State of Alaska
Department of Fish and Game
Division of Sport Fish

Nomination Form
Anadromous Waters Catalog

Region: SOUTHEAST - REGION 1 USGS Quad(s): SITKA B-2

Anadromous Waters Catalog Number of Waterway: 112-67 - 10610

Name of Waterway: #9E ☐ USGS Name ☐ Local Name

☒ Addition ☐ Deletion ☐ Correction ☐ Backup Information

For Office Use

Nomination #	10-916		
		Fisheries Scientist	Date
Revision Year:	2011		
Revision to:	Atlas ____ Catalog ____ Both ____	Habitat Operations Manager	Date
			19OCT10
		AWC Project Biologist	Date
Revision Code:	F-1		
		Cartographer	Date

OBSERVATION INFORMATION

Species	Date(s) Observed	Spawning	Rearing	Present	Anadromous
coho salmon	5-31-09		X		☒
					☐
					☐
					☐
					☐

IMPORTANT: Provide all supporting documentation that this water body is important for the spawning, rearing or migration of anadromous fish, including: number of fish and life stages observed; sampling methods, sampling duration and area sampled; copies of field notes; etc. Attach a copy of a map showing location of mouth and observed upper extent of each species, as well as other information such as: specific stream reaches observed as spawning or rearing habitat; locations, types, and heights of any barriers; etc.

Comments:

SEE ATTACHED DOCUMENT AND MAP, ADDITIONAL INFO AVAILABLE IN REPORT SUBMITTED FOR ADFG PERMIT SF2009-105

Name of Observer (please print): LEYLA ARSAN

Signature: [signature] Date: 5-10-10

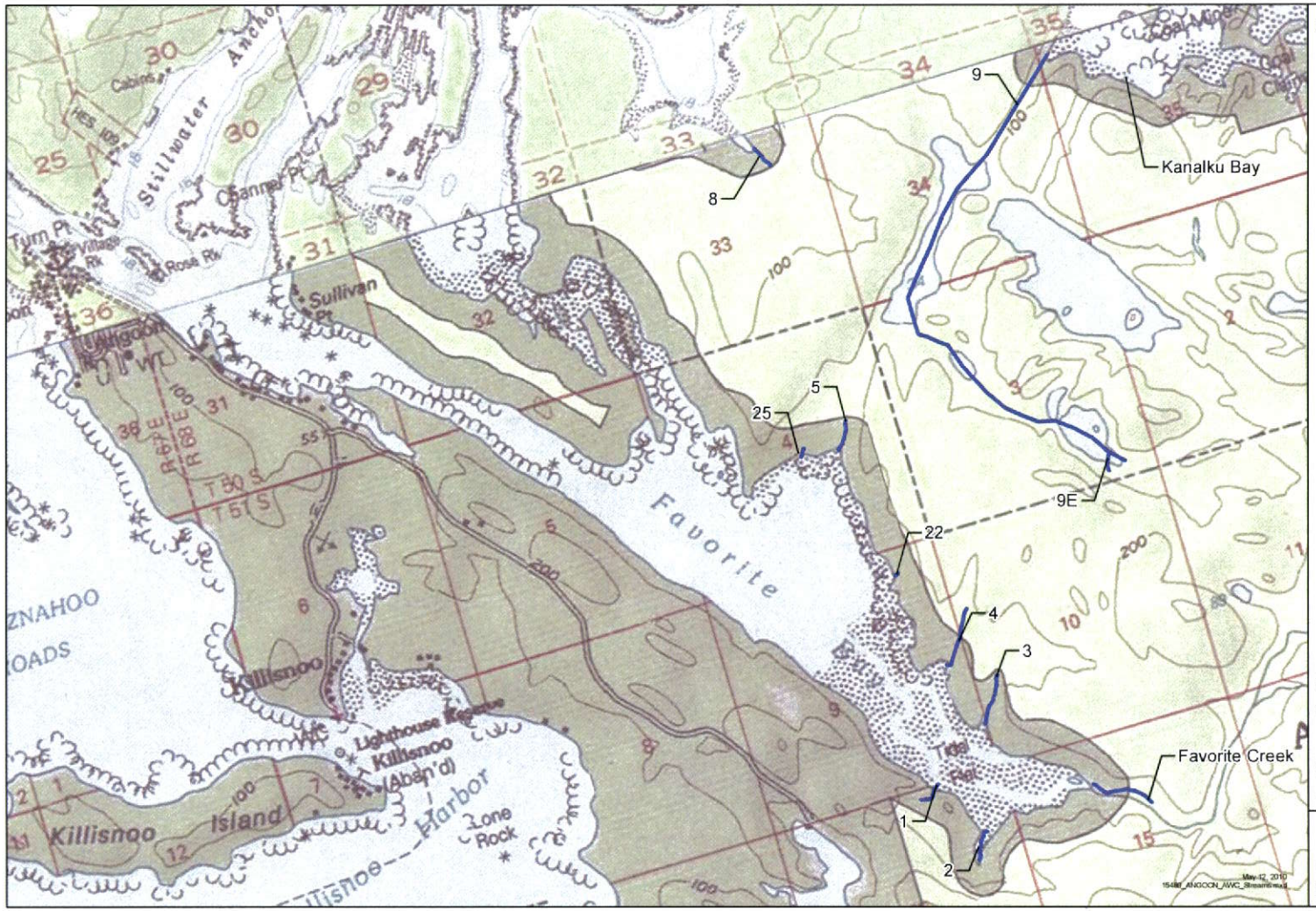
Agency: SWCA ENVIRONMENTAL CONSULTANTS

Address: 434 NW 6TH AVE
PORTLAND, OR 97209

This certifies that in my best professional judgment and belief the above information is evidence that this waterbody should be included in or deleted from the Anadromous Waters Catalog.

Signature of Area Biologist: _____ Date: _____ Revision

02/08



Anadromous Waters Catalog Additions

Streams with anadromous fish (coho) observed

0 0.5 1 km

0 0.5 1 mi

N

Contains Privileged Information: Do Not Release

Source: USGS topo quads

SWCA
ENVIRONMENTAL CONSULTANTS

SWCA
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.

Portland Office
434 NW Sixth Avenue, Suite 304
Portland, OR 97209-3652
Tel 503.224.0333 Fax 503.224.1851
www.swca.com

Anadromous Waters Catalog Nomination Form – Supporting Information

To: Alaska Department of Fish and Game - Division of Sport Fish
From: Leyla Arsan, SWCA Environmental Consultants
Date: October 18, 2010
Subject: Anadromous Waters Catalog Nominations – SE Alaska-Region 1

SWCA is submitting 11 nominations for the Anadromous Waters Catalog (AWC) from streams surveyed for the Angoon Airport EIS under Fish Resource Permit SF2009-105. The attached map shows stream reaches where anadromous fish were observed. A GIS shapefile or Google Earth (.kmz) file of streams is available upon request. This document provides additional supporting information for each stream proposed for nomination. We realize that multiple "fish in hand" observations are required for inclusion in the AWC, and that several of our observations include single captures or visual surface observations. We feel strongly that additional surveys would document more fish in all of the streams included in this nomination. Chiska Derr (currently of NMFS Juneau, and formerly of ADF&G) was on site with SWCA staff in July and observed several of these streams. She has offered to verify our expertise as biologists in support of our nominations, if necessary. Additional information on streams proposed for nomination is available in the Draft Freshwater, Estuarine, and Marine Technical Report for the Angoon Airport EIS, which was submitted to ADF&G on April 30, 2010, with the Completion Report for Fish Resource Permit SF2009-105.

