

**Technical Report No. 25-05**

---

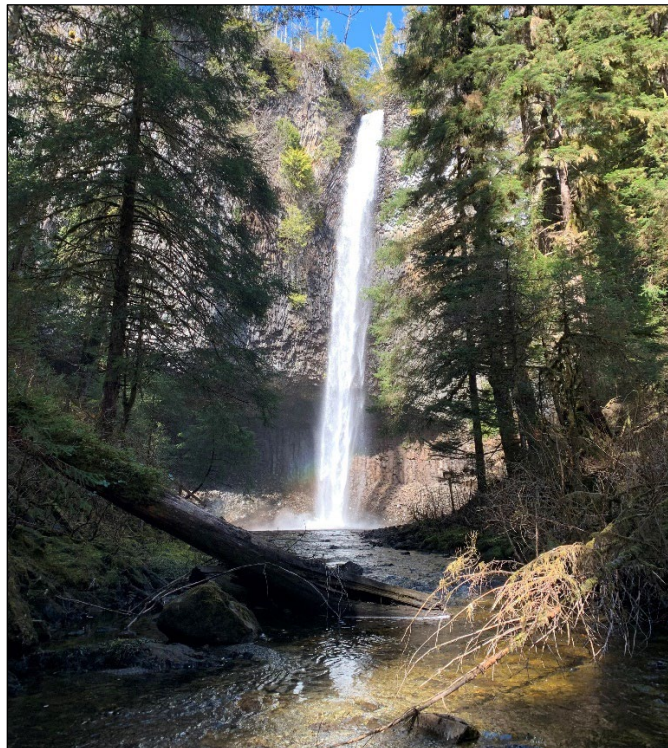
# **Cataloging Prince of Wales Island Anadromous Water Bodies**

by

**Evan Fritz**

and

**Greg Albrecht**



**March 2025**

---

**Alaska Department of Fish and Game**

**Habitat Section**



## Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in reports by the Divisions of Sport Fish and Commercial Fisheries and the Habitat Section. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figures or figure captions.

Weights and measures (metric)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative		fork length	FL
deciliter	dL	Code	AAC	mid-eye-to-fork	MEF
gram	g	all commonly accepted		mid-eye-to-tail fork	METF
hectare	ha	abbreviations	e.g., Mr., Mrs., AM, PM, etc.	standard length	SL
kilogram	kg			total length	TL
kilometer	km	all commonly accepted			
liter	L	professional titles	e.g., Dr., Ph.D., R.N., etc.	<b>Mathematics, statistics</b>	
meter	m			<i>all standard mathematical</i>	
milliliter	mL	at	@	<i>signs, symbols and</i>	
millimeter	mm	compass directions:		<i>abbreviations</i>	
		east	E	alternate hypothesis	H <sub>A</sub>
		north	N	base of natural logarithm	<i>e</i>
		south	S	catch per unit effort	CPUE
		west	W	coefficient of variation	CV
		copyright	©	common test statistics	(F, t, $\chi^2$ , etc.)
		corporate suffixes:		confidence interval	CI
		Company	Co.	correlation coefficient	
		Corporation	Corp.	(multiple)	R
		Incorporated	Inc.	correlation coefficient	
		Limited	Ltd.	(simple)	r
		District of Columbia	D.C.	covariance	cov
		et alii (and others)	et al.	degree (angular)	°
		et cetera (and so forth)	etc.	degrees of freedom	df
		exempli gratia		expected value	<i>E</i>
		(for example)	e.g.	greater than	>
		Federal Information		greater than or equal to	≥
		Code	FIC	harvest per unit effort	HPUE
		id est (that is)	i.e.	less than	<
		latitude or longitude	lat. or long.	less than or equal to	≤
		monetary symbols		logarithm (natural)	ln
		(U.S.)	\$, ¢	logarithm (base 10)	log
		months (tables and		logarithm (specify base)	log <sub>2</sub> , etc.
		figures): first three		minute (angular)	'
		letters	Jan,...,Dec	no data	ND
		registered trademark	®	not significant	NS
		trademark	™	null hypothesis	H <sub>0</sub>
		United States		percent	%
		(adjective)	U.S.	probability	P
		United States of		probability of a type I error	
		America (noun)	USA	(rejection of the null	
		U.S.C.	United States	hypothesis when true)	$\alpha$
			Code	probability of a type II error	
		U.S. state	use two-letter	(acceptance of the null	
			abbreviations	hypothesis when false)	$\beta$
			(e.g., AK, WA)	second (angular)	"
				standard deviation	SD
				standard error	SE
				variance	
				population	Var
				sample	var
Weights and measures (English)					
cubic feet per second	ft <sup>3</sup> /s				
foot	ft				
gallon	gal				
inch	in				
mile	mi				
nautical mile	nmi				
ounce	oz				
pound	lb				
quart	qt				
yard	yd				
Time and temperature					
day	d				
degrees Celsius	°C				
degrees Fahrenheit	°F				
degrees kelvin	K				
hour	h				
minute	min				
second	s				
Physics and chemistry					
all atomic symbols					
alternating current	AC				
ampere	A				
calorie	cal				
direct current	DC				
hertz	Hz				
horsepower	hp				
hydrogen ion activity	pH				
(negative log of)					
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

***TECHNICAL REPORT NO. 25-05***

**CATALOGING PRINCE OF WALES ISLAND ANADROMOUS WATER  
BODIES**

by

Evan Fritz  
and  
Greg Albrecht

Alaska Department of Fish and Game  
Habitat Section, Southeast Region  
P.O. Box 110024, Juneau, Alaska, 99811

March 2025

This project was partially funded by the Alaska Sustainable Salmon Fund.

Cover: Waterfall on Canoe Creek, Prince of Wales Island.

Technical Reports are available through the Alaska State Library, Alaska Resources Library and Information Services (ARLIS) and on the Internet: [http://www.adfg.alaska.gov/index.cfm?adfg=habitat\\_publications.main](http://www.adfg.alaska.gov/index.cfm?adfg=habitat_publications.main). This publication has undergone editorial and peer review.

*Note:* Product names or specific company names used in this publication are included for completeness but do not constitute product endorsement. The Alaska Department of Fish and Game, in accordance with State of Alaska ethics laws, does not favor one group over another through endorsement or recommendation.

*Alaska Department of Fish and Game, Habitat Section  
P.O. Box 110024, Juneau, Alaska, 99811, USA*

*This document should be cited as:*

*Fritz, E. and G. Albrecht. 2025. Cataloging Prince of Wales Island anadromous water bodies. Alaska Department of Fish and Game, Technical Report No. 25-05, Douglas, AK.*

The Alaska Department of Fish and Game (ADF&G) administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act (ADA) of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

**If you believe you have been discriminated against in any program, activity, or facility please write:**

ADF&G ADA Coordinator, P.O. Box 115526, Juneau, AK 99811-5526

U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, MS 2042, Arlington, VA 22203

Office of Equal Opportunity, U.S. Department of the Interior, 1849 C Street NW MS 5230, Washington DC 20240

**The department's ADA Coordinator can be reached via phone at the following numbers:**

(VOICE) 907-465-6077, (Statewide Telecommunication Device for the Deaf) 1-800-478-3648,

(Juneau TDD) 907-465-3646, or (FAX) 907-465-6078

**For information on alternative formats and questions on this publication, please contact:**

ADF&G Habitat Section, P.O. Box 110024, Juneau, Alaska, 99811 (907) 465-4105

# TABLE OF CONTENTS

	<b>Page</b>
LIST OF TABLES.....	i
LIST OF FIGURES.....	i
LIST OF APPENDICES .....	ii
ACKNOWLEDGEMENTS.....	iii
EXECUTIVE SUMMARY .....	2
INTRODUCTION.....	2
METHODS.....	3
RESULTS.....	8
DISCUSSION.....	9
REFERENCES CITED .....	13

## LIST OF TABLES

<b>Table</b>	<b>Page</b>
1. Anadromous habitat predictions based on elevation and slope, displayed using color in the map. ....	5
2. FRPA anadromous fish block criteria (11 AAC 95.265(g); Table A).....	6
3. Community water body survey metrics.....	8

## LIST OF FIGURES

<b>Figure</b>	<b>Page</b>
4. Example of a DEM hill shade relief derived from LiDAR, Calder Bay, Prince of Wales Island.....	4
5. Example of the slope-elevation model output and USFS stream class layer, Tuxekan Passage, Prince of Wales Island. ....	5
6. Potential barrier to anadromous fish identified with DEM shade relief produced from LiDAR, Calder Creek, Prince of Wales Island. ....	10
7. Potential barrier to anadromous fish and 1 ft contours produced from LiDAR, Calder Creek tributary, Prince of Wales Island.....	11
8. Field-verified anadromous fish barrier on Calder Creek tributary, Prince of Wales Island. ....	12

## **LIST OF APPENDICES**

APPENDIX A: PRINCE OF WALES ISLAND AREA MAP AND NOMINATIONS

APPENDIX B: KETCHIKAN AREA MAP AND NOMINATIONS

APPENDIX C: PETERSBURG AREA MAP AND NOMINATIONS

APPENDIX D: JUNEAU AREA MAP AND NOMINATIONS

APPENDIX E: ADMIRALTY ISLAND AREA MAP AND NOMINATIONS

APPENDIX F: CHICHAGOF ISLAND AREA MAP AND NOMINATIONS

APPENDIX G: YAKUTAT AREA MAP AND NOMINATIONS

## **ACKNOWLEDGEMENTS**

Regional Supervisor Kate Kanouse helped secure funding and provided project oversight and direction. Habitat Biologists Dylan Krull, Jesse Lindgren and former Habitat Biologists Kelsey Dean, Bill Kane, and Flynn Casey and former Fish and Wildlife Technicians Ben Landes and Marc Heifetz completed field work and created and submitted anadromous waters catalog nominations. Habitat Section Operations Manager Dr. Al Ott, Ms. Kanouse, and Mr. Krull reviewed the report.

The Southeast Region Habitat Section appreciates Division of Commercial Fisheries Alaska Sustainable Salmon Fund staff Peter Bangs and Debbie Mass for excellence in program administration. We also appreciate contributions by ADF&G Fisheries Biologist Craig Schwanke and Habitat Biologist Mark Minnillo for lending boats and highway vehicles for transportation to survey sites. And finally, thanks to Habitat Biologist Dylan Krull for transitioning our staff to tablet-based data collection and bearing the brunt of technical upkeep and staff training to date.





## EXECUTIVE SUMMARY

Water bodies documented in the anadromous waters catalog are afforded proper protection under the Anadromous Fish Act. The objective of this project was to identify salmon and steelhead habitats and corresponding life history phases in communities in Southeast Alaska and update the *Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes* and its associated Atlas. Between May 2019 and June 2022, Alaska Department of Fish and Game Habitat Section staff completed 1,336 stream surveys in remote and urban areas throughout Southeast Alaska, resulting in 511 nominations adding 77.48 miles and correcting 40.16 miles in the anadromous waters catalog. This technical report includes maps of surveyed areas and nominations submitted to the anadromous waters catalog. Geospatial survey data is archived by the Alaska Department of Fish and Game and has been submitted to the Alaska Sustainable Salmon Fund and the National Oceanic and Atmospheric Administration.

## INTRODUCTION

Pacific salmon and steelhead habitats in Alaska have been protected since 1889, with territorial laws implemented in 1919. In 1962, the state adopted the territorial rules and passed the Anadromous Fish Act (Alaska Statute (AS) 16.05.871) to protect salmonid and other anadromous fish habitats. Initially, ADF&G did not compile a list specifying anadromous water bodies, and asserted authority to regulate all water bodies up to the tributary of a tributary of a water body known to support anadromous fish. Policy interpretation varied, occasionally providing protection to non-anadromous fish-bearing tributaries (Frank et al. 2000).

