

# Appendix G: Hoonah










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## Guide to direct fieldwork for cataloging anadromous water bodies in Southeast Alaska



## Symbols and Abbreviations

K	Chinook salmon
CH	chum salmon
CO	coho salmon
CT	cutthroat trout (anadromous and resident juveniles and adults)
DV	Dolly Varden char
OU	eulachon
S	sockeye salmon
P	pink salmon
RT	rainbow trout (unknown juvenile or resident adult)
SC	sculpin sp.
SH	steelhead trout (adult)
SB	threespine stickleback
s	spawning
r	rearing
p	presence
EF	electrofishing
VI	visual identification
HN	handnet
RS	route survey
MT	minnow trap
BS	beach seine
FN	fyke net
 (ginger pink)	route correction
 (apatite blue)	addition
 (solar yellow)	future investigation
 (poinsettia red)	resident fish
 (lepidolite lilac)	conveyance
 (electron gold)	deletion
 (lapis lazuli)	AWC
 (lapis lazuli)	overflow channel
 (electron gold)	barrier

*This appendix is a working document updated as new information is acquired. Figures and tables are numbered per water body. Pages numbers are eliminated to prevent document reprinting when individual pages are inserted or removed.*

# HOONAH SURVEYS

Hoonah, population 787, is a Tlingit community located on the northeast shore of Chichagof Island (Figure 1), 40 air miles west of Juneau.<sup>1</sup>



Figure 1.—Hoonah survey map.

<sup>1</sup> State of Alaska Department of Commerce, Community, and Economic Development, Division of Community and Regional Affairs database. Available from: <http://www.commerce.state.ak.us/cra/DCRAExternal/Community/Details/7b1783c7-a548-47fe-b944-dc9bb6ebfc0d>. (Accessed June 24, 2015).

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Figure 1.—Three coho salmon caught in stream number 114-31-10080.



Figure 2.—Low gradient gravel habitat that coho salmon were caught in.



Figure 3.—Upper section of stream number 114-31-10080. No anadromous fish were caught in this section.

