



# MOSAICS IN SCIENCE

## Diversity Internship Program

### 2021 Project Descriptions

<b>NPS UNIT: ISLE ROYALE NATIONAL PARK</b>		<b>PD #: 2021509</b>
<p><b>Project Title:</b> Cascading impacts: Assessing abundance of snowshoe hare in a wilderness park following wolf reintroduction</p> <p><b>Position Type:</b> Mosaics PLC</p> <p><b>Primary natural resource discipline:</b> Biological Sciences</p> <p><b>Project keywords:</b> vegetation, wilderness, herbivory, forest ecology, wildlife</p> <p><b>Location:</b> Houghton, Michigan</p>		
<b>COVID-19 NOTICE</b>		
<p>As the COVID-19 pandemic continues to change and evolve, project timelines and structure remain flexible and it may be necessary to postpone start dates, begin work remotely, or reformulate the project's description. Should any development in the COVID-19 outbreak impair a project's timeline or results, the SIP Team will work with the park and project mentors to assess the situation and determine the best course of action at that time.</p>		
<b>PROJECT DESCRIPTION AND WORK PRODUCTS</b>		

**Position Description:** The primary project will be an analysis of snowshoe hare distribution and habitat on Isle Royale. Wolf reintroduction on Isle Royale is ongoing and the park is interested in the cascading impacts of predation throughout the ecosystem. While snowshoe hare are not a primary prey of wolves, the population and distribution is expected to be impacted. Snowshoe hare density surveys were last conducted in 2017 when the wolf population was 2, while the current wolf population is at least 14 (not counting pups born in 2020).

The field work will consist of snowshoe hare density surveys (accomplished through hare pellet transects) and habitat assessment. The survey occurs early in the season, and requires extensive hiking and backpacking in remote areas. Field data collection typically concludes the second week of June and after this period the intern will enter and analyze data, use GIS to make maps and perform spatial analysis, make comparisons to previous surveys relative to predator populations, prepare a summary report, and present findings to Natural Resource Management Staff.

The snowshoe hare project is one of many monitoring activities taking place at Isle Royale to better understand the effects of restoring predators on the landscape. The MIS intern will have a role in increasing the knowledge base of wolf reintroduction impacts and trophic cascades at the park. In addition, the intern will participate in vegetation surveys assessing the impact of beaver and moose on Isle Royale's vegetation, assist with acoustic bat monitoring, eagle and osprey surveys, and common loon monitoring.

Since the fall of 2018, wolves have been translocated to Isle Royale from Minnesota, Canada, and Michigan (<https://www.nps.gov/isro/learn/news/presskit.htm>). This park management action has received national attention, as the park seeks to manage a growing population of herbivores and dampen the impacts of browse on the island's vegetation. This project assessing snowshoe hare abundance addresses a critical natural resource management need within the Natural Resources management division to evaluate the ecological impacts of wolf reintroduction on small mammals.

This position is offered through the National Park Service's Mosaics in Science Internship Program in partnership with Environment for the Americas.

**Work Products:** The SIP intern will prepare to a summary report focused on snowshoe hare distribution on Isle Royale. They will also be responsible for producing an excel file with current and past data that is quality controlled. Dependent on the intern's interests they can also develop interpretive programming on any topic of interest on Isle Royale.

## **NATURAL & PHYSICAL WORK ENVIRONMENT**

Physical/Natural Environment: Isle Royale National Park is an island archipelago located in Lake Superior. It is an International Biosphere Reserve and 99% of the park is designated Wilderness. The park is approximately 70 miles from Houghton, Michigan in northern Lake Superior. There is limited access to the park, by boat or seaplane. Isle Royale runs a ferry service that services the park with two trips per week during peak season. There are numerous opportunities for recreation including kayaking (park provided kayaks on Mott Island), hiking, fishing, and camping to name a few.

Groceries and other supplies are ordered from Houghton, Michigan, and are typically delivered by boat once a week. Access is available via NPS ferry from Houghton, with complimentary fares for employees, as well as for partners, parents, and/or children to come visit. Other family members or friends are eligible for a reduced fare. Pets are not allowed. Land vehicles are not allowed. During the summer, the temperature may vary, from cold and wet with the need for winter clothes to hot and humid, with temperatures over 90°F. Blackflies and mosquitoes can be bad at times, especially during June. Flexibility is required, as weather conditions may cause cancellations and delays in ferry boat and work schedules.

Cell phones generally don't work, with a few exceptions. Opportunities to get back to the mainland during the summer are limited. There are computers/internet that can be used outside of work hours to take care of personal business, within government guidelines. There are phones available for personal use. There is wi-fi available to park employees, however bandwidth and location of the signal is limited.

Work Environment: This is a field-based position and the intern can expect to be working outdoors 70-80% of the time. Marine conditions often dictate where and when we can travel, and flexibility in work is a must. Interns must be in good physical condition and able to hike distances of up to 10 miles over rough terrain while carrying loads of 30 pounds or more. Biting insects or other pests such as black flies, deer flies and mosquitoes are common. Interns will be expected to work in a variety of environmental conditions; from near-freezing temperatures with rain and snow in May, to hot and humid weather in late summer. The intern can expect frequent encounters with moose in the field. The trails are well maintained, but there is a fair amount of elevation change, and the trails are challenging with roots, rocks, and mud. The main hazards are working in cold and wet conditions and boating.

## **QUALIFICATIONS**

Undergraduate student or recent graduate in a Natural Resources or Environmental Sciences program. The position could be filled by a first or second year undergraduate student, but higher skilled candidates could apply and job duties could be adjusted accordingly. No specific coursework is required. Experience with hiking and backpacking is ideal, but not necessary. The intern must be able to hike 6-8 miles per day, with repeated bending or stooping. The intern should possess an excellent work ethic, have a passion for the outdoors, attention to detail, ability to collect high-quality data, and most importantly a positive attitude.

The applicant must be a U.S. citizen or U.S. permanent legal resident ("green-card-holder") between the ages of 18 and 30 years old, inclusive, or veterans up to age 35. Prior to starting this position, a government security background clearance will be required.

## **VEHICLE AND DRIVER LICENSE REQUIREMENTS**

**Applicant does not need a valid drivers license.**

**A personal vehicle is not required for this position.**

**HOUSING**

Park housing is available and will be provided at no cost to the participant. The intern will live with NPS staff in dormitory facilities (shared or private room). These facilities have a shared kitchen and bathroom facilities and are located near the park headquarters on Mott Island or on Mott Island itself. Bedding and towels are not provided.

**INTERNSHIP START/END DATES**

**Start Date:** 5/17/2021

**End Date:** 7/30/2021

Eleven weeks of the internship will be in the park. A mandatory Career and Leadership Workshop will be held in Washington, D.C. from August 1 – 5, 2020.

**PLEASE DIRECT ANY QUESTIONS TO ENVIRONMENT FOR THE AMERICAS**

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