In 1980, the legislature directed ADF&G to specify water bodies that contain any life stage of anadromous fish and imposed a deadline. ADF&G was tasked to complete the list of water bodies important to anadromous fish, covering 943,739 mi<sup>2</sup> of land and over 745,645 mi of streams, in two years. To complete the work ADF&G relied heavily on the experience of biologists throughout the state. Due to the time constraints, nominations were not field verified; consequently, fish use data was incomplete and in some cases incorrect. Also, mapping capabilities were limited to 1:63,360 scale paper maps, resulting in inaccurate depictions of stream courses and the omission of many tributaries.

As a result of the legislature direction and the survey effort, the department created the *Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes* and its companion Atlas (AWC; Giefer and Graziano 2024), which are the documents ADF&G uses to list the water bodies considered important to anadromous fish and affords ADF&G's authority under the Anadromous Fish Act. Fish habitat in undocumented water bodies is not afforded protection under state law, however fish passage is ensured by the Fishway Act (AS 16.05.841) regardless of a water body's listing in the AWC. Historical nominations often only include a large-scale map with little or no fish observation information; few nominations contain an assessment on habitat quality and quantity, and many smaller streams and tributaries of larger streams remain uncataloged.

Since 2010, the ADF&G Habitat Section Southeast Region has been working to update the AWC through numerous projects funded by the Alaska Sustainable Salmon Fund. These projects addressed gaps in the AWC throughout Southeast Alaska by providing field surveys documenting fish habitat and use, as well as identification of natural and man-made migration barriers. Habitat Section staff added streams to the AWC, corrected inaccurately mapped streams listed in the

AWC, and occasionally deleted streams from the AWC that do not provide anadromous fish habitat.

In addition to the Anadromous Fish Act, the Forest Resources and Practices Act (FRPA) governs forestry-associated activity on state and privately owned land and provides for the protection of streams bearing anadromous fish and high-value resident fish habitat when identified in the field, prior to timber harvest. These protections, in the form of streamside buffers, are applied immediately following capture of a single anadromous fish in a water body, up to a permanent migration barrier as defined by FRPA. ADF&G staff, in coordination with the landowner and Alaska Department of Natural Resources Division of Forestry staff, typically makes anadromous determinations on unsurveyed streams immediately prior to harvest. Though this process results in useful information, surveying streams on timberlands in advance of proposed harvest provides more useful information for all entities involved, and the time to survey streams multiple times if needed (Albrecht and Fritz 2019).

This project was initially intended to survey public and private lands on Prince of Wales Island. However, due to COVID-19, Habitat Section staff limited fieldwork and travel to smaller communities in Southeast Alaska during the 2020–2022 field seasons. With approval from the Alaska Sustainable Salmon Fund Program Coordinators, we expanded survey areas to Admiralty and Chichagof Islands, and around the communities of Juneau, Hoonah, Petersburg, Ketchikan, and Yakutat.

## METHODS

We used information provided in geographic information system (GIS) databases, both online and internal, to plan and prioritize field surveys including; existing stream survey data from the AWC, a U.S. Forest Service (USFS) stream class prediction layer<sup>a</sup>, Digital Elevation Models (DEM) and 1 ft and 10 ft contour lines derived from Light Detection and Ranging (LiDAR) data acquired by the Nature Conservancy in 2017 (on Prince of Wales Island) and the Hoonah Native Forest Partnership (for portions of the Hoonah Road System), and the ADF&G Division of Sport Fish slope-elevation model (Figures 1, 2; Table 1)<sup>b</sup>. In addition, we used the Valley Bottom Extraction tool in ArcGIS Pro to process LiDAR and DEM data and create a layer of streams that were likely to contain anadromous fish to prioritize field work.

---

<sup>a</sup> U.S. Forest Service stream class designations projected in ArcGIS are based on topographic and physical habitat metrics derived from digital evaluation models and field verified corrections.

<sup>b</sup> The slope-elevation model combines elevation data obtained through the Shuttle Radar Topography Mission flown by NASA in 2000. The model results are projected as polygons on the landscape highlighting combinations of slope and elevation that can be used to identify areas where salmon and steelhead presence is probable. Unpublished Regional Operational Plan obtained from Jeff Nichols, Alaska Department of Fish and Game, Division of Sport Fish, Douglas, AK, March 2004.

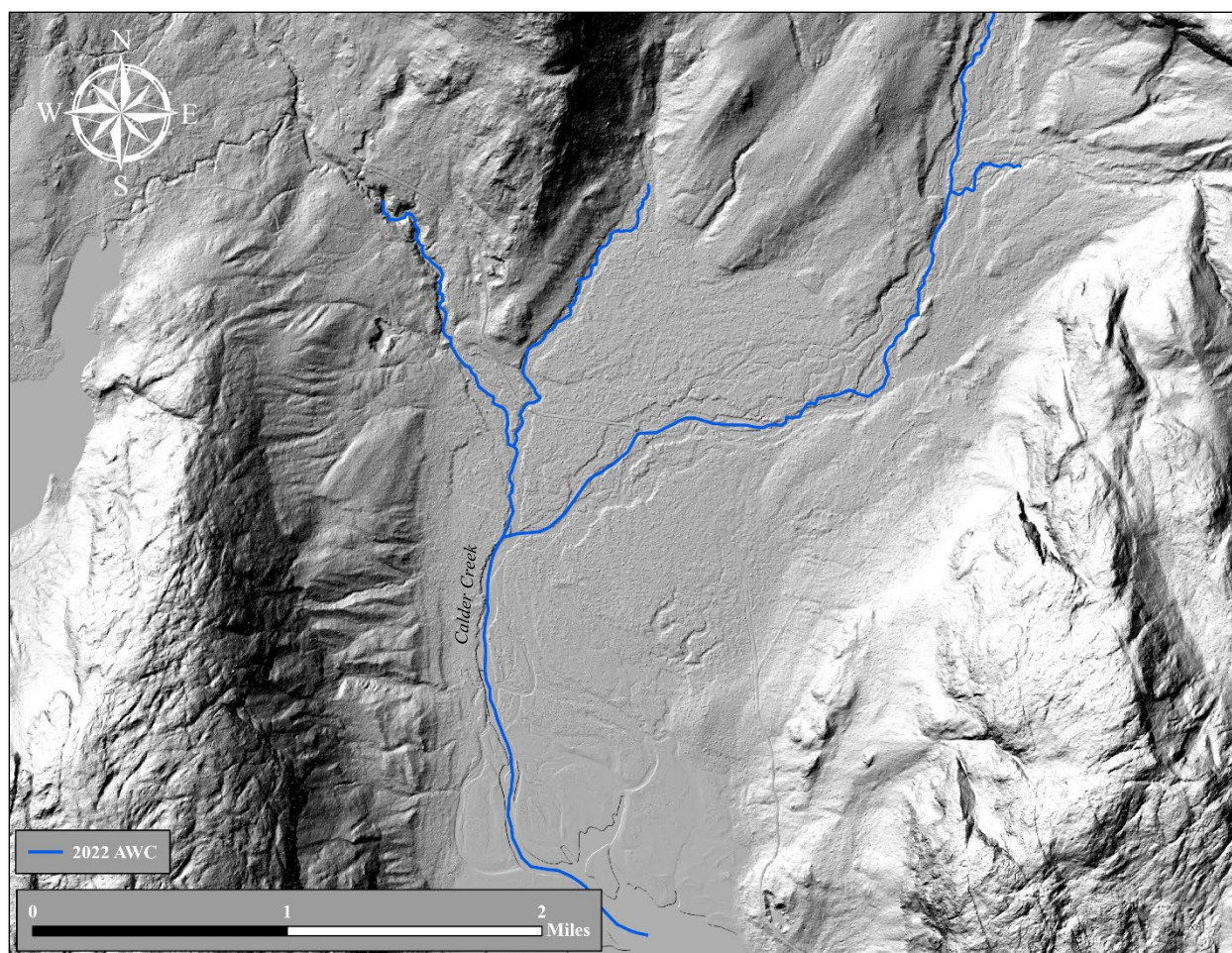


Figure 1.—Example of a DEM hill shade relief derived from LiDAR, Calder Bay, Prince of Wales Island.



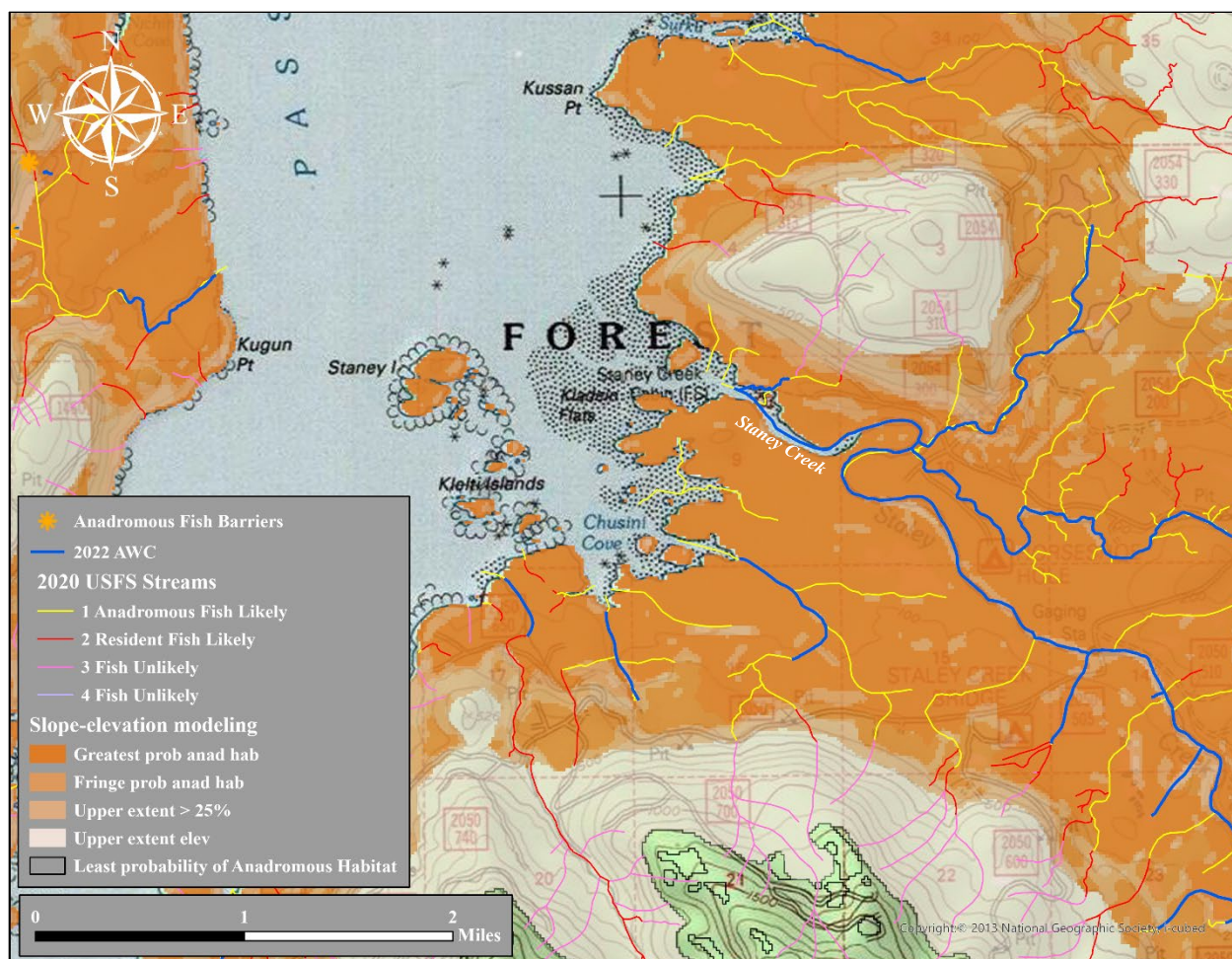


Figure 2.—Example of the slope-elevation model output and USFS stream class layer, Tuxekan Passage, Prince of Wales Island.

