Cannery Creek Steeppass
Progress Report
2005

Prepared by:
Trenten T. Dodson, Biologist
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This year's operation of the Cannery Creek Steeppass Project was made possible through enhancement taxes paid by the commercial fishermen in Area H, Cook Inlet and associated waters and by grants from the U.S. Fish and Wildlife Service and the Alaska Department of Fish and Game Sport Fish Division.

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DISCLAIMER

The Cook Inlet Aquaculture Association conducts salmon enhancement and restoration projects in area H, Cook Inlet and associated waters. As an integral part of these projects a variety of monitoring and evaluation studies are conducted. The following progress report is a synopsis of the monitoring and evaluation studies conducted for the Cannery Creek Steeppass project.

The purpose of the progress report is to provide a vehicle to distribute the information produced by the monitoring and evaluation studies and to provide the basis for continuing operations in 2006. Data collected each year are presented with a summary of the information previously collected for comparative purposes. These reports are intended to provide a general description of project activity and are not an exhaustive evaluation of any restoration or enhancement project. The information presented in this report has not undergone an extensive review. As reviews are completed, the information may be updated and presented in later progress reports.

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ACKNOWLEDGEMENTS

Many individuals and agencies contributed to the success of the Cannery Creek Steeppass in 2005. Appreciation is extended to Cook Inlet Aquaculture Association field assistants, Alger Aleck, Sean McGroarty, and Gabe Smith; and all full time staff who endured many long hours in the field. Special thanks go to Cook Inlet Pipeline, the crew at the Drift River Terminal. Additional thanks are extended to The Cook Inlet Aquaculture Association Board of Directors and for the support they have provided to the Cannery Creek Steeppass project. Finally, thank you to the U.S Fish and Wildlife Service and the Alaska Department of Fish and Game Sport Fish Division for providing the funding that allowed CIAA to maintain this important salmon resource.

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ABSTRACT

The terminus of Cannery Creek is located approximately 50.8 km west of Kenai, Alaska. The creek runs parallel to the Drift River and divides into 4 smaller channels. Near the terminus of each channel is a water fall. After the falls, each channel flows into a larger common channel and then to Cook Inlet. The project area was located at the water fall furthest west from the Drift River Terminal, which lies approximately 2.8 km to the east. The Cook Inlet Aquaculture Association (CIAA) has completed all the field activities, which were funded by the United States Fish and Wildlife Service (USF&WS) and the Alaska Department of Fish and Game Sport Fish Division (ADF&GSFD)

The initial stages of installation of the steeppass began on 10 August, 2005. Several modifications and repairs were made to the steeppass. Steeppass operations began on 18 August 2005.

Adult sockeye salmon escapement was monitored from 18 August to 7 September. During this time, 110 adult coho salmon were counted through the steeppass.

Additional funds are requested to continue the project in 2006 for operations ($10,054.00).

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INTRODUCTION AND PURPOSE

Mt. Redoubt erupted in 1989 filling Cannery Creek with large amounts of mud and ash, and forcing it out of its established stream channel. A series of actively eroding water falls have since developed, recently preventing upstream access by anadromous fish.

CIAA first became aware of this problem in 1994. In 1996, CIAA responded to a report by a local fisherman that the falls may be impeding the migration of anadromous fish into Cannery Creek; CIAA then conducted an aerial survey of the area. However, individuals familiar with the area claimed fish could pass the falls at tides greater than 21 feet, so no remedial action was taken.

In 2003, the Cook Inlet Pipeline Company contacted CIAA with information that the waterfalls had eroded further upstream and the future of the resident coho salmon population was threatened. With the assistance of the Cook Inlet Pipeline Company, CIAA conducted a ground and aerial survey in August 2003.

By 2003, the creek had braided into several channels and each channel now had an approximately 10 foot high falls. Water flow below the falls is confined to a channel; however, flows above the falls are not confined. As a result the stream depth above the falls is only 12 to 16 inches. The stream flows over a vegetated peat layer and the falls are constantly cutting back. As they have moved further away from Cook Inlet, the falls have become less influenced by tides and are now too high for fish to pass - *even at high tides.*

Through the joint collaboration of CIAA, Cook Inlet Pipeline, the USF&WS, and the ADF&GSFD a portable Alaska Steeppass was designed, constructed, and set into the creek to allow the passage of coho salmon past the falls.

2005 was the second year for the steeppass project.

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PROJECT AREA

The terminus of Cannery Creek is located approximately 50.8 km west of Kenai, Alaska. The creek runs parallel to the Drift River and divides into 4 smaller channels. Near the terminus of each channel is a water fall. After the falls, each channel flows into a larger common channel and then to Cook Inlet. The project area was located at the water fall furthest west from the Drift River Terminal, which lies approximately 2.8 km to the east (Figure 1).

