cCL15.OH

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

**Nomination Form**
**Anadromous Waters Catalog**

Region: South-Central

USGS Quad(s): Tyonek D-4 C-2 B2 C-3 D-3

AWC Number of Water Body: 247-41-10200-2015-3040 2015-0010

Name of Water body: Clear Creek ☒ USGS Name ☐ Local Name

☒ Addition ☐ Deletion ☐ Correction ☐ Backup Information

**For Office Use**

| | | | |
|---|---|---|---|
| Nomination # | 150492 | James J Hadrowski<br>Fisheries Scientist | 10/26/2015<br>Date |
| Revision Year: | 2016 | Habitat Operations Manager | 10/26/15<br>Date |
| Revision to: Atlas ____ Catalog ____ Both ✓ | | AWC Project Biologist | 19 Oct 15<br>Date |
| Revision Code: | A-1, B-1, C-8<br>B-2 | GIS Analyst | 11 5 15<br>Date |

OBSERVATION INFORMATION

| Species | Date(s) Observed | Spawning | Rearing | Present | Anadromous |
|---|---|---|---|---|---|
| Pacific Lamprey | 8/22/2010 | | | Z | ☒ |
| | | | | | ☐ |
| Add Coho Salmon present to 247-41-10200-2015 | | | | | ☐ |
| annotation was left off in error | | | | | ☐ |
| | | | | | ☐ |

**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**

Electro fishing and minnow trapping
Extend 247-41-10200-2015-3040 w/ Pacific lamprey present
Add Pacific lamprey present to portion of 247-41-10200 and all of 247-41-10200-2015 and lake 2015-0010
Associated with Map #3

Name of Observer (please print): Ed Fleming
Signature: Ed Fleming
Agency: Ottertail Environmental Inc.
Address: 10200 W 44th Ave, Ste 210
Wheat Ridge, CO 80033

Date: 9/28/2015

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.

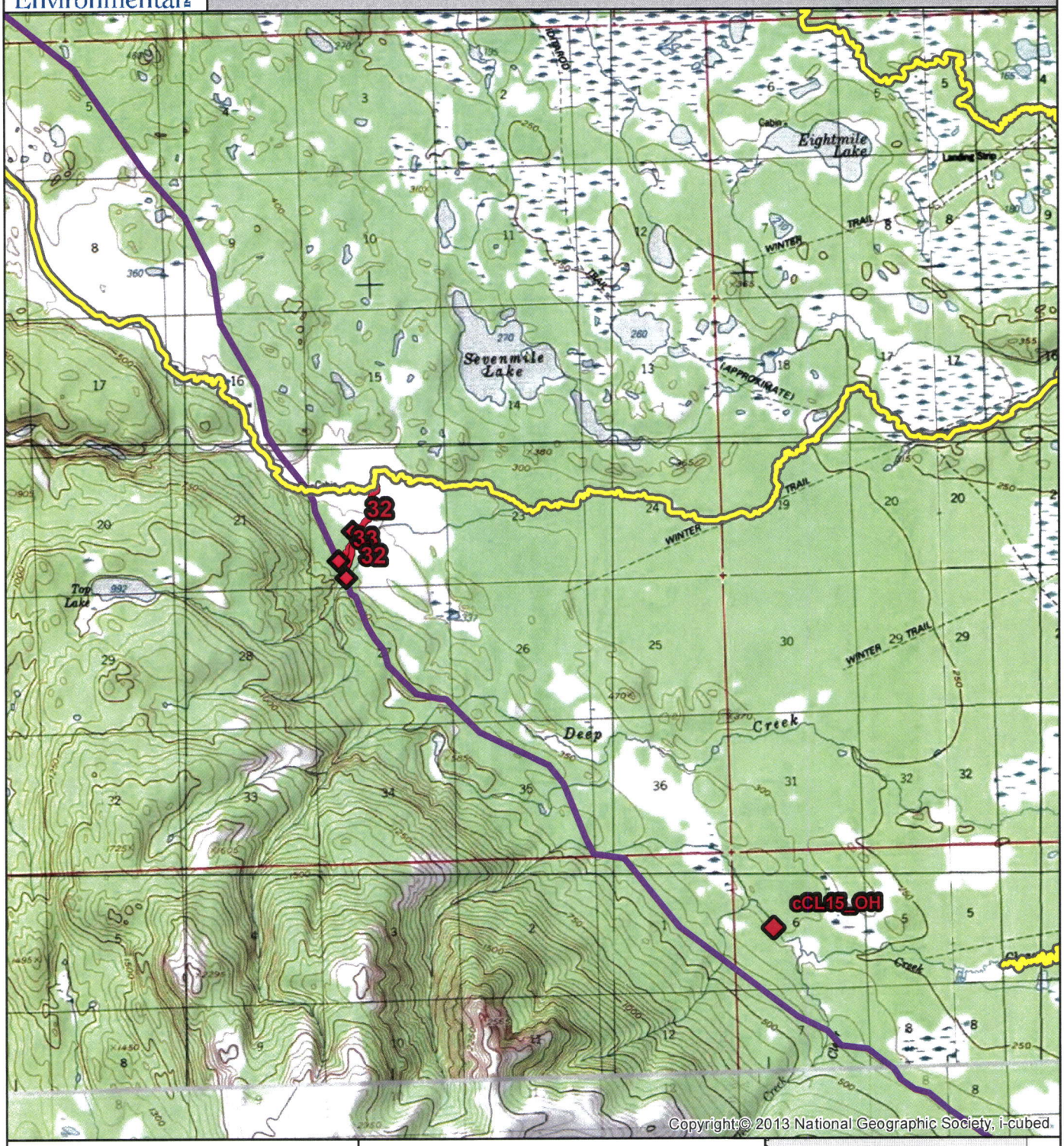
Signature of Area Biologist: Date: _____ Revision Year: _____
Name of Area Biologist (please print):

