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CLPP Relicensing Project

Dear Mr. Burke,

First I'd like to thank you for providing me with the opportunity to comment on the Cooper Lake Fish Resources Study: Draft 2003 Study Plan, Relicensing Document # 6A. I was pleased to find that this plan is extremely well written and proposes to address most of the fishery concerns. I do, however, offer a few comments and suggestions.

Aging of Arctic char is proposed using scales. Information at my disposal shows that ages of older Arctic char cannot be accurately determined using scales. The Kenai Fishery Resources Office aged six Arctic char collected at Cooper Lake on November 22, 1999. The Kenai FRO, using otoliths, determined that two 16 inch char taken that day were nine years old. A reference work on char by Balon concluded from eight studies (page 58) "that otoliths provided the most satisfactory material for aging". Based on this information I recommend that otoliths be used for aging Arctic char from Cooper Lake for this relicensing study.

I was also pleased to learn that two char spawning areas have already been discovered this fall in Cooper Lake. The draft plan did not indicate, however, if the spawning areas were being used by dwarf or the normal sized morphological forms.

There are two color phases of the larger char in both Cooper and nearby Char Lakes. It is not known if these color phases represent separate populations that are reproductively isolated. Of interest was the fact that the largest Arctic char (n=906) captured in nine gill netting efforts by resource agencies since 1973 was a gray color phase male that was 19.9 inches long and weighed 2.75 pounds. It was captured by the Kenai FRO on June 8, 2000.

Tagging studies at Karluk Lake on Kodiak Island by DeLacy indicated that Arctic char showed little movement. Most of the recaptured char were found a year later where they had been tagged or nearby. I throw this observation out to suggest that a spawning area for gray color phase char may be near the south end of the rocky islands along the southwestern side of Cooper Lake. That's where the 2.75 pound gray char was taken. The Kenai FRO has the latitude and longitude of this gill netting location. If anyone is curious I have a color photo of that male char.

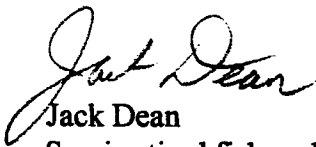
This draft study plan indicates only six sexually mature Arctic char will be radio tagged in an effort to locate additional spawning areas. In light of the unknown status of the gray color phase char this level of radio tagging does not appear adequate to locate their spawning areas. It is apparent that a larger radio tagging effort is needed including some sexually mature gray char.

If this study determines that dwarf and normal sized char are reproductively isolated I would suggest that adequate numbers of pyloric caeca and gill rakers be counted to determine if significant differences exist. To date I've counted 9 dwarf and 12 normal sized char from Cooper Lake. My limited sample shows that the dwarfs have fewer pyloric caeca and gill rakers.

#### References

Balon, Eugene K. 1980. Charrs, salmonid fishes of the genus *Salvelinus*. Dr. W. Junk bv publishers. The Hague, the Netherlands. 928 p.

DeLacy, Allen C. 1941. Contributions to the life histories of two Alaskan charrs, *Salvelinus malma* (Walbaum) and *Salvelinus alpinus* (Linnaeus). Ph. D. thesis. Univ. of Wash. Seattle. 144 p.



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