Restoration and Conservation to Combat the Biodiversity Crisis: What I did on my sabbatical

NIU Board of Trustees Meeting
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About me
DeKalb, Ill. - If you’ve enjoyed the beauty this fall of NIU’s East Lagoon and Montgomery Woods, the latter of which is home to a pair of great horned owls, you can thank our community of environmentally minded students, faculty, staff and alumni.

A portion of the western shoreline of NIU’s iconic East Lagoon, the creek that feeds into it, the gardens at Montgomery Hall and its adjacent forested areas have all had a facelift this past year.

Shoreline stabilization, native plantings, removal of invasive species such as buckthorn. It’s get-your-hands-dirty-and-your-feet-wet work that will pay dividends for generations of Huskies—and you’re likely to see more
Biodiversity Crisis
Island recovery after invasive mammal removal

Disciplines represented: Practitioners, Conservation Biologists, Population Ecologists
Funders: National Geographic Society, Pacific Seabird Group, Waikato Regional Council, Auckland Council, Ecological Society of Australia, Fulbright, DigitalGlobe, Phi Kappa Phi, NIU
Students are engines of research in my Evidence-based Restoration Lab
Invasive mammals cause most extinctions
Seabirds are ecosystem engineers

Breeding seabirds at the colony

- Seed Dispersal
- Burrowing
- Guano Deposition
Mammals can be removed
How do island ecosystems recover following mammal removal?
Oh, bird poop! Study shows invasive island predators can even disrupt life offshore

November 7, 2022

DeKalb, IL - A new study identifies the “circular economy” of seabirds linking land and sea and shows how invasive predators on an island can disrupt even what’s happening offshore beneath the waves.

What’s more, at the heart of it all is, well, bird poop.

Led by Professor Holly Jones of Northern Illinois University, the researchers studied four northern New Zealand islands in the same archipelago—two with histories of marauding invasive mammals such as rats, rabbits or cats and two that remain untouched by non-native predators.

Seabirds themselves are top hunters in the ocean, feeding on squid and fish. On the islands with invasive predators—Korapuki and Motutapu—seabirds were found to have a reduced diet, which in turn affected nearshore marine algae communities. The reduced diet is driven by seabird nutrient runoff, and full recovery of algae communities doesn’t occur even 30 years after mammal removal.

Ecosystems are headed toward full recovery, but the research shows the need for continued monitoring and management of invasive predators to prevent potential long-term ecological impacts.

A grey-faced petrel on Korapuki, the Mercury Islands.
Prairie responses to restoration

Disciplines represented: Ecology, Practitioners
Prairie-focused
Jones Lab members
Tallgrass prairie - one of the most endangered ecosystems

Tallgrass Prairie Center
Anna Groves
Smith and Butler 2011
Nachusa Grasslands - Founded in 1986
Mimic historical disturbance regimes
More decomposition 
Higher abundance, richness 
Increased success, change in composition 
Change predation risk 
Shifts in diet; not strict grass grazers 
Bison are engineering 
News coverage

Research by re-bison alter 'lair' rodents in grass

DeKalb, IL - When it comes to what The consequences of those decisions published study so important.
The study looked at how bison rei in Franklin Grove, Illinois - has im

What happens when bison are reintroduced is they alter the 'land of fear' for small mammals,” said Holly Jones, a co-author of the stu carried out by her Evidence-based Restoration Lab. Jones holds a joint appointment at NIU in biologicals and environmental studies.

Reintroduction of bison students
NIU student Angela B. Burbank, Ill.

With its prevalence of and the regular roar from Chicago's Midwestern southwest suburb, cer

So, for a week in Augi Burke like she was on another planet or in a time warp – as she stepped out each morning onto the front porch of a little yellow farmhouse, a cup of coffee in hand.

A symphony of songbirds. A pink-haloed sunrise. A misty, endless prairie of tall grass, dotted with sunflowers, forbs and coneflowers in shades of pink, purple and yellow.

The Nachusa Grasslands near Dixon, Ill., just a 45-minute drive from the NIU campus, had a new visitor flying overhead this past summer, but it wasn't one of the nature preserve's many bird varieties.

World-renowned for its restoration strategies, the Nachusa Grasslands preserve near Dixon, Ill., just a 45-minute drive from the NIU campus, provides a rare and stunning reminder of what the "Prairie State" looked like once upon a time—complete with bison roaming its grasslands.
CAPER: Community Assembly in Prairie Ecosystem Restoration
DeKalb, Ill. — The planned Northern Illinois Center for Community Sustainability (NICCS) continues to gain momentum, with new faces on campus who will help heighten its profile and faculty affiliates already embarking on exciting new research.

Announced in October 2018, NICCS is part of the Illinois Innovation Network, a group of research and innovation centers aimed at driving economic growth in Illinois and addressing critical global issues. The NIU center supports interdisciplinary research, policy development and public-private partnerships to stimulate economic development and job creation, as well as to attract and develop talent.


Questions?

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