AWC # 112-67-10800 (Favorite Creek) – Supporting Observations and Cutthroat Addition

The lower 0.5 mile of Favorite Creek were surveyed several times from May through August 2009. Multiple age 1+ juvenile coho (*Oncorhynchus kisutch*) were captured using baited minnow traps on May 29, 2009 and were also observed during snorkeling. Approximately 16 fish were caught in minnow traps and 142 were observed during snorkeling. Pink (*O. gorbuscha*) and chum (*O. keta*) salmon fry had already migrated to the estuary (Favorite Bay tidal flats) by this time and were captured there using beach seines. Coho fry (age 0) primarily hatched during June or early July and were observed visually from the surface during mid July 2009 foot surveys. Adult pink and chum salmon were observed spawning in lower Favorite Creek during foot surveys on August 20, 2009. One lone adult sockeye salmon (*O. nerka*) was observed intermixed with several spawning pink salmon and showed obvious spawning coloration (red body, green head; Figure 1). Spawning pink and chum salmon were distributed evenly throughout the lower 0.5 mile of the creek. One 190-mm cutthroat trout (*O. clarkii*) was observed in a minnow trap on May 29, 2009 (Figure 2). This was the only cutthroat observed in 20 minnow traps, which soaked for 4 to 8.5 hours. In mid July 2009, as adult pink and chum salmon were staging in the tidewater area of Favorite Creek, several adult Dolly Varden (*Salvelinus malma*) and sea-run cutthroat trout (400 mm average fork length) were observed among the salmon [57.461003°, −134.501230°]. These fish were observed via angling with a sportfishing license and appeared to be staging to enter Favorite Creek. Although Favorite Creek was not sampled to verify presence of adult cutthroat trout and Dolly Varden, it appears that the creek receives an anadromous run of cutthroat trout and Dolly Varden. A few stray sockeye have been observed by ADF&G in the past, but there does not appear to be a significant population in Favorite

Creek, which is supported by anecdotal information from Angoon residents. Several coastrange sculpin (*Cottus aleuticus*) were also observed in Favorite Creek.

Comment [LB1]: This is the only sci name given--is there a reason?

Figure 1. Several spawning pink salmon and one lone sockeye salmon in lower Favorite Creek.

Figure 2. Cutthroat captured in a minnow trap in Favorite Creek.

AWC Basin # 112-67-X Numerous Unnamed Streams – Anadromous Additions

Stream #1 on map

Two juvenile (age 1+) coho were visually observed from the surface of this stream, although the stream was not directly sampled for fish. There is a small bedrock step at the stream mouth that likely prevents juvenile fish from migrating up into the stream during low-flow periods. The line shown for this stream on the attached map extends upstream to the uppermost coho observation. Additional habitat may extend upstream of this point.

Figure 3. Stream 1.

Stream #2 on map

Three juvenile coho (age 1+) were captured in minnow traps and multiple others were visually observed from the surface of this stream. The stream was sampled with seven minnow traps (soak times of 1 to 4 hours, except one trap that was removed from the water by a brown bear shortly after being set). Coho were captured in two of the traps. Coho habitat extends less than 100 m upstream of the upper extent of tidal influence. The attached map shows the stream to the upsteam-most coho observation. Potential habitat extends upstream of this point although gradient increases and pool quality is diminished. There is a complete barrier to anadromous fish approximately 250 m upstream from the end of this line.

Figure 4. Stream 2.

Stream #3 on map

Two juvenile coho (age 1+) were captured in minnow traps and multiple others were visually observed from the surface. The stream was sampled with five minnow traps (soak times of 1 to 2.5 hours). The line shown for this stream on the attached map extends upstream to the uppermost coho observation. Field crews walked the stream beyond this point and coho habitat appeared to extend well upstream, but crews did not sample to document presence.

Figure 5. Stream 3.

Stream #4 on map

Two juvenile coho (age 1+) were captured in minnow traps and multiple others were visually observed from the surface. The stream was sampled with five minnow traps (soak times of 0.75 to 3.5 hours). The line shown for this stream on the attached map extends upstream to the uppermost coho observation. Field crews walked the stream beyond this point and coho habitat appeared to extend well upstream, but crews did not sample to document presence.

