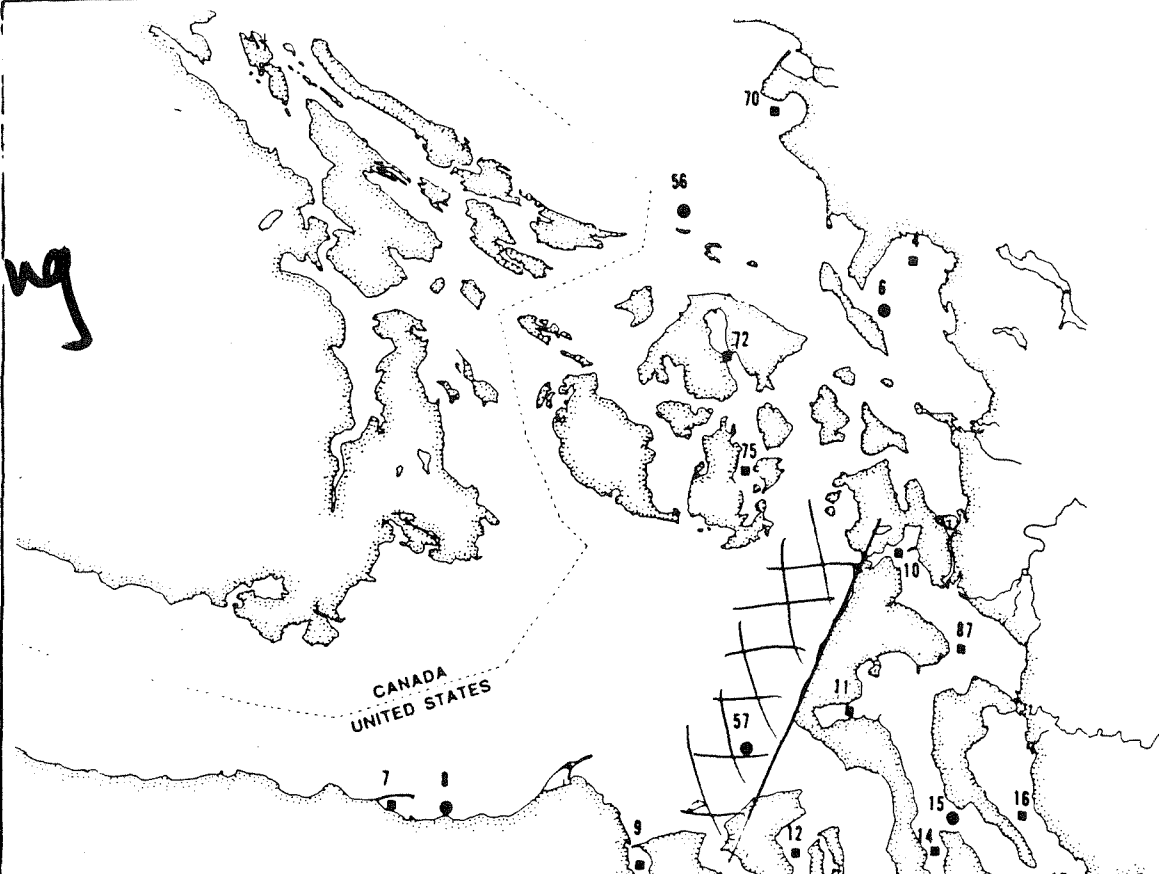


| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LGP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

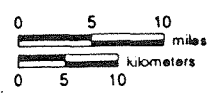
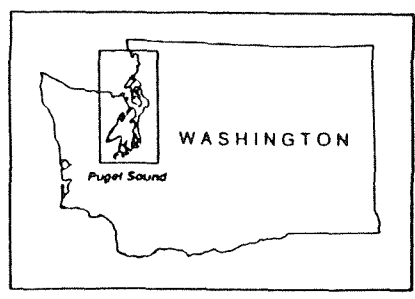


PSB 003 Deep Spring

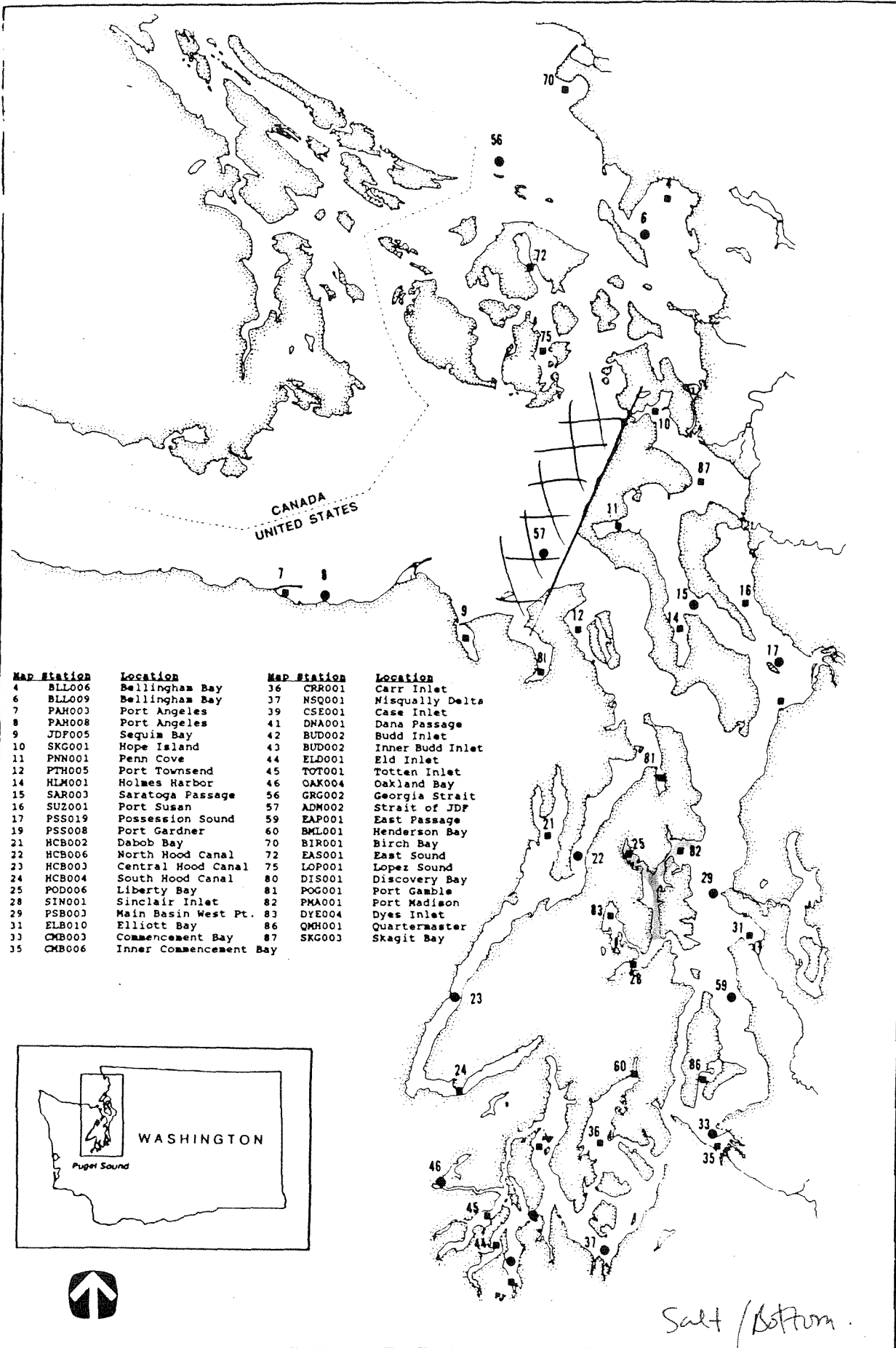
FW.  
Spring



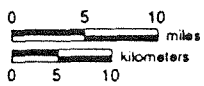
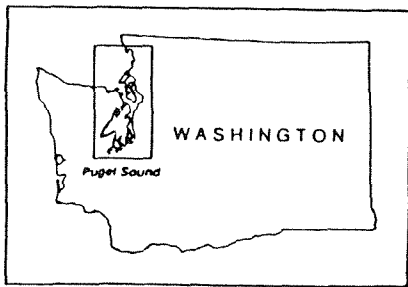
| MAP Station | Location | MAP Station            | Location |        |                  |
|-------------|----------|------------------------|----------|--------|------------------|
| 4           | BLLO06   | Bellingham Bay         | 36       | CRR001 | Carr Inlet       |
| 6           | BLLO09   | Bellingham Bay         | 37       | NSQ001 | Nisqually Delta  |
| 7           | PAH003   | Port Angeles           | 39       | CSE001 | Case Inlet       |
| 8           | PAH008   | Port Angeles           | 41       | DNA001 | Dana Passage     |
| 9           | JDF005   | Sequim Bay             | 42       | BUD002 | Budd Inlet       |
| 10          | SKG001   | Hope Island            | 43       | BUD002 | Inner Budd Inlet |
| 11          | PNN001   | Penn Cove              | 44       | ELD001 | Eld Inlet        |
| 12          | PTH005   | Port Townsend          | 45       | TOT001 | Totten Inlet     |
| 14          | HLM001   | Holmes Harbor          | 46       | OAK004 | Oakland Bay      |
| 15          | SAR003   | Saratoga Passage       | 56       | GRG002 | Georgia Strait   |
| 16          | SUZ001   | Port Susan             | 57       | ADM002 | Strait of JDF    |
| 17          | PSS019   | Possession Sound       | 59       | EAP001 | East Passage     |
| 19          | PSS008   | Port Gardner           | 60       | BML001 | Henderson Bay    |
| 21          | HCB002   | Dabob Bay              | 70       | BIR001 | Birch Bay        |
| 22          | HCB006   | North Hood Canal       | 72       | EAS001 | East Sound       |
| 23          | HCB003   | Central Hood Canal     | 75       | LOP001 | Lopez Sound      |
| 24          | HCB004   | South Hood Canal       | 80       | DIS001 | Discovery Bay    |
| 25          | POD006   | Liberty Bay            | 81       | POG001 | Port Gamble      |
| 28          | SIN001   | Sinclair Inlet         | 82       | PMA001 | Port Madison     |
| 29          | PSB003   | Main Basin West Pt.    | 83       | DYE004 | Dyes Inlet       |
| 31          | ELB010   | Elliott Bay            | 86       | QMH001 | Quartermaster    |
| 33          | CMB003   | Commencement Bay       | 87       | SKG003 | Skagit Bay       |
| 35          | CMB006   | Inner Commencement Bay |          |        |                  |



POD006/31. Surface.



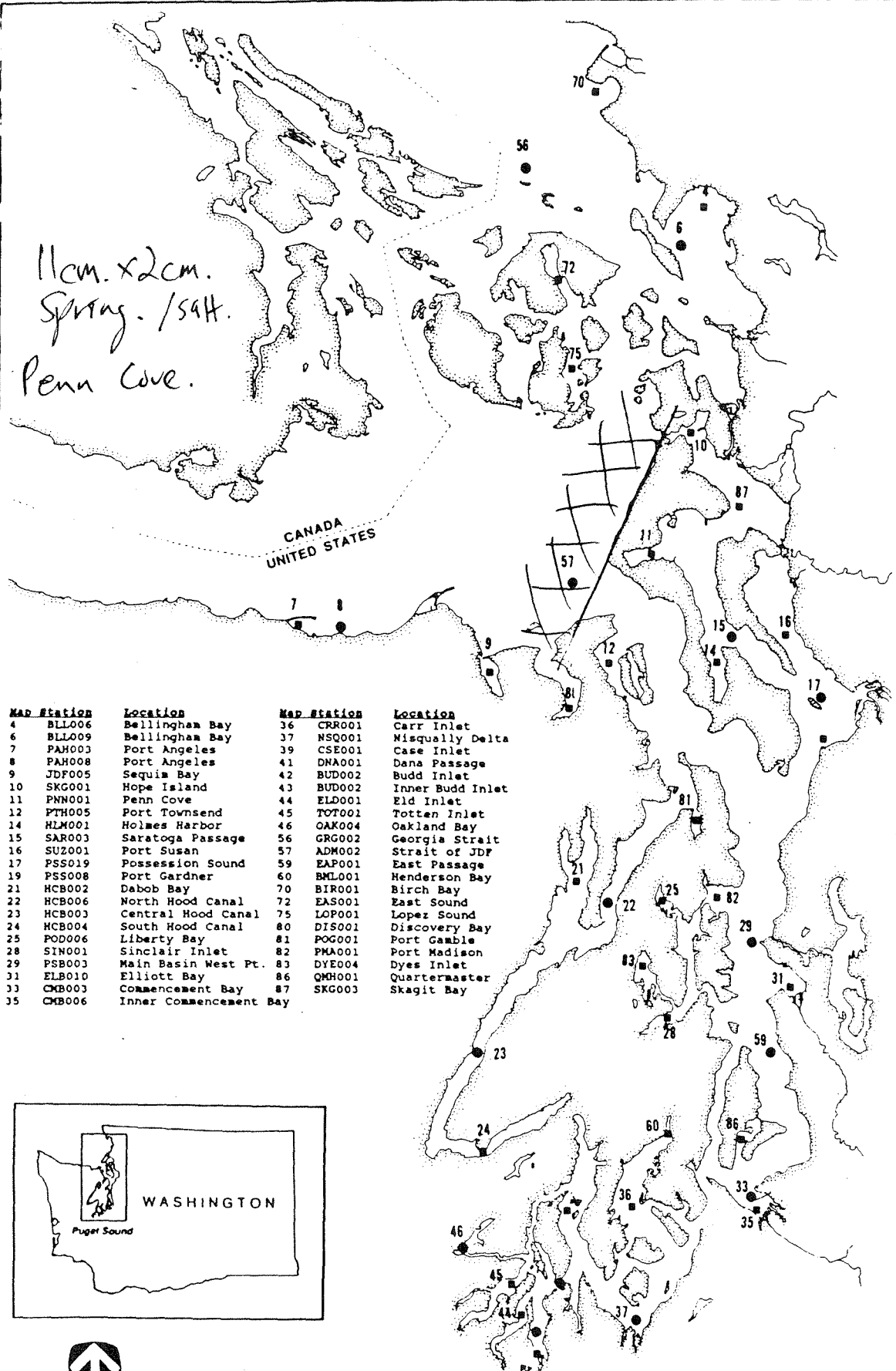
| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Tottan Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDR    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



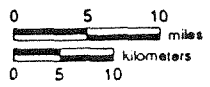
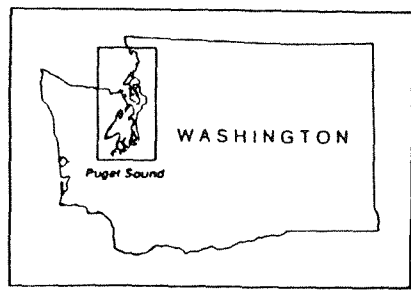
Salt / Bottom

POD006.

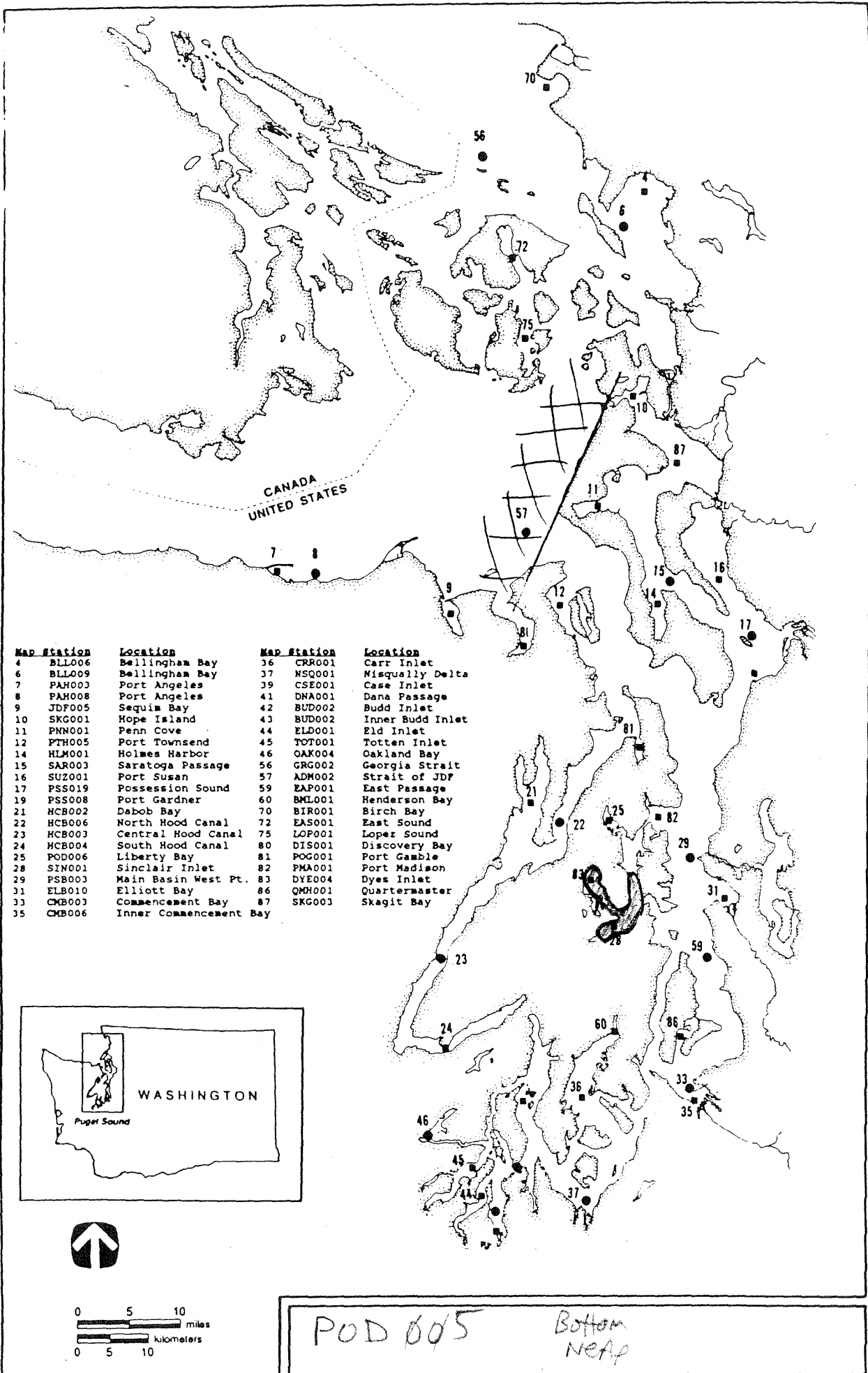
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Spring. /SAH.  
Penn Cove.

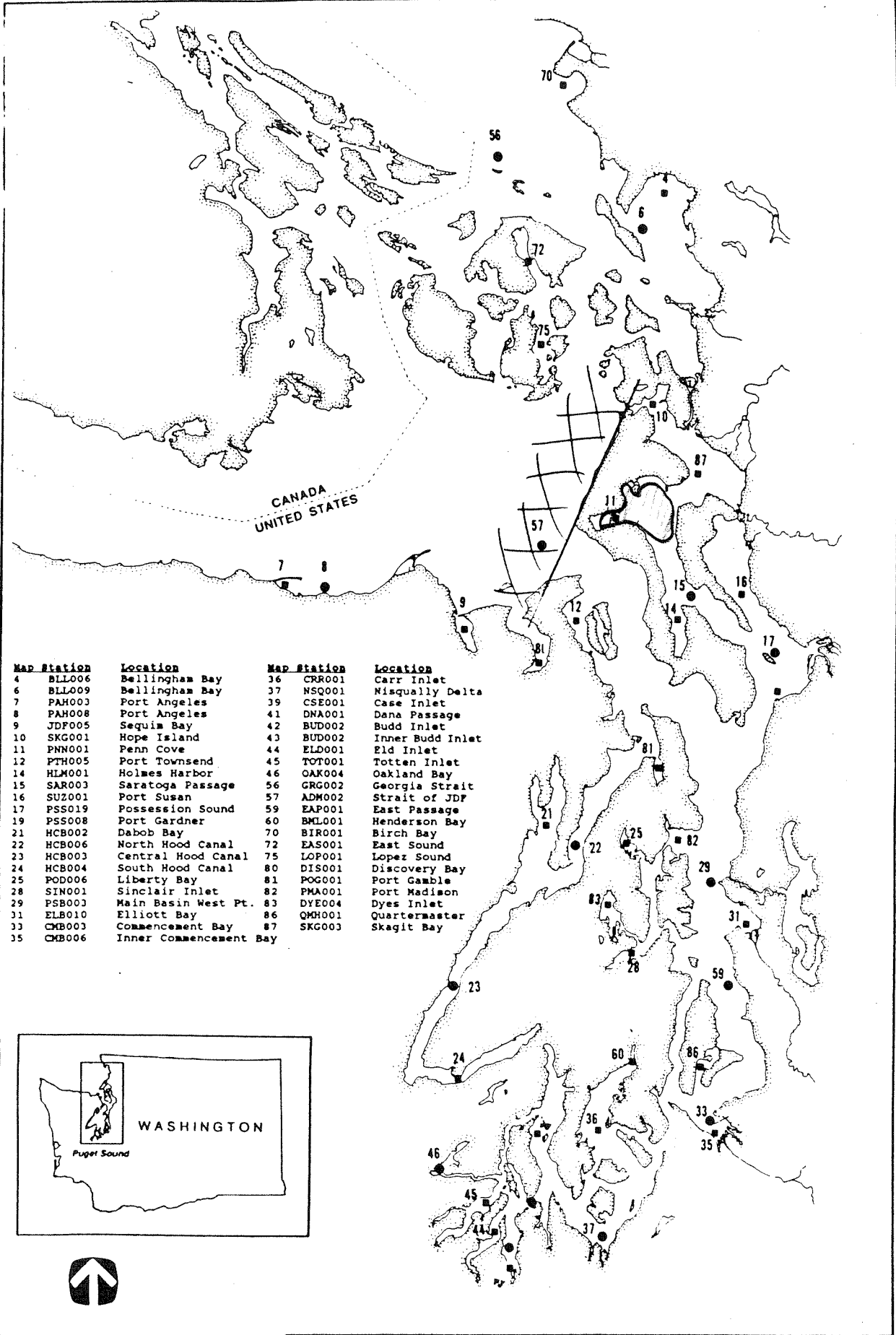


| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

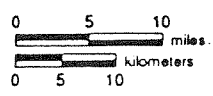
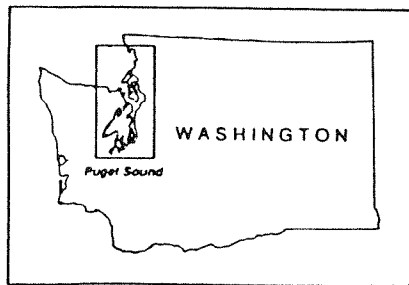


PNN 001

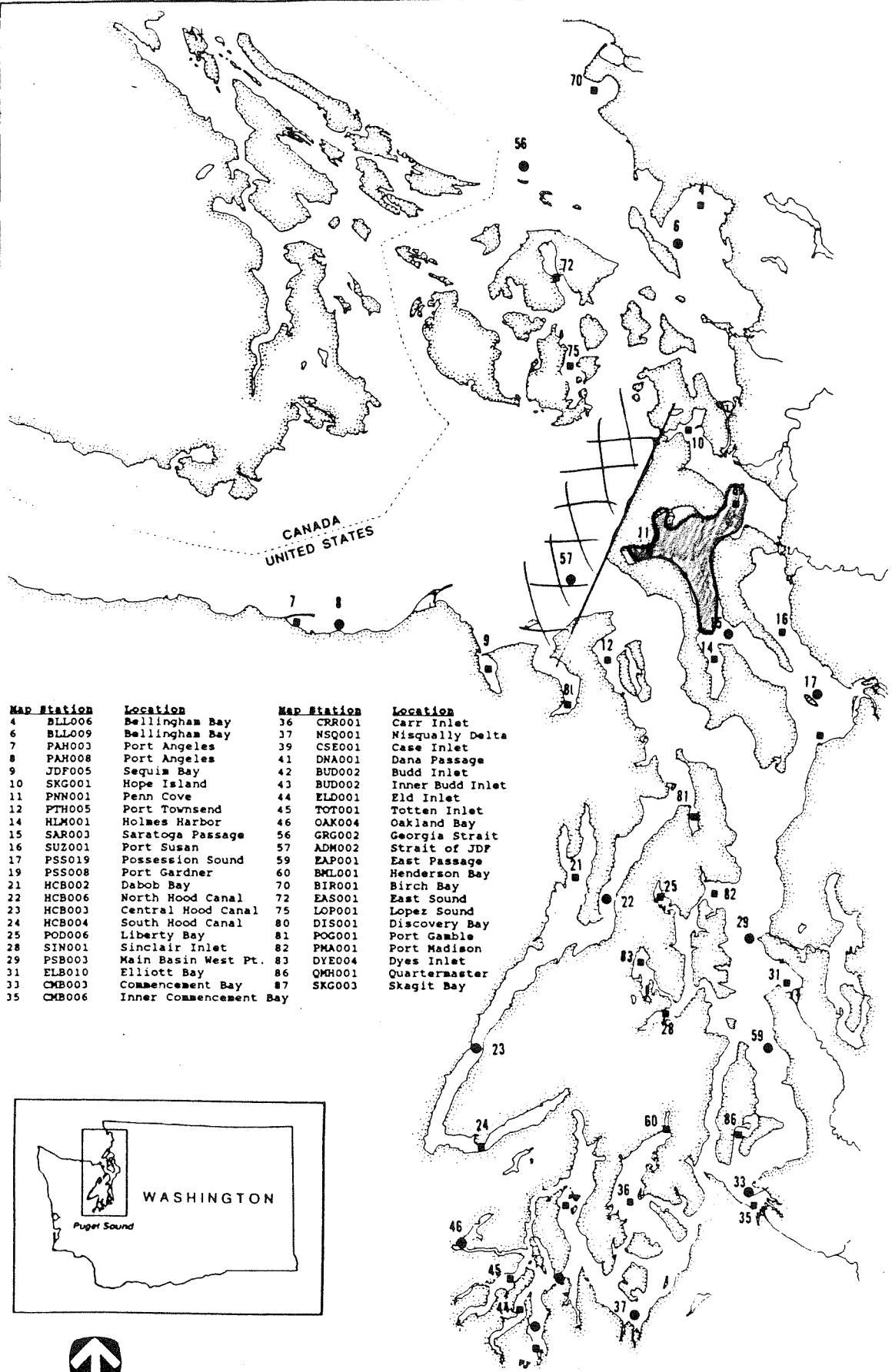




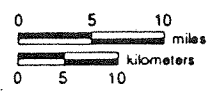
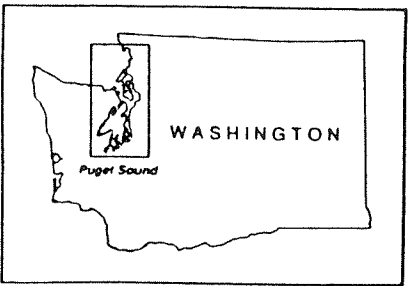
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Tottan Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



PNN 001      Sweet Neap      Inl

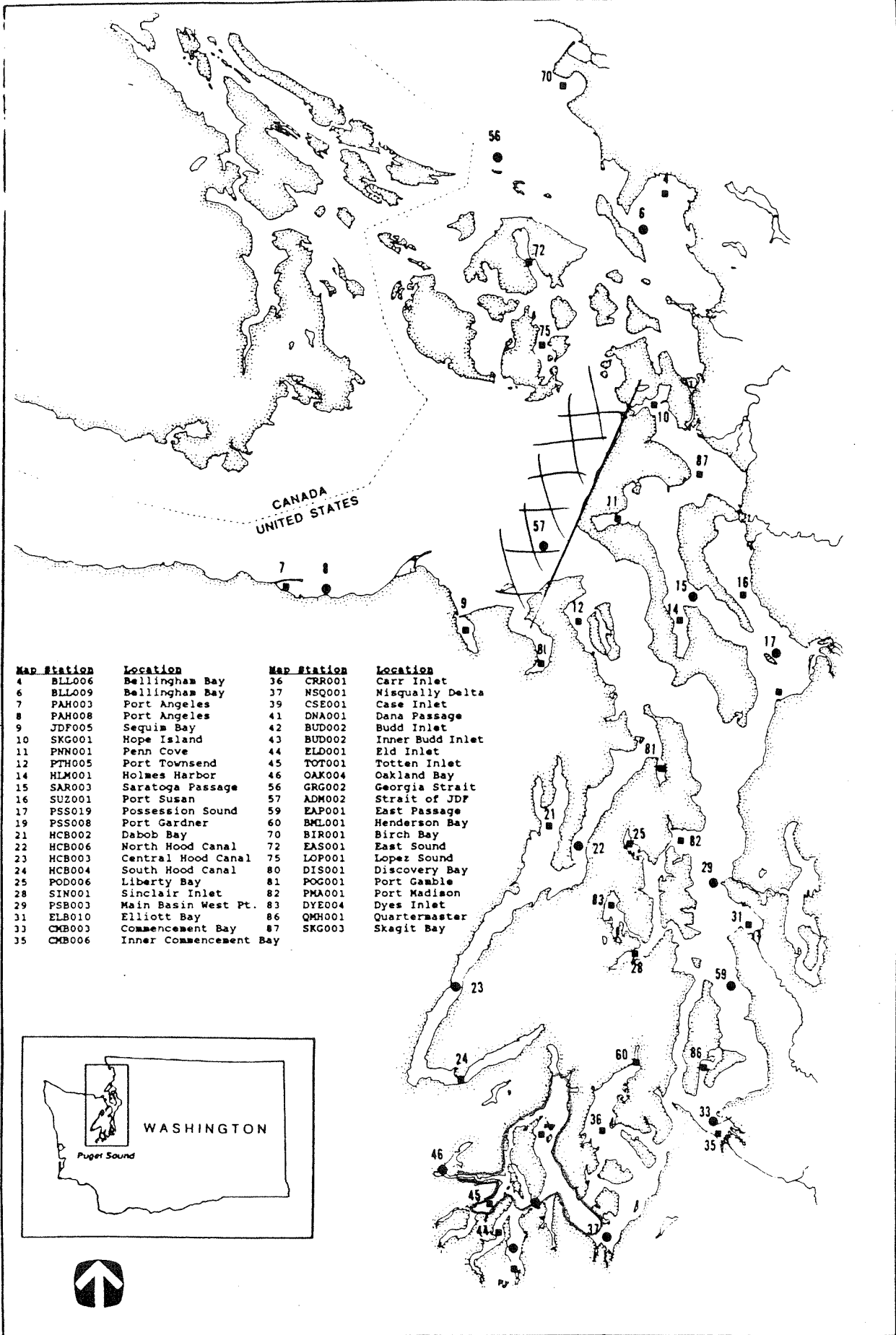


| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CR001 Carr Inlet        |
| 6           | BLL009 Bellingham Bay         | 37          | NS001 Nisqually Delta   |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequia Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PN001 Penn Cove               | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

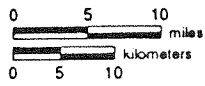
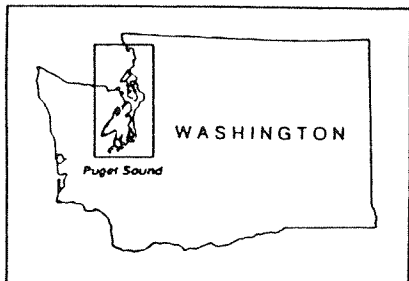


PNN 001 *SPR* Spring 1MI

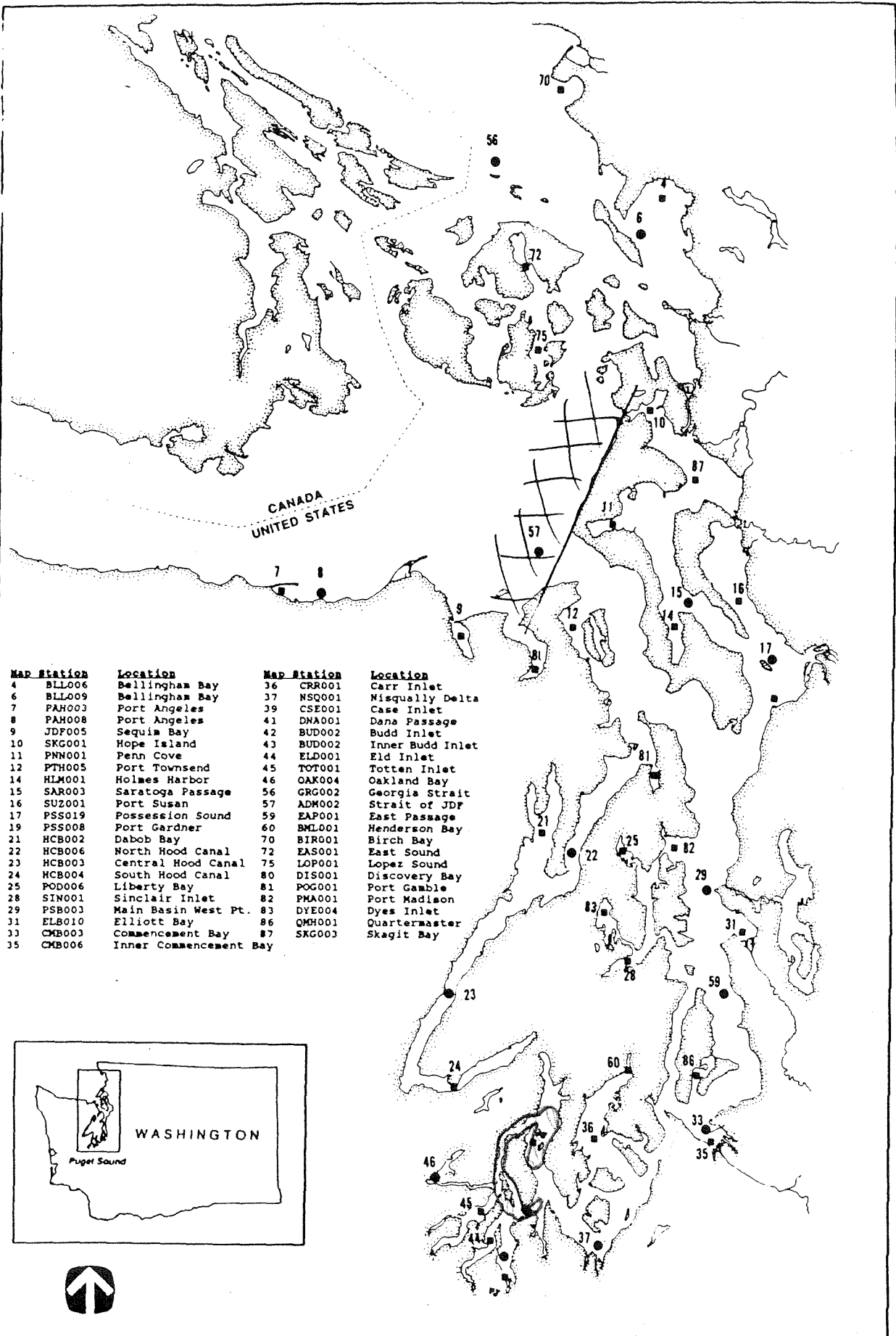




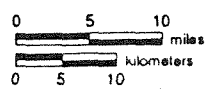
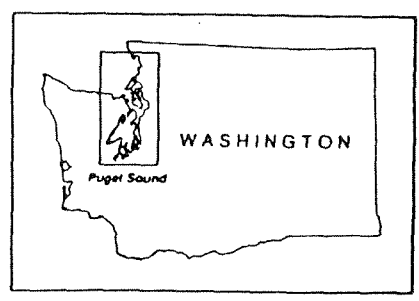
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CR001 Carr Inlet        |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



PLT 001 SURT 500 143

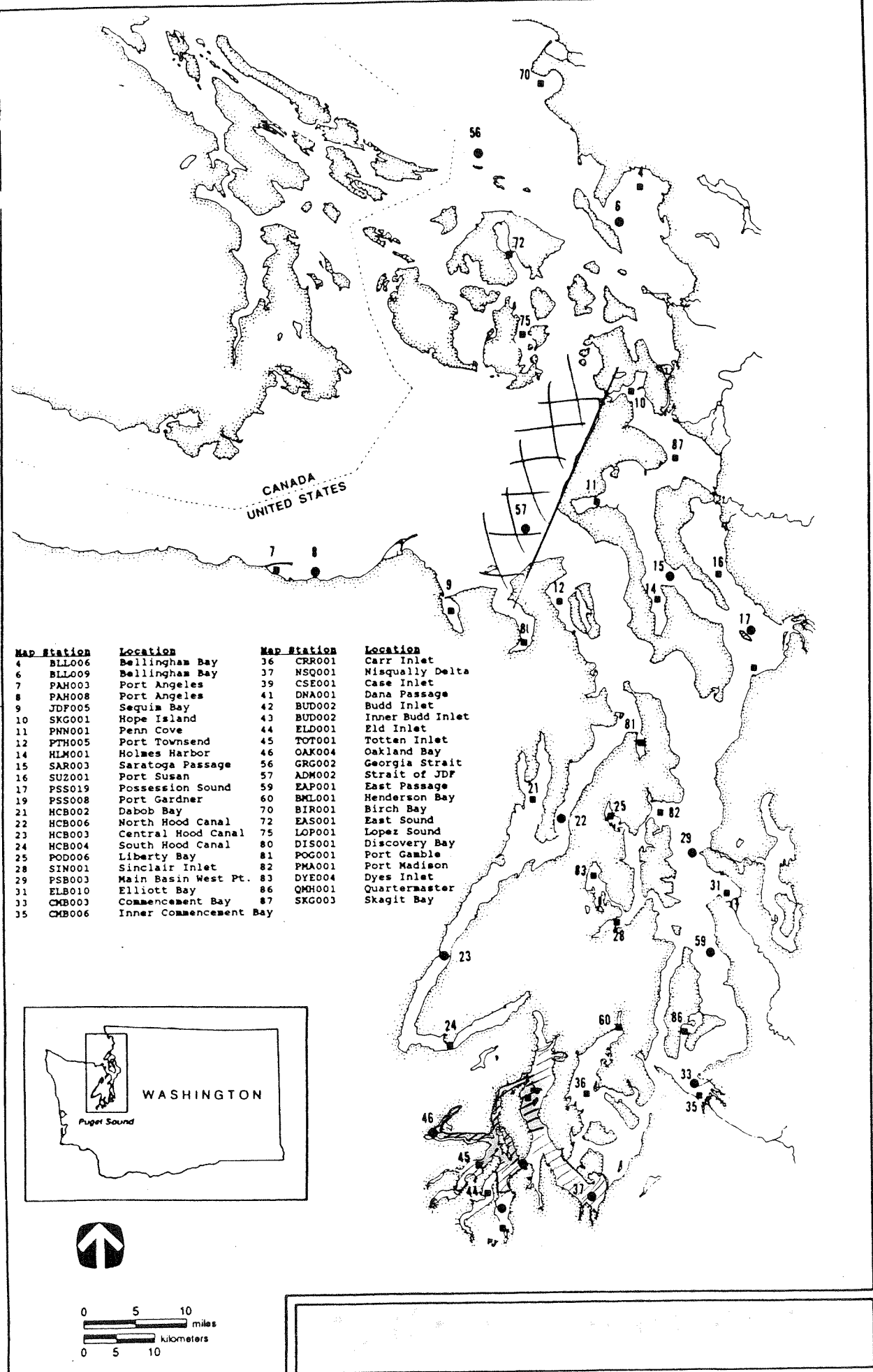


| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequia Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PHA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 11          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 13          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 15          | CMB006 Inner Commencement Bay |             |                         |