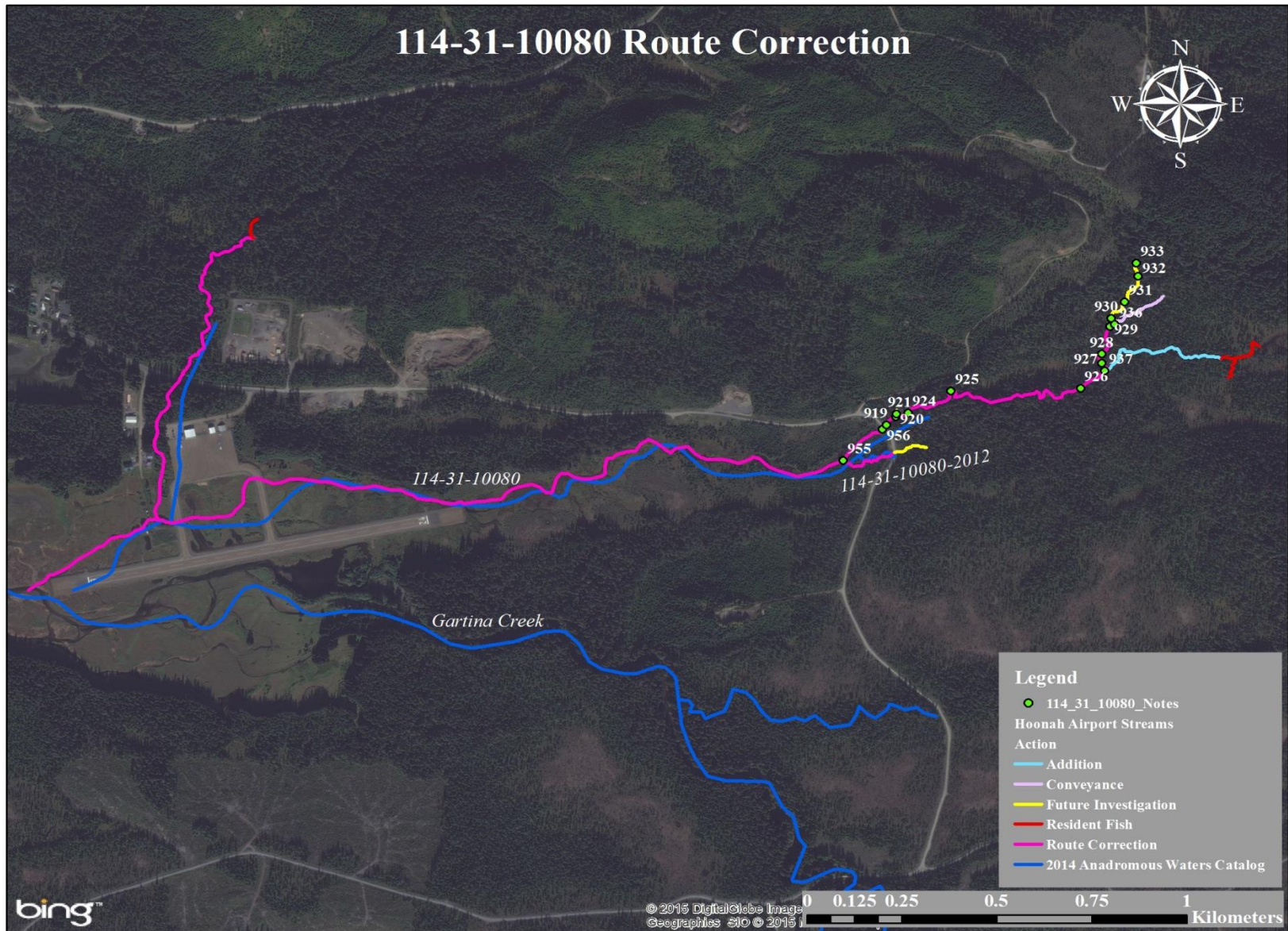


Figure 4.—114-31-10080 route correction map.

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## 114-31-10080-2001

## CORRECTION

**Water body name:** Shotter Creek

**Survey date:** 4/6/2016

**Watershed:** Port Fredrick- Frontal Icy Strait

**Species & Lifestage:** COsr

**MTR:** C043S061E **Quad:** Juneau A-5

**Findings:** In 2013, a perched a culvert on Shotter Creek was replaced under the Hoonah Airport taxiway as part of airport improvements. Prior to the replacement, the Shotter Creek culvert only provided fish passage during high tide. Eventually, Shotter Creek course changed and became a tributary to Stream No. 114-31-10080. ADF&G Habitat Division has been monitoring the streams at the airport to document ay changes since the completion of the airport improvements. Since the replacement of the perched culvert, the mainstem of Shotter Creek has redirected back to its original course and now flows through the replaced culvert throughout the year (Figure 1). Shotter Creek has a distributary to the east that still flows into Stream No. 114-31-10080 (Figure 2). In September 2015, we conducted salmon spawning survey and found pink salmon carcasses in Shotter Creek downstream of the culvert (Table 1, Figure 3). In April 2014-2016, we surveyed Shotter Creek with a beach seine downstream and upstream of the culvert. Each year we caught several out migrating chum salmon fry (Figure 4). In April 2016, we also caught several out migrating pink salmon fry (Figure 5).

**Recommendations:** Update this stream's course to reflect the field verified route and add rearing and spawning pink salmon and rearing chum salmon to the AWC (Figure 6). **Since the nomination was submitted Stream No. 114-31-10080-2003 has changed to 114-31-10080-2001**

**Nomination:** 16-563

Table 1.–114-31-10080-2001 survey data.

Waypoint	Latitude	Longitude	Notes	Sample Effort	Sample Results
1073	58.0972	-135.4149	Three pink salmon carcasses downstream of the Shotter Creek culvert.	VI	3 P
1078	58.0976	-135.4141	Unidentified adult salmon pieces in the east fork of Shotter Creek.	VI	Unidentified adult salmon
1079	58.0980	-135.4141	Confluence of the mainstem Shotter Creek and the east fork distributary.		
1096	58.0972	-135.4178	Seine pass 1 in Shotter Creek. 2 age classes of CO.	BS	5000+ CH, 15 P, 56 CO
1097	58.0975	-135.4150	Seine pass 2 in Shotter Creek.	BS	300 CH, 50 CO
1098	58.0973	-135.4145	Seine pass 3 in Shotter Creek. Upstream of culvert.	BS	4 CO, 1 CH, 1 P





Figure 1.—Mainstem of Shotter Creek channel disconnected from Stream No. 114-31-10080.



Figure 2.—Distributary of Shotter Creek flows into Stream No. 114-31-10080.



Figure 3.—Pink salmon carcass in Shotter Creek downstream of the replaced culvert.