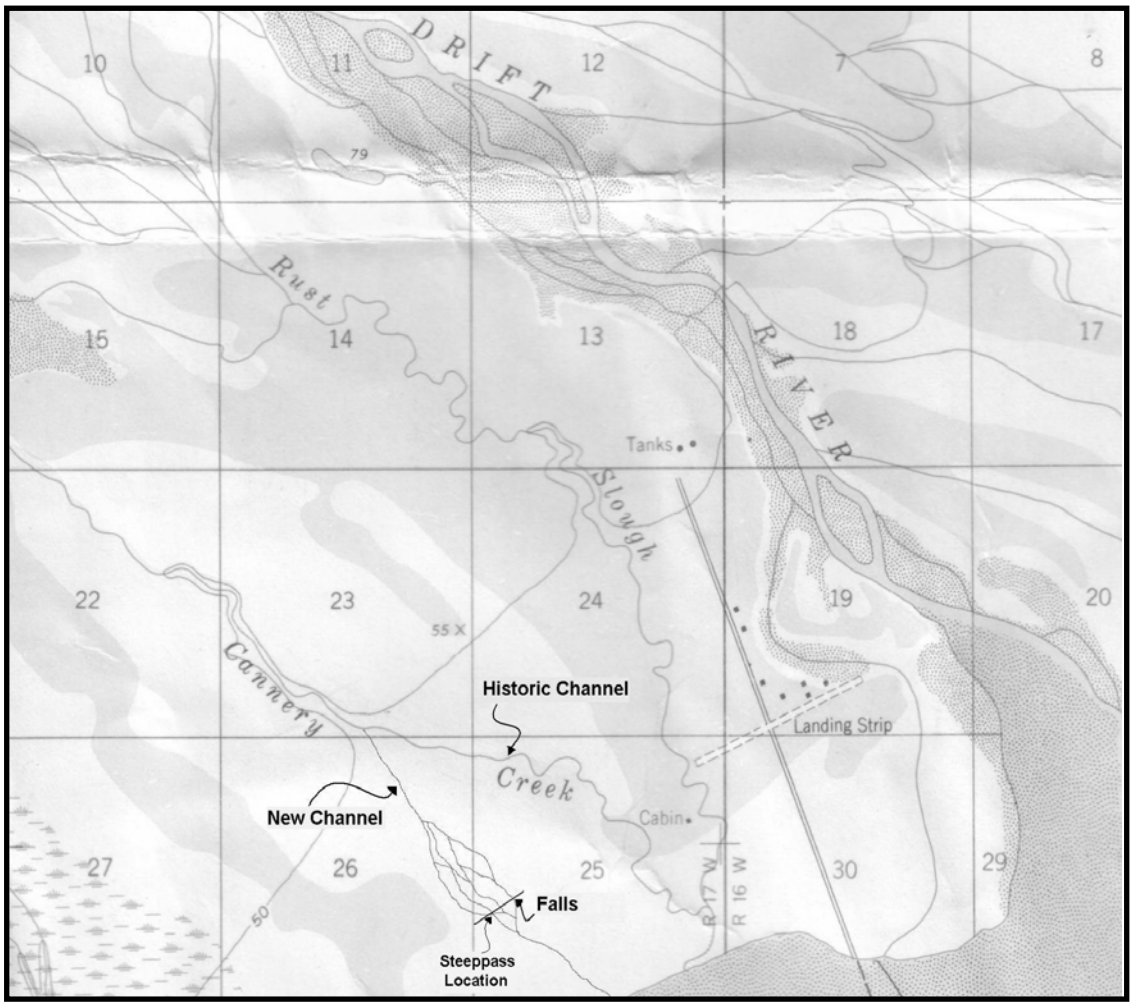

Figure 1. Excerpt from U.S. Geological Survey Kenai (C-6) Quadrangle showing Cannery Creek historic channel, new channel, falls, and Alaska Steep Pass locations.

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Fish historically observed in the Cannery Creek watershed include coho salmon (*O. kisutch*), sockeye salmon (*O. nerka*), pink salmon, (*O. gorbuscha*), and Dolly Varden char (*Salvelinus malma*).

METHODS

Funding/Financial

Direct funning for the project was provided by the USF&WS and the ADF&GSFD to CIAA. CIAA provided the design of the project as well and the staff to work the project. Cook Inlet Pipeline provided ground and air support during transportation of materials and crew. A breakdown of cost accrued to the cooperating agencies is as shown in Table 1.

Table 1. Summary of in-kind and funding sources for steeppass project - 2005.