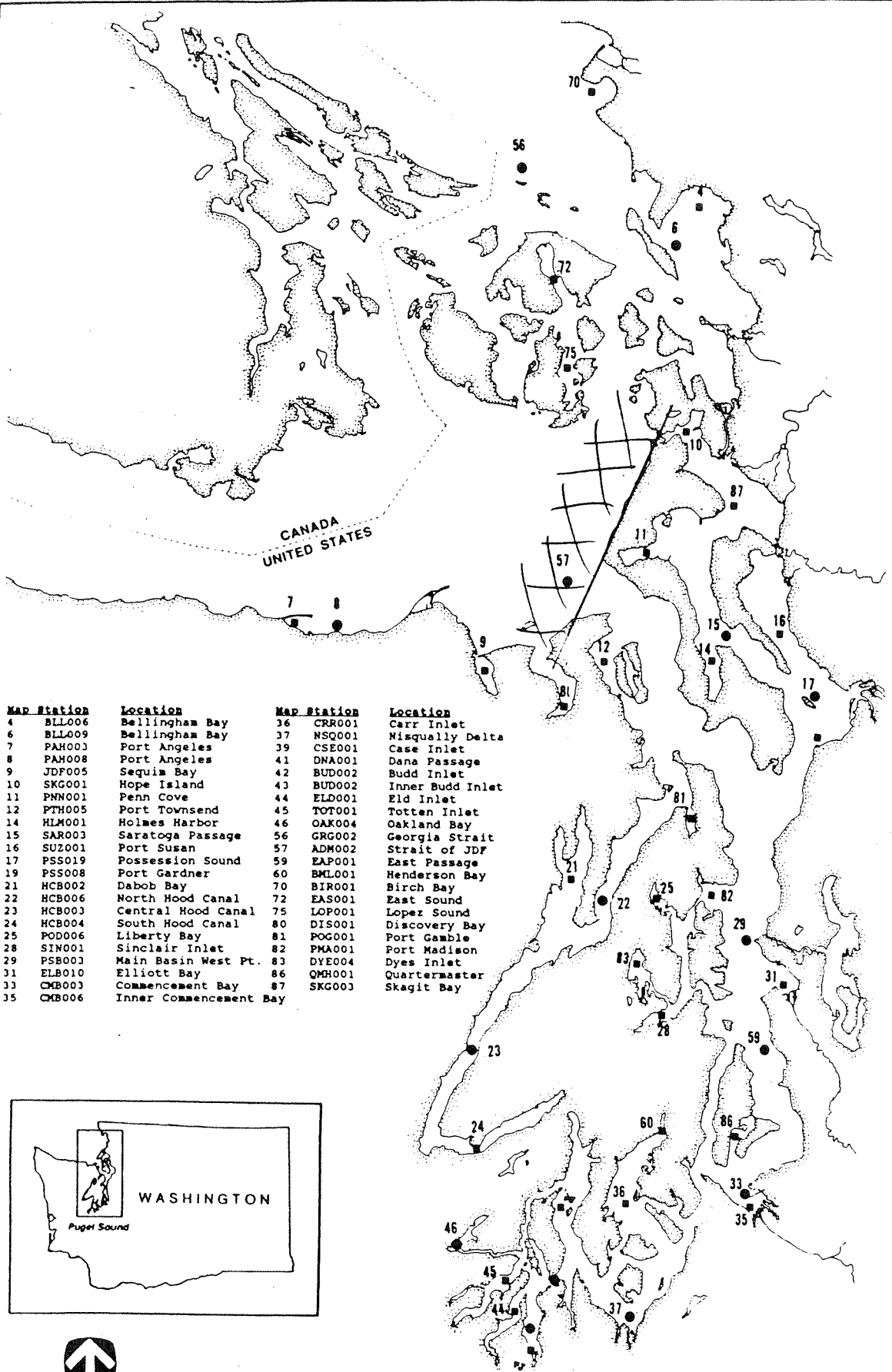
PCK 001 SURF NEAP

NEAT  
96 x 7  
SPRING  
108? x 7

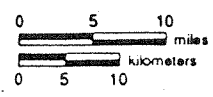
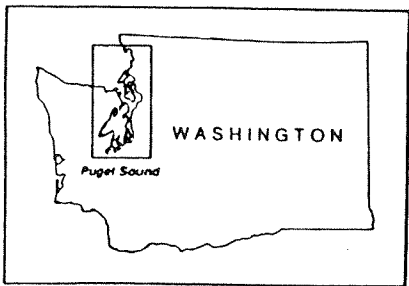


Alcap  
28x40cm

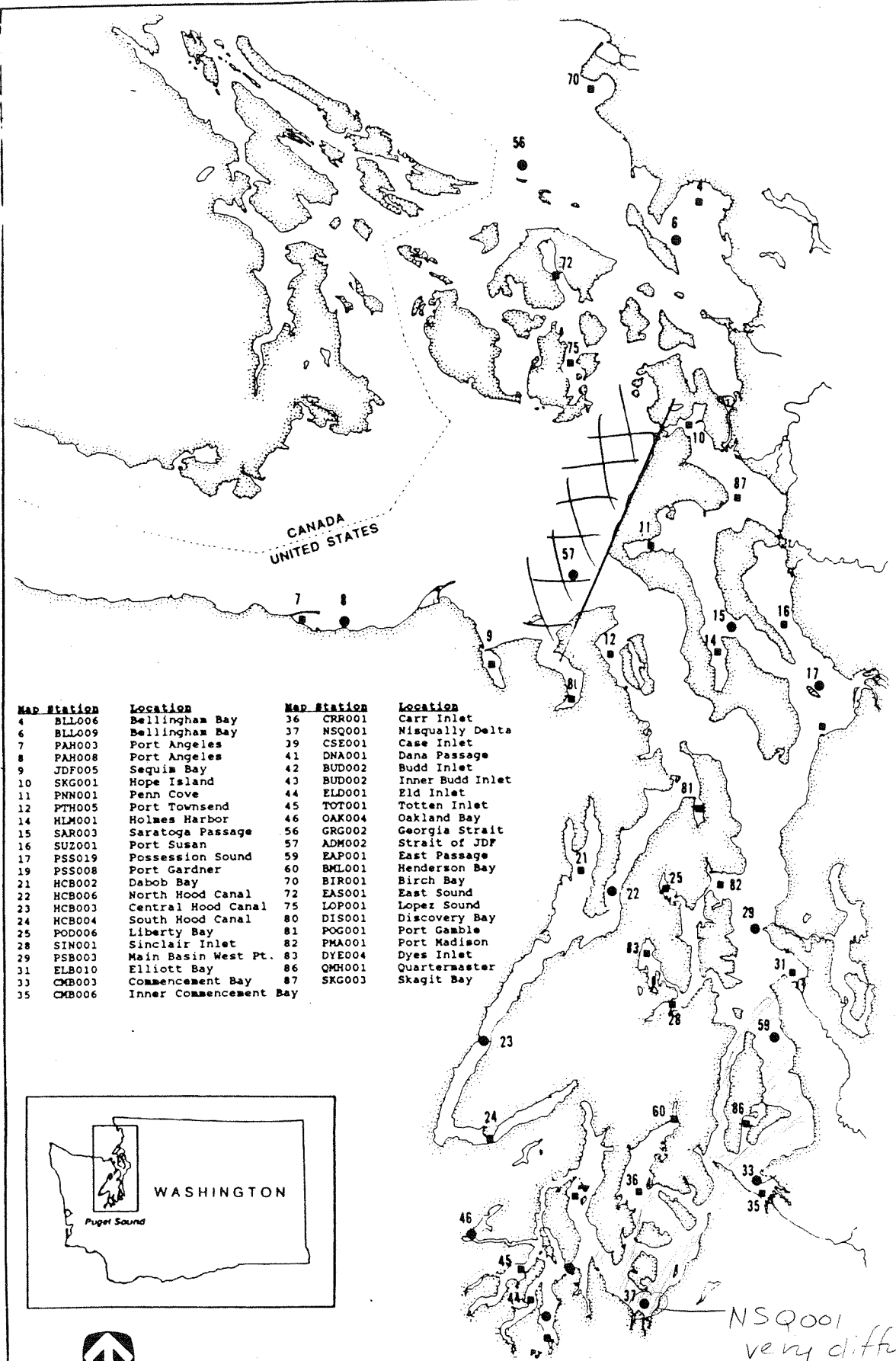
Salt/Bottom



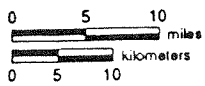
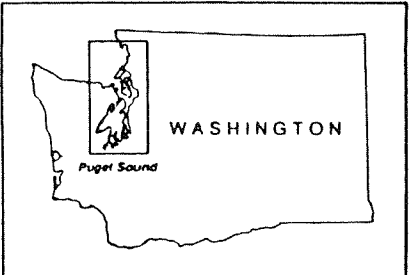
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 6           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 7           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 8           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 9           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 10          | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 11          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 12          | PNH001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 13          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



OAK 004

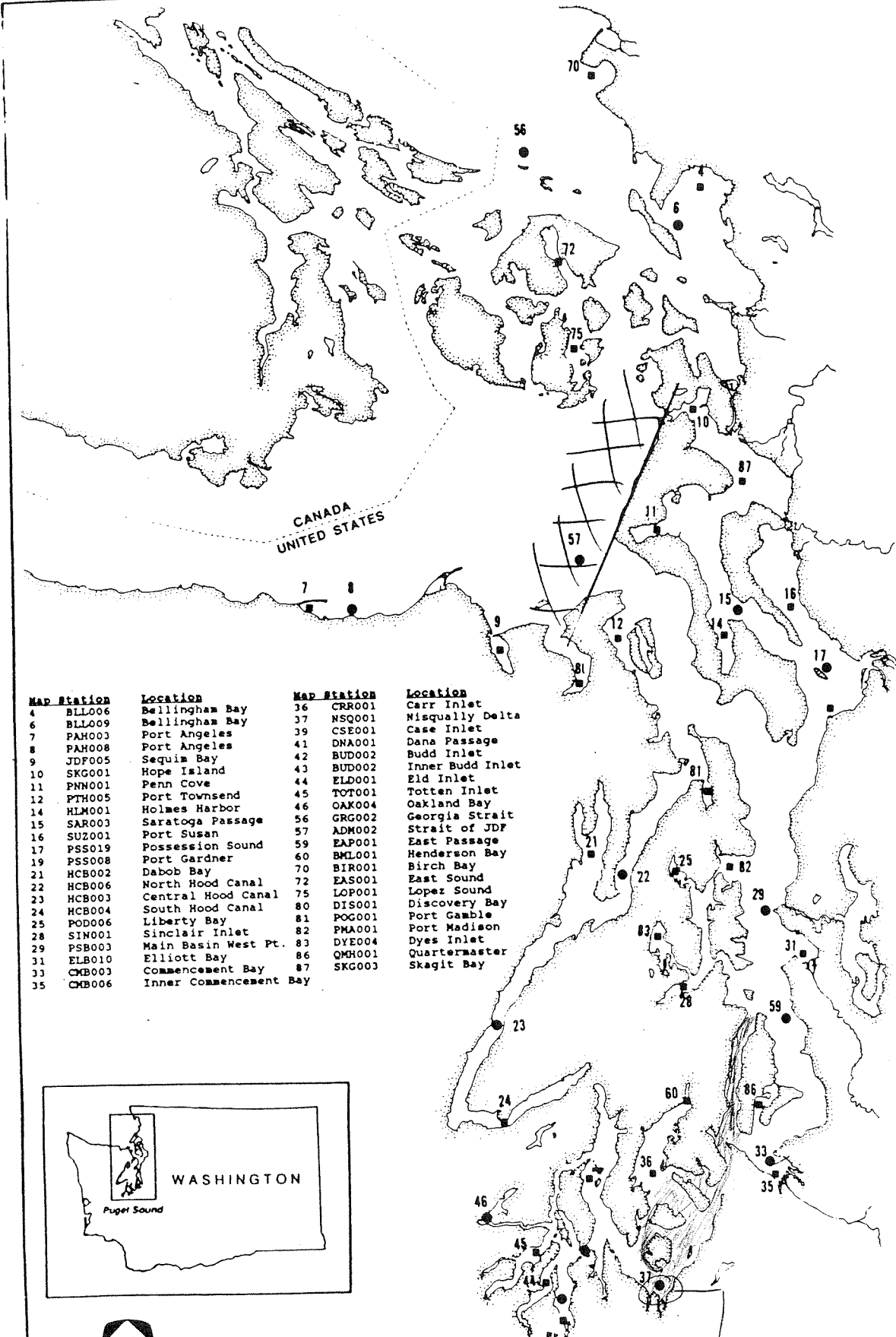


| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PHA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SRG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

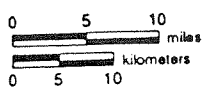
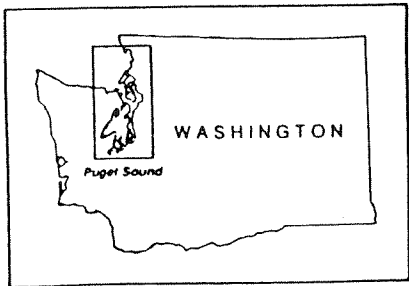


NSQ001  
very diffused -  
hard to see

NSQ001/SFE SPRING

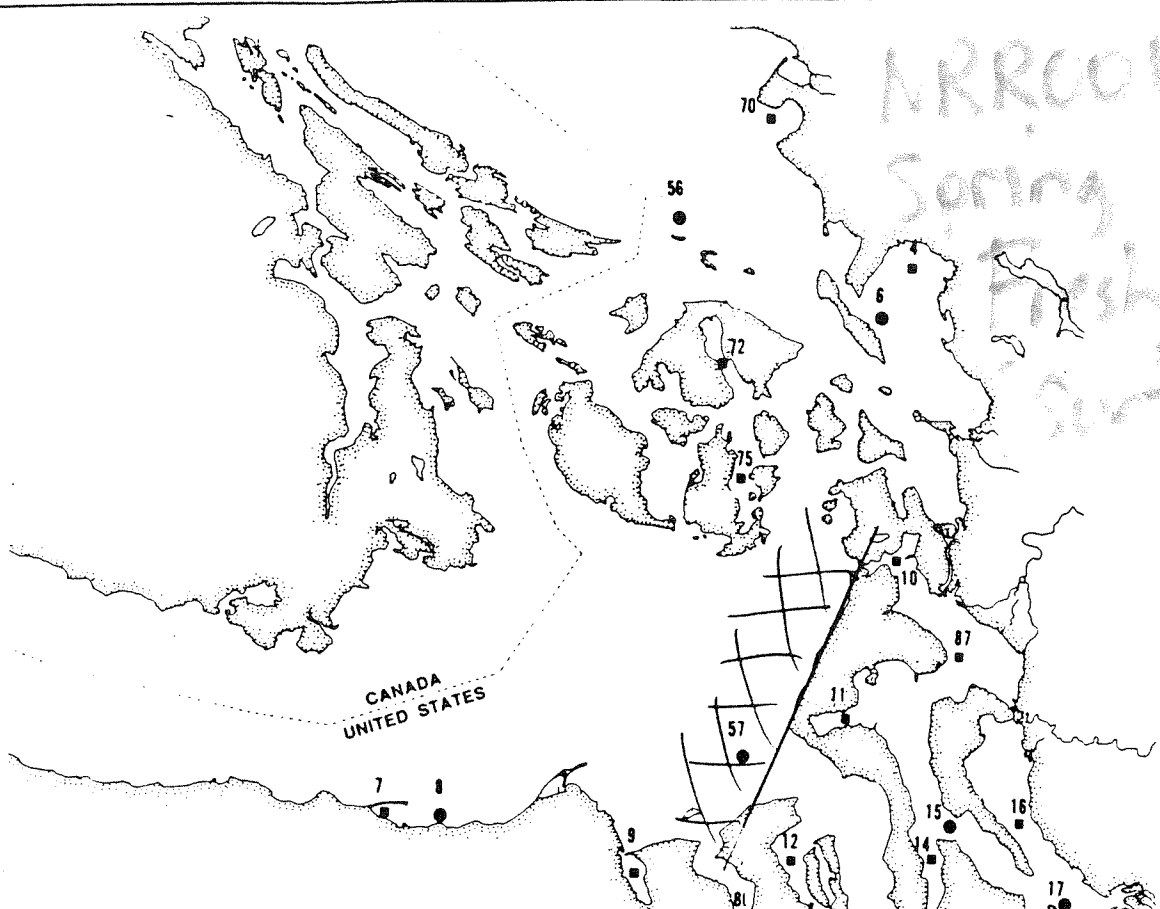


| MAP Station | Location | MAP Station            | Location |        |                  |
|-------------|----------|------------------------|----------|--------|------------------|
| 4           | BLL006   | Bellingham Bay         | 36       | CRR001 | Carr Inlet       |
| 6           | BLL009   | Bellingham Bay         | 37       | NSQ001 | Nisqually Delta  |
| 7           | PAH003   | Port Angeles           | 39       | CSE001 | Case Inlet       |
| 8           | PAH008   | Port Angeles           | 41       | DNA001 | Dana Passage     |
| 9           | JDF005   | Sequia Bay             | 42       | BUD002 | Budd Inlet       |
| 10          | SKG001   | Hope Island            | 43       | BUD002 | Inner Budd Inlet |
| 11          | PNN001   | Penn Cove              | 44       | ELD001 | Eld Inlet        |
| 12          | PTH005   | Port Townsend          | 45       | TOT001 | Totten Inlet     |
| 14          | HLM001   | Holmes Harbor          | 46       | OAK004 | Oakland Bay      |
| 15          | SAR003   | Saratoga Passage       | 56       | GRG002 | Georgia Strait   |
| 16          | SUZ001   | Port Susan             | 57       | ADM002 | Strait of JDF    |
| 17          | PSS019   | Possession Sound       | 59       | EAP001 | East Passage     |
| 19          | PSS008   | Port Gardner           | 60       | BML001 | Henderson Bay    |
| 21          | HCB002   | Dabob Bay              | 70       | BIR001 | Birch Bay        |
| 22          | HCB006   | North Hood Canal       | 72       | EAS001 | East Sound       |
| 23          | HCB003   | Central Hood Canal     | 75       | LSP001 | Lopez Sound      |
| 24          | HCB004   | South Hood Canal       | 80       | DIS001 | Discovery Bay    |
| 25          | POD006   | Liberty Bay            | 81       | POG001 | Port Gamble      |
| 28          | SIN001   | Sinclair Inlet         | 82       | PMA001 | Port Madison     |
| 29          | PSB003   | Main Basin West Pt.    | 83       | DYE004 | Dyes Inlet       |
| 31          | ELB010   | Elliott Bay            | 86       | QMH001 | Quartermaster    |
| 33          | CMB003   | Commencement Bay       | 87       | SKG003 | Skagit Bay       |
| 35          | CMB006   | Inner Commencement Bay |          |        |                  |

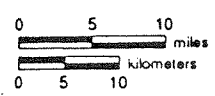
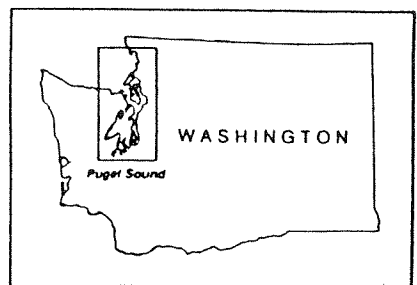


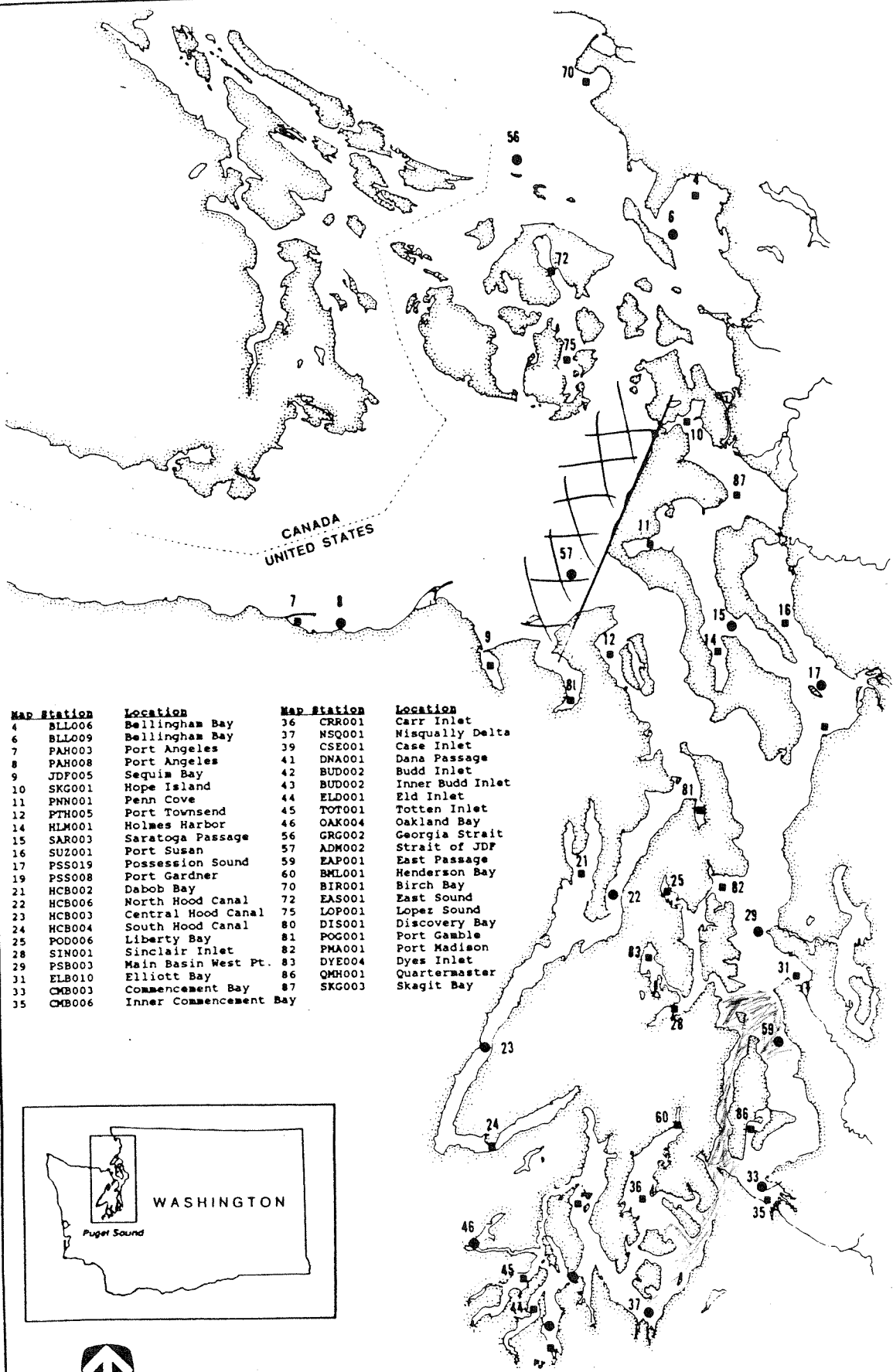
NSQ001 / SE NEAP

NRR001  
Spring  
Fresh  
Surficial

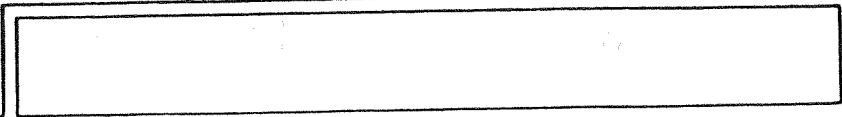
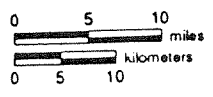
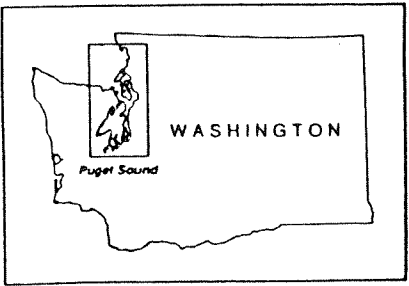


| Map Station | Location | Map Station            | Location |        |                  |
|-------------|----------|------------------------|----------|--------|------------------|
| 4           | BLL006   | Bellingham Bay         | 36       | CRR001 | Carr Inlet       |
| 6           | BLL009   | Bellingham Bay         | 37       | NSQ001 | Misqually Delta  |
| 7           | PAH003   | Port Angeles           | 39       | CSE001 | Casa Inlet       |
| 8           | PAH008   | Port Angeles           | 41       | DNA001 | Dana Passage     |
| 9           | JDP005   | Sequia Bay             | 42       | BUD002 | Budd Inlet       |
| 10          | SKG001   | Hope Island            | 43       | BUD002 | Inner Budd Inlet |
| 11          | PNN001   | Penn Cove              | 44       | ELD001 | Eld Inlet        |
| 12          | PTH005   | Port Townsend          | 45       | TOT001 | Totten Inlet     |
| 14          | HLM001   | Holmes Harbor          | 46       | OAK004 | Oakland Bay      |
| 15          | SAR003   | Saratoga Passage       | 56       | GRG002 | Georgia Strait   |
| 16          | SUZ001   | Port Susan             | 57       | ADM002 | Strait of JDF    |
| 17          | PSS019   | Possession Sound       | 59       | EAP001 | East Passage     |
| 19          | PSS008   | Port Gardner           | 60       | BML001 | Henderson Bay    |
| 21          | HCB002   | Dabob Bay              | 70       | BIR001 | Birch Bay        |
| 22          | HCB006   | North Hood Canal       | 72       | EAS001 | East Sound       |
| 23          | HCB003   | Central Hood Canal     | 75       | LOP001 | Lopez Sound      |
| 24          | HCB004   | South Hood Canal       | 80       | DIS001 | Discovery Bay    |
| 25          | POD006   | Liberty Bay            | 81       | POG001 | Port Gamble      |
| 28          | SIN001   | Sinclair Inlet         | 82       | PHA001 | Port Madison     |
| 29          | PSB003   | Main Basin West Pt.    | 83       | DYE004 | Dyes Inlet       |
| 31          | ELB010   | Elliott Bay            | 86       | QMH001 | Quartermaster    |
| 33          | CMB003   | Commencement Bay       | 87       | SKG003 | Skagit Bay       |
| 35          | CMB006   | Inner Commencement Bay |          |        |                  |





| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



NOV



NRR001

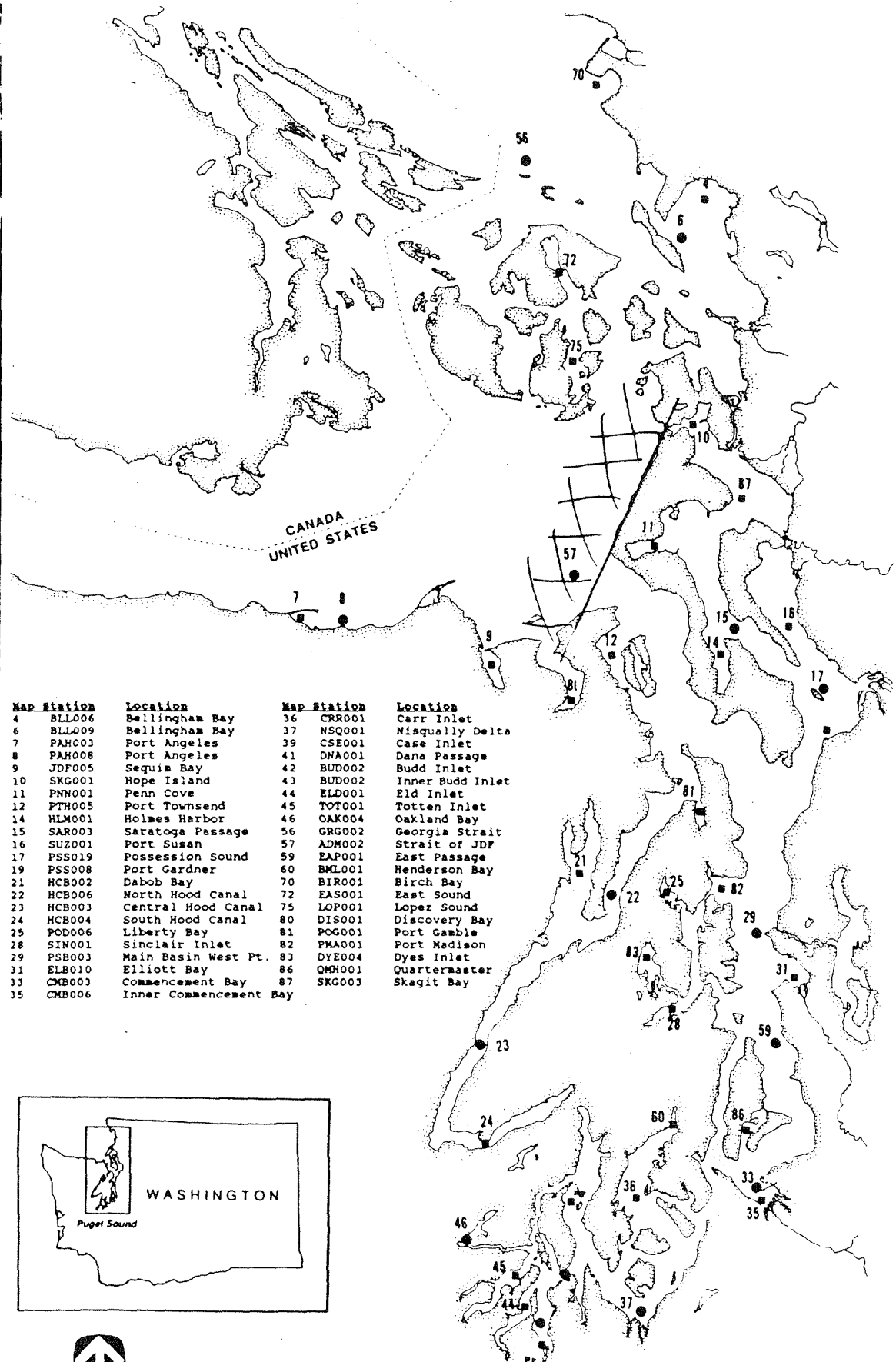
Spring

Salt

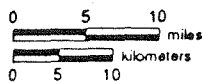
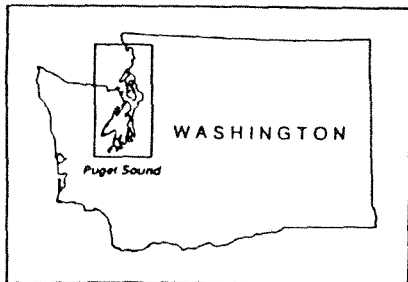
K.D.E.

Note:  
Dye dispersed  
eyond limits  
of visibility.

57



| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNW001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



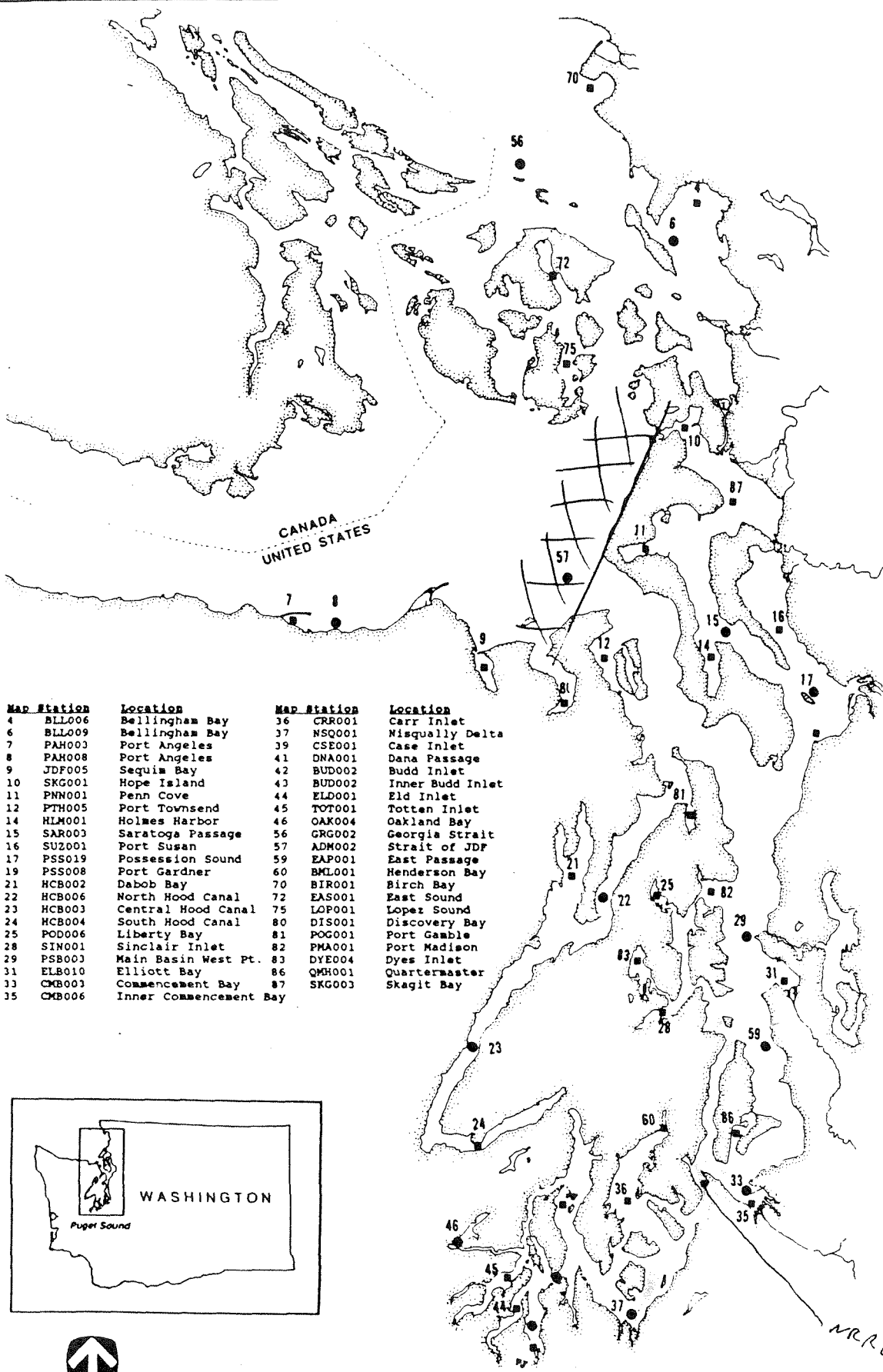
NR001

Neop  
Salt

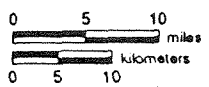
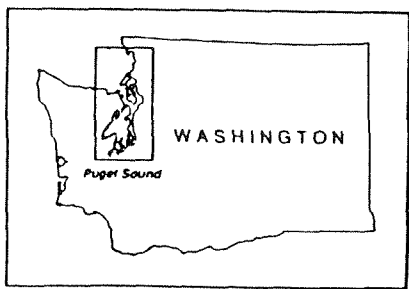
K.D.z

Notes dye  
dispersed to  
limits of  
visibility

57



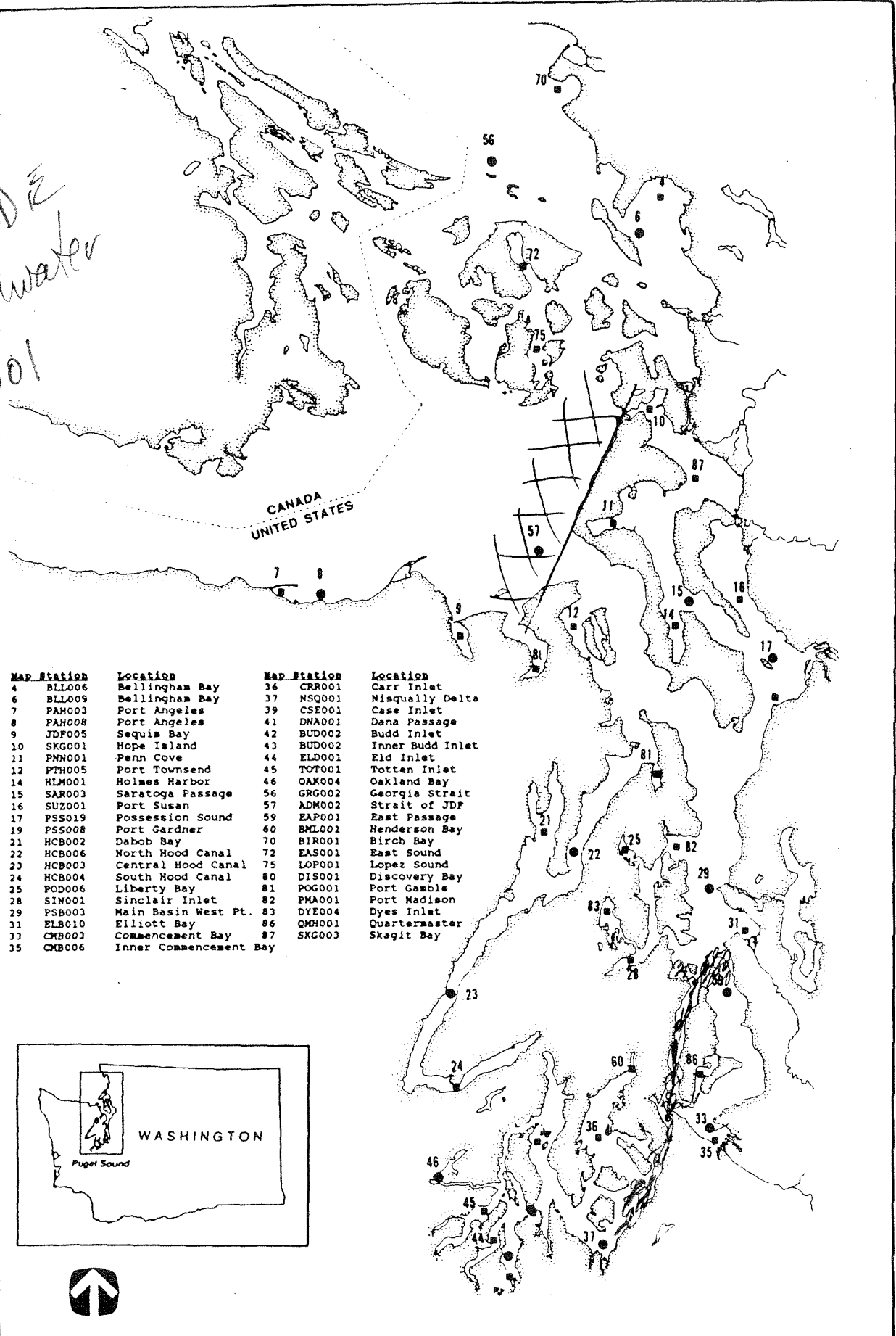
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB001 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



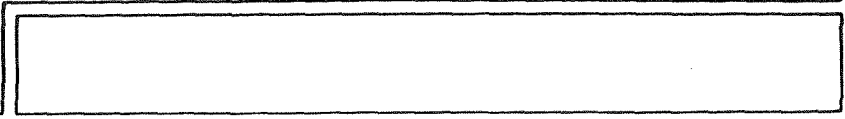
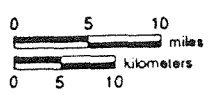
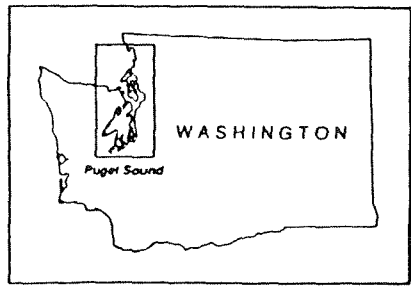
NR001

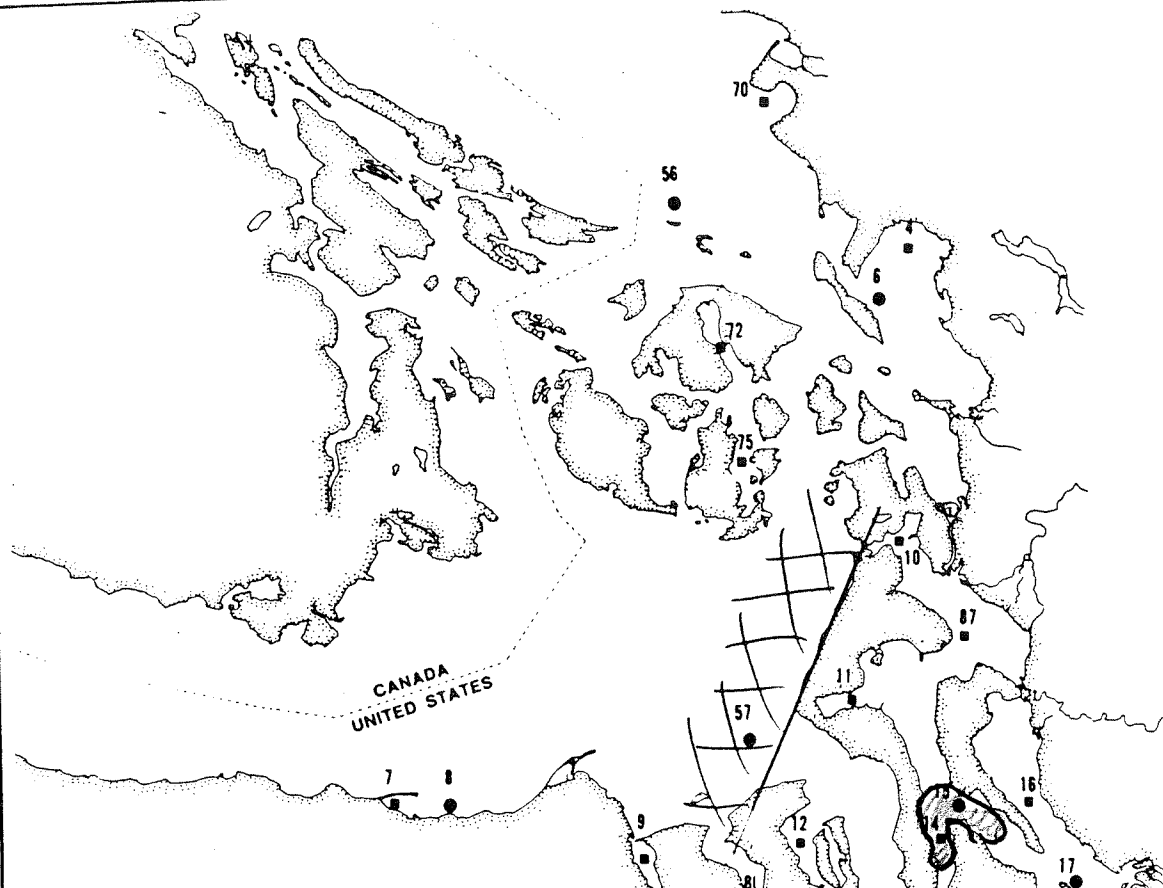


NEAA  
TIDIE  
freshwater  
NRR 001  
1.0ml. of  
F.W.  
by the narrow  
passage with  
(~20cm)



