

BioBlitz 2015 Marsh-Billings-Rockefeller NHP

Final Report



Submitted by:
Kent P. McFarland
Vermont Center for Ecostudies
PO Box 420
Norwich, Vermont



30 Sept 2015

Introduction

Part scientific endeavor, part festival, and part education, a BioBlitz is a 24-hour event in which teams of volunteers, including scientists, families, students, teachers, and other community members, work together to find and identify as many species of living organisms as possible.

These events have their origins in the National Park Service. The term "BioBlitz" was first coined by National Park Service naturalist Susan Rudy while assisting with the first event in 1996 in Washington, D.C. organized by Sam Droege (USGS) and Dan Roddy (USNPS). Since the success of that first BioBlitz, many have been held in other National Parks.

Nearly two decades later, hundreds of BioBlitz events are held annually around the world. The idea has remained the same, but the technology available has drastically improved. A BioBlitz has always required the participation of biologists with specialized equipment. But, with the addition of a smart-phone and internet powered BioBlitz, we are able to include the public more directly by helping to capture hundreds of photographs of species with coordinates and then uploading and automatically tallying the results using an iNaturalist BioBlitz project page on the internet. iNaturalist was the brainchild of Ken-ichi Ueda and other students at UC Berkeley in 2008 and has since improved and grown dramatically. It is now supported by the California Academy of Sciences. Additionally, as species identifications are confirmed on the site, the data become "research grade" and are shared with the Global Biodiversity Information Facility (GBIF) and the Encyclopedia of Life (EOL), where researchers across the world can use the data.

The National Park Service with National Geographic has been conducting a major BioBlitz in a different National Park each year, leading up to the National Park Service centennial celebration in 2016. We hoped this BioBlitz would also be a way of celebrating not only biodiversity and the National Park Service, but also the 150th anniversary of George Perkins Marsh's book, *Man and Nature*. Were he alive today, we'd like to believe he'd have joined and reveled in this celebration.

Preparation and Results

In preparation for the BioBlitz, we uploaded the Park boundary as well as all species known from the Park to a "Places" page on iNaturalist (see <http://www.inaturalist.org/places/marsh-billings-rockefeller-national-historical-park-woodstock-vt-us>). This page automatically tracks observations and species checklists from the park as they are added to iNaturalist at any time. This "place" was then connected to a BioBlitz project page on iNaturalist (see <http://www.inaturalist.org/projects/mbrnbp-bioblitz-2015>) that we created for the event day.

We recruited area biologists as well as National Park Service rangers and interns to help lead public field events during the day (Table 1). We advertised and recruited the public in email listserves, local newspaper articles, VCE eNews, web sites, and other outlets.



SCA interns join Bioblitz participants searching a stream and photo-documenting new species.

We had approximately 50 people attend the BioBlitz from as far away as Tennessee. Expert naturalists and biologists volunteered for the Bioblitz from the Vermont Entomological Society, Vermont Department of Agriculture, Vermont Wildlife Department, and the Vermont Department of Environmental Conservation. Attendance of public events scheduled throughout the day varied from 20 people on the bird survey to 6 on the trees and trunk survey (Table 1). Additionally, attendees were encouraged to continue to explore, discover and record species on their own and upload their observations to our iNaturalist project page either directly from their smartphones or at the BioBlitz headquarters located in the Forest Center where computers were available for use.

As the event progressed and data were added, the BioBlitz project page showed a live box score, including total observations, number of people adding observations, total number of species, and several top 5 lists. In the days and weeks following the event, data continued to be uploaded and species verified by participants.



Biologists and Bioblitz participants sort, identify and photo-document insect species from a light trap.

As of 30 Sept 2015, we have recorded 399 observations (see http://www.inaturalist.org/observations?d1=2015-07-11T00%3A00%3A00-04%3A00&d2=2015-07-11T23%3A59%3A00-04%3A00&place_id=55121) from across the park representing 218 species (see http://www.inaturalist.org/observations/taxa?d1=2015-07-11T00%3A00%3A00-04%3A00&d2=2015-07-11T23%3A59%3A00-04%3A00&hrank=species&place_id=55121). Participants have identified 295 observations to species. When an observation includes a photograph, date, location, and two or more observers have agreed on the identification, it is labeled as “research

grade”. We have 202 research grade observations identified to species to date.

BioBlitz events can be an important source of data about local biodiversity. Data and insights gained through the efforts of citizen scientists can be as valuable as that obtained by scientists working in academia, natural history collections, and government agencies. Harnessing the efforts of the hundreds of people participating in citizen science will enhance the range and depth of data available as well as promote learning and caring for our natural heritage. As George Perkins Marsh wrote in Man and Nature, “Sight is a faculty; seeing, an art.” We believe that this BioBlitz helped bring recognition of the Park’s biodiversity through the art of seeing. It helped us to discover a rich fauna and flora that remains in the Park 150 years since Marsh penned his famous observations and thoughts.

Table 1. Public events led by specialists to find and photo-document species during the BioBlitz.

Group Event	Time	No. Participants
Bird survey	7-9 am	20
Old Rock Walls	9-11 am	10
Streams	10-12 pm	15
Old Logs	1-3 pm	12
Mega-transect Walk Across the Park	1-4 pm	20
Pond	2-4 pm	7
Trees and Trunks	3-5 pm	6
Junior Rangers	ongoing	