

Feb. 24, 2020

To: House Fisheries Committees

Hon. Louise Stutes  
Hon. Bryce Edgmon  
Hon. Chuck Kopp  
Hon. Jonathan Kreiss-Tompkins  
Hon. Geran Tarr  
Hon. Sarah Vance  
Hon. Mark Neuman

From: Milo D. Adkison, Ph.D.

Re: HB199

I'm a professor of fisheries with a long history of research on and involvement in Alaska's fisheries. I'm once again writing to oppose the draft of House Bill 199 "An Act relating to fish; and establishing a fisheries rehabilitation permit", which is a revision of legislation introduced in previous legislative sessions. While I understand the desire of Alaskans to do something to help fish stocks on which they depend recover more quickly, the fish cultivation approach in this bill is misguided. In my professional opinion, the small-scale fish enhancement efforts motivating this bill will do more harm than good. They are not a sensible strategy for responding to current weak productivity in some of our salmon stocks.

When enhancement works, the enhanced stock can sustain higher harvest rates. Unfortunately, when the enhanced fish are mixed with other stocks on the fishing grounds, harvesting at this higher rate will overharvest the other fish, driving their populations lower. This is a serious problem in gauntlet fisheries such as we have on the Susitna, Yukon and Kuskokwim rivers, where mixed stocks of salmon are subject to several fisheries in the approaches to and in the mouths of the rivers.

Imagine four stocks in a river, all adapted to conditions in their specific tributaries, and all experiencing a poor climatic conditions so that they can no longer sustain a harvest. A local group enhances one stock, so now this stock can be harvested. But the fish from all four stocks are mixed in the fishery at the lower part of the river and in the inlet leading to the river. Any such fishery will overharvest the three non-enhanced stocks, driving them even lower. Any strays from the enhanced stock will have a large effect on the genetics of the depleted non-enhanced populations' spawners, greatly diluting the locally-adapted genes, and further reducing these stocks' productivity. Alaska's salmon hatcheries are required to release fish in areas away from wild stocks; this mixed stock fishery problem is a major reason why.

Other genetic problems also arise when enhancement works to produce large numbers of fish. Domestication can happen rapidly in captivity, and these traits can reduce survival in the wild. Enhancement increases the number of offspring of the fish used for broodstock, so that the population ends up with a high number of closely related individuals. Successive generations of enhancement results in the majority of the population being highly related; this inbreeding can expose genetic defects, and the loss of genetic diversity makes the population less able to adapt to environmental changes. To

prevent these problems, ADF&G has strict breeding protocols requiring large broodstock numbers for hatchery facilities. Small-scale projects are unlikely to be able to follow these protocols.

Finally, there are obvious problems if enhancement fails; fish taken for broodstock or incidentally disturbed during egg takes reduce the natural reproductive potential of the population.

I'll highlight several notable specifics of this bill:

The language "...place the incubated and fertilized eggs or hatched fish in the same waters" is a significant improvement over a previous version that would have allowed transplanting fish among watersheds, which is for good reason prohibited in Alaska's fisheries genetics policies.

The language "local stakeholders have identified a decline in the number of the species of fish" is unchanged from the previous bill, and seems to set a very low bar to justifying an enhancement project. Other conditions necessary for the commissioner to issue a project, such as only permitting a project when "subsistence and escapement goals have not been met" and requiring that a project "will not harm indigenous wild fish stocks" are reassuring.

However, these assurances are completely negated by the requirement that a complete application be judged within 90 days, which is by no means sufficient time to allow a thorough review of the potential benefits and risks. Additionally, the "zero cost" fiscal note implies that ADF&G will not receive any additional resources to support necessary review and oversight.

I do not support this legislation. The best response to lows in the cycles of fish productivity is to reduce fishing pressure and maintain the integrity of the habitat. This strategy has proven successful in the past, and entails little risk to our fish stocks. Should significant conservation concerns arise where supplementation efforts would be useful, ADF&G has the expertise and internal oversight capabilities to best accomplish this. I urge you not to proceed with well-intentioned but risky misguided private enhancement efforts.