Table 1.—Anadromous habitat predictions based on elevation and slope, displayed using color in the map.

Elevation class (ft)	Slope class (%)			
	0-2	2-16	16-25	>25
0-200	1	1	2	3
200-400	1	1	2	3
400-1200	2	4	4	4
>1200	5	5	5	5

Note: (1) Probable anadromous habitat, (2) Fringe probable anadromous habitat (3) Upper extent of anadromous habitat, (4) Improbable anadromous habitat, and (5) No anadromous habitat.

We used several methods of transportation (e.g., motor vehicles, watercrafts, and aircrafts) to access streams. Generally, we proceeded in an upstream direction on foot and surveyed each tributary we encountered, unless we did not capture fish in which case, we would survey downstream until identifying a barrier to fish passage, if present. We used a Smith-Root LR-24 backpack electrofisher and ¼ inch mesh Gee minnow traps baited with disinfected salmon eggs to

sample flowing and ponded waters. We identified fish captured using Pollard et al. (1997) and released them into slow-moving water for recovery. We collected data with an Apple iPad using ArcGIS Collector, and Field Maps after Collector was retired, and tracked our survey path with handheld GPS units and the tracking feature in Field Maps. We developed a fillable feature layer through ArcGIS Online for use with ArcGIS Field Maps to collect georeferenced field data including: observer(s), date, sample method, fish captured, stream width, stream depth, fish habitat features, barriers specifications, stream substrate, and a blank notes field. We also incorporated additional layers useful for offline reference, including high-resolution imagery, the most current version of the AWC, previous timber harvest units, roads, the USFS stream class layer, and elevation contours.

Throughout the project, we used clinometers, tape measures, and a Nikon Forestry Pro rangefinder/hypsometer unit to measure stream gradient, distance, and fall heights at suspected barriers to fish passage and at waypoints representative of the habitat within the stream reach. We ended stream surveys when; we stopped catching anadromous fish, the stream seeped out of the ground, or a fish passage barrier was encountered. We used FRPA criteria (Table 2) and professional judgement to determine fish passage barriers and sampled upstream of barriers if fish navigation was questionable. Crews ended some surveys prematurely before the furthest extent of fish habitat was reached due to time, logistical constraints, or for the sake of initiating a survey on a neighboring drainage to maximize anadromous habitat documented on a given day.

Table 2.–FRPA anadromous fish block criteria (11 AAC 95.265(g); Table A).

Criterion	Species Requirements (ft)				
	Coho	Steelhead	Sockeye	Chinook	Pink/Chum
Maximum Fall Height. A blockage may be presumed if fall height in feet exceeds:	11	13	10	11	a) 4 with deep jump pool b) 3 without pool
Pool depth. A blockage may be presumed if the unobstructed water column depth in feet within the pool is less than:	1.25 × jump height, except that no minimum pool depth exists for falls as follows: a) less than 4 in the case of coho and steelhead; and b) less than 2 in the case of other anadromous fish species.				
Steep channel. A blockage may be presumed at the upper end of the reach if channel steepness in feet is equal to or greater than the following without resting places for fish:	>225 at 12 percent gradient >100 at 16 percent gradient >50 at 20 percent gradient >25 at 24 percent gradient				>100 at 9% gradient

*Source:* Alaska Department of Natural Resources Division of Forestry 2019.

*Note:* Fall heights greater than 3 ft are considered barriers to fish migration in streams with only rearing habitat available.

We synced<sup>c</sup> survey data collected on ArcGIS Field Maps to ArcGIS Online and exported the file geodatabases to Microsoft Excel to process data for nomination tables. We used ArcGIS Pro to manage data, draw stream courses, and create maps for nominations to the anadromous waters

<sup>c</sup> Completed daily, when internet access was available, to avoid data loss.

catalog (Krull and Lindgren 2021). Using the field data, we developed the following classification system:

- Additions:
  - Streams or stream reaches not included in the AWC that contain anadromous fish.
- Route corrections:
  - Streams already listed in the AWC but either inaccurately mapped or missing the intertidal portion of the channel.
- Conveyances:
  - Streams that do not provide fish habitat due to either a lack of habitat or the presence of a downstream fish barrier.<sup>d</sup>
- Resident fish streams:
  - Streams or stream reaches in which only resident fish (e.g., sculpin, threespine stickleback, Dolly Varden<sup>e</sup>, cutthroat trout<sup>e</sup>, and rainbow trout<sup>e</sup>) were captured. These streams are usually above an anadromous fish barrier or do not have potential for supporting anadromous fish.
- Future investigations:
  - Streams in which we did not capture anadromous fish, though may provide anadromous fish habitat due to gradient and stream size and warrant a resurvey when conditions permit.<sup>f,g</sup>
- Polygons:
  - Areas where we captured or observed anadromous fish in ponds, flooded wetlands, lakes, or areas of unconfined channels that resulted in numerous side channels or distributaries that were difficult to map individually. Once adopted into the AWC, all waters in these polygons are considered anadromous (Giefer and Graziano 2024).
- Lakes:
  - An inland waterbody within a basin that has a defined inlet and outlet where anadromous fish have been captured.
- Deletions:
  - Streams or stream reaches that are listed in the AWC that do not contain anadromous fish habitat or are inaccessible due to a migration barrier.
- Braided channels:
  - Channels that split and rejoin the main channel. Braided channels of cataloged anadromous streams are generally not mapped in the AWC but are included by definition.

---

<sup>d</sup> Some resident fish populations occur above physical migration barriers; these are denoted by Habitat Section as resident fish streams.

<sup>e</sup> These fish may occur in anadromous and resident life history forms and cannot be used as the sole indication of anadromy.

<sup>f</sup> Some of these streams contain resident fish.

<sup>g</sup> During 2019 and 2022, Southeast Alaska experienced a prolonged summer drought, resulting in many surveys ending prematurely due to dry stream beds or a depressed distribution of fish due to low water conditions.

- Back up nominations:
  - Streams listed in the AWC where we collected additional data to add to the AWC database.

We created nominations incorporating location and current stream information, survey results, recommendations, nomination number, data tables, photos, and map(s). We submitted all nominations on the Alaska Department of Fish and Game website<sup>h</sup>: <https://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=noms.home>. Data that did not result in changes to the AWC are kept by the Douglas Habitat Section and are available upon request. The appendices to this report contain the stream numbers and temporary names prior to revisions to the AWC produced by this project, many numbers have been changed or assigned to new streams since this report was published.

## RESULTS

Between May 2019 and September 2022, we completed field surveys of 1,336 water bodies in the Southeast Alaska on Prince of Wales, Admiralty, and Chichagof Islands, and around the communities of Ketchikan, Petersburg, Juneau, Hoonah, and Yakutat (Table 3). We submitted 511 nominations<sup>i</sup> to the AWC resulting in 77.48 miles of stream added, 40.16 miles of streams corrected, 1.95 miles deleted,<sup>j</sup> and 42.42 acres of polygons added (Table 3). Effort associated with a single drainage survey varied from a few minutes to several days depending on fish habitat present, which ranged from high gradient seeps with no potential fish habitat<sup>k</sup> to a complex low gradient system with multiple tributaries and ponds created by beaver activity.

---

<sup>h</sup> All nominations submitted during this project are available on the website.

<sup>i</sup> Some individual nominations included multiple revisions to the AWC.

<sup>j</sup> The AWC contains streams that were either never field verified or inaccurately mapped with fish habitat occurring upstream of migration barriers. When encountered, we submitted documentation to reduce stream length to the field verified barrier.

<sup>k</sup> About 120 of the 1,336 water bodies we surveyed were conveyance streams that had no potential fish habitat.

Table 3.–Community water body survey metrics.

Overview map	Streams surveyed	Addition Nominations	Addition Distance (mi)	Route Correction Nomination	Route Correction Distance (mi)	Polygon Addition	Polygon Acentage	Deletion Nominations	Deletion Distance (mi)	Backup Nominations	Total Nominations
Prince of Wales Island	1018	273	50.42	64	31.02	4	16.19	9	1.95	10	356
Ketchikan	6	5	0.48	-	-	-	-	-	-	-	5
Petersburg	32	12	1.96	1	0.12	-	-	-	-	-	13
Hoonah	27	14	3.01	1	0.15	-	-	-	-	1	16
Juneau	105	67	11.73	3	7.28	11	24.74	-	-	-	81
Admiralty Island	40	25	5.5	2	1.2	1	1.49	-	-	-	27
Yakutat	108	12	4.38	1	0.39	-	-	-	-	-	13
<b>Total</b>	<b>1336</b>	<b>408</b>	<b>77.48</b>	<b>72</b>	<b>40.16</b>	<b>16</b>	<b>42.42</b>	<b>9</b>	<b>1.95</b>	<b>11</b>	<b>511</b>



## DISCUSSION

We routinely captured juvenile coho salmon in streams as small as six inches wide with gradient less than 8% and generally under 200 ft elevation; most of these areas were identified on slope-elevation models. We observed the slope-elevation model tended to underestimate stream density in low gradient areas, especially when stream channels less than about six ft wide or beaver ponds were present. In instances where we did not capture juvenile coho salmon in low gradient streams, we observed a lack of rearing habitat with no resting pools (i.e., consistent riffle habitat), nondurable or man-made fish passage barriers (e.g., beaver dams or impassable culverts), no upstream spawning habitat, or a subsurface flow condition due to weather conditions or porous stream substrate. We routinely captured Dolly Varden and cutthroat trout in streams under 20% grade<sup>1</sup> and above anadromous fish barriers, likely relict populations the last inter-glacial period when sea level was higher (Hastings 2005).

Steep channels tended to be the most common form of barrier encountered; these features often required the application of best professional judgement to assess whether resting habitat was present through the reach, as outlined in Table 2. We also encountered numerous waterfalls that exceeded anadromous fish block criteria identified in Table 2 and areas where the channel seeped out of the ground.

LiDAR data for parts of Prince of Wales and Chichagof Islands proved invaluable for fieldwork planning and identifying stream channels and potential anadromous barriers beneath the forest canopy. In multiple instances, we identified potential anadromous barriers prior to surveys using LiDAR derived data, that we then field verified, making field work more efficient (Figures 3–5). As it becomes more available in southeast Alaska, LiDAR products should be used to determine channel morphology and the extent of anadromy when planning fieldwork.

We successfully completed project objectives by identifying salmon and steelhead habitats and corresponding life history phases (e.g., spawning, rearing, migration), and submitting information to update the AWC. Though some of the areas identified were previously surveyed, a repeat survey was necessary to document the maximum extent of anadromous fish habitat during more favorable conditions or during time periods when undocumented species would be present.

---

<sup>1</sup> And up to about 1,400 ft elevation in some cases.

