MTF comments submitted to NPRF regarding research priorities for 2021

From the highest levels of U.S. federal government to the state and local levels, developing the marine aquaculture industry has become a priority to increase domestic food production, reduce trade deficits, create jobs, support commercial fisheries, and protect and enhance wild ecosystems. Alaska's more than 30,000 miles of coastline, clean waters, and existing seafood industry and infrastructure make it an ideal environment for aquaculture development, in particular, mariculture development. In this context, mariculture refers to the farming, enhancement, and restoration of marine invertebrates (mostly shellfish) and seaweeds (macroalgae) in Alaska. Finfish farming is prohibited by law in state waters.

Many unanswered research questions inhibit mariculture development in Alaska. Cooperative and applied research are needed to develop a sustainable, efficient, economical, and resilient mariculture industry. We recommend the addition of a new research priority to focus on various aspects of mariculture development in Alaska. During a comprehensive planning process completed in 2018, Tthe following general topics have been identified as near-term priorities for mariculture development in the state in the *Alaska Mariculture Development Plan* (see pages 23-27 for more info).

1. **Invertebrate and seaweed farming** (e.g., genetics, phenotypes, disease, broodstock development, spawning and early life stages, production methods, multi-trophic systems)
2. **Mariculture for enhancement and restoration** (e.g., rearing and outplanting methods, habitat/site suitability, survival, economic viability)
3. **Identifying new species suitable for mariculture**
4. **Ecological and genetic interactions between hatchery-reared and wild individuals and populations**
5. **Environmental data collection to support mariculture** (e.g., public health, water quality, toxin detection and reporting, spatial planning tools, optimum grow out areas, species interactions, PH levels and potential for ocean acidification mitigation, currents, HABs occurrence, severity or likelihood)
6. **Economic data collection to support mariculture** (e.g., planning tools, regional economic impact analyses, risk analyses, farm right-sizing, harvest and processing technology, markets)
7. **Education to promote regional scale mariculture opportunities** (e.g., workforce development and training, technology transfer, STEM curriculum, public perceptions)