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

**Nomination Form**
**Fish Distribution Database**

Region: Three

USGS Quad(s): Big Delta A-4

Fish Distribution Database Number of Waterway: 334-40-11000-2490-3416-~~4002~~

Name of Waterway: Salmon Alley Spring

☐ USGS Name ☑ Local Name

☑ Addition ☐ Deletion ☐ Correction ☐ Backup Information

For Office Use

| | | | |
|---|---|---|---|
| Nomination # | 11-264 | | |
| | | ADF&G Fisheries Scientist | Date |
| Revision Year: | 2012 | | |
| Revision to: | Atlas ____ Catalog ____ | ADNR OHMP Operations Mgr. | Date |
| | Both ____ | | 9 may 11 |
| | | FDD Project Biologist | Date |
| Revision Code: | F-3 | | |
| | | Cartographer | Date |

OBSERVATION INFORMATION

| Species | Date(s) Observed | Spawning | Rearing | Present | Anadromous |
|---|---|---|---|---|---|
| CO spawning | 1994-1998 | yes | | yes | ☑ |
| | | | | | ☐ |
| | | | | | ☐ |
| | | | | | ☐ |
| | | | | | ☐ |

**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:** Salmon Alley Spring is a spring influenced tributary likely an former channel of the Delta Clearwater River. Salmon Alley Spring has a wide backwater area and extensive wetland area associated with the spring. There are not barriers to fish movement and the Delta Clearwater River closest to Salmon Alley has the highest concentration of spawning salmon in the entire river. This submission of Salmon Alley Spring is to provide a new submission to the AWC, provide a description, and add aerial coho salmon survey counts to the AWC database. A description of Salmon Alley Spring is described in the word document (Salmon Alley Spring.doc) From 1994-1998, ADF&G conducted aerial surveys of Salmon Alley Spring and 34 other non-navigatable springs. Salmon Alley Spring is approximately 0.24 miles in length and spawning coho salmon were observed in all four survey years, counts ranging from 25-350. Salmon Alley Spring originates at the confluence of the Delta Clearwater River (N64° 04.637', W145° 30.671') and the lower end with its confluence with the Delta Clearwater River (N64° 04.698', W145° 30.733'). Salmon Alley Spring has good habitat for juvenile coho salmon as well as other Juvenile species. TOPO! software was used to calculate distance and obtain lat/long

observation ≥ 10 + yrs old

Name of Observer (please print): James F. Parker

Signature: _____ Date: 4/20/2011

Agency: ADF&G - Sport Fish

Address: Box 605

Delta Junction, AK 99737

This certifies that in my best professional judgment and belief the above information is evidence that this water body should be included in or deleted from the Fish Distribution Database.

Signature of Area Biologist: _____ Date: _____ Revision 02/05

Name of Area Biologist (please print):

## Johnson, J D (DFG)

**From:** Parker, Fronty (DFG)
**Sent:** Monday, May 09, 2011 7:33 AM
**To:** Johnson, J D (DFG)
**Subject:** AWC nomination: Salmon Alley (334-40-11000-2490-3416-4002)
**Attachments:** Salmon Alley Spring 04-20-2011.xls; Salmon Alley Spring.doc; AWC number system for DCR.xlsx

Salmon Alley is one of 21 tributaries into the Delta Clearwater River that has aerial coho salmon survey data. This is a new AWC nomination and the sequence for Salmon Alley is shown in the spreadsheet "AWC number system for DCR.XLSX". Descriptive information and aerial coho salmon survey data for Salmon Alley is added to this nomination.
-Fronty

Salmon Alley Spring (local name, no USGS name) 04/20/2011
**Anadromous stream catalog number** 334-40-11000-2490-3416-4002

