Ecological Scorecard and Monitoring in the Adirondack Region, New York, Year Six (2024-2025) Summary and Recommendations

Phase II: Wildland Monitoring Data Collection

David Rosenbaum, Tristan McMerty, Natasha Karniski-Keglovits & Stacy McNulty, SUNY-ESF Adirondack Ecological Center

28 March 2025

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

ESF State University of New York College of Environmental Science and Forestry

Executive Summary

The Ecological Scorecard project monitors select ecological indicator variables to assess environmental change at recreation sites (points of interest) including trails, lakes, streams, camp sites, lean-tos, rock climbing areas, and boat launches in Adirondack Park's state Forest Preserve. This report reviews year six of the collaborative program between NYS DEC and SUNY ESF. In 2019, we initiated Phase I of the project, which entailed conducting an initial review of existing monitoring programs, identifying which datasets and variables could feasibly function as indicators for the Adirondacks. We then completed an autumn pilot test of sampling methods at selected public sites, and estimated sampling effort. Phase II began in 2020, with a full summer pilot field season incorporating the data into a condition matrix for the ecological scorecard. In 2021 and 2022, we continued data collection and made initial comparisons to 2020 data. During the 2023 field season, we resampled all sites visited in 2022, and sampled two new campsites in the Boreas Ponds Tract.

Beginning in 2024, we adopted a rotating sampling schedule, pausing sites where conditions were stable or exhibiting limited cause for concern. This schedule enabled us to sample six new sites. Eight Management Units were sampled in High Peaks Wilderness, Boreas Ponds Tract, Debar Mountain Wild Forest, Essex Chain Lakes Primitive Area, Hammond Pond Wild Forest, Pharaoh Lake Wilderness Area, Siamese Ponds Wilderness, Wilcox Lake Wild Forest. Consistent with prior years, we also sampled two locations on the Huntington Wildlife Forest property. Sites will be rotated in and out in the future based on data analysis and input from agency staff.

Overall, as of 2024, the ecological indicators showed little evidence of major change over time. However, indicators at certain sites did suggest potential impacts from recreation (see Recommendations Summary). We detected no forest pests (e.g., Beech Leaf Disease, Hemlock Wooly Adelgid) aside from Beech Bark Disease at any of our 18 transect sampling sites. Invasive plants were detected at five of 18 transect sampling sites. Ticks have been more consistently detected at several sites including Wolf Pond, Pharaoh Lake, and Hudson Access.

Several sites showed or are continuing to show signs of human influence, such as invasive species, trash, bare soil, and non-native earthworms. Marcy Dam, Boreas Ponds, Hudson Access, Polaris Bridge, and Hammond Pond all had invasive plants, and at Hammond Pond and Hudson Access the extent of the invasive species had expanded into the surrounding forest. The Hudson Access site also had the second highest earthworm density, trash present along multiple transects, and more bare soil in near plots, which rendered this site one of the most degraded. The Marcy Dam point of interest also warranted concern, as there were several transects with trash, invasive plants documented for multiple years in a row, and earthworm densities remained relatively high. LaBier Flow was another site with multiple signs of concern including greater bare soil cover and less moss cover near the point of interest, trash along four different transects, and the presence of non-native plants.

Recommendations Summary

There were several areas of concern that came to the forefront in 2024. Some of these were site-specific, while others might benefit from wider management actions.

All newly-opened sites and control sites were in good condition as inferred from indicator variables. They were the only sites we assessed to be in good condition. In 2024, we only assessed two sites to be degraded. The rest were in moderate condition, and trends were relatively stable. This suggests that although there is cause for concern and management actions are recommended, there is time to implement thoughtful management plans of action. After being informed of management actions, ecological monitoring will help to track improvements to these sites.

Broad trends and recommendations: Most sites with waterbodies should include signage discouraging live bait and specifically mentioning earthworms, as people may not realize they are non-native and can impact the surrounding forest. • Any invasive plants should be removed. • Sites with bare soil, decreased moss, and braiding of trails should have trails delineated or otherwise marked, with any braiding/herd paths brushed in. • Soil compaction provides the most robust evidence for recreational impact and should be measured at each site. We recommend a near plot mean soil compaction of one standard deviation greater than far plot soil compaction, accompanied by a mean near plot soil compaction greater than 1.5 kg/cm^2, to be adopted as a threshold of acceptable difference between near and far plot treatments beyond which management action is taken • Climbing sites show soil compaction and other signs of recreation impact, and would benefit from trail counters. • Visitors to the Management Units included in this study would benefit from educational signage on ticks. In general, ticks are increasingly common in the Adirondacks, but some people may still perceive the Adirondacks as tick-free. Therefore, broad public education and signage is recommended. • Due to the number of sites with trash, Leave No Trace education should continue, and could be combined with broader public education about earthworms and ticks. • In general, monitoring should continue at sites until a baseline is established and the site is stable; monitoring should resume at set intervals or when management action is taken.