Figure 4.—1000's of chum and a few pink salmon caught in seine.



Figure 5.— Chum, pink, and coho salmon caught in a seine in Shotter Creek.

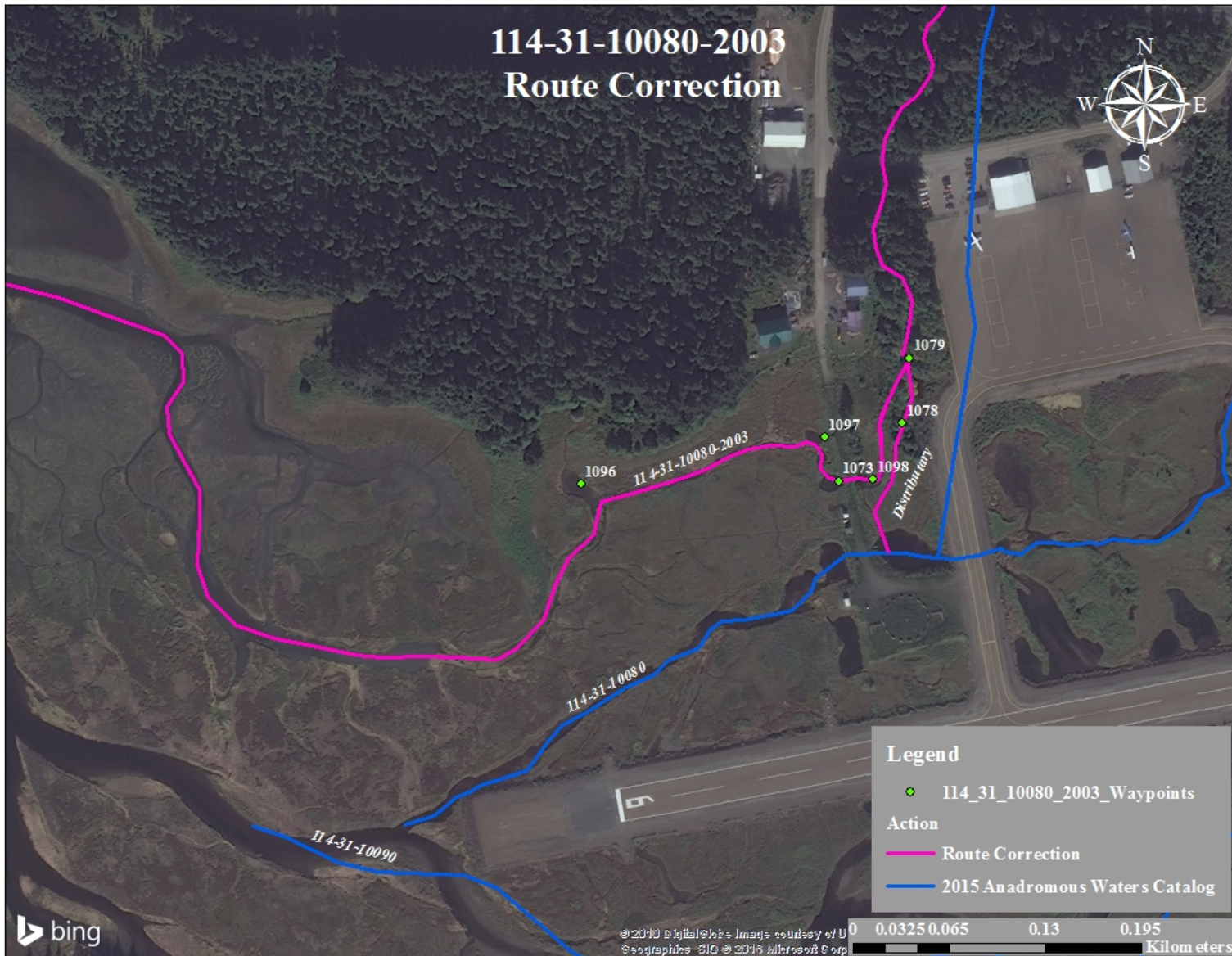


Figure 6.—114-31-10080-2001 (114-31-10080-2003) route correction map.

