

Southern Southeast Area  
Operational Forest Inventory  
For  
State Forest  
And  
General Use Lands

February 9, 2016



State of Alaska  
Department of Natural Resources  
Division of Forestry

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**Southern Southeast Area  
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I. Executive Summary

This report presents findings from a forest inventory conducted on 69,790 acres of state land in Southeast Alaska. Timber types were mapped on state land available for timber management in the Southeast State Forest, the Prince of Wales Island Area Plan, Prince of Wales Island Area Plan Amendment and the Central-Southern Southeast Area Plan. This inventory updates a draft report issued in 2011 by deleting lands identified for conveyance to the Wrangell Borough. The net timber base in the inventoried area is 44,196 acres and the annual allowable cut is estimated to be 11,200 thousand board feet (MBF) per year.

II. Introduction and Background

A. Purpose

This inventory is an operational level inventory that provides the basis for assessing area-wide timber resources and establishing the annual allowable cut for the Southern Southeast Area (SSE). The following information was developed as a part of this project:

1. Forest Resources

This inventory data summarizes forest resources in SSE, taking into account timber stands, forest roads, streams, lakes, eagle nests, and other site-specific considerations. DOF uses this information to develop Five-year schedules of timber sales (FYSTSs), Forest Land Use Plans (FLUPs) and guiding other management operations such as timber sale preparation or stand improvement.

2. The Annual Allowable Cut (AAC) for the SSE.

3. A database for tracking reforestation and precommercial thinning activity on State harvested land.

B. Background

This operational inventory was originally produced on July 25, 2011, subsequent to the creation of the Southeast State Forest and was titled “Southern Southeast Area Forest Inventory of State Forest and General Use Lands *Draft*.” The original report was termed a *draft* due to the selection rights of the City and Borough of Wrangell in AS 41.17.500(f). The State’s Final Finding and Decision regarding fulfillment of the Wrangell municipal entitlement concluded on April 15, 2015. Prior to that time the Division of Forestry managed the land as State Forest. Lands included in the Wrangell entitlement have been subsequently removed from the timber land base for the

calculations in this update. This report is the operational inventory of the Southern Southeast Area as of the date of this report.

### C. Lands included in inventory

Land ownership in the inventory is based on the State Land Records Information System. Future changes in land status will be reflected in updates to the inventory.

The inventory covers all State of Alaska area plan designated General Use (GU) lands and legislatively designated State Forest lands within the SSE (see Vicinity Maps). The State land base in SSE encompasses the major islands of Mitkof, Kupreanof, Kuiu, Etolin, Wrangell, Prince of Wales, and Revillagigedo, and the surrounding smaller islands south of Fredrick Sound. In addition, the land base includes the mainland from Thomas Bay to Hyder. This inventory does not include land owned by the University of Alaska (UA) or the Alaska Mental Health Land Trust (AMHLT).

The inventory focuses on lands that are available for timber harvest, as identified in the Prince of Wales Island Area Plan, Prince of Wales Island Area Plan Amendment and the Central/Southern Southeast Area Plan.<sup>1</sup> Most of the units described as available for timber harvest are designated as “General Use (GU)” within the area plans. Within GU areas, specific sites are often excluded or restricted from forest management. Specific plan restrictions pertaining to forest management are summarized in Appendix 1 and reflected in the inventory. The land inventoried does not include Settlement designated land.

### III. Methods

The areas identified for potential commercial forest management were quantified based on aerial photo analysis. Several different photo sets and orthographic images were used as referenced (Appendix 3). The photo analysis focused the subsequent ground and aerial reconnaissance.

The photo analysis was done in an iterative manner as field visits were performed (photos were examined and delineated before and after field inspection). The information gathered by physical observation was compared and extrapolated to that developed by remote observation of the aerial photos. This method provided physical correlation and adaptation of the initial photo typing.

The United States Forest Service (USFS) GIS road layers and vegetation models were used to establish a framework of reference for the timber types that was modified based on observation of past timber sale characteristics along with the knowledge accumulated by contractors and staff that have worked in the study areas. Volume classifications

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<sup>1</sup> The Southeast State Forest (SESF) Management Plan was in preparation during preparation of the inventory. When adopted, it will supersede the area plans for the lands in the SESF.

attributed to the timber types were based on staff observation and experience. The DOF staff visited the majority of the areas listed in this report from 2004-2011.

Polygons, lines and points were developed delineating the shapes and locations of the inventory information. An ESRI personal database was developed to contain and organize the information accumulated. Separate layers were developed to record information pertaining to GU lands, timber types, roads, streams, lakes, property lines, rock pits, eagle trees, state pre-commercial thinning and state timber sales (proposed, active and closed). A data dictionary was developed to establish consistent terms and define the data parameters (see Appendix 2). All distances and acreages referred to in the report and data were developed using the tools associated with the ESRI GIS Arc Map 9.3.1 through 10.2 software.

A paper graphic representation of the entire data set was not developed as part of this report due to the extensive geographic distribution of the data. Due to the multitude of recorded variables, graphic maps of the features will be developed as needed and can be inspected electronically as required in the SSE Area Office. The electronic data is available on request.

#### IV. Results

##### A. Net timber base

###### 1. Gross acreage available for timber management

The area plans determine the gross available acreage. Through the area plans, DNR accounts for a variety of uses for forest lands including, but not limited to settlement, timber harvest, recreation and fish and wildlife habitat. The area plans designate forest management activities (timber harvest) as an appropriate use of the forest resource on land classified as General Use (GU). The DOF has estimated that out of the total state acreage in the SSE, the total General Use (GU) land type at present is approximately 23,198 acres. In addition to the GU land, the legislature in 2010 and 2011 converted 46,592 acres of previously classified GU lands to State Forest. The combination of these two land classes (69,790 acres) is the gross amount of land that is potentially appropriate for commercial forest management.

###### 2. Net acreage available for timber management

###### a. Cover types

DOF classified land in the gross available area into cover types, including water, muskeg, non-productive land (scrub) and several timber types that have the capability of having commercial value. The commercial timber types are based on potential of the stand to produce logs with commercial characteristics. The following four vegetative (cover) types have the potential to grow or produce marketable saw log timber:

Old Growth (G)

Old growth timber was defined as a stand of timber exhibiting characteristics of an over-mature stand generally with no man-made disturbances that has log size characteristics that would produce a #3 saw log as defined by the Official Rules of the Northwest Log Scale Bureaus<sup>2</sup>. Within old growth stands, volume classes were assigned and the level of stocking was estimated based on USFS inventory data, aerial photos and site observations.

Mature Second Growth (S)

Timber in this type is predominantly second growth timber that has saw log size characteristics as defined by the Northwest Log Scale Bureaus. Timber in this size class is at or nearing the stand rotation age within the next 25 years for that site.

Pole Class Second Growth (P). This timber is second growth timber that has an average present diameter at four feet above the projected stump height of 6” and larger but not meeting the (S) class above.

Reforestation (R)

Second growth stands not presently meeting the above classes.

Acreage of the timber types and old growth volume classes is shown in Table 1 on page 8.

b. Reductions for multiple use considerations

Areas excluded from timber harvesting were deleted from the area with vegetative cover types capable of growing commercial timber (G,S,P and R). Typical exclusions include:

- 100-foot no harvest retention along known anadromous and high-value resident fish water bodies,
- 300-foot coastal shoreline retention on all areas,
- 330-foot retention for cataloged eagle nesting trees, and
- Buffers for subdivisions and other specific sites detailed in the area plans.

The majority of the management subunits require shore side management areas of 300 feet or greater. In other areas it has been the DOF’s experience that 300 feet has been emphasized for its importance and requested retained by ADFG for wildlife habitat. The DOF for this analysis therefore removed the first 300 feet of land from the shoreline from the timber base in all areas. In the past fifteen years DOF and ADFG have worked to maintain this average shore distance of 300 feet contingent on accessibility, timber quality, and habitat need. This has resulted in a leave area in excess of 300 feet from the saltwater shorelines. Experience also indicates that the

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<sup>2</sup> #3 Sawlog is defined as: a log suitable for the manufacture of Standard and Better lumber to an amount of not less than 331/3% of the gross scale. The logs shall have a gross diameter of 6 inches and gross length of 12 feet, minimum volume of 50 board feet net scale.

majority of the bald eagle nest trees in SE Alaska are inside this 300 feet distance of saltwater. Evaluating all of the coastal area in this manner allocates land area under the Alaska Forest Resources and Practices Regulations (11 AAC 95.340(c)) for the avoidance of bald eagle nesting trees when ever feasible with a buffer of 330 feet.

c. Commercial operability

The commercial operability of a given area is based on a variety of factors that change over time such as market size and location, demand for various species, harvest methods, timber species and quality, harvesting technology and access. The DOF did not delete acreage based on commercial operability of individual stands of timber because commercial operability changes constantly as markets, forest condition, and technology evolve.

d. Calculation of Net Timber Base

The Net Timber Base (NTB) is determined by adjusting the gross available acreage to reflect the exclusion areas described above and categorizing the cover types. Both old growth and second growth stands (mature second growth, pole, and young regeneration) are included in the NTB for this report. The result is a Net Timber Base totaling 44,196 acres.

**Table 1. Timber type summary -- State Forest and General Use land combined**

Volumes are in thousand board feet (MBF). Rotation age is 100 years.

Timber Type	Acres	% by Acres	Approx. average MBF/ac	Total estimated MBF by timber type	% of Total Volume
0	3,797	9%	5	19,000	2%
1	11,815	27%	15	177,200	16%
2	9,980	23%	25	249,500	22%
3	1,698	4%	35	59,400	5%
4	219	0%	40	8,800	1%
P	4,219	10%	35	147,700	15%
R	8,715	20%	35	305,000	27%
S	3,753	8%	40	150,100	13%
Total for Net Timber Base	44,196	100%	25	1,116,700	100%
<b>Annual Allowable Cut</b>	<b>442 acres</b>			<b>11,200 MBF</b>	

<b>KEY</b>	
Old growth volume classes:	Young growth classes:
0 <10 MBF/ac	P Pole timber (<6")
1 10-20 MBF/ac	R Reproduction
2 20-30 MBF/ac	S Mature second growth
3 30-40 MBF/ac	
4 >40 MBF/ac	

Note: The estimated volume by timber type and annual allowable cut are rounded to the nearest hundred thousand board feet.

