



mounted into the rock substrate. Rods, permanently attached to the diversionary board, when placed into the supporting sleeves, will support the entire device for the duration of the migration season.

Water diversion structures are also installed to keep the proper flows through various fish passes in the Pauls Lake (Pauls/Laura/Gretchen) system and along Portage Creek, also within the Perenosa Bay area. We propose constructing and installing improved diversion devices as described above for Little Waterfall Creek.

The Frazer Lake fish pass facility, near the south end of Kodiak Island, consists of fish passes and a diversion weir, the latter to prevent fish approaching the fish pass from attempting to navigate the barrier falls. The original fish pass covers were made of wood, and many of them are now missing or broken. The missing fish pass covers are problematic because migrating fish can fall out of the fish pass, and it also poses a hazard to field crew that occasionally walk up the fish pass. At the upstream end of the fish pass, where fish exit the structure, part of the concrete has been eroding, deteriorating more every year and must be repaired soon. The diversion weir would be repaired by drilling out the existing bolts, cleaning out the gravel, and installing new angle iron. Additionally, the old fish pass covers would be replaced with aluminum covers and eroding concrete at the fish pass exit would be repaired with high-strength quick-set concrete.

*Laura Creek Staging Pool:* The first upstream staging pool in the Pauls/Laura/Gretchen system, which was constructed in 1952, has deteriorated to the point that temporary repairs are not sufficient to keep it operational. This pool is essential to enable migrating salmon access to upstream habitat. We propose to build a new pool using standard concrete construction techniques (forms, rebar reinforcement, and concrete).

*Kodiak Weir Materials:* The primary basis of inseason management for Kodiak sockeye and chinook salmon is a complex of seventeen salmon enumeration weirs. Several of these systems, such as the Karluk, Ayakulik, Dog Salmon and Afognak rivers, are responsible for most of the sockeye salmon and all of the chinook salmon production in the Kodiak archipelago. One of the largest expenses incurred for weir projects is the continual replacement of lumber due to aging in response to exposure to the elements. Not only is the cost of replacing the lumber substantial, but the frequent transport of these materials to remote weir sites is a recurring and substantial expense.

The replacement of existing wooden tripods and stringers used in current weirs would be accomplished with two types of structures: 1) aluminum tripod weirs and 2) PVC-pipe floating weirs. The aluminum weirs would consist of aluminum tripods, stringers and picket panels similar in design to the current wooden structures; consideration will also be given to an alternate method utilizing metal rails on the stream bottom supporting picket panels. The second design, following successful attempts in other areas of the state, would be a "floating" weir constructed of PVC-pipe pickets that effectively adjust to fluctuating water levels; this design would be specifically tested at the Ayakulik River.

This project, while not providing for sufficient materials to replace all the existing weirs in the Kodiak Management Area, would allow for replacement of those in worst repair and for testing of the floating weir design in local waters.

*Communication (satellite telephone) Upgrade for Weir Camps:* Single Side Band (HF) radios are currently used for communication between ADF&G biologists in Kodiak and many remote field projects. Solar activity, atmospheric conditions, or electronic interference often cause poor reception, limiting communications. Recent improvements in satellite telephone systems and reductions in system costs allow this technology to be a feasible alternative. Currently, four remote field projects and two research vessels utilize this technology, proving the viability of this technology as a communication option. Also, system prices are now less than the replacement cost of SSB radios. Further advantages include increased safety (the satellite systems are able to dial an emergency number at any time, while SSB radio communication only works if someone is listening at the other end), privacy (these are digitally encoded signals; it is not possible for someone else to intercept and unscramble the signal), and the ability to transmit data.

*Remote Field Station Repairs/Maintenance:* Remote field stations at Ayakulik and Afognak Rivers are located on Native Corporation lands and long-term lease arrangements have been made for fisheries management and research. Crews spend up to 4 months on site. We propose dedicating funds to repair and conduct needed maintenance on the cabins used for housing the crews.

