

Project #: R0204

Title: NPAFC Salmon Tagging

Principal Investigator(s) and Recipient Organization(s): Jack Helle (jack.helle@noaa.gov)

North Pacific Anadromous Fish Commission (attn.: Vladimir Fedorenko, vladf@npafc.org)

Award Period and Amount of Funding: July 1, 2002 to October 31, 2003

Report Period: July 1, 2002 – December 31, 2002

Report Date: January 9, 2003

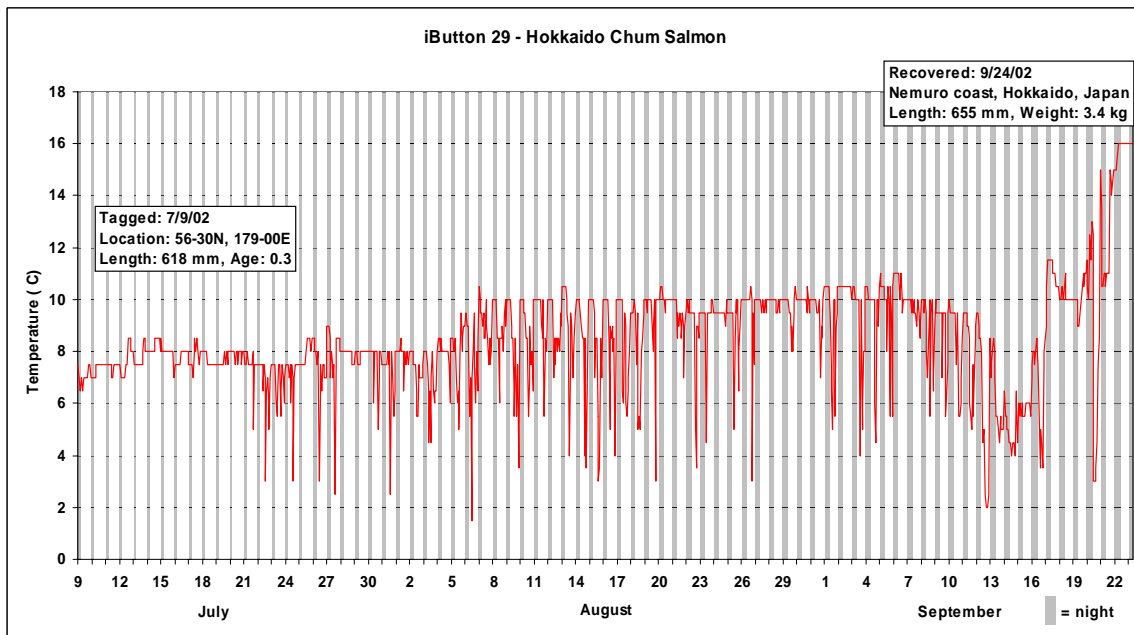
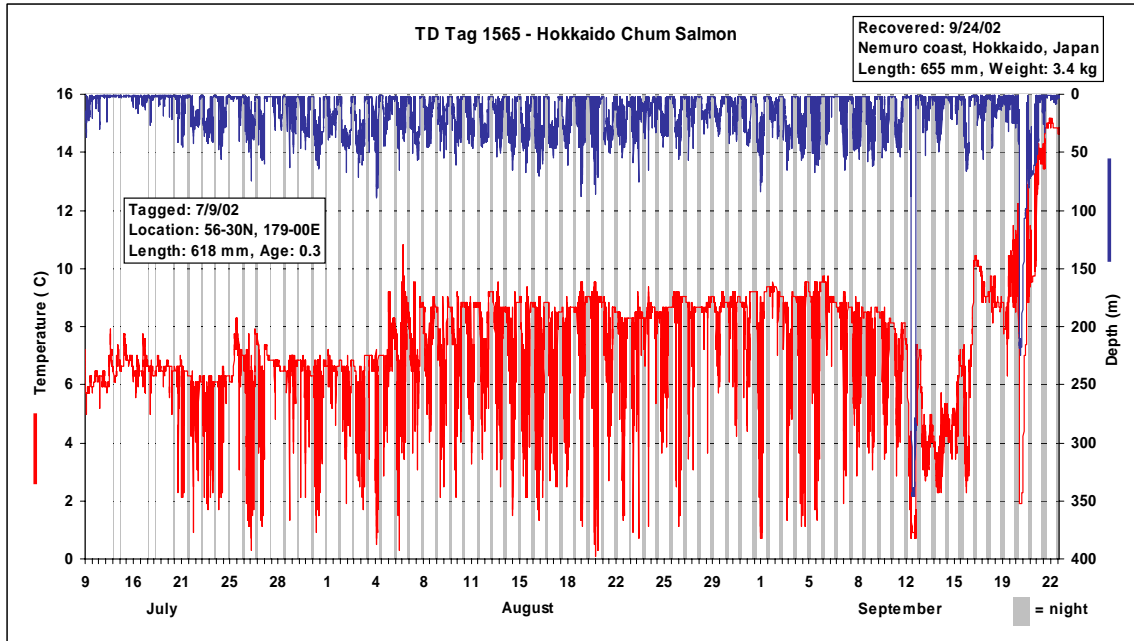
Lead Author of Report: Jack Helle

