



SMOLTS

Providing and Protecting Your Salmon Resource



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The Newsletter for the Cook Inlet Aquaculture Association

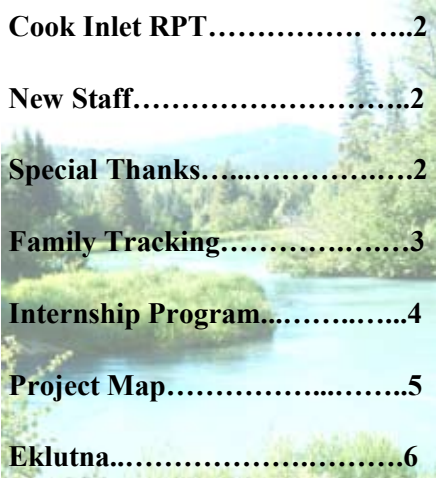
Spring/Summer 2007

SUSITNA RIVER WATERSHED PROJECT

In 2006, CIAA proposed to investigate the freshwater rearing environment of the Sustina River Watershed. The studies include the enumeration of adult salmon escapement (count 1 completed in 2006 see below) and smolt emigrations at each lake (count 1 to begin May 2007). Adult sockeye salmon and smolts are sampled for age, weight and length throughout the enumeration at lakes along the mainstem Susitna River and Talkeetna River (Larson, Stephan and Byers Lakes); and four are on tributaries of the Yentna River (Judd, Shell, Hewitt, and Chelatna Lakes).

It is the feeling of CIAA that understanding the entire salmon life cycle will help to identify if rehabilitation is warranted and which strategies seem to offer the most promise. These studies complement the work being performed by The Department of Fish and Game. ADF&G has designed a study program that focuses primarily on the adult fish and management's ability to enumerate the return. CIAA assisted the Department with tag recovery at each of the weir sites. Both projects are slated to continue until July of 2009.

Further investigations include limnological sampling (water chemistry and zooplankton) and the collection of dissolved oxygen, light and temperature profiles within each lake. In conjunction with this investigation, ADF&G will conduct hydroacoustic analyses in the fall to survey fry production of each lake. In addition, CIAA will assist the ADF&G mark-recapture study at all seven adult salmon weirs.



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Information collected during this project is available at www.ciaa.net.org

DATA COLLECTED IN 2006			
<u>Susitna River Lakes</u>	<u># of Sockeye</u>	<u>Yentna River Lakes</u>	<u># of Sockeye</u>
Byers Lake	3,074	Chelatna Lake	13,266*
Larson Lake	56,305	Judd Lake	40,630
Stephan Lake	No count	Hewitt Lake	2,507*
		Shell Lake	69,747

* Incomplete count: Represents less than 95% of the total return

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Gary Fandrei - Executive Director
Trenten Dodson - Senior Biologist
Dan Frisbie - Field Biologist
Paul Blanche - Field Biologist
Ron Carlson - Project Technician
Carol Jones - Admin. Assistant
Dawne Schmidt - Admin. Assistant

Trail Lakes Hatchery

Robert Blankenship - Manager
Tom Prochazka - Assistant Mgr.
Mark Thomas - Assistant Mgr.
Teddy Berglund - Seasonal Assistant
Terry Estes - Seasonal Assistant
Jen Mervissen - Seasonal Assistant

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Cook Inlet RPT

In January 2007, the Cook Inlet Regional Planning Team completed and submitted the *Cook Inlet Salmon Enhancement Plan Phase II 2006—2025* to Denby Lloyd, Commissioner of the Alaska Department of Fish and Game. Mr. Lloyd signed and approved the document on March 22, 2007.

The document was designed to be updated and reviewed by the RPT on an annual basis and should provide valuable information to any group looking to implement projects that enhance Cook Inlet salmon populations or improve salmon habitat.

The document is available online at both the Fish and Game and CIAA websites. For a hard copy or a CD of the document contact the CIAA office.

Staff Additions

In November, 2006 CIAA hired Dawne Schmidt as a new administrative assistant to the office. Prior to working with CIAA, Dawne was employed at Peak Construction where she worked in the payroll and invoicing department. To augment her previous education in the University of California system, Dawne has enrolled in the Kenai Peninsula College accounting program. Dawne and her husband, Armon, are active in the set Cook Inlet set net commercial fishery.

Over the winter, CIAA added two new biologists to the staff. Paul Blanche is a recent graduate of the University of Kentucky with a degree in Natural Resource Conservation and Management. Paul will manage the Susitna River Watershed Project. Dan Frisbie is a graduate of Unity College with a degree in Aquaculture and will manage the CIAA hatchery support field programs as well as the Cannery Creek steppass and other salmon enumeration camps on the Kenai Peninsula. Dan and Paul were summer Interns for CIAA in 2004 and 2005 respectively; both worked on the Fish Creek project.

Special Thanks

The Cook Inlet Board of Directors, staff, and Regional Planning Team members would like to extend a special thank you to Tom Walker. Mr. Walker, who was instrumental in putting together and organizing the original plan (*Cook Inlet Salmon Enhancement Plan 1980 - 2000*), spearheaded the effort on the Phase II project.

