



January 27, 2023

Senator Jeff Golden, Chair  
Senate Committee on Natural Resources  
900 Court St NE, S-421  
Salem, OR 97301  
Email: [Sen.JeffGolden@oregonlegislature.gov](mailto:Sen.JeffGolden@oregonlegislature.gov)

RE: Comments on Senate Bill 89 as amended in Committee

Dear Senator Golden:

Please accept and act upon the comments of the National Aquaculture Association<sup>1</sup> in opposition to certain principal components of Senate Bill 89-1. We are not opposed to thoughtful review and analysis of US aquaculture production practices and regulations but we are opposed to legislation that is created, as SB 89-1 has been, without public comment that includes knowledgeable stakeholders especially Oregon's aquatic and plant farming community and state and region aquaculture research and extension professionals.

### **Farmed Aquatic Animal Welfare**

There continues to be uncertainty within the scientific community as to whether fish, molluscan shellfish or octopus and squid are sentient or experience fear, pain or stress similar to human psychology, physiology and emotion. We recommend the bill authors read a peer-reviewed paper by Browman et al. (2018) entitled: *Welfare of aquatic animals: where things are, where they are going, and what it means for research, aquaculture, recreational angling, and commercial fishing.*

The authors thoroughly review the evidence attributing sentience-pain-suffering to aquatic animals. Their objective was to inform readers of the current state of affairs, to direct attention to where research is needed, and to identify "wicked" questions that are difficult to resolve unequivocally. They accomplished the very difficult task of separating the ethical from the scientific debate, while applying organized skepticism to the latter, to focus and strengthen research on aquatic animal welfare.

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<sup>1</sup> The National Aquaculture Association (NAA) is a U.S. producer-driven, non-profit trade association founded in 1991 that supports the establishment of governmental programs that further the common interest of our membership, both as individual producers and as members of the aquaculture community. For over 32 years NAA has been the united voice of the domestic aquaculture sector committed to the continued growth of our industry, working with state and federal governments to create a business climate conducive to our success, and fostering cost-effective environmental stewardship and sustainability.

A second, closely-related objective of their paper, was to briefly summarize the research used to support the regulations governing the welfare of aquatic animals, particularly its limitations. The authors reported that if the regulatory environment continues on its current trajectory (adding more aquatic animal taxa to those already regulated), activity in some aquatic animal farming sectors could be severely restricted, even banned. They conclude, and we strongly support, *extending legal protection to aquatic animals is a societal choice, but that choice should not be ascribed to strong support from a body of research that does not yet exist, and may never exist, and the consequences of making that decision must be carefully weighed.*

### **US Aquaculture and the Current Regulations**

It is an unfortunate circumstance the public does not fully appreciate the progress made by the US aquatic farming community to achieve and exceed global sustainability goals (FAO 2022) nor the scope and complexity of the state and federal regulatory framework governing current farmed fish, shellfish and invertebrate. We recommend the bill authors read a recent paper by Zajicek, et al. (2021) entitled, *Refuting marine aquaculture myths, unfounded criticisms, and assumptions.*

The authors present an in-depth analysis arguing sustainable domestic aquaculture development is a critical component to achieving greater U.S. seafood security in the future, yet detrimental allegations have corrupted public support. A variety of longstanding, inaccurate myths and assumptions directed at aquaculture farming and its regulation have been foisted on the public. Their paper refutes the most prevalent critiques by reviewing current policies, regulations, research and industry production practices. These criticisms include: inadequate regulatory oversight; portrayal of farms as being high density factories unconcerned by feed waste, untreated discharge, unregulated use of drugs and chemicals; entanglement of marine mammals; impacts on wild stocks and habitats; use of feed additives to pigment fish flesh; unsustainable use of fish meal in feed formulations; potential market disruption by producing cheap, low quality products; and commercial farms and commercial fishers cannot coexist as for-profit businesses. All of these criticisms are examined and debunked.

Aquaculture is not risk-free in terms of potential environmental, economic, social, and cultural impacts and challenges remain to achieve a sustainable industry. These challenges are well known and addressable by the United States and global research community. Current aquatic animal and plant farming realities bode well for the future:

- 1) there is a clear global imperative to sustainably produce more seafood to meet growing demand and the United States has the land, water and feed resources to become a major producer rather than a net importer with an annual seafood deficit of \$17 billion;
- 2) U.S. farmers work within a very complex and effective legal, regulatory, science-driven environment to anticipate and mitigate potential impacts;

- 3) farm level management decisions and federal and state regulatory frameworks have worked together to bring about environmentally friendly siting, operational, and production outcomes; and,
- 4) the farming community and its advocates in government, universities, and industry recognize it is essential to reach out to decision-makers and the interested public, as well as critics, with the latest research and empirical results to present an accurate picture of risks and rewards to development.

### **Existing Federal Regulatory Framework**

As aquatic animal and plant farmers, we recognize 20 Congressional Acts authorizing 9 federal agencies and 15 offices to regulate US aquaculture.