ALASKA DEPT. OF FISH & GAME
SEP 29 2015

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kTLT36 | 62.15488 | -155.37801 | NAD83 | GPS | 335-30-16600-2080-3180-4009 | 8/27/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Tatlawiksuk River Trib | |
| kTLT4 | 62.19094 | -155.22264 | NAD83 | GPS | No name | 8/29/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Tatlawiksuk River Trib | |
| kTLT4_OH1 | 62.19993 | -155.23059 | NAD83 | GPS | No name | 8/26/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Tatlawiksuk River Trib | |
| kTLT4_OH1 | 62.19993 | -155.23059 | NAD83 | GPS | No name | 8/27/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Tatlawiksuk River Trib | |
| kTLT5 | 62.18559 | -155.24101 | NAD83 | GPS | 335-30-16600-2080-3240-4020 | 8/30/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Tatlawiksuk River Trib | |
| kTLT6 | 62.16133 | -155.33083 | NAD83 | GPS | 335-30-16600-2080-3196-4010 | 8/27/2010 | Ed Fleming | Minnow Trap | no fish collected or observed | not applicable | | | Unknown | | | | | | | Tatlawiksuk River Trib Reach End 62.14385 -155.41925 | |
| kTLT6 | 62.16133 | -155.33083 | NAD83 | GPS | 335-30-16600-2080-3196-4010 | 8/27/2010 | Ed Fleming | Visual Observation, Air | no fish collected or observed | not applicable | | | Unknown | | | | | | | Tatlawiksuk River Trib | |
| kTLT6_OH1 | 62.15527 | -155.32298 | NAD83 | GPS | 335-30-16600-2080-3196-4010 | 9/3/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Happy River Trib | |
| kTLT6_OH1 | 62.15527 | -155.32298 | NAD83 | GPS | 335-30-16600-2080-3196-4010 | 8/26/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Happy River Trib | |
| kTLT66 | 62.16220 | -155.32922 | NAD83 | GPS | No name | 8/18/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Happy River Trib | |
| kTLT7 | 62.16189 | -155.34154 | NAD83 | GPS | 335-30-16600-2080-3196-4010 | 8/18/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Happy River Trib | |
| kTLT7 | 62.16189 | -155.34154 | NAD83 | GPS | 335-30-16600-2080-3196-4010 | 8/18/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Happy River Trib | |
| kTLT7 | 62.16189 | -155.34154 | NAD83 | GPS | 335-30-16600-2080-3196-4010 | 8/23/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Pass Creek Mainstem | |
| kTLT7 | 62.16189 | -155.34154 | NAD83 | GPS | 335-30-16600-2080-3196-4010 | 8/23/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Pass Creek Mainstem | |
| kTLT75 | 62.13119 | -155.91444 | NAD83 | GPS | No name | 7/23/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Sheep Creek Mainstem Reach End 62.12508 -153.10568 | |
| kTLT8 | 62.15778 | -155.35163 | NAD83 | GPS | 335-30-16600-2080-3196 | 7/22/2010 | Ed Fleming | Angling | no fish collected or observed | not applicable | | | Unknown | | | | | | | Sheep Creek Mainstem | |
| kTLT8 | 62.15778 | -155.35163 | NAD83 | GPS | 335-30-16600-2080-3196 | 8/4/2010 | Ed Fleming | Visual Observation, Air | no fish collected or observed | not applicable | | | Unknown | | | | | | | Skwentna Trib | |
| kTLT9.R1 | 62.15218 | -155.42523 | NAD83 | GPS | 335-30-16600-2080-3196 | 7/20/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Skwentna Trib | |
| kTLT99 | 62.18125 | -155.24524 | NAD83 | GPS | 335-30-16600-2080-3230 | 8/1/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Skwentna Trib | |
| kWI1 | 62.41861 | -154.16429 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/19/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Skwentna Trib | |
| kWI1 | 62.41861 | -154.16429 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/19/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Skwentna Trib | |
| kWI1 | 62.41861 | -154.16429 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/19/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Skwentna Trib | |
| kWI1 | 62.41861 | -154.16429 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/19/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Skwentna Trib | |
| kWI1_OH1 | 62.39368 | -154.12820 | NAD83 | GPS | Windy Fork Kuskokwim River | 7/30/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Skwentna Trib | |
| kWI1_OH1 | 62.39368 | -154.12820 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/1/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Skwentna Trib | |
| kWI1_OH1 | 62.39368 | -154.12820 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/1/2010 | Ed Fleming | Minnow Trap | no fish collected or observed | not applicable | | | Unknown | | | | | | | Skwentna Trib | |
| kWI1_OH2 | 62.42425 | -154.18487 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/1/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Red Creek Trib Reach End 61.9734 -152.11464 | |
| kWI1_OH2 | 62.42425 | -154.18487 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/19/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Red Creek Trib | |
| kWI1_OH2 | 62.42425 | -154.18487 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/19/2010 | Ed Fleming | Visual Observation, Air | no fish collected or observed | not applicable | | | Unknown | | | | | | | Kuskokwim Trib | |
| kWI1_OH2 | 62.42425 | -154.18487 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/20/2010 | Ed Fleming | Backpack Electrofisher | no fish collected or observed | not applicable | | | Unknown | | | | | | | Clear Creek Mainstem | |
| kWI1_OH2 | 62.42425 | -154.18487 | NAD83 | GPS | Windy Fork Kuskokwim River | 9/1/2010 | Ed Fleming | Backpack Electrofisher | northern pike | juvenile/adult | | | Unknown | 2 | ID'ed and released | | | 2 | voucher specime | Lewis River Trib | |
| kWI1_OH2 | 62.42425 | -154.18487 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/22/2010 | Ed Fleming | Backpack Electrofisher | Pacific lamprey | juvenile/adult | | | Unknown | 1 | ID'ed and released | | | | | Eightmile Creek Trib | |
| kWI1_OH2 | 62.42425 | -154.18487 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/17/2010 | Ed Fleming | Backpack Electrofisher | rainbow trout | juvenile/adult | | | Unknown | 15 | ID'ed and released | | | | | Skwentna Trib | |
| kWI1_OH3 | 62.41617 | -154.13850 | NAD83 | GPS | Windy Fork Kuskokwim River | 7/30/2010 | Ed Fleming | Backpack Electrofisher | rainbow trout | juvenile/adult | | | Unknown | 7 | ID'ed and released | | | | | Skwentna Trib | |
| kWI1_OH3 | 62.41617 | -154.13850 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/2/2010 | Ed Fleming | Backpack Electrofisher | rainbow trout | juvenile/adult | | | Unknown | 1 | Unintended mortality | | | | | Skwentna Trib | |
| kWI1_OH3 | 62.41617 | -154.13850 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/2/2010 | Ed Fleming | Backpack Electrofisher | rainbow trout | juvenile/adult | | | Unknown | 31 | ID'ed and released | | | | | Skwentna Trib | |
| kWI1_OH3 | 62.41617 | -154.13850 | NAD83 | GPS | Windy Fork Kuskokwim River | 8/21/2010 | Ed Fleming | Backpack Electrofisher | rainbow trout | juvenile/adult | | | Unknown | 1 | Unintended mortality | | | | | Skwentna Trib | |