Family Tracking Coho Salmon - Mark Thomas, TLH Assistant Manager

Coho salmon fingerlings of Bear Lake stock being reared at Trail Lakes Hatchery in the winter of 2005 and at Eklutna Hatchery in the subsequent winter of 2006 were diagnosed with Bacterial Kidney Disease (BKD). For the health of this stock and the programs it supports, it became necessary to screen out the cause of this problem. Family Tracking provides a practical tool to screen out BKD.

The term 'Family Tracking' brings up thoughts of genealogy charts. However, in this application, it only relates to tracking the progeny of individual fish for one generation in order to screen out pathogens from entering the hatchery environment. The pathogen being screened in this case is a bacterium called *Renibacterium salmoninarum*. It is the causative agent of BKD. This bacterium is endemic to the Pacific Northwest and exists in numerous wild populations of fish. One route the bacterium is transmitted is within the egg from parent fish to progeny. It is at this stage that tracking eggs of individual fish that are proven to carry the pathogen can be screened out and discarded.

In order to carry out this process it was necessary to purchase a different style of incubator. Vertical incubators (Heath trays) were purchased with capital improvement funds. Though in the experience of Trail Lakes Hatchery staff, Heath tray incubators do not lend themselves to large scale production, they do an excellent job of keeping eggs separate for tracking purposes.

At Trail Lakes Hatchery, Family Tracking entails these steps: Preparations are made to coordinate tracking of eggs from individual spawners through a period of incubation. This involves having corresponding numbering of fish tags, spawning buckets, kidney



Assistant Hatchery Manager, Mark Thomas inspects the Heath trays at Trail Lakes Hatchery.

sample containers and incubator trays. For our purposes, the pooling of three females with two males is considered an acceptable loss if and when discarding is necessary. At egg take, each individual brood fish is tagged with a tracking number. Eggs from three females and milt from two males are placed into the spawning bucket having the corresponding fish tag numbers. The spawning bucket is also numbered to correlate with an incubation tray. After the fish are spawned kidney samples are taken and placed into sample containers having the fish's corresponding number. At the end of the egg take, the kidney samples are sent to the Alaska Department of Fish and Game Fish Pathology Laboratory to test for *Renibacterium*. While waiting for the test results the eggs are incubated in Heath trays having the tracking numbers on them. When the test results are obtained, progeny (in the egg life stage) with positive parents are discarded, effectively screening out BKD.

For brood year 2006, two hundred sixty three fish were sampled. One fish tested positive for BKD. The incubator tray containing the progeny of this fish was discarded.

CIAA Internship Program

Right: Northern Michigan University biology student, Josh Fosdick calibrates a PIT tag antenna at the sockeye salmon weir on Hidden Creek



A total of twenty-six interns from colleges and universities located in Michigan, Colorado, Indiana and Montana were assigned to smolt enumeration projects throughout the Kenai Peninsula and Mat-Su Valley for the summer field season in 2006. The program was divided into two sessions with the majority of the interns arriving for the latter of the two in July. The bulk of students hailed from Northern Michigan University (NMU).



Above: Lenore Yeager places a scale sample from a sockeye salmon onto a gum card. Lenore, a biology student from Northern Michigan University, was on the crew that operated the weir at Shell Lake

