NOAA GLRI Webinar - Project Fact Sheet

Project Title	Synthesis, Observations, Response (SOAR) Under Ice
Project Lead	PI: Steve Ruberg Co-PIs: Andrea Vander Woude, Henry Vanderploeg, Reagan Errera
Funding amount ($) and years funded	FY20 - $350,000
External partners, collaborators and/or sub-awardees	Internal collaborators: Ron Muzzi, Kyle Beadle, Steve Constant
GLRI Focus Area	FA 5 – Foundations for Future Restoration Actions
GLRI Action Plan Primary Measure	Objective: 5.2 -- Conduct comprehensive science programs and projects.
	Measure(s) of Progress: 5.3.2 - Annual Great Lakes monitoring conducted and used to prioritize GLRI funding decisions each year
Brief project description	Observations of winter ecology have been neglected as ecologically unimportant relative to the summer open-water period, when most limnological field work has occurred (Powers 2016). In the Great Lakes, winter observations under ice are impacted by the difficulty in getting research vessels out in what can very dangerous conditions. However, recent indications are that some biological processes accelerate during the winter months. NOAA real-time observation buoys are retrieved in late fall and redeployed in early spring in order to prevent damage caused by Great Lakes ice conditions. Modeling and forecasting research and development efforts currently lack the observational and validation data required during the critical, annual thermal cycle transition times when conventional platforms (buoys, gliders and research vessels) are precluded from safe or efficient operation (early and late winter). The absence of data collection during the winter months is an issue for real-time nowcast/forecast model development as calibration and validation data are only available for at most 8 months per year and typically do not cover the periods with the greatest storm intensity or the spring warm-up

	of the lakes. This project will provide real-time physical, chemical, and biological observations to improve our understanding of winter ecosystems and provide model and forecast validations. The project will deploy a short cabled system providing observations of relevant year-round water quality parameters and physical observations such as waves, currents, and ice thickness in western Lake Erie. Powers, SM, Hampton, SE 2016. Winter Limnology as a New Frontier, L&O Bulletin. https://doi.org/10.1002/lob.10152