| kWIT1 | 62.42063 | -154.18254 | NAD83 | GPS | No name | 8/21/2010 | Ed Fleming | Backpack Electrofisher | rainbow trout | juvenile/adult | | | Unknown | | ID'ed and released | | | | | Skwentna Trib | |
| kWIT1 | 62.42063 | -154.18254 | NAD83 | GPS | No name | 8/20/2010 | Ed Fleming | Backpack Electrofisher | rainbow trout | juvenile/adult | | | Unknown | | ID'ed and released | | | | | Skwentna Trib | |
| kWO2 | 62.17032 | -153.37457 | NAD83 | GPS | Wolverine Creek | 8/1/2010 | Ed Fleming | Backpack Electrofisher | rainbow trout | juvenile/adult | | | Unknown | 1 | ID'ed and released | | | | | Skwentna Trib | |
| sEIT2 | 61.80292 | -151.25700 | NAD83 | GPS | No name | 8/2/2010 | Ed Fleming | Backpack Electrofisher | rainbow trout | juvenile/adult | | | Unknown | | ID'ed and released | | | | | Skwentna Trib | |
| sEIT2 | 61.80292 | -151.25700 | NAD83 | GPS | No name | 8/20/2010 | Ed Fleming | Backpack Electrofisher | rainbow trout | juvenile/adult | | | Unknown | 2 | ID'ed and released | | | | | Shell Creek Trib | |
| sEIT2 | 61.80292 | -151.25700 | NAD83 | GPS | No name | 8/1/2010 | Ed Fleming | Backpack Electrofisher | rainbow trout | juvenile/adult | | | Unknown | 1 | ID'ed and released | | | | | Red Creek Trib | |
| sEIT2_OH1 | 61.80754 | -151.25524 | NAD83 | GPS | No name | 7/30/2010 | Ed Fleming | Backpack Electrofisher | rainbow trout | juvenile/adult | | | Unknown | 18 | ID'ed and released | | | | | Post River Mainstem | |
| sEIT2_OH1 | 61.80754 | -151.25524 | NAD83 | GPS | No name | 8/19/2010 | Ed Fleming | Backpack Electrofisher | round whitefish | juvenile/adult | | | Unknown | 3 | ID'ed and released | | | | | Post River Mainstem | |
| sEIT2_OH1 | 61.80754 | -151.25524 | NAD83 | GPS | No name | 8/3/2010 | Ed Fleming | Seine | round whitefish | juvenile/adult | | | Unknown | 3 | ID'ed and released | | | | | Post River Mainstem | |
| sEIT2_OH1 | 61.80754 | -151.25524 | NAD83 | GPS | No name | 8/3/2010 | Ed Fleming | Backpack Electrofisher | round whitefish | juvenile/adult | | | Unknown | 3 | ID'ed and released | | | | | Tatina River Mainstem | |
| sEIT3 | 61.80488 | -151.25747 | NAD83 | GPS | No name | 8/3/2010 | Ed Fleming | Backpack Electrofisher | round whitefish | juvenile/adult | | | Unknown | 1 | ID'ed and released | | | | | Tatina River Mainstem | |
| sHAT1 | 62.02105 | -152.48694 | NAD83 | GPS | No name | 7/14/2010 | Ed Fleming | Backpack Electrofisher | round whitefish | juvenile/adult | | | Unknown | 14 | ID'ed and released | | | | | Tatina River Mainstem | |
| sHAT10 | 62.02544 | -152.56433 | NAD83 | GPS | No name | 7/15/2010 | Ed Fleming | Backpack Electrofisher | round whitefish | juvenile/adult | | | Unknown | 19 | ID'ed and released | | | | | Tatina River Mainstem | |
| sHAT2 | 62.02649 | -152.57044 | NAD83 | GPS | No name | 8/4/2010 | Ed Fleming | Backpack Electrofisher | round whitefish | juvenile/adult | | | Unknown | 13 | ID'ed and released | | | | | Bear Creek Mainstem | |
| sHAT2 | 62.02649 | -152.57044 | NAD83 | GPS | No name | 8/5/2010 | Ed Fleming | Backpack Electrofisher | round whitefish | juvenile/adult | | | Unknown | 33 | ID'ed and released | | | | | Clear Creek Mainstem | |
| sHAT6 | 62.15236 | -152.79826 | NAD83 | GPS | No name | 8/4/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 32 | ID'ed and released | | | | | Clear Creek Mainstem | |
| sHAT6 | 62.15236 | -152.79826 | NAD83 | GPS | No name | 7/29/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 10 | ID'ed and released | | | | | Clear Creek Mainstem | |
| sHAT7 | 62.17063 | -152.92500 | NAD83 | GPS | No name | 7/30/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 71 | ID'ed and released | | | | | Deep Creek Mainstem | |
| sHAT7 | 62.17063 | -152.92500 | NAD83 | GPS | No name | 7/30/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 25 | ID'ed and released | | | | | Deep Creek Mainstem | |
| sHAT7 | 62.17063 | -152.92500 | NAD83 | GPS | No name | 8/22/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 135 | ID'ed and released | | | | | Lewis River Trib | |
| sHAT7 | 62.17063 | -152.92500 | NAD83 | GPS | No name | 7/30/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 29 | ID'ed and released | | | | | Lewis River Trib | |
| sHAT7 | 62.17063 | -152.92500 | NAD83 | GPS | No name | 8/21/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 2 | ID'ed and released | | | | | Lewis River Trib | |
| sPA.R1 | 62.17100 | -152.92474 | NAD83 | GPS | Pass Creek | 8/17/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 24 | ID'ed and released | | | | | Lower Sucker Creek Trib | |
| sPA1 | 62.17076 | -153.06881 | NAD83 | GPS | Pass Creek | 8/17/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 4 | ID'ed and released | | | | | Lower Sucker Creek Trib | |
| sPA10 | 62.17574 | -152.95632 | NAD83 | GPS | Pass Creek | 8/17/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 2 | ID'ed and released | | | | | Lower Sucker Creek Sucker Lake Inlet | |
| sPA10 | 62.17574 | -152.95632 | NAD83 | GPS | Pass Creek | 7/28/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 42 | ID'ed and released | | | | | Lower Sucker Creek Sucker Lake Inlet | |
| sPA11 | 62.17554 | -152.94908 | NAD83 | GPS | Pass Creek | 7/28/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 6 | ID'ed and released | | | | | Tom's Creek Trib | |
| sPA11 | 62.17554 | -152.94908 | NAD83 | GPS | Pass Creek | 7/28/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 61 | ID'ed and released | | | | | Tom's Creek Trib | |
| sPA11 | 62.17554 | -152.94908 | NAD83 | GPS | Pass Creek | 7/28/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 79 | ID'ed and released | | | | | Tom's Creek Trib | |
| sPA22 | 62.17560 | -152.93768 | NAD83 | GPS | Pass Creek | 7/28/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 2 | Unintended mortality | | | 2 | Unintended mortal | Tom's Creek Trib | |
| sPA22 | 62.17560 | -152.93768 | NAD83 | GPS | Pass Creek | 8/21/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 95 | ID'ed and released | | | | | Upper Sucker Creek Mainstem | |
| sPA22 | 62.17560 | -152.93768 | NAD83 | GPS | Pass Creek | 8/21/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 72 | ID'ed and released | | | | | Upper Sucker Creek Mainstem | |
| sPA3 | 62.17422 | -152.99646 | NAD83 | GPS | Pass Creek | 7/28/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 2 | ID'ed and released | | | | | Upper Sucker Creek Mainstem | |
| sPA3 | 62.17422 | -152.99646 | NAD83 | GPS | Pass Creek | 7/27/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 54 | ID'ed and released | | | | | Upper Sucker Creek Mainstem | |
| sPA3 | 62.17422 | -152.99646 | NAD83 | GPS | Pass Creek | 7/27/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 43 | ID'ed and released | | | | | Wolverine Creek Mainstem | |
| sPA33 | 62.20008 | -153.08032 | NAD83 | GPS | Pass Creek | 8/22/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | | Unintended mortality | | | | | Wolverine Creek Mainstem | |
