

Hearing of the Maine Legislature's Joint Committee on Marine Resources
March 16, 2023
In Support of LD 586, An Act to Protect Maine Fisheries from the Effects of Industrial
Recirculating Aquaculture Operations

Testimony of Jane Earley

I am pleased to submit this testimony to the Marine Resources Committee. I am an attorney, now retired, whose career has included work in many areas relevant to the work of this committee. Most recently I am serving as a board member of the Friends of the Harriet L. Hartley Conservation Area, a non-profit in the Belfast area whose mission is to protect the intertidal and coastal land abutting the planned Nordic Aquaculture facility. In that capacity, I have facilitated work on a grant provided by the Maine Community Foundation to the Environmental Law Institute (ELI), a Washington-based non-profit known for generating neutral, non-advocacy-based analyses of legal and policy issues integral to national and international environmental regulatory policy. The project, entitled "Fish Forward; Best Practices for Land-Based Aquaculture in Maine," will produce a report in the coming weeks that has great relevance for this committee's consideration of LD 586. We look forward to providing it to every member of the committee. In the meantime, I would like to summarize some of its recommendations for the purpose of aiding the committee in its deliberations and to highlight how ELI's recommendations support passage of LD 586.

The report analyzes the legal and regulatory regimes of Maine and three other states governing RAS (recirculating aquaculture system) facilities, and the legal frameworks of three foreign countries that have strong land-based aquaculture industries. It includes case studies of three aquaculture facilities and their individual approaches to mitigating environmental impacts. It recommends best practices to

- 1) Avoid and mitigate environmental impacts
- 2) Promote transparency, public engagement and expert and stakeholder input, and
- 3) Ensure that regulation keeps pace with technological innovation while providing certainty to the industry

While ELI did not find any jurisdiction, US or elsewhere, that has implemented a comprehensive regulatory system for land-based aquaculture, they looked at the best of those in force plus regulatory programs of other industries in addition to aquaculture. The building blocks of a comprehensive system include: 1) an environmental impact assessment (EIA) carried out early in the project proposal stage. Environmental review ensures decision-makers weigh and consider all potential significant environmental impacts associated with an activity and allows them to identify measures to mitigate unavoidable adverse impacts; 2) standards that protect human health and the environment; 3) siting criteria that favor existing industrially zoned areas and avoid areas that would negatively affect sensitive natural, cultural, and other resources; 4) permits that require compliance with all applicable standards and mitigation measures identified in the EIA; and 5) requiring proof of financial responsibility for restoring the site to its prior use or suitability for a planned future use by the entity proposing the facility.

The conclusions and recommendations of the report highlight how LD 586 can benefit Maine's land-based aquaculture industry by promoting development in Maine of innovative, non-polluting land-based facilities within its current regulatory regime. The ELI report emphasizes that Maine does not mandate a comprehensive environmental impact review, without which larger, polluting developments cannot be effectively regulated.

The report highlights several aspects of land based finfish aquaculture that are not generally understood. While land-based aquaculture can be less polluting to the marine environment than sea-based aquaculture, important qualifications must be made. Labeling land based aquaculture as "recirculating" mistakenly implies that it is not polluting.

Many recirculating systems, including those for which permits may already have been issued, actually emit large volumes of effluent daily into marine waters. This creates a real risk that the high volumes of nitrogen and phosphorus in effluent will create dead zones and toxic algae blooms, especially where adequate studies of aquatic recirculation have not been conducted. There is also growing evidence that effluent from land-based facilities does not eliminate viruses lethal to marine organisms, and plenty of evidence that disposal of sludge and organic material from large fish processing operations is particularly difficult to maintain without adverse environmental consequences.

Apart from these problems, the energy requirements of large recirculating aquaculture plants can be substantial and carbon intensive. For example, Nordic's energy requirements in Maine would require a transmission upgrade so significant that it would rival Bath Iron Works. Its eight diesel smokestacks would contribute to air pollution, and its carbon footprint, including buildout on a forested river valley, would significantly alter Maine's ability to meet its carbon emission goals.

ELI recommends that an environmental impact assessment be undertaken early in the planning stage and that numerical, science-based standards be applied consistent with the needs and impacts of RAS facilities. But since Maine presently does not require an EIS, agencies are instead forced to rely on monitoring compliance with generalized permit conditions. Agencies do not have the staff needed to effectively monitor permit conditions now. Adding new, large, polluting facilities would require staffing levels not yet even envisaged by Maine agencies and require a degree of coordination between them that does not currently exist. The cumulative effect of many new polluting facilities in the Gulf of Maine has not yet been studied.

In the meantime, high levels of pollution from already permitted sources may well negatively affect fisheries and other kinds of aquaculture that currently provide Mainers with increasing employment and, of course, adversely affect the marine environment that makes it all possible. By limiting permits to new operations that do not contribute to the degradation of water quality or air quality or increase carbon emissions, LD 586 would resolve many of the regulatory and environmental problems associated with the high levels of pollution associated with large recirculating aquaculture facilities.

Regulations implemented under LD 586 could also include many of the other elements of ELI's building blocks for a comprehensive regulatory system. Such regulations could update standards and guidelines with public input, and recognize industry advances that improve sustainability outcomes like use of alternative feedstocks and increased health and safety measures.

Finfish aquaculture is expected to benefit in the near future from technological advances in breeding, genetics, disease control, nutrition, feeds and feeding management. Low-impact systems that ease use of resources are being developed and used. Maine can benefit from these systems and should welcome them. Passage of LD 586 would provide a signal that Maine is open for their business.

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Relevant experience:

- NOAA attorney
- CEO, Marine Stewardship Council
- Fisheries and environment trade negotiator, Office of the U.S. Trade Representative
- Consultant to World Wildlife Fund and agribusiness on sustainability standards