Project Summary: The goal of the proposed research is to understand the distribution patterns, habitat utilization, and movements of Bering Sea salmon stocks, including western Alaska sockeye, chum, and chinook salmon, through an at-sea tagging program of immature and maturing fish. The proposed work directly addresses the priority of the North Pacific Research Board (NPRB) to study factors affecting western Alaska salmon stock dynamics, mortality, and migration. The NPAFC is planning and coordinating an international cooperative research program, the Bering-Aleutian Salmon International Survey (BASIS), to study the stock dynamics of salmon in the Bering Sea and Aleutian Island ecosystems. The NPRB funding will be used to tag and release approximately 1000 salmon caught during 2002-2003 salmon research vessel cruises in the Bering Sea and Gulf of Alaska. Several types of tags, ranging from simple numbered plastic discs to complex electronic tags that record sea temperature, depth, and daily position estimates will be used. A tag recovery reward program will provide incentive to fishermen and processors to return tags. The BASIS working group of NPAFC will coordinate, implement, and report on the results of the tagging research. The proposed work will complement ecosystem research and monitoring activities of the North Pacific Marine Science Organization (PICES) and Global Ocean Ecosystem Dynamics (GLOBEC), as well as the electronic tagging research activities of the Pacific Ocean Salmon Tracking (POST) program of the Census of Marine Life.

