

National Aquaculture Association

Seafood Watch Standard for Aquaculture

Version F4

July 8, 2024

General Comments:

The National Aquaculture Association¹ is appreciative of the continual improvements to Seafood Watch made by the Monterey Bay Aquarium over the last 25 years. The breadth of depth of the draft standards is impressive and speaks to an organizational and staff investment that may be unmatched in the world. We support this effort and offer comments in support of the ten criteria from the perspective of the farmers growing seafood within the United States.

Occasionally, the draft refers to third party certifications as being equivalent to laws and regulations enforced by governing public agencies. We suggest not all certifications are equal in their standards or verification of farmer implementation. Seafood Watch should assess whether certification standards are similar to their standards and whether the certification process (i.e., verification) is rigorous, repeatable and documented.

We suggest Seafood Watch improve the transparency of their effort by posting a response to the comments. Over the years, many U.S. seafood farmers have participated in reviewing proposed standards for various species. Developing thoughtful comments represents a significant time investment by farmers and professionals and it is frustrating when there are not incorporated in the final document. If Seafood Watch wants to ensure participation in future review efforts, we suggest an explanation should be provided as to why comments and revisions were rejected. This transparency would certainly differentiate your effort and legitimize your claim of “developing a trusted, rigorous standards...built on a foundation of science and collaboration...” , and will encourage thoughtful reviews especially as your standards expand in complexity and scope.

Specific Comments:

Bullet 8, Page 7. We suggest there are exceptions to this standard. In the first instance, governing agencies may require the farming of certain species and certain locations must be of a genetic makeup identical to, or very similar to, wild conspecific species. Broodstock must be periodically captured from local populations to produce F₁ generation production animals. In the second instance, holding broodstock to sexually maturity may not be feasible. Periodic capture of sexually mature animals is needed to manually strip eggs and

¹ The [National Aquaculture Association](#) (NAA) is a U.S. producer-based, 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 33 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.

milt to produce eggs to begin the grow out process. In these instances, wild broodstock capture occurs under agency permit and/or oversight.

Bullet 9, Page 7. We suggest adding to the standard 1) development of a management plan to deter or prevent predation and 2) reporting predacious birds and mammals killed under authority granted by governing public agencies (i.e., permit).

General Question 7, Page 7. We suggest caution in considering the comments of animal rights activists offering aquatic animal welfare standards for your consideration. Their perspective is not one of animal care, protein production, or farm success. As farmers we work and invest to produce healthy animals for our success is entirely predicated on rapid growth of healthy animals whose appearance, weight, or vigor yields the highest market price in very competitive global or national markets. The marketplace is a demanding environment and farms that fail to produce healthy animals also fail or amend their production practices to the benefit of the animals.

General Question 6, page 9. We suggest Governance should be a criterion as an alternative to effluent, habitat, feed and chemical use. Effective governance should encompass all of the Seafood Watch standards and governance will be applicable to all farms regardless of size, location, production methods or production facility management (public agency or private farms).

We recognize this is no small task to assess effective governance and offer the United States as an example of this complexity and scope. The United States is a republic of 50 sovereign states, where those states can be more restrictive than Congress and federal agencies in their food safety, environmental protection and conservation, labor, taxation, transportation laws and regulations. We know of no compilation of aquaculture directed state regulations.² However, we are familiar there are, at least, 27 Congressional Acts governing U.S. aquaculture (this list of Acts does not include those directed towards taxation, labor or criminal laws).

- Agricultural Marketing Act
- Animal Health Protection Act
- Animal Medicinal Use Drug Clarification Act
- Coastal Barrier Resources Act
- Coastal Zone Management Act
- Endangered Species Act
- Federal Food Drug and Cosmetic Act

² Efforts to indirectly assess federal and state regulations have occurred, please see [Regulatory Restrictions Across U.S. Protein Supply Chains | Journal of Agricultural and Applied Economics | Cambridge Core](#). We believe this approach overestimates regulations but is probably indicative of regulatory complexity. The authors completed a spin-off study focused on the US aquaculture supply chain. Please see [Choices Magazine Online](#).

- Federal Insecticide, Fungicide, and Rodenticide Act
- Federal Meat Inspection 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
- Moving Ahead for Progress in the 21st Century Act
- Marine Mammal Protection Act
- Migratory Bird Protection Act
- Minor Use and Minor Species Animal Health 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
- Rivers and Harbors Act
- Toxic Substances Control Act
- Triploid Grass Carp Certification Act.

Notable is the National Environmental Policy Act directing federal agencies engaged in permitting to consult the other federal agencies to invoke their authority in a final permit and to prepare Environmental Assessments or Environmental Impact Statements as appropriate to the regulated activity.

We recognize 18 federal agency offices for enforcing the 27 Congressional Acts.

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 Agency
 - National Marine Fisheries Service

Dept. of Defense:

- Army Corps of Engineers

Dept. of Health and Human Services:

- Food and Drug Administration
 - Center for Food Safety and Nutrition
 - Center for Veterinary Medicine

Dept. of Homeland Security:

- Cybersecurity and Infrastructure Security
- Coast Guard

Dept. of Interior

- Bureau of Ocean Energy Management
- Bureau of Safety and Environmental Enforcement
- Fish and Wildlife Service

Dept. of Transportation

- Federal Aviation Administration
- Federal Motor Carriers Safety Administration

Environmental Protection Agency:

- Pesticides
- Pollution Prevention and Toxics
- Water

A pretty good overview and example of federal permitting and integrated federal and state regulatory integration is provided by this publication required by Presidential Executive Order: [fisheries.noaa.gov/s3/2022-07/Guide-Permitting-Marine-Aquaculture-United-States-June2022.pdf](https://www.fisheries.noaa.gov/s3/2022-07/Guide-Permitting-Marine-Aquaculture-United-States-June2022.pdf).