Figure 6. Stream 4.

Stream #5 on map

One juvenile coho (age 1+) was captured in a minnow trap near the stream mouth and another unidentified salmonid was visually observed from the surface at the upper extent of the line shown on the attached map. The stream was sampled with five minnow traps (soak times of 4.5 to 6.5 hours). The line shown for this stream on the attached map extends upstream to the uppermost unidentified salmonid observation. Coho habitat is present throughout this reach and appears to extend above our upstream-most observation point; no obvious barriers to migration were observed.

Stream #8 on map

Multiple juvenile coho (age 1+) were visually observed from the surface, although none were captured in minnow traps. The stream was sampled with five minnow traps (soak times of 0.75 to 2.75 hours). The line shown for this stream on the attached map extends upstream to the uppermost coho observation. Field crews walked the stream beyond this point and coho habitat appeared to extend well upstream, but crews did not sample to document presence. There is a large beaver dam complex approximately 300 m upstream from the end of this line that may currently be a barrier to migration.

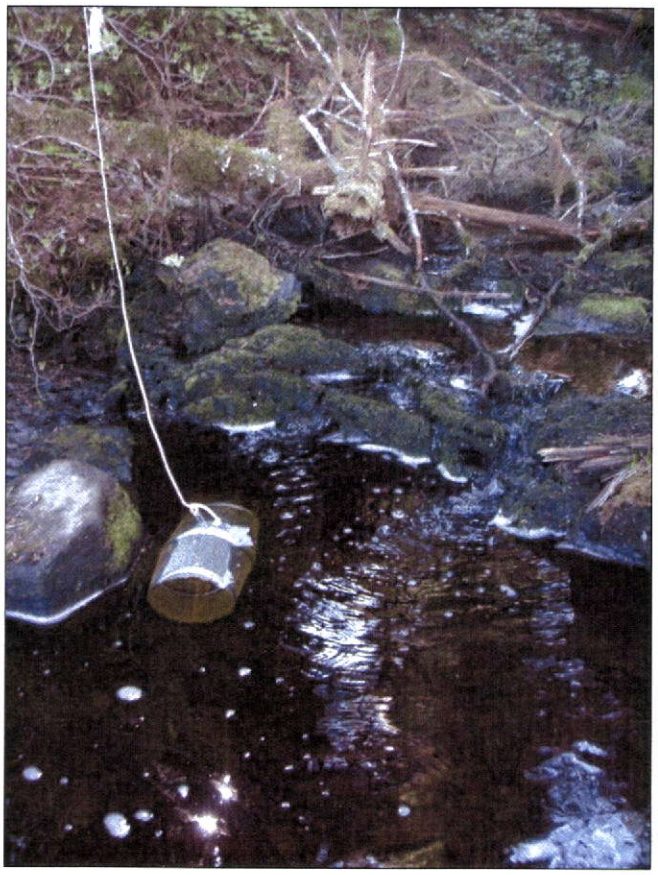


Figure 7. Stream 8.

Stream #9 on map (lake complex)

Three juvenile coho (age 1+) were captured in minnow traps in uppermost lake, and multiple juvenile coho were visually observed from the surface. The stream was sampled with five minnow traps (soak times of 1.5 to 3.5 hours). The line shown for this stream on the attached map extends upstream to the uppermost coho observation. Field crews walked the stream beyond this point and coho habitat appeared to extend into tributaries upstream, but crews did not sample to document presence. One minnow trap (soak time of 2 hours), placed in a side tributary (9E below) to the lake approximately 50 m upstream from the lake confluence, captured one juvenile coho. No quality spawning habitat was observed in tributaries surveyed along the south and east shores of the lake complex.