| sPA33 | 62.20008 | -153.08032 | NAD83 | GPS | Pass Creek | 8/22/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 82 | ID'ed and released | | | | | Dalzell Creek Mainstem | |
| sSH.R1 | 62.14154 | -153.02957 | NAD83 | GPS | Sheep Creek | 8/22/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | | ID'ed and released | | | | | Dalzell Creek Mainstem | |
| sSH2 | 62.13871 | -153.05964 | NAD83 | GPS | Sheep Creek | 8/22/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 26 | ID'ed and released | | | | | Denny Creek Mainstem | |
| sSH2 | 62.13871 | -153.05964 | NAD83 | GPS | Sheep Creek | 7/14/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 11 | ID'ed and released | | | | | E Fork George River Trib | |
| sSH2 | 62.13871 | -153.05964 | NAD83 | GPS | Sheep Creek | 7/14/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 3 | ID'ed and released | | | | | Kuskokwim Trib | |
| sSH2 | 62.13871 | -153.05964 | NAD83 | GPS | Sheep Creek | 7/19/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | | ID'ed and released | | | | | Kuskokwim Trib | |
| sSH3 | 62.12768 | -153.08738 | NAD83 | GPS | Sheep Creek | 9/17/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 26 | ID'ed and released | | | | | Kuskokwim Trib | |
| sSH3 | 62.12768 | -153.08738 | NAD83 | GPS | Sheep Creek | 9/1/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 3 | ID'ed and released | | | | | Kuskokwim Trib | |
| sSH4 | 62.12501 | -153.10544 | NAD83 | GPS | Sheep Creek | 9/1/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 4 | ID'ed and released | | | | | Kuskokwim Trib | |
| sSH4 | 62.12501 | -153.10544 | NAD83 | GPS | Sheep Creek | 9/1/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 48 | ID'ed and released | | | | | Kuskokwim Trib | |
| sSHT3 | 62.12030 | -153.15589 | NAD83 | GPS | No name | 9/1/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 10 | ID'ed and released | | | | | Little South Fork Trib | |
| sSK.R1 | 61.97397 | -151.93555 | NAD83 | GPS | Skwentna River | 9/1/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | | ID'ed and released | | | | | Middle Fork Kuskokwim River Mainstem | |
| sSK R1 | 61.97397 | -151.93555 | NAD83 | GPS | Skwentna River | 8/24/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 33 | ID'ed and released | | | | | Middle Fork Kuskokwim River Mainstem | |
| sSKT17 | 61.97980 | -151.89396 | NAD83 | GPS | No name | 9/17/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 32 | ID'ed and released | | | | | Middle Fork Kuskokwim River Trib | |
| sSKT17 | 61.97980 | -151.89396 | NAD83 | GPS | No name | 7/17/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 42 | ID'ed and released | | | 1 | Unintended mortal | Middle Fork Kuskokwim River Trib | |
| sSKT17_OH | 61.97010 | -151.89314 | NAD83 | GPS | No name | 8/29/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 23 | ID'ed and released | | | | | Middle Fork Kuskokwim River Trib | |
| sSKT17_OH | 61.97010 | -151.89314 | NAD83 | GPS | No name | 8/25/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 1 | ID'ed and released | | | | | Middle Fork Kuskokwim River Trib | |
| sSKT17_OH | 61.97010 | -151.89314 | NAD83 | GPS | No name | 7/17/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 44 | ID'ed and released | | | | | Middle Fork Kuskokwim River Trib | |
| sSKT19 | 61.98500 | -151.97089 | NAD83 | GPS | No name | 8/5/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 27 | ID'ed and released | | | | | Middle Fork Kuskokwim River Trib | |
| sSKT19 | 61.98500 | -151.97089 | NAD83 | GPS | No name | 8/23/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 116 | ID'ed and released | | | | | Moose Creek Mainstem | |
| sSKT19_OH | 61.97715 | -151.96753 | NAD83 | GPS | No name | 8/23/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 4 | ID'ed and released | | | | | Nunsatuk River Trib | |
| sSKT19_OH | 61.97715 | -151.96753 | NAD83 | GPS | No name | 8/25/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 2 | ID'ed and released | | | | | Post River Mainstem | |
| sSKT19_OH | 61.97715 | -151.96753 | NAD83 | GPS | No name | 9/3/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 59 | ID'ed and released | | | | | Post River Mainstem | |
| sSKT19_OH | 61.97715 | -151.96753 | NAD83 | GPS | No name | 9/16/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 1 | ID'ed and released | | | | | Post River Mainstem | |
| sSKT21 | 61.97306 | -151.99468 | NAD83 | GPS | No name | 8/3/2010 | Ed Fleming | Seine | slimy sculpin | juvenile/adult | | | Unknown | 35 | ID'ed and released | | | | | South Fork Kuskokwim River Trib | |
| sSKT21 | 61.97306 | -151.99468 | NAD83 | GPS | No name | 8/3/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 5 | ID'ed and released | | | | | South Fork Kuskokwim River Trib | |
| sSKT21 | 61.97306 | -151.99468 | NAD83 | GPS | No name | 7/21/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 4 | ID'ed and released | | | | | South Fork Kuskokwim River Trib | |
| sSKT21 | 61.97306 | -151.99468 | NAD83 | GPS | No name | 7/16/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 1 | ID'ed and released | | | | | South Fork Kuskokwim River Trib | |
| sSKT24 | 61.96375 | -152.19944 | NAD83 | GPS | No name | 7/21/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 2 | ID'ed and released | | | | | Tatina River Mainstem | |
| sSKT25 | 61.96829 | -152.24942 | NAD83 | GPS | No name | 7/21/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | | Unintended mortality | | | | | Tatina River Mainstem | |
| sSKT26 | 61.97559 | -152.26287 | NAD83 | GPS | No name | 7/14/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 21 | ID'ed and released | | | | | Tatina River Mainstem | |
| sSKT26 | 61.97559 | -152.26287 | NAD83 | GPS | No name | 7/14/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 1 | ID'ed and released | | | | | Tatina River Mainstem | |
| sSKT27 | 61.97448 | -152.28915 | NAD83 | GPS | No name | 7/14/2010 | Ed Fleming | Minnow Trap | slimy sculpin | juvenile/adult | | | Unknown | 26 | ID'ed and released | | | | | Tatina River Mainstem | |
| sSKT27 | 61.97448 | -152.28915 | NAD83 | GPS | No name | 7/15/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 26 | ID'ed and released | | | | | Tatina River Mainstem | |
| sSKT27_OH | 61.97988 | -152.28651 | NAD83 | GPS | No name | 8/4/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 20 | ID'ed and released | | | | | Tatina River Mainstem | |
| sSKT28 | 61.98437 | -151.92467 | NAD83 | GPS | No name | 8/5/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 23 | ID'ed and released | | | | | Tatina River Mainstem | |
| sSKT28 | 61.98437 | -151.92467 | NAD83 | GPS | No name | 8/4/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | Unknown | 7 | ID'ed and released | | | | | Tatina River Mainstem | |
| sSKT28 | 61.98437 | -151.92467 | NAD83 | GPS | No name | 8/4/2010 | Ed Fleming | Backpack Electrofisher | slimy sculpin | juvenile/adult | | | | | | | | | | | |
| sSKT29 | 61.85679 | -151.31692 | NAD83 | GPS | No name | | | | | | | | | | | | | | | | |

