

March 7, 2008

Review comments on Dr. Kenn Brooks document: "The frequency of *Mytilus edulis galloprovincialis* alleles in Washington State marine waters where the species is commercially cultivated" (electronic file name: "Taylor EIS - mussel genetics August 31 2005").

Review by R. Elston, ITR Committee member.

I have attached a copy of the Brooks document I received in November 2007. This document deals with genetics and escapement. I have added comments and made insertions in track changes mode. I did not do a detailed edit on the document, because editing is not the job of the ITRC, as I understand it. Where more substantive changes are needed, in the opinion of this reviewer, comments are inserted in the attached draft. However, in addition to such comments, I made yellow highlights where there were misspelled words or other obvious needed editorial changes. There may be additional editorial corrections needed that I did not highlight.

A primary point of the paper prepared by Dr. Brooks is that the view that *Mytilus galloprovincialis* is a European invasive species, as claimed in the widely cited McDonald and Cohen (1988) paper, is not valid nor supported by later literature. Dr. Brooks discusses the later paper by Kenchington et al (1995), and other later papers, that demonstrate that Pacific Northwest *Mytilus trossulus* are genetically more similar to European *Mytilus galloprovincialis* than Pacific Northwest *Mytilus galloprovincialis*. Also discussed are physiological characteristics of the two species of mussels on the west coast of the US, and that they may be long resident and native species that occupy different niches, and for which partial gene flow barriers exist, although they can, and occasionally do, hybridize.

In addition, Dr. Brooks discusses his work on earlier projects, his collection of mussels from Totten Inlet, the molecular genetic results from the Totten Inlet mussels (as conducted by Dr. Patrick Gaffney). The rate of hybridization of the two species of mussels in Totten Inlet appears similar to the rate of hybridization in other locations in Puget Sound.

Dr. Brooks' interpretation appears to be valid but his report is in need of a good edit to correct many typographical errors and to organize the paper by more appropriate and understandable subject categories. The primary substantive points that need clarification are made in comments on the draft in MS Word Track Changes mode.