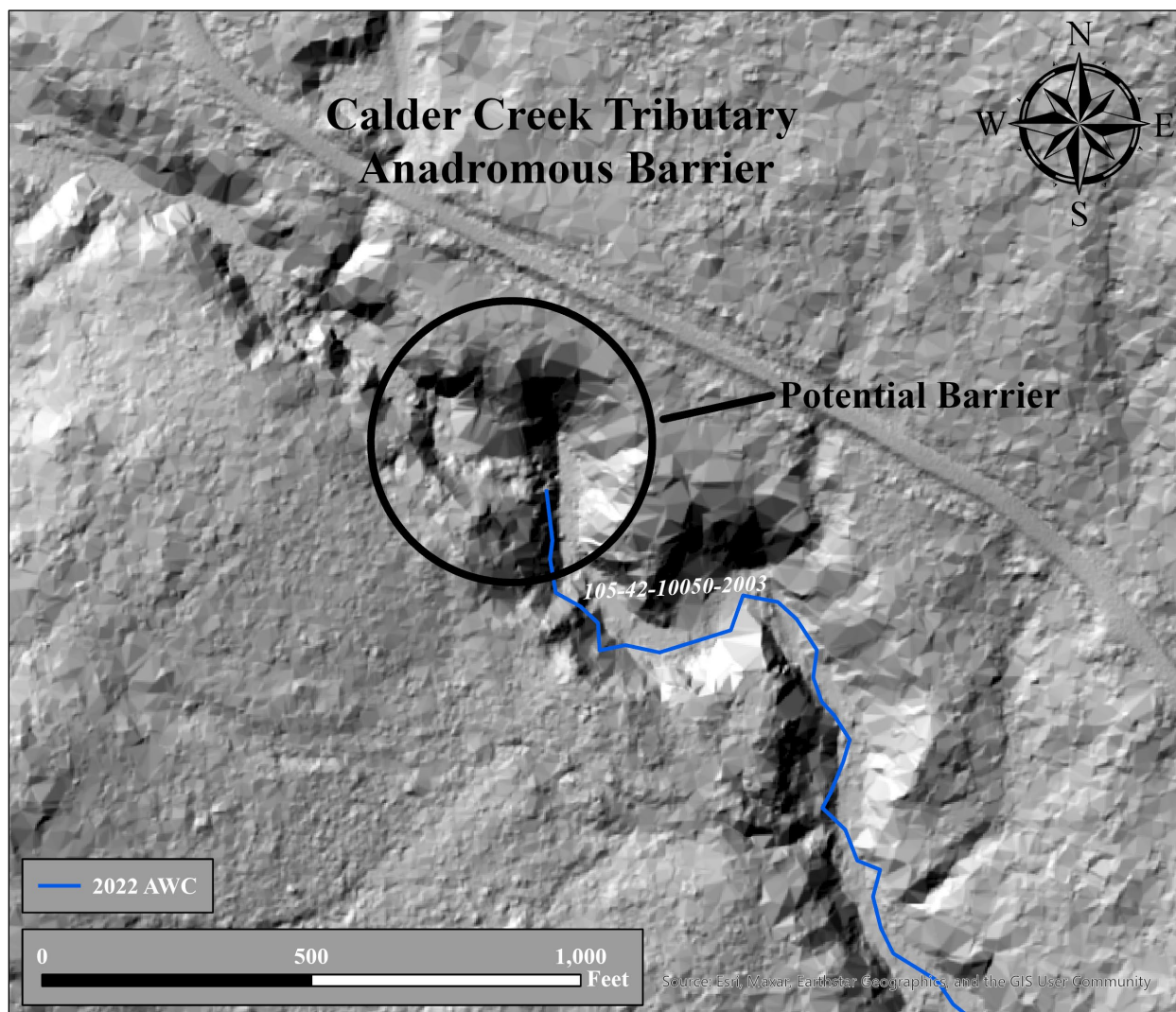


Figure 3.—Potential barrier to anadromous fish identified with DEM shade relief produced from LiDAR, Calder Creek, Prince of Wales Island.



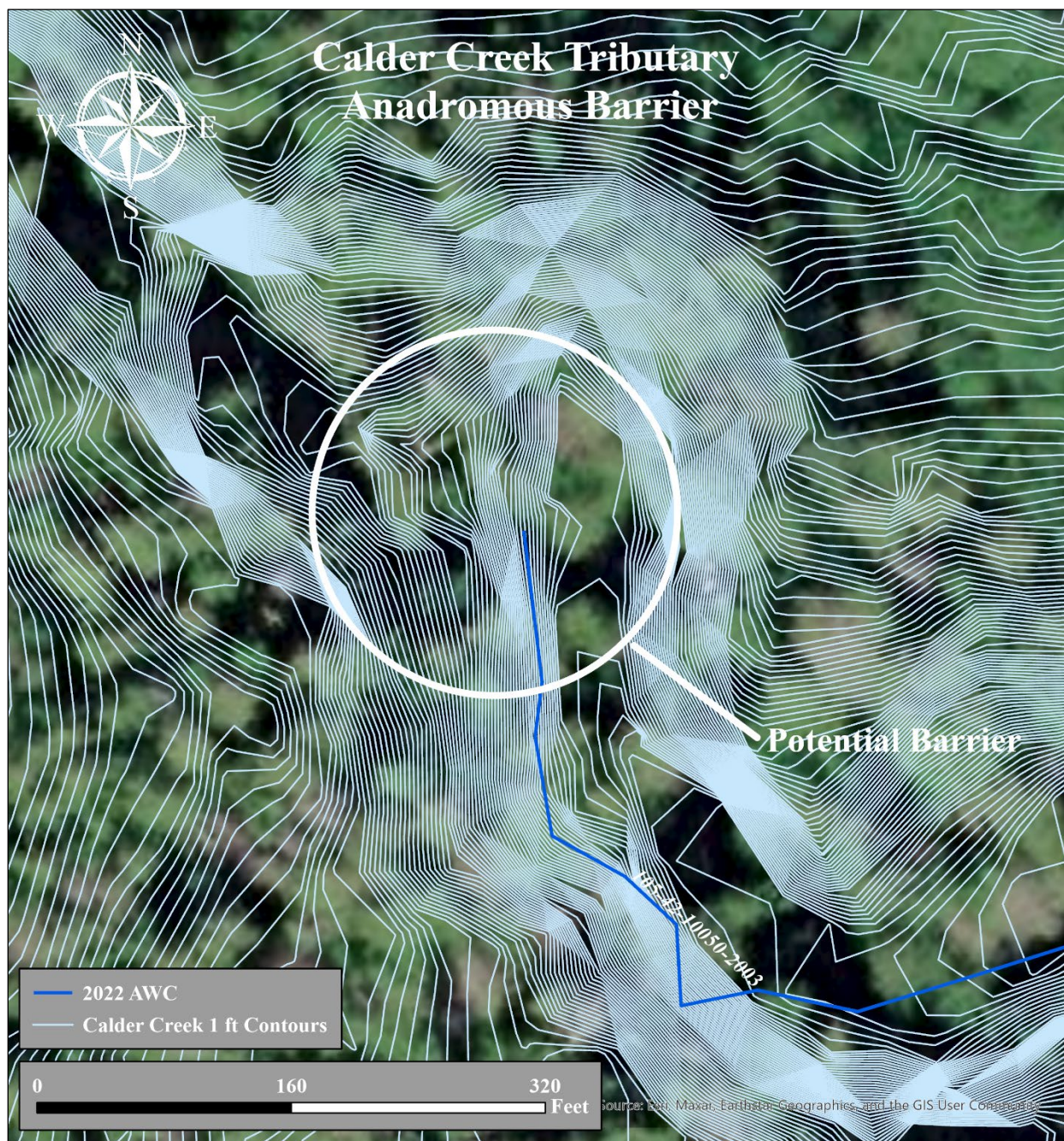


Figure 4.—Potential barrier to anadromous fish and 1 ft contours produced from LiDAR, Calder Creek tributary, Prince of Wales Island.





Figure 5.—Field-verified anadromous fish barrier on Calder Creek tributary, Prince of Wales Island.

## REFERENCES CITED

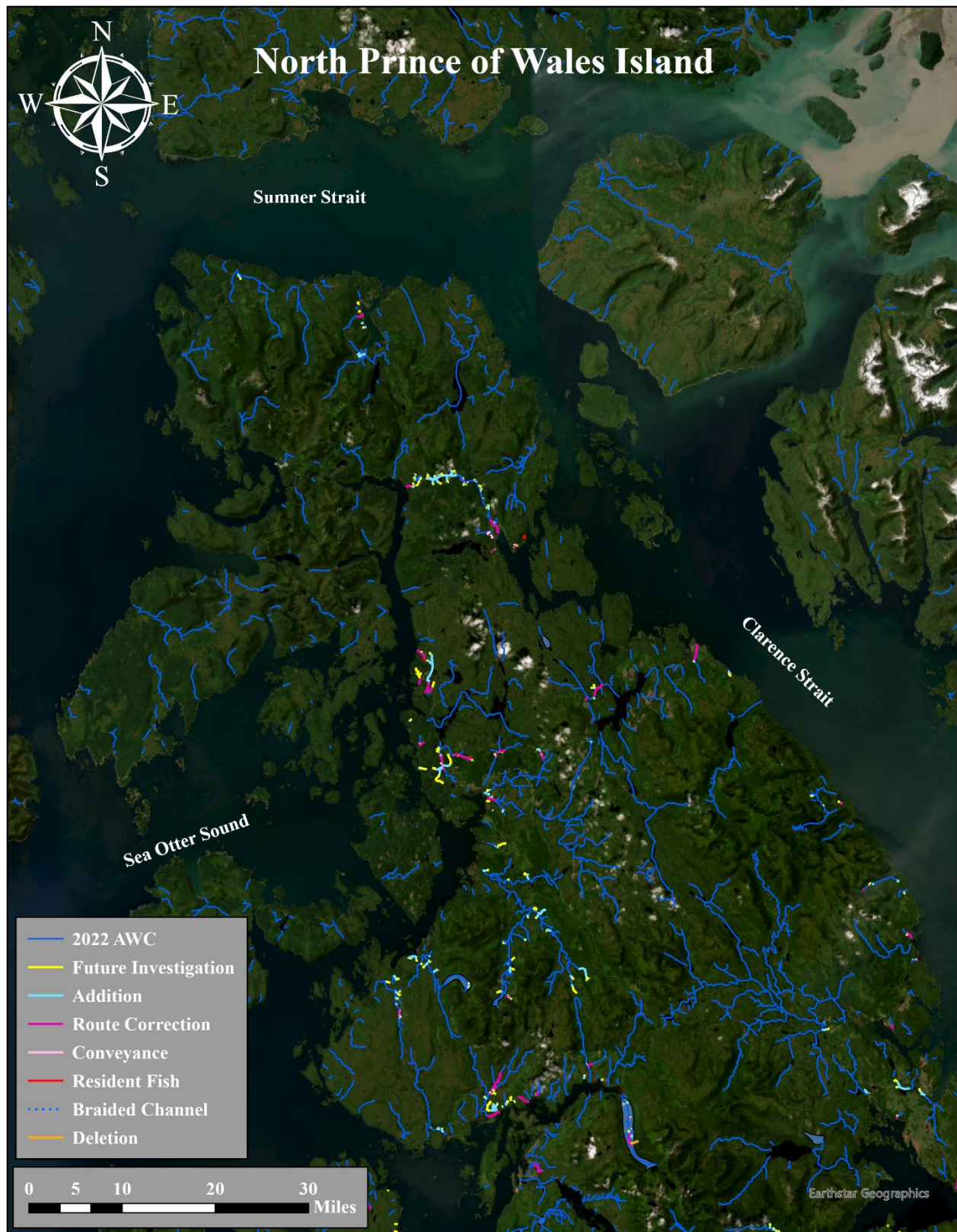
- Albrecht, G. and E. Fritz. 2019. Cataloging anadromous waters on Southeast Alaska timberlands. Alaska Department of Fish and Game, Technical Report No. 19-11, Douglas, AK.
- Department of Natural Resources Division of Forestry. November 2019. Alaska Forest Resources & Practices Regulations 11 AAC 95. Table A: Anadromous Fish Blockage. p.20.
- Frank, M. J., C. M. Rozen, and E. W. Weiss. 2000. Legislative history of Alaska Statutes pertaining to the protection of anadromous fish. Unpublished report. Alaska Department of Fish and Game, Division of Habitat, Anchorage, Alaska.
- Giefer, J., and S. Graziano. 2024. Catalog of waters important for spawning, rearing, or migration of anadromous fishes – Southeastern Region, effective June, 2024, Alaska Department of Fish and Game, Special Publication No. 24-04, Anchorage, Alaska.
- Hastings, K. 2005. Long-term persistence of isolated fish populations in the Alexander Archipelago. Graduate Student Theses, Dissertations, & Professional Papers. 9560.
- Krull, D. and J. Lindgren. 2021. Cataloging anadromous waters in Southeast Alaska. Alaska Department of Fish and Game, Technical Report No. 21-07, Douglas, AK.
- Pollard, W.R., G.F. Hartman, C. Groot, and P. Edgell. 1997. Field identification of coastal juvenile salmonids. Department of Fisheries and Oceans, Vancouver, BC.



