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Marine Research Assets Core Facility
2017 Annual Report - Year 3

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Marine Research Assets Core Facility Manager

Mike Abbott
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Abstract

The Great Lakes Research Center (GLRC) at Michigan Technological University (Michigan Tech) offers a unique combination of shared use marine assets with direct access to Lake Superior. Both surface and subsurface assets are available for use by university faculty, staff and students, as well as collaborative partners, as shared resources through the Marine Research Assets Facility (MRAF). Four surface vessels and four sub-surface vehicles along with a variety of specialized equipment and trained operators make the MRAF an ideal year-round base of operations for research on, under, or related to, the Great Lakes and coastal oceans. MRAF funding supported GLRC Faculty Researchers through enhanced safety and effectiveness of all facility vessels, including upgraded tracking systems, enhanced ROV capabilities, and ongoing improvements to our ability to build, test, repair, and deploy advanced distributed sensor systems. The MRAF will continue to expand support of research, and increase the breadth and depth of techniques and technologies used to support our research faculty. The MRAF specific operational and fiscal year (FY), for the purposes of this report, is April 1 2016 through March 31 2017, and is based on a typical marine field season at Michigan Technological University.

Facility Staff

Leadership

Dr. Guy A. Meadows, Director of the Great Lakes Research Center and Robbins Professor of Sustainable Marine Engineering, leads the Marine Research Assets Facility. Before joining Michigan Tech, Meadows served as Professor of Physical Oceanography for 35 years, and directed the Ocean Engineering and Marine Hydrodynamics Laboratories at the University of Michigan.

Staff

GLRC staff members will devote time to the operation and maintenance of the MRAF. All are well versed and trained in marine operations including marine safety and deployment of assets.

- Mike Abbott is the Director of GLRC Operations and has oversight responsibility for the Great Lakes Research Center’s physical plant, personnel and shared use equipment.
- **Elizabeth Hoy** serves as the Assistant Director of Business and Program Development at the GLRC. Beth oversees clerical and administrative operations of the GLRC as well as marketing, outreach and business development initiatives.

- **Jamey Anderson** is the GLRC Coordinator of Marine Operations and is responsible for the direct coordination of the MRAF and its operation. He is also available for work on research contracts/proposals.

- **Chris Pinnow** is the GLRC Electronics/Computer Engineer. Chris’s responsibilities include maintaining all new and existing electronics and advanced systems. He can design new or enhance existing electrical systems to facilitate research. He is also available for work on research contracts/proposals and is shared with Michigan Tech’s Advanced Power Systems Research Center.

- **Devin Seppala** is the MRAF and Geospatial Research Core Facility (GRF) office assistant. Devin brings extensive experience with many of the most complicated internal administrative processes at Michigan Tech, from purchasing to accounting. Devin’s diverse skill set also includes a strong foundation in geospatial techniques and processing.

- **Captain Stephen Roblee** is the primary captain of the R/V Agassiz and has an extensive background in sailing and vessel safety. He holds a commercial license and coordinates MRAF vessel activities with the U.S. Coast Guard, including inspections and safety drills.

- **Captain Travis White** is the secondary captain of the R/V Agassiz. Travis is fully qualified and holds a commercial license to operate the R/V Agassiz.

*Colin Tyrrell, Marine Operations Specialist, left the GLRC in July of 2016 to pursue graduate studies.

**Policies and Procedures**

**Facility Access**

Access to MRAF equipment is coordinated through MRAF Manager and GLRC Coordinator of Marine Operations, Jamey Anderson, pending approval by Director Meadows. Operation of MRAF assets is carried out by GLRC technical staff under the direction of both Jamey Anderson, and GLRC Operations Director, Mike Abbott. The R/V Agassiz and S/V Osprey have approved use charges while all other assets are available on a time and materials, or consumables used, basis. All assets are maintained to the
highest operational standards by the GLRC staff including operational safety protocols and scientific calibration standards.

Availability and use of specialized MRAF equipment is divided into three distinct and self-explanatory classes:

- Arrange for Pick-Up
- Arrange for Instruction and Pick-Up
- Arrange for Technical Staff Operation

Examples of “Arrange for Pick-Up” equipment include water and sediment sampling gear, simple digital cameras, and several electrical generators. Examples of “Arrange for Instruction and Pick-Up” include multi-parameter water quality sondes, remotely operated vehicle (ROVs), and several Acoustic Doppler Current Profilers (ADCPs). Lastly the “Arrange for Technical Staff Operation” class includes some of the MRAF’s most unique capabilities including the IVER3 Autonomous Underwater Vehicle (AUV), a subsea positioning system (USBL), and all MRAF research and survey vessels. A full listing of all classes, equipment and their specifications can be found on the MRAF website.

**TechFinder Updates**

MRAF staff commit to entering and regularly updating all applicable equipment and technologies associated with the Core facility in 2017/2018.

**Facility Safety and OCIS Annual Inspection**

The MRAF staff are fully trained in Coast Guard regulations and other matters of marine safety. The MRAF staff are responsible for all necessary safety training for users of the facility’s assets. The most recent Michigan Tech OCIS safety inspection of the facility was conducted on February 24, 2017 with no violations or corrective action required. A USCG Annual inspection of the R/V Agassiz was most recently completed on May 25, 2017, with an additional 5-year dry dock hull inspection completed on March 13, 2017. The R/V Agassiz passed both inspections with no pending violations or corrective actions currently required. Lastly, annual USCG required crew/user safety training directed by Capt. Roblee was last completed on July 13, 2016. Other safety enhancements this year include the Michigan Boater Safety Certification of summer intern Dayton Pax. This certification is required for any staff and students
operating MRAF vessels whose birthday is after July 1, 1996 and do not already possess a Michigan DNR Boater Education Certification/Card.