**B. Annual Allowable Cut Analysis:**

1. Assumptions

a. Sustained yield

DOF is required to manage state timber harvesting on a sustained yield basis. "Sustained Yield" means the "achievement and maintenance in perpetuity of an annual or regular periodic output of the various renewable resources of the State land consistent with multiple use" (AS 38.04.910). The Division defines "regular periodic output" as the yearly average output over a ten-year period. This is done

to allow for market fluctuations and changes in operational and economic considerations.

b. Cutting method

In developing the AAC, DOF assumed that the majority of the timber harvested in the region will be by the clear cut method. Where this is not the case due to restrictions by the area plans, it was assumed that the timber would eventually be removed over the rotation period. Most of the area designated for partial cut management in the area plans has been transferred to municipal ownership.

c. Area regulation

The allowable cut calculation method that best utilizes existing information is the area regulation method. The area regulation method involves determining the net-forested acres available for harvest and dividing that number by the rotation period.

d. Rotation length

The rotation period is the average time it takes to grow a commercial stand of trees. A 100-year rotation has been the established standard for Southeast and was used by the DOF in this calculation. This rotation age could be adjusted in the future when more scientific information on managed second-growth stands is available. Initial studies indicate that a rotation age as low as 70 –80 years may be feasible on managed second-growth in Southern Southeast Alaska.

e. Volume classes

Within the commercial timber type classification, volume classes were estimated and allocated based on aerial photo analysis. The old growth average volumes per acre were categorized based on existing conditions. The mature second growth stands (S) were based on information on like stands in the area. The pole timber and reproduction timber were assigned a volume per acre projected at time of harvest; for these two types it was assumed that the volume per acre would be less than the existing observed mature second growth. The reduced volume per acre in these two types is based on the market trend for the last several decades towards utilizing a smaller log diameter in world markets; logs under a 34” large end diameter presently have a broader marketability. The DOF estimates harvest will occur when the volume per acre reaches 35 MBF. This is based on projected stand conditions in which a portion of tree stems are approaching 34” in diameter at four feet above projected stump height.

## 2. Annual allowable cut area calculation

When the total NTB acreage (44,196 acres) is divided by the 100-year rotation period, an annual allowable cut of 442 acres is derived.

## 3. Annual allowable cut volume calculation

### a. Average volume per acre

Based on past USFS timber inventory figures for the Tongass National Forest (USFS, 1983) and a trend to higher yields from managed second-growth stands the average volume per acre ranges from 25 MBF to 30 MBF. An average volume per acre for the state timber base is calculated in Table 1 based on a weighted average of the mid-range volume per acre values for the old growth timber types and the assigned volumes per acre for second-growth types (see section IV.B.1.e., above). The calculated average is 25 MBF/acre.

### b. Calculated annual allowable cut volume

Dividing the total estimated NTB volume by 100 yields an allowable cut of 11,200 MBF per year, or a total of 112,000 MBF over a 10-year period.

## 4. Age class distribution

The data shows several distinct age classes; the uneven distribution of age classes will affect the log size and total volume of timber that is harvestable at different periods. However, active management of second-growth and evolving markets may even out timber supply over time.

A majority of the state forest land base is centered on areas that were initially used as logging camps for USFS long term timber sales from 1940 - 1980's. Much of this area is covered with second growth, which totals 38% of the net timber base. Through observation and historical knowledge, the second growth stands over 20 years old are on high index sites; past harvesting focused on high-value sites. Pre-commercial thinning may increase the effective yield and shorten the rotation age for these second-growth stands. At the time of this report, most second-growth reproduction stands older than 30 years in the timber base have been thinned at least once. More detailed information will be needed to determine whether the age class gaps can be evened out and whether second-growth stands can be managed under a shorter rotation.

## Appendix 1: Site-specific considerations by subunit

Key to land use designations: The Central/Southern Southeast Area Plan (CSSAP) and the Prince of Wales Island Area Plan (POWIAP) use the following abbreviations to denote land use designations in the plans.

GU or Gu	General Use (CSSAP and POWIAP)
Ha	Habitat (CSSAP) or Crucial Habitat/Intensive Harvest (POWIAP)
Hv	Harvest (CSSAP)
P	Public facilities (POWIAP)
Pr	Public facilities-retain (CSSAP)
Pt	Public facilities-transfer (CSSAP)
R	Recreation (POWIAP)
Rd	Recreation and tourism – Public use site (developed) (CSSAP)
RU or Ru	Public recreation (undeveloped) (CSSAP and POWIAP)
S	Settlement (CSSAP and POWIAP)
W	Water resources and uses (CSSAP) or Water Resources (POWIAP)

### All units

- Coastal shoreline retention areas of 300 feet are maintained on all subunits except where wider shoreline retention areas are specified in the plans. In some areas this distance or greater is specified; in other cases it has been developed in past FLUPS or DOF assumes it would be applied when the FLUP is written.
- Settlement areas are removed. A 100-foot buffer is retained around the perimeter of each State subdivision.
- All anadromous streams were given a 100-foot retention area on either side of the stream per AS 41.17118(a) (1). Streams of significant length and size (over 1 mile long) with multi-species runs or streams specifically identified in the plan were given a retention area of 300 feet. The retention area reflects the intent of AS 41.17.118(a) (1) and past experience working with timber in these areas.

### Central/Southern Southeast Area Plan

#### P-01 Thomas Bay (Mainland)

- Deleted area on the west side of the Patterson River (subdivision).
- Deleted the Patterson River delta area for wildlife habitat potential.
- Coastal retention area of 300 feet was removed along with 300 feet retention adjacent to Peterson River.
- Cover types based on USFS data.

#### D-01 Port Delores (Suemez Island)

- Provided for 100-foot buffer adjacent to anadromous streams.
- Cover types based on USFS data.

#### U-02 Rowan Bay (Kuiu Island)

- Provided 500-foot coastal retention.
- Provided for 300-foot buffer adjacent to anadromous stream 109-52-10040.
- Cover types based on USFS data.

### **Mitkof Island**

#### P-14 Falls Creek

- Provided for 500-foot retention on Falls Creek 106-44-10060.
- Provided for 300-foot retention on anadromous stream 106-44-10060-2005.

#### P-23 East Mitkof

- Excluded area between Mitkof Highway and coast.
- Provided for 150-foot retention on Mitkof Highway.
- Provided for 300-foot retention on anadromous stream on 108-40-10600.
- Coastal retention of 500 feet.
- Cover types based on USFS data.

#### P-25 South Mitkof

- Excluded area between Mitkof Highway and coast.
- Provided for 100-foot retention on Mitkof Highway.
- Provided for 300-foot retention on anadromous stream 108-40-10450.
- Cover types based on USFS data.

#### P-27 Wood Pecker Cove

- Provided for 300-foot retention on anadromous stream 108-40-10430.
- 500-foot coastal retention.
- Provided for 100-foot retention adjacent to unnamed anadromous streams.
- Provided for 100-foot retention along southern mainline road.
- Cover types based on USFS data.

#### P-28 Fredrick Point

- Pan Creek is to be retained 300 feet on both sides.
- Provide a 100-foot retention either side of the Waterline Road north of Cabin Creek.
- Provide a 500-foot coastal retention.
- Retention State subdivision by 100 feet.

#### P-30 South Lindenberg

- Provided for 300-foot coastal retention.
- Removed subdivision.
- Cover types based on USFS data.

Areas removed from inventory:

P-02	View shed.
P-03	GU, Plan specifically prohibits timber harvest.
P-04	Airport.
P-05/6/7/8/9/10	RU.
P-29	RU.
P-13	Alaska Mental Health Land Trust Replacement Pool.
P-15	Ru.
P-16	Pt.
P-19/20/21	RU, Ha.
P-22	Crystal Lake Hydro.
P-24	Ru/Ha.
P-31	S/Ru.

**Wrangell Area**

W-1Crittenden Creek

- 500-foot retentions each side of Crittenden Creek.
- 1,000-foot retentions each side of Crittenden Creek estuary and tidelands at the mouth of creek. This extends a significant distance inland based on photo analysis and USFS data.
- 500-foot coastal retention elsewhere.
- Harvest activities preferred to not be visible from Eastern Passage; this was not developed for the operable acreage due to the subjective nature of the objective.
- Cover types based on USFS and State interpretation of data.

W-08 Eastern Passage

- 500-foot State Creek retention was mentioned in plan was not taken due to it being determined in the Eastern Passage Timber Sale FLUP as not necessary.
- Retention around State subdivisions by 100 feet.
- Provide a 500-foot coastal retention. In Section 35, no harvest from the road to shore was originally specified in the area plan. This was modified to reflect actual road location used in Eastern Passage FLUP. The road constructed was moved upslope out of the coastal retention.
- Most of the above objectives for this planning unit are no longer relevant to State ownership with the transfer of these lands to the Borough of Wrangell.

W-10 Pat Creek

- 1000-foot wide vegetated corridor maintained along the valley bottom connecting Pat Creek to Hermit Creek.

W-12 Earl West Cove

- Provided for 500-foot retention on Earl West Creek (107-40-10780).
- Old growth in Sections 2 and 35 east of Earl West Cove Recreation Area was removed due to harvest restrictions.

- Provided for 500-foot coastal retention.

#### W-27 Pat Creek Uplands

- Provided for 100-foot retention adjacent to subdivisions.
- Provided for 300-foot retention on McCormack's Creek.
- Provided for 1000-foot corridor in valley bottom of Hermit Creek and Pat Creek (W10).