## **APPENDIX A: PRINCE OF WALES ISLAND**

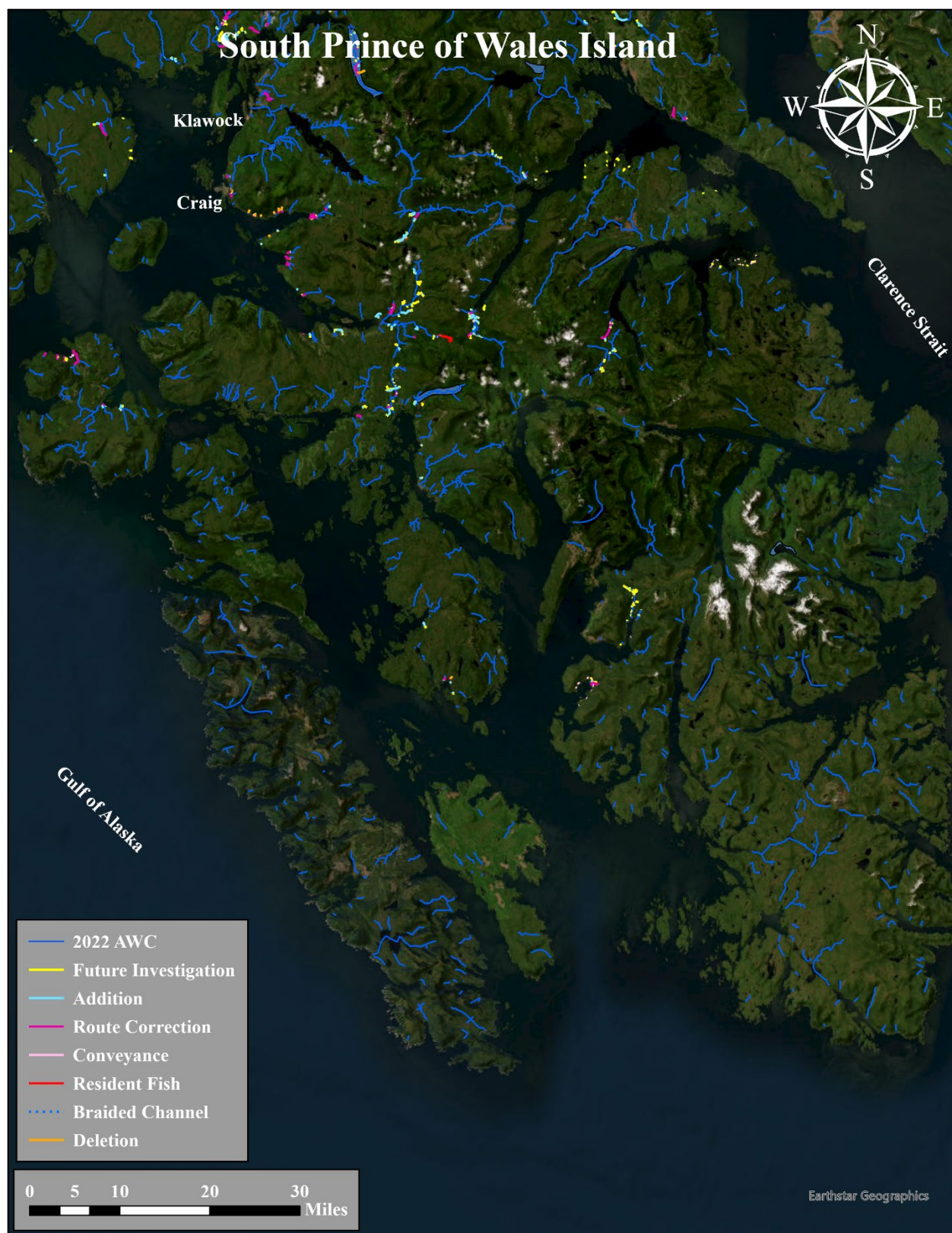






Appendix A.1.—North Prince of Wales Island AWC revisions.





Appendix A.2.—South Prince of Wales Island AWC revisions.

Appendix A.3.–Prince of Wales Island AWC revisions.

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
102-60-10380 Tributary 1	21-706	Addition
102-60-10380 Tributary 2	21-707	Addition
102-60-10380 Tributary 3	21-708	Addition
102-60-10390	21-883	Route Correction
102-60-10390 Tributary 1	21-884	Addition
102-60-10390 Tributary 2	21-885	Addition
102-60-10390 Tributary 3	21-886	Addition
102-60-10720 Tributary 1	21-711	Addition
102-60-10720 Tributary 2	21-712	Addition
102-60-10720 Tributary 3	21-713	Addition
102-60-10820-2013	21-887	Addition
102-60-10820-2013 Tributary 1	21-888	Addition
102-60-10820-2013 Tributary 2	21-889	Addition
102-60-10820-2013 Tributary 3	21-890	Addition
102-60-10820-2013 Tributary 4	21-891	Addition
102-60-10840 Tributary 1	21-714	Addition
102-60-10840 Tributary 2	21-715	Addition
102-60-10840 Tributary 3	21-716	Addition
102-60-10840 Tributary 4	21-717	Addition
102-60-10840 Tributary 5	21-718	Addition
102-60-10840 Tributary 6	21-719	Addition
102-60-10980	20-613	Route Correction
102-60-10987	20-614	Route Correction
102-60-10990	20-615	Route Correction
102-60-10992	20-616	Route Correction
102-70-10430	20-617	Addition
102-70-10430 Tributary	20-618	Addition
102-70-10510	20-619	Addition
102-70-10510 Tributary	20-620	Addition
102-70-10580-2026-3008 Tributary	20-865	Addition
102-60-10720	23-635	Backup Information
102-60-10720 Tributary 1	23-636	Addition
102-60-10720 Tributary 2	23-637	Addition
102-60-10720 Tributary 3	23-638	Addition
102-60-10720 Tributary 4	23-639	Addition
102-60-10720 Tributary 5	23-640	Addition
102-60-10720 Tributary 6	23-641	Addition
102-60-10720 Tributary 7	23-642	Addition
102-60-10720 Tributary 8	23-643	Addition
102-60-10720 Tributary 9	23-644	Addition
102-60-10720 Tributary 10	23-645	Addition
102-60-10720 Tributary 11	23-646	Addition
102-60-10720 Tributary 12	23-647	Addition
102-60-10720-2002	23-648	Route Correction

-continued-

Appendix A.3.–Page 2 of 8.

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
102-60-10820 Tributary 1	23-632	Addition
102-60-10820 Tributary 2	23-633	Addition
102-60-10820 Tributary 3	23-634	Addition
102-60-10846	23-651	Route Correction
102-60-10846 Tributary 1	23-652	Addition
102-60-10846 Tributary 2	23-653	Addition
102-70-10745 Tributary 1	21-720	Addition
102-70-10745 Tributary 2	21-721	Addition
102-70-10800	21-722	Route Correction
102-70-10800 Tributary 1	21-723	Addition
102-70-10800 Tributary 2	21-724	Addition
103-21-10180	20-624	Route Correction
103-21-10180	20-629	Addition
103-21-10180 Tributary 1	20-626	Addition
103-21-10180 Tributary 2	20-627	Addition
103-21-10180 Tributary 3	20-628	Addition
103-21-10280-2008	20-625	Route Correction
103-40-10150 Route Correction	23-550	Route Correction
103-40-10300	20-565	Route Correction
103-40-10300 Tributary 1	20-566	Addition
103-40-10300 Tributary 2	20-567	Addition
103-40-10300 Tributary 3	20-568	Addition
103-40-10300 Tributary 4	20-569	Addition
103-40-10300 Tributary 5	20-570	Addition
103-40-10300 Tributary 6	20-571	Addition
103-40-10300 Tributary 7	20-572	Addition
103-40-10300 Tributary 8	20-573	Addition
103-40-10300 Tributary 9	20-574	Addition
103-40-10300 Tributary 10	20-575	Addition
103-40-10300 Tributary 11	20-576	Addition
103-40-10300 Tributary 12	20-577	Addition
103-40-10300 Tributary 13	23-631	Addition
103-40-10300-2031	20-578	Route Correction
103-40-10300-2031 Tributary	20-579	Addition
103-40-10350 Tributary 1	20-580	Addition
103-40-10350 Tributary 2	20-581	Addition
103-40-10350 Tributary 3	20-582	Addition
103-40-10600	23-532	Route Correction
103-40-10620	23-533	Route Correction
103-50-10180	23-629	Backup Information
103-50-10180 Tributary	23-630	Addition
103-50-10470	23-518	Route Correction
103-50-10470 Tributary 1	23-519	Addition
103-60-10050 Tributary 1	23-626	Addition

-continued-

Appendix A.3.–Page 3 of 8.

