



FALL/WINTER 2023-2024

VERMONT *Nature*

VINS Research American Kestrel Monitoring Project

In late July, VINS Research Staff ended the third season of our American Kestrel Monitoring Project by banding two male nestlings at a nest box in Norwich, Vermont. The Research Team wound our way up the hill of a heavily wooded area to reach this final box. As the team reached the top of the hill, the tree-line thinned and opened to a meadow. The meadow is bounded by forest and a thin veil of fog lingered over a grassy stretch just large enough to support a family of kestrels. The team parked along the access road and prepared to navigate downhill toward the box – no easy task when carrying a 6-foot ladder!

The landowners of this site informed us that a pair of Kestrels occupied the box in the previous breeding season, but this was the first year it was part of our monitoring network.



American Kestrel feeding nestlings. Artwork by Emily Blaikie.

The team quietly approached the box and used an extendable net to cover the entry hole. Should an adult be inside the box, the net allows us to safely catch them for banding along with the chicks. In this case, an adult bird was not present, so we were able to set up our ladder and prepare to band the chicks. A technician then climbed the ladder, opened the side, and discovered two nestlings. These nestlings were older than nestlings