#### W-19, 20, 21, 22 Bradfield Canal Areas

- Older photography used. The Bradfield River is a dynamic floodplain with a large estuary zone that will significantly influence economical timber operations.
- Known streams were given retention per FRPA.
- A coastal retention of 500 feet on all subunits was used.
- Power line and powerhouse facilities were deducted.
- Lake Tyee watershed deducted.

#### Areas removed from inventory:

- W-03                      Airport.
- W-06                      Ru
- W-07                      Mill Cr. -- Ru, Pr, Gu not practical for timber management due to other uses
- W-13                      Ha/S/Gu.
- W-14                      Ha/S/Gu.
- W-15/16 Gu/Ru      Olive Cove dropped due to small size and isolation combined with subdivision on front half.
- W-17                      H/Pr/Hv.
- W-28                      Ru.
- The Wrangell municipal entitlement that was concluded on April 15, 2015.

### **Ketchikan Area**

#### K-02 Neets Bay

- 500 foot coastal retention.
- Provided for 100-foot retention adjacent to lakes.
- Provided for 300-foot retention on Neets Creek.
- Hatchery area excluded.

#### K-04 Traitors Cove Subunit

- This subunit contains a USFS log transfer facility retained by the USFS.

#### K-09 Moser Bay

- 300-foot retention area on Anadromous Stream 101-90-10600 (Wolf Creek).
- 300-foot coastal retention.

K-11 Bat Point/ Leask Cove

- 500-foot coastal retention
- Provided for 100-foot retention on each side of anadromous streams
- Provided for 100-foot retention adjacent to subdivisions

K-17 West George Inlet

- Shore retention of 300 feet.
- Anadromous Stream 101-45-10450 retention of 300 feet.

K-24 West end of Slide Ridge

K-33 Vallenar Bay

- Vallenar Creek retention area 300 feet. Plan proposes up to a 500-foot management area as determined necessary per ADFG in the FLUP process (300 feet modeled in the inventory based on consultation with ADFG).

K-25 North Gravina Island

- 500-foot coastal retention.
- Provided for 100-foot retention adjacent to subdivision.

K-41 Bostwick

- Bostwick Creek and Lake retention area 300 feet.

Areas removed from inventory:

C-01 Sunny Cove. Gu. Area plan restricts all development.

C-02 Square Island. Gu. Area plan restricts all development.

C-03 Spacious Bay. Gu. Area plan restricts all development.

C-04 Ru/Pr

K-03 Ru/Pr West Side Traitors Cove.

K-07/8 Ru/Pr

K-11 Bat Point. Drop areas not in State Forest due to S and Ru.

K-13 Ru/Pr

K-16 Ru/Pr Lake Harriet Hunt.

K-18 Rd

K-21 Gu AMHLT Replacement Pool.

K-26 Ru

K-27 S/Ru/H

K-28 Airport

K-29 Ru K-50 Ha/Hv

K-37 W/Ru

K-39 Ru/Gu Area plan restricts.

K-43 Mountain Point. Gu/W. The DNR Div. of Mining, Land, and Water (DMLW) wants it for S.

K-45 Ru/Pr

K-46 Ru

K-47 Ru. Dall Head Marine Park

K-56 Settlers Cove Park  
M-01/2 Duke Island. Gu. Area plan restricts development.

## **Prince of Wales Island Area Plan**

### Subunit 1 Salmon Bay

- Exchange Cove GU -- AMHLT exchange pool. Removed from consideration.
- All other land is Ru, therefore removed from consideration.

### Subunit 2 Point Baker/Port Protection

- Port Protection All Ru therefore removed from consideration.
- Hole in the Wall Lake All Ru therefore removed from consideration.

Subunit 3 Shakan -- No state upland ownership.

### Subunit 4a El Capitan

- Coastal retention of 400 feet specified in the Prince of Wales Island Area Plan.
- Deleted R areas.
- Visual buffer required in plan for the lake; used 300 feet.
- Retention of 300 feet on anadromous stream 106-30-10800.

### Subunit 4b El Cap Island - South

- Island zoned for Settlement and Forestry. DMLW requested retention area on southern lagoon and the northern area due to existing lodge. Retention of 500 feet given on the lagoon and portion of the southern part of the island dropped. Northern area utilized a 300-foot shore retention.

### Subunit 5a Whale Pass

- Deleted existing subdivision and P/Ha and Ru areas.

### Subunit 6a Coffman Cove

- Deleted subdivision and S/R and Ha areas.
- Anadromous streams 106-30-10120 and 106-30-10160 used 300-foot retention.

Subunit 7a Sea Otter Sound -No state upland ownership.

Subunit 7b Tuxekan Island – no site specific applicable restrictions.

### Subunit 7c Naukati

- Deleted settlement areas and P/Ha and Ru.
- 300-foot retention on Yatuk, Guchi and Naukati Creeks.

### Subunit 8b Edna Bay

- Deleted Subdivision and P/Ha and Ru and W.

- 100- to 300-foot retention/management zone specified on Charlie Creek (this document used a 300-foot retention area for planning).

Subunit 9 Coronation -- No state upland ownership.

Subunit 10a Heceta Island

- Removed Ru and S.

Subunit 10b Shaheen

- All State land Ru; removed from consideration.

Subunit 11a Control Lake

- Dropped S area near Control Lake.
- 100-foot no-cut retention area on the State highways.
- 300-foot retention on Control Lake.
- The property lines in this subunit do not follow the protracted Public Land Survey lines due to an error in survey instructions in the original conveyance to the State. No intent by DMLW to change the property lines. The lines platted and surveyed on the ground are generally off 400 feet to the east from the protracted location. The actual survey line on the ground and recorded is the actual property line.

Subunit 11b Karta Bay -- No State uplands.

Subunit 11c Thorne Bay

- Water Lake has a City of Thorne Bay ordinance defined no harvest in watershed to protect the drinking water source. The watershed was deducted.
- S and R areas removed.

Subunit 12a and b Kasaan/Hollis

- Removed S/W/Ha and R.
- 300 foot retention on Harris and Indian Creek.

Subunit 12c Kasaan Bay

- Coal Bay
  - Retention area of 300 feet on anadromous streams 102-60-10640 and 102-60-10620.
  - All R land removed.

Subunit 12d, e and f Lower Twelvemile Arm, Polk Inlet, Skowl Arm -- No state upland ownership; area removed from consideration.

Subunit 13a West Cholmondeley -- No state upland ownership; removed from consideration.

Subunit 13b East Cholmondeley (Kitkun Bay)

- Provided for 100-foot buffer on each side of anadromous streams.

Subunit 14a Dickman Bay -- No state upland ownership.

Subunit 14b Moria Sound

- Nowiskay Cove  
Retention area of 300 feet around anadromous stream 102-30-10900.
- Menefee  
All land R/H removed from further consideration.

Subunit 14c Ingraham Bay

- Removed 400 feet in selected areas for future settlement.
- Retention area of 300 feet on anadromous streams 102-20-10210 and 10220-10170.

Subunit 15a Kendrick Bay

- Removed 400 feet in selected areas for future settlement.
- Retention area of 300 feet on anadromous stream 102-10-10050.

Subunit 15b Cape Chacon -- No state upland ownership.

Hook Arm

(Note: This unit is on the west coast of Dall Island. This unit was conveyed to the State in 2011 and is not part of the existing POW plan. The unit is part of the legislatively designated State Forest).

- Retention area of 100 feet on anadromous stream 104-30-10490.
- Retention area of 500 feet on shore.

## Appendix 2: Data Base Dictionary

### Timber Theme Data Dictionary

#### Cover Characteristics

Water Body	W
Muskeg/Bog	M
Scrub/Nonproductive Site	N
Reproduction	R
Pole Timber (6"+)	P
Mature Second Growth	S
Old Growth	G

#### Species

1) Define Majority Species	
2) Define 2nd Species if > 20%	
Spruce	1
Hemlock	2
Red Cedar	3
Yellow Cedar	4
Cottonwood	5

#### Volume Class for Saw-log Stand

< 10 MBF per acre	0
10 – 20 MBF per acre	1
20 – 30 MBF per acre	2
30 – 40 MBF per acre	3
> 40 MBF per acre	4

#### Stand Origin Date/ Age

Old Growth	1600
For 2nd Growth	year of previous harvest

#### Stand Stocking Level

Low	1
Medium	2
Full	3
Overstocked	4

## Appendix 2: Data Base Dictionary

### Water Body Theme Data Dictionary

#### Type

Cataloged Anadromous	1
Non-cataloged Anadromous	2
Water Quality Class C Stream	3
Water Quality Class D Stream	4
General Water Quality Stream	5
Resident fish	6

#### Classification History

Water body Visited		
	Yes	1
	No	2
Date Visited		mm/dd/yyyy
Reach Class Verified on State Lands by ADF&G		
	Yes	1
	No	2

## Appendix 2: Data Base Dictionary

### Road Theme Data Dictionary

#### Road Types

Permanent Road	1
Temporary Road	2
Inactive Road	3
Road Closed and Water bared	4
Road Closed with Natural Reclamation	5
Proposed Road	6

#### Road Condition

Good	1
Functional	2
Drivable with Care	3
Un-drivable	4

#### Material Sites

Unusable for Rock Source	1
Expandable	2

### **Appendix 3: References**

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POW Inventory Project contracted 2004 with Alan Rockwood. This project did an initial inventory of POW State lands in GU classification. This contract set up the database structure and beta tested on POW the concepts used in the final product.

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Prince of Wales Island Area Plan Amendment published by the Alaska Department of Natural Resources in May 2008.

Roberts, Greg, Forester, USFS Wrangell Ranger District – provided Forest Service inventory maps for Zarembo and Wrangell Eastern Passage area.

United States Forest Service, Tongass National Forest, GIS Library, May 2010.

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Van Hess, Willem W.S., Summary Estimates of Forest Resources on Unreserved Lands of the Ketchikan Inventory Unit, Tongass National Forest, Southeast Alaska, 1998, PNW-RB-233. Published by Pacific Northwest Forest and Range Experiment Station, US Department of Agriculture, USFS, January 2001.