OtterTail Environmental LLC

# Map 3



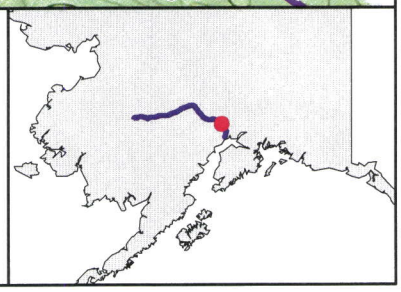

Region: South Central

USGS Quad: Tyonek D-4

0 0.5 1 2
Miles

1 inch = 5,393 feet

- AWC Crossing
- New crossing with salmon present
- Currently in Anadromous Catalog
- Determined by OtterTail to be anadromous
- Proposed pipeline route
- Data sheet #



U.S. Fish & Wildlife Service

# Pacific Lamprey

*Entosphenus tridentata*

*June 2012*

*An adult Pacific lamprey* Credit: Jeremy Monroe, Freshwaters Illustrated

## Species Description

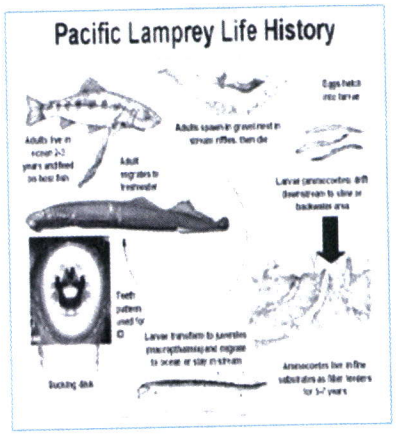
Lampreys belong to a primitive group of fishes that are eel-like in form but lack the jaws and paired fins of true fishes. These species have a round sucker-like mouth, no scales, and breathing holes instead of gills.

Identification of lampreys depends largely on the number, structure, and position of teeth found in adult lamprey; adult Pacific lampreys are characterized by the presence of 3 large teeth and posterior teeth on the oral disc. As larvae (ammocoetes), they are nearly indistinguishable from other lampreys.

## Life History

*Adult lamprey*

As adults in the marine environment, Pacific lampreys are parasitic and feed on a variety of fish, including Pacific salmon, flatfish, rockfish, and pollock, and are preyed upon by sharks, sea lions, and other marine animals. They have been caught in depths ranging from 300 to 2,600 feet, and as far off the west coast as 62 miles in the ocean.




After spending 1 to 3 years in the marine environment, Pacific lampreys cease feeding and migrate to freshwater between February and June. They are thought to overwinter and remain in freshwater habitat for approximately one year before spawning where they may shrink in size up to 20 percent. Most upstream migration takes place at night. Adult size at the time of migration ranges from about 15 to 25 inches.

*A Pacific lamprey digging a redd*
Credit: Jeremy Monroe, Freshwaters Illustrated

*Spawning*

Pacific lampreys spawn in similar habitats to salmon; in gravel bottomed streams, at the upstream end of riffle habitat, typically above suitable young larvae (ammocoete) habitat.

Spawning occurs between March and July depending upon location within their range. The degree of homing is unknown, but adult lampreys cue in on ammocoete areas which release pheromones that are thought to aid adult migration and spawning location. Both sexes construct the nests, often moving stones with their mouth. After the eggs are deposited and fertilized, the adults typically die within 3 to 36 days after spawning.

**Oregon Fish and Wildlife Office**
2600 S.E. 98th Avenue, Suite 100, Portland, OR 97266
503/231-6179; 503-231-6195 (fax)
http://www.fws.gov/pacific/Fisheries/sphabcon/Lamprey/index.cfm

*Ammocoetes (larval lamprey)*

Embryos hatch in approximately 19 days at 59° Fahrenheit (F) and the ammocoetes drift downstream to areas of low velocity and fine substrates where they burrow, grow and live as filter feeders for 2 to 7 years and feed primarily on algae. Several generations and age classes of ammocoetes congregate in high densities that form colonies.

*Pacific lamprey ammocoetes*
*Credit: USFWS*

Ammocoetes are relatively immobile in the stream substrates, though will move during high flow events. Larger ammocoetes drift primarily during higher flows in spring and smaller ammocoetes drift during the summer. Anecdotal information suggests that ammocoetes may occur within the hyporheic zone and may move laterally through stream substrates.

*Macropthalmia (juvenile lamprey)*

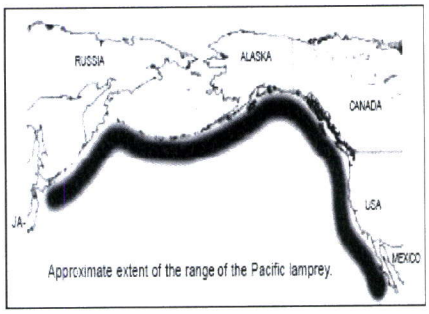
*Pacific lamprey macropthalmia*
*Credit: USFWS*

Metamorphosis to macropthalmia (juvenile phase) occurs gradually over several months as they develop eyes, teeth, and become free swimming.

Transformation from ammocoetes to macropthalmia typically begins in July to October. They drift and swim downstream as they emigrate to the ocean between late fall and spring where they mature into adults.

## Range

Pacific lampreys are widely distributed. They have been found in streams from Hokkaido Island, Japan, and around the Pacific Rim including Alaska, Canada, Washington, Oregon, Idaho, and California to Punta Canoas, Baja California, Mexico. Their distribution includes major river systems such as the Fraser, Columbia, Klamath-Trinity, Eel, and Sacramento-San Joaquin Rivers. Historically, Pacific lampreys are thought to be distributed wherever salmon and steelhead have occurred.