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## 114-31-10080-2003

## CORRECTION

**Water body name:** Shotter Creek

**Survey date:** 7/9/2015

**Water body number:** 114-31-10080-2003

**Species & Lifestage:** COsr

**Watershed:** Port Fredrick-Frontal Icy Strait

**MTR:** C043S061E **Quad:** Juneau A-5

**Findings:** We sampled stream number 114-31-10800-2003 using a backpack electrofisher and GPS (Table 1). We captured coho salmon, cutthroat trout, and Dolly Varden char. The upper extent of fish use is at an old 3-4 m high dam and spillway spanning across the creek (Figure 1). Sediment filled in the area upstream of the dam and there was a small amount of water overtopping the spillway. We did not walk upstream of the dam, but from what we could see the stream was dry (Figure 2). Shotter Creek used to be the primary water source for Hoonah up until the late 1980's.

**Recommendations:** Correct the stream route and extend the upper extent of anadromy for coho salmon as shown in Figure 3.

**Nomination:** 15-642

Table 2.– 114-31-10080-2003 survey data.

Waypoint	Latitude	Longitude	Notes	Sample Effort	Sample Results
1050	58.1004	-135.4135	Upstream of culvert.		
1051	58.1005	-135.4135	Visual on many coho.	EF	2 CO
1052	58.1010	-135.4129		EF	1, CO, 2 CT
1053	58.1012	-135.4126		EF	2 CO
1054	58.1022	-135.4121		EF	2 CO, 5 DV
1055	58.1024	-135.4122		EF	2 CO, 1 CT, 2 DV
1056	58.1030	-135.4125		EF	2 CO, 1 CT
1057	58.1032	-135.4126	Cobble and gravel substrate up to this point. Gradual gradient increase.	EF	2 CO
1058	58.1036	-135.4122		EF	2 CO
1059	58.1037	-135.4113		EF	2 CT
1060	58.1038	-135.4111		EF	2 DV, 4 CO
1061	58.1039	-135.4109	Visual on many coho.	EF	2 CO
1062	58.1040	-135.4104		EF	2 CO, 2 DV, 2 CT
1063	58.1045	-135.4103	Old wooden dam with ~10 ft high spillway. Upstream of dam is filled with gravel and the water is seeping of the ground out over the spillway.		



Figure 1.—Tess Quinn below the spillway on Shotter Creek.



Figure 2.—Looking down at Shotter Creek immediately upstream of the dam.

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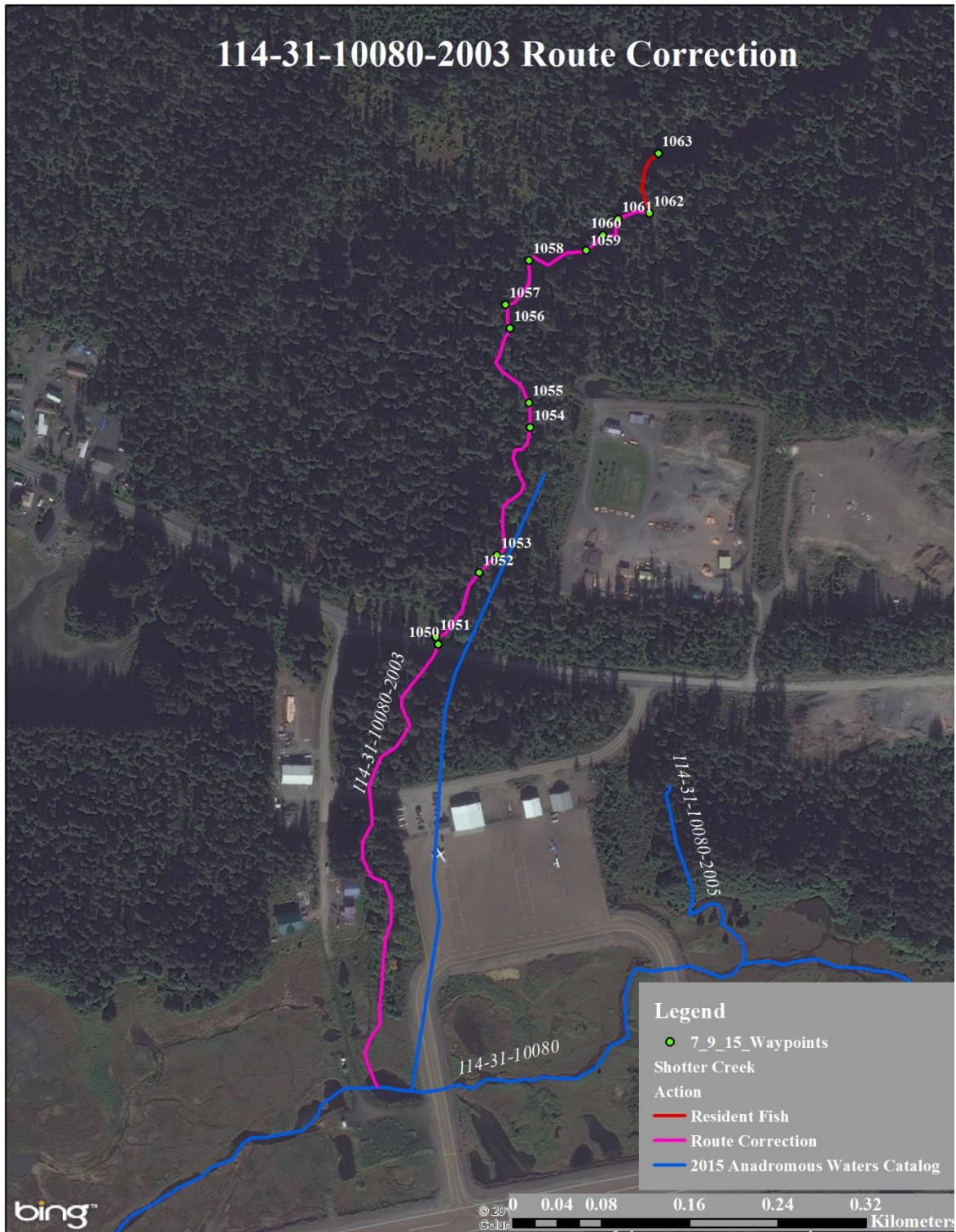