State of Alaska, Land Records Information System, May 17, 2011.

State of Alaska, Alaska Mapper, January 14, 2016.

#### Imagery:

1996 black and white digital ortho-photography from USFS GIS database.

2006 color digital ortho-photography from USFS GIS database.

Ortho-photographs made for the US Census Bureau for the 2010 census.

Ortho-photographs made for the Ketchikan Gateway Borough in 2001 and 2008.

Selected ortho-photographs from Quickbird, 2008.

Selected ortho-photographs from Digital Globe, 2004.

#### Contributing Personnel:

Greg Staunton, Regional Resource Manager, project manager.

Michael Curran, Regional Forester, technical consultation.

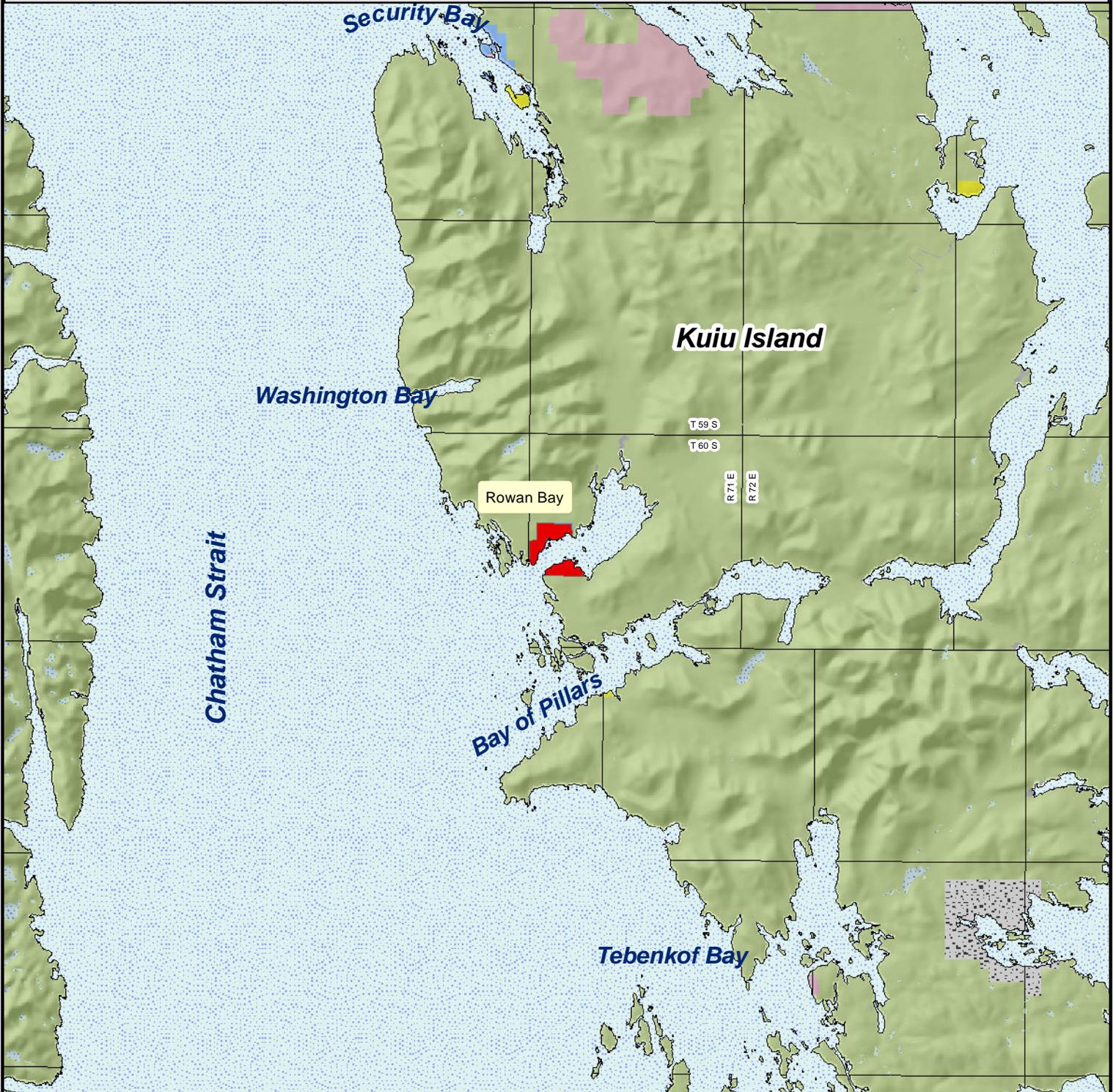
Clarence Clark, Resource Forester, field check and timber typing.

Matt Dunford, Resource Forester, field check and timber typing.

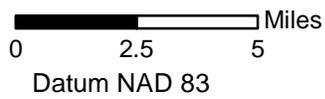
Corey Wyatt, Resource Forester, field check and timber typing.

Paul Slenkamp, past Area Forester, field check.

Joel Nudelman, Resource Forester, GIS editing.

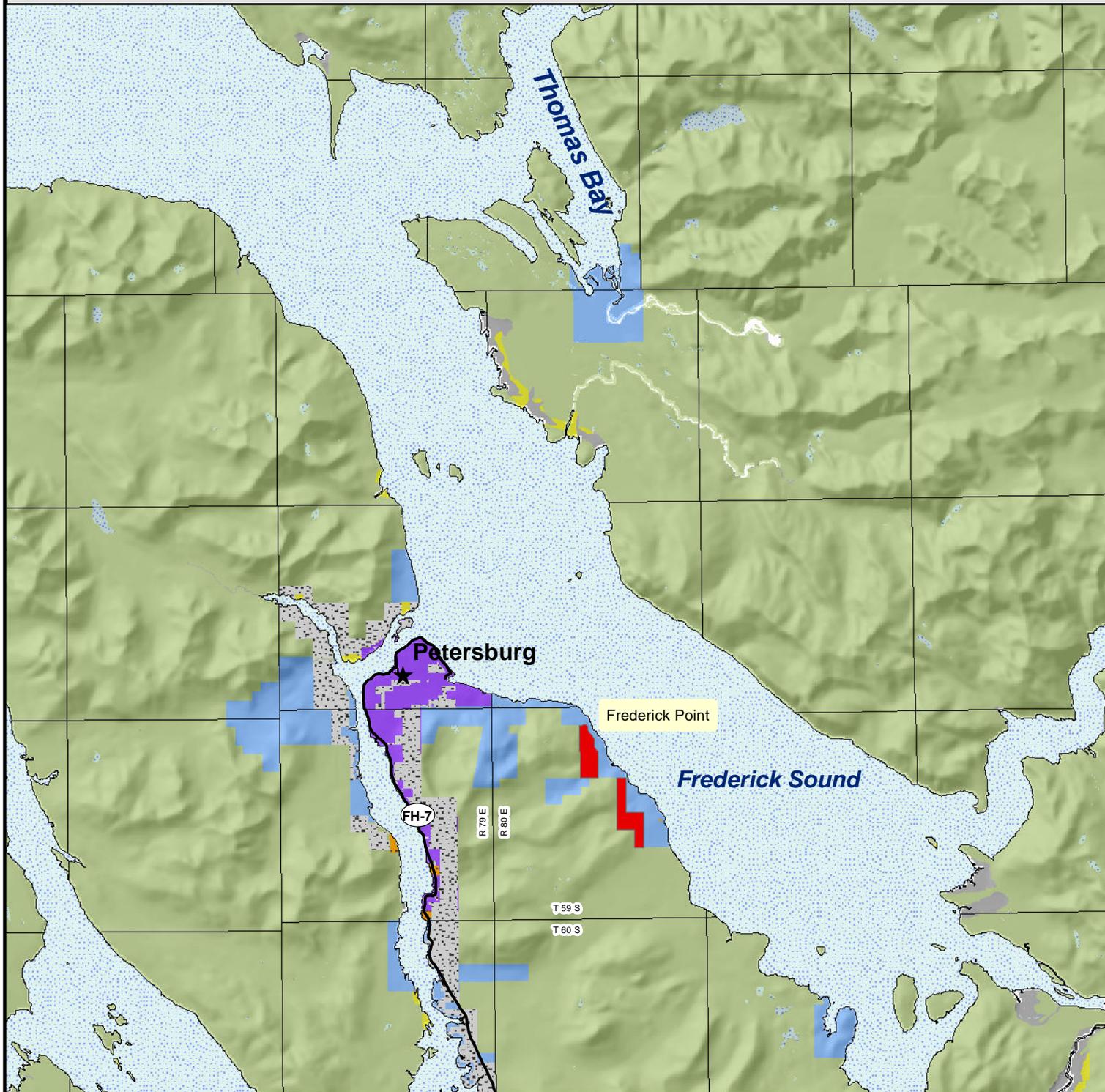


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-  Mental Health Ownership
-  Federal Ownership
-  Municipal Ownership
-  State Ownership
-  Native Corporation Ownership
-  Private Ownership