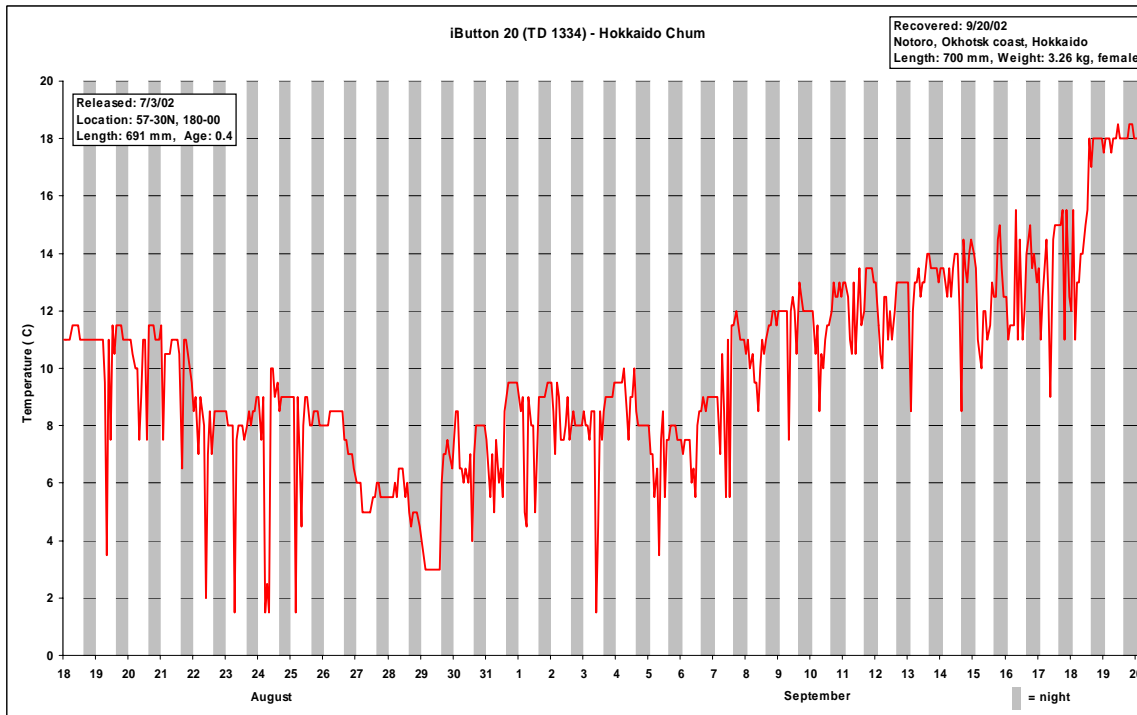
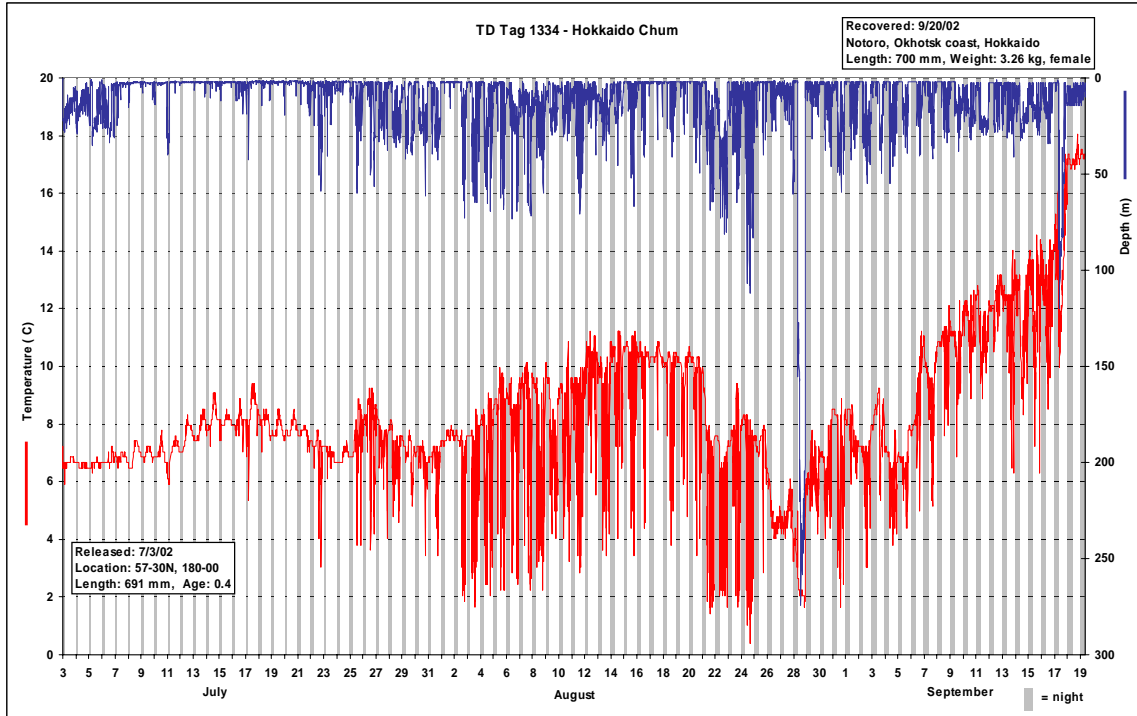
Progress Summary: To date, contract negotiations between NPRB and NPAFC have not been completed. Once I have a signed contract and funds are awarded, I will be able to begin work on this project. The first job will be to immediately order from the manufacturers the electronic tags for deployment during BASIS cruises that begin in May 2003.

In the meantime, NOAA-contracted researchers at the University of Washington field tested and compared the performance of iButton (Alpha Mach, ER-1002) and Lotek Wireless (LTD_1100-300) tags during the Bering Sea research cruise of the Japanese research vessel, *Wakatake maru*, in July 2002. Six adult chum salmon, identified as Japanese origin fish by quick shipboard examination of their scales, were double tagged with the iButton and Lotek Wireless tags and released near the international date line (180° longitude) in the central Bering Sea. To date, three of the six double-tagged chum salmon have been recovered in Japan. Examples of the tag recovery data are shown in the figures below. There were differences in sea temperature recorded by the two tag types attached to the same fish (see last two figures), however, this type of measurement error can be easily corrected by calibrating tags in the laboratory after recovery.