Figure 3.—114-31-10080-2003 route correction map.

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# 114-31-10080-2012

# CORRECTION

**Water body name:**

**Survey date:** 10/2/2014

**Water body number:** 114-31-10080-2012

**Species & Lifestage:** CO

**Watershed:** Port Fredrick-Frontal Icy Strait

**MTR:** C043S061E **Quad:** Juneau A-5

**Findings:** We surveyed 114-31-10080-2012 using a backpack electrofisher and GPS (Table 1). We found the stream route differs from the Anadromous Waters Catalog (Figures 1, 2). We did not catch any fish above the current AWC upper extent for this stream.

**Recommendations:** Update the stream route in the AWC (Figure 3).

**Nomination:** 15-502

Table 1.—114-31-10080-2012 survey data.

Waypoint	Latitude	Longitude	Notes	Sample Effort	Sample Results
917	58.0990	-135.3813	Upstream of 114-31-10080-2012 culvert.		
918	58.0991	-135.3801	No fish to this point upstream of road. Seeps in.	EF	No Fish
954	58.0990	-135.3815	Downstream of 114-31-10080-2012 culvert.		
955	58.0987	-135.3837	Confluence of 114-31-10080-2012 and 114-31-10080. The entire area is beaver dam.		



Figure 1.—Upper extent of survey area of 114-31-10080-2012.



Figure 2.—Confluence of 114-31-10080 and 114-31-10080-2012. This area is flooded by beaver dams.





Figure 1.-114-31-10080-2012 route correction map.

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**114-31-10080-2005****ADDITION****Water body name:****Survey date:** 2/5/2014**Water body number:** 114-31-10080-2005**Species & Lifestage:** CO**Watershed:** Port Fredrick-Frontal Icy Strait**MTR:** C043S061E **Quad:** Juneau A-5

**Findings:** In October 2012 the east apron at the Hoonah Airport was expanded and this tributary to stream number 114-31-10080 was rerouted as a ditch which parallels the apron. Coho salmon were documented previous to the reroute, but were never nominated to the Anadromous Waters Catalog. ADF&G has been monitoring this stream since the reroute. In 2014, we caught coho salmon, Dolly Varden char, and cutthroat trout in this creek with minnow traps during three sampling events (Tables 1-3), (Figures 1-3). Portions of the rerouted section have been dry during our site visits, but there is a possibility water flows during rain events that allows fish to pass.

**Recommendations:** Add this stream to the Anadromous Waters Catalog (Figure 4).**Nomination:** 14-708

Table 1.–114-31-10080-2005 survey data on February 5, 2014.

Waypoint	Latitude	Longitude	Notes	Sample Effort	Sample Results
44	58.0984	-135.4095	CO-85 mm	MT	1 CO
45	58.0983	-135.4095	CO length range: 40-70 mm	MT	5 CO

Table 2.–114-31-10080-2005 survey data on April 21, 2014.