## Status

Recent data indicate that distribution of the Pacific lamprey has been reduced in many river drainages. They are extirpated above dams and other impassable barriers in west coast streams, including many larger rivers throughout coastal Washington, Oregon, and California, and above dams in the upper Snake and Columbia Rivers. In addition to extirpations, Pacific lampreys have declined in abundance throughout the Columbia River basin and southern California.

*In freshwater adult lamprey attach to rocks and large substrate while to hold in fast currents* Credit: USFWS

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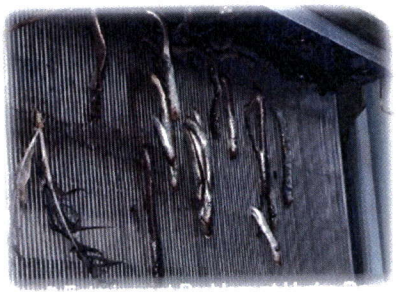
## Threats

Pacific lampreys face a variety of threats to its various life history stages. Taking into account the potential for lamprey utilization of an area is essential to their conservation.

*Even small dams may act as barriers to lamprey passage* Credit: USFWS

***Passage (dams, culverts, water diversions, tide gates, other barriers) both upstream & downstream:*** Artificial barriers can impede upstream migrations by adult lampreys and downstream movement of ammocoetes and macropthalmia. During downstream migrations juvenile lampreys may be entrained in water diversions or turbine intakes. In many cases, water diversions and hydroelectric projects have been screened to bypass juvenile salmonids.

However, due to their size and weak swimming ability, juvenile lampreys are frequently impinged on the screens resulting in injury or death. There is evidence that many dams with fish ladders designed to pass salmonids do not effectively pass lampreys. The excessive use of swimming energy required by Pacific lampreys to negotiate fish ladders or culverts combined with sharp angles and high water velocities, effectively block or restrict passage. Lampreys travel deeper in the water column (no air bladder) compared to salmonids, therefore, traditional spill gates may block passage. Pacific lampreys persist for only a few years above impassable barriers before dying out.



*Macropthalmia entrained at a dam intake screen* Credit: U.S. Army Corps of Engineers

***Dewatering and flows (reservoir management, water diversions, construction projects):*** Alterations in reservoir levels may dewater areas where ammocoetes occur. Water diversions and instream construction projects (i.e., culvert replacements) may also dry up stream reaches where ammocoetes reside. Since several generations and age classes of ammocoetes congregate in areas forming colonies; one dewatering event can have a significant effect on a local lamprey population.

*Dead juvenile lamprey in a dewatered stream.* Credit: Ralph Lampman

***Poisoning (accidental spills, chemical treatments):*** Because ammocoetes are relatively immobile in the stream substrates and often occur in high densities, they are prone to effects from chemical poisoning that may affect many age classes from a single action.

***Poor water quality:*** Elevated water temperature has been documented as a mortality factor for eggs and early stage ammocoetes under laboratory conditions. Water temperatures of 72°F may cause significant death or deformation of eggs or ammocoetes. This may be a common occurrence in degraded streams during the early to mid-summer period of lamprey spawning and ammocoete development. Also, ammocoetes



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tend to concentrate in the lower portions of streams and rivers where gradients are low and toxins, if present, accumulate.

***Dredging (channel maintenance and mining):*** Many age classes of ammocoetes in stream substrates can be impacted by mining or dredging activities because of their "colonial" nature. Dredging impacts have been documented and the effect of suction-dredge mining is thought to be one of the reasons for the loss of lamprey in the upper John Day River basin in Oregon.

***Stream and floodplain degradation (i.e., channelization, loss of side channel habitat, scouring):*** Because lamprey ammocoetes colonize areas and are relatively immobile in the stream substrates, they are prone to effects from channel alterations. In addition, the loss of riffle and side channel habitats may reduce areas for spawning and for ammocoete rearing.

*Channelized streams impact larval lamprey populations.* Credit: USFWS

***Ocean conditions (loss of prey, increase in predators):*** Changing ocean conditions could also be a possible threat to the Pacific lamprey adults. Pacific salmon, Pacific hake, and walleye pollock have declined in numbers; reductions in the availability of these host/food species may be affecting adult lamprey survival and growth.

*Walleye prey on adult and juvenile lamprey* Credit: Hook Up Guide Service

***Predation by nonnative fish species:*** Nonnative fishes such as bass, sunfish, walleye, striped bass, and catfish, among others, have become established over the last century in some rivers in the western U.S. In addition, as Pacific lampreys migrate through reservoirs, they may be more susceptible to predation.

***Overutilization of adult Pacific lampreys:*** Harvest was historically more widespread for lampreys than currently, though may still present a threat, particularly if concentrated on rivers with low numbers. Use of Pacific lampreys for bait has been discontinued by the states of Oregon and Washington. California allows unlimited harvest of lampreys and there is evidence that lampreys are regularly collected for bait.

## Conservation Opportunities

Primary opportunities to protect and restore Pacific lamprey populations include:

- Provide lamprey passage
- Protect ammocoete habitat
- Restore stream channel complexity

*Service biologists place large woody debris in a stream to restore aquatic habitat* Credit: USFWS

For more information visit the following website:

http://www.fws.gov/pacific/Fisheries/sphabcon/Lamprey/index.cfm

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http://www.fws.gov/pacific/Fisheries/sphabcon/Lamprey/index.cfm

State of Alaska
Department of Fish and Game
Nomination for Waters
Important to Anadromous Fish

AWC Volume SE **SC** SW W AR IN USGS Quad Tyonek ~~D~~-3 D-3 + C-3

Anadromous Water Catalog Number of Waterway: 247-41-10200-2015-3040

Name of Waterway: Clear Creek USGS name X Local name ___

Addition X Deletion ___ Correction ___ Backup Information ___

For Office Use

Nomination # 97 .71

Revision Year: 1997

Revision to: Atlas X Catalog ___

Both ___

Revision Code: B-1

Regional Supervisor — Date 12/8/97

AWC Project Biologist — Date 5/18/97

Drafted — Date 12/15/97

OBSERVATION INFORMATION

| Species | Date(s) Observed | Spawning | Rearing | Migration | Anadromous |
|---|---|---|---|---|---|
| COHO SALMON | Late July 94-95 | | | 15 | yes |
| | May 94-95 | | 8+ | | |
| | | | | | |
| | | | | | |

**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 any other information such as: specific stream reaches observed as spawning or rearing habitat; locations, types, and heights of any barriers; etc.

**Comments:** Mouth point located in T19N R9W section9.
Observed during juvel index for chinook.
Observed on pike sampling trip.

