Proposal #: 20GAR003-110

Project Title: Sustainable US cleanerfish production: developing a lumpfish broodstock program

Applicant: University of New Hampshire

Priority Addressed Priority #2 – Science or Technology that Promotes Sustainable U.S. Seafood Production and Harvesting

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Abstract: Lumpfish, a species native to the Gulf of Maine, are proven successful cleanerfish that can delouse salmonids when integrated into salmonid farms. This biological control strategy is used throughout all north Atlantic salmonid-rearing countries except in the US. Domestic Atlantic salmon and steelhead trout farmers want the ability to use cleanerfish in their farms, however, there is neither a US lumpfish source nor an established permitting process for using cleanerfish in Maine and NH farms. Developing methods to rear fish in captivity with locally sourced fish and maintain self-supporting populations, is key to the commercial viability of any aquaculture operation, especially when fish will be stocked into sea cages. At UNH and UME, with lumpfish research already underway and an existing captive population, we are able to address this bottleneck. We propose to conduct lumpfish broodstock maturation studies, thus providing a source of lumpfish eggs for other US researchers and bringing attention to and spurring other lumpfish research activities. We recognize the need to more widely disseminate cleanerfish strategies, so a series of stakeholder workshops will be held. Our goal is that the outcome of this research will ultimately lead to the integration of cleanerfish into US salmonid farms.

Summary of potential commercial benefit to the fishing & aquaculture communities: The end products of this research are the development of a lumpfish broodstock program which will create a source of fertilized lumpfish eggs available to any researcher or emergent lumpfish hatchery. The formation of this multi-entity group that supplies wild lumpfish to the broodstock program and knowledge, resulting from the workshops, about using cleanerfish in salmonid farming operations, will galvanize lumpfish use in US salmonid farms. This could lead to new business opportunities (lumpfish hatcheries and grow out facilities, support, infrastructure, and equipment for cleanerfish in salmonid farms) and increase domestic production of Atlantic salmon and steelhead trout. The fishing community would have a new, high-value, opportunity to supply live, adult, wild lumpfish to broodstock facilities.