

Proposal #: 20AKR009-003

Project Title: Development and testing of an in situ imaging and identification system for the assessment of fish passage in small streams

Applicant: Prince William Sound Science and Technology Institute

Priority Addressed Priority #2 – Science or Technology that Promotes Sustainable U.S. Seafood Production and Harvesting

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Abstract: This project proposes to develop low-cost and low-power camera systems to be deployed in small clear water streams to count fish passage. The camera systems will include an onboard micro supercomputer that will be trained to identify different species of salmon as they pass and detect if they are moving up- or down-stream. The systems will be designed to transmit their counts of fish passage in near real-time through a cellular or satellite data connection. The cameras will be developed for Eshamy Creek, a small sockeye, pink and coho salmon stream in Prince William Sound that has historically been managed in part with a small weir where fish passage was directly counted, but which was cancelled due to budget cuts in 2011. The Eshamy Creek weir will be redeployed to provide training images and ground-truth data for the camera systems. Fish passage counts made at the weir will also be used by area managers for in-season management of fisheries in the region for the two years of the project. If successful, the cameras are expected to be an economical method for estimating fish passage that will complement or potentially replace other existing methods.

Summary of potential commercial benefits to the fishing community of the research results: This project will develop a new technology, underwater cameras with onboard computers, to count and identify fish as they pass, providing valuable escapement information to salmon fisheries managers (among others) making in-season decisions about fishing opportunities. This project will also reinstate a weir used for in-season management in western PWS that was cancelled due to budget cuts. The weir will be used to collect training and ground-truth data for the cameras, but will additionally again provide real time data on salmon escapement for the fisheries managers of the district for the duration of the project