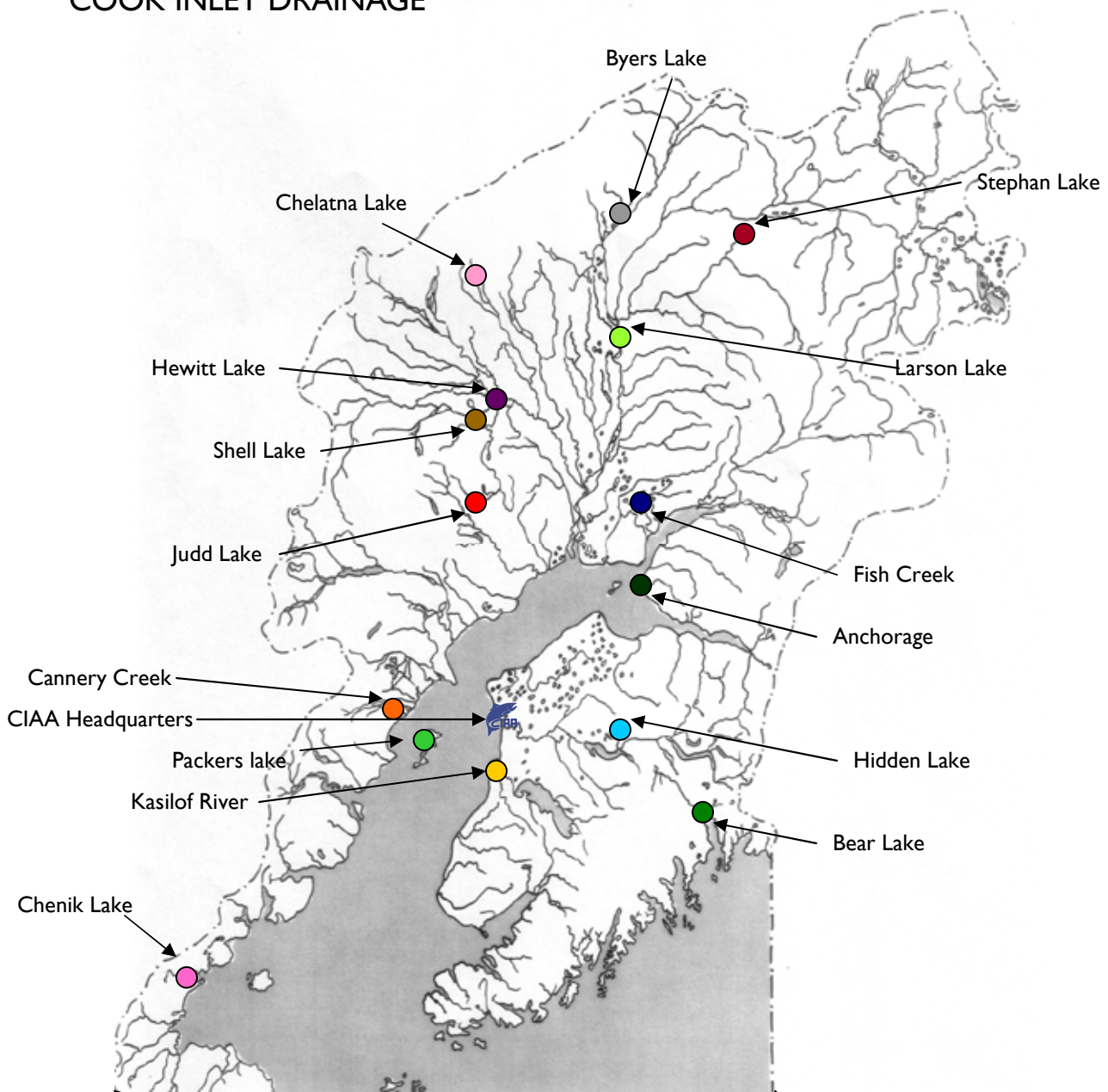
CIAA Senior Biologist, Trent Dodson hosted Dr. Jill Leonard, a biology professor from NMU, for a week in August; the two visited Trail Lakes hatchery, Bear Lake weir and several field camps where Jill was able to get a first hand look at how the Association works with salmon and what some of her student's daily activities involved. Additionally, Trent was able to take part in NMU's science career expo while vacationing in Marquette this fall; there he was able to discuss the program with potential interns for 2007. During the off-season Trent and field biologist, Paul Blanche worked on fine tuning the program's application process, broadening the intern search and organizing intern training sessions. CIAA has selected over 30 interns from seven colleges and universities to participate in the upcoming field season of 2007.



Left: The Fish Creek smolt crew, Grant Slusher, Kyle Bernard, and Matt Backs. Grant and Kyle are biology students from NMU; Matt is a biology student from Wabash College

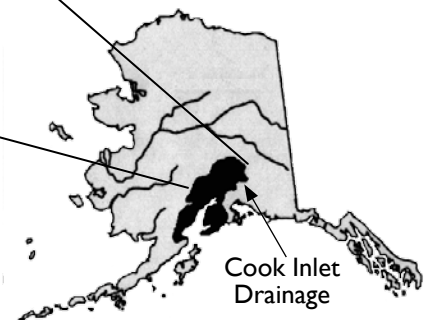
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COOK INLET DRAINAGE



This map indicates all of the areas that the Cook Inlet Aquaculture Association will be enumerating juvenile or adult salmon in 2007.

CIAA Headquarters and Anchorage are show for reference



Eklutna Salmon Hatchery

The Eklutna Salmon Hatchery, located on the Old Glenn Highway near Palmer, is owned by CIAA. The Board of Directors suspended hatchery operations in 1998. The hatchery, however, is maintained and kept in a state of readiness as a reserve facility. In 2006 the hatchery was utilized when low aquifer levels at Trail Lakes Hatchery caused the wells to run at critically low levels. CIAA implemented several improvements to the hatchery in 2006 including, plumbing refurbishing, raceway reconstruction and aeration tower reconfiguration.

In the winter of 2007, CIAA was once again forced to transport Bear Lake and Big Lake smolts to Eklutna Salmon Hatchery. Field Biologist Dan Frisbie, took over hatchery manager responsibilities and was assisted by Mark Thomas, TLH Assistant Hatchery Manager, and Ron Carlson, CIAA Project Technician. The fish were housed and fed at ESH for from February to May and were transported from the hatchery to their regularly scheduled sites of release.



Dan Frisbie, acting hatchery manager at Eklutna Salmon Hatchery, broadcasts food to sockeye salmon smolt



Cook Inlet Aquaculture Association

40610 Kalifornsky Beach Road
Kenai, Alaska 99611
(907) 283-5761

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