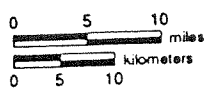
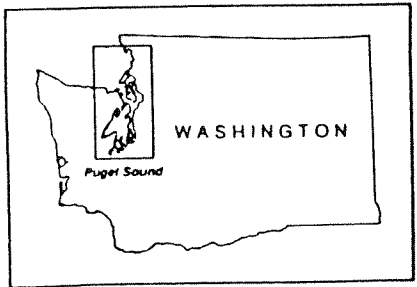
| MAP Station | Location                     | MAP Station | Location                |
|-------------|------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay        | 36          | CR001 Carr Inlet        |
| 6           | BLL009 Bellingham Bay        | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles          | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles          | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay            | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island           | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove             | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend         | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor         | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage      | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan            | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound      | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner          | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay             | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal      | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal    | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal      | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay           | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet        | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.   | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay           | 86          | QMR001 Quartermaster    |
| 33          | CM002 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CM006 Inner Commencement Bay |             |                         |



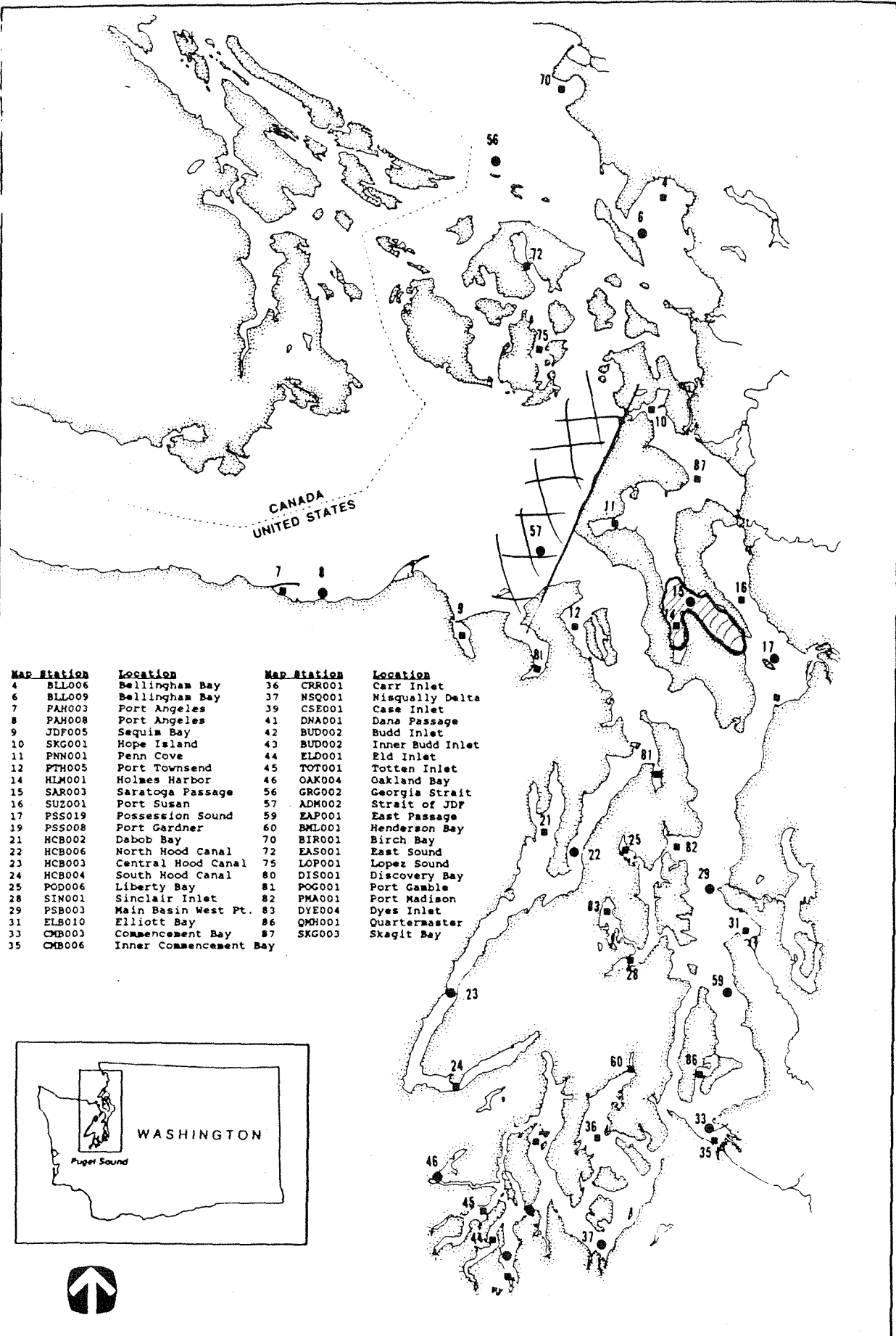


| MAP Station | Location                      |
|-------------|-------------------------------|
| 4           | BLLO06 Bellingham Bay         |
| 6           | BLLO09 Bellingham Bay         |
| 7           | PAHO03 Port Angeles           |
| 8           | PAHO08 Port Angeles           |
| 9           | JDF005 Sequim Bay             |
| 10          | SKG001 Hope Island            |
| 11          | PNN001 Penn Cove              |
| 12          | PTH005 Port Townsend          |
| 14          | HLM001 Holmes Harbor          |
| 15          | SAR003 Saratoga Passage       |
| 16          | SUZ001 Port Susan             |
| 17          | PSS019 Possession Sound       |
| 19          | PSS008 Port Gardner           |
| 21          | HCB002 Dabob Bay              |
| 22          | HCB006 North Hood Canal       |
| 23          | HCB003 Central Hood Canal     |
| 24          | HCB004 South Hood Canal       |
| 25          | POD006 Liberty Bay            |
| 28          | SIN001 Sinclair Inlet         |
| 29          | PSB003 Main Basin West Pt.    |
| 31          | ELB010 Elliott Bay            |
| 33          | CHB003 Commencement Bay       |
| 35          | CHB006 Inner Commencement Bay |

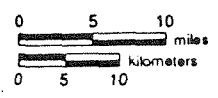
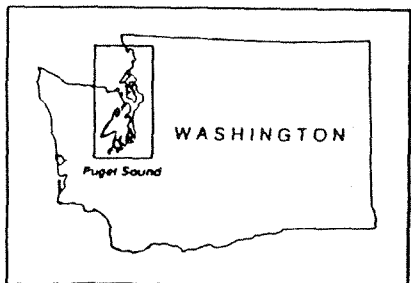
| Map Station | Location                |
|-------------|-------------------------|
| 36          | CRR001 Carr Inlet       |
| 37          | NSQ001 Nisqually Delta  |
| 39          | CSE001 Case Inlet       |
| 41          | DNA001 Dana Passage     |
| 42          | BUD002 Budd Inlet       |
| 43          | BUD002 Inner Budd Inlet |
| 44          | ELD001 Eld Inlet        |
| 45          | TOT001 Totten Inlet     |
| 46          | OAK004 Oakland Bay      |
| 56          | GRG002 Georgia Strait   |
| 57          | ADM002 Strait of JDF    |
| 59          | EAP001 East Passage     |
| 60          | BML001 Henderson Bay    |
| 70          | BIR001 Birch Bay        |
| 72          | EAS001 East Sound       |
| 75          | LOP001 Lopez Sound      |
| 80          | DIS001 Discovery Bay    |
| 81          | POG001 Port Gamble      |
| 82          | PMA001 Port Madison     |
| 83          | DYE004 Dyes Inlet       |
| 86          | QMH001 Quartermaster    |
| 87          | SKG003 Skagit Bay       |



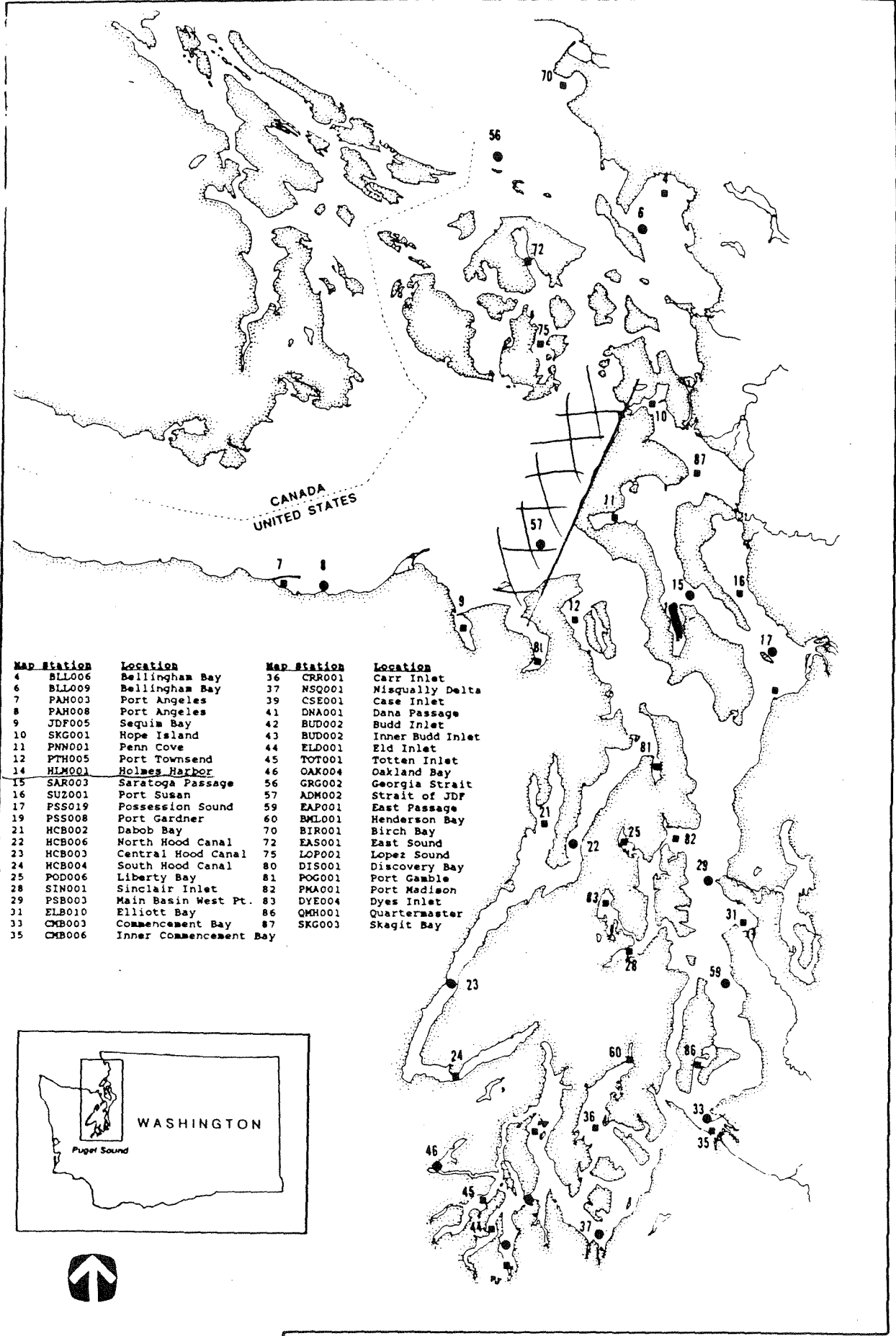
HLM001 NEAP IMI  
SURF



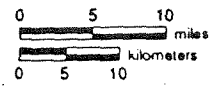
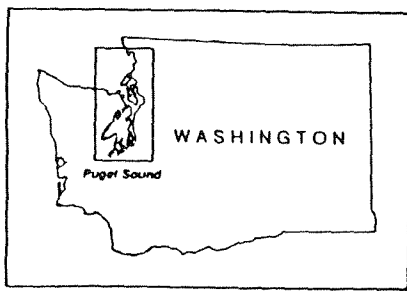
| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELS010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



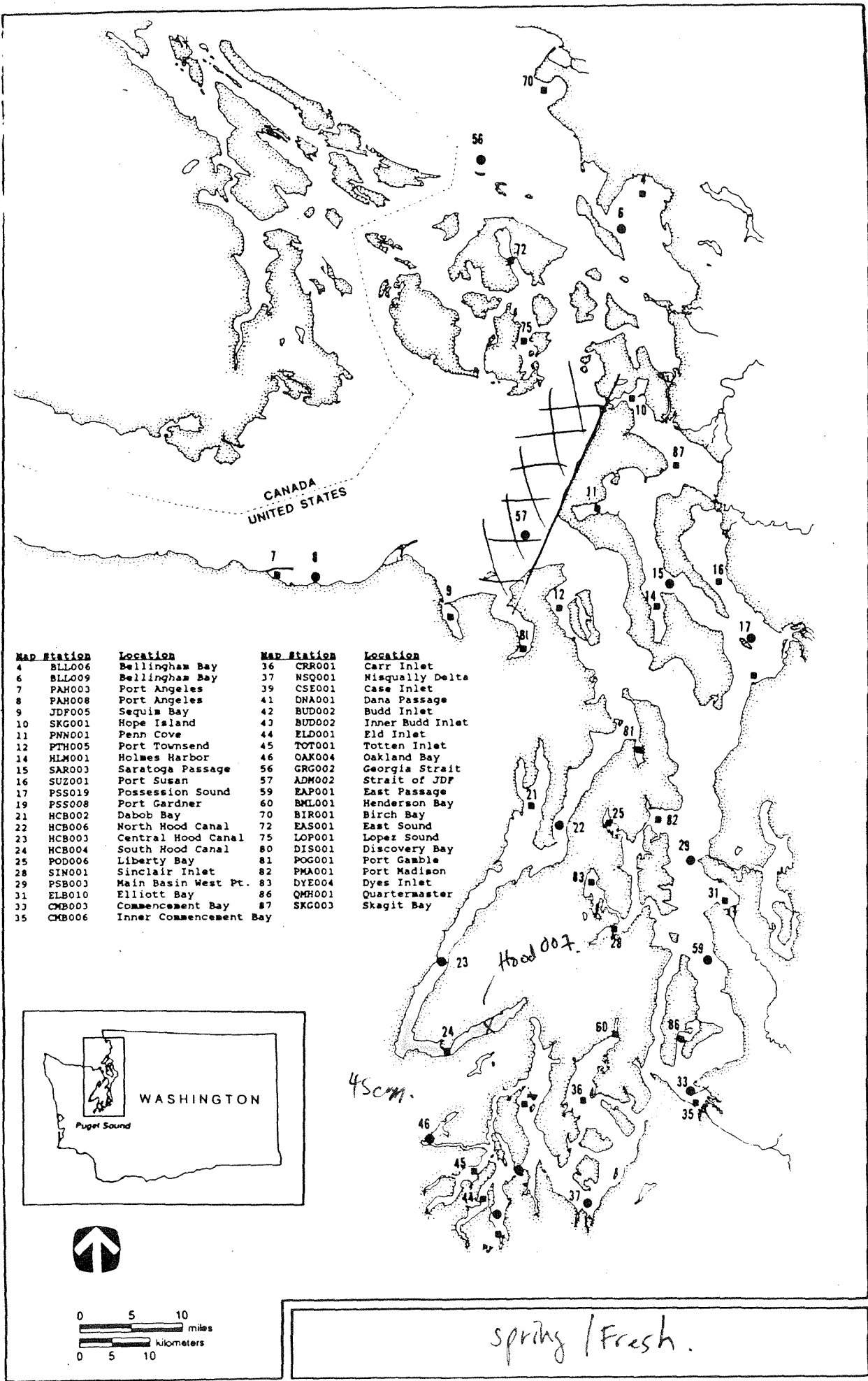
HLM001 <sup>Surf</sup> Spring IMI



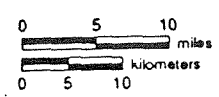
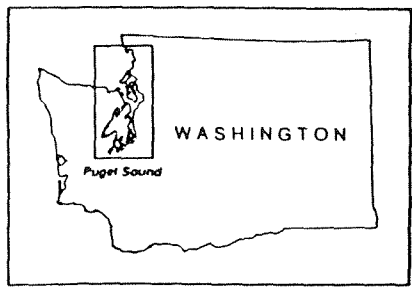
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNM001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 <u>Holmes Harbor</u>   | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



HLM001 NEAR Bottom

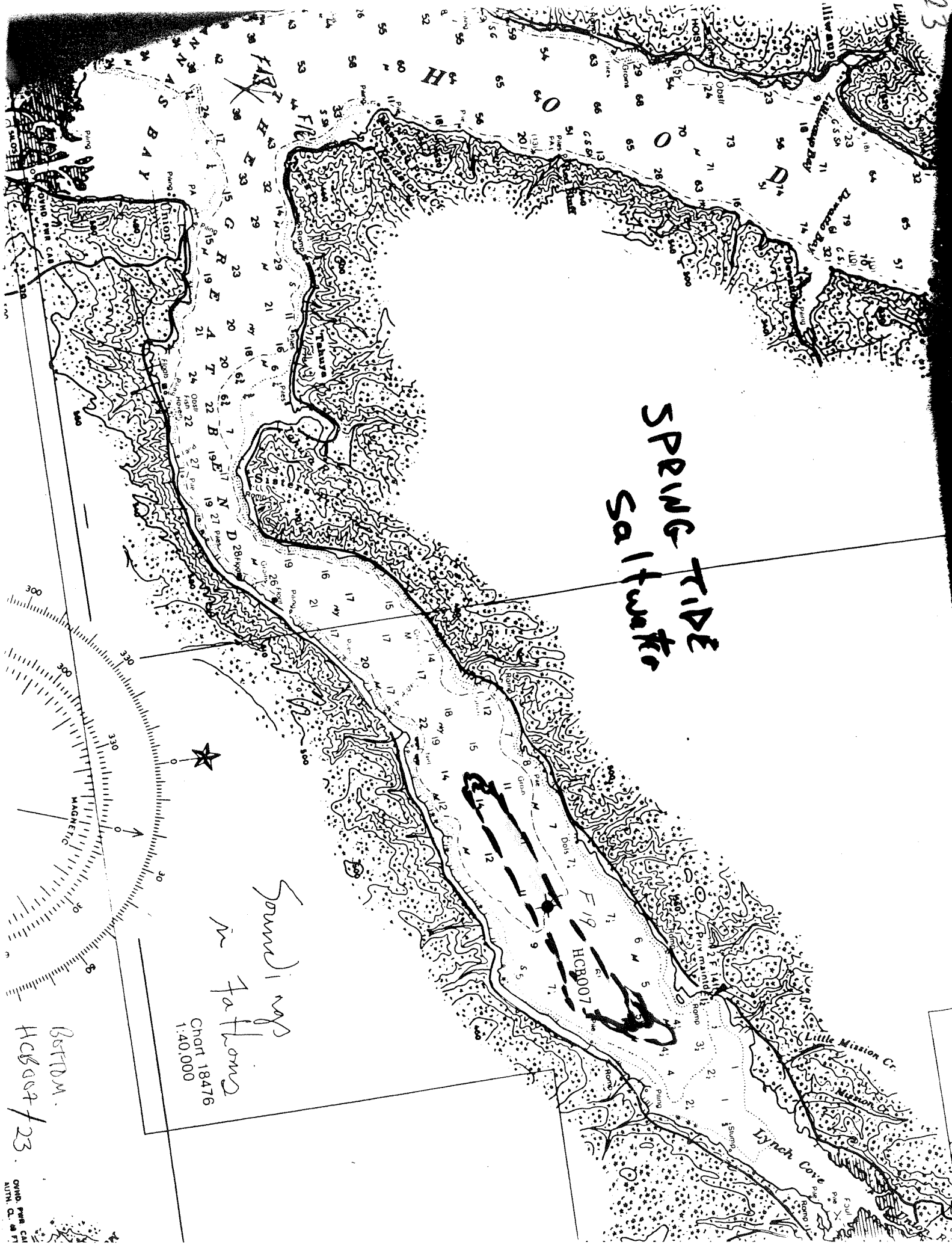


| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



spring / Fresh.



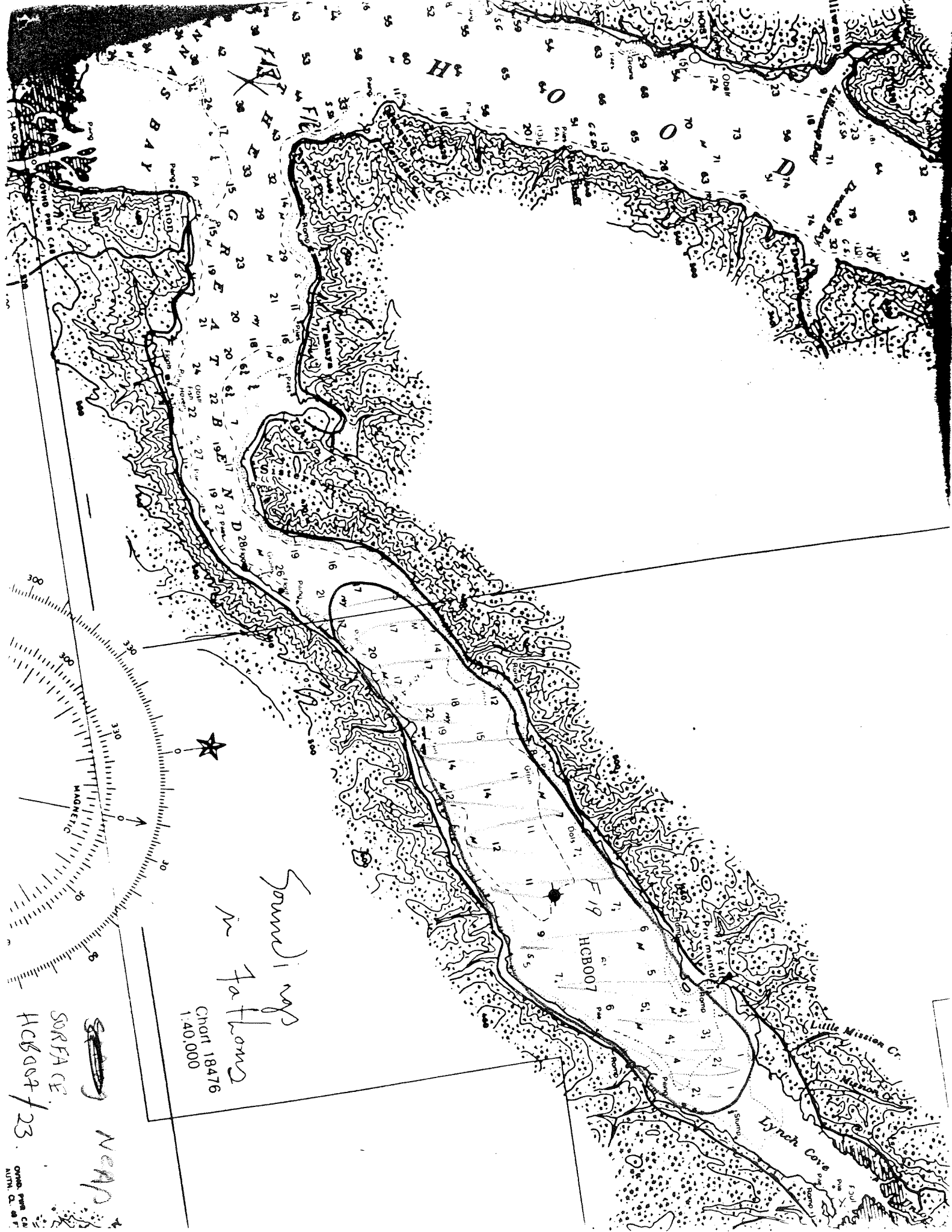


SPRING TIDE  
Saltsuck

Soundings  
in fathoms

Chart 18476  
1:40,000

BOTTOM  
HCR007/23

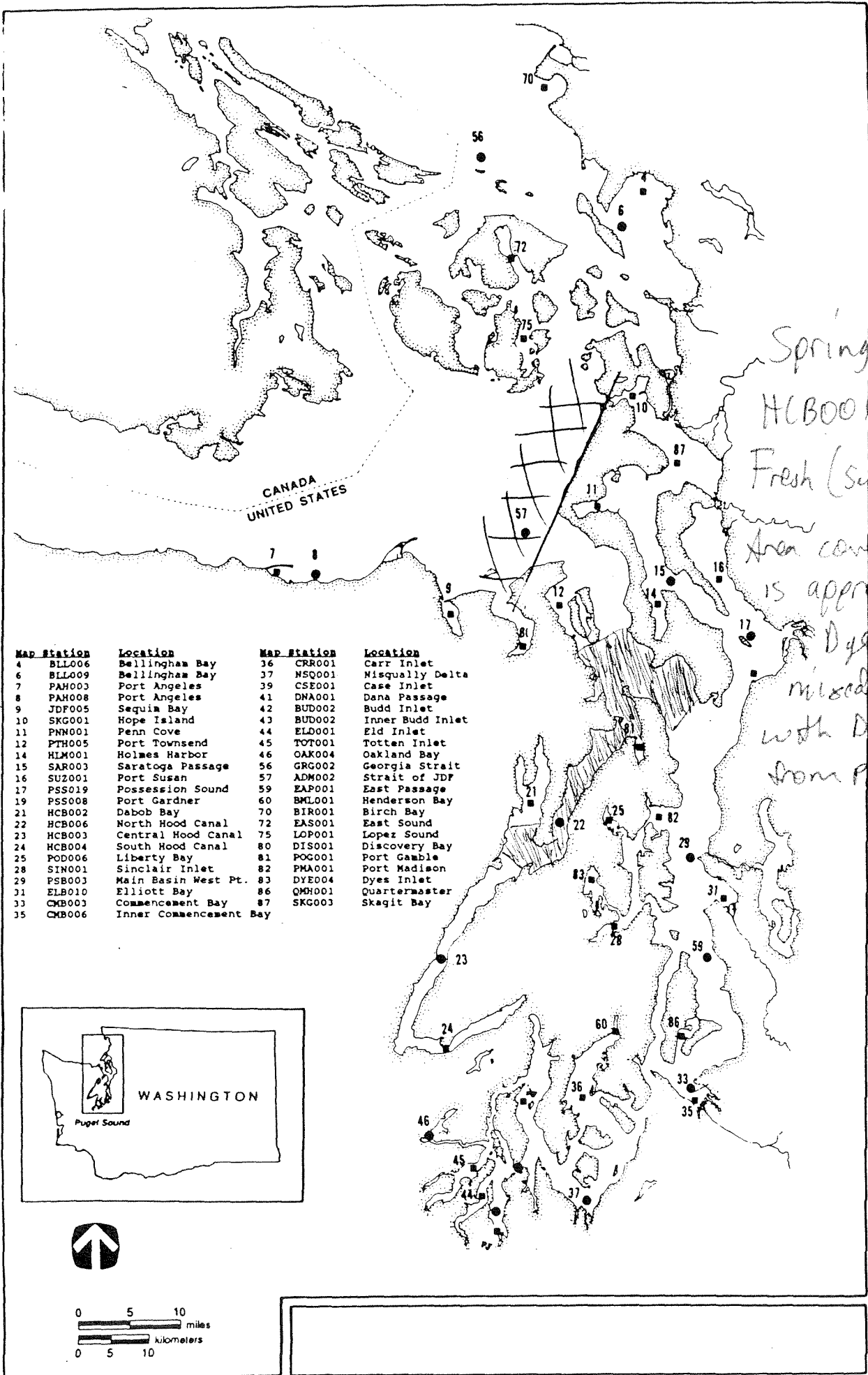


Soundings  
in Fathoms

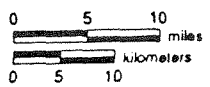
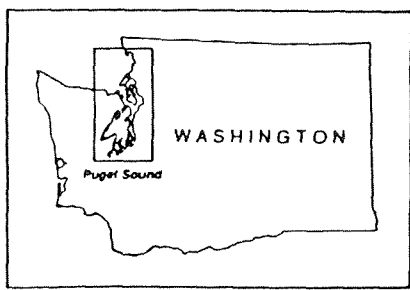
Chart 18476  
1:40,000

SURFACE  
HC8007 / 23  
NEAP

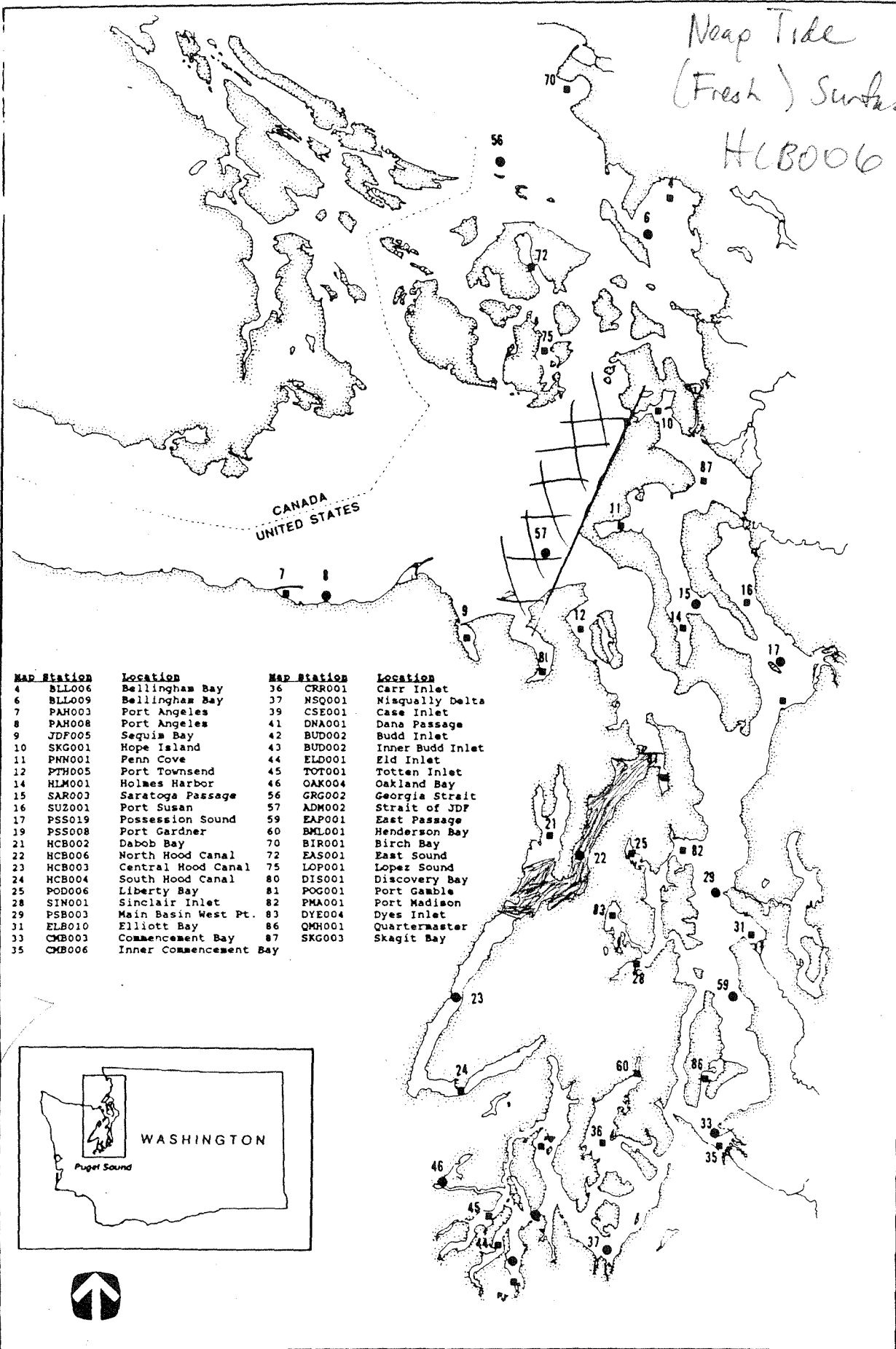
UNITED STATES  
NAVY



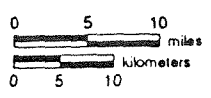
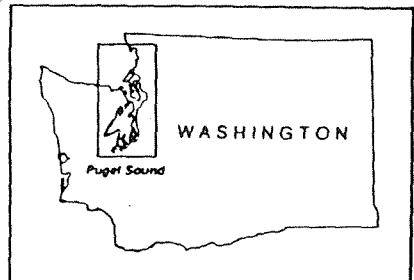
Spring  
 HCB006  
 Fresh (surface)  
 Area covered  
 is approx.  
 Dye  
 mixed  
 with Dye  
 from P06a



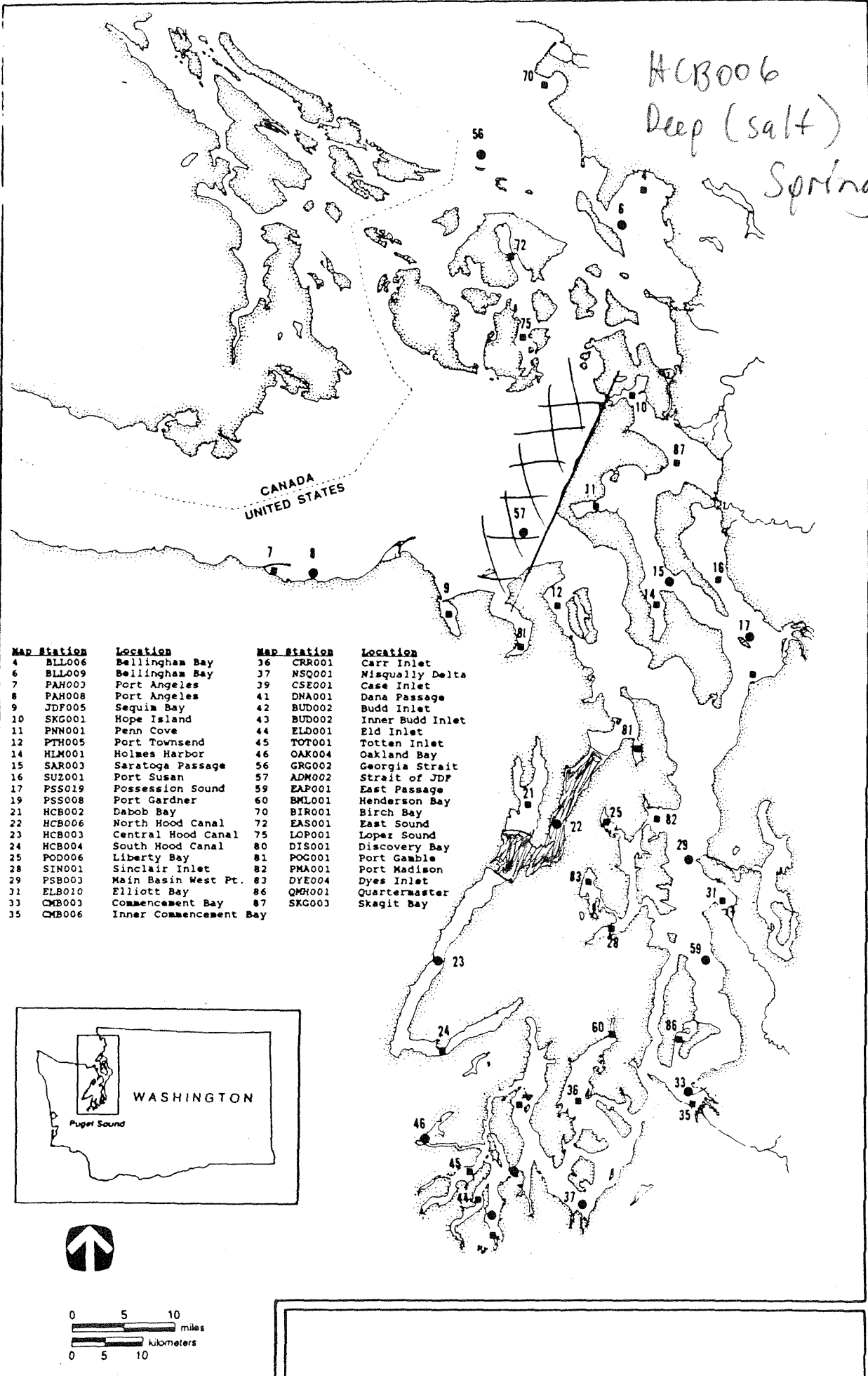
Neap Tide  
(Fresh) Surface  
HCB006



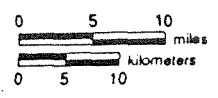
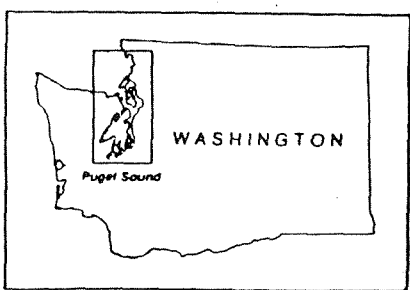
| MAP Station | Location | MAP Station            | Location |        |                  |
|-------------|----------|------------------------|----------|--------|------------------|
| 4           | BLL006   | Bellingham Bay         | 36       | CRR001 | Carr Inlet       |
| 6           | BLL009   | Bellingham Bay         | 37       | NSQ001 | Nisqually Delta  |
| 7           | PAH003   | Port Angeles           | 39       | CSE001 | Case Inlet       |
| 8           | PAH008   | Port Angeles           | 41       | DNA001 | Dana Passage     |
| 9           | JDF005   | Sequim Bay             | 42       | BUD002 | Budd Inlet       |
| 10          | SKG001   | Hope Island            | 43       | BUD002 | Inner Budd Inlet |
| 11          | PNN001   | Penn Cove              | 44       | ELD001 | Eld Inlet        |
| 12          | PTH005   | Port Townsend          | 45       | TOT001 | Totten Inlet     |
| 14          | HLM001   | Holmes Harbor          | 46       | OAK004 | Oakland Bay      |
| 15          | SAR003   | Saratoga Passage       | 56       | GRG002 | Georgia Strait   |
| 16          | SUZ001   | Port Susan             | 57       | ADM002 | Strait of JDF    |
| 17          | PSS019   | Possession Sound       | 59       | EAP001 | East Passage     |
| 19          | PSS008   | Port Gardner           | 60       | BML001 | Henderson Bay    |
| 21          | HCB002   | Dabob Bay              | 70       | BIR001 | Birch Bay        |
| 22          | HCB006   | North Hood Canal       | 72       | EAS001 | East Sound       |
| 23          | HCB003   | Central Hood Canal     | 75       | LOP001 | Lopez Sound      |
| 24          | HCB004   | South Hood Canal       | 80       | DIS001 | Discovery Bay    |
| 25          | POD006   | Liberty Bay            | 81       | POG001 | Port Gamble      |
| 28          | SIN001   | Sinclair Inlet         | 82       | PHA001 | Port Madison     |
| 29          | PSB003   | Main Basin West Pt.    | 83       | DYE004 | Dyes Inlet       |
| 31          | ELB010   | Elliott Bay            | 86       | QMH001 | Quartermaster    |
| 33          | CKB003   | Commencement Bay       | 87       | SKG003 | Skagit Bay       |
| 35          | CKB006   | Inner Commencement Bay |          |        |                  |

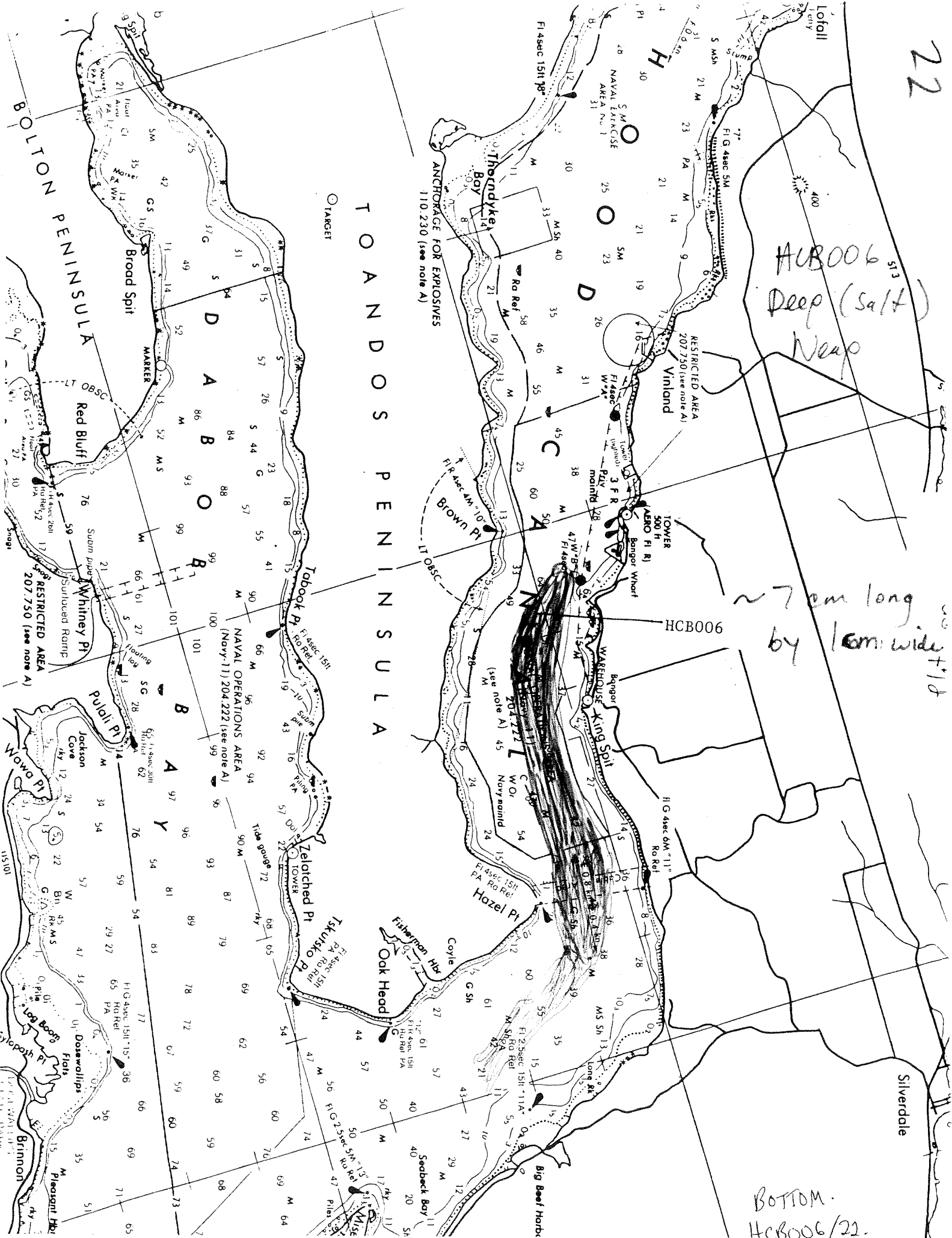


HCB006  
Deep (salt)  
Spring



| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequia Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PHN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMR001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

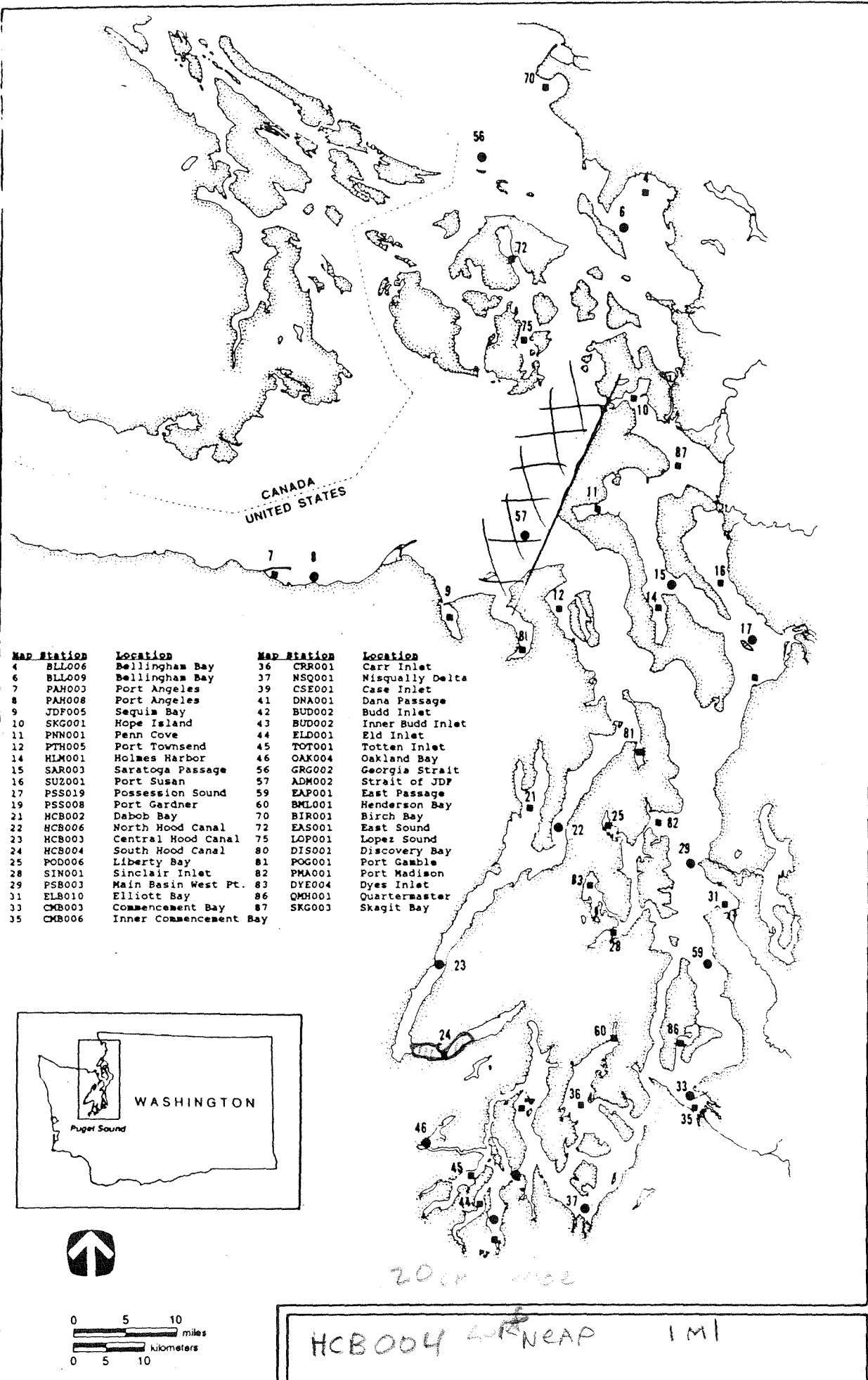




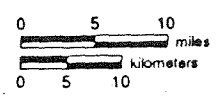
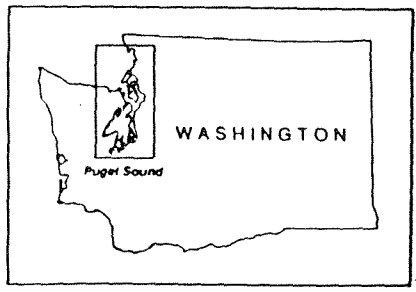
HUB006  
Deep (salt)  
Neap

~ 7 km long  
by 1 km wide

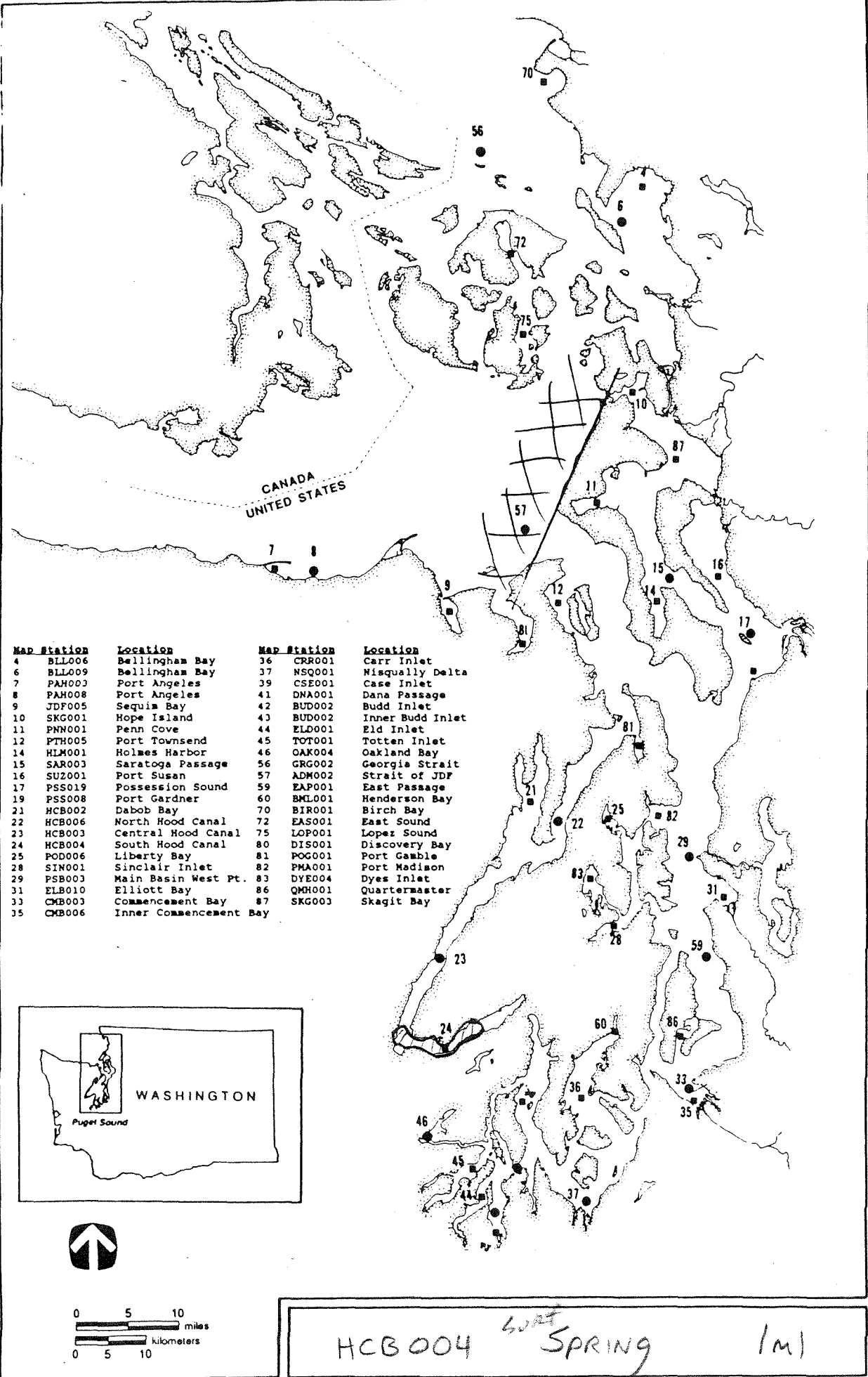
BOTTOM.  
HUB006/21.



| MAP STATION | Location                      | MAP STATION | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMR003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMR006 Inner Commencement Bay |             |                         |

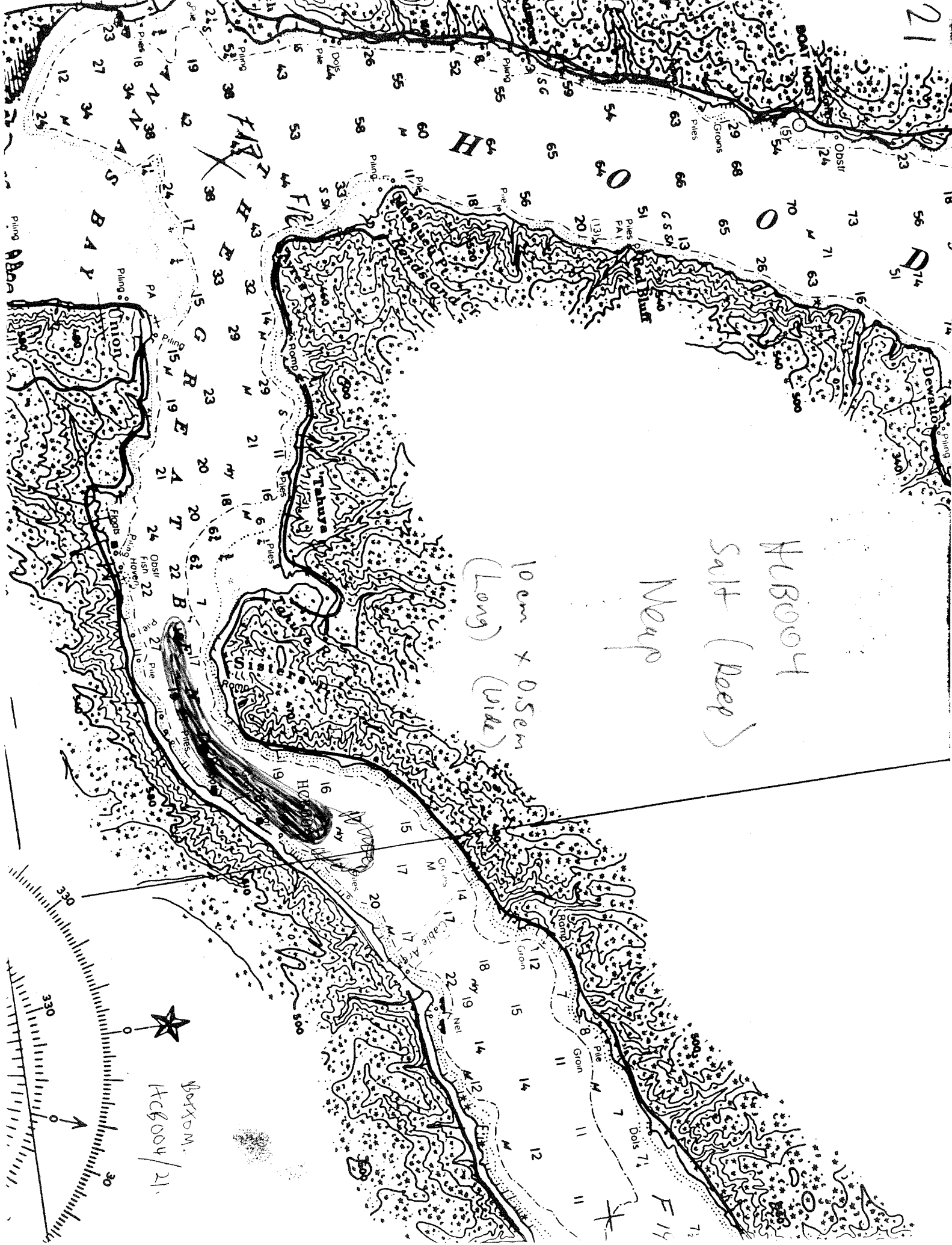


2000 1002  
 HCB004 WNEAP 1MI



HCB004 <sup>60</sup> SPRING (M)





10cm x 0.5cm  
(Long) (Wide)

Near

Salt (Deep)

ABOOR

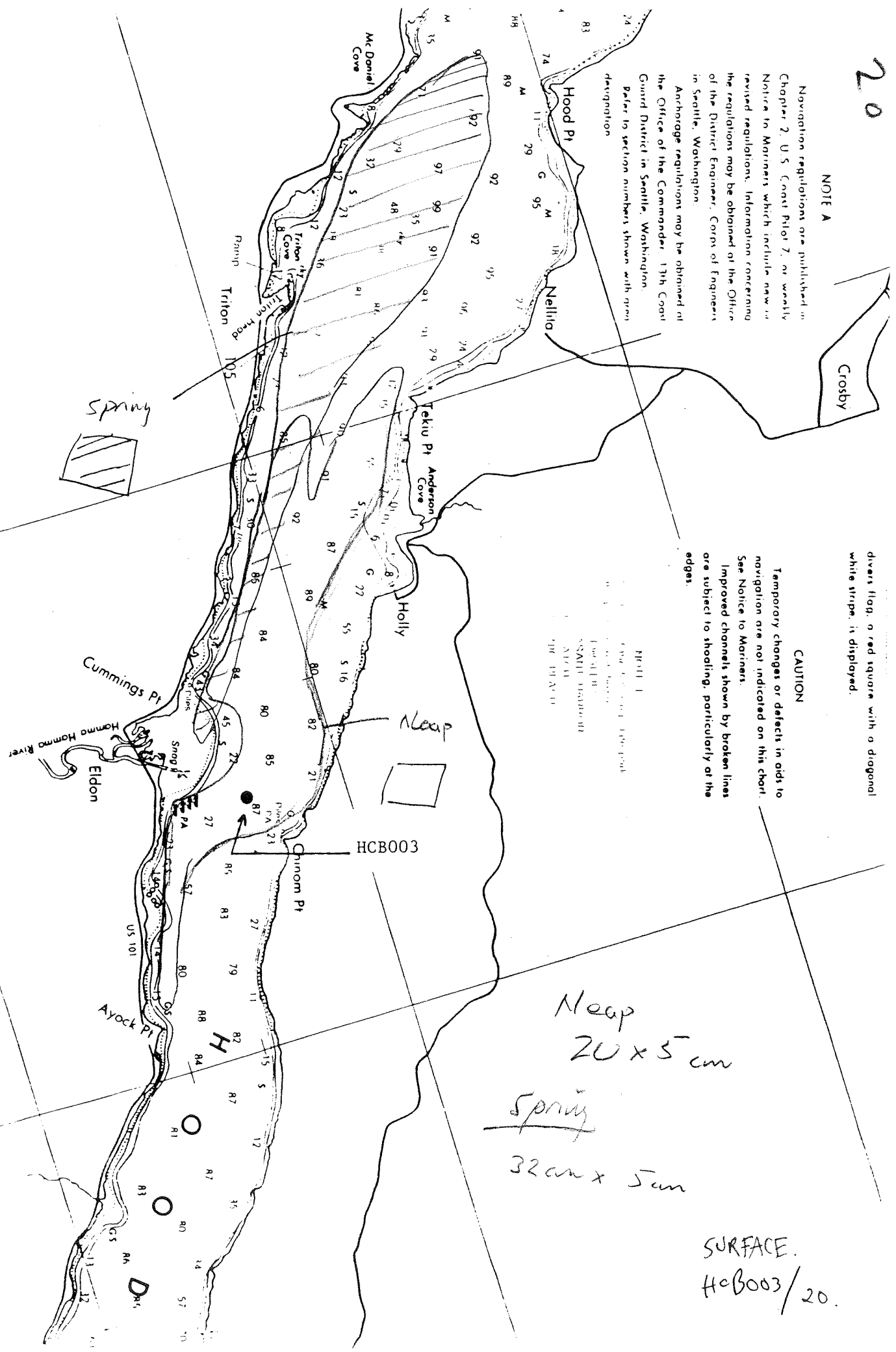
BOXTON.  
ABOOR/21.

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7, or weekly Notice to Mariners which include new or revised regulations. Information concerning the regulations may be obtained at the Office of the District Engineer, Corps of Engineers in Seattle, Washington.  
Anchorages regulations may be obtained at the Office of the Commander, 13th Coast Guard District in Seattle, Washington.  
Refer to section numbers shown with area designation.

divers flag, a red square with a diagonal white stripe, is displayed.  
**CAUTION**  
Temporary changes or defects in aids to navigation are not indicated on this chart. See Notice to Mariners.  
Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

Sheet 1  
Scale of Horizontal Distances  
Scale of Vertical Distances  
SOUNDINGS IN FEET  
DEPTH IN FATHOMS  
SOUNDINGS IN METERS  
DEPTH IN METERS



Neap  
20 x 5 cm  
Spring  
32 cm x 5 cm

SURFACE.  
HcB003/20.

Published at Washington, D. C.  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7, or weekly Notice to Mariners which include new or revised regulations. Information concerning the regulations may be obtained at the Office of the District Engineer, Corps of Engineers in Seattle, Washington.

Anchorage regulations may be obtained at the Office of the Commander, 13th Coast Guard District in Seattle, Washington. Refer to section numbers shown with green designation.

Crosby

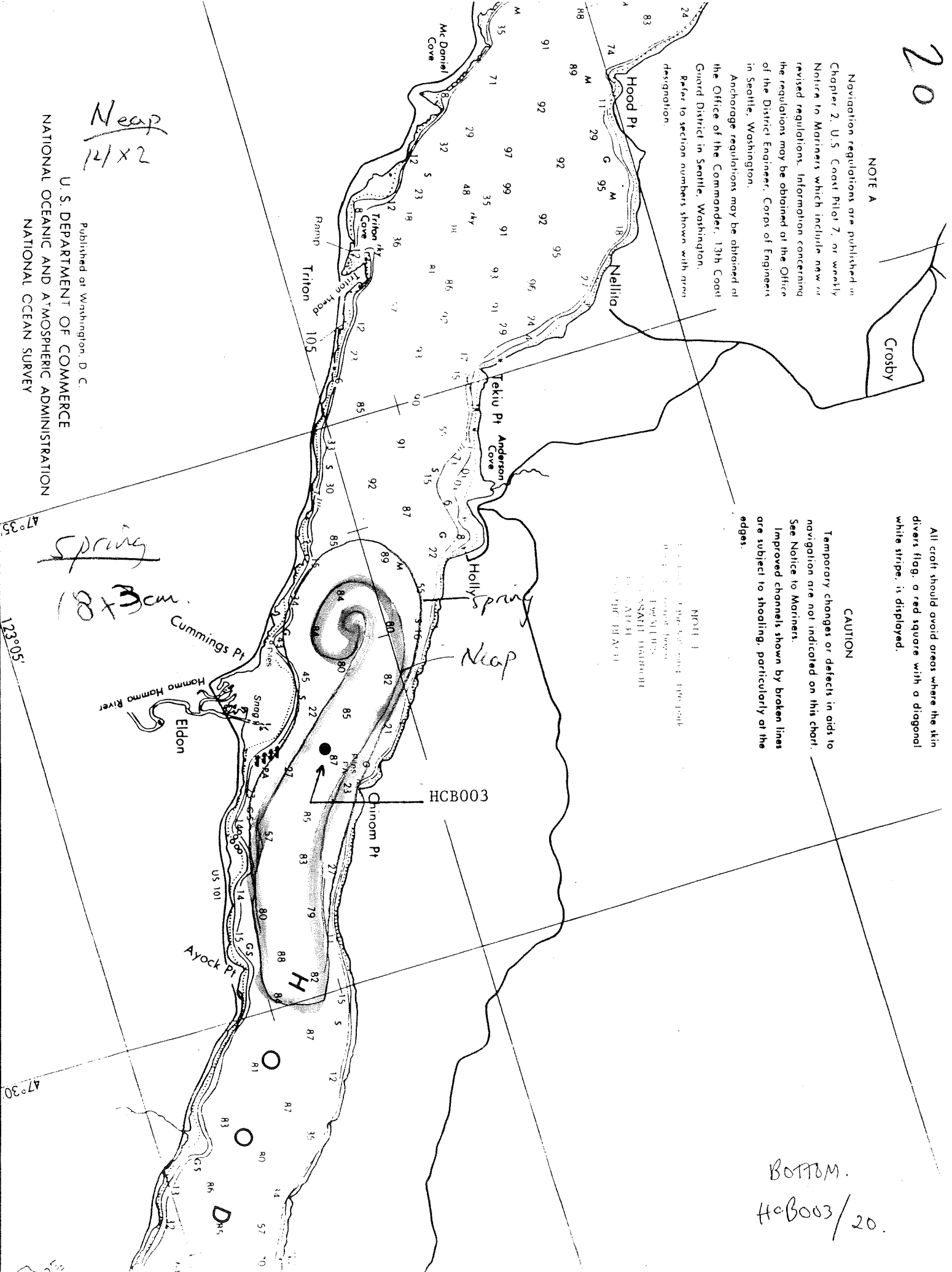
All craft should avoid areas where the skin divers flag, a red square with a diagonal white stripe, is displayed.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Notice to Mariners. Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

NOTE 1

Soundings are in fathoms, five-foot intervals, rounded down.   
 M - MEAN LOW WATER   
 M - MEAN HIGH WATER   
 G - GALVANIC ELECTRIC BATTERY



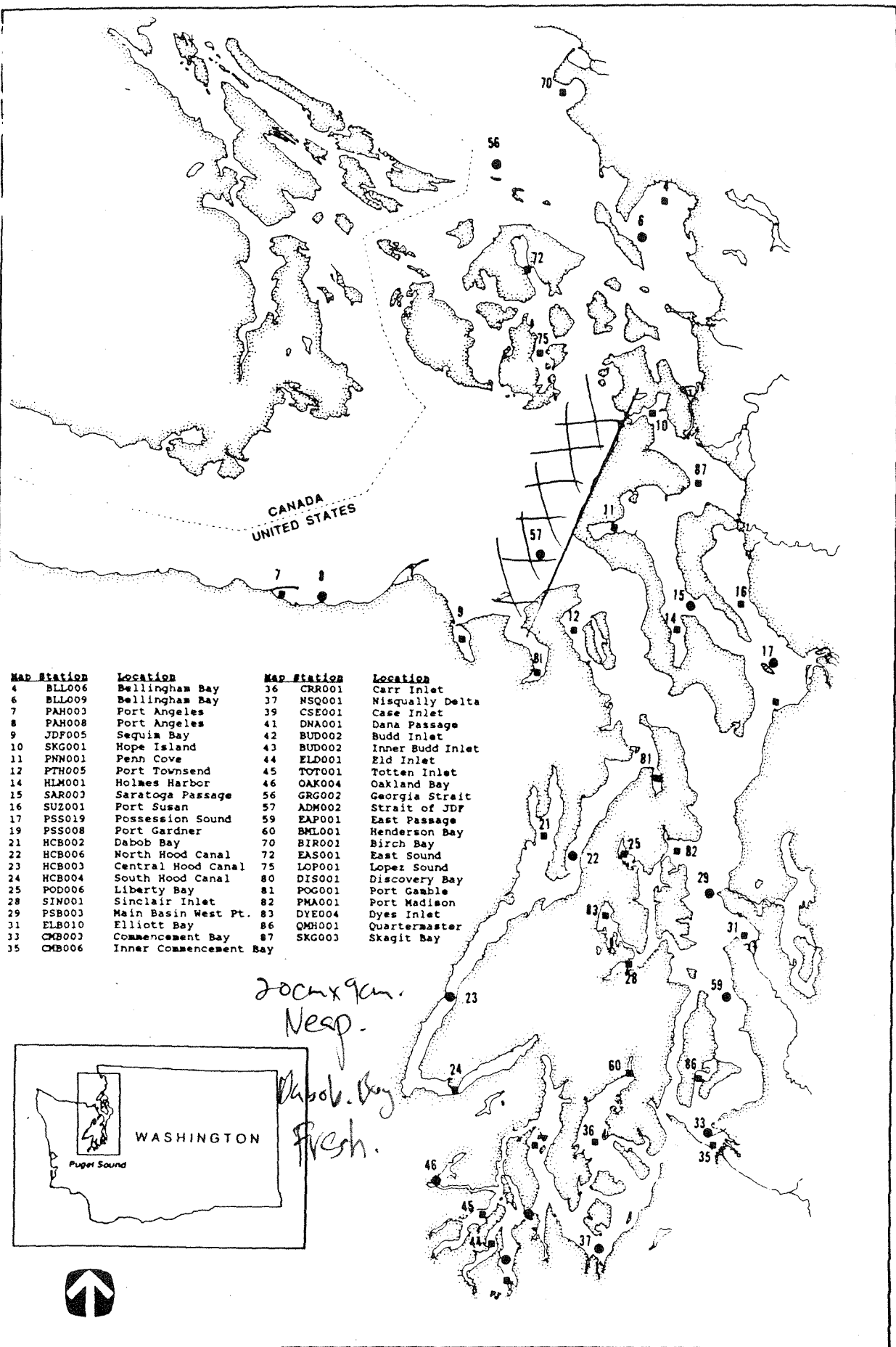
Neap  
14x2

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 U. S. DEPARTMENT OF COMMERCE   
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION   
 NATIONAL OCEAN SURVEY

Spring  
18x3cm.

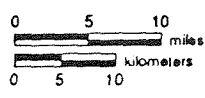
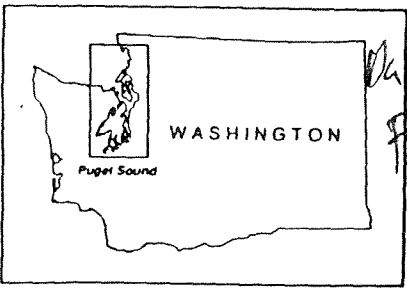
HCB003

BOTTOM.  
HCB003/20.



| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNM001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

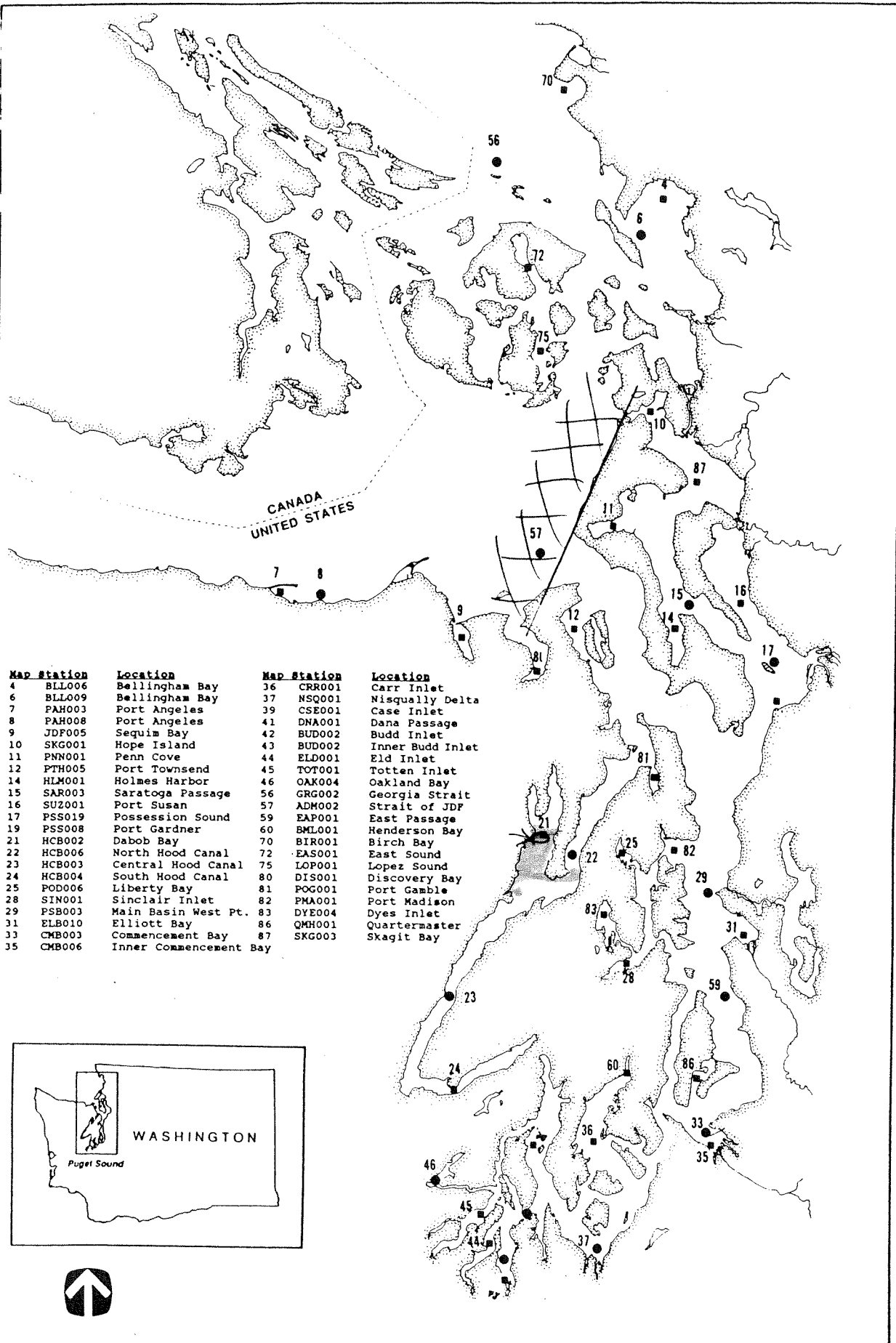
Jockx gum.  
Neap.  
Dabob Bay  
Fresh.



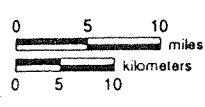
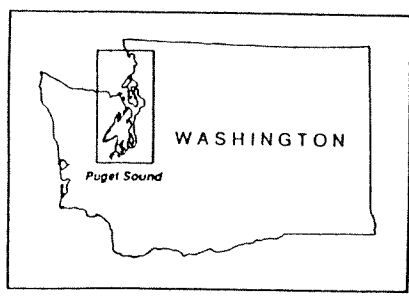
(HCB 002)

NEAR  
25+13

19

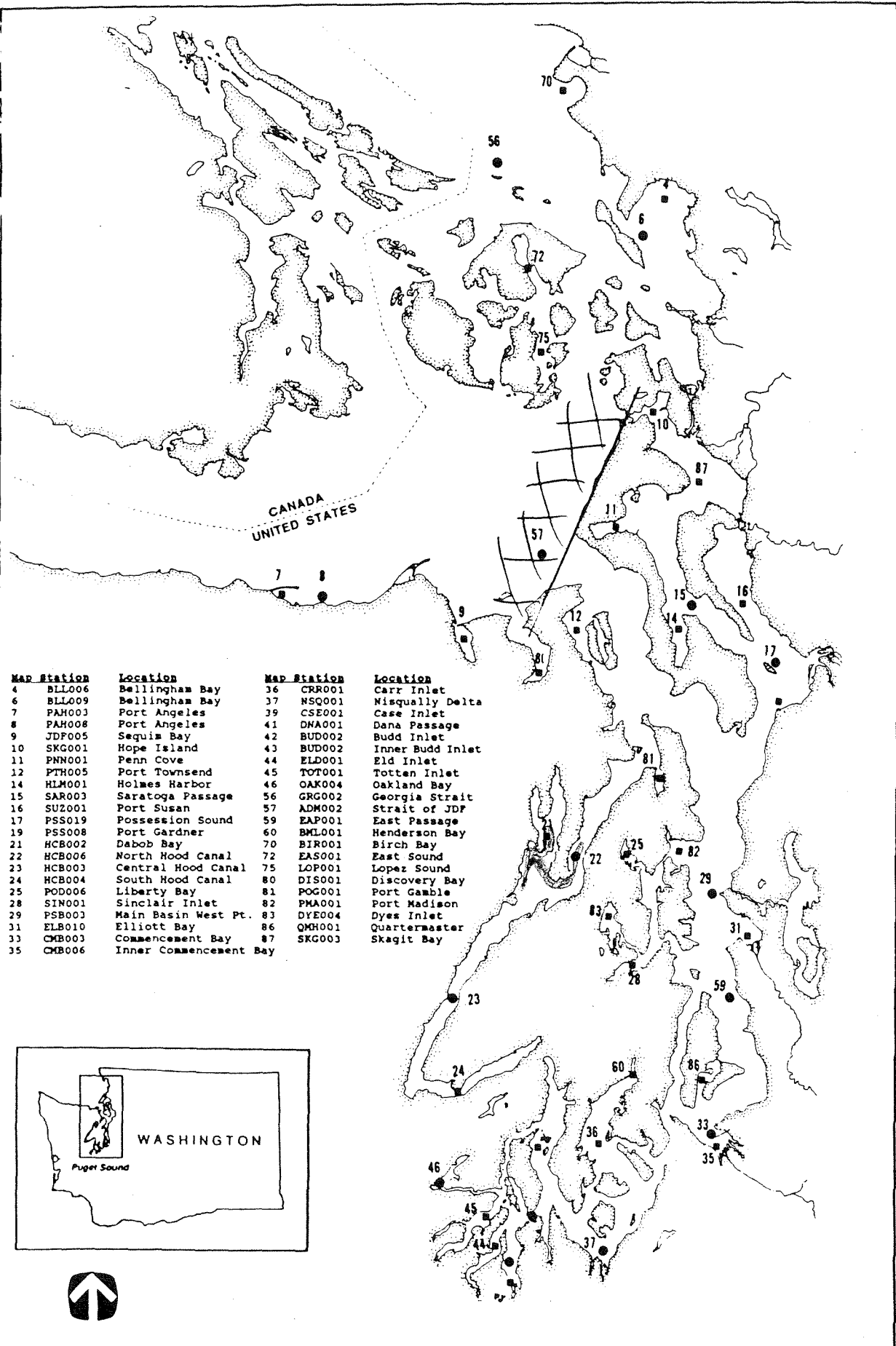


| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYED004 Dyes Inlet      |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

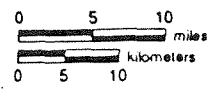
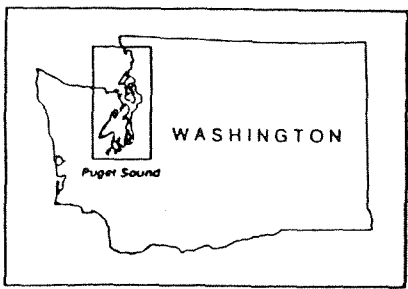


#CBB002/19. (See detail in Hood Canal).  
SURFACE.

Spring  
23 x 20



| Map Station | Location | Map Station            | Location |        |                  |
|-------------|----------|------------------------|----------|--------|------------------|
| 4           | BLL006   | Bellingham Bay         | 36       | CRR001 | Carr Inlet       |
| 6           | BLL009   | Bellingham Bay         | 37       | NSQ001 | Nisqually Delta  |
| 7           | PAH003   | Port Angeles           | 39       | CSE001 | Case Inlet       |
| 8           | PAH008   | Port Angeles           | 41       | DNA001 | Dana Passage     |
| 9           | JDF005   | Sequia Bay             | 42       | BUD002 | Budd Inlet       |
| 10          | SKG001   | Hope Island            | 43       | BUD002 | Inner Budd Inlet |
| 11          | PNH001   | Penn Cove              | 44       | ELD001 | Eld Inlet        |
| 12          | PTH005   | Port Townsend          | 45       | TOT001 | Totten Inlet     |
| 14          | HLM001   | Holmes Harbor          | 46       | OAK004 | Oakland Bay      |
| 15          | SAR003   | Saratoga Passage       | 56       | GRG002 | Georgia Strait   |
| 16          | SUZ001   | Port Susan             | 57       | ADM002 | Strait of JDF    |
| 17          | PSS019   | Possession Sound       | 59       | EAP001 | East Passage     |
| 19          | PSS008   | Port Gardner           | 60       | BML001 | Henderson Bay    |
| 21          | HCB002   | Dabob Bay              | 70       | BIR001 | Birch Bay        |
| 22          | HCB006   | North Hood Canal       | 72       | EAS001 | East Sound       |
| 23          | HCB003   | Central Hood Canal     | 75       | LOP001 | Lopez Sound      |
| 24          | HCB004   | South Hood Canal       | 80       | DIS001 | Discovery Bay    |
| 25          | POD006   | Liberty Bay            | 81       | POG001 | Port Gamble      |
| 28          | SIN001   | Sinclair Inlet         | 82       | PMA001 | Port Madison     |
| 29          | PSB003   | Main Basin West Pt.    | 83       | DYE004 | Dyes Inlet       |
| 31          | ELB010   | Elliott Bay            | 86       | QMH001 | Quartermaster    |
| 33          | CMB003   | Commencement Bay       | 87       | SKG003 | Skagit Bay       |
| 35          | CMB006   | Inner Commencement Bay |          |        |                  |



HCB 002/19 Surface

Neap

5x5 cm

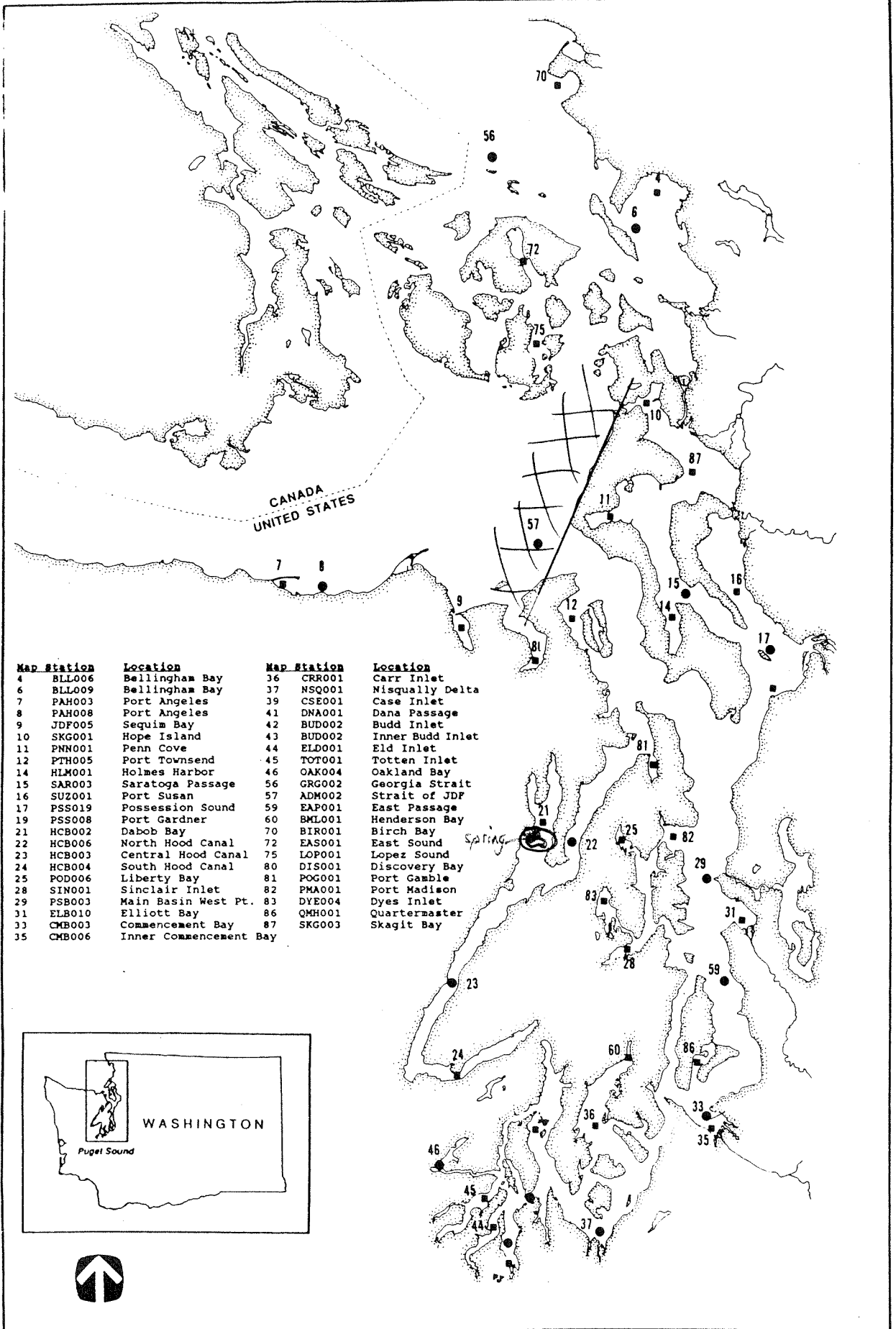


Spring

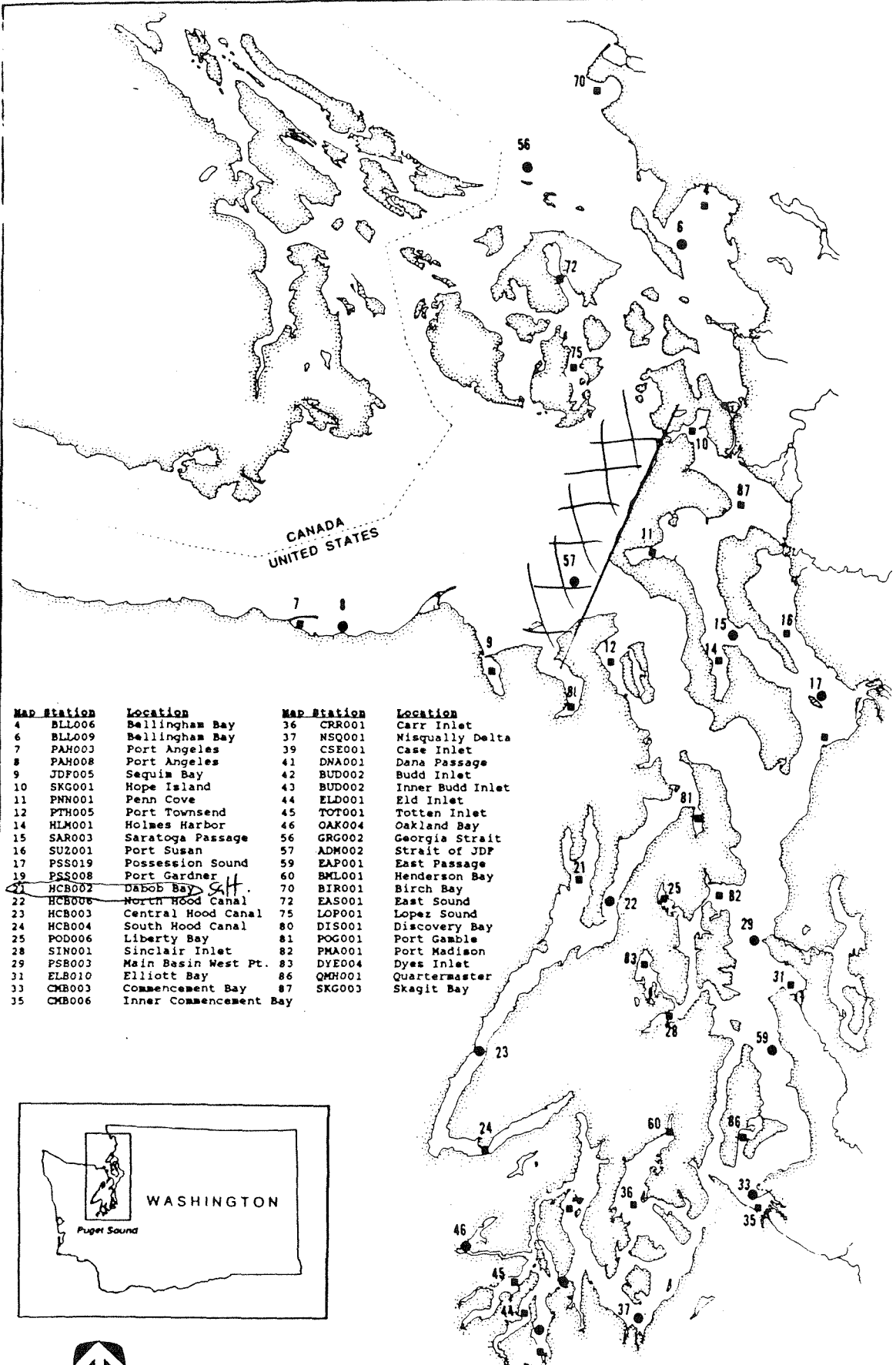
8x3 cm



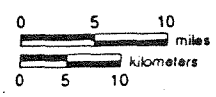
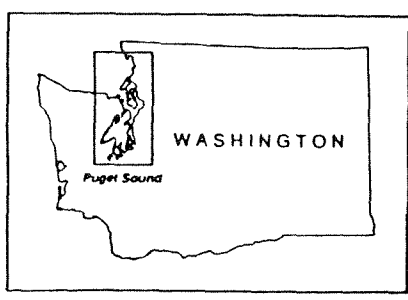
16



HCB002/19. (See detail in Hood Canal).  
BOTTOM.



| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 DEGB Bay <i>S.H.</i>   | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PBS003 Main Basin West Pt.    | 86          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMN001 Quartermaster    |
| 33          | CKB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CKB006 Inner Commencement Bay |             |                         |



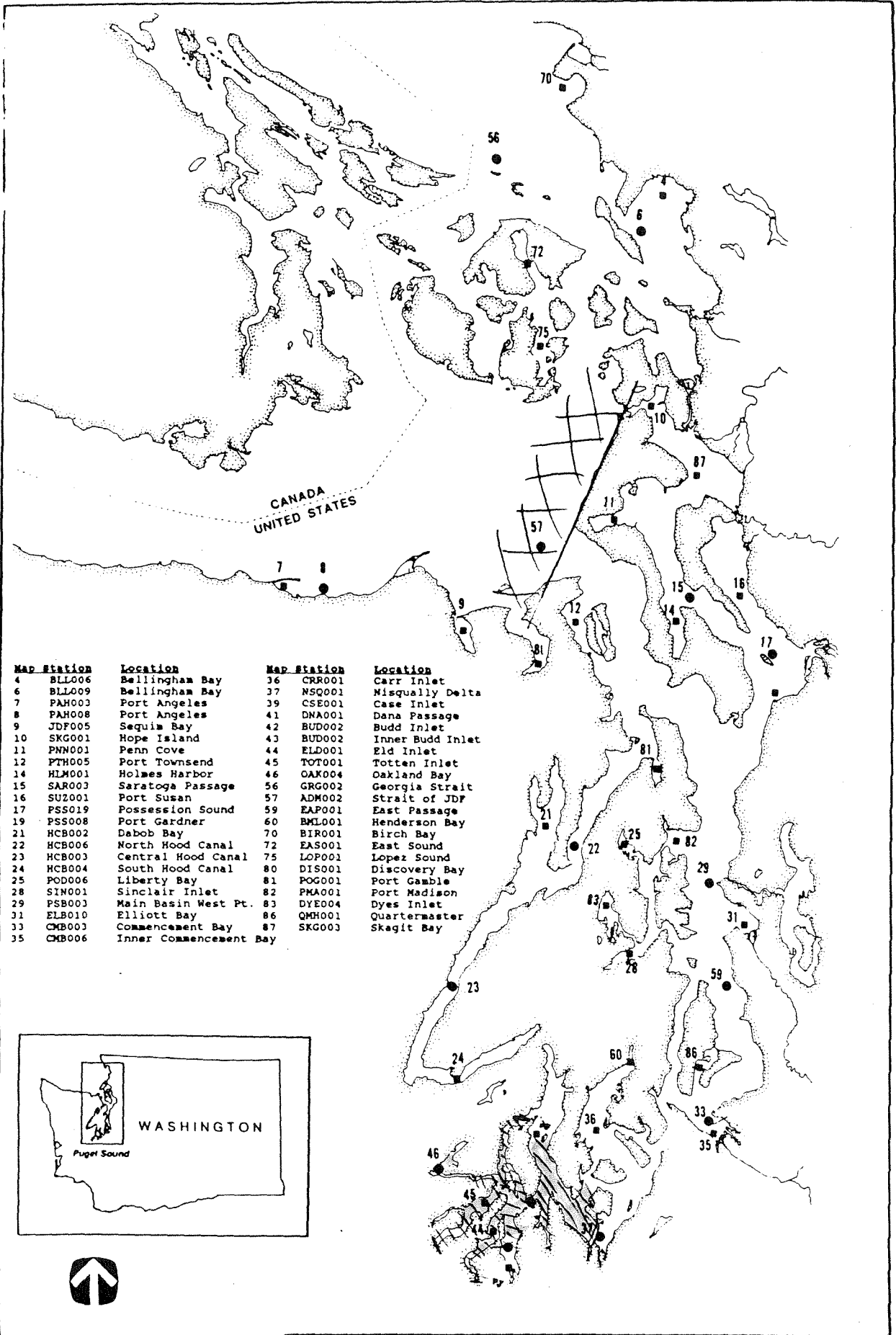
*5cm x 3cm. Neap.*



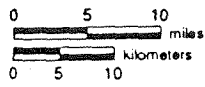
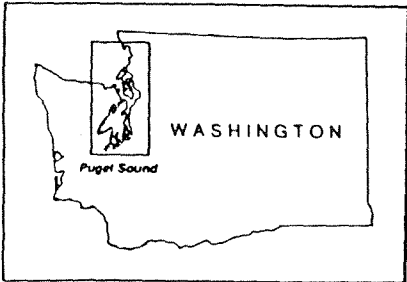


NEAR  
SPRING  
80?

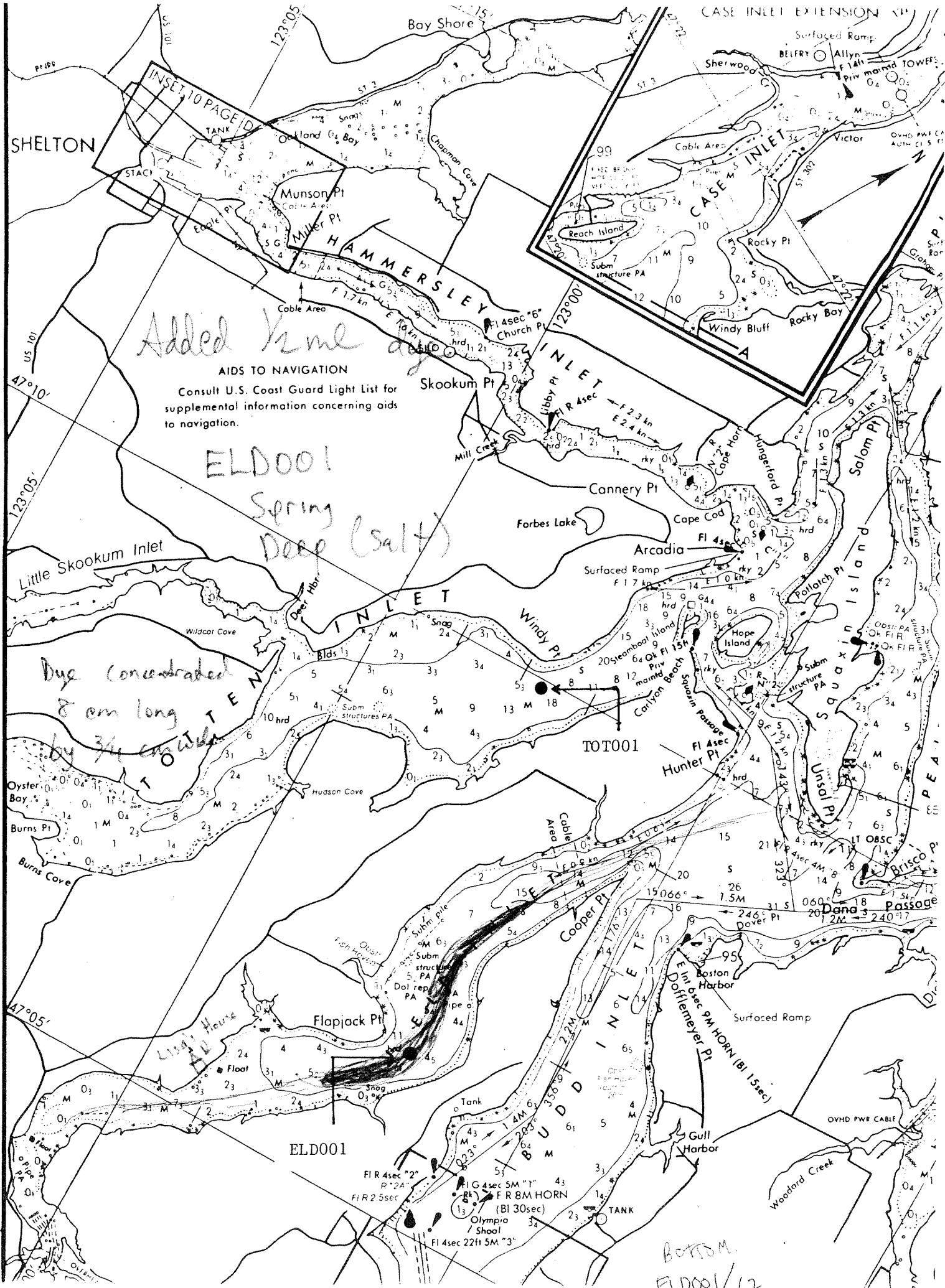
17



| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



ELD001 SURFACE 1/2 m



*Added 1/2 mile deep*

**AIDS TO NAVIGATION**  
 Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

**ELD001**  
 Spring Deep (Salt)

*Dye concentrated 8 cm long by 3/4 cm wide*

*BOTTOM. ELD001/17*

INSET 10 PAGE 10

CASE INLET EXTENSION

SHELTON

Bay Shore

HAMMERSLEY

CASE INLET

Skookum Pt

Cannery Pt

Arcadia

WINDY INLET

TOTO01

FLAPJACK Pt

BUDD INLET

Doffmeyer Pt

ELD001

Gull Harbor

Woodford Creek

FIR 4sec "2"  
 R 24"  
 FIR 2 5sec  
 G 4sec SM "1"  
 F R 8M HORN  
 (BI 30sec)  
 Olympia Shoal  
 Fl 4sec 22ft SM "3"

15066° 7.5M  
 246° 31 S  
 060° 20 M  
 240° 17

US 101  
 47° 10'  
 123° 05'

123° 00'

150° 00'

47° 05'

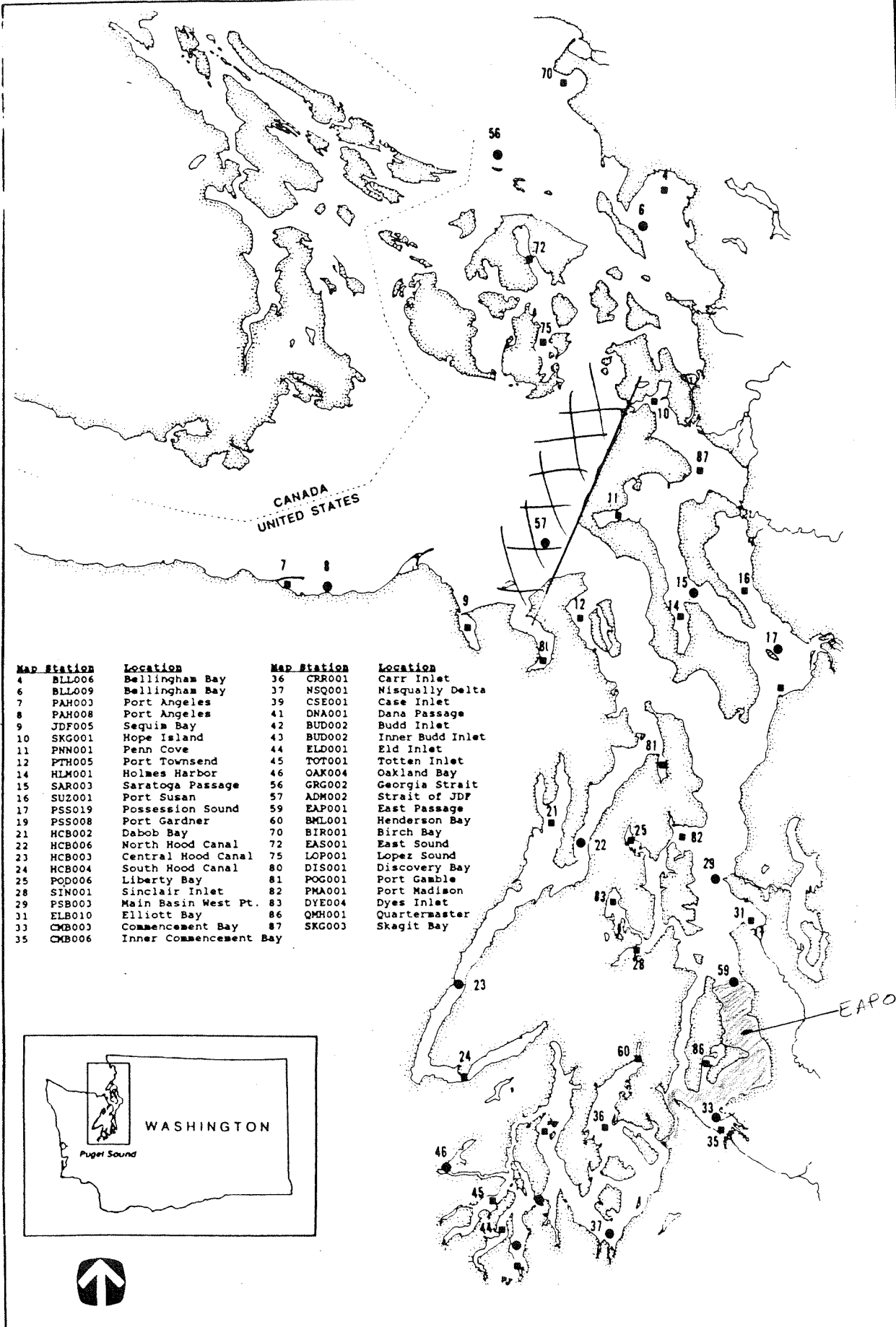
OVHD PWR CABLE

WOODFORD CREEK

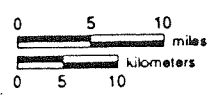
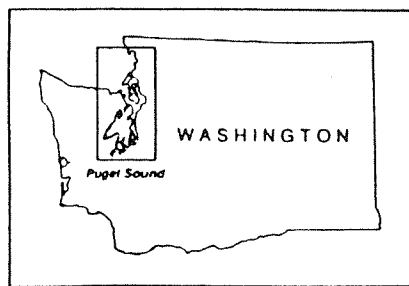
WOODFORD CREEK

WOODFORD CREEK

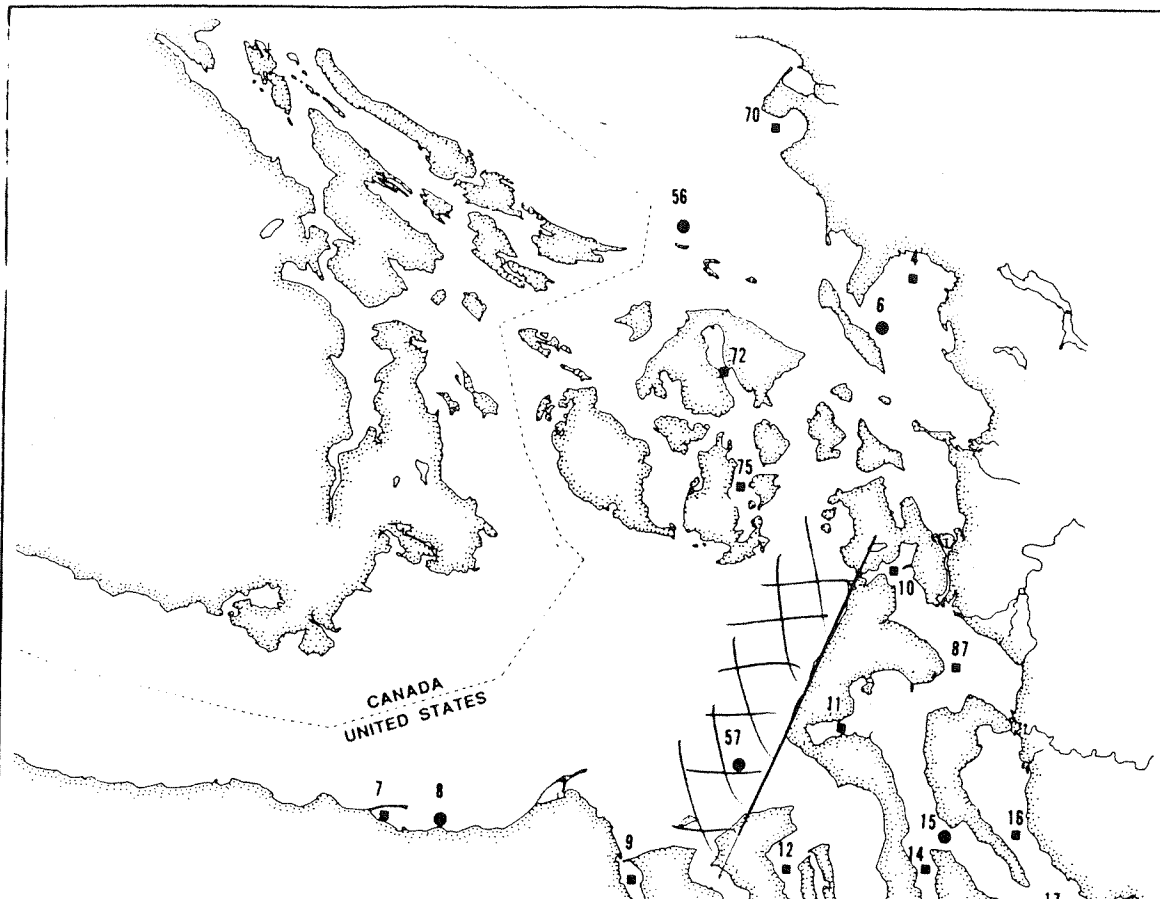
WOODFORD CREEK



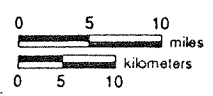
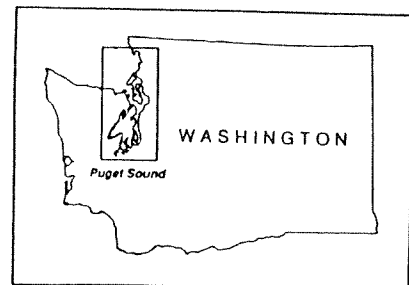
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



EAP001/sf      SPRING  
fresh,



| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

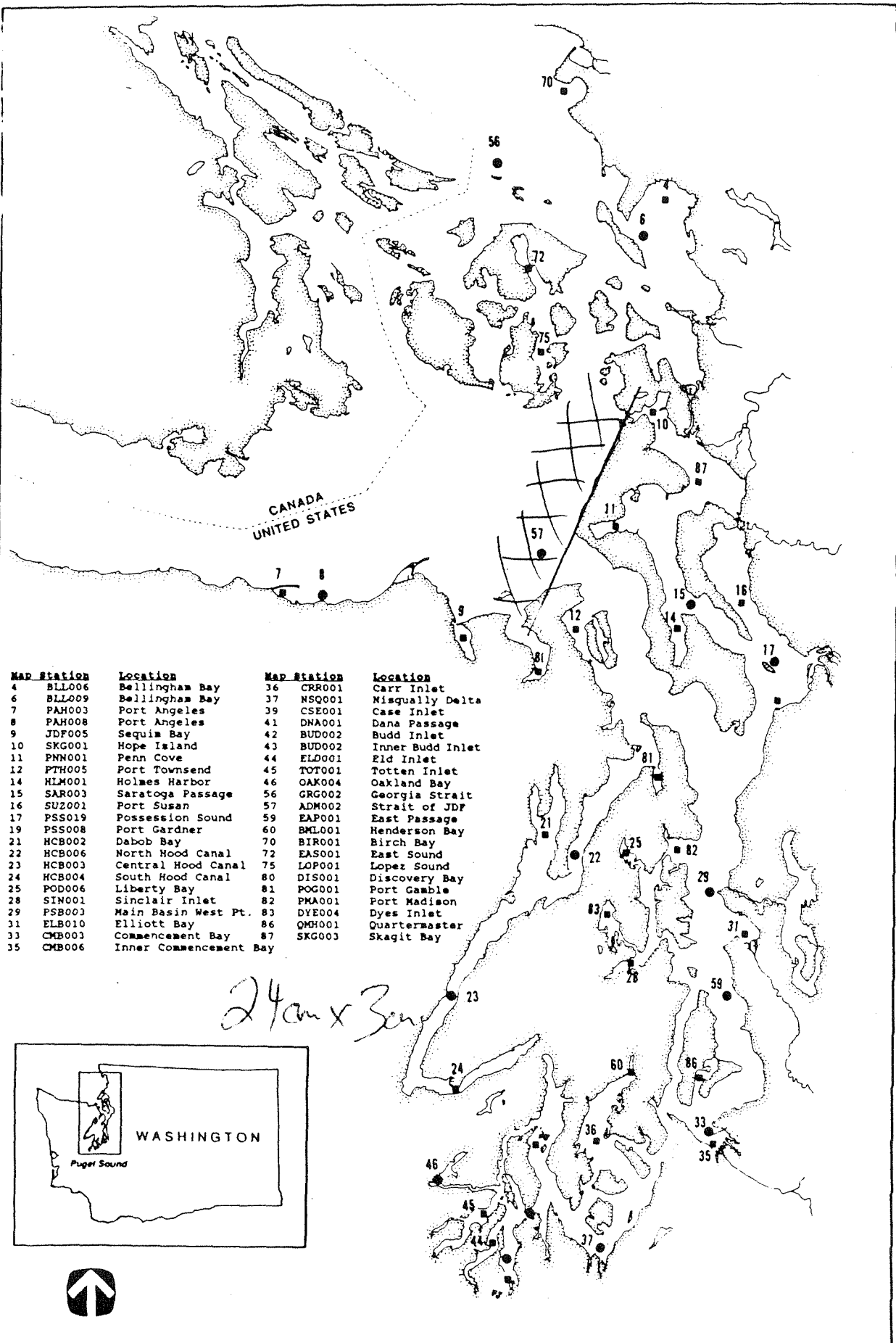


18 x 100cm

60cm  
EAP001

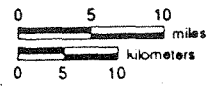
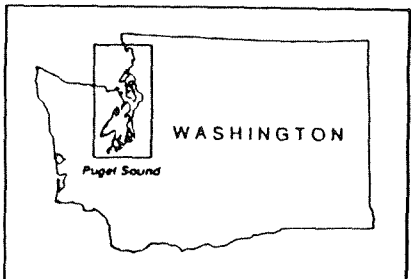
~18cm

EAP001/EC Fresh-NEAP



| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LDP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SINC01 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

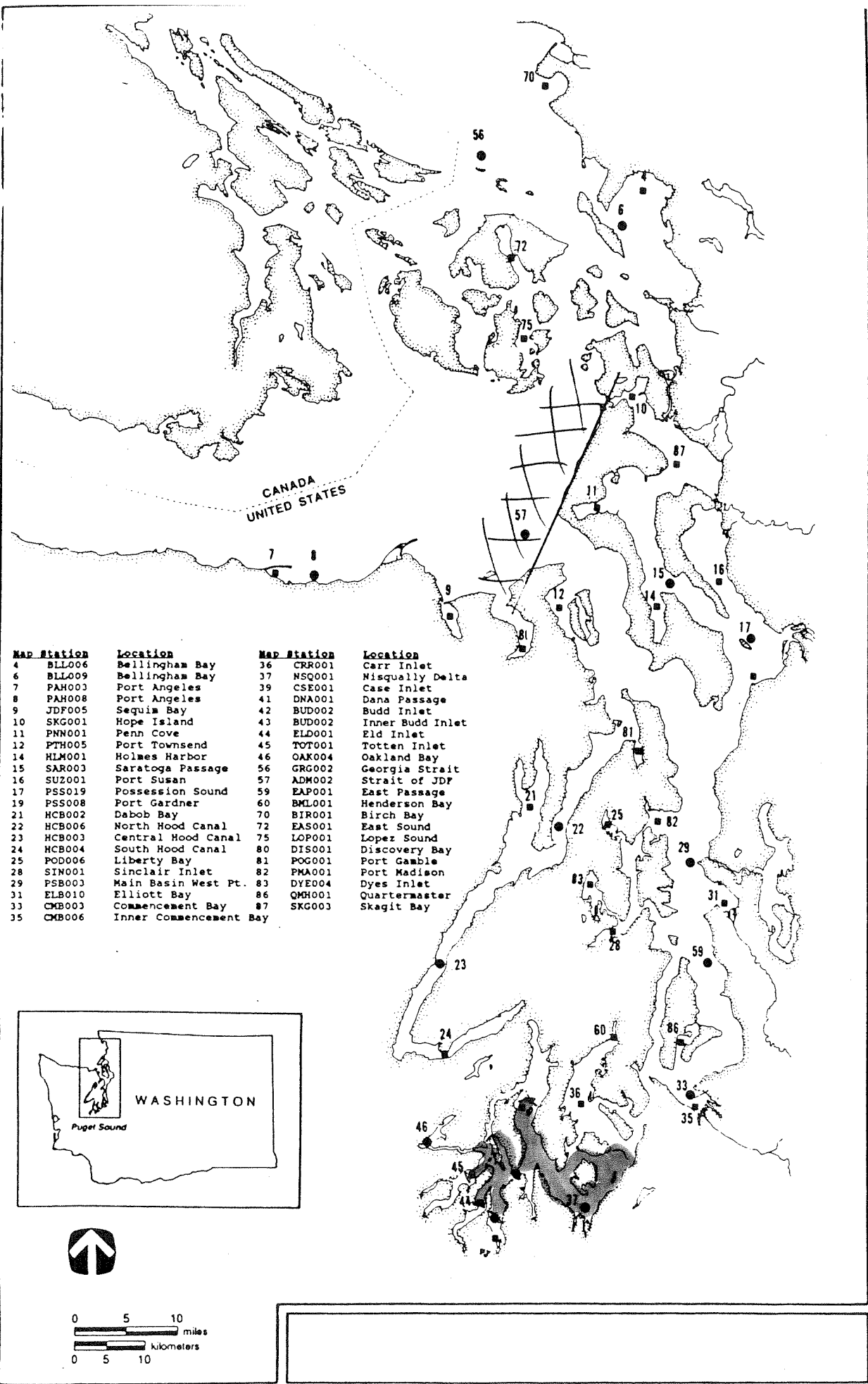
24m x 3m



DN A-001/12. Near Bottom.

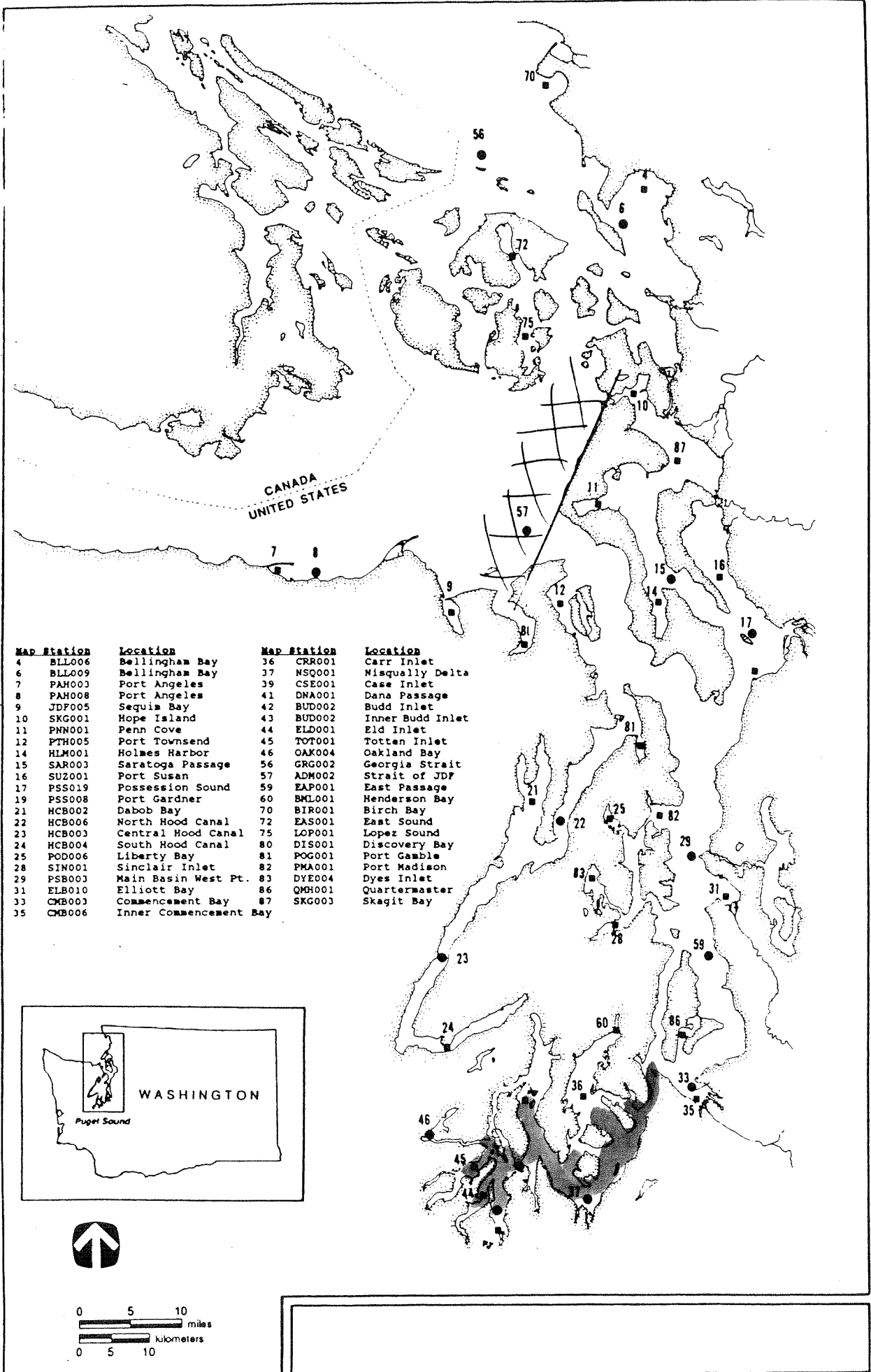
DNA001

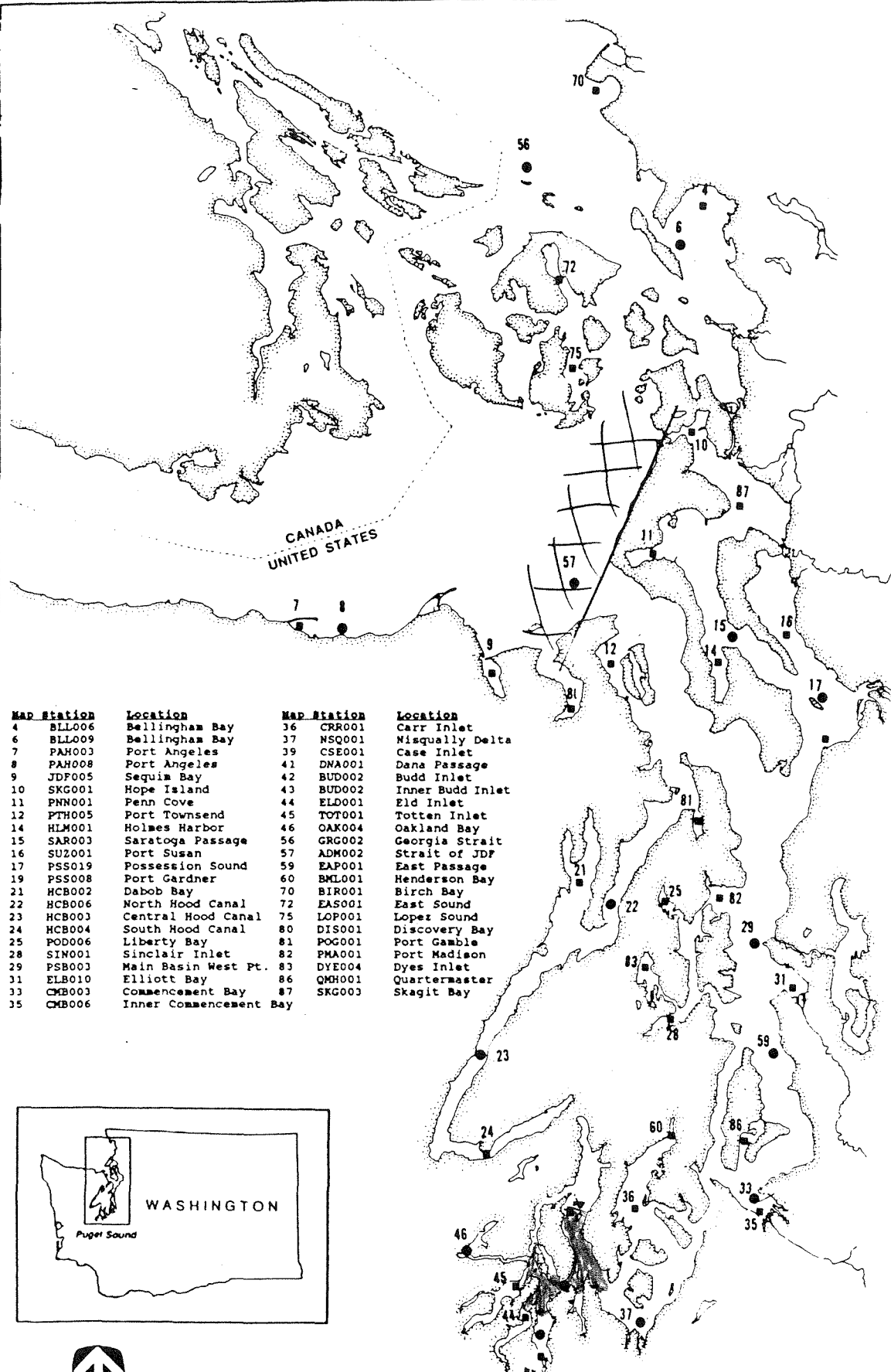
Neap  
Fresh  
K.D.E.



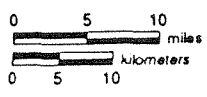
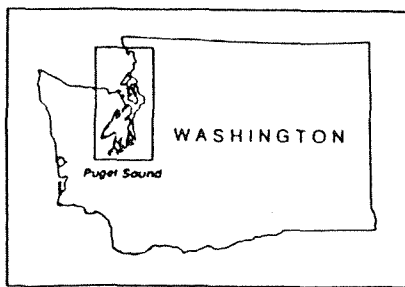
DNA 001  
 Spring  
 Fresh  
 K.D.Z.

71





| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNM001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

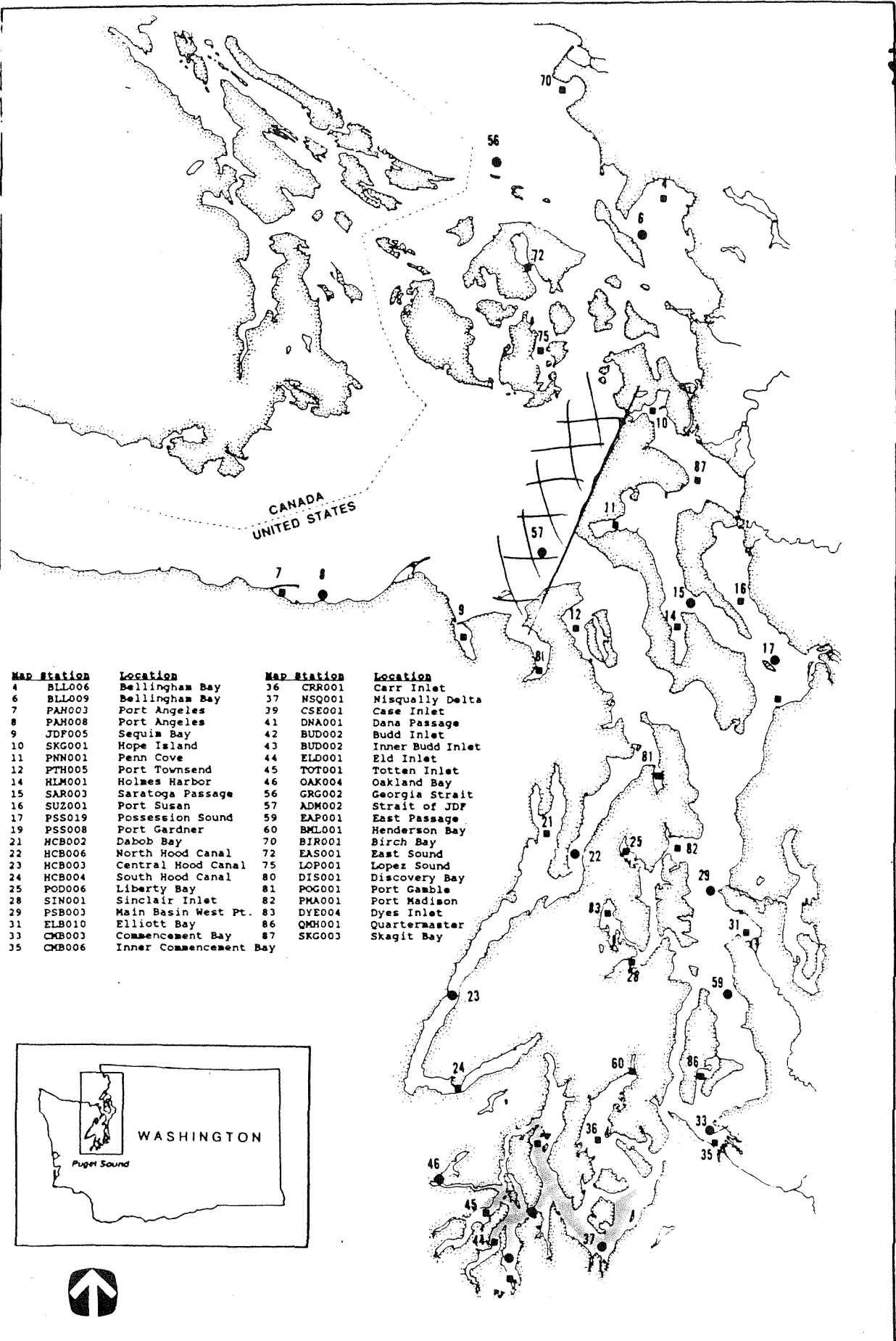


DNA001 Nap  
Salt (Deep)

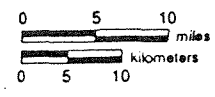
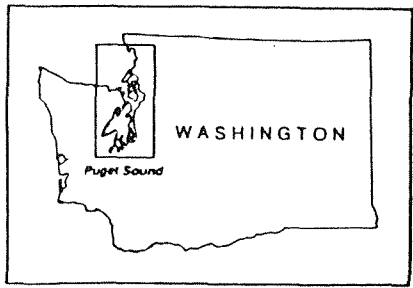


40x  
 CHANDEL  
 11/17/79

12.

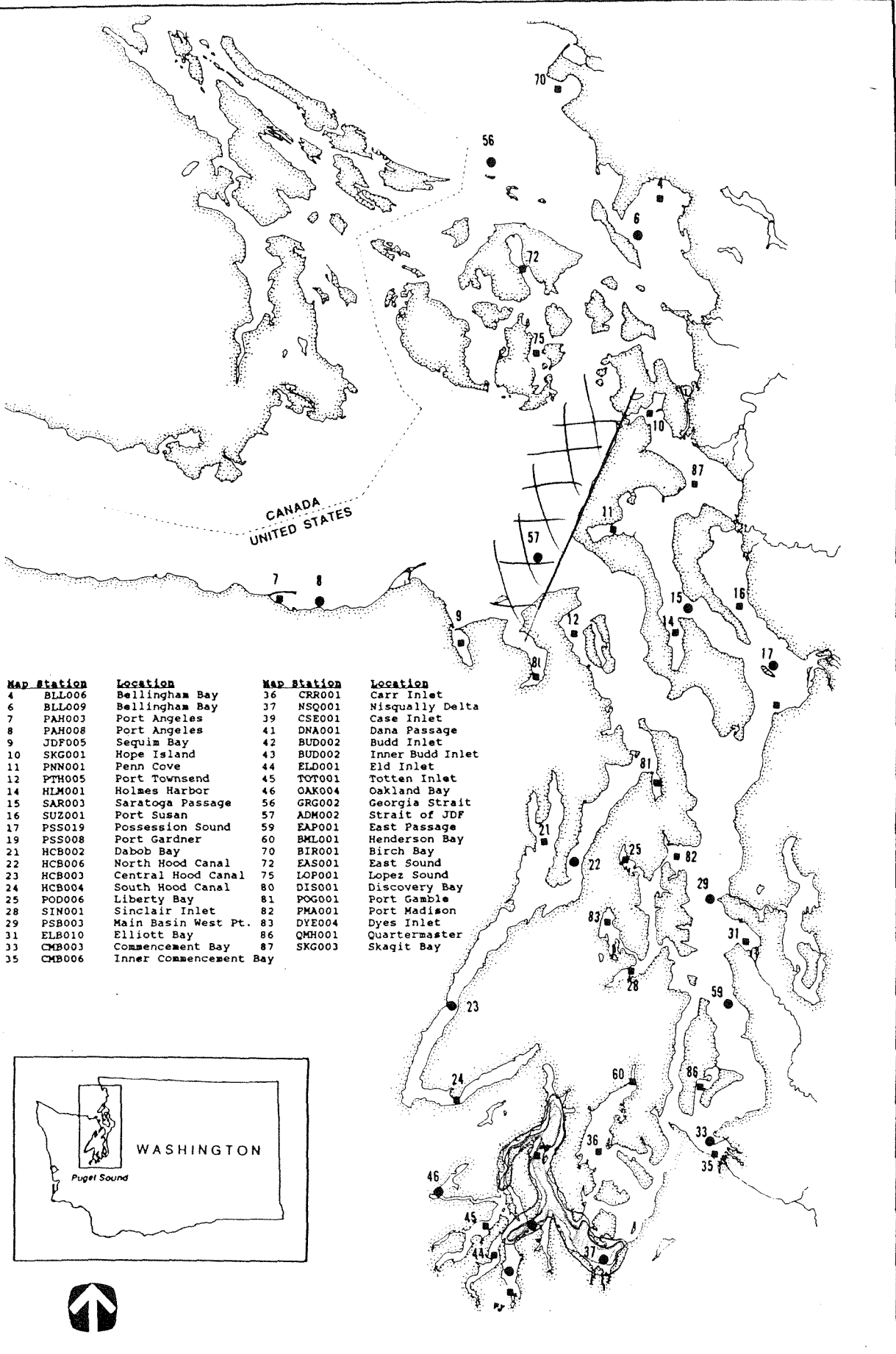


| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
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| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

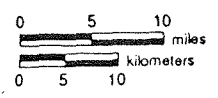
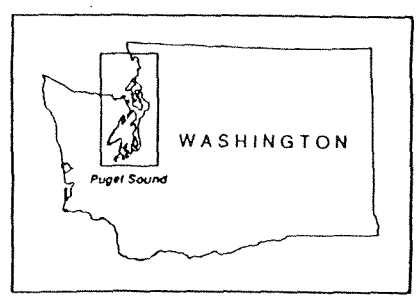


DNA001 BOTTOM STRIKE

1url



| MAP Station | Location                      | MAP Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
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| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
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| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skaqit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

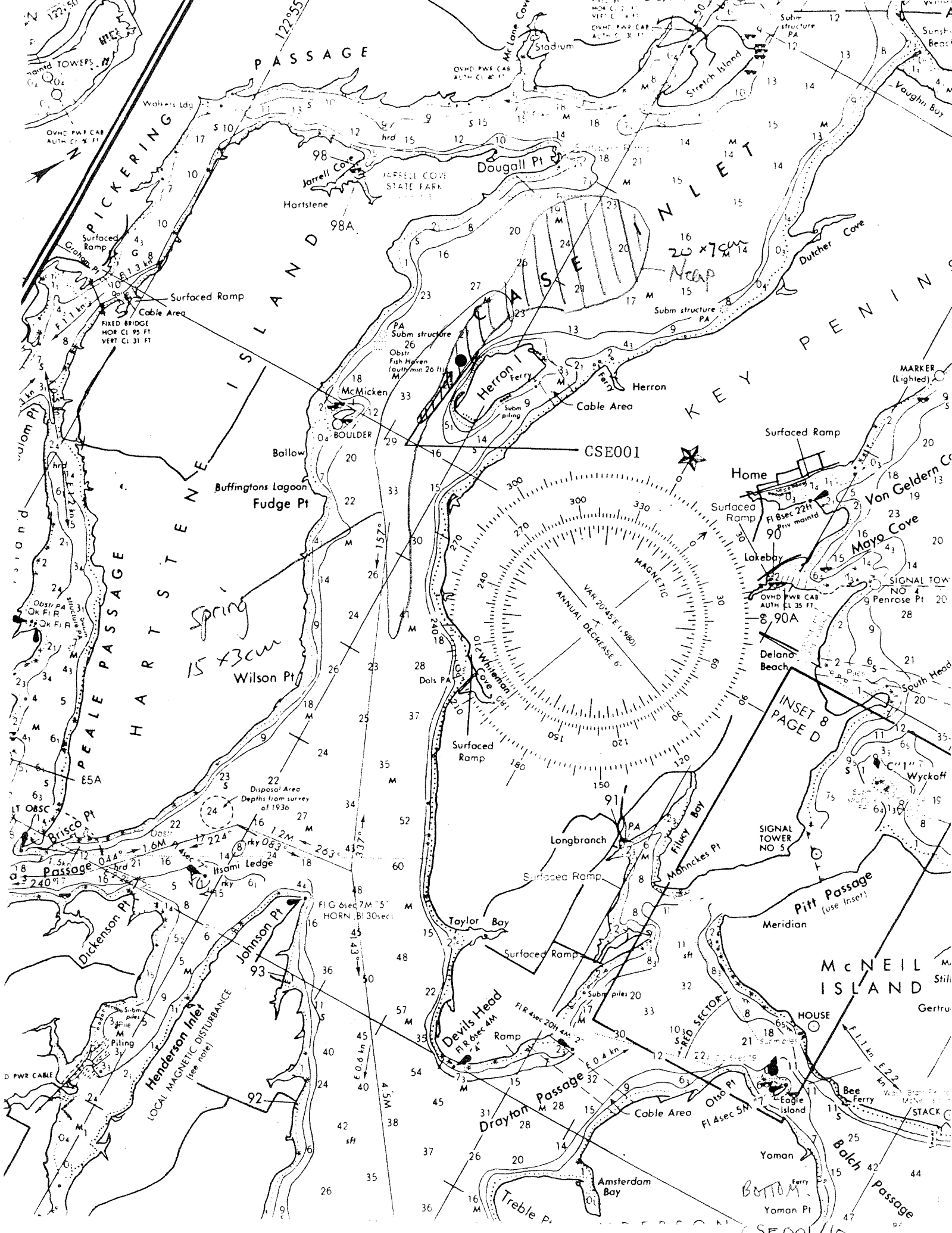


CSE001 = Neap Same pattern  
 = Spring Both tides

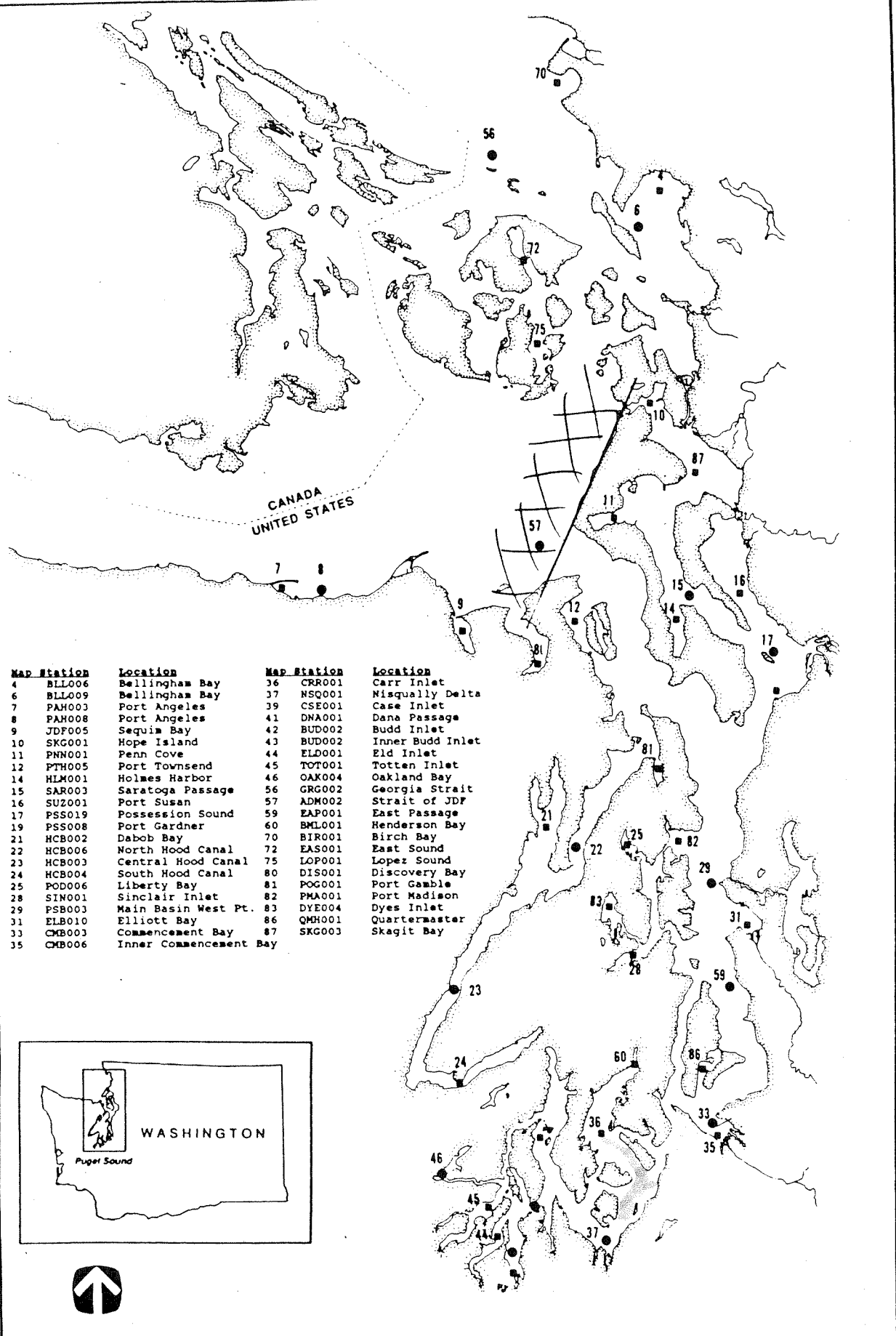
Surface / Freshwater.

Neap  
 65 x 30 cm

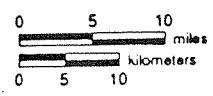
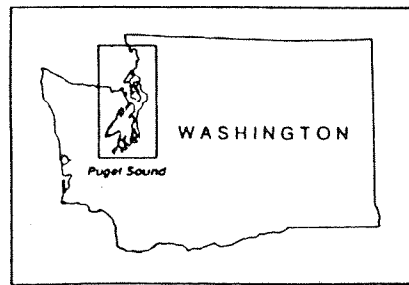
Spring  
 60 x 30 cm



NEAP  
37+4

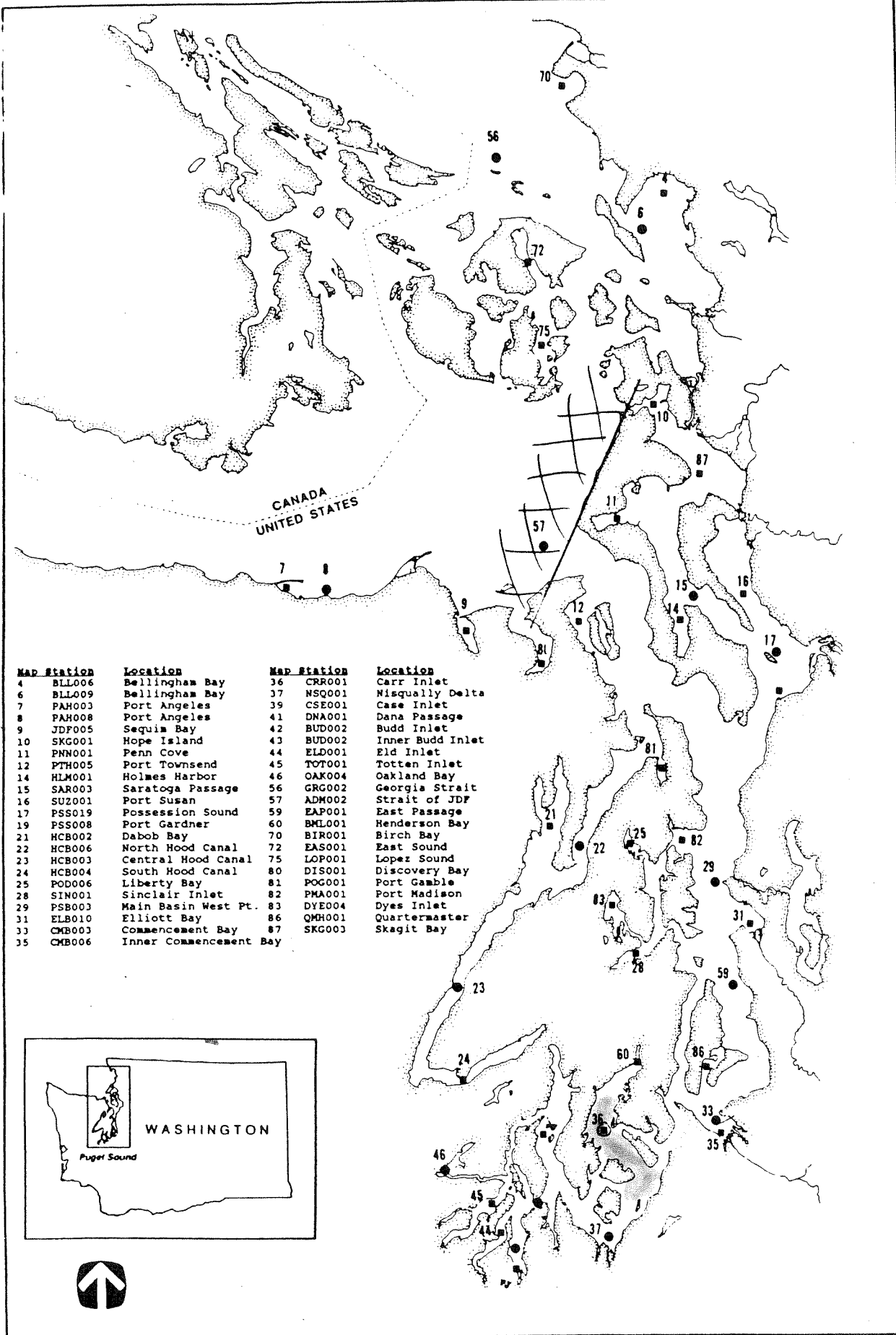


| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
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| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

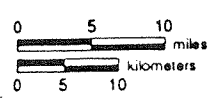
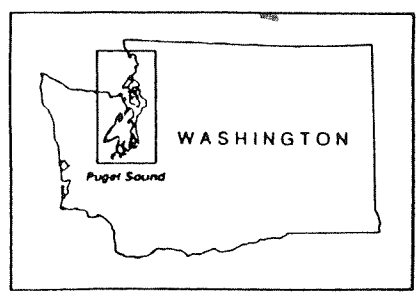


CRR001 Bottom NEAP  
1m

SPRING  
3575



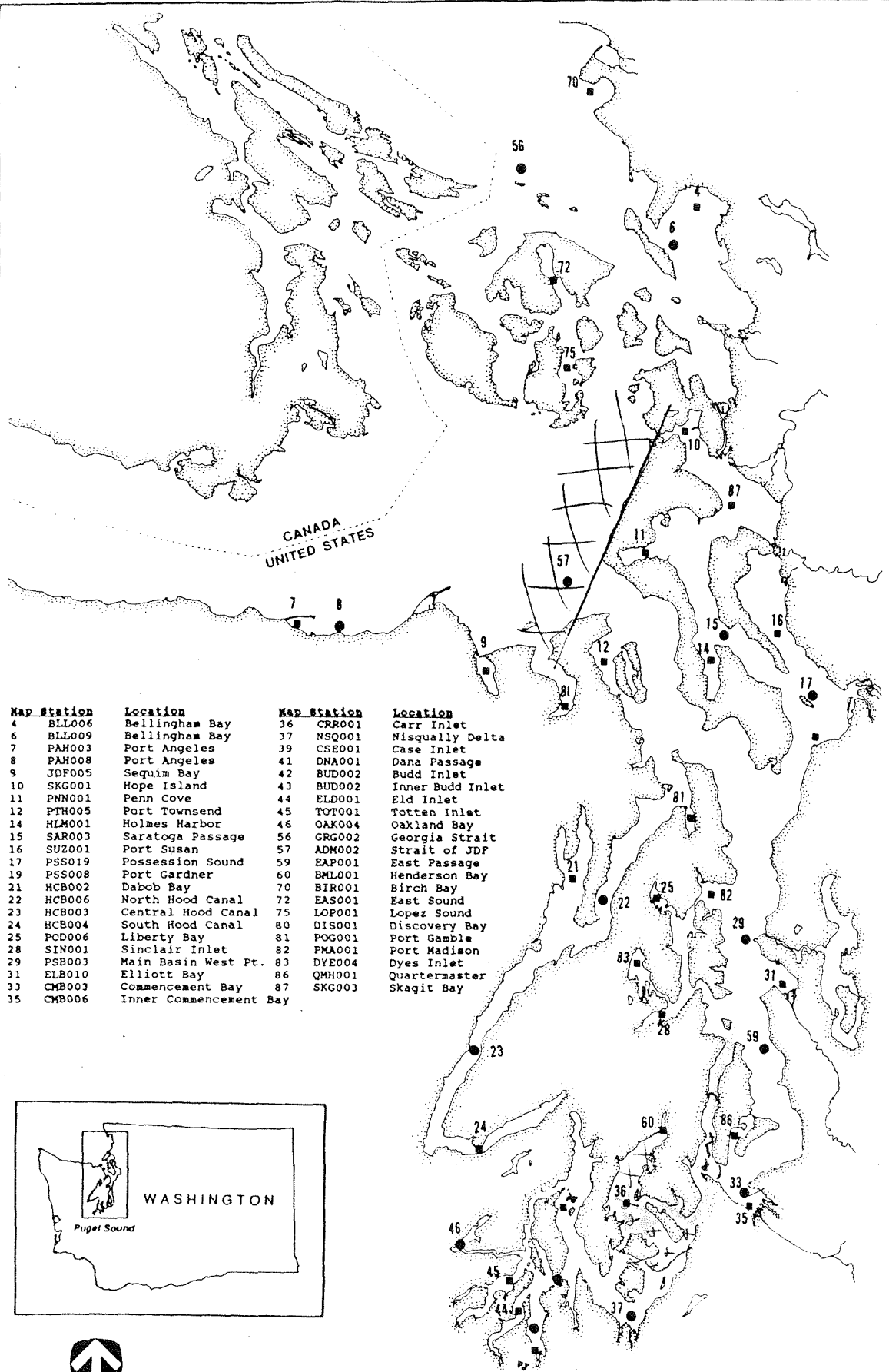
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequia Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POB006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



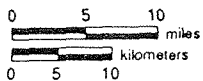
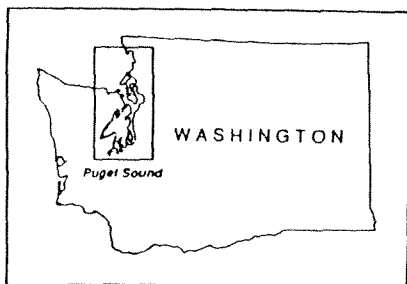
CRR001 SPRING BOTTOM

1 m

CRA001  
~~Map~~ Spring  
 Fresh  
 30 x 100  
 Kan D2



| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



CRR001

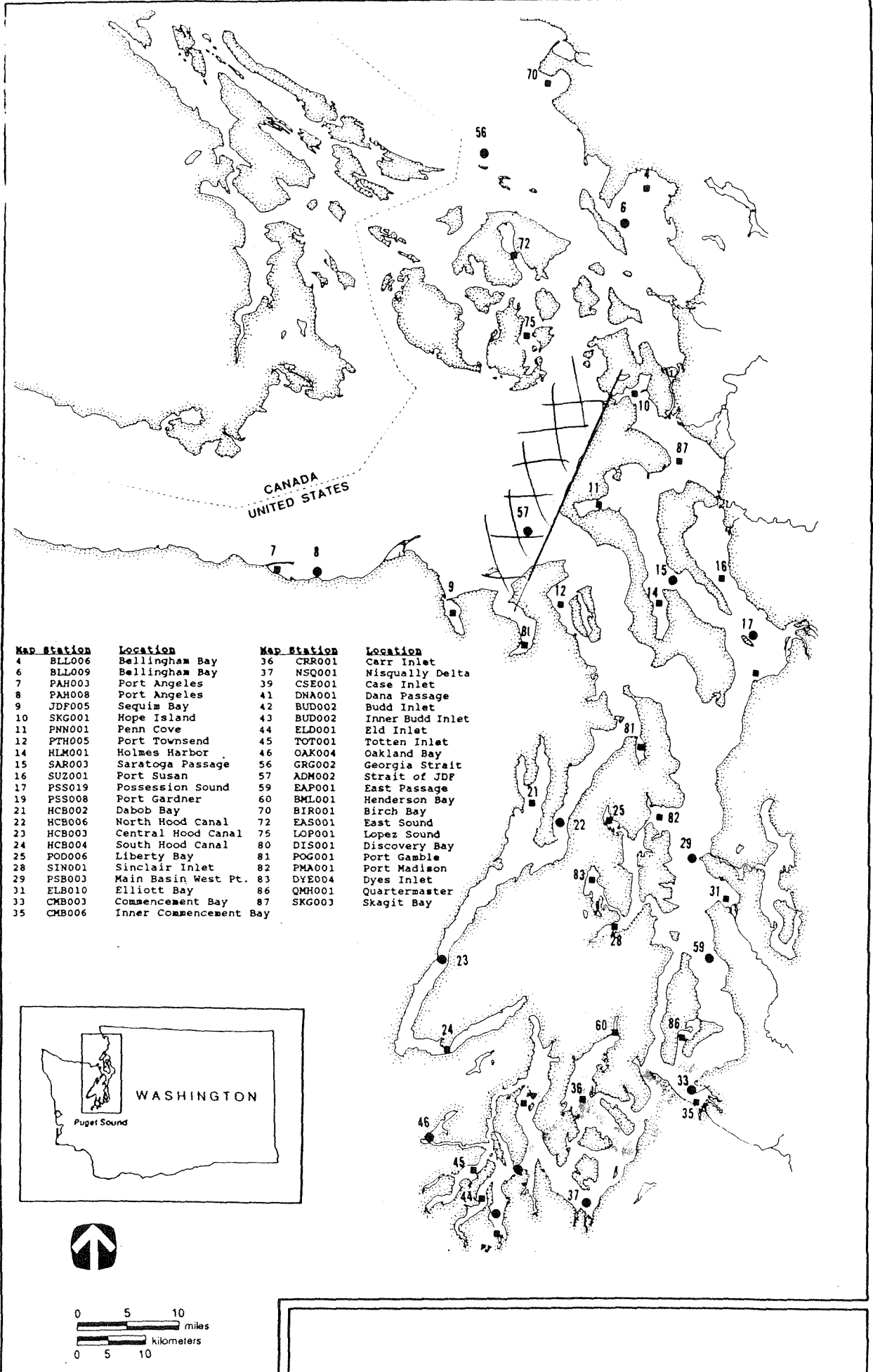
~~S~~ Neap

Fresh

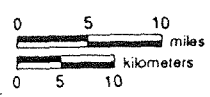
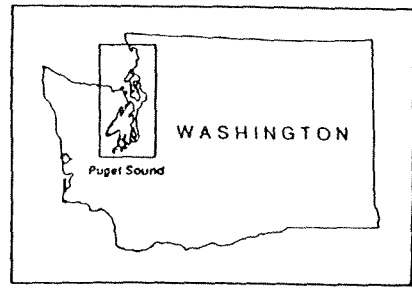
~~3000~~  
80 + 45

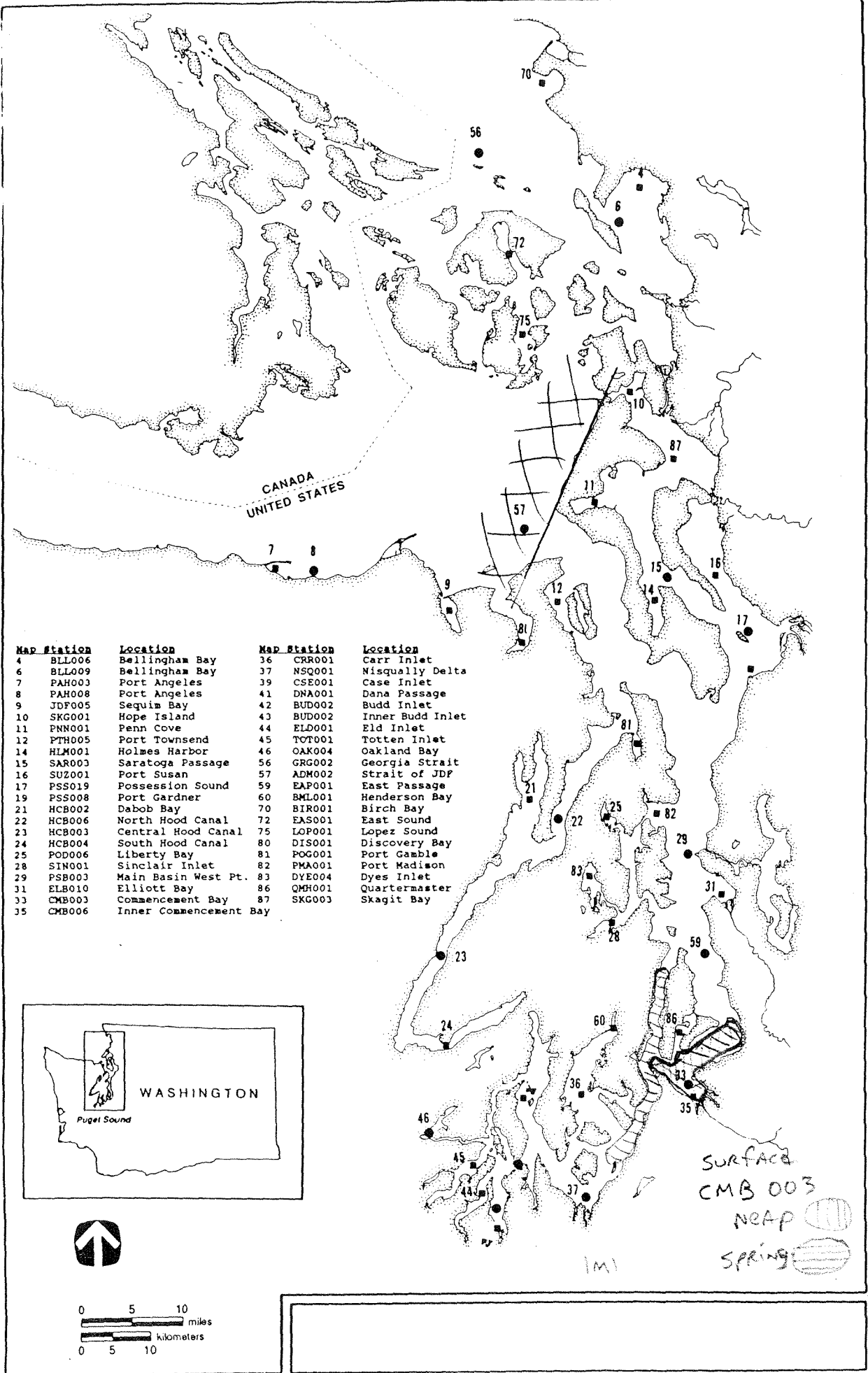
Ka Dz.

6

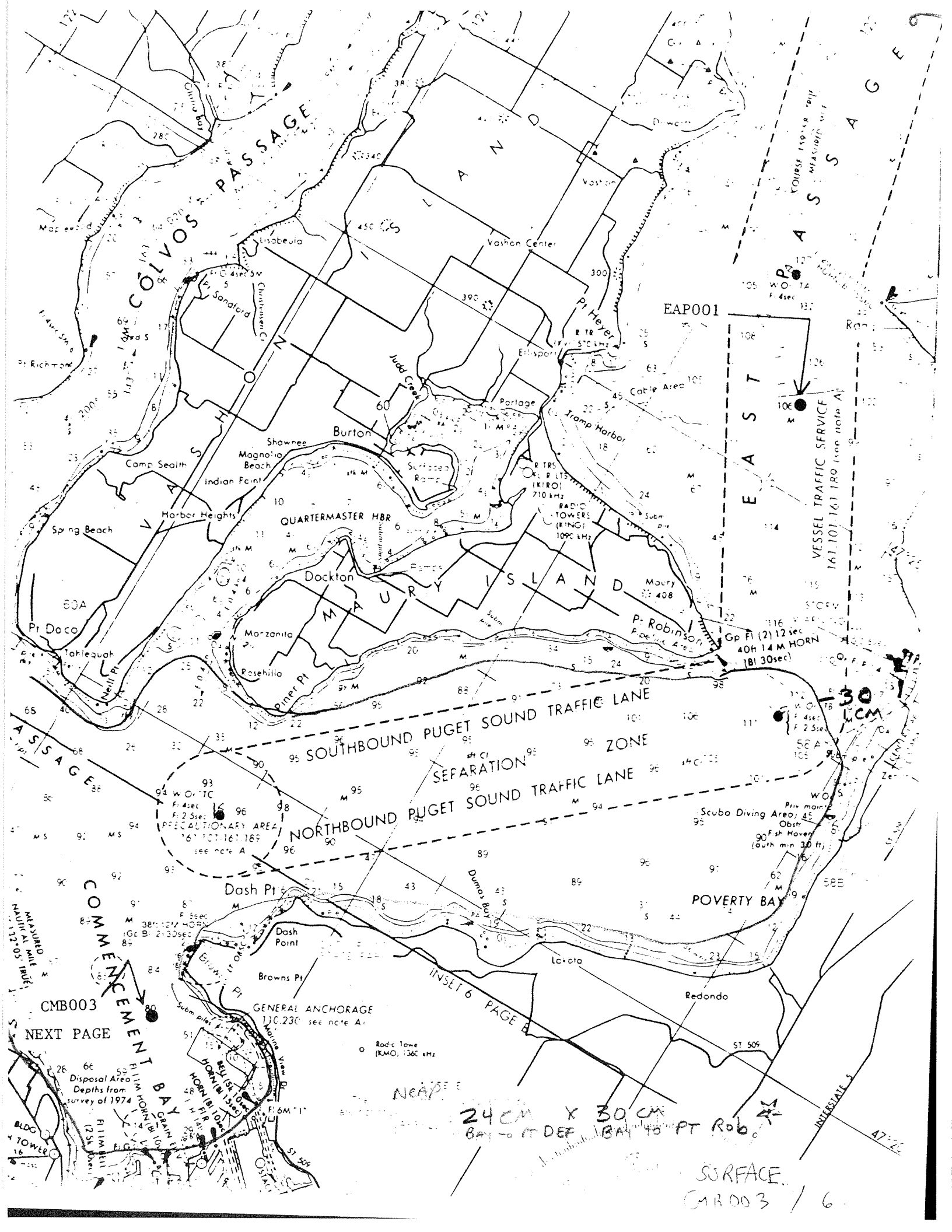


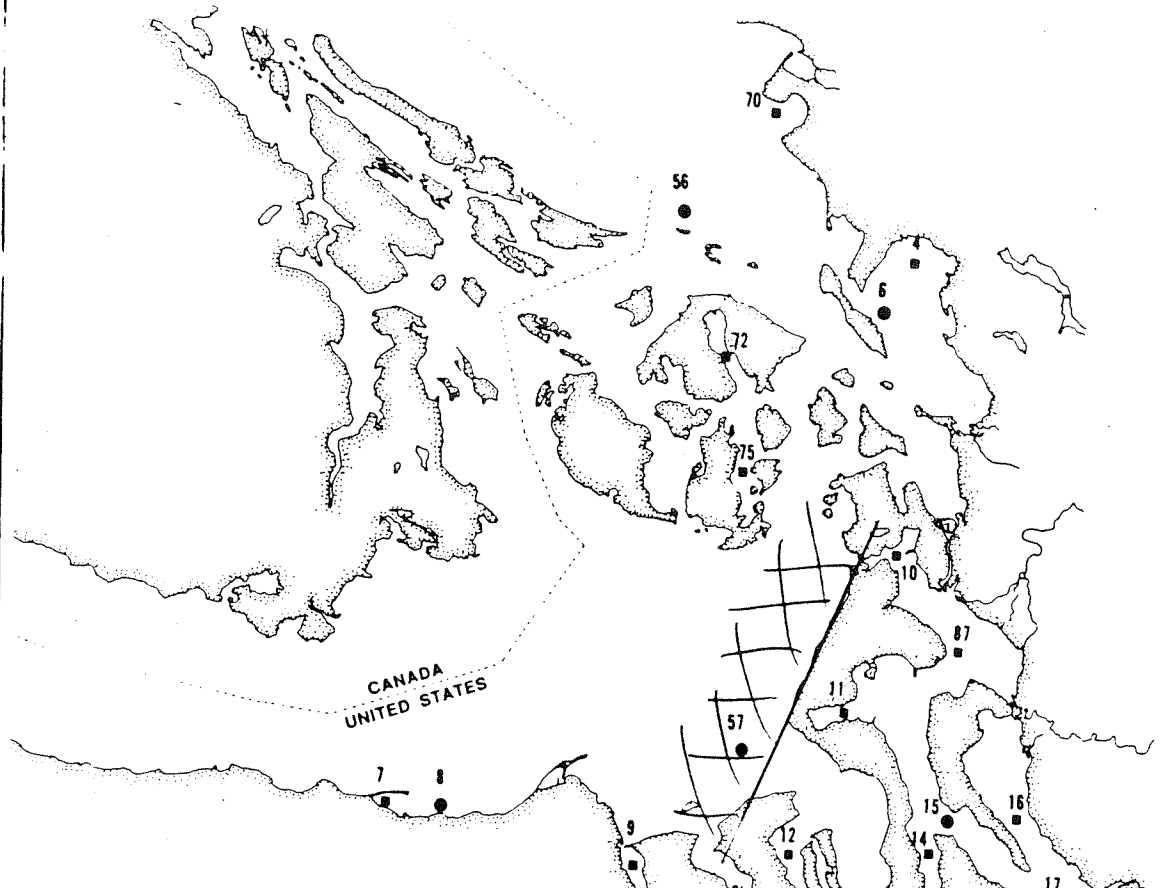
| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDP005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNM001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLR001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



