Joshua Powell AMRSB
Moosewatch Expedition - Isle Royale National Park, Michigan, USA

Above: Josh finding a moose antler or 'shed'

Isle Royale is the largest island on the world's largest freshwater lake and I was there on a Moosewatch Expedition, part of one of the longest-running biological experiments in the world, thanks to an RSB travel grant. I had applied for a travel grant as I concentrated on environmental biology during my studies and Isle Royale is one of the most exciting and iconic biological research locations in the world, especially for those who are fascinated by the role that large mammals play in ecosystems. And of course, the area of the island where we were going to be conducting research was the most remote part of one of the most remote national parks in the Lower 48 states of the USA – as a field biologist how much more exciting could you want?

The Moosewatch Expedition contributed to the Wolves-Moose of Isle Royale Study, led by Dr Rolf Peterson, one of North America's foremost wolf biologists. It is an iconic study of predator-prey dynamics, with a focus on the wolves (*Canis lupus*) and moose (*Alces alces*) of Isle Royale. Not only is the study world-renowned and longstanding, it is also really important for our understanding of predator-prey dynamics.

Above: Moose bone showing extensive signs of wolf damage, either before or after death

I was keen to get involved with the study as it had reached a particularly interesting stage from a scientific perspective. The island wolf population was down to just 2 individuals due to a genetic bottleneck and inbreeding depression, and the National Park Service was hesitant to engage in genetic rescue or reintroduction. This really was a final chance to study the island while it still has a functioning wolf population. With this transition underway, in which the only large predator on the island is likely to become extirpated in the immediate future, it was an incredibly interesting time to get involved in the study. The expedition set out to collect moose bones (skulls are useful to date and sex the individual) and antlers, or 'sheds' – the data that is collected from this informs minimum population counts for moose on the island. It told the story of a rapidly expanding moose population and provided information on moose population health allowing comparison with mainland populations.

The Moosewatch Expedition was a fantastic opportunity for me to get to grips with a different working environment and new research techniques – including the handling of biological remains. Although I did not realise it until the time, it gave me a chance to learn about, and participate in, a new field – zooarchaeology!

Above: Josh marks an antler, using a bone saw to avoid double counts

I was also able to share conservation wisdom regarding making difficult decisions. While there are genuine arguments for the reintroduction of wolves into any system, however remote and self-contained (e.g. Isle Royale), it became abundantly clear that when social factors and the broader ecological context were considered, wolf genetic rescue, or rather now reintroduction, is crucially important to Isle Royale. I learnt so much, both in my field, about field research, about a specific system and ultimately about using scientific data to make conservation decisions, that I would highly recommend applying for a RSB travel grant to anyone interested in furthering their academic and professional development in the biosciences.

Joshua Powell
Josh is a Thouron Award Scholar and master's student at the University of Pennsylvania. His research interests include large mammal ecology, conservation biology, human-wildlife dynamics and environmental policy. He is a student associate (AMRSB) of the Royal Society of Biology.