**Description:** Salmon Alley Spring is likely a former oxbow of the Delta Clearwater River with short spring influenced tributaries entering along its length (Figure 1). Salmon Alley Spring is situated near a large wide riffle area of the Delta Clearwater River having the largest concentration of spawning salmon for the entire river. Salmon Alley Spring has a wide wetland area with springs seeping from the upland area. No barriers exist for movements of fish along this spring. Spawning coho salmon have observed and counted in all four years that aerial surveys were conducted in Salmon Alley Spring.
The Delta Clearwater River (DCR) is entirely spring fed. A report written in 1991 (Parker, J. F. 1991. Status of Coho Salmon in the Delta Clearwater River of Interior Alaska. Alaska Department of Fish and Game, Fishery Data Series 91-4, Anchorage.) gives a summary of coho life history and data collected on the DCR. The report documents the DCR being only 20 miles in length, as having the largest spawning concentration in the Yukon River drainage, the largest coho sport fishery in the Tanana River drainage, and an extensive record of coho escapement index counts. Adult coho salmon distribute throughout the DCR to spawn. Coho salmon eggs hatch in February and March and coho salmon fry emerge from the gravel in May, approximately 6 months after spawning. The springs provide consistent flows, little change in water temperature, highly productive aquatic communities, and favorable over-wintering habitat for rearing coho salmon. The majority of the juvenile coho salmon rear in the DCR for 1 - 3 years before smolting, and spend 1 year in the ocean before returning (Parker 1991).
Salmon Alley Spring is a 0.24 mile in length and is located at Mile 3.4 of the Delta Clearwater River (Figure1). Salmon Alley Spring for AWC purposes is hand drawn in to show location in Figure 2. Salmon Alley Spring originates from its upper confluence with the Delta Clearwater River (N64° 04.637', W145° 30.671') and the lower end with its confluence with the Delta Clearwater River (N64° 04.698', W145° 30.733').
DF&G conducts an annual coho salmon survey to assess the coho salmon escapement goal of 5,200–17,000. Annual coho counts since 1972 to the present are found in Table 1 (Parker, J. F. 2009. Fishery management report for sport fisheries in the Upper Tanana River drainage in 2008. Alaska Department of Fish and Game, Fishery Management Report No. 09-47, Anchorage.)
From 1994-1998, aerial coho surveys were conducted to determine numbers of spawning coho salmon in non-boatable portions of the DCR. A significant portion of coho salmon are found spawning in non-navigatable portions of the river in short spring tributaries contributing to the DCR. Aerial counts for coho salmon in areas not counted by boat, were 21.9%, 23.8%, 19.0%, 17.1%, and 20.0% (averaging 20.36%) of the escapement, respectively (Table 1). The average proportion is then applied to the mainstem DCR count and the resultant estimate for the non-navigable component is added to the mainstem count to obtain an estimate of total escapement. From 1994-1998, the helicopter count for Salmon Alley Spring is presented in Table 2.

**Anadromous species present**: Coho salmon (spawning and rearing).
**Other Species**; round whitefish, Arctic grayling, long nose suckers, and slimy sculpins.
**Anadromous species data collection**:
This nomination is to provide a description for this water and provide aerial coho survey data.

Figure 1. Salmon Alley Spring, Google Earth picture of Salmon Alley Spring joining with both of its confluences of the Delta Clearwater River.

Figure 2. USGS map with several spring tributaries of the Delta Clearwater River including Salmon Alley Spring.