Waypoint	Latitude	Longitude	Notes	Sample Effort	Sample Results
44	58.0984	-135.4095	CO-69 mm	MT	1 CO
45	58.0983	-135.4095	CO length range: 44-84 mm	MT	9 CO
83	58.0993	-135.4098	CO length range: 58-95 mm	MT	10 CO

Table 3.–114-31-10080-2005 survey data on July 23, 2014.

Waypoint	Latitude	Longitude	Notes	Sample Effort	Sample Results
44	58.0984	-135.4095	CO length range: 40-97 mm	MT	16 CO, 2 DV, 1 CT
45	58.0983	-135.4095	CO length range: 42-85 mm	MT	22 CO, 3 SB
83	58.0993	-135.4098	CO length range: 62-84 mm	MT	6 CO, 2 DV, 1 CT



Figure 1.—Coho salmon caught in stream number 114-31-10080-2005.



Figure 2.—Upper extent of fish use (WPT 83).



Figure 3.—Dry section of stream number 114-31-10080-2005.

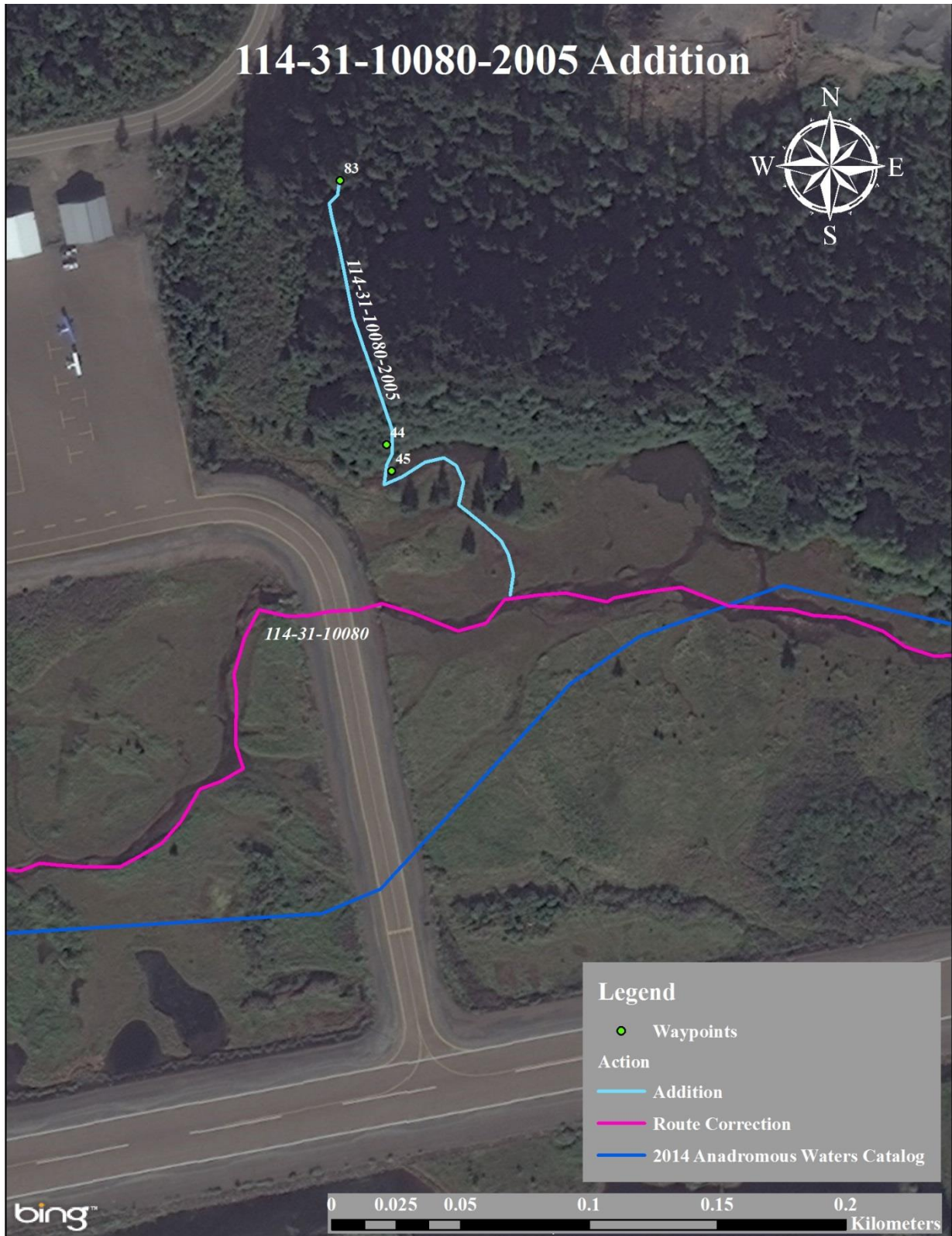


Figure 4.-114-31-10080-2005 addition map.

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**114-31-10080-2009****ADDITION****Water body name:****Survey date:** 7/24/2014**Water body number:** 114-31-10080-2009**Species & Lifestage:** CO**Watershed:** Port Fredrick-Frontal Icy Strait**MTR:** C043S061E **Quad:** Juneau A-5

**Findings:** We surveyed this stream using a backpack electrofisher and GPS (Table 1). We caught rearing coho salmon, Dolly Varden char, and cutthroat trout (Figure 1). This shallow stream flows through an open forest throughout skunk cabbage and ferns (Figure 2). The substrate is gravel with several shallow pools. We stopped catching fish at a small cave-like undercut with a two foot drop into a pool (Figure 3). Upstream of the drop, the stream flows from a meadow (Figure 4). We did not catch any fish in the meadow.

**Recommendations:** Add this stream to the Anadromous Waters Catalog (Figure 5).

**Nomination:** 14-617

Table 1.–114-31-10080-2009 survey data.

Waypoint	Latitude	Longitude	Notes	Sample Effort	Sample Results
803	58.0981	-135.3946	Mouth of tributary into 114-31-10080 on river right.		
804	58.0982	-135.3948		EF	2 CO
805	58.0987	-135.3954		EF	2 CO, 1 CT
806	58.0990	-135.3954		EF	2 CO, 1 DV
807	58.0991	-135.3957		EF	3 CO, 1 CT
808	58.0991	-135.3961		EF	2 CO