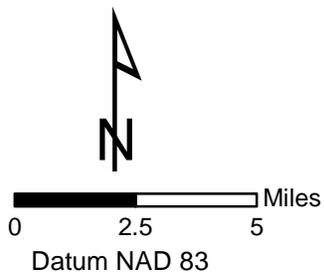


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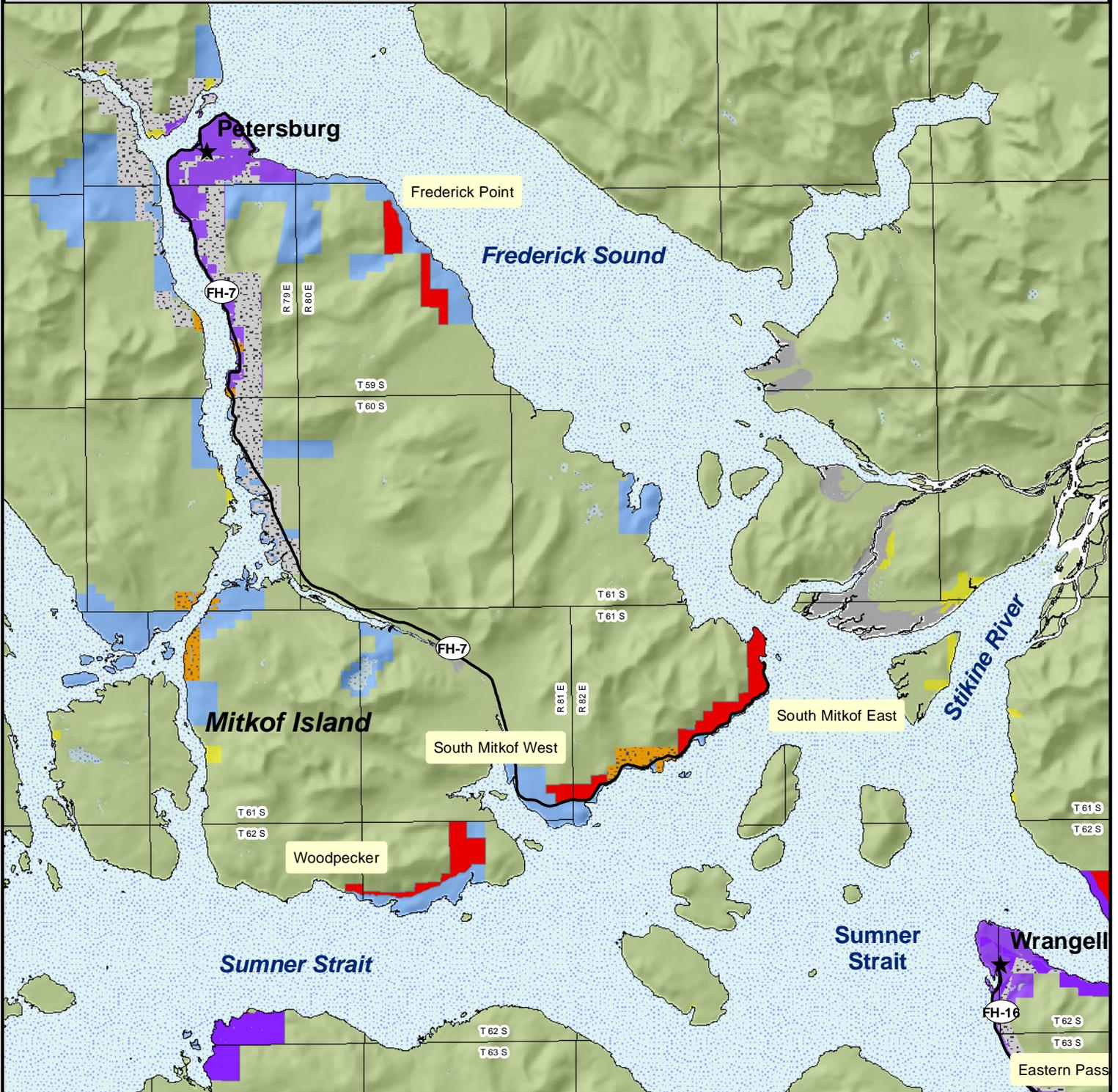


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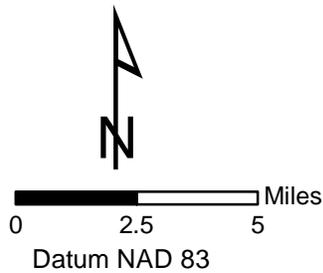


### Southern Southeast Area Operational Forest Inventory Vicinity Map



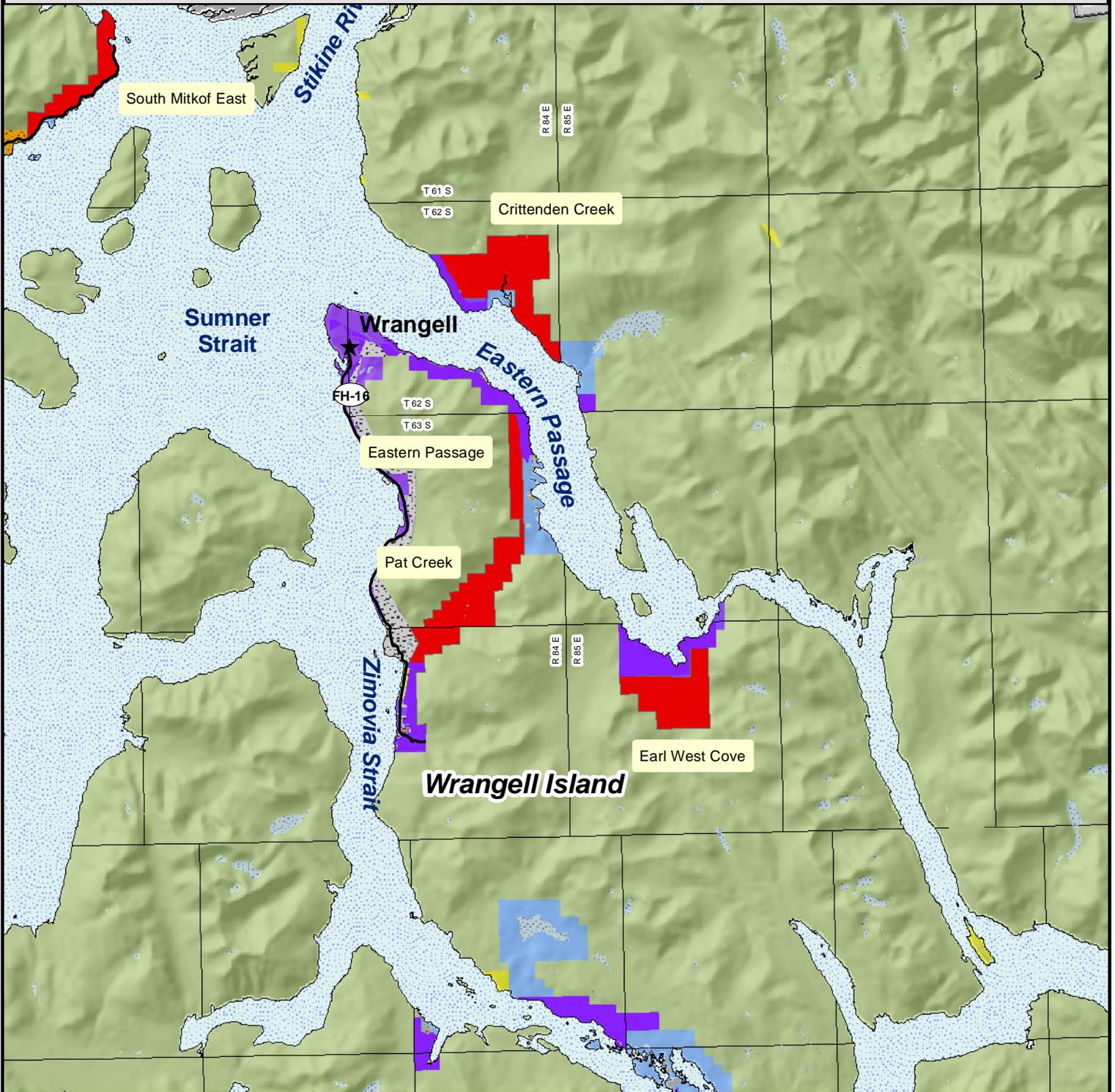


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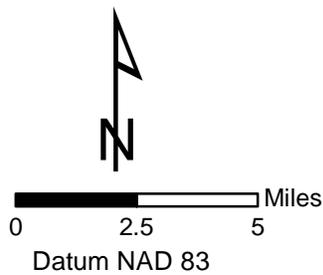


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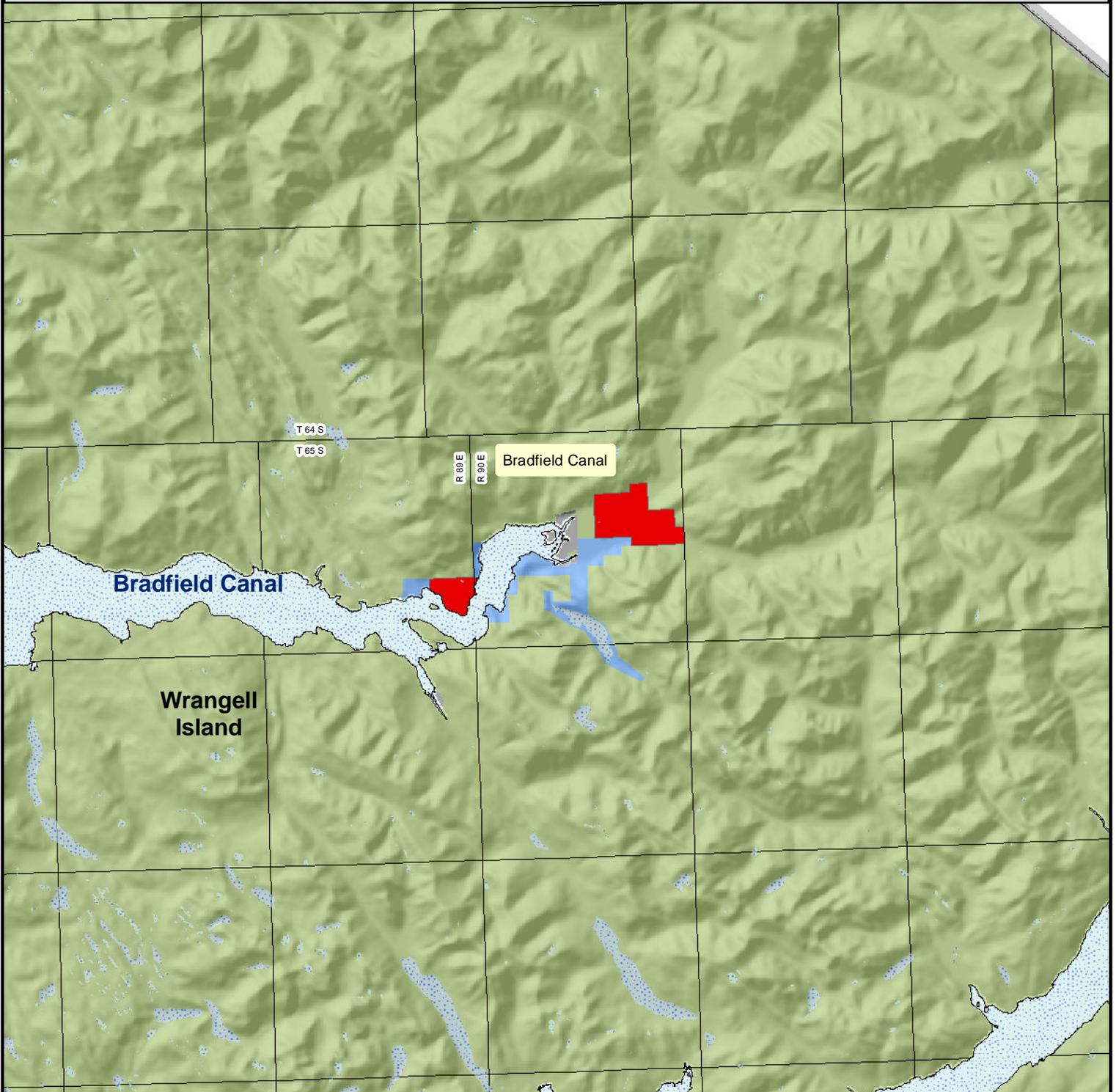