ALASKA DEPT. OF FISH & GAME
1997
HABITATION

Name of Observer (please print) David Ritz

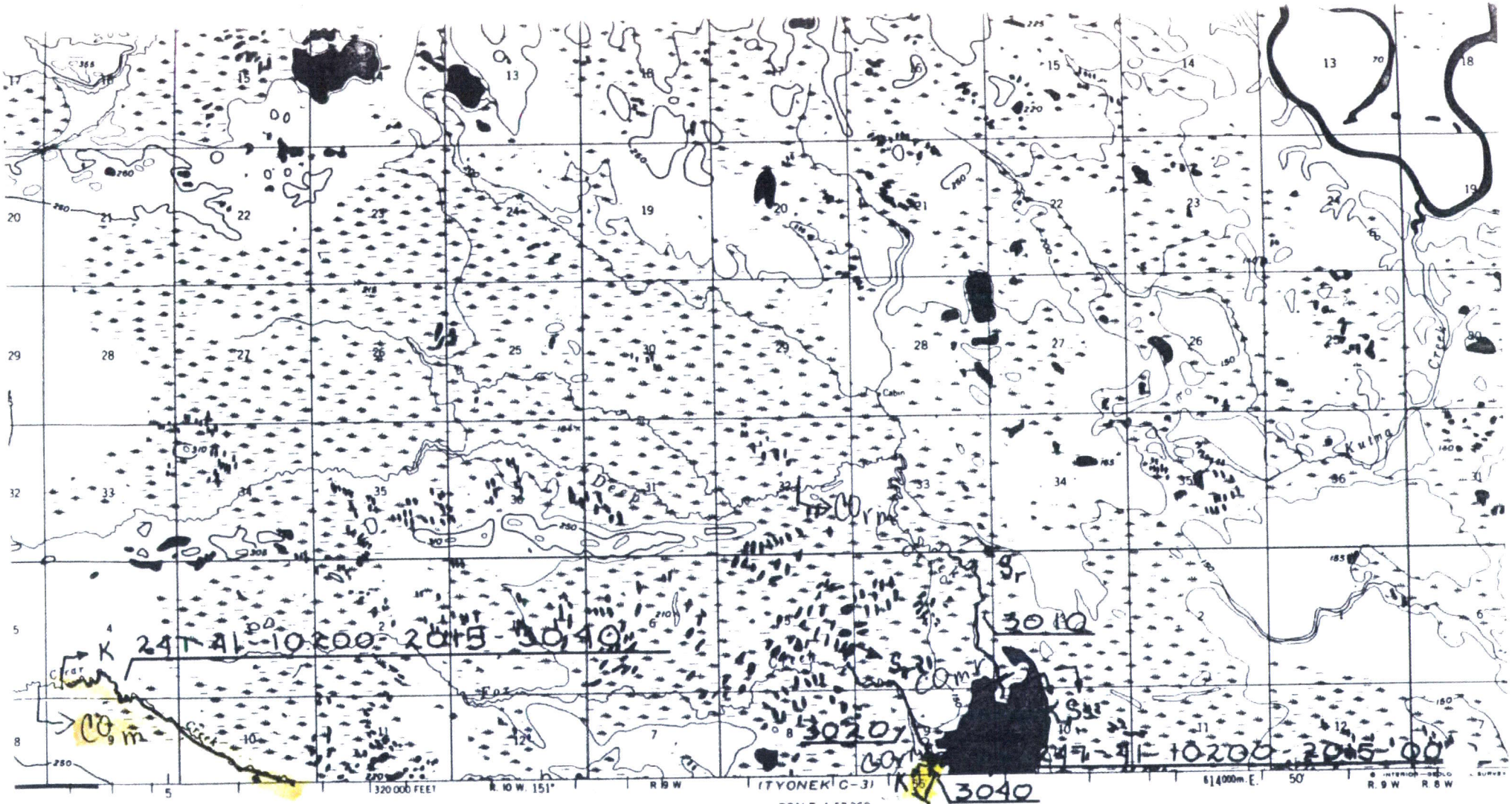
Date: 1/7/97 Signature: David A Ritz

Address: ADF&G Palmer Office
1800 Glenn Highway, Suite 4
Palmer, AK 99645-6736

This certifies that in my best professional judgement and belief the above information is evidence that this waterbody should be included in or deleted from the Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes per AS 16.05.870.

Rev. 7/93

Signature of Area Biologist: ___




SCALE 1:63 360

CONTOUR INTERVAL 50 FEET
DATUM IS MEAN SEA LEVEL

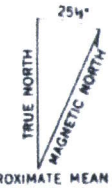
ped, edited, and published by the Geological Survey
ol by USGS

graphy from aerial photographs by photogrammetric
ds 1960. Aerial photographs taken 1952 - 1953.
nnotated 1954. Map not field checked

rsal Transverse Mercator projection, 1927 North American datum
0-foot grid based on Alaska coordinate system, zone 4
meter Universal Transverse Mercator grid ticks,
5, shown in blue

lines represent unsurveyed and unmarked locations
termined by the Bureau of Land Management
S 2 Seward Meridian

ps as portrayed, indicate only the wetter areas,
y of low relief, as interpreted from aerial photographs




