

Written testimony submitted 3/17/2021 for House Committee on Agriculture and Natural Resources hearing on HB 2844

Dr. Chris Jordan, Federal research fisheries biologist

Corvallis, Oregon

Chair, committee members, thank you for the opportunity to provide testimony. My name is Dr. Chris Jordan, I am a federal research fisheries biologist with two decades of experience in stream habitat restoration based on beaver. My professional responsibility is to support the rebuilding of salmon and steelhead populations to commercially and recreationally harvestable levels in the Pacific Northwest. Realistically, the only way we can return robust salmon and steelhead populations across Oregon is by increasing the quantity and quality of freshwater habitat.

Beaver dams, ponds, channels, burrows and floodplain connection are important to more than just beaver, they are key aquatic components of fish habitat. When beaver modify a valley bottom, they are creating ideal spawning and rearing conditions for salmonids.

The research community that I have been part of for two decades has demonstrated that beaver dams, ponds, side channels, and floodplain connections fundamentally change the physics and biology of streams in hugely beneficial ways. We have shown that salmonid populations in beaver dominated watersheds are twice as productive as watersheds without beaver; a single beaver dominated stream reach can result in a two foot rise in ground water elevation across the valley floor. This means increased riparian vegetation and macro-invertebrate production, key for generating fish food. We demonstrated that beaver improve stream temperature conditions, both buffering of extreme temperatures and increased temperature diversity, factors that are critical to good fish habitat, increasing summer and winter survival of juvenile salmonids by 50%. Our research demonstrates that beaver modified stream reaches have vastly more wetted area – more pools, more channels, more space for fish to live, resulting in up to 10-fold increases in juvenile salmonid numbers.

From our work, it is clear to me that salmon and steelhead recovery in Oregon will arrive on the backs of beaver.

Beaver in Oregon need to be managed for numbers and locations that allow them to change the face of streams and rivers. Currently beaver in Oregon are managed to provide sufficient trapping opportunities and to avoid the potential to cause property damage, and for those purposes the current management

structure is sufficient. However, beaver exist on the landscape for reasons other than to surrender their pelts or to be prevented from plugging undersized culverts. Beaver are the fundamental architects of healthy, productive riverscapes. To serve in this role, beaver need to be far more abundant, and be able to establish durable, resilient floodplain habitats. Our job as resource managers is to develop the management structures that support beaver in Oregon in this role and then to get out of their way and let them do their job.

The ecosystem services Oregon expects from its watersheds – clean, abundant water, productive forests, buffering of high and low flow events, robust fish and wildlife populations – depend on beaver. Simply put, our research tells us that we need beaver at higher numbers and persisting for generations, if we want to meet our goals.

I am a professional fisheries biologist. I have a job to help manage the commercial exploitation of natural fish populations. I know that we can manage for robust populations, exploitation and ecosystem benefits. I also know that we can manage to drive populations to extinction, industries to shutter and ecosystems to collapse. Successfully managing populations means using a broad suite of tools, including closures, quotas, regulations, assessments, and forecasts, but also depends on shifting values and goals as we learn, as climates change and as human populations grow.