809	58.0991	-135.3963		EF	1 CO, 1 CT
810	58.0992	-135.3965	There is a two foot drop here inside a clay cave with water flowing over logs. Appears to be a barrier.	EF	2 CO, 1 CT
811	58.0993	-135.3970	Stopped electrofishing. We did not catch any fish above falls. Stream is running through a meadow.		



Figure 1.—Coho salmon caught in 114-31-10080-2009



Figure 2.—114-31-10080-2009 habitat.



Figure 3.—Cave-like undercut.



Figure 4.—Stream in meadow above last fish location.



Figure 5.—114-31-10080-2009 addition map.

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**114-31-10080-2032****ADDITION****Water body name:****Survey date:** 10/2/2014**Water body number:** 114-31-10080-2032**Species & Lifestage:** CO**Watershed:** Port Fredrick-Frontal Icy Strait**MTR:** C043S061E **Quad:** Juneau A-5

**Findings:** We surveyed this stream using a backpack electrofisher and GPS (Table 1). We caught rearing coho salmon in this stream (Figure 1). This is a beautiful rearing stream that ends at a muskeg pond (Figures 2, 3).

**Recommendations:** Add this stream to the Anadromous Waters Catalog (Figure 4).

**Nomination:** 15-502

Table1.-114-31-10080-2032 survey data.

Waypoint	Latitude	Longitude	Notes	Sample Effort	Sample Results
937	58.1012	-135.3722	Tributary enters on river left. Approximately 1/3 of water.		
938	58.1014	-135.3717	Tannic and gravel.	EF	2 CO, 1 CT
939	58.1016	-135.3716		EF	2 CT, 1 CO
940	58.1017	-135.3711		EF	2 DV, 2 CO
941	58.1017	-135.3702		EF	2 CO, 1 CT
942	58.1017	-135.3697	Small shallow pool.	EF	2 CO
943	58.1016	-135.3688	Gradient increase.	EF	1 CT, 1 CO
944	58.1016	-135.3680		EF	2 CO, 1 CT
945	58.1016	-135.3672		EF	1 CT
946	58.1015	-135.3670	Narrow, incised, gravel, sand.	EF	2 CO, 1 CT
947	58.1015	-135.3666	Base of 2 ft drop. Habitat changed to incised, deep, channel through meadow.	EF	2 DV
948	58.1017	-135.3656	1 ft wide. 1.5 ft deep. Grassy meadow.	EF	1 CT
949	58.1019	-135.3653	Ends at muskeg pond.		
950	58.1015	-135.3664	Tributary entering on river left. Narrow meadow channel.		



