NOAA GLRI Webinar - Project Fact Sheet

Project Title	Next Generation Tools to Sample Dreissena
Project Lead	NOAA PI: Ashley Elgin
Funding amount ($) and years funded	FY19: $59,700 to NOAA (plus $240,300 to USGS)
External partners, collaborators and/or sub-awardees	Peter Esselman (Project Lead, US Geological Survey) Daniel Buscombe (Northern Arizona University) Al Steinman (Grand Valley State University)
GLRI Focus Area	5 – Foundations for Future Restoration Actions
GLRI Action Plan Primary Measure	**Objective:** 5.2 - Conduct comprehensive science programs and projects
	Measure of Progress: 5.2.1 - Annual Great Lakes monitoring conducted and used to prioritize GLRI funding decisions
Brief project description	In spite of great efforts by multiple agencies to survey invasive dreissenid mussel populations, existing monitoring programs typically sample large areas at low spatial resolution and with limited coverage and some zones (e.g., shallow nearshore) are largely missed. This project will apply and advance emerging technologies to improve our ability to (1) describe the distribution of dreissenid mussels; (2) understand the role of dreissenids in declining pelagic primary and secondary production; (3) estimate lake-wide impacts on *Diporeia*, HABs, *Cladophora*, round goby distributions, and (4) inform control efforts. In 2020, we will develop protocols to use high-resolution multi-beam echosounders (MBES), autonomous underwater vehicles (AUVs), and computer vision to estimate dreissenid presence, density, biomass, and size structure in multiple test geographies. Each technology has shown promise for improving the spatial resolution, extent, safety, and cost effectiveness of data collection and analysis, but requires additional development before routine deployment.

	USGS will lead the efforts to collect, process and interpret MBES and AUV data. NOAA GLERL will lead the collection and processing of benthic sediment samples for ground-truthing. Field testing will take place in Lake Michigan and potentially Lake Huron as well.