Site-specific recommendations include:

- **Boreas Ponds** (**moderate**): Establish specific walking paths around the lean-to to mitigate further exposure of bare soil. This also decreases the public's exposure to ticks. Post signage to inform visitors that ticks are established in the area. Pause sampling, given the relative stability of the site (sampling will be reinstated at a given interval, or when new management actions are taken that warrant monitoring).
- **LaBier Flow** (**degraded**): Delineate public access points and walking trails to keep surrounding forest healthy and to decrease the public's exposure to possible ticks, which tend to be on the edge of trails. Post signs about ticks either at LaBier Flow specifically or at the parking areas. Continue to monitor this site, with specific attention to bare soil and moss.
- **LaBier campsite 5** (**good**): Continue monitoring. Post signs about ticks.

- **LaBier campsite 6** (good): Continue monitoring. Post signs about ticks.
- **Ragged Mountain cliffs and surrounding area** (moderate)**:** We previously suggested reinforcing the ground at climbing locations at the base of cliffs (see Karniski-Keglovits et al. 2023, Table 1, climbing impacts) as a potential action item. As this has moved into the action space at Ragged Mountain, we will continue to monitor the site at set time intervals and take photographs of the climbing area annually to monitor how the site changes with infrastructural changes implemented by NYSDEC. In addition to these changes, we recommend installing signage encouraging hikers to be conscientious about not trampling established vegetation to mitigate soil erosion.
- **Wolf Pond** (moderate)**:** Post signage encouraging people to remain on trails, and/or brushing in herd paths to prevent erosion of moss and allow revegetation around the lean-to. If tent camping is anticipated, create established tent pads to minimize impact to surrounding ground cover. Post signs near the fishing areas or at the parking area to not use live bait to ensure continued absence of earthworms.
- **Marcy Dam** (moderate)**:** Remove invasive species. Continue to monitor the site at specified time intervals to assess changes in ground cover and other indicators. Post signage discouraging the use of earthworms as bait near Marcy Brook or at the trailhead.
- **New Cascade trail** (good): Continue to monitor the site, including photo points, on an annual basis to ensure a robust body of data before the trail system is used by the public. Post signage in the parking area or trailhead educating visitors on the presence of ticks.
- **Old Cascade trail** (moderate): Continue to monitor the site, including photo points, on an annual basis to ensure a robust body of data before the trail system is closed. Brushing major trail braids may be warranted if the path is to remain open for the foreseeable future. Remove invasive plants near the trailhead to prevent spread and monitor for the presence of invasive plants along the trail.
- **The Garden trailhead:** Two ticks we found at this site were positive for *B. burgdorferi* (NYS Department of Health, pers. comm.), a bacterium that causes Lyme disease. It is recommended that signage is posted at the trailhead to warn visitors of ticks in the area.
- **Debar Pond proposed campsite** (good): Continue to monitor the site on an annual basis to ensure a robust body of data before the campsite is officially established.
- **Debar Pond proposed lean-to (good**): Continue to monitor the site on an annual basis to ensure a robust body of data before the campsite is officially established.
- **Mountain Pond campsite 3** (moderate): Install signage about use of live bait. Continue to monitor the site on an annual basis to ensure a robust body of baseline data.
- **Hudson Access** (degraded): Remove invasive *Lonicera* manually or with herbicide treatment. Remove large debris and trash around the site. Continue monitoring ground cover, especially moss around the campsite. Post signs near the Hudson River or at the parking area encouraging anglers not to use live bait. Signs informing visitors that ticks are established in the area.

- **Polaris Bridge** (moderate): Post signs near the Hudson River encouraging anglers not to use live bait. Pause sampling due to the relative stability of the site.
- **HWF Control sites D11 and L16** (good): Continue monitoring on an annual basis to provide data on sites not open to public use.
- **Hammond Pond** (moderate): Continue to monitor moss and vegetation growing on erratics and boulders, due to the high potential for trampling and erosion. Implement signs discouraging the use of live bait by anglers. Continue to monitor for invasive plants and remove specimens observed.
- **Puffer Pond lean-to** (moderate): Continue to monitor the site on an annual basis to elucidate whether changes occur after the lean-to is relocated farther back from the shoreline. Implement signs discouraging the use of live bait by anglers.
- **Thirteenth Lake campsite 8** (moderate): Continue to monitor the site on an annual basis to ensure a robust body of data. Post signage at the trailhead to encourage visitors not to use live bait.
- **Garnet Lake campsite 3** (moderate): Continue to monitor the site on an annual basis to ensure a robust body of data. Remove any invasive plants.
- **Crane and Huckleberry Mts., Shanty Cliffs** climbing assessments: Continue monitoring, as possible management actions similar to Ragged Mountain might be warranted due to signs of climbing impacts at these sites. Potential actions include: increased signage to educate visitors, and creation of established routes to minimize extent of potential damage. Given recreational infrastructure is under construction at Ragged Mountain, which showed limited soil compaction, it is reasonable to consider these other locations as above a limit of acceptable change. Implementing management action may ameliorate further erosion of soil and loss of vegetation at these sites, with the caveat that we do not have sufficient evidence that our observations at the cliff sites are anthropogenic. Implement trail counters to quantify visitor use.

In all cases, we recommend continuing monitoring either annually, or once stable, on a rotating basis. Once management action is taken, ecological monitoring will help determine the success of those actions. Lastly, as a team we will facilitate discussions with unit and regional managers one to two times a year to discuss updates and recommendations and determine priorities, in order to ensure the full process of the adaptive management loop is completed.