APPROXIMATE MEAN DECLINATION, 1954

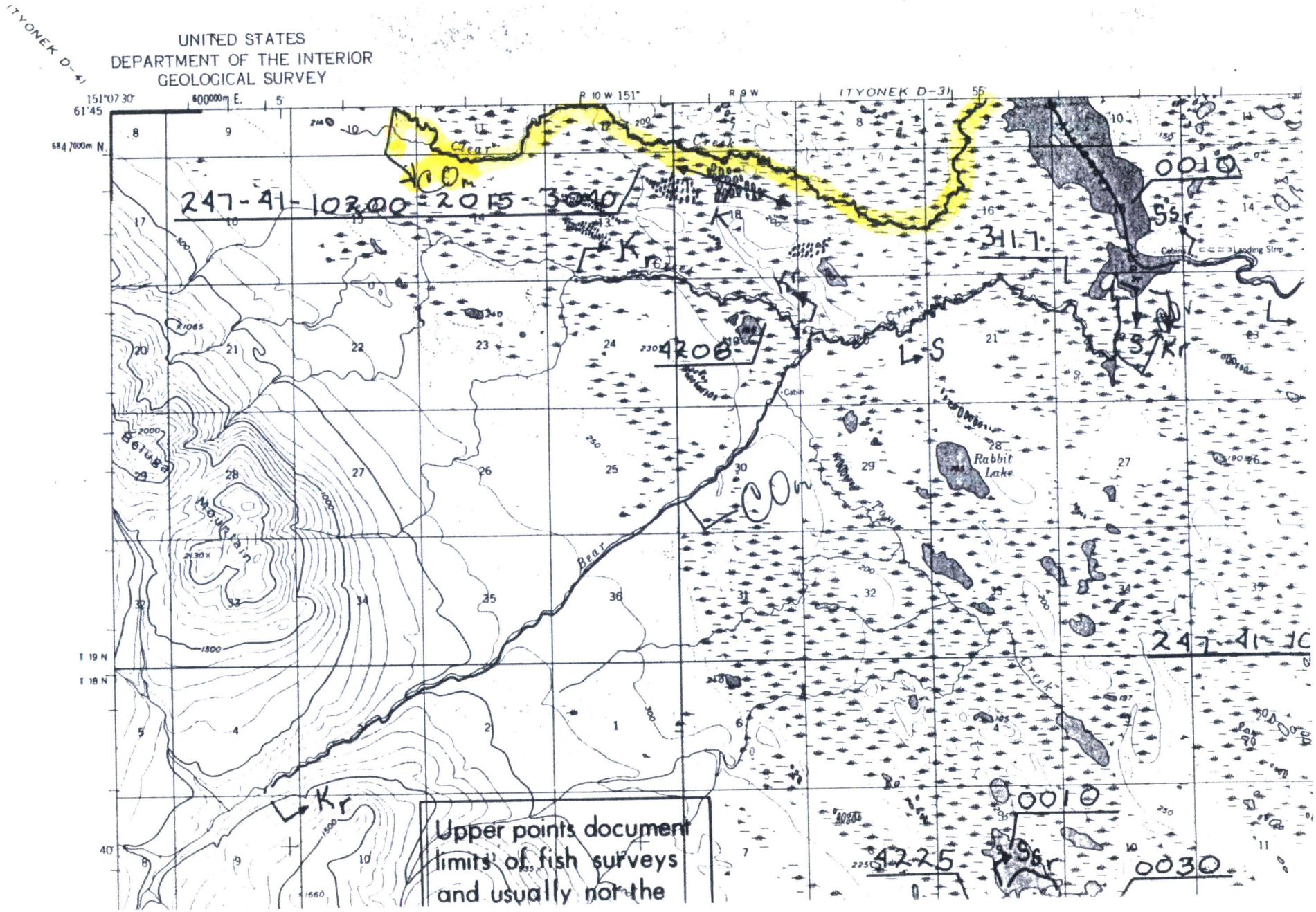
Add SPECIES COHO TO STREAM
247-41-10200-2015-3040

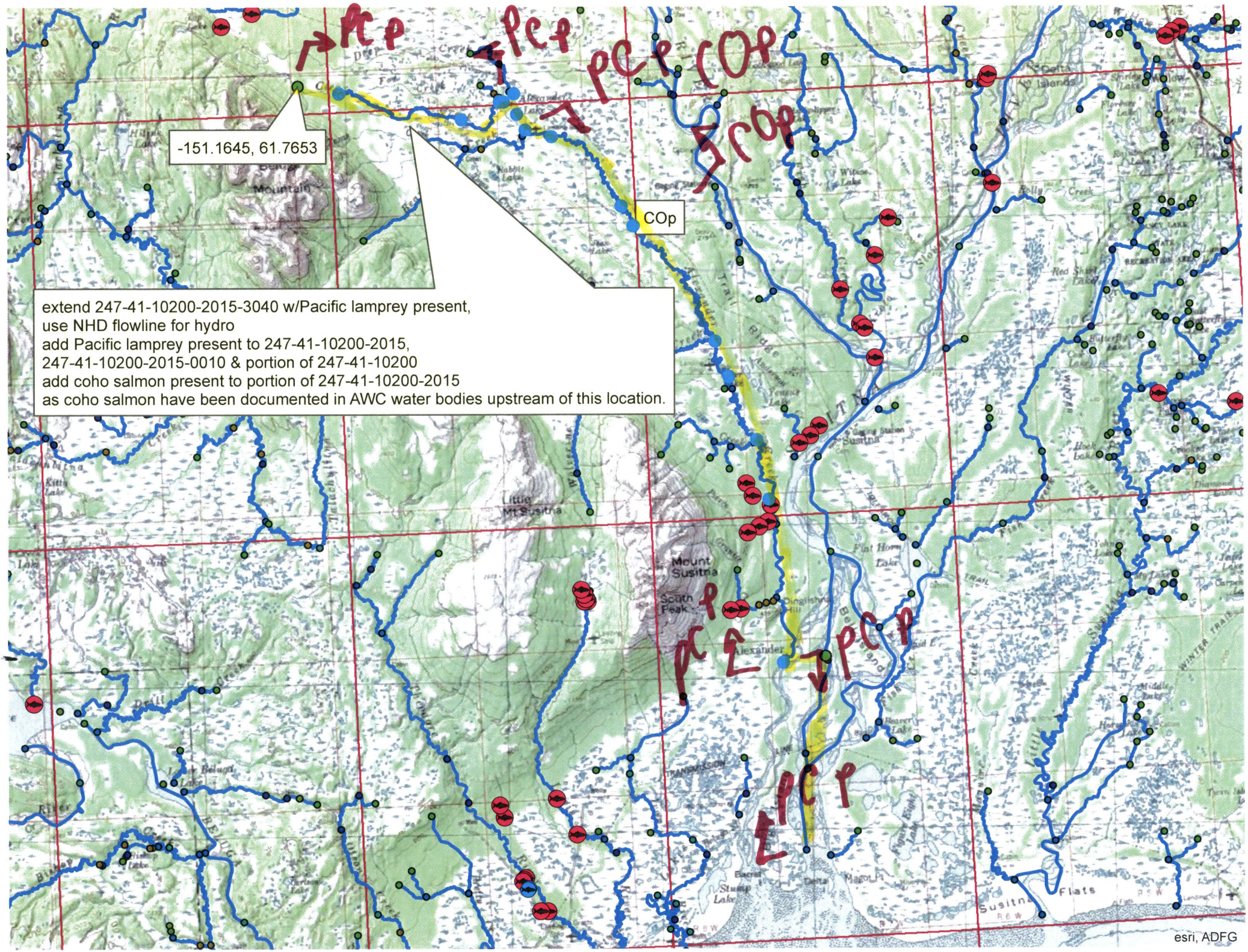
QUADRANGLE LOCATION

TYON
N

END

PROJ TITLE


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
(TYONEK D-4)
(TYONEK D-3)
R 10 W 151°
R 9 W
T 19 N
T 18 N
Clear Creek
Bear Creek
Beluga Mountain
Rabbit Lake
Cabin
Landing Strip
247-41-10200-2015-3040
0010
3117
4208
247-41-10
0010
4225
0030
Upper points document limits of fish surveys and usually not the


PCP
PCP
PCP
COP
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-151.1645, 61.7653
COp
extend 247-41-10200-2015-3040 w/Pacific lamprey present,
use NHD flowline for hydro
add Pacific lamprey present to 247-41-10200-2015,
247-41-10200-2015-0010 & portion of 247-41-10200
add coho salmon present to portion of 247-41-10200-2015
as coho salmon have been documented in AWC water bodies upstream of this location.
Mount Susitna
South Peak
Little Mt Susitna
Alexander
Susitna Flats
esri, ADFG