Lake complex

The lowermost lake was also sampled with minnow traps, although no coho were captured. Several cutthroat trout and threespine stickleback (*Gasterosteus aculeatus*) were observed along with coho in the upper lake in minnow traps and angler sampling. The dark coloration of the cutthroat indicate that they may be resident fish (at least during the preceding year). Dolly Varden and prickly scuplin (*Cottus asper)* were captured in the minnow traps in the lower lake. Since coho were present, these lakes may also support anadromous runs of Dolly Varden and cutthroat trout. There is no anecdotal evidence from Angoon residents that sockeye salmon use this system, although it does drain to Kanalku Bay. The limiting factor to salmonid use is likely a lack of spawning habitat. These lakes have dark tannic-stained waters, with steep shorelines that lack gravel and/or rocky substrates.

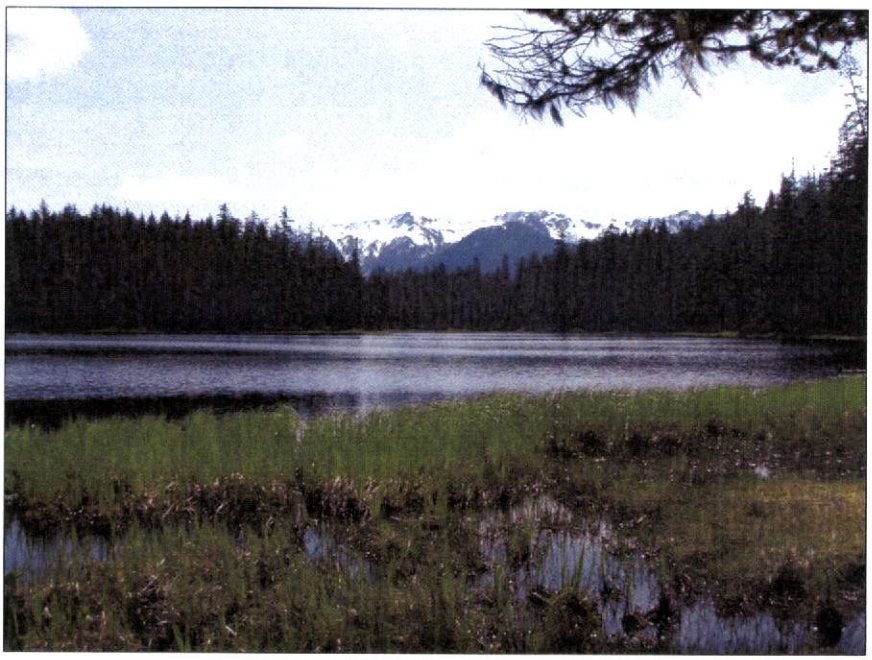


Figure 8. Upper Lake (stream 9).

Figure 9. Juvenile coho from upper lake shown in Figure 8 (stream 9).

Figure 10. Cutthroat from upper lake (stream 9).

Stream #9E on map

One minnow trap was placed in a small side tributary of the lake (9) (soak time of 2 hours). One juvenile coho was captured in this trap approximately 50 m upstream from the lake confluence. No other coho were visually observed from the surface. This is a short stream and there is limited habitat available upstream from this point because gradient increases and streamflow diminishes quickly. The line shown for this stream on the attached map extends upstream to the uppermost coho observation.

Stream #22 on map

The stream was sampled with two minnow traps (soaked for 3.25 hours), which captured one unidentified salmon approximately 30 m upstream from the stream mouth. The captured fish escaped the trap before handling and was likely a coho (age 1+) based on size and color. Coho were also the only species observed in similar habitat types in surrounding streams. The line shown for this stream on the attached map extends upstream to the uppermost unidentified salmonid observation; this is a small stream and limited habitat exists upstream of this point.

Figure 11. Stream 22.

Stream #25 on map

The stream was sampled with two minnow traps (soaked for 1.25 hours), which captured one juvenile coho (age 1+) approximately 30 m upstream from the mouth. No other coho were visually observed from the surface. The line shown for this stream on the attached map extends upstream to the uppermost coho observation; this is a small stream and limited habitat exists upstream of this point.

Figure 12. Stream 25.