Overview

- **Purpose:** To facilitate a scenario planning workshop for the Michigan Army National Guard Fort Custer Training Center (FCTC) to help them incorporate climate information into their updated Integrated Natural Resource Management Plan (INRMP).

- **Partner:** Fort Custer Training Center (FCTC); John Wood Group PLC

- **People:** FCTC officials and local experts, including the Kalamazoo Nature Center and the Michigan Dept. of Natural Resources

- **Impact:** The FCTC, operated by the Michigan Army National Guard, used climate information and scenarios co-produced by GLISA to update its INRMP. The FCTC won the 2020 Department of Defense Environmental Award for Natural Resource Conservation for the Plan.

The U.S. military faces many direct threats, but its mission is also disrupted by climate, urbanization, and water resource shortages. To manage these compound threats, military installations implement an Integrated Natural Resource Management Plan (INRMP) and update it regularly per Department of Defense requirements. In 2018, Michigan Army National Guard leadership wanted to incorporate climate change into its next IMRMP update and requested the Great Lakes Integrated Sciences and Assessments' (GLISA's) support to do so.

In GLISA's scenario planning approach, scenarios of plausible events are described, and actors respond to them, distinguishing between plausible and likely events. The goal is to develop a strategic framework to respond to potentially disastrous disruptions, rather than to develop a checklist to respond to specific, likely disruptions. When focused on likely events, scenario planning is focused on known threats; a focus on plausible events extends the method to unknown events. In 2018, GLISA applied its scenario planning process to a military installation for the first time at the Fort Custer Training Center (FCTC) in Battle Creek (MI). Notably, the facility is also used by other branches of the armed forces (in Ohio, Illinois, and Indiana), the Reserve Officer Training Corps, and other state and federal agencies (e.g., Michigan State Police, FBI).

Prior to the workshop, GLISA developed a historical climate summary for the Battle Creek area, using local observations from the W.K. Kellogg Airport Automated Surface Observing Station (ASOS) and a more regional analysis from the Climate Science Special Report (CSSR, 2017). Additionally, GLISA worked with the lead organizer at Fort Custer to learn about the management concerns and selected four different climate models, projected to the end of century, that offered information about the future that would specifically challenge their management actions.

GLISA facilitated the scenario planning workshop in October 2018 and guided natural resource managers and others through a process of learning about local climate trends and future projections to identify weather and/or climate events that challenge their management of specific natural resources (i.e., invasive species, high quality natural areas, etc.). Many of these management

areas had already experienced stress due to climate variability, and managers wanted to be better prepared for these events in the future. Local experts (e.g., Kalamazoo Nature Center, Michigan Dept. of Natural Resources) brought in their unique knowledge to discuss climate change and natural resource management concurrently. In previous scenario planning iterations, these discussions had occurred separately, without much collaboration.

The scenario planning helped the participants identify management goals, map environmental hazards to these goals, prioritize threats, and develop scenarios that stressed particular management goals. Then, the participants used the scenarios to identify priority management concerns and make management recommendations. GLISA developed an accompanying workbook to facilitate the group discussions and record important information coming out of the groups. According to a survey, almost all participants agreed they had advanced their knowledge of the process and gained valuable information to use in their planning. The outcome was a set of four specific climate scenarios that consist of a timeline of weather hazards, resulting on-the-ground impacts to the resources they manage, and a set of recommendations for how one could better prepare for each scenario. Fort Custer used the climate information and recommendations developed at the workshop to update their next Integrated Natural Resource Management Plan (INRMP) per Department of Defense requirements.

FCTC won the 2020 Department of Defense Environmental Award for Natural Resource Conservation for the Plan, partly for being the first installation nationwide to include climate information. GLISA's work with Fort Custer provides a strong foundation to scale scenarios to entire installations, and GLISA is seeking funding opportunities to scale-up this work to other military installations in the region.

> *" It feels good to apply climate planning to a specific project. I'd like to do it more! "*
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> *– Anonymous FCTC scenario planning workshop attendee*

About GLISA   *Advancing Climate Knowledge for Adaptation and Resilience with Great Lakes Communities*

Established in 2010, GLISA is a collaboration between the University of Michigan and Michigan State University, supported by the National Oceanic and Atmospheric Administration (NOAA). As one of 11 NOAA Regional Integrated Sciences and Assessments (RISA) teams, GLISA works at the boundary between climate science and decision-makers, striving to enhance Great Lakes communities' capacity to understand, plan for, and respond to climate impacts now and in the future. Our team of social and physical scientists collaborates to:

- Develop usable climate information tailored to stakeholder needs;
- Develop, implement, and evaluate resources and tools to apply climate information to decision-making;
- Facilitate collaborative activities, education, and training and support stakeholder networks; and,
- Investigate emerging climate issues and synthesize findings for practitioners.

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Example of GLISA's boundary chain model of stakeholder engagement for the Great Lakes Climate Adaptation Network (GLCAN). Climate information is tailored and moves through different boundary organizations (links in the chain) to connect science to users. Adapted from Lemos et al. 2014.

Climate Information → GLISA 🔗 GLCAN (Boundary Organization) 🔗 Cities → Information Users

Feedback