Cook Inlet Aquaculture Association (In-kind)	**Cost**
Executive Director (labor)	$ 311.78
Administrative Assistiant (labor)	$ 48.70
Biologist (labor)	$ 1,545.92
Project Technician (labor)	$ 1,106.61
CIAA Field Crew (labor)	$ 2,000.00
Aleckson Fabrication (repairs)	$ 596.55
Steeppass Supplies	$ 721.24
Air Charter Service	$ 1,620.00
	$ 7,950.80
Drift River Terminal (CIP) (In-kind)	
Crew Lodging	$ 3,900.00
Air Support (heliocopter)	$ 1,750.00
	$ 5,650.00
U.S. Fish and Wildlife Grant	
Steeppass Extension Constuction	$ 1,170.00
Repairs/Additions	$ 73.50
	$ 1,243.50
ADF&GSport Fish Grant	
CIAA Biologist (labor)	$ 1,545.92
CIAA Project Technician (labor)	$ 1,106.61
CIAA Field Crew (labor)	$ 4,839.12
Air Charter Service	$ 1,620.00
Supplies/Provisions	$ 905.04
	$ 10,016.69

In addition to the in kind costs, CIAA provided all field camp equipment, data recording supplies, and other support equipment.

Alaska Steeppass Design, Materials, and Deployment

The Alaska Steeppass was designed from plans provided by Zeimer 1962. The steeppass measured 24ft in length and was divided into three 8ft sections (Figure 2). One of the 8ft sections was transported form Kenai, Alaska to Cannery Creek via fixed-wing air craft. The remaining sections, used in 2004, were warehoused at the Drift River Terminal over the winter. A helicopter, provided by Cook Inlet Pipeline transferred the steeppass sections, along with field camp gear, to the project site.

The steeppass was assembled by CIAA field crew, put on wheels and pushed into position over the falls. A cable system was installed and the steeppass was lowered into place. Once the steeppass was secured, plywood walls were place along the upstream opening to divert the required amount of water.

