

# STATE OF ALASKA

## DEPARTMENT OF FISH AND GAME

### DIVISION OF SPORT FISH

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## MEMORANDUM

TO: Carl Schrader, Habitat Biologist  
Division of Habitat Management and Permitting  
Department of Natural Resources  
Juneau

DATE: April 5, 2005

FROM: Ben Kirkpatrick  
Habitat Biologist

SUBJECT: Skagway Flood Control Mitigation Projects

The Sport Fish Division (SFD) Watershed and Restoration Program provides the following comments on the Skagway Flood Control Project (Skagway River 10). These comments only pertain to the proposed mitigation projects that are intended to improve fish habitat in the Skagway River and its tributary Dairy Creek and summarize our discussions on a teleconference of April 1, 2005.

### Dairy Creek Habitat Improvements

A design typical is attached that should be used in constructing the riffle-pool sequence that is proposed. This includes 10' of spawning gravel followed by 20' of riffle gravel immediately downstream. Specifications of the two gravel types are also attached. The first riffle structure should be constructed at the existing culvert that is scheduled to be removed. This should be followed by a 30' pool and then an additional riffle structure. This sequence should be followed for the length of the dikes along Dairy Creek.

Currently there exists adequate riparian vegetation along most of Dairy Creek in the project area. Any disturbed area between the toe of the dike and Dairy Creek should be revegetated with willow live stakes and native grass seed.

The original proposal included a bottomless structure to cross Dairy Creek to access private land. Because of the low gradient and moderate flows, there is minimal threat of scour occurring in this location. A round of oval CMP that is set at least 2' below grade would be just as effective as a bottomless structure in this location.

The condition of the confluence of Dairy Creek and the Skagway River is critical to the success of any habitat restoration in Dairy Creek. Access to this location needs to be secure so that minor work can be done to improve fish passage. There will be times when fish passage will not be possible due to natural migration of the Skagway River active channel.

### East Side Island Bank Protection

The proposed hard points and cottonwood/willow post planting should protect the bank of this island and promote riparian vegetation in an area that currently has none. Less than 80% survival rate of the pole plantings will compromise the benefits of this project, replacement should occur if the survival is less than 80%.

### Monitoring

As a standard procedure, monitoring should always be included as an integral part of habitat improvement projects. Established photo points are a cost effective method of documenting project change over time. As-built surveys should be completed when both habitat improvement projects are completed. A thalweg survey of Dairy Creek will monitor the pool/riffle sequence for change. Vegetation surveys to document success of willow/cottonwood plantings and grass seed survival should also be included.

The SFD Watershed and Restoration program will volunteer to establish these photo points and conduct an initial thalweg survey. Ideally, a thalweg survey should be completed prior to construction. The Taiya Inlet Watershed Council should be able to conduct follow up surveys.

cc: Joe Donohue, OHMP, Juneau  
John Klutz, COE, Anchorage  
Amber Bethe, TIWC, Skagway