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
103-60-10050 Tributary 2	23-627	Addition
103-60-10050 Tributary 3	23-628	Addition
103-60-10130 Tributary 1	21-725	Addition
103-60-10130 Tributary 2	21-726	Addition
103-60-10130-2009	23-625	Backup Information/Route Correction
103-60-10134	23-583	Addition
103-60-10134-2001 Tributary 1	23-584	Addition
103-60-10160	21-727	Route Correction
103-60-10160 Tributary	21-278	Addition
103-60-10190	23-585	Route Correction
103-60-10270 Tributary 1	23-620	Addition
103-60-10270 Tributary 2	23-621	Addition
103-60-10270 Tributary 3	23-622	Addition
103-60-10270 Tributary 4	23-623	Addition
103-60-10270 Tributary 5	23-624	Addition
103-60-10270-2006	23-619	Backup Information/Route Correction
103-60-10310 Tributary 1	23-614	Addition
103-60-10310 Tributary 2	23-615	Addition
103-60-10310 Tributary 3	23-616	Addition
103-60-10310 Tributary 4	23-617	Addition
103-60-10310 Tributary 5	23-618	Addition
103-60-10310-2007	23-612	Route Correction
103-60-10310-2007 Tributary	23-613	Addition
103-60-10390	20-649	Route Correction
103-60-10390 Tributary	20-650	Addition
103-60-10390-2010	20-651	Route Correction
103-60-10450	23-574	Route Correction
103-60-10492	23-655	Route Correction
103-60-10495 Tributary	23-656	Addition
103-60-10505	23-657	Deletion
103-60-10507	23-658	Deletion
103-60-10510	23-659	Route Correction
103-60-10512	23-660	Route Correction
103-60-10520	23-661	Deletion
103-60-10525	23-662	Deletion
103-60-10530	23-664	Deletion
103-60-10540	23-665	Deletion
103-60-10550	23-673	Route Correction
103-60-10560	23-666	Deletion
103-60-10589	23-667	Route Correction
103-60-10590 Tributary 1	23-668	Addition
103-60-10590 Tributary 2	23-669	Addition
103-60-10590 Tributary 3	23-670	Addition
103-60-10590-2013	23-671	Route Correction

-continued-

Appendix A.3.–Page 4 of 8

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
103-60-10592	23-674	Route Correction
103-60-10594	23-675	Route Correction/Deletion
103-60-10620	23-672	Deletion
103-60-10650	23-575	Route Correction
103-60-10650 Tributary 1	23-576	Addition
103-60-10650 Tributary 2	23-577	Addition
103-60-10660	23-578	Route Correction
103-60-10670	23-579	Route Correction
103-60-10680	23-580	Route Correction
103-60-10690	23-602	Route Correction
103-60-10750 Tributary 1	23-603	Addition
103-60-10750 Tributary 2	23-604	Addition
103-60-10750 Tributary 3	23-605	Addition
103-60-10750 Tributary 4	23-606	Addition
103-60-10750 Tributary 5	23-607	Addition
103-60-10750-2001	23-608	Route Correction
103-60-10750-2003	23-609	Route Correction
103-60-10750-2003 Tributary	23-610	Addition
103-60-10750-2017 Tributary	23-611	Addition
103-60-10770 Tributary 1	21-743	Addition
103-60-10770 Tributary 2	21-744	Addition
103-60-10770 Tributary 3	21-745	Addition
103-60-10770 Tributary 4	21-746	Addition
103-60-10770 Tributary 5	23-600	Addition
103-60-10770 Tributary 6	23-601	Addition
103-60-10770-2002-3027	20-583	Addition
103-70-10150	23-598	Route Correction
103-70-10150 Tributary	23-599	Addition
103-80-10350	23-552	Route Correction
103-80-10350 Tributary 1	20-866	Addition
103-80-10350 Tributary 2	20-867	Addition
103-80-10350 Tributary 3	20-868	Addition
103-80-10350 Tributary 4	23-553	Addition
103-80-10350 Tributary 5	23-554	Addition
103-80-10350 Tributary 6	23-555	Addition
103-80-10350 Tributary 7	23-556	Addition
103-80-10350 Tributary 8	23-557	Addition
103-80-10350 Tributary 9	23-558	Addition
103-80-10350-2015 Tributary	20-869	Addition
103-90-10070	20-540	Route Correction
103-90-10080	20-541	Route Correction
103-90-10090	20-542	Addition
103-90-10090	20-543	Route Correction
103-90-10090 Tributary	20-544	Addition

-continued-

Appendix A.3.–Page 5 of 8.

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
103-90-10095	20-546	Addition
103-90-10140-2004	20-547	Route Correction
103-90-10140-2004 Tributary 1	20-548	Addition
103-90-10140-2004 Tributary 2	20-549	Addition
103-90-10140-2004 Tributary 3	20-550	Addition
103-90-10140-2004 Tributary 4	20-551	Addition
103-90-10140-2004 Tributary 5	20-552	Addition
103-90-10140-2004 Tributary 6	20-553	Addition
103-90-10140-2004 Tributary 7	20-554	Addition
103-90-10140-2004-3003	20-555	Route Correction
103-90-10140-2004-3003	20-556	Addition
103-90-10140-2004-3003-4014	20-632	Route Correction
103-90-10220	20-557	Route Correction
103-90-10230	20-558	Route Correction
103-90-10250	20-559	Route Correction
103-90-10260 Tributary 1	23-569	Addition
103-90-10260 Tributary 2	23-570	Addition
103-90-10260-2009	20-560	Route Correction
103-90-10260-2015	20-561	Route Correction
103-90-10260-2015	20-870	Addition
103-90-10260-2015-3007	20-562	Addition
103-90-10270	23-571	Route Correction
103-90-10270 Tributary 1	23-572	Addition
103-90-10290	23-595	Addition
103-90-10290 Tributary 1	23-596	Addition
103-90-10290 Tributary 2	23-597	Addition
103-90-10310	23-539	Addition
103-90-10310 Tributary 1	21-750	Addition
103-90-10310 Tributary 2	21-751	Addition
103-90-10310 Tributary 3	21-752	Addition
103-90-10310 Tributary 4	23-540	Addition
103-90-10310-2005 Tributary 1	20-871	Addition
103-90-10310-2005 Tributary 2	23-541	Addition
103-90-10310-2005-3005 Tributary 1	23-542	Addition
103-90-10310-2005-3013	23-543	Addition
103-90-10310-2005-3013 Tributary 1	23-544	Addition
103-90-10310-2005-3013 Tributary 2	23-545	Addition
103-90-10310-2005-3014	23-546	Backup Information
103-90-10310-2015	20-875	Addition
103-90-10310-2018 Tributary 1	20-872	Addition
103-90-10310-2018 Tributary 2	20-873	Addition
103-90-10310-2018 Tributary 3	20-874	Addition
103-90-10310-2018 Tributary 4	20-876	Addition
103-90-10310-2018-3009	23-547	Addition

-continued-

Appendix A.3.–Page 6 of 8.

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
103-90-10310-2018-3009	21-753	Backup Information
103-90-10310-2018-3016-4011 Tributary	20-877	Addition
103-90-10310-2018-3019	20-878	Addition
103-90-10310-2018-3039	21-754	Addition
103-90-10310-2018-3039 Tributary 1	21-755	Addition
103-90-10310-2018-3039 Tributary 2	21-756	Addition
103-90-10310-2018-3039 Tributary 3	21-757	Addition
103-90-10310-2018-3039-4038	21-758	Route Correction
103-90-10310-2023	21-759	Route Correction
103-90-10310-2023	23-548	Addition
103-90-10310-2036	20-879	Addition
103-90-10310-2036 Tributary	20-880	Addition
103-90-10310-2928	23-549	Addition
103-90-10420 Tributary 1	20-881	Addition
103-90-10420 Tributary 2	23-559	Addition
103-90-10420 Tributary 3	23-560	Addition
103-90-10420 Tributary 4	23-561	Addition
103-90-10420 Tributary 5	23-562	Addition
103-90-10420-2001 Tributary 1	23-563	Addition
103-90-10420-2035	20-882	Addition
103-90-10420-2035-3021	20-883	Addition
103-90-10420-2035-3201 Tributary	20-887	Addition
103-90-10440 Tributary	20-884	Addition
105-42-10050 Tributary	20-604	Addition
105-42-10050-2010	20-605	Route Correction
105-42-10110	20-606	Route Correction
105-42-10110 Tributary 1	20-607	Addition
105-42-10110 Tributary 2	20-608	Addition
105-42-10110 Tributary 3	20-609	Addition
105-42-10110 Tributary 4	20-610	Addition
105-42-10110 Tributary 5	20-611	Addition
105-42-10110 Tributary 6	20-612	Addition
105-42-10110 Tributary 7	20-885	Addition
106-10-10020 Tributary	21-760	Addition
106-10-10040	21-761	Route Correction
106-10-10040 Tributary 1	21-763	Addition
106-10-10040 Tributary 2	21-764	Addition
106-10-10040 Tributary 3	21-765	Addition
106-10-10040 Tributary 4	21-766	Addition
106-10-10040 Tributary 5	21-768	Addition
106-10-10070	21-769	Route Correction
106-10-10070 Tributary	21-770	Addition
106-10-10100-2006 Tributary	21-771	Addition
106-30-10120	23-593	Route Correction

-continued-



Appendix A.3.–Page 7 of 8.

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
106-30-10120 Tributary	23-594	Addition
106-30-10150	23-592	Backup Information
106-30-10670-2004-3010	23-588	Route Correction/Backup Information
106-30-10670-2004-3010-4003	23-587	Route Correction/Backup Information
106-30-10670-2004-3010 Tributary 1	23-589	Addition
106-30-10670-2004-3010 Tributary 2	23-590	Addition
106-30-10670-2004-3010 Tributary 3	23-591	Addition
106-30-10800	20-586	Addition
106-30-10800	20-587	Route Correction
106-30-10800 Tributary 1	20-588	Addition
106-30-10800 Tributary 2	20-589	Addition
106-30-10800 Tributary 3	20-590	Addition
106-30-10800 Tributary 4	20-591	Addition
106-30-10800 Tributary 5	20-592	Addition
106-30-10800 Tributary 6	20-593	Addition
106-30-10800 Tributary 7	20-594	Addition
106-30-10800 Tributary 8	20-595	Addition
106-30-10800 Tributary 9	20-596	Addition
106-30-10800 Tributary 10	20-597	Addition
106-30-10800 Tributary 11	20-598	Addition
106-30-10800 Tributary 12	20-599	Addition
106-30-10800 Tributary 13	20-600	Addition
106-30-10800 Tributary 14	20-601	Addition
106-30-10800 Tributary 15	20-602	Addition
106-30-10800 Tributary 16	20-603	Addition
106-30-10800 Tributary 17	21-772	Addition
106-30-10800 Tributary 18	21-773	Addition
106-30-10800 Tributary 19	21-774	Addition
106-30-10800 Tributary 20	21-775	Addition
106-30-10800 Tributary 21	21-776	Addition
106-30-10800 Tributary 22	21-777	Addition
106-41-10300 Tributary	21-778	Addition
106-41-10300-2001	21-779	Backup Information
106-41-10300-2002-3003	23-564	Backup Information
106-41-10350 Tributary	21-780	Addition
106-41-10360	23-565	Route Correction
106-41-10360 Tributary 1	23-566	Addition
106-41-10420 Tributary	20-886	Addition
106-41-10440 Tributary	21-781	Addition
Big Lake Uncataloged Stream 1	21-782	Addition
Big Lake Uncataloged Stream 2	21-783	Addition
Big Lake Uncataloged Stream 3	21-784	Addition
Big Lake Uncataloged Stream 4	21-785	Addition
Big Lake Uncataloged Stream 5	21-786	Addition