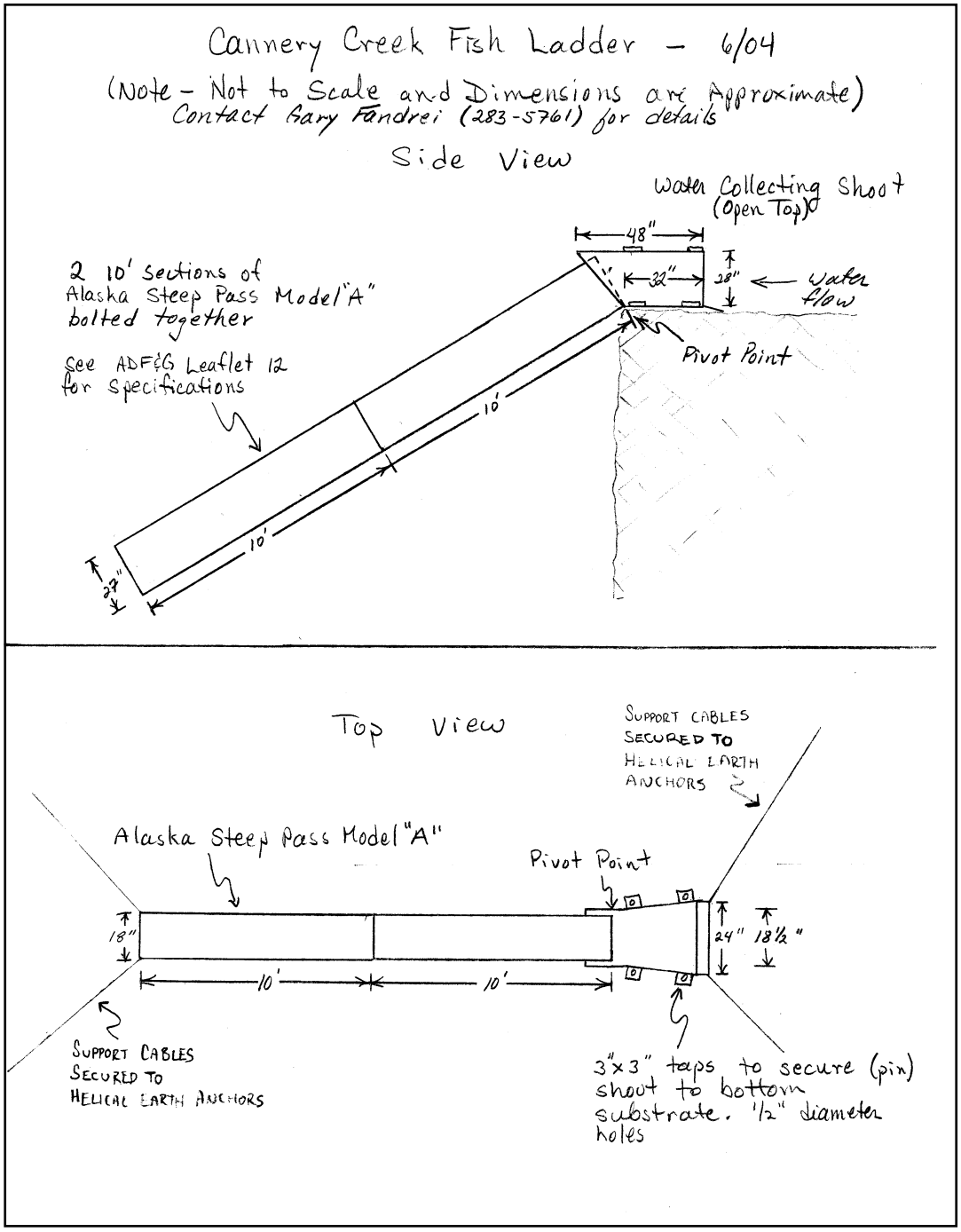

Figure 2. Sketch of Alaska Steeppass used at Cannery Creek. Note that the plans were changed from two 10ft sections to three 8ft sections.

Environmental Conditions

Environmental Conditions were not recorded in 2005

Adult Escapement

Adult coho salmon were enumerated once the steeppass was completed and operational. Enumeration from 18 August to 7 September consisted of one twelve hour long event through each 24 hour period. Each enumeration event began at 7:00 am and continued until 7:00 pm that same evening. If fish were observed at the foot of the falls past 7:00 pm, enumeration continued.

An aerial survey was conducted on 6 September 2005. During the survey there were no coho salmon observed at the junction of the historic spawning channel and Cannery Creek.

RESULTS AND DISCUSSION

Environmental Conditions

Environmental conditions were not recorded in 2005

Adult Escapement

Adult coho salmon were first observed moving up the steeppass on 19 August 2005; counts were conducted until 7 September. During this time period 110 coho salmon traveled up the steeppass and up stream (Appendix 2). No fish were observed traveling back downstream and over the falls. On 6 September an aerial survey was completed; there were no coho salmon observed several miles up stream at the junction of the historical spawning channel and Cannery Creek. Several days of rain events had caused the spawning channel to appear cloudy. It was concluded that if coho were in the channel, cloudy water conditions hid them from observers.

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CANNERY CREEK PROJECT 2006

CIAA requests that the Cannery Creek Steeppass project continue in 2006. In order to conduct the project in 2006 further funding is required. Once again, funding for support staff and camp supplies will be needed. A proposed budget for 2006 is shown in Table 2.

Table 2. 2006 Project Budget Proposal.

OPERATIONS					
Labor - Temporary	2 people x	100 $/day	30 days		$ 6,000.00
Supplies					
Groceries	2 people x	14 $/day	30 days	$ 840.00	
Fuels				$ 100.00	
Tools & Small Equip.				$ 250.00	
Misc.				$ 250.00	$ 1,440.00
Charter					
Kenai Aviation	5 trips x	340 $/trip			$ 1,700.00
Contingency (10%)					$ 914.00
Subtotal					$ 10,054.00
Total					$ 10,054.00

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RECOMMENDATIONS

There are no indications that the conditions at Cannery Creek will improve in 2006. It is recommended that the operations of the steeppass continue in 2006. It is also recommended that the steppass be installed earlier in August.

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LITERATURE CITED

Ziemer, G.L. 1962. *Steeppass Fishway Development*. Alaska Department of Fish and Game. Informational Leaflet 12. Juneau, AK. 34 Pages.

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APPENDICES

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Appendix 1. Cannery Creek 2005 – Environmental Conditions.

No Environmental Conditions were recorded

Appendix 2. Cannery Creek 2004 – Coho Migration.

Date	Count Total	Total Count	pm High Tide (ft)*
17-Aug	Steeppass Installed		19.2
18-Aug	0	0	21.1
19-Aug	20	20	22.6
20-Aug	2	22	23.8
21-Aug	34	56	24.3
22-Aug	1	57	24.2
23-Aug	0	57	23.5
24-Aug	4	61	22.3
25-Aug	10	71	20.6
26-Aug	4	75	18.9
27-Aug	1	76	17.4
28-Aug	1	77	15.2
29-Aug	8	85	16.1
30-Aug	7	92	17.3
31-Aug	2	94	18.4
01-Sep	6	100	19.5
02-Sep	9	109	20.5
03-Sep	0	109	21.3
04-Sep	0	109	22.0
05-Sep	0	109	22.3
06-Sep	0	109	22.3
07-Sep	1	110	22.9
Total	110	110	20.7

*Data taken from the Kenai River tide table