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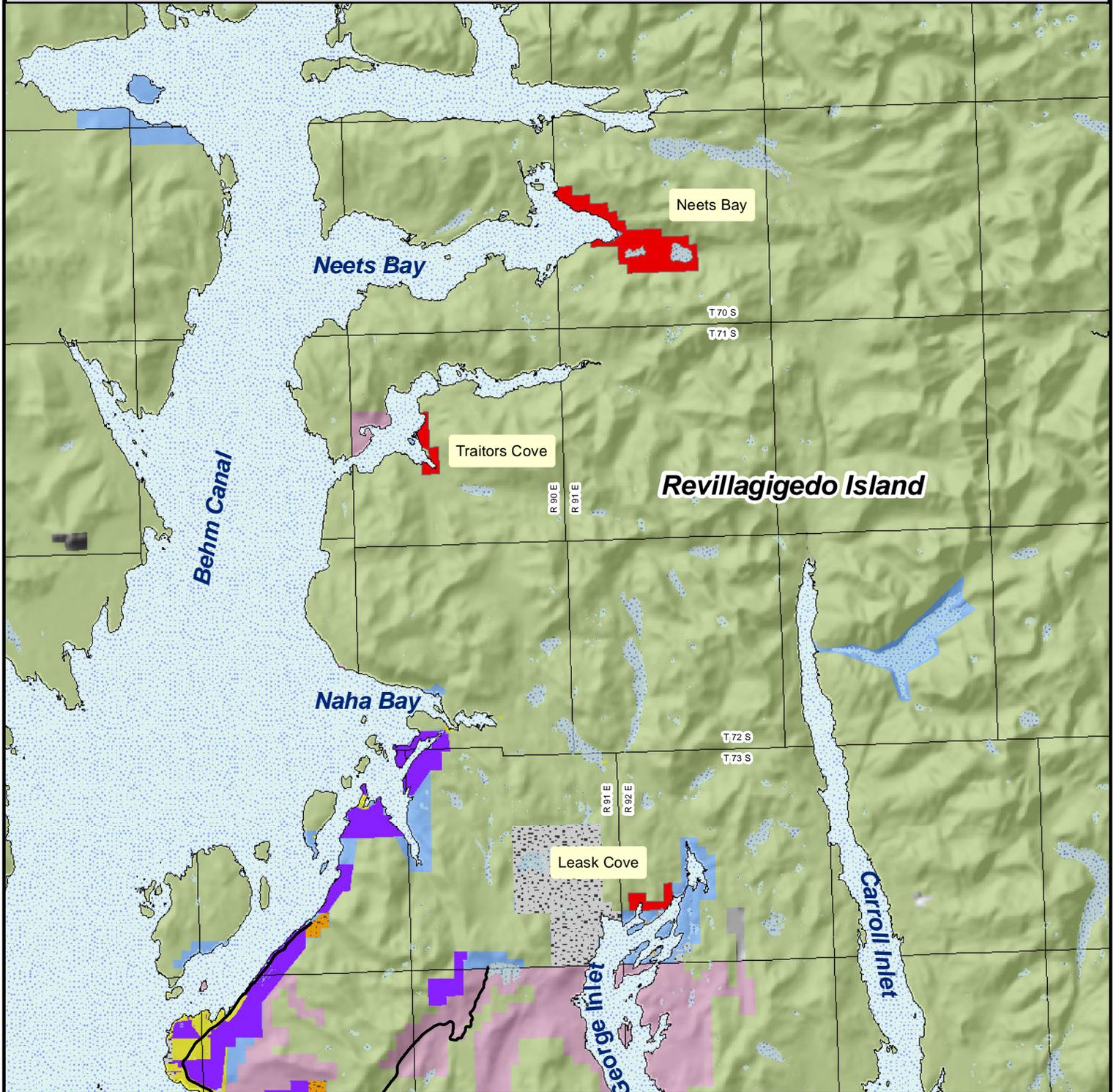


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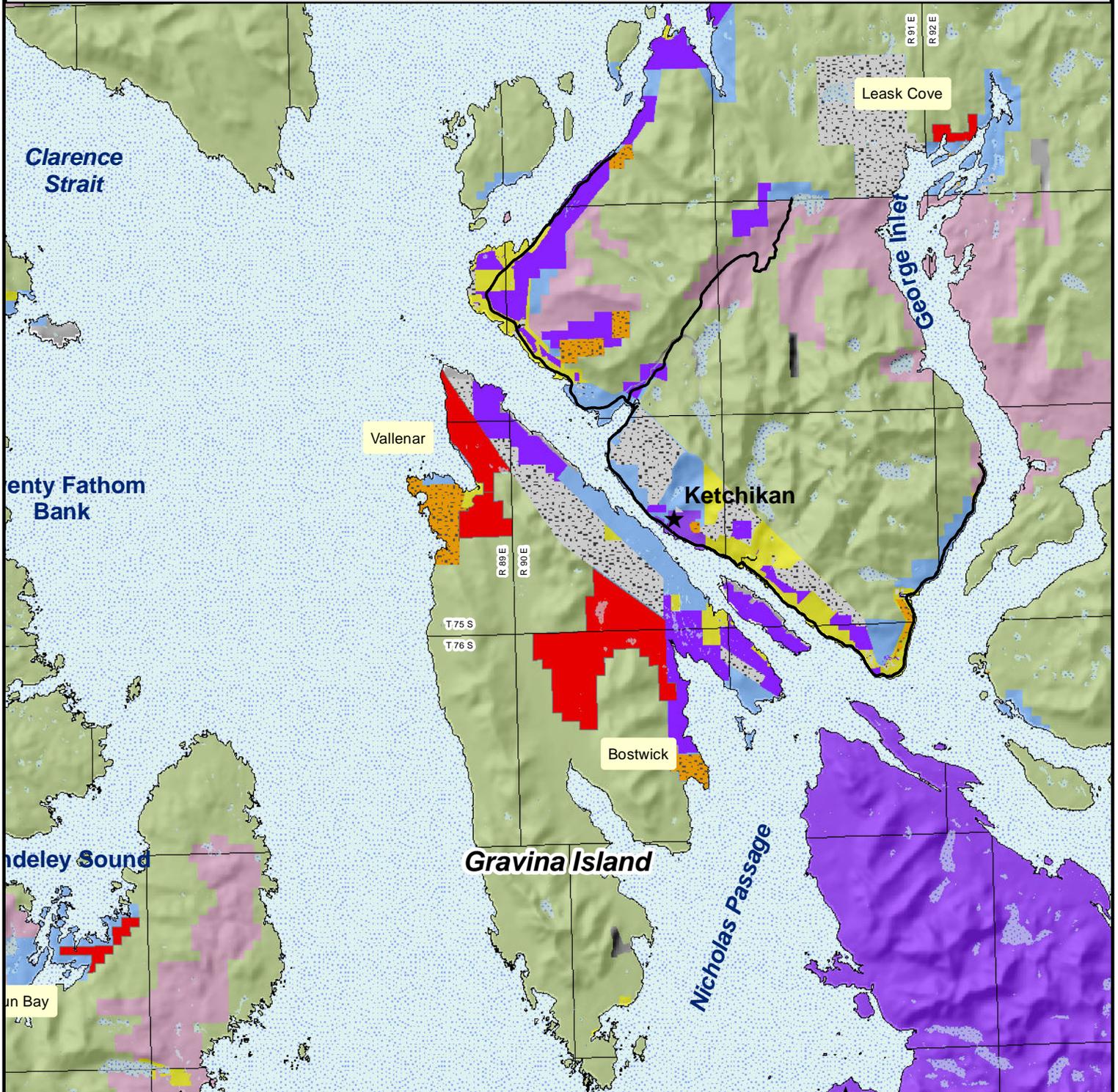


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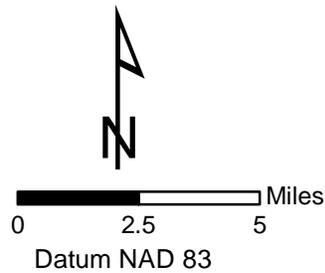