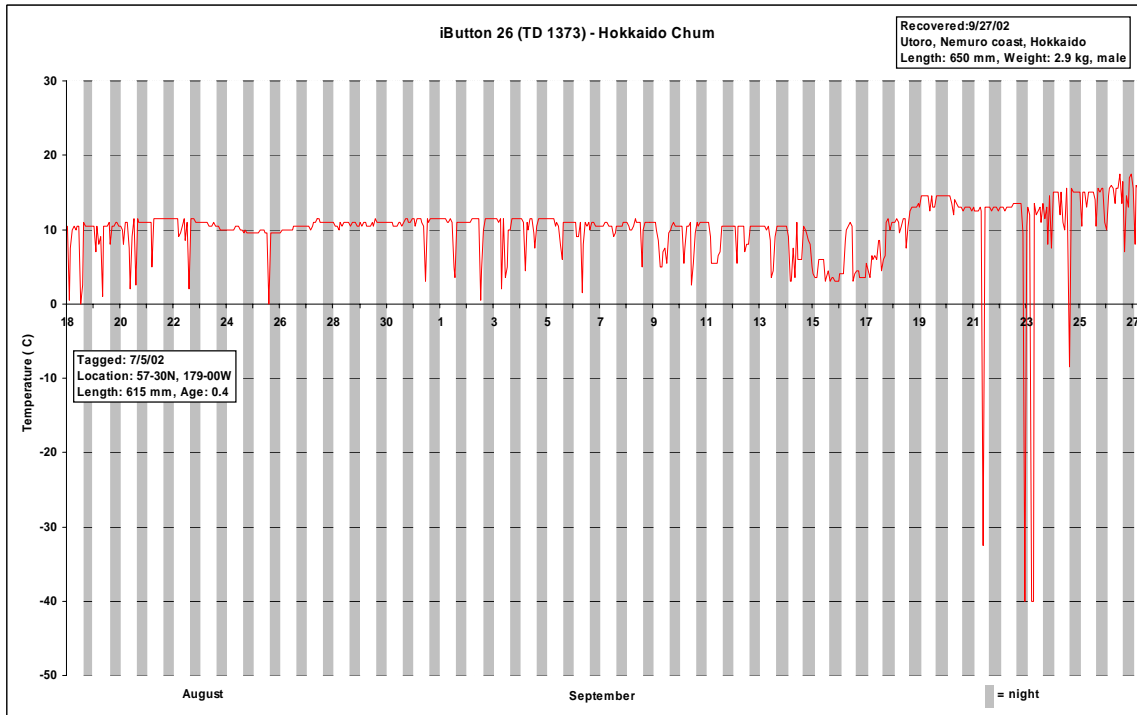
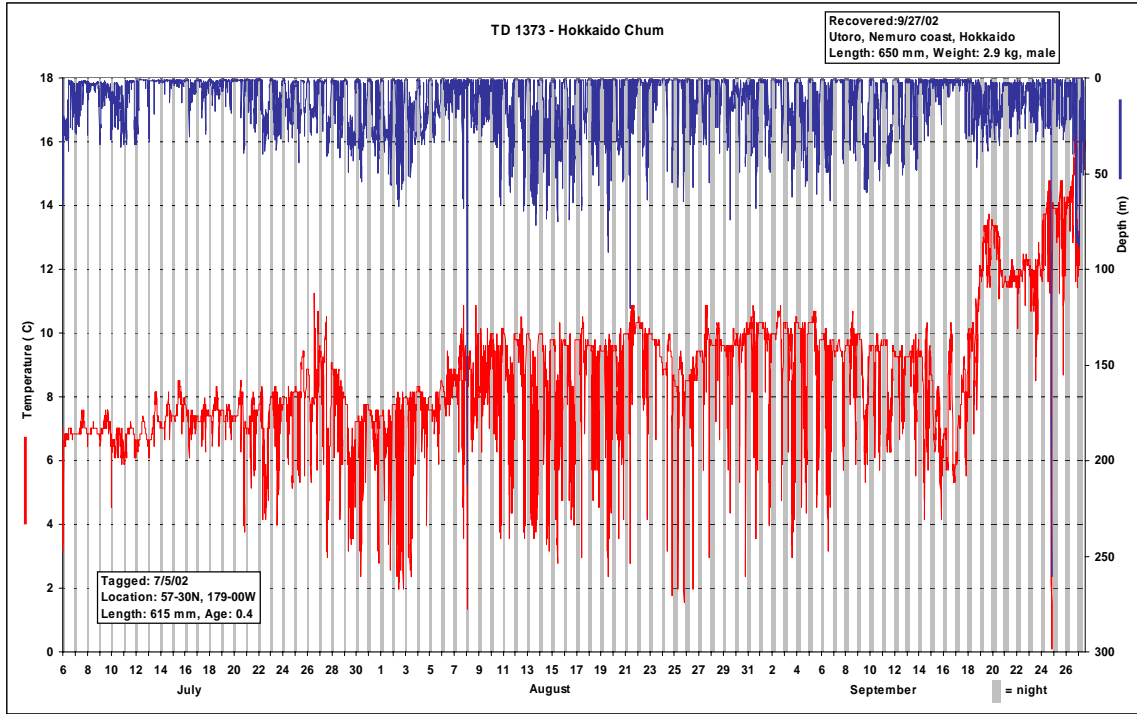
Tags 1565 and iB29 (first recovery)



