Project Title: Partnerships to study and build international environmental literacy in the Bahamas

Tackling global challenges, including access to clean water, shrinking biodiversity, and climate change, requires an environmentally literate citizenry, especially within ecologically sensitive areas. The continuation of programs, such as conversion of land to protected areas and development of future ones depends entirely on voters, leaders, and decision makers who understand ecology, care about the environment, can analyze environmental challenges from multiple perspectives, and are motivated to act. This type of citizen, however, is best-developed through interventions during childhood and adolescent years (Stevenson et al., 2014). Environmental literacy (EL) efforts address this challenge by helping K-12 students acquire key ecological knowledge, affect (pro-environmental attitudes and emotional response to nature), cognitive skills such as issue analysis and action planning, and behaviors (Hollweg et al., 2011). Building EL will require a rigorous, interdisciplinary approach to education, but environmental education efforts currently suffer from lack of quantitative and experimental programming evaluation (Blumstein & Saylan, 2007; Monroe, 2010). Further, building EL requires a level of interdisciplinary collaboration of natural and social sciences that is rare (Cunningham, 1998). Recent advances have begun to address the need for both empirical rigor and interdisciplinary strength, with large-scale EL studies (Hollweg et al., 2011; McBeth et al., 2011; Stevenson et al., 2013), efforts to integrate EL into social studies and science curricula (Birmingham & Calabrese Barton, 2013), and use of the environment as an integrating context for learning (Lieberman, 2013). The efforts are particularly important in contexts outside Europe and North America where the vast majority of threatened resources (e.g., water, species) exist, but far fewer environmental education (EE) programming and evaluation tools are available, largely due to disparities in infrastructure relative to industrialized nations (Fisher & Christopher, 2007).
The Bahamas National Trust’s (BNT) Discovery Club Program is the only nationwide EE effort in the nation of the Bahamas, but it has never been formally evaluated and has no formal evaluation tools available. The Discovery Club is a comprehensive EE program in which students engage in a range of activities—such as camping, hiking, snorkeling, environmental games, and outdoor classroom events—designed to teach them about the ecology of the Bahamas and biology of the species that live there. With the support of the Laarman International Gift Fund, I was able to travel to Andros Island to test a valid environmental literacy tool formulated for the Bahamas. Our research team conducted this study by surveying Bahamian children in schools and around town. We also attempted to survey children enrolled in the Discovery Club as well as children not in the program.

Findings
We conducted a study of children between the ages of 5 and 12 on Andros Island, The Bahamas to determine how they prioritized wildlife species based on five attributes: endemcity, use for hunting and fishing, a rapid decline in population, visible around their home, and importance in nature. Children ranked ecologically significant and endemic species as more important than other attributes. Participants in the environmental education program, Discovery Club, differed from other students by ranking species whose numbers are declining as more important. These findings highlight key patterns in how children value biodiversity and suggest children’s conservation priorities may align well with those of conservation biologists. Our finding that Discovery Club students ranked species whose numbers are decreasing as more important than other students seems intuitive given emphasis placed on helping declining species in the Discovery Club curriculum and activities. Our results suggest that the Discovery Club is having a positive impact on environmental literacy of Bahamian children. However, more research is needed to determine exactly how much of an impact the Discovery Club has on children’s environmental literacy.

Thank You
I would like to thank the Laarman International Gift Fund for the opportunity to travel abroad and conduct important research on Andros Island, The Bahamas. Without the funding from this grant, I would not have been able to implement our survey or collaborate with the Bahamas National Trust and International Field Studies.
Figure 1. Students on Andros Island, The Bahamas filling out the survey.

Figure 2. Part of the research team with one of the classes that completed the survey.
Figure 3. Members of the research team helping two children complete the survey.