We suggest that assessing governance include several criteria:

- Public availability and access to legislative process, legislated laws and public promulgated regulations.
- Regulatory transparency and opportunity for public comment (e.g., written or verbal) during regulatory development.
- Governing agencies provide public facing regulatory enforcement description, explanation, and authorizing legislation.
- Public access to environmental monitoring, facility reporting, and enforcement actions.
- Enforcement effectiveness:
 - Employee resources (number, training, support).
 - Educational outreach.
 - Regulatory notifications.
 - Inspection.

- Administrative, civil and criminal enforcement actions.

Criteria 1 – Data, page 11.

We suggest effective governance is more important than data. Governing public agencies may exempt small farms from monitoring and reporting. As a consequence, data may not be available for small farms. However, law and regulation enforcement applicable to all farms, regardless of size, may include inspections, frequent permit renewals and other tools to ensure compliance. Please see our governance comments for additional information.

We also suggest that the demand for data incurs costs to farms (e.g., sample collection, handling and analysis, record keeping, reporting). Small farms are being forced to close or sell to larger operations with an economy of scale to absorb and spread regulatory costs over larger production volumes.

The National Aquaculture Association encouraged its members and non-members to welcome a team of economists for an in-depth analysis of regulatory costs that resulted in the following peer-reviewed publications. We strongly suggest your review and thoughtful consideration as to the outcome of increased regulation that stifles innovation and forces small farms out of business. These outcomes negatively impacts rural and coastal community jobs, income and economic stability.

[Competitiveness of U.S. Aquaculture Within the Current U.S. Regulatory Framework: Aquaculture Economics & Management: Vol 17, No 3 \(tandfonline.com\)](#)

[The Costs of Regulations on US Baitfish and Sportfish Producers - van Senten - 2017 - Journal of the World Aquaculture Society - Wiley Online Library](#)

[Effects of regulations on technical efficiency of U.S. baitfish and sportfish producers: Aquaculture Economics & Management: Vol 22, No 3 \(tandfonline.com\)](#)

[Regulatory costs on U.S. salmonid farms - Engle - 2019 - Journal of the World Aquaculture Society - Wiley Online Library](#)

[Full article: Regulatory costs on Pacific coast shellfish farms \(tandfonline.com\)](#)

[Farm-Level Cost Drivers of Salmonid Fish Health Inspections - Engle - 2021 - Journal of Aquatic Animal Health - Wiley Online Library](#)

[U.S. hybrid Striped Bass and Red Drum farms: Economic effects of the U.S. regulatory framework - Engle - 2023 - North American Journal of Aquaculture - Wiley Online Library](#)

[A regulatory cost assessment of ornamental aquaculture farms in Florida - Boldt - 2023 - Journal of the World Aquaculture Society - Wiley Online Library](#)

[Cost of regulations on US catfish farms - Hegde - 2023 - Journal of the World Aquaculture Society - Wiley Online Library](#)

Criterion 4 – Chemical Use

Related to Governance as a criterion, governing public agencies should explain chemical restrictions and require product labeling that reiterates those restrictions and relative to antimicrobials require oversight and prescription by federal and state licensed aquatic animal health professionals whose accreditation/licensure is at-risk for illegal use. As examples:

- [3rd Edition Quick Desk Reference Guide to Approved Drugs for Use in Aquaculture \(fws.gov\)](#)
- [Approved Aquaculture Drugs | FDA](#)
- [Veterinary Feed Directive \(VFD\) | FDA](#)

We also note aquatic animal disease events are stochastic and transient. The opportunity to use illegal drugs or legal drugs in an unapproved manner are a challenge for governing public agencies to monitor and prevent. We suggest the integrated enforcement of therapeutant and chemical use across agencies and regulatory programs should serve as an alternative to chemical or therapeutant use reporting. As an example, the Environmental Protection Agency, National Pollution Discharge Elimination System permit restricts and requires reporting for chemical and therapeutant products approved and labeled by the Food and Drug Administration. Please see [Concentrated Aquatic Animal Production Compliance Guide and Reporting Forms | US EPA](#).

Criterion 5 - Feed

We suggest the metric feed conversion ratio (FCR) may not be indicative of a sustainable practice for impacts on farm productivity by disease and predation. Please see this recent analysis:

Stone, N. M., Engle, C. R., Kumar, G., Li, M. H., Hegde, S., Roy, L. A., Kelly, A. M., Dorman, L., & Recsetar, M. S. (2024). Factors affecting feed conversion ratios in US commercial catfish production ponds. *Journal of the World Aquaculture Society*, 55(3), e13053. <https://doi.org/10.1111/jwas.13053>

We suggest recognition be given to the nutritional importance of fish meal and fish oil to early life stages. As a necessity for animal care, early life stages feeds may always require fish meal and oil which does not belittle replacement with other sources of essential

protein, fats, vitamins and minerals in grow-out diets. Please see the following paper which is posted to <https://www.sciencedirect.com/science/article/pii/S0044848620309741> :

Kok, B., W. Malcorps, M. F. Tlusty, M. M. Eltholth, N. A. Auchterlonie, D. C. Little, R. Harmsen, R. W. Newton & S. J. Davies. (2020). Fish as feed: Using economic allocation to quantify the Fish In: Fish Out ratio of major fed aquaculture species. *Aquaculture* 528: 735474.