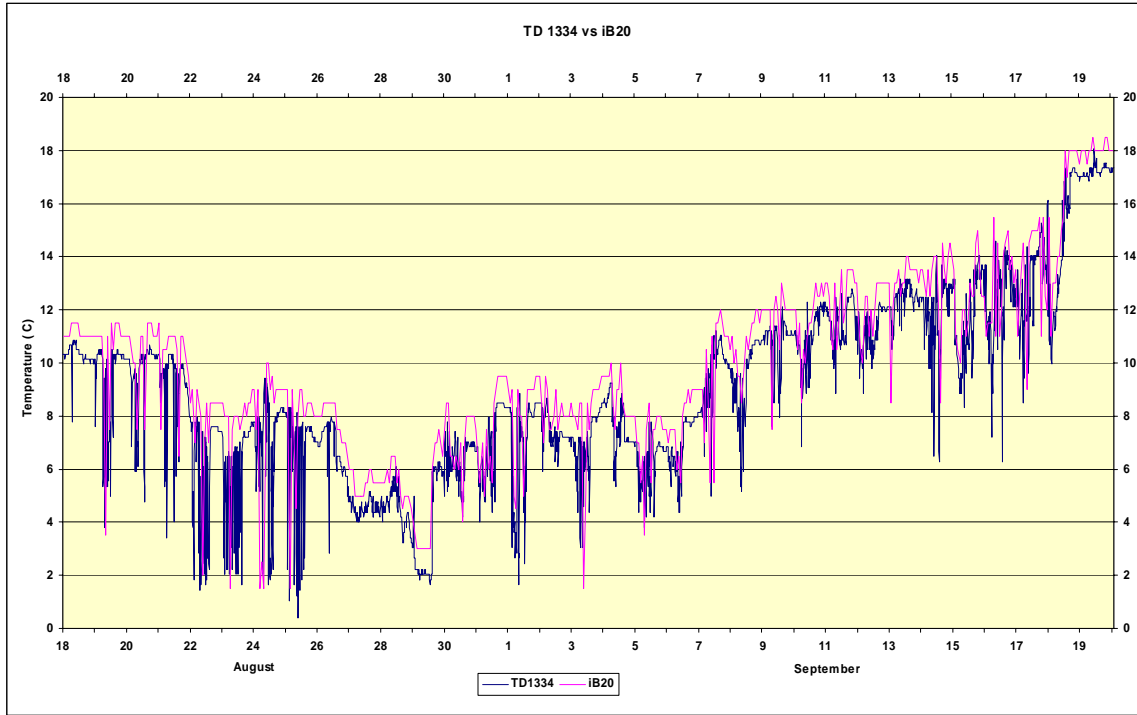
Tags 1334 and iB20



Tags 1373 and iB26



Tag comparisons – 1334 vs iB20



1373 vs iB26