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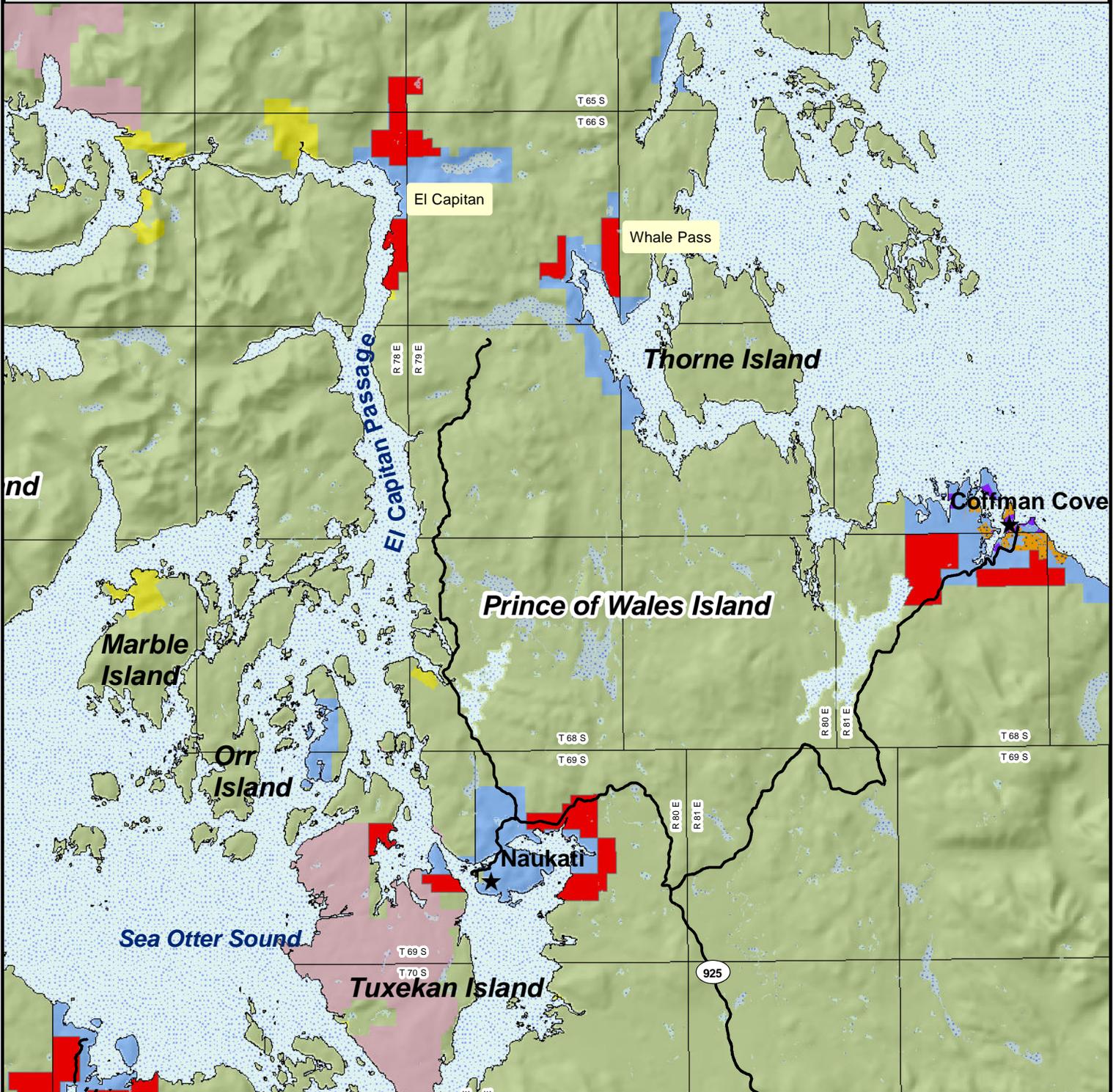


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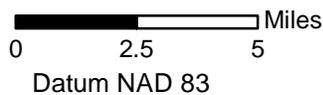


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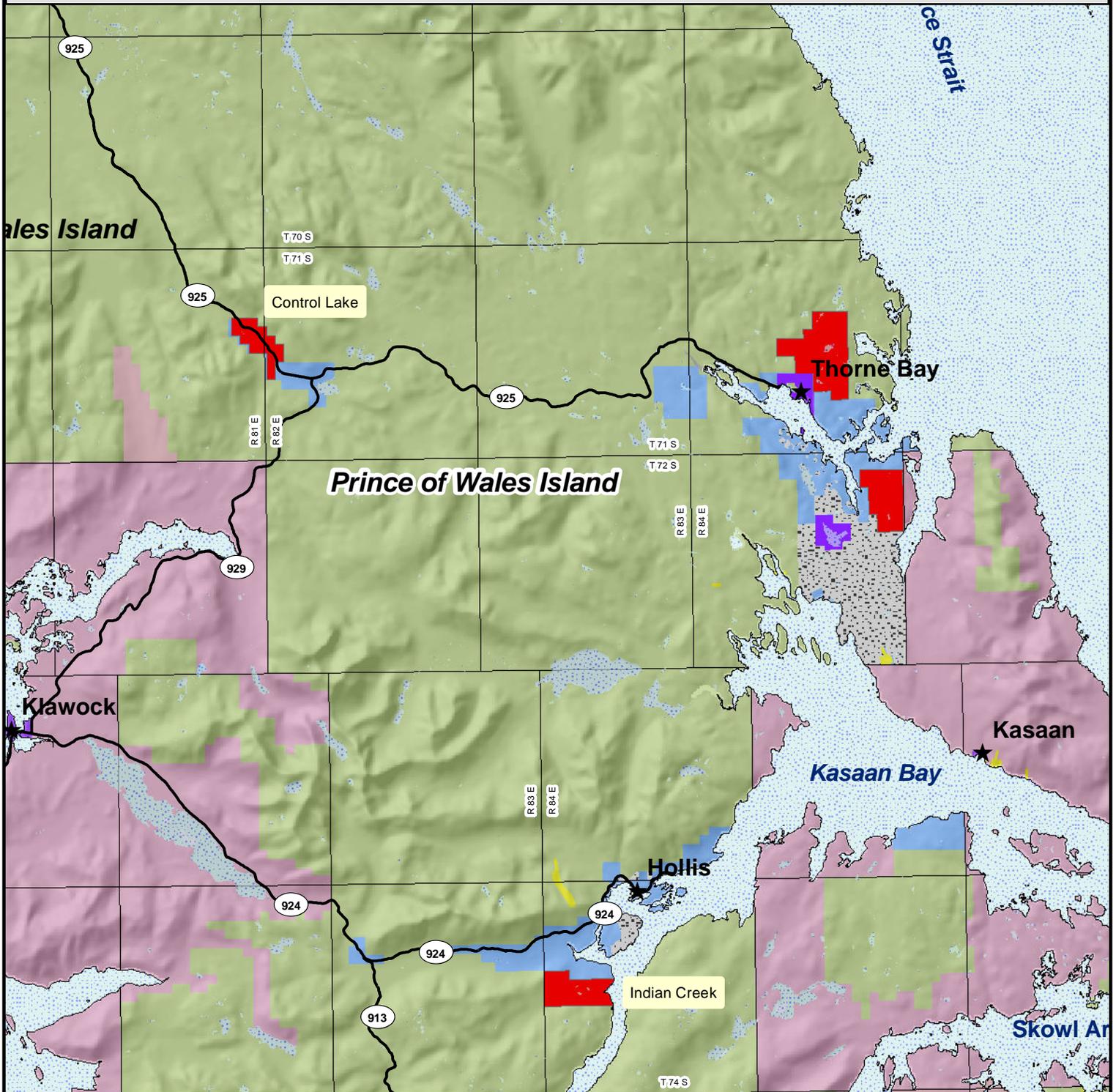


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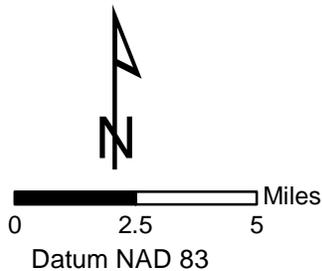


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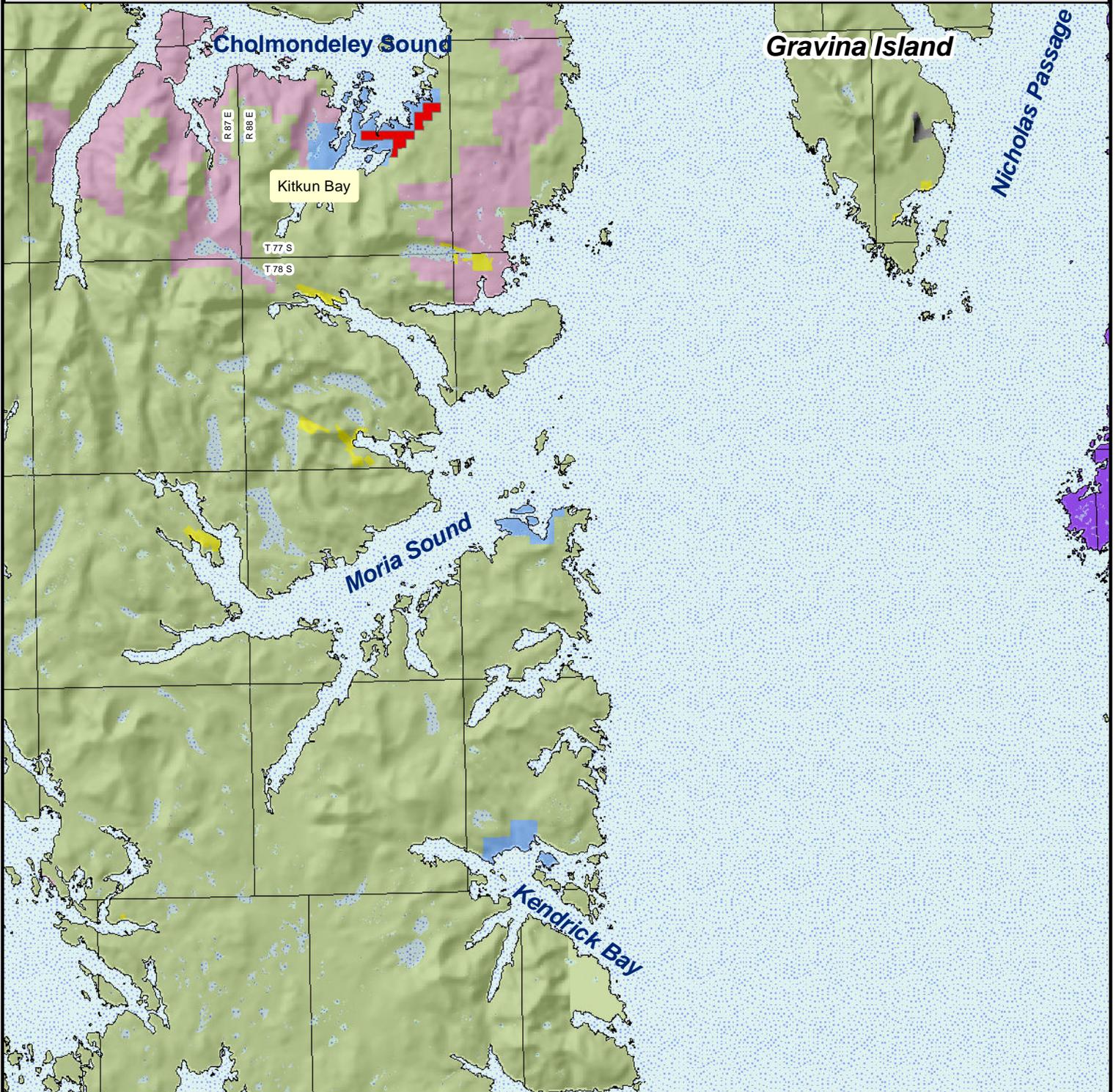