The Acts include: Animal Health Protection Act; Animal Medicinal Use Drug Clarification Act; Coastal Zone Management Act; Endangered Species Act; Federal Food Drug and Cosmetic Act; Federal Insecticide, Fungicide, and Rodenticide Act; Fish and Wildlife Coordination Act; Federal Water Pollution Control Act (Clean Water Act); Food Safety Modernization Act; Lacey Act; Magnuson-Stevens Fishery Conservation and Management Act; Marine Mammal Protection Act; Migratory Bird Protection Act; National Environmental Policy Act; National Historic Preservation Act; National Marine Sanctuary Act; National Invasive Species Act; Non-indigenous Aquatic Nuisance Prevention and Control Act; Outer Continental Shelf Lands Act; and Rivers and Harbors Act.

The federal agencies and offices include: Council on Environmental Quality; Dept. of Agriculture: Agricultural Marketing Service, Food Safety and Inspection Service, Animal and Plant Health Inspection Service; Dept. of Commerce, National Oceanic and Atmospheric Administration: National Marine Fisheries Service (Protected Resources and Office of Aquaculture); Dept. of Defense: Army Corps of Engineers, Navy, Air Force; Dept. of Health and Human Services: Food Drug Administration (Center for Food Safety and Applied Nutrition, Center for Veterinary Medicine); Dept. of Homeland Security: Cybersecurity and Infrastructure Security Agency, U.S. Coast Guard; Dept. of Interior: Bureau of Ocean and Energy Management, Bureau of Safety and Environmental Enforcement, Fish and Wildlife Service (Ecological Services, Branch of Invasive Aquatic Species); Dept. of Transportation: Federal Aviation Administration, Federal Motor Carrier Safety Administration; Environmental Protection Agency: Office of Water.

Notably, 2022 marked the 50<sup>th</sup> year anniversary for the Clean Water Act and Coastal Zone Management Act and 2023 will mark the 50<sup>th</sup> year anniversary for the Endangered Species Act. We believe public investment at the federal, state and tribal levels have realized significant environmental protection and conservation benefits. And little recognized by the public is the Acts are implemented by regulations codified in the Code of Federal Regulations which has been significantly influenced by litigation over the last fifty years to sharpen restrictions and prohibitions.

### **Regulatory Costs**

Rainbow trout are farmed in Oregon. Engle, van Senten and Fornshell (2019) examined the effects of state and federal regulations upon salmonid farms. They conducted a national survey of salmonid (trout and salmon) farms in 17 states of the United States, including Oregon, to measure on-farm regulatory costs and to identify which regulations were the most costly to this industry segment.

The regulatory system resulted in increased national on farm costs of \$16.1 million/year, lost markets with a sales value of \$7.1 million/year, lost production of \$5.3 million/year, and thwarted expansion attempts estimated at \$40.1 million/year. Mean farm regulatory costs were \$150,506/farm annually, or \$2.71/kg; lost markets with annual sales values of \$66,274/farm; annual lost production of \$49,064/farm; and an annual value of thwarted expansion attempts estimated at \$375,459/farm. As an example of this impact, small farms cannot get started or operate profitably. A farm producing 20,000 pounds a year experiences a regulatory burden of \$3.31 per pound.

Smaller-scale farms were affected to a disproportionately greater negative extent than larger-scale farms. Per-farm regulatory costs were, on average, greater for foodfish producers than for producers selling to recreational markets, but per-kg regulatory costs were greater for those selling to recreational compared to foodfish markets. Regulatory costs constituted 12% of total production and marketing costs on U.S. salmonid farms. The greatest regulatory costs were found to be effluent discharge regulations. The majority of regulatory costs were fixed costs, but regulatory barriers to expansion precluded compensatory adjustments to the business in spite of growing demand for salmonid products.

Results of this study show that the on-farm regulatory cost burden is substantial and has negatively affected the U.S. salmonid industry's ability to respond to strong demand for U.S. farm-raised salmonid products. Results also suggest that the regulatory system has contributed to the decline in the number of U.S. salmonid farms. While regulations will necessarily have some degree of cost to farms, the magnitude of the on-farm regulatory cost burden on U.S. salmonid farms calls for concerted efforts to identify and implement innovative regulatory monitoring and compliance frameworks that reduce the on-farm regulatory cost burden.

The US aquaculture community (farmers, research and aquaculture extension specialists) has been educated at the same universities or schools as are the critics and regulators. We have taken the same courses in marine or freshwater biology and ecology to understand animal, plant and ecosystem function and the invaluable benefits of intact natural systems to society. Our farming methods and farm management have been and continue to be influenced by this education, research and the information and demonstration projects completed by aquaculture extension (Land Grant and Sea Grant programs). We care for our animals for if we don't, we fail as

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farmers and businesses. The hard-earned outcome is global recognition that U.S. aquaculture sets the standard for responsible, sustainable aquaculture (Tucker and Hargreaves 2008). We recommend thoughtful reconsideration of the proposed legislation and offer our assistance to dig deep into production practices, animal care and regulations. We believe that if the bill has been driven by serious, selfless critics that are seeking factual, informative answers, then when all is said and done, they will recognize the functional sustainability of aquatic animal and plant farming as practiced in the United States (Boyd et al. 2020).

Thank you for the opportunity to comment, please do not hesitate to contact us with questions or additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'S Belle', written in a cursive style.

Sebastian Belle  
President

cc: Clinton J. Bentz, President, Oregon Aquaculture Association  
Jeanne McKnight, Executive Director, Northwest Aquaculture Alliance

## References

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