Figure 1.—Coho salmon caught in 114-31-10080-2032.



Figure 2.—114-31-10080-2032 habitat.



Figure 3.—Tributary ends at a muskeg pond.

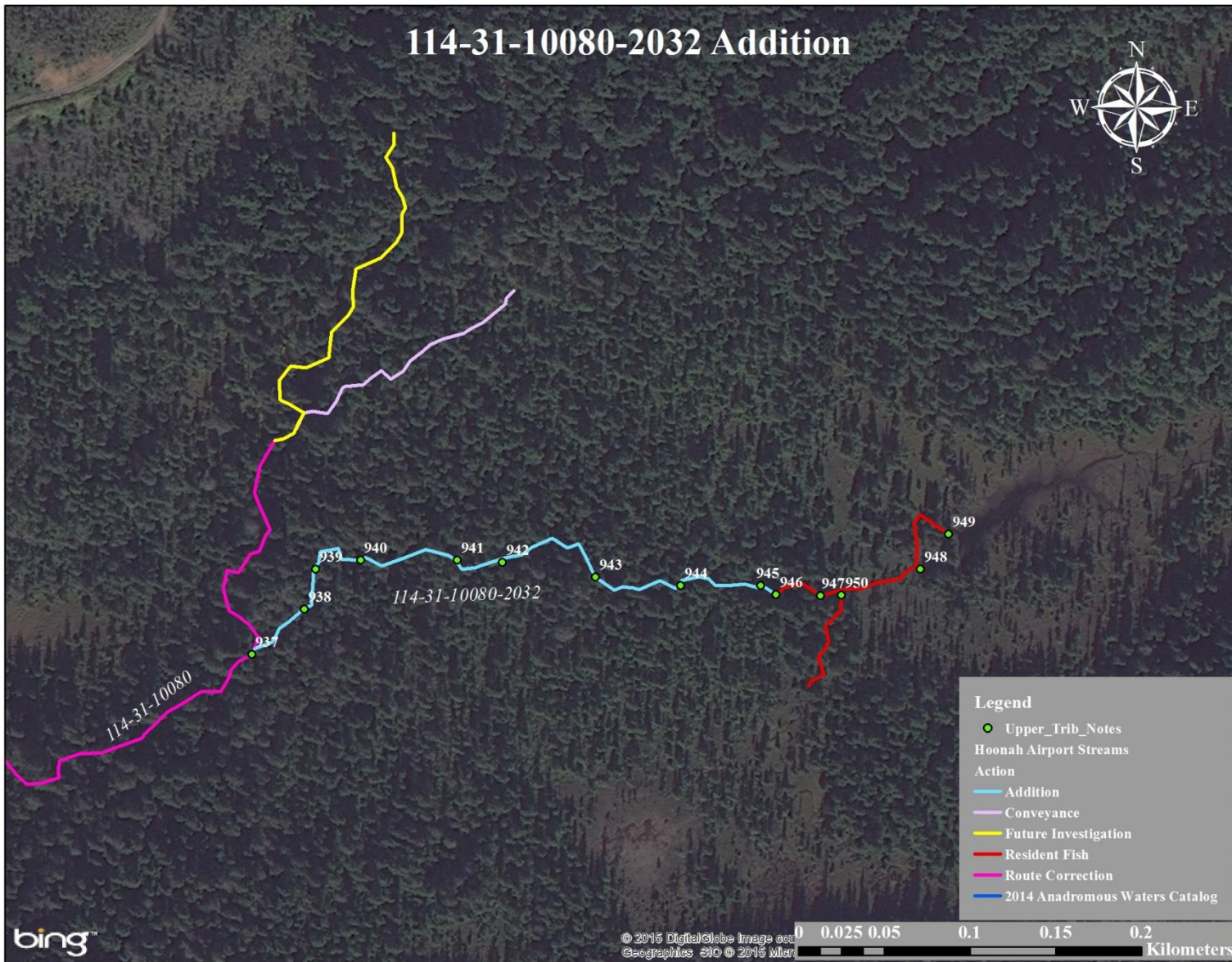


Figure 4.-114-31-10080-2032 addition map.

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