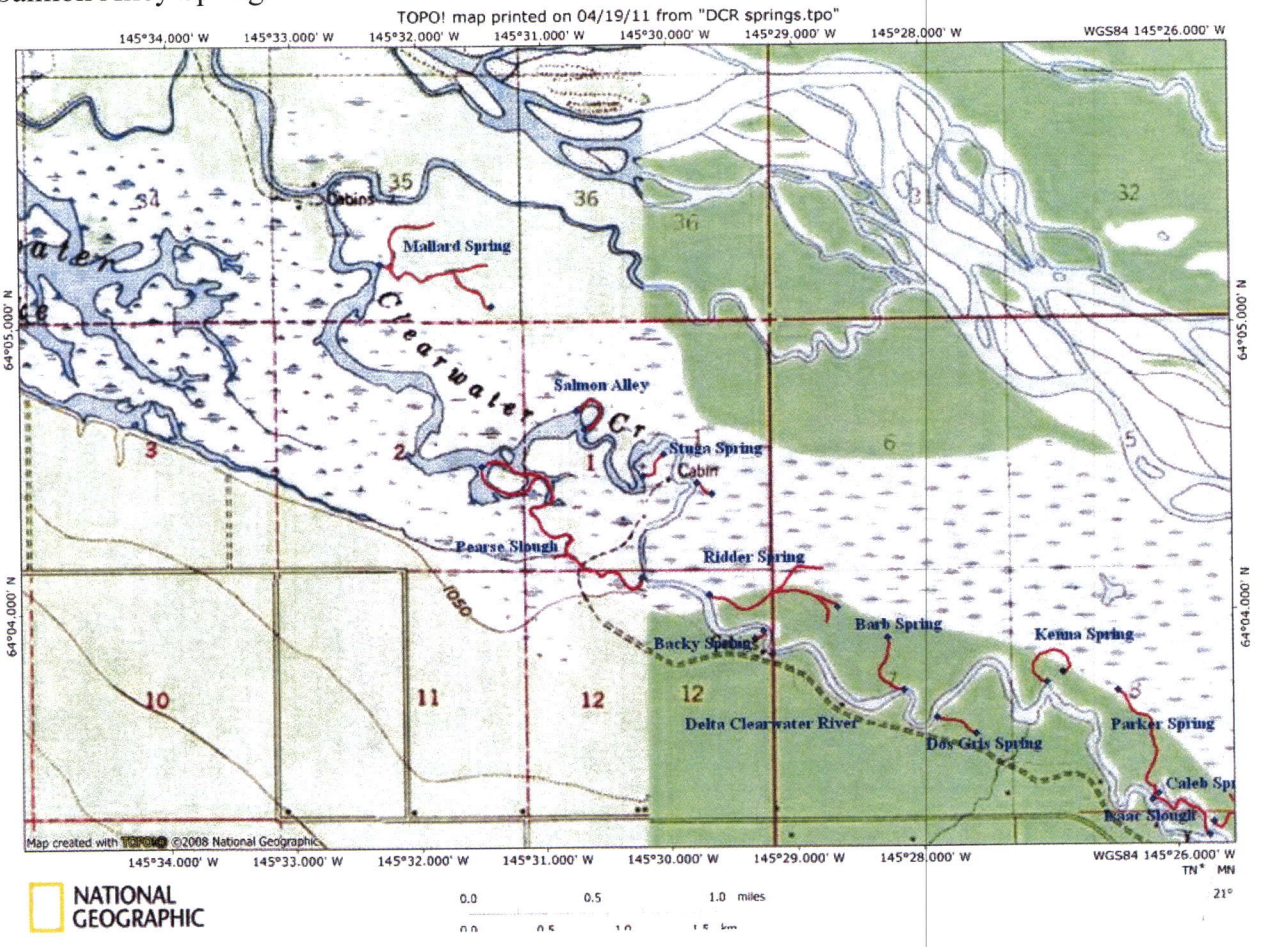

Table 1. Delta Clearwater River coho counts by boat and aerial counts from 1994-1998, expanded to include non-navigatable portions of the river in years when aerial surveys were not done.

| Year | Mainstem DCR Escapement | Counts in Lower River Mile 0-8 | Counts in Upper River Mile 8-18 | Only Tributaries | Coho's % in Tributaries | Expanded Count to include Tributaries. |
|---|---|---|---|---|---|---|
| 1972 | 632 | | | | | 803 |
| 1973 | 3,322 | | | | | 4,220 |
| 1974 | 3,954 | | | | | 5,023 |
| 1975 | 5,100 | | | | | 6,479 |
| 1976 | 1,920 | | | | | 2,439 |
| 1977 | 4,793 | | | | | 6,089 |
| 1978 | 4,798 | | | | | 6,095 |
| 1979 | 8,970 | | | | | 11,395 |
| 1980 | 3,946 | | | | | 5,013 |
| 1981 | 8,563 | | | | | 10,878 |
| 1982 | 8,365 | | | | | 10,627 |
| 1983 | 8,019 | | | | | 10,187 |
| 1984 | 11,061 | | | | | 14,052 |
| 1985 | 5,358 | | | | | 6,807 |
| 1986 | 10,857 | | | | | 13,793 |
| 1987 | 22,300 | | | | | 28,330 |
| 1988 | 21,600 | | | | | 27,441 |
| 1989 | 12,600 | | | | | 16,007 |
| 1990 | 8,325 | | | | | 10,576 |
| 1991 | 23,900 | | | | | 30,362 |
| 1992 | 3,963 | | | | | 5,035 |
| 1993 | 10,875 | | | | | 13,816 |
| 1994 | 62,675 | | | 17,565 | 21.9% | 80,240 |
| 1995 | 20,100 | | | 6,283 | 23.8% | 26,383 |
| 1996 | 14,070 | | | 3,300 | 19.0% | 17,370 |
| 1997 | 11,525 | | | 2,375 | 17.1% | 13,900 |
| 1998 | 11,100 | | | 2,775 | 20.0% | 13,875 |
| 1999 | 10,975 | | | 2,967 | 21.3% | 13,942 |
| 2000 | 9,225 | 4,200 | 5,025 | 2,494 | 21.3% | 11,719 |
| 2001 | 46,875 | 19,375 | 27,500 | 12,013 | 21.3% | 59,547 |
| 2002 | 38,625 | 17,700 | 20,925 | 10,441 | 21.3% | 49,067 |
| 2003 | 102,800 | 41,575 | 61,225 | 27,791 | 21.3% | 130,591 |
| 2004 | 37,550 | 16,775 | 20,775 | 10,551 | 21.3% | 47,701 |
| 2005 | 31,175 | 13,825 | 17,350 | 8,428 | 21.3% | 39,603 |
| 2006 | 15,950 | 10,100 | 5,850 | 4,312 | 21.3% | 20,262 |
| 2007 | 14,650 | 7,325 | 7,325 | 3,961 | 21.3% | 18,611 |
| 2008 | 7,500 | 2,475 | 5,025 | 1,917 | 21.3% | 9,417 |
| 2009 | 16,850 | 9,425 | 7,425 | 4,307 | 21.3% | 21,157 |
| 2010 | 5,867 | 1,961 | 3,906 | 1,586 | 21.3% | 7,453 |

**Table 2.-** Helicopter Aerial Coho surveys of Salmon Alley Spring from 1994-1998.

| Year | Salmon Alley Spring Tributary |
|---|---|
| 1994 | Not surveyed |
| 1995 | 350 |
| 1996 | 50 |
| 1997 | 50 |
| 1998 | 25 |