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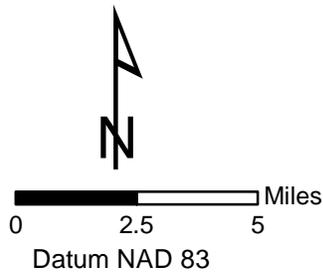


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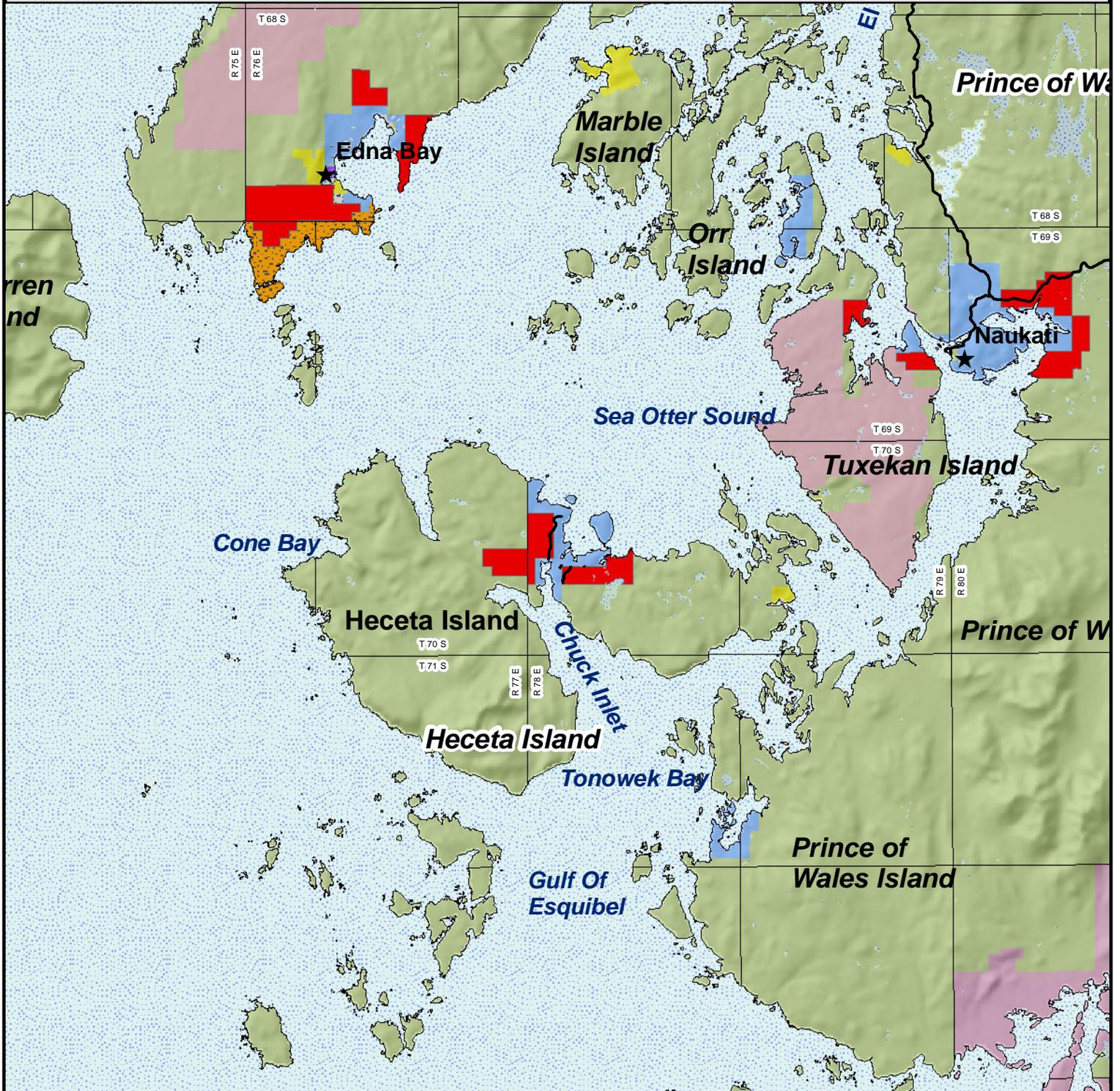


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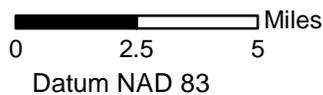


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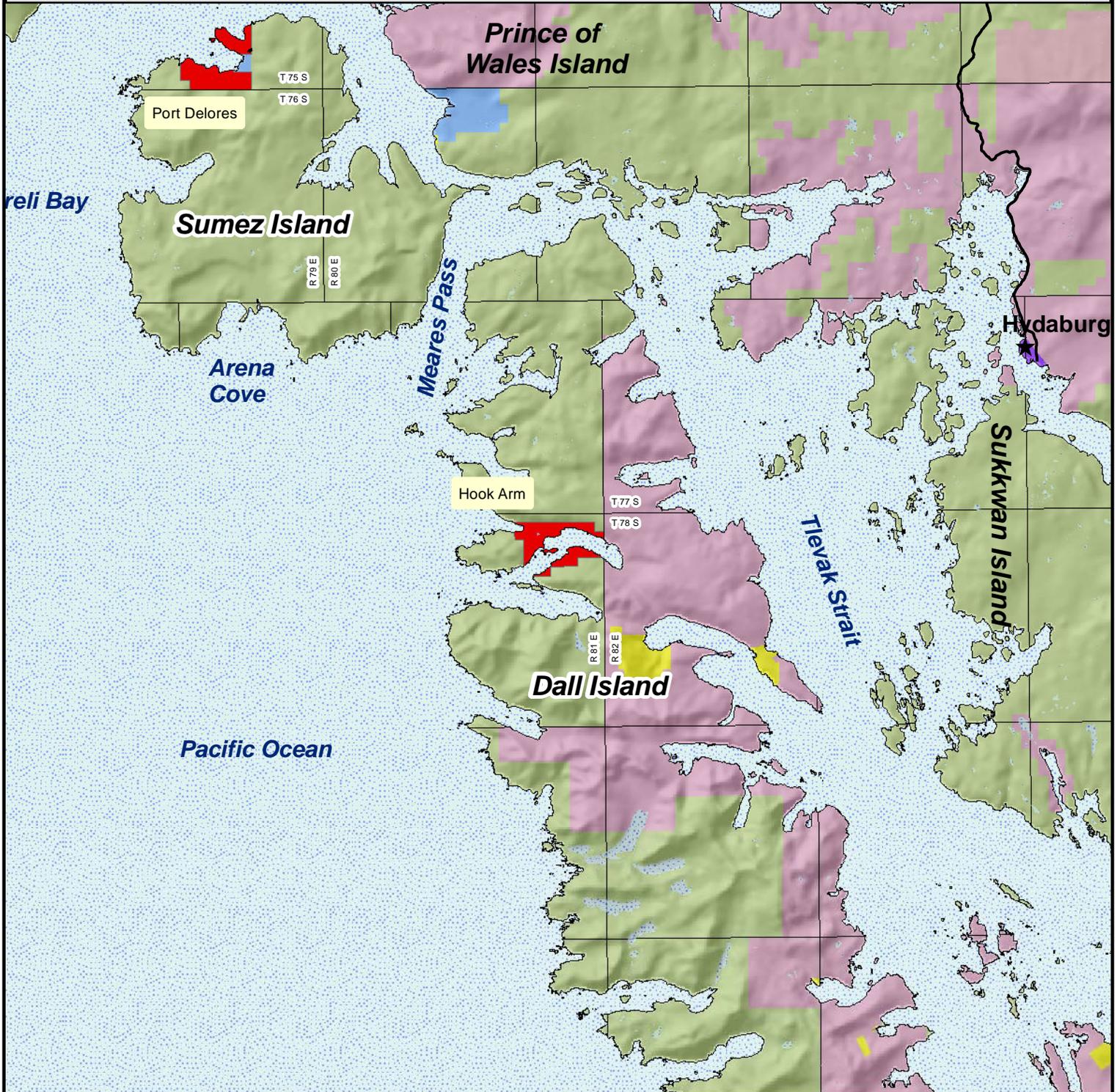


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