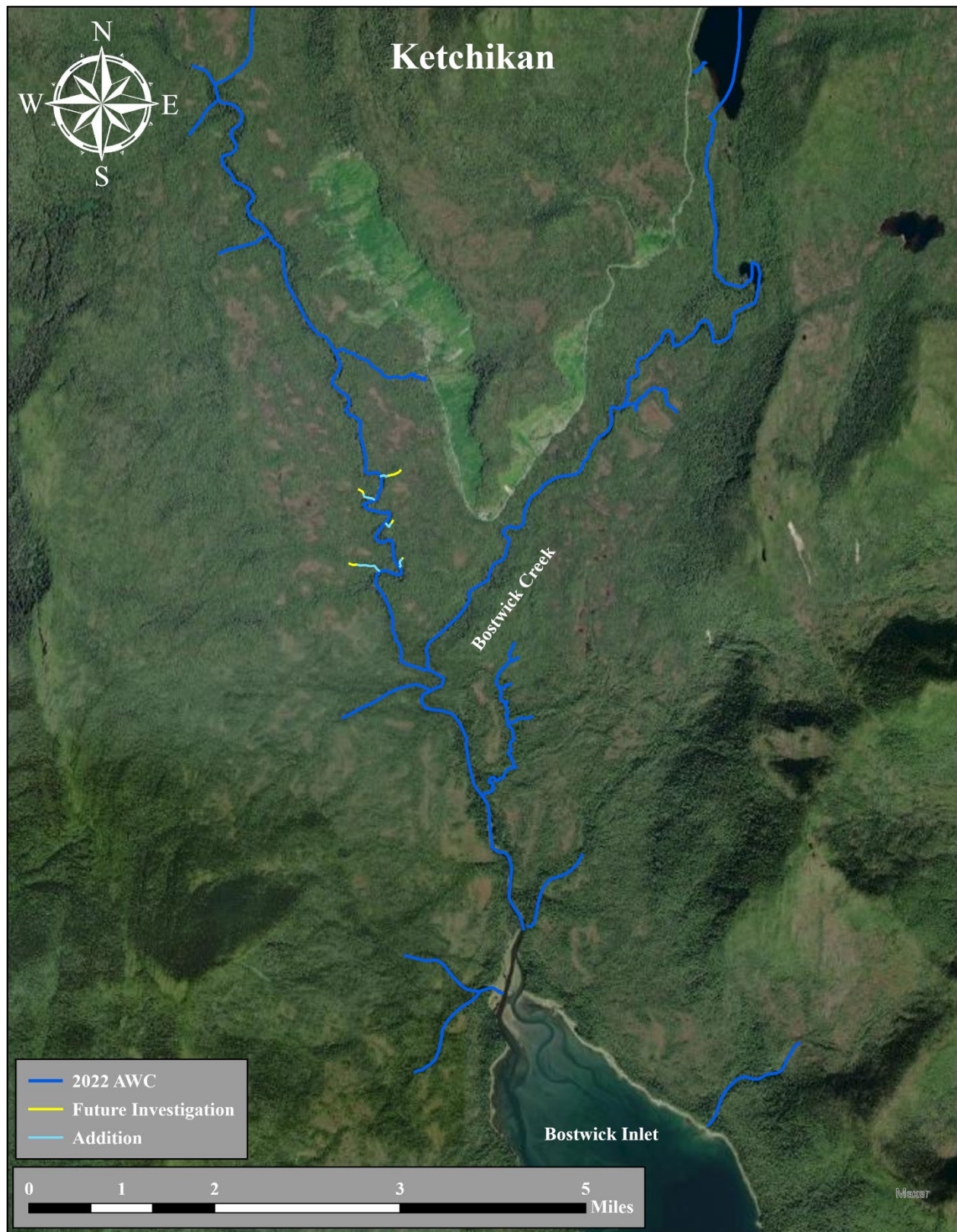
-continued-

Appendix A.3.–Page 8 of 8.

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
Big Lake Uncataloged Stream 6	21-787	Addition
Big Salt Lake Uncataloged Stream 1	23-586	Addition
Big Salt Lake Uncataloged Stream 2	22-660	Addition
Big Salt Lake Uncataloged Stream 2 Tributary	22-661	Addition
Coffman Cove Uncataloged Stream 1	23-581	Addition
Coffman Cove Uncataloged Stream 2	23-582	Addition
Hydaburg Uncataloged Stream 1	20-584	Addition
Hydaburg Uncataloged Stream 2	20-585	Addition
Hollis Uncataloged Stream	23-654	Addition
Karheen Passage Uncataloged Stream 1	21-710	Addition
Karheen Passage Uncataloged Stream 2	21-788	Addition
Karheen Passage Uncataloged Stream 3	21-789	Addition
Karheen Passage Uncataloged Stream 4	21-709	Addition
Karheen Passage Uncataloged Stream 5	21-905	Addition
Kasaan Uncataloged Stream	20-621	Addition
Kasaan Uncataloged Stream Tributary	20-622	Addition
Keete Inlet Uncataloged Stream 1	20-630	Addition
Keete Inlet Uncataloged Stream 2	20-631	Addition
Klawock Uncataloged Stream	20-623	Addition
Naukati Uncataloged Stream 1	20-563	Addition
Naukati Uncataloged Stream 2	20-564	Addition
Naukati Bay Uncataloged Stream	23-573	Addition
Port Refugio Uncataloged Stream 1	23-520	Addition
Port Refugio Uncataloged Stream 2	23-521	Addition
Port Refugio Uncataloged Stream 3	23-522	Addition
Port Refugio Uncataloged Stream 4	23-523	Addition
Port Saint Nicholas Uncataloged Stream	21-790	Addition
Red Bay Uncataloged Stream 1	23-567	Addition
Red Bay Uncataloged Stream 2	23-568	Addition
Soda Bay Uncataloged Stream	23-551	Addition
Sugar Point Uncataloged Stream	23-538	Addition
Sukkwon Island Uncataloged Stream 1	23-534	Addition
Sukkwon Island Uncataloged Stream 2	23-535	Addition
Sukkwon Island Uncataloged Stream 3	23-536	Addition
Trocadero Bay Uncataloged Stream 1	23-524	Addition
Trocadero Bay Uncataloged Stream 2	23-525	Addition
Trocadero Bay Uncataloged Stream 3	23-526	Addition
Trocadero Bay Uncataloged Stream 4	23-527	Addition
Trocadero Bay Uncataloged Stream 5	23-528	Addition
Trocadero Bay Uncataloged Stream 6	23-529	Addition
Trocadero Bay Uncataloged Stream 7	23-530	Addition
Trocadero Bay Uncataloged Stream 8	23-531	Addition
Twelvemile Arm Uncataloged Stream	23-649	Addition
Twelvemile Arm Uncataloged Stream Tributary	23-650	Addition

## **APPENDIX B: KETCHIKAN**





Appendix B.1.—Ketchikan AWC revisions.

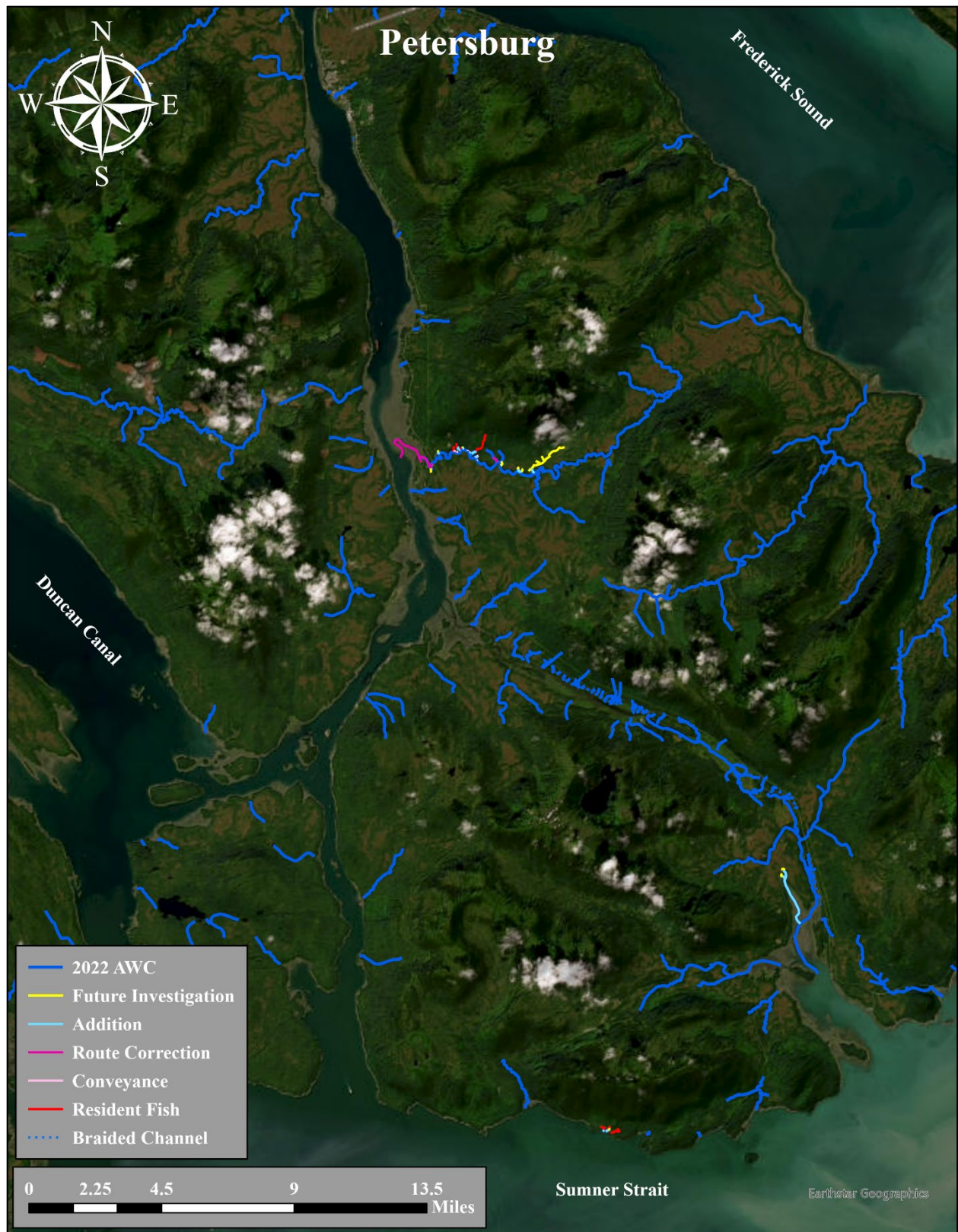
Appendix B.2.—Ketchikan AWC revisions

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
101-27-10360-2005 Tributary 1	23-676	Addition
101-27-10360-2005 Tributary 2	23-677	Addition
101-27-10360-2005 Tributary 3	23-678	Addition
101-27-10360-2005 Tributary 4	23-679	Addition
101-27-10360-2005 Tributary 5	23-680	Addition



## **APPENDIX C: PETERSBURG**





Appendix C.1.—Petersburg AWC revisions

Appendix C.2.–Petersburg AWC revisions.

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
106-44-10060 Tributary 1	21-840	Addition
106-44-10060 Tributary 2	21-841	Addition
106-44-10060 Tributary 3	21-842	Addition
106-44-10060 Tributary 4	21-843	Addition
106-44-10060 Tributary 5	21-844	Addition
106-44-10060 Tributary 6	21-845	Addition
106-44-10060 Tributary 7	21-846	Addition
106-44-10060 Tributary 8	21-847	Addition
106-44-10060-2003	21-848	Route Correction
108-40-10500 Tributary 1	21-908	Addition
108-40-10500 Tributary 2	21-909	Addition
Woodpecker Cove Uncataloged Stream 1	21-910	Addition
Woodpecker Cove Uncataloged Stream 2	21-911	Addition

## **APPENDIX D: JUNEAU**







Appendix D.1.–North Juneau AWC revisions.





Appendix D.2.—South Juneau AWC revisions.

Appendix D.3.—Juneau AWC revisions.

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
111-40-10690	21-814	Route Correction
111-40-10690 Tributary 1	21-815	Addition
111-40-10690 Tributary 2	21-816	Addition
111-50-10070 Tributary	21-793	Addition
111-50-10070-2004 Tributary	21-817	Addition
111-50-10070-2004-3006 Tributary	21-818	Addition
111-50-10070-2004-3006-4013	21-819	Addition
111-50-10490-2020-3008	20-1044	Addition
111-50-10500 Tributary 1	20-1007	Addition
111-50-10500 Tributary 2	20-1008	Addition
111-50-10500 Tributary 3	20-1009	Addition
111-50-10500 Tributary 4	20-1010	Addition
111-50-10500 Tributary 5	20-1011	Addition
111-50-10500 Tributary 6	20-1012	Addition
111-50-10500 Tributary 7	20-1013	Addition
111-50-10500 Tributary 8	20-1014	Addition
111-50-10500 Tributary 9	20-1015	Addition
111-50-10500 Tributary 10	20-1016	Addition
111-50-10500 Tributary 11	20-1017	Addition
111-50-10500 Tributary 12	20-1018	Addition
111-50-10500-2004 Tributary	21-810	Addition
111-50-10500-2006 Tributary 1	20-1019	Addition
111-50-10500-2006 Tributary 2	20-1021	Addition
111-50-10500-2012	21-906	Addition
111-50-10500-2014	21-907	Addition
111-50-10500-2019	21-554	Addition
111-50-10500-2035	21-553	Addition
111-50-10500-2903	20-913	Addition
111-50-10660 Tributary	21-809	Addition
115-10-10230 Tributary	21-808	Addition
115-20-10300	21-820	Route Correction
115-20-10300 Tributary 1	21-821	Addition
115-20-10300 Tributary 2	21-822	Addition
115-20-10620 Tributary 1	21-873	Addition
115-20-10620 Tributary 2	21-874	Addition
115-20-10620 Tributary 3	21-875	Addition
115-20-10620 Tributary 4	21-876	Addition

-continued-

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
115-20-10620 Tributary 6	21-878	Addition
115-20-10620 Tributary 7	21-879	Addition
115-20-10620 Tributary 8	21-880	Addition
115-20-10620 Tributary 9	21-881	Addition
115-20-10620-2002	21-882	Route Correction
115-20-10620-2003 Tributary 1	20-988	Addition
115-20-10620-2003 Tributary 2	20-989	Addition
115-20-10620-2003 Tributary 3	20-991	Addition
115-20-10620-2003 Tributary 4	20-993	Addition
115-20-10620-2003 Tributary 5	20-1000	Addition
115-20-10620-2003 Tributary 6	20-1001	Addition
115-20-10620-2003 Tributary 7	20-1003	Addition
115-20-10620-2003 Tributary 8	20-1006	Addition
115-20-10620-2003 Tributary 9	21-807	Addition
115-20-10620-2003 Tributary 10	21-806	Addition
115-20-10620-2003 Tributary 11	21-805	Addition
115-20-10620-2003 Tributary 12	21-804	Addition
115-20-10620-2003 Tributary 13	21-803	Addition
115-20-10620-2003 Tributary 14	21-802	Addition
115-20-10620-2003 Tributary 15	21-801	Addition
115-20-10620-2003 Tributary 16	21-800	Addition
115-20-10620-2003 Tributary 17	21-799	Addition
Berners Bay Uncataloged Stream 1	21-823	Addition
Berners Bay Uncataloged Stream 2	21-824	Addition
Berners Bay Uncataloged Stream 3	21-825	Addition
Eagle River Uncataloged Stream	21-798	Addition
Freedom Cove Uncataloged Stream 1	21-813	Addition
Freedom Cove Uncataloged Stream 2	21-812	Addition
Freedom Cove Uncataloged Stream 3	21-811	Addition
Gastineau Channel Uncataloged Stream 1	21-797	Addition
Gastineau Channel Uncataloged Stream 2	21-796	Addition
Gastineau Channel Uncataloged Stream 3	21-795	Addition
Gastineau Channel Uncataloged Stream Tributary	21-794	Addition

## **APPENDIX E: ADMIRALTY ISLAND**







Appendix E.1.—Admiralty Island AWC revisions.

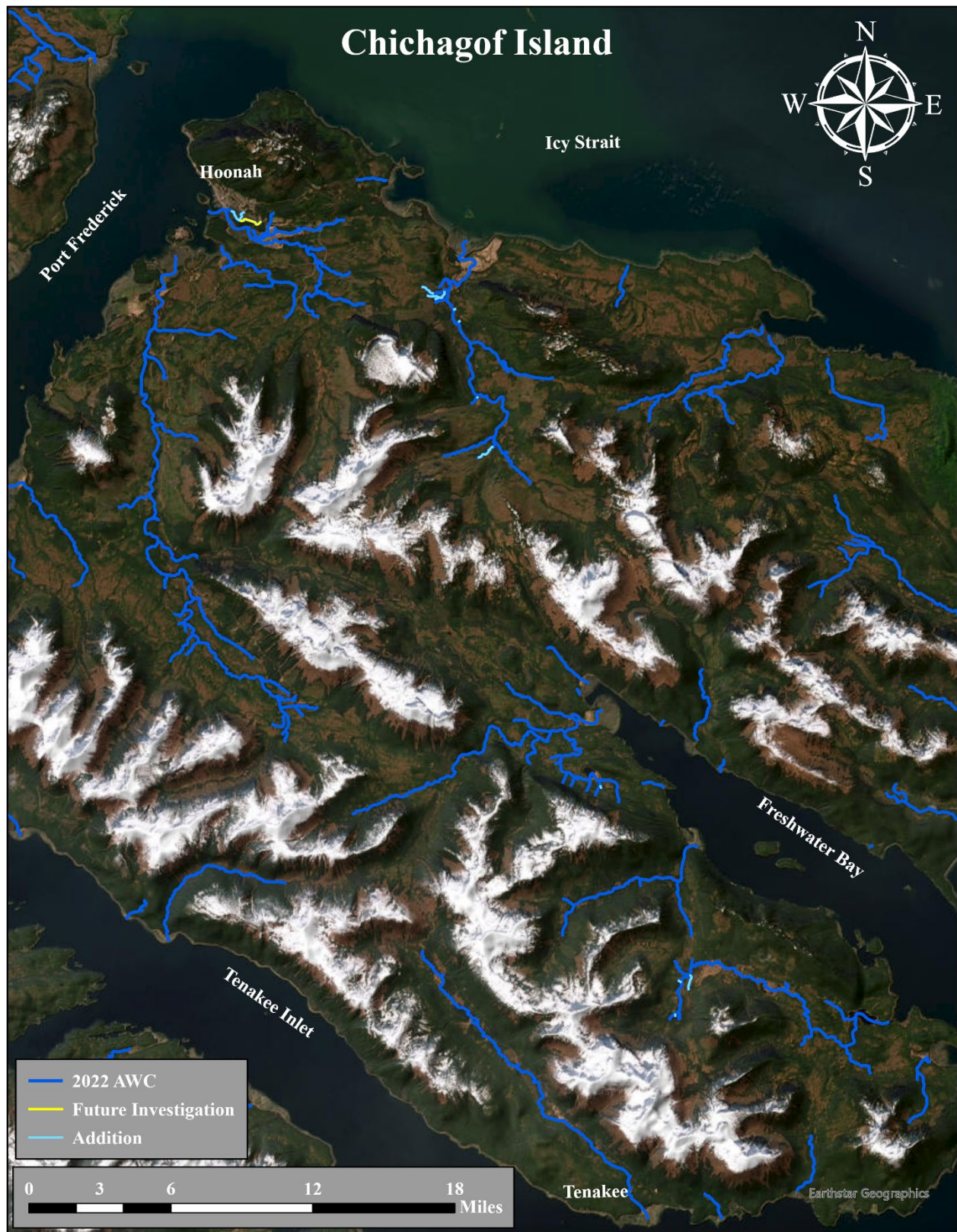
Appendix E.2.—Admiralty Island AWC revisions.

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
111-41-10050 Tributary 1	21-826	Addition
111-41-10050 Tributary 2	21-827	Addition
111-41-10050 Tributary 3	21-828	Addition
111-41-10050 Tributary 4	21-829	Addition
111-41-10050 Tributary 5	21-830	Addition
111-41-10050 Tributary 6	21-831	Addition
111-50-10800	21-867	Route Correction
111-50-10800 Tributary 1	21-868	Addition
111-50-10800 Tributary 2	21-869	Addition
111-50-10800 Tributary 3	21-870	Addition
111-50-10800 Tributary 4	21-871	Addition
111-50-10800 Tributary 5	21-872	Addition
111-50-10830	21-832	Route Correction
111-50-10830 Tributary 1	21-833	Addition
111-50-10830 Tributary 2	21-834	Addition
111-50-10830 Tributary 3	21-835	Addition
Horse Island Uncataloged Stream 1	21-836	Addition
Horse Island Uncataloged Stream 2	21-837	Addition
Horse Island Uncataloged Stream 3	21-838	Addition
Horse Island Uncataloged tributary 1	21-839	Addition
Horse Island Uncataloged Tributary 2	21-850	Addition
Horse Island Uncataloged Tributary 3	21-851	Addition
Horse Island Uncataloged Tributary 4	21-852	Addition
Horse Island Uncataloged Tributary 5	21-853	Addition
Lone Mountain Uncataloged Stream 1	21-856	Addition
Lone Mountain Uncataloged Stream 2	21-854	Addition
Lone Mountain Uncataloged Stream 3	21-855	Addition

## **APPENDIX F: CHICHAGOF ISLAND**







Appendix F.1.—Chichagof Island AWC revisions.

Appendix F.2.—Chichagof Island AWC revisions.

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
112-50-10100 Tributary 1	21-656	Addition
112-50-10100 Tributary 2	21-657	Addition
112-50-10100-2102	21-568	Route Correction
112-50-10100-2118 Tributary	21-569	Addition
112-50-10300-2003-3016 Tributary	21-660	Addition
114-27-10300 Tributary 1	21-661	Addition
114-27-10300 Tributary 2	21-662	Addition
114-27-10300-2006	21-663	Addition
114-27-10300-2006 Tributary 1	21-664	Addition
114-27-10300-2006 Tributary 2	21-665	Addition
114-27-10300-2006 Tributary 3	21-666	Addition
114-27-10300-2014 Tributary	21-667	Addition
114-27-10300-2020	21-668	Addition
114-31-10130-2011	21-669	Backup Information
Hoonah Uncataloged Stream 1	21-670	Addition
Hoonah Uncataloged Stream 2	21-671	Addition



## **APPENDIX G: YAKUTAT**





Appendix G.1.—Yakutat AWC revisions.

Appendix G.2.—Yakutat AWC revisions.

<b>Location/Stream Number</b>	<b>Nomination Number</b>	<b>Type</b>
182-80-10100-2005-3012 Tributary	21-918	Addition
183-40-10100 Tributary	21-919	Addition
183-40-10100	21-920	Route Correction
183-50-10100-2004 Tributary	22-692	Addition
Doggie Island Uncataloged Stream 1	22-693	Addition
Doggie Island Uncataloged Stream 2	22-694	Addition
Doggie Island Uncataloged Stream 3	22-695	Addition
Doggie Island Uncataloged Stream 3 Tributary	22-696	Addition
Khantaak Island Uncataloged Stream 1	22-697	Addition
Khantaak Island Uncataloged Stream 2	22-698	Addition
Khantaak Island Uncataloged Stream 2 Tributary	22-699	Addition
Khantaak Island Uncataloged Stream 3	22-700	Addition
Khantaak Island Uncataloged Stream 4	22-701	Addition