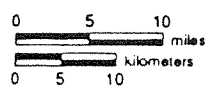
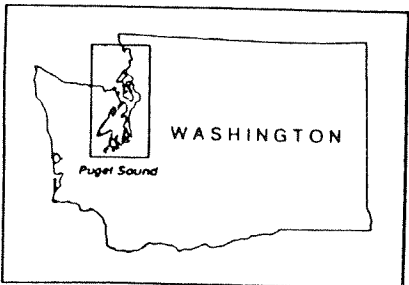




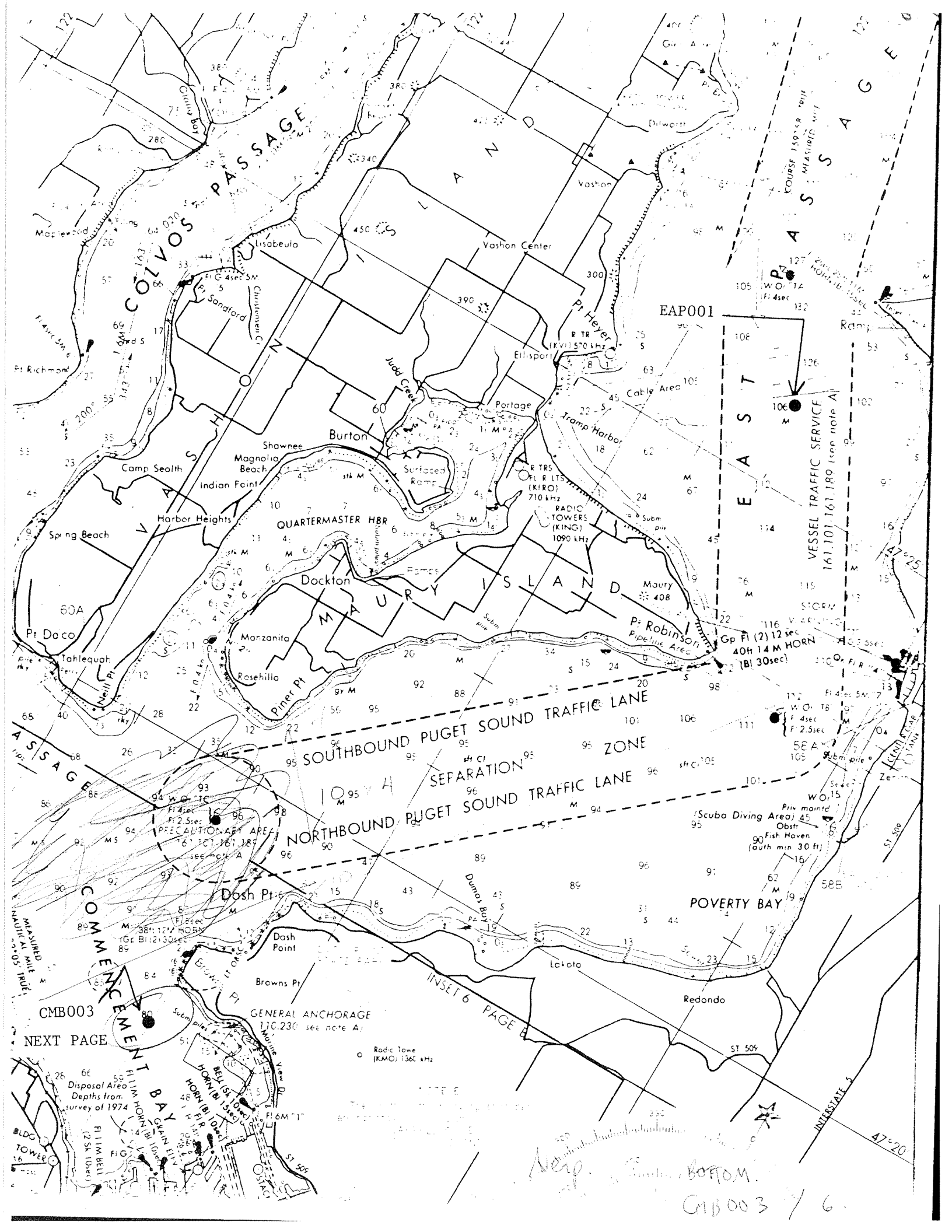




| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POC001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |



CMB003 Bottom SPRING



122

Maplewood

Pt Richmond

Spring Beach

Pt Doco

Tahlequah

NEILL Pt

COMMENCEMENT BAY

Disposal Area  
Depths from  
survey of 1974

BLDG  
TOWER

Colvos Passage

Isabeula

Pt Sanford

Camp Sealth

Harbor Heights

Manzanita

Docketon

Dash Pt

GENERAL ANCHORAGE  
110.230 see note A

HORN Pt

LAND

Vashon

Vashon Center

Burton

QUARTERMASTER HBR

Maury

Dumas Pt

Browns Pt

Redondo

INTERSTATE 5

450

Judd Creek

Portage

Tramp Harbor

RADIO TOWERS  
(KING)  
1090 kHz

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

390

Ellisport

Portage

Tramp Harbor

RADIO TOWERS  
(KIRO)  
710 kHz

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

300

Pt Hever

Ellisport

Tramp Harbor

RADIO TOWERS  
(KING)  
1090 kHz

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

400

Vashon

Vashon Center

Pt Hever

Tramp Harbor

RADIO TOWERS  
(KING)  
1090 kHz

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

EAPO01

Vashon

Vashon Center

Pt Hever

Tramp Harbor

RADIO TOWERS  
(KING)  
1090 kHz

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

127

Pt Hever

Tramp Harbor

RADIO TOWERS  
(KING)  
1090 kHz

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

122

EAPO01

Vashon

Vashon Center

Pt Hever

Tramp Harbor

RADIO TOWERS  
(KING)  
1090 kHz

1095 M SEPARATION

1095 M SEPARATION

1095 M SEPARATION

CMB003

NEXT PAGE

COMMENCEMENT BAY

HORN Pt

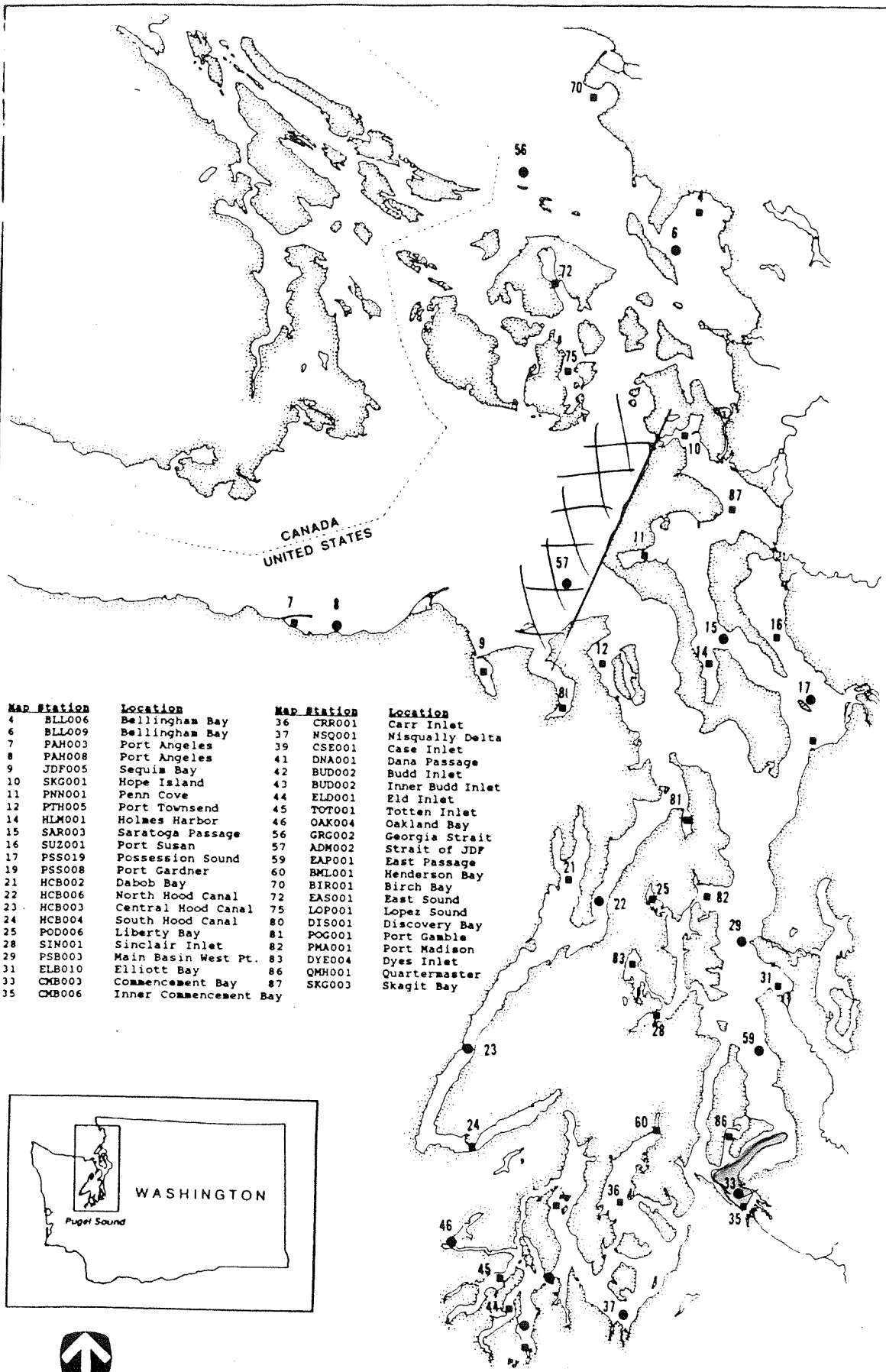
BLDG  
TOWER

Next Page BOTTOM

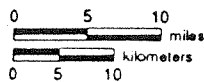
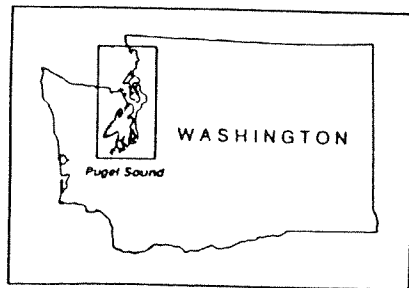
CMB003 / 6

Map

15 x 8 cm

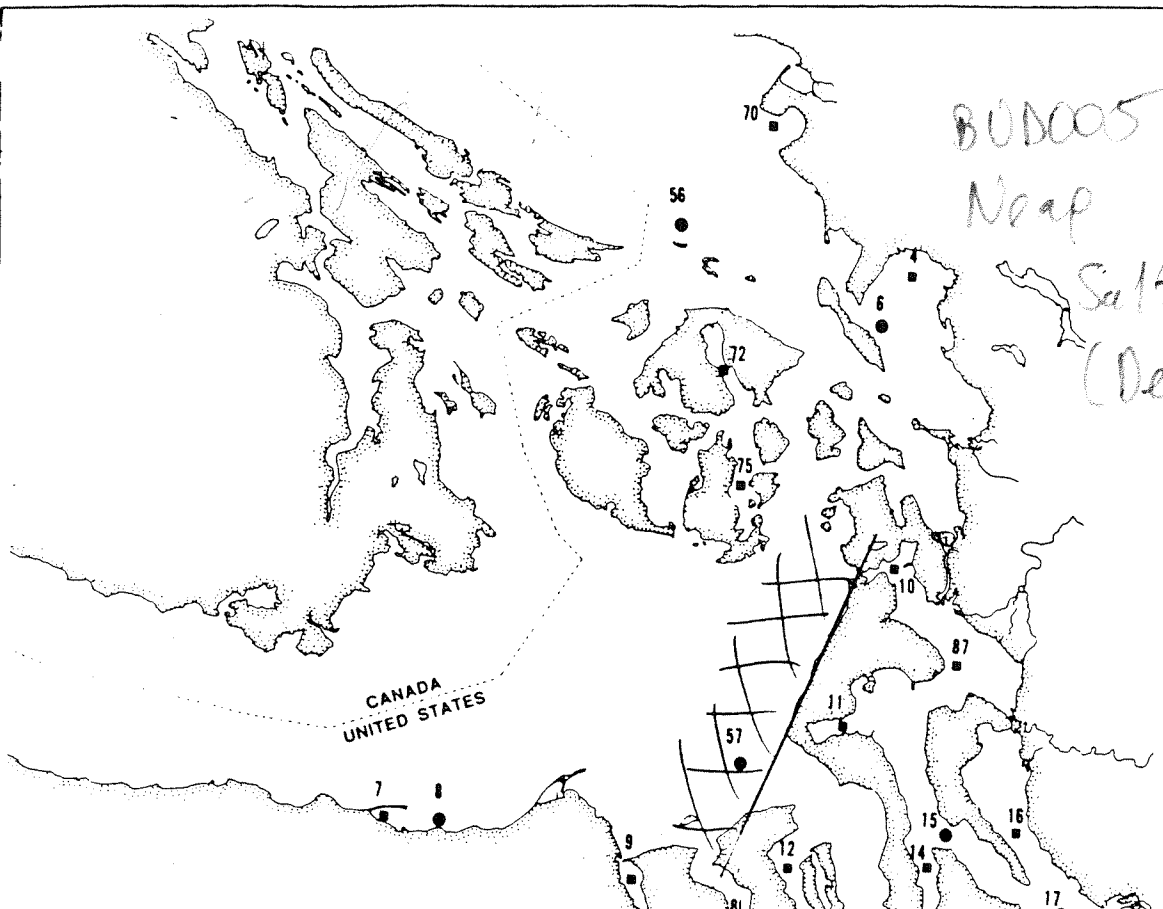


| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLLO06 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLLO09 Bellingham Bay         | 37          | MSQ001 Misqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

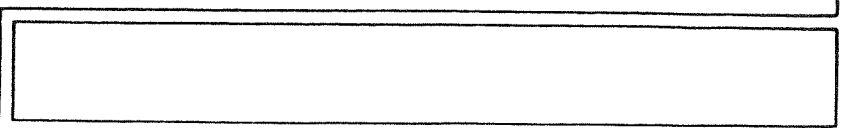
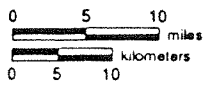
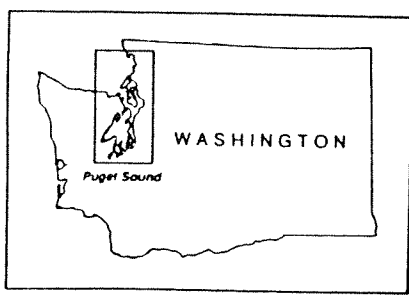


CMB003 Bottom

BUD005  
Neap  
Salt  
(Deep)



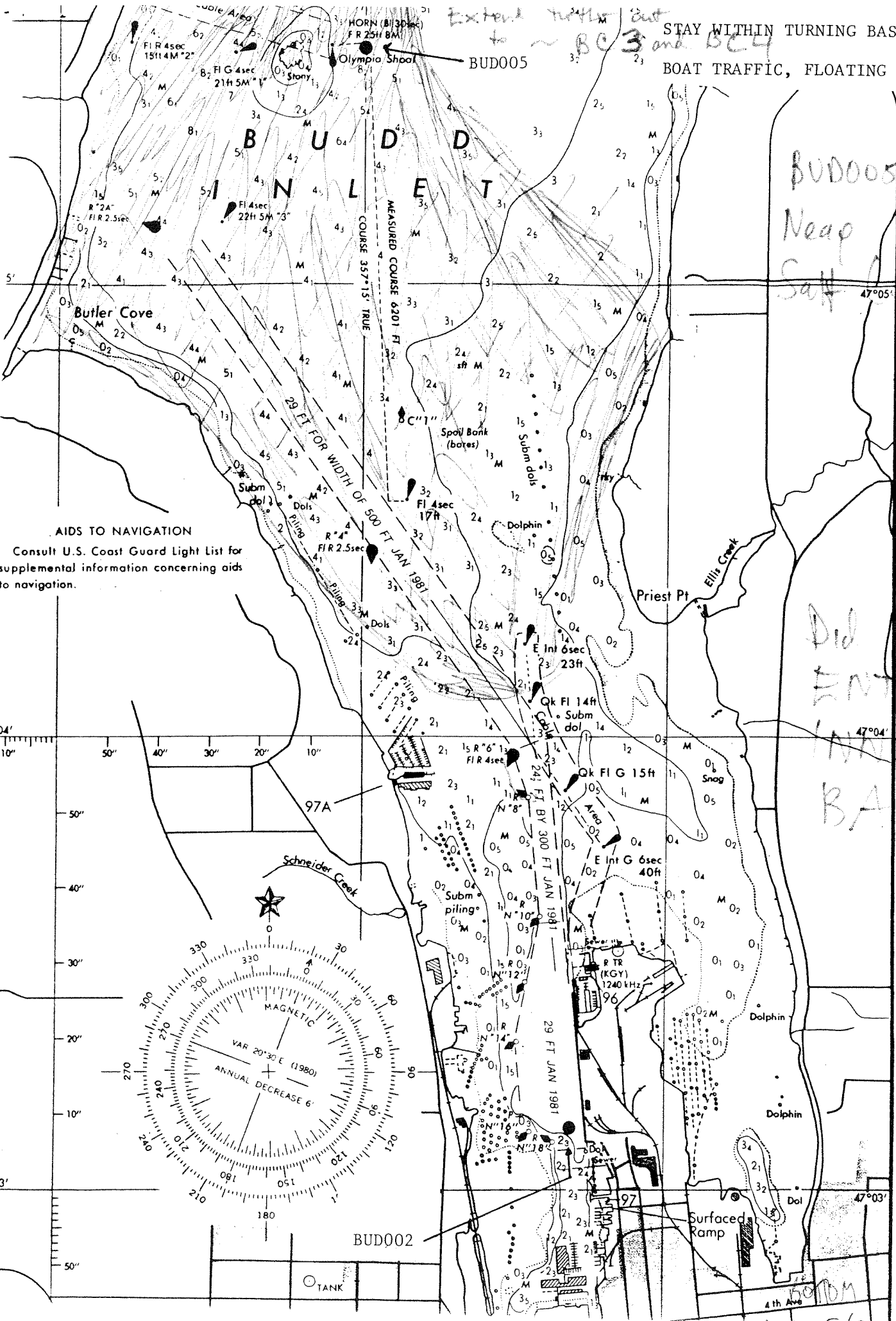
| Map Station | Location | Map Station            | Location |        |                  |
|-------------|----------|------------------------|----------|--------|------------------|
| 4           | BLL006   | Bellingham Bay         | 36       | CRR001 | Carr Inlet       |
| 6           | BLL009   | Bellingham Bay         | 37       | NSQ001 | Nisqually Delta  |
| 7           | PAH003   | Port Angeles           | 39       | CSE001 | Case Inlet       |
| 8           | PAH008   | Port Angeles           | 41       | DNA001 | Dana Passage     |
| 9           | JDF005   | Sequim Bay             | 42       | BUD002 | Budd Inlet       |
| 10          | SKG001   | Hope Island            | 43       | BUD002 | Inner Budd Inlet |
| 11          | PNN001   | Penn Cove              | 44       | ELD001 | Eld Inlet        |
| 12          | PTH005   | Port Townsend          | 45       | TOT001 | Totten Inlet     |
| 14          | HLN001   | Holmes Harbor          | 46       | OAK004 | Oakland Bay      |
| 15          | SAR003   | Saratoga Passage       | 56       | GRG002 | Georgia Strait   |
| 16          | SUZ001   | Port Susan             | 57       | ADM002 | Strait of JDF    |
| 17          | PSS019   | Possession Sound       | 59       | EAP001 | East Passage     |
| 19          | PSS008   | Port Gardner           | 60       | BML001 | Henderson Bay    |
| 21          | HCB002   | Dabob Bay              | 70       | BIR001 | Birch Bay        |
| 22          | HCB006   | North Hood Canal       | 72       | EAS001 | East Sound       |
| 23          | HCB003   | Central Hood Canal     | 75       | LOP001 | Lopez Sound      |
| 24          | HCB004   | South Hood Canal       | 80       | DIS001 | Discovery Bay    |
| 25          | POD006   | Liberty Bay            | 81       | POG001 | Port Gamble      |
| 28          | SIN001   | Sinclair Inlet         | 82       | PMA001 | Port Madison     |
| 29          | PSB003   | Main Basin West Pt.    | 83       | DYE004 | Dyes Inlet       |
| 31          | ELB010   | Elliott Bay            | 86       | QMH001 | Quartermaster    |
| 33          | CMB003   | Commencement Bay       | 87       | SKG003 | Skagit Bay       |
| 35          | CMB006   | Inner Commencement Bay |          |        |                  |



STAY WITHIN TURNING BASIN  
BOAT TRAFFIC, FLOATING DEBRIS

67

Extend north cut  
to ~ BC 3 and BC 4



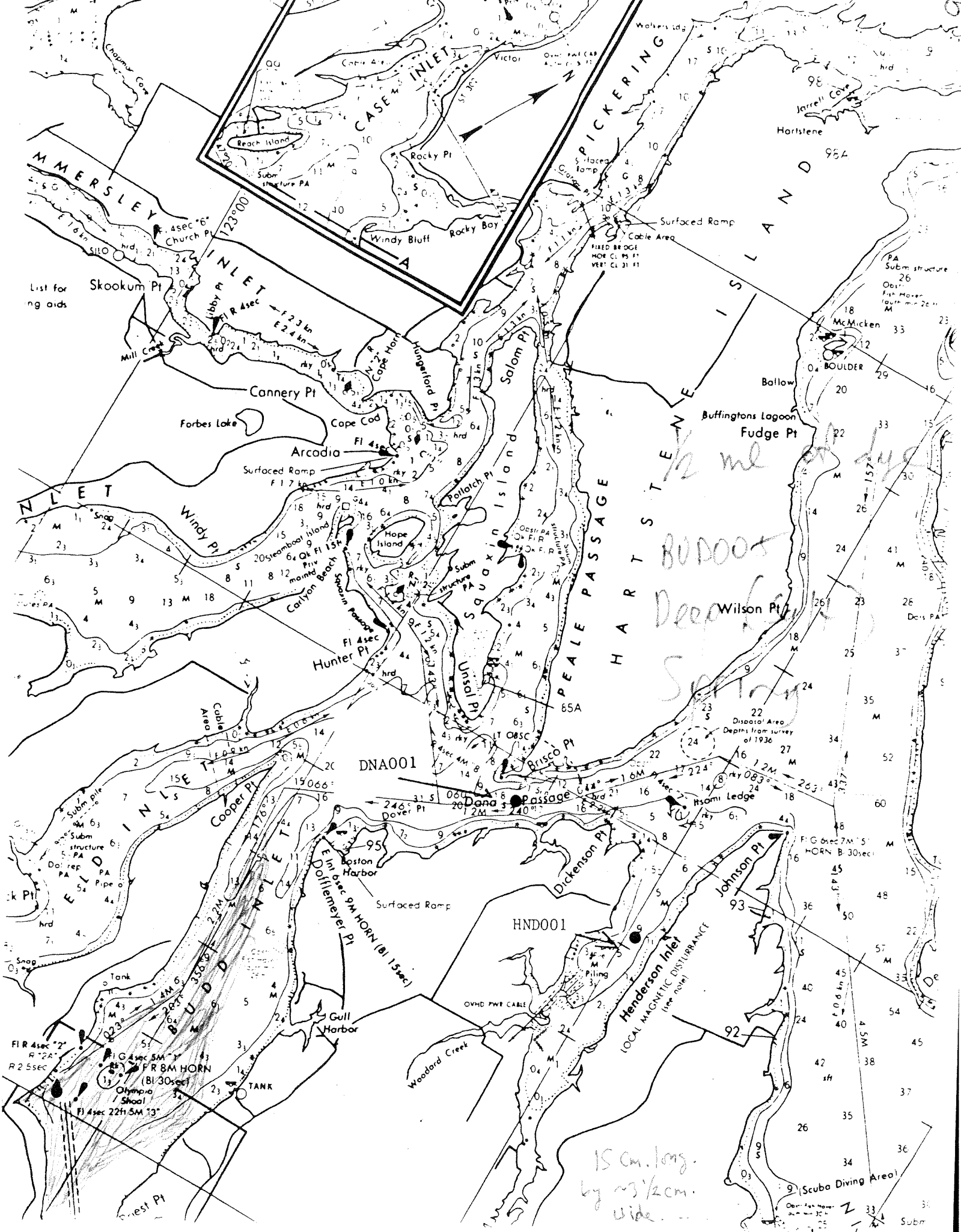
BUD005  
Neap  
Saff (Deep)

13 cm  
long  
by 4 1/2  
cm  
wide

Did Not  
ENTER  
INNER  
BAY!

AIDS TO NAVIGATION  
Consult U.S. Coast Guard Light List for  
supplemental information concerning aids  
to navigation.

BUD005/C



List for  
ng aids

*1/2 mile at day*  
*BUDOOS*  
*Deep for S...*

*15 cm. long.*  
*by 2 1/2 cm.*  
*wide.*

9 Scuba Diving Area

DNA001

HND001

HENDERSON INLET  
LOCAL MAGNETIC DISTURBANCE  
(line area)

FIG 0 sec 7M 'S'  
HORN B 30sec

FIR 4sec '2'  
R 72A  
R 2 Ssec

FIR 4sec 5M '3'  
R 8M HORN  
(BI 30sec)

Olympia Shoal  
Fl 4sec 22ft 5M '13'

Skookum Pt

WINDY PT

ELDON INLET

BUDD INLET

WEST PT

COOPER PT

DOFFENMEYER PT

LIBBY PT

CANNERY PT

ARCADIA

HUNTER PT

COOPER PT

DOFFENMEYER PT

DOFFENMEYER PT

DOFFENMEYER PT

DOFFENMEYER PT

DOFFENMEYER PT

LIBBY PT

CANNERY PT

ARCADIA

HUNTER PT

COOPER PT

DOFFENMEYER PT

DOFFENMEYER PT

DOFFENMEYER PT

DOFFENMEYER PT

DOFFENMEYER PT

LIBBY PT

CANNERY PT

ARCADIA

HUNTER PT

COOPER PT

DOFFENMEYER PT

DOFFENMEYER PT

DOFFENMEYER PT

DOFFENMEYER PT

DOFFENMEYER PT

LIBBY PT

CANNERY PT

ARCADIA

HUNTER PT

COOPER PT

DOFFENMEYER PT

DOFFENMEYER PT

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DOFFENMEYER PT

DOFFENMEYER PT

LIBBY PT

CANNERY PT

ARCADIA

HUNTER PT

COOPER PT

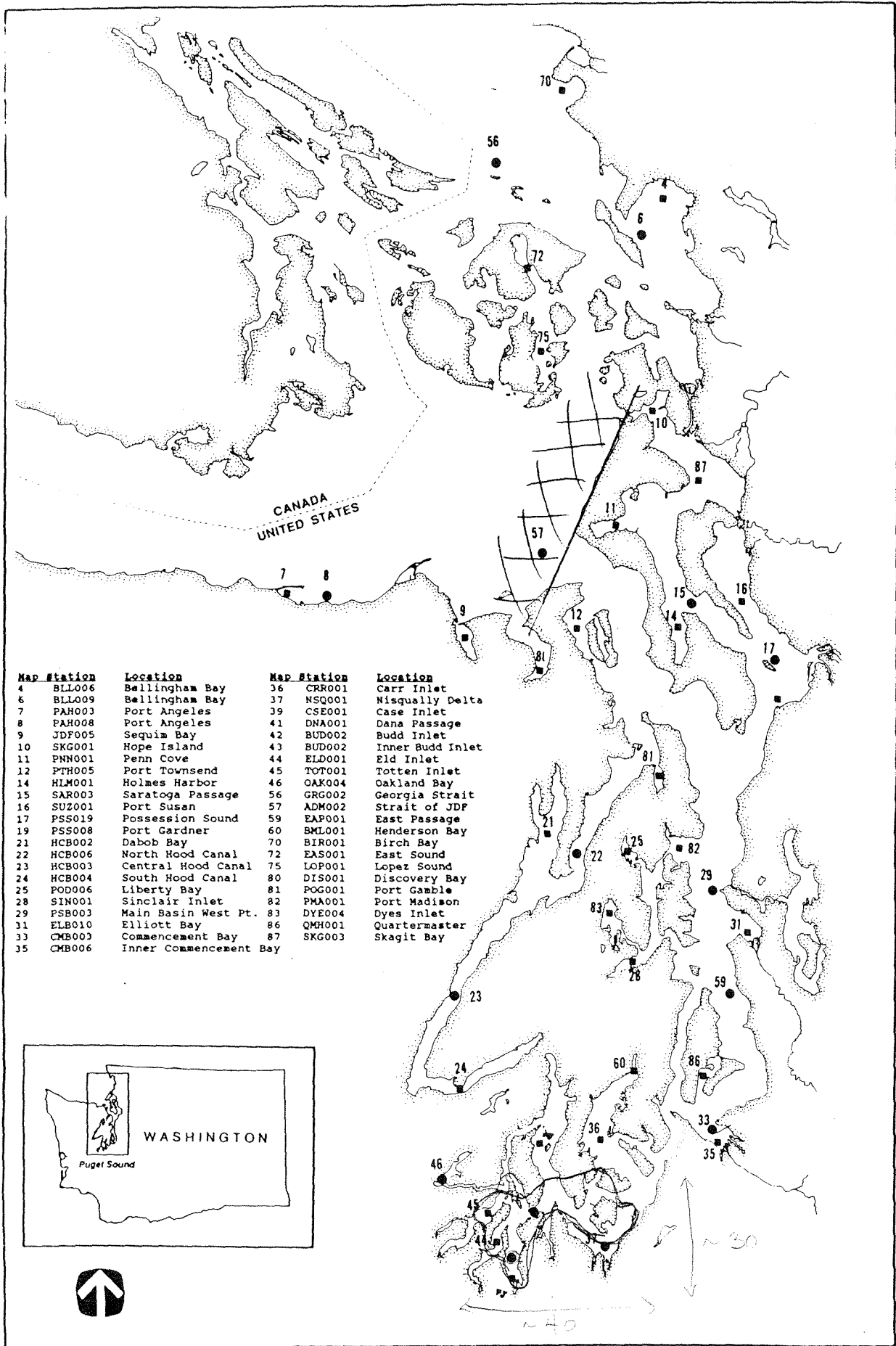
DOFFENMEYER PT

DOFFENMEYER PT

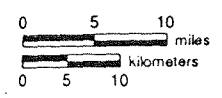
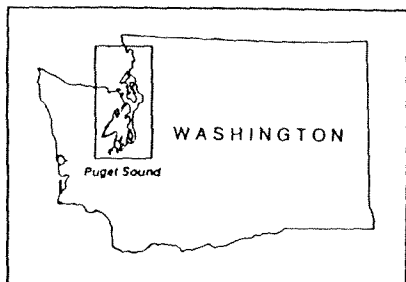
DOFFENMEYER PT

DOFFENMEYER PT

DOFFENMEYER PT

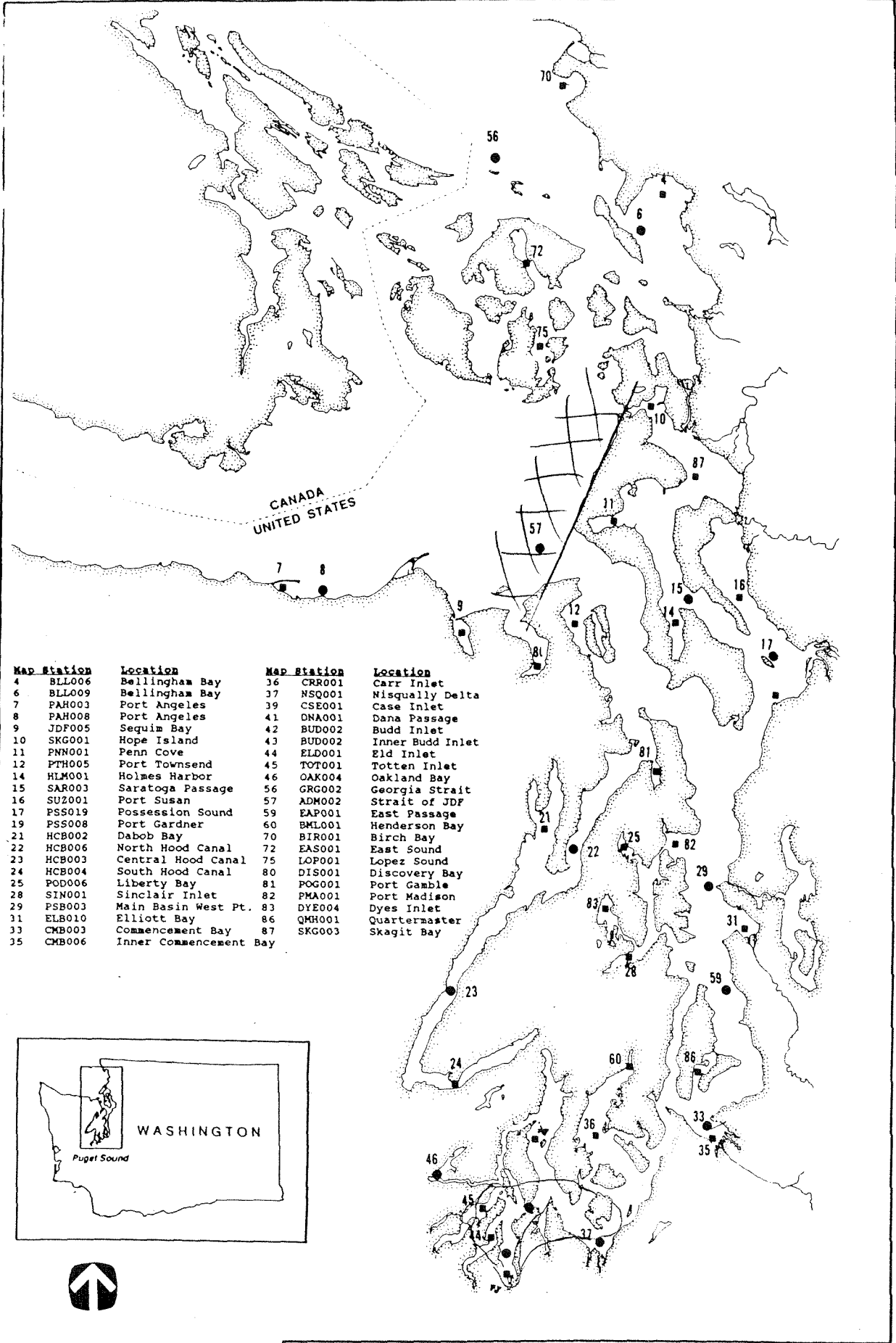


| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

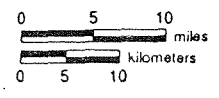
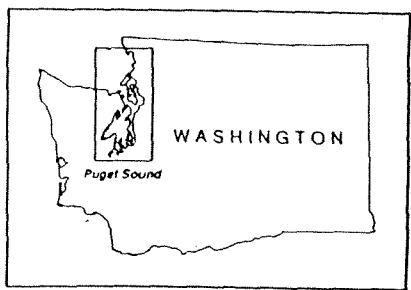


Bud005/50 Spring fresh.





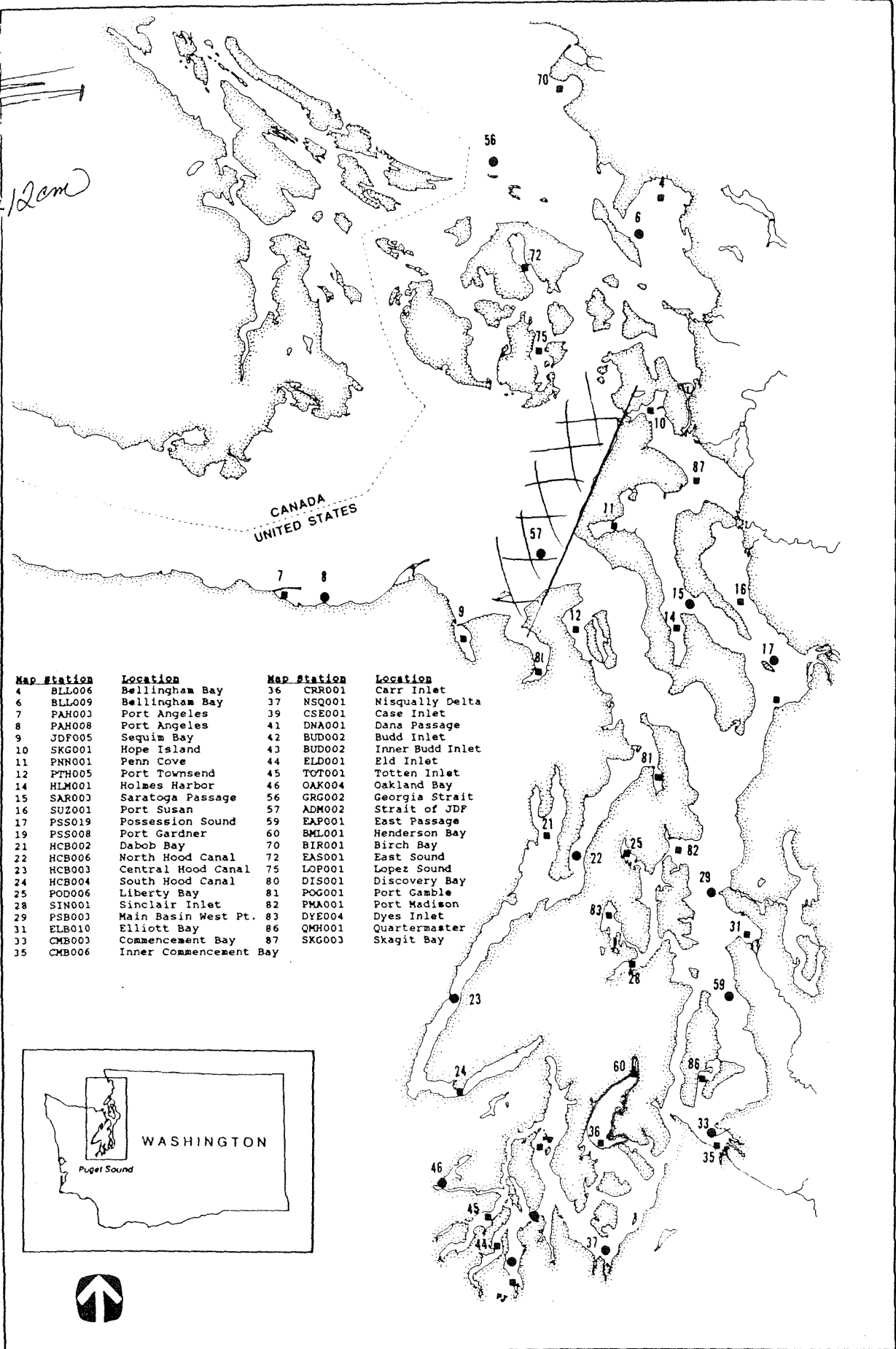
| Map Station | Location | Map Station            | Location |        |                  |
|-------------|----------|------------------------|----------|--------|------------------|
| 4           | BLL006   | Bellingham Bay         | 36       | CRR001 | Carr Inlet       |
| 6           | BLL009   | Bellingham Bay         | 37       | NSQ001 | Nisqually Delta  |
| 7           | PAH003   | Port Angeles           | 39       | CSE001 | Case Inlet       |
| 8           | PAH008   | Port Angeles           | 41       | DNA001 | Dana Passage     |
| 9           | JDF005   | Sequim Bay             | 42       | BUD002 | Budd Inlet       |
| 10          | SKG001   | Hope Island            | 43       | BUD002 | Inner Budd Inlet |
| 11          | PNN001   | Penn Cove              | 44       | ELD001 | Eld Inlet        |
| 12          | PTH005   | Port Townsend          | 45       | TOT001 | Totten Inlet     |
| 14          | HLM001   | Holmes Harbor          | 46       | OAK004 | Oakland Bay      |
| 15          | SAR003   | Saratoga Passage       | 56       | GRG002 | Georgia Strait   |
| 16          | SUZ001   | Port Susan             | 57       | ADM002 | Strait of JDF    |
| 17          | PSS019   | Possession Sound       | 59       | EAP001 | East Passage     |
| 19          | PSS008   | Port Gardner           | 60       | BML001 | Henderson Bay    |
| 21          | HCB002   | Dabob Bay              | 70       | BIR001 | Birch Bay        |
| 22          | HCB006   | North Hood Canal       | 72       | EAS001 | East Sound       |
| 23          | HCB003   | Central Hood Canal     | 75       | LOP001 | Lopez Sound      |
| 24          | HCB004   | South Hood Canal       | 80       | DIS001 | Discovery Bay    |
| 25          | POD006   | Liberty Bay            | 81       | POG001 | Port Gamble      |
| 28          | SIN001   | Sinclair Inlet         | 82       | PMA001 | Port Madison     |
| 29          | PSB003   | Main Basin West Pt.    | 83       | DYE004 | Dyes Inlet       |
| 31          | ELB010   | Elliott Bay            | 86       | QMH001 | Quartermaster    |
| 33          | CMB003   | Commencement Bay       | 87       | SKG003 | Skagit Bay       |
| 35          | CMB006   | Inner Commencement Bay |          |        |                  |



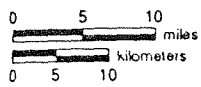
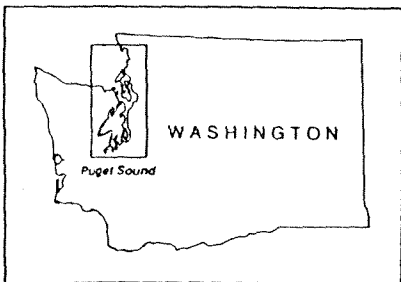
Budd 005 / SE Neaf

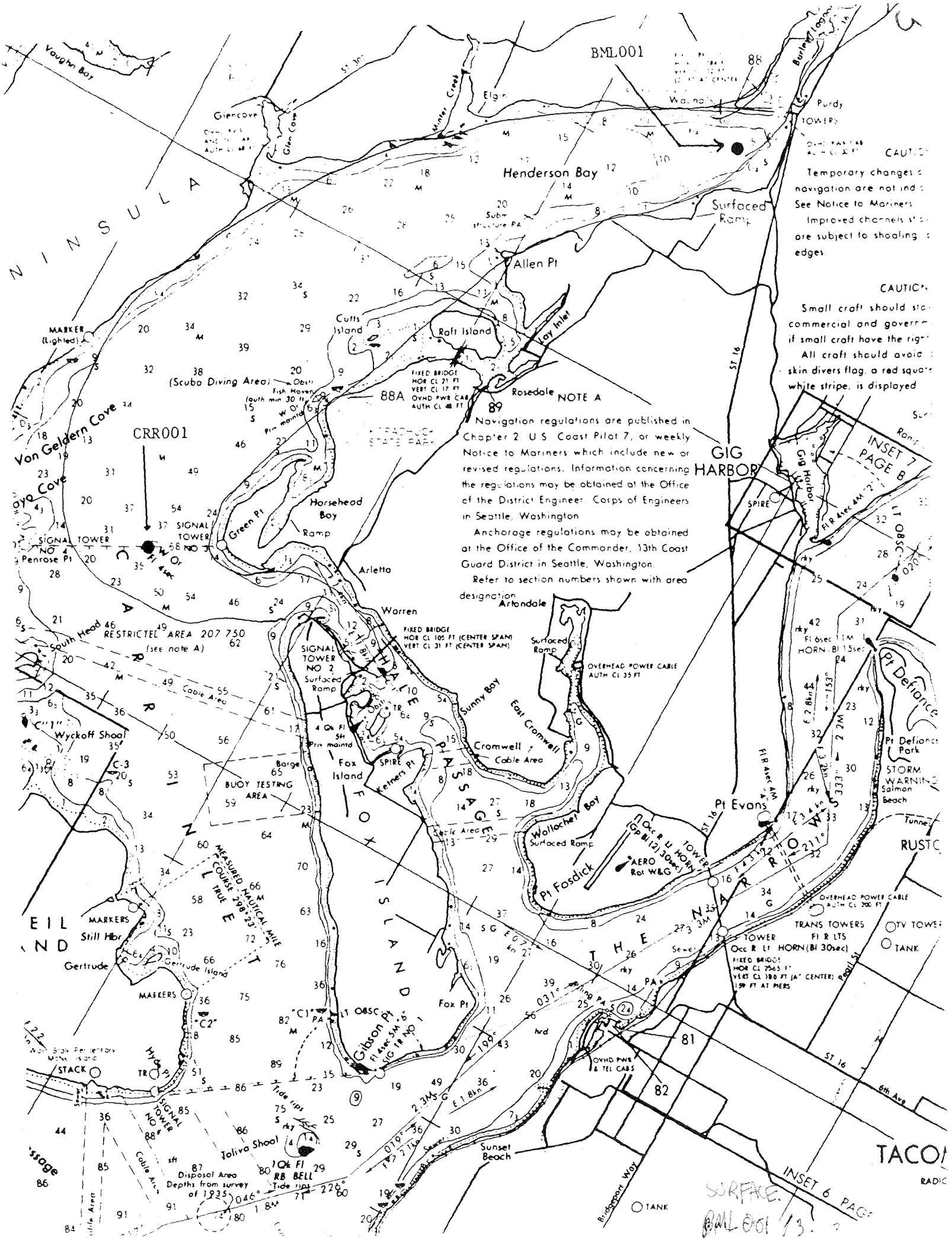
SPRING HEAD 41cm x 12cm

SURFACE BML001



| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |





CAUTION  
 Temporary changes to navigation are not indicated. See Notice to Mariners. Improved channels are subject to shoaling edges.

CAUTION  
 Small craft should stop commercial and government if small craft have the right. All craft should avoid skin divers flag, a red square with white stripe, is displayed.

NOTE A  
 Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7, or weekly Notice to Mariners which include new or revised regulations. Information concerning the regulations may be obtained at the Office of the District Engineer, Corps of Engineers in Seattle, Washington.  
 Anchorage regulations may be obtained at the Office of the Commander, 13th Coast Guard District in Seattle, Washington.  
 Refer to section numbers shown with area designation.

INSET 7  
 PAGE B

GIG HARBOR

TACOMA ISLAND

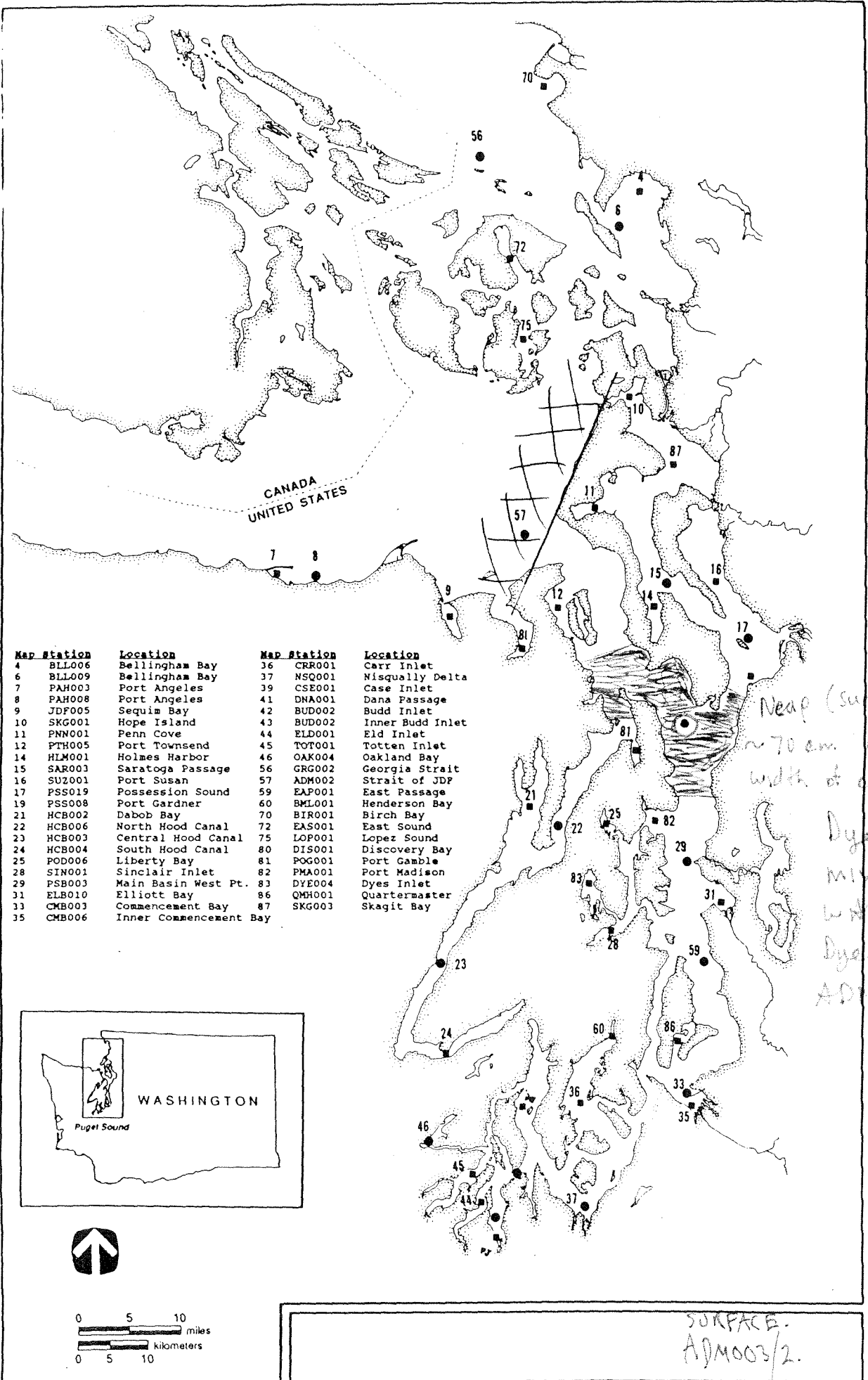
SURFACE  
 BML001 13

INSET 6  
 PAGE A

ADM003

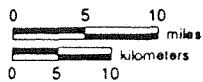
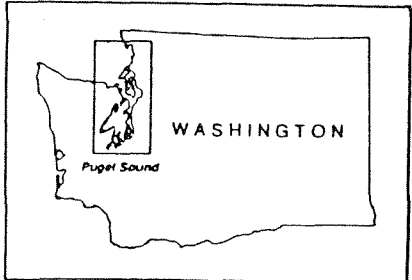
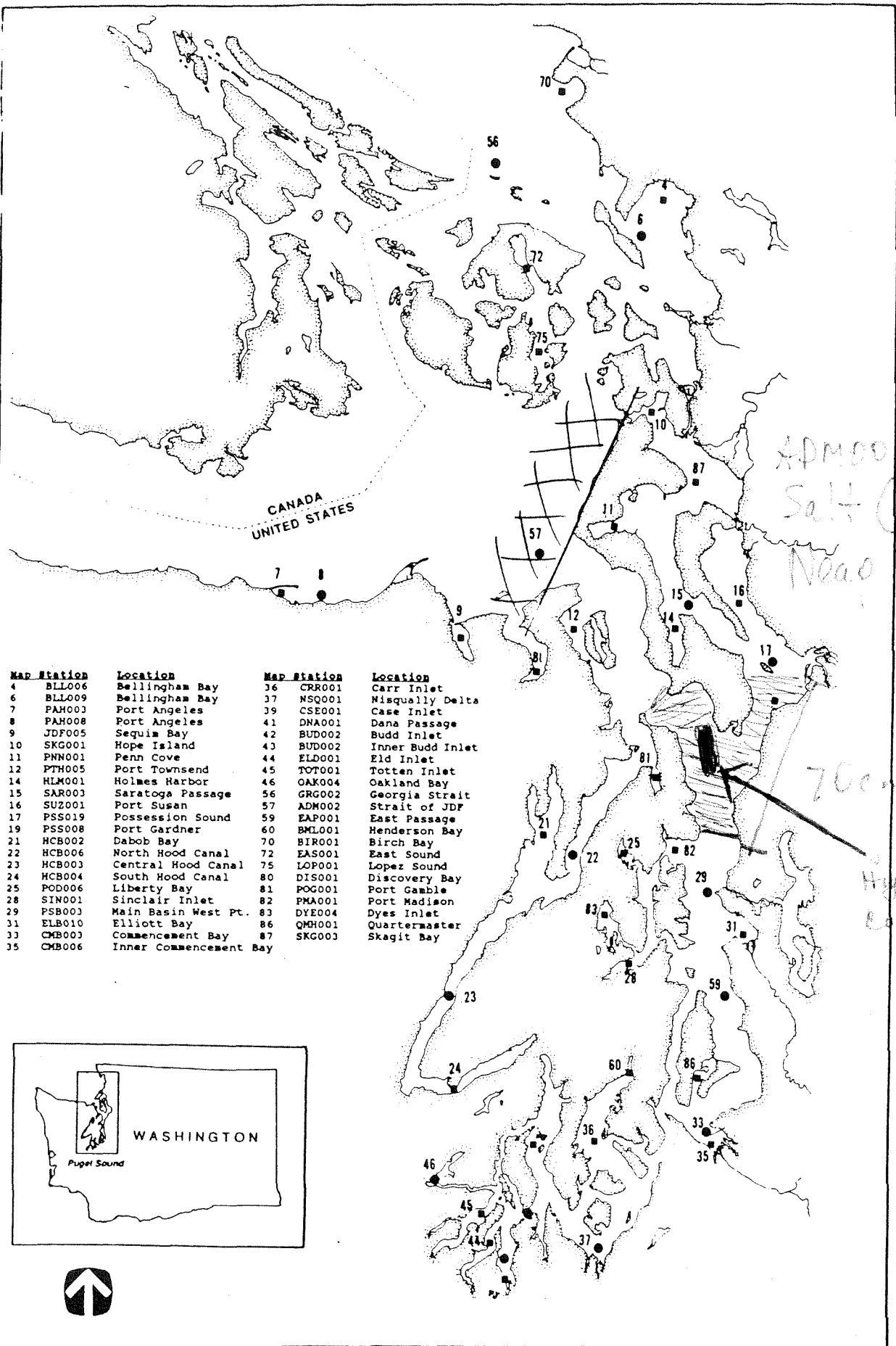
Fresh  
(Surface)

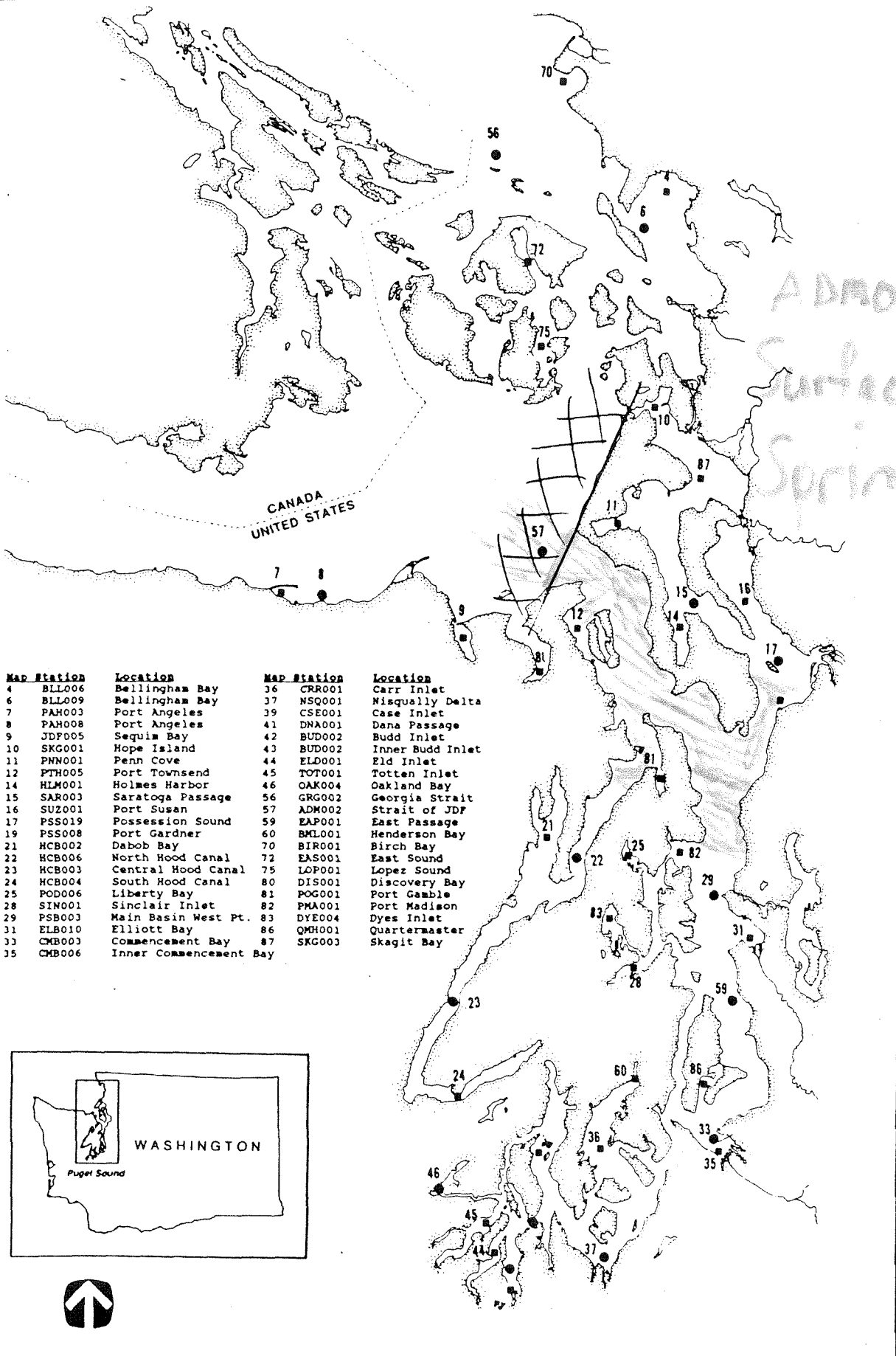
Neap  
Tide



Neap (surface)  
 ~70 am by  
 width of channel  
 Dye  
 mixed  
 with  
 dye from  
 ADM001

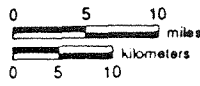
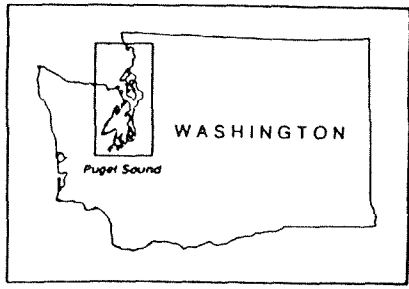
SURFACE  
 ADM003/2.

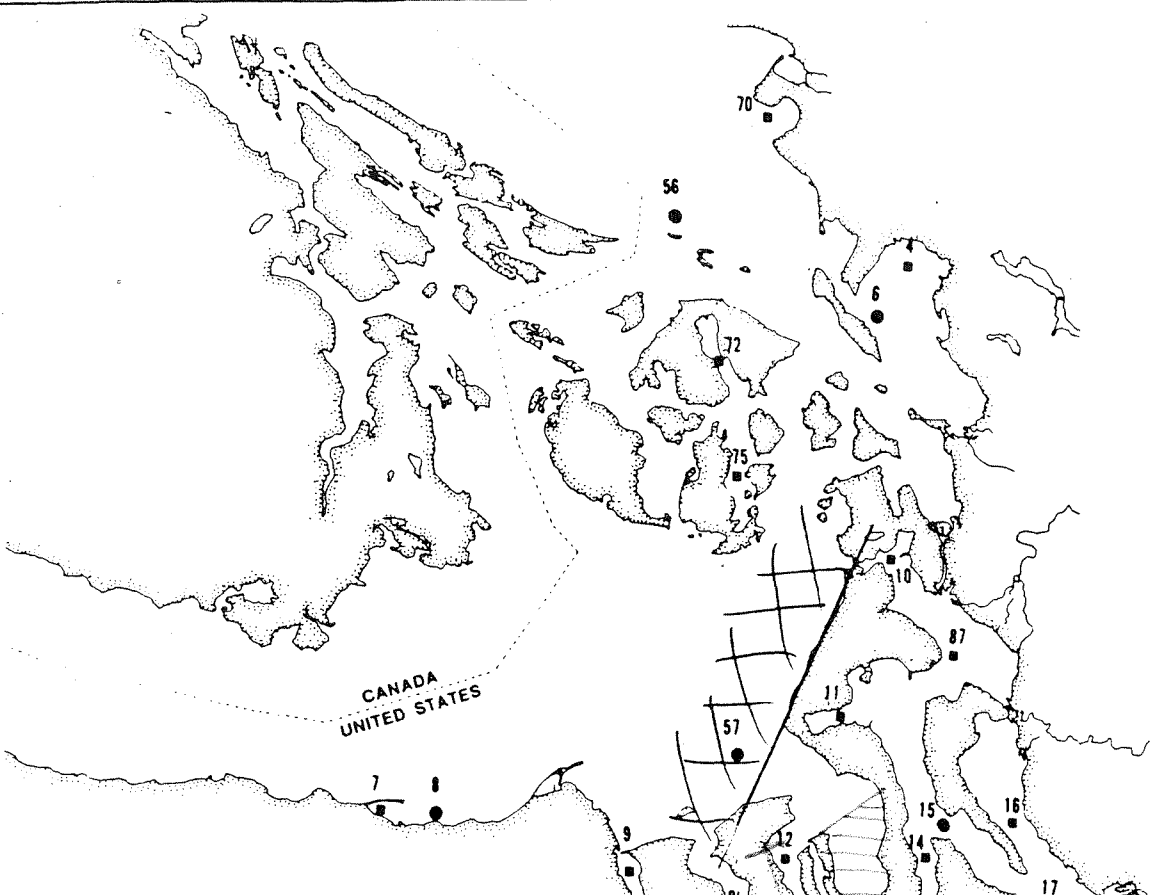




ADM003  
Surface  
Spring

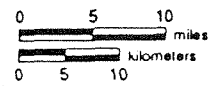
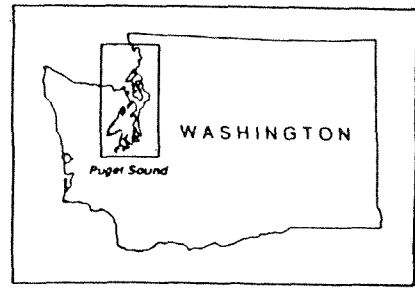
| MAP STATION | Location                      | MAP STATION | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMR003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMR006 Inner Commencement Bay |             |                         |



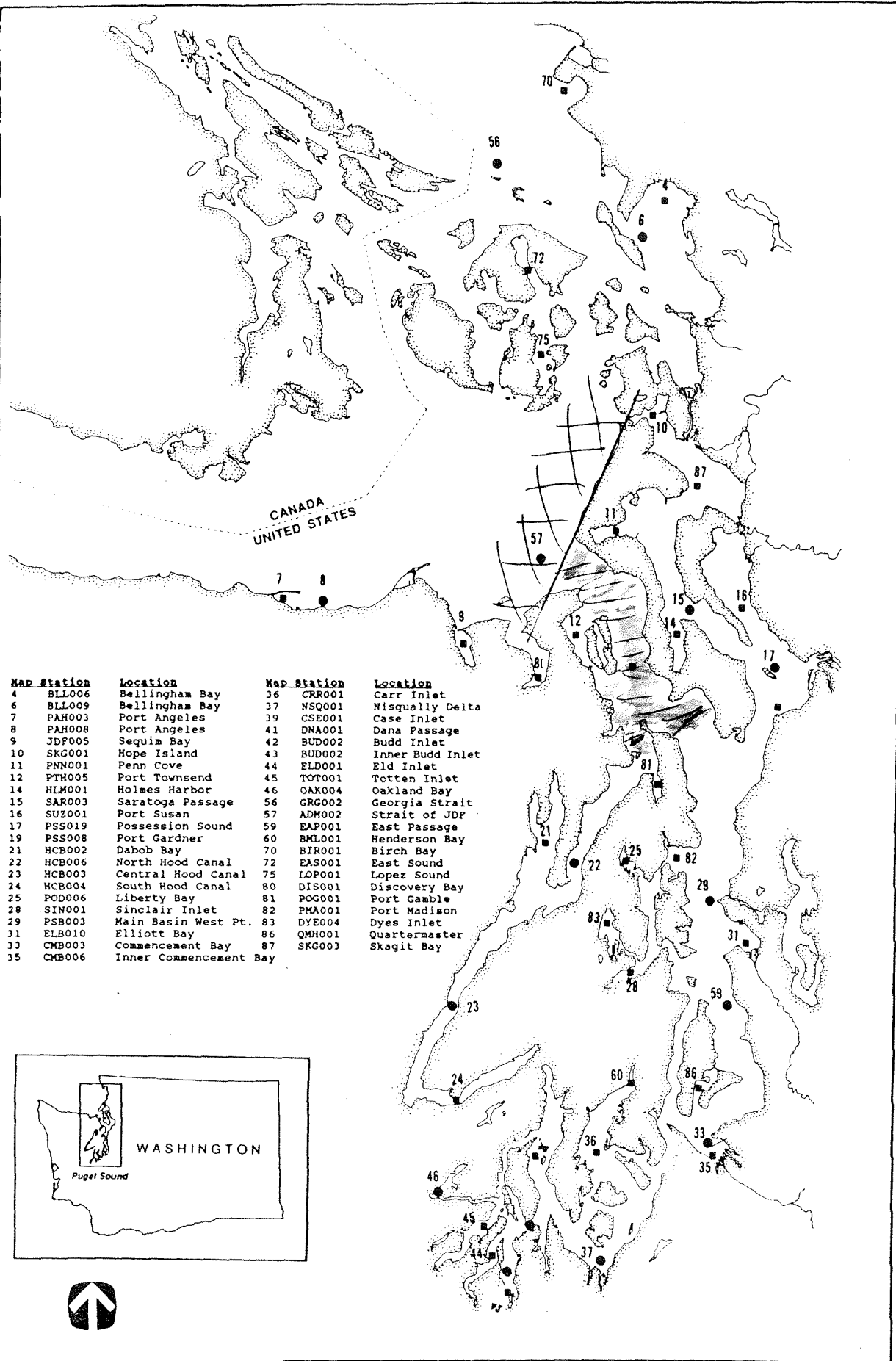


| Map Station | Location | Map Station            | Location |        |                  |
|-------------|----------|------------------------|----------|--------|------------------|
| 4           | BLL006   | Bellingham Bay         | 36       | CRR001 | Carr Inlet       |
| 6           | BLL009   | Bellingham Bay         | 37       | NSQ001 | Misqually Delta  |
| 7           | PAH003   | Port Angeles           | 39       | CSE001 | Case Inlet       |
| 8           | PAH008   | Port Angeles           | 41       | DNA001 | Dana Passage     |
| 9           | JDF005   | Sequim Bay             | 42       | BUD002 | Budd Inlet       |
| 10          | SKG001   | Hope Island            | 43       | BUD002 | Inner Budd Inlet |
| 11          | PNH001   | Penn Cove              | 44       | ELD001 | Eld Inlet        |
| 12          | PTH005   | Port Townsend          | 45       | TOT001 | Totten Inlet     |
| 14          | HLM001   | Holmes Harbor          | 46       | OAK004 | Oakland Bay      |
| 15          | SAR003   | Saratoga Passage       | 56       | GRG002 | Georgia Strait   |
| 16          | SUZ001   | Port Susan             | 57       | ADM002 | Strait of JDF    |
| 17          | PSS019   | Possession Sound       | 59       | EAP001 | East Passage     |
| 19          | PSS008   | Port Gardner           | 60       | BML001 | Henderson Bay    |
| 21          | HCB002   | Dabob Bay              | 70       | BIR001 | Birch Bay        |
| 22          | HCB006   | North Hood Canal       | 72       | EAS001 | East Sound       |
| 23          | HCB003   | Central Hood Canal     | 75       | LOP001 | Lopez Sound      |
| 24          | HCB004   | South Hood Canal       | 80       | DIS001 | Discovery Bay    |
| 25          | POD006   | Liberty Bay            | 81       | POG001 | Port Gamble      |
| 28          | SIN001   | Sinclair Inlet         | 82       | PMA001 | Port Madison     |
| 29          | PSB003   | Main Basin West Pt.    | 83       | DYE004 | Dyes Inlet       |
| 31          | ELB010   | Elliott Bay            | 86       | QMH001 | Quartermaster    |
| 33          | CMB003   | Commencement Bay       | 87       | SKG003 | Skagit Bay       |
| 35          | CMB006   | Inner Commencement Bay |          |        |                  |

ADM003  
Salt (Deep)  
Spring



NEAP  
ADM 001  
EW

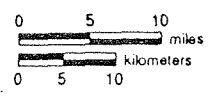
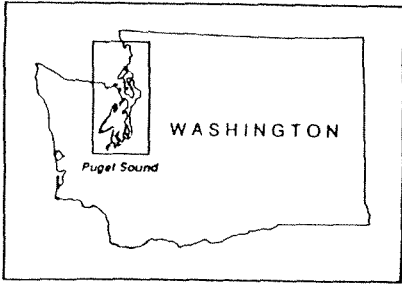


| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PMA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CMB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CMB006 Inner Commencement Bay |             |                         |

Freighter: 1.0 ml.  
of dye release  
on both.

Neap Tide:  
90 cm. x 25 cm.

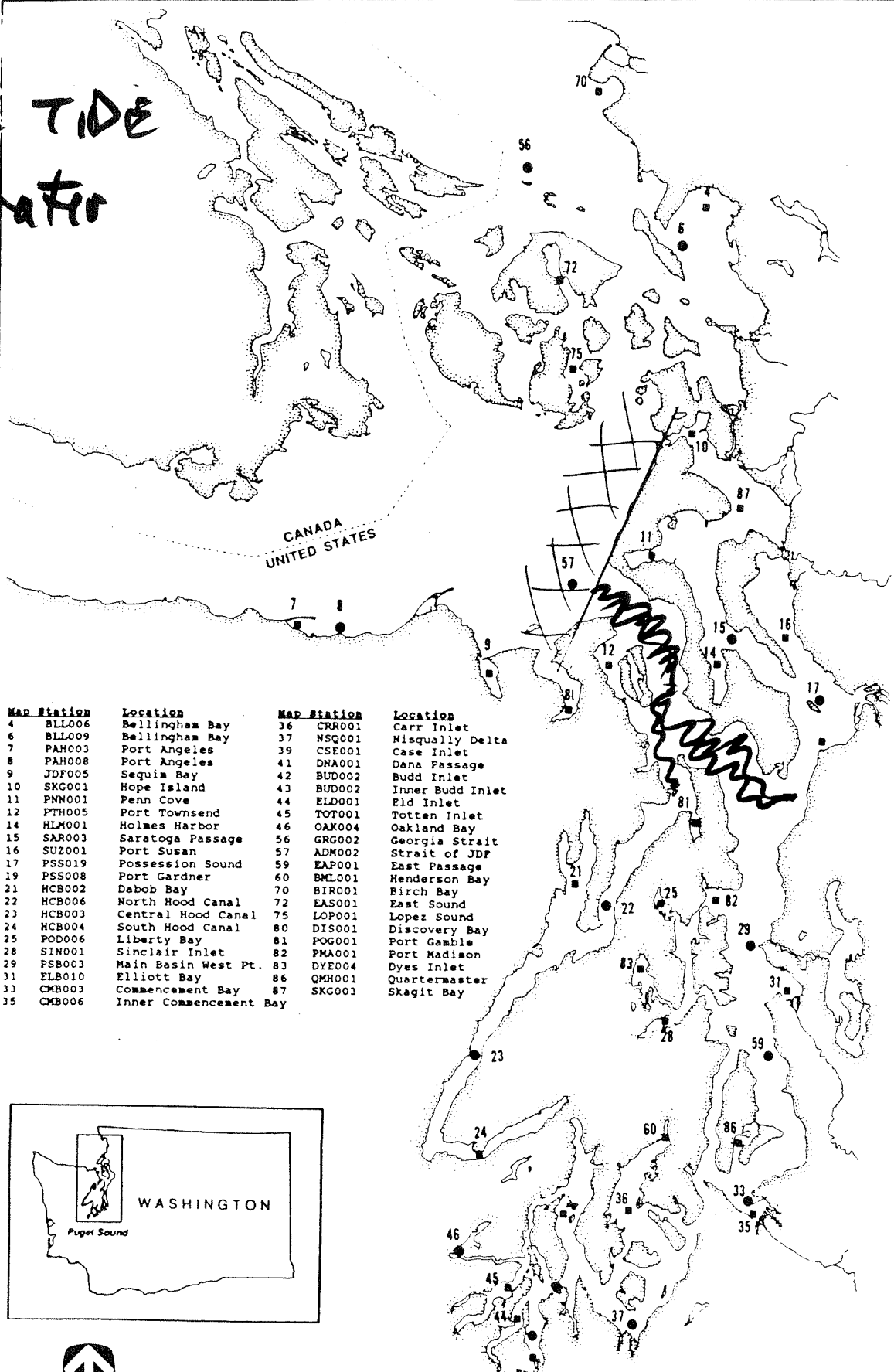
Spring Tide:  
130 cm. x 25 cm.



SURFACE  
ADM001/1.

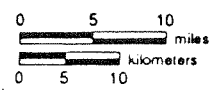
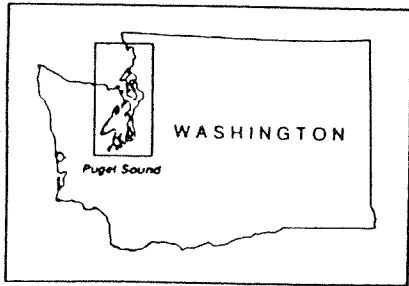


# SPRING TIDE Saltwater

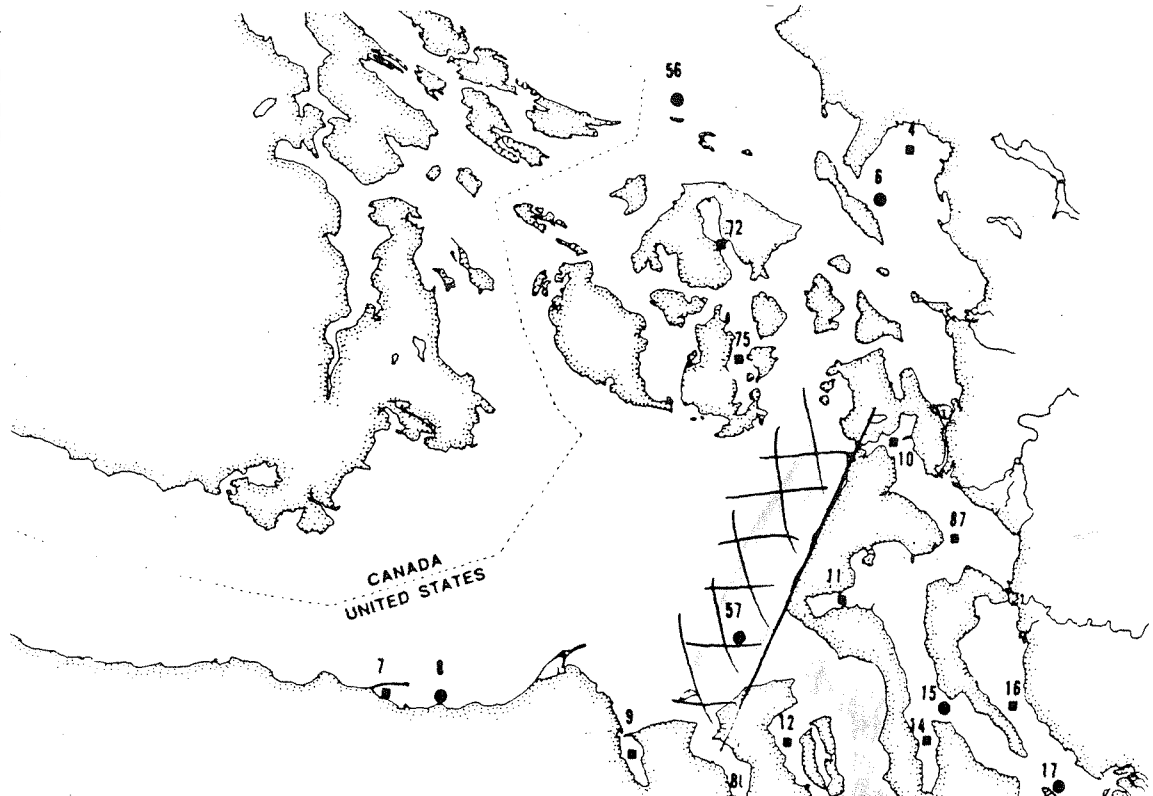


| MAP Station | Location                      |
|-------------|-------------------------------|
| 4           | BLL006 Bellingham Bay         |
| 6           | BLL009 Bellingham Bay         |
| 7           | PAH003 Port Angeles           |
| 8           | PAH008 Port Angeles           |
| 9           | JDF005 Sequia Bay             |
| 10          | SKG001 Hope Island            |
| 11          | PNN001 Penn Cove              |
| 12          | PTH005 Port Townsend          |
| 14          | HLM001 Holmes Harbor          |
| 15          | SAR003 Saratoga Passage       |
| 16          | SUZ001 Port Susan             |
| 17          | PSS019 Possession Sound       |
| 19          | PSS008 Port Gardner           |
| 21          | HCB002 Dabob Bay              |
| 22          | HCB006 North Hood Canal       |
| 23          | HCB003 Central Hood Canal     |
| 24          | HCB004 South Hood Canal       |
| 25          | POD006 Liberty Bay            |
| 28          | SIN001 Sinclair Inlet         |
| 29          | PSB003 Main Basin West Pt.    |
| 31          | ELB010 Elliott Bay            |
| 33          | CMB003 Commencement Bay       |
| 35          | CMB006 Inner Commencement Bay |

| MAP Station | Location                |
|-------------|-------------------------|
| 36          | CRR001 Carr Inlet       |
| 37          | NSQ001 Misqually Delta  |
| 39          | CSE001 Case Inlet       |
| 41          | DNA001 Dana Passage     |
| 42          | BUD002 Budd Inlet       |
| 43          | BUD002 Inner Budd Inlet |
| 44          | ELD001 Eld Inlet        |
| 45          | TOT001 Totten Inlet     |
| 46          | OAK004 Oakland Bay      |
| 56          | GRG002 Georgia Strait   |
| 57          | ADM002 Strait of JDF    |
| 59          | EAP001 East Passage     |
| 60          | BML001 Henderson Bay    |
| 70          | BIR001 Birch Bay        |
| 72          | EAS001 East Sound       |
| 75          | LOP001 Lopez Sound      |
| 80          | DIS001 Discovery Bay    |
| 81          | POG001 Port Gamble      |
| 82          | PMA001 Port Madison     |
| 83          | DYE004 Dyes Inlet       |
| 86          | QMH001 Quartermaster    |
| 87          | SKG003 Skagit Bay       |



ALM 011



| Map Station | Location                      | Map Station | Location                |
|-------------|-------------------------------|-------------|-------------------------|
| 4           | BLL006 Bellingham Bay         | 36          | CRR001 Carr Inlet       |
| 6           | BLL009 Bellingham Bay         | 37          | NSQ001 Nisqually Delta  |
| 7           | PAH003 Port Angeles           | 39          | CSE001 Case Inlet       |
| 8           | PAH008 Port Angeles           | 41          | DNA001 Dana Passage     |
| 9           | JDF005 Sequim Bay             | 42          | BUD002 Budd Inlet       |
| 10          | SKG001 Hope Island            | 43          | BUD002 Inner Budd Inlet |
| 11          | PNN001 Penn Cove              | 44          | ELD001 Eld Inlet        |
| 12          | PTH005 Port Townsend          | 45          | TOT001 Totten Inlet     |
| 14          | HLM001 Holmes Harbor          | 46          | OAK004 Oakland Bay      |
| 15          | SAR003 Saratoga Passage       | 56          | GRG002 Georgia Strait   |
| 16          | SUZ001 Port Susan             | 57          | ADM002 Strait of JDF    |
| 17          | PSS019 Possession Sound       | 59          | EAP001 East Passage     |
| 19          | PSS008 Port Gardner           | 60          | BML001 Henderson Bay    |
| 21          | HCB002 Dabob Bay              | 70          | BIR001 Birch Bay        |
| 22          | HCB006 North Hood Canal       | 72          | EAS001 East Sound       |
| 23          | HCB003 Central Hood Canal     | 75          | LOP001 Lopez Sound      |
| 24          | HCB004 South Hood Canal       | 80          | DIS001 Discovery Bay    |
| 25          | POD006 Liberty Bay            | 81          | POG001 Port Gamble      |
| 28          | SIN001 Sinclair Inlet         | 82          | PHA001 Port Madison     |
| 29          | PSB003 Main Basin West Pt.    | 83          | DYE004 Dyes Inlet       |
| 31          | ELB010 Elliott Bay            | 86          | QMH001 Quartermaster    |
| 33          | CKB003 Commencement Bay       | 87          | SKG003 Skagit Bay       |
| 35          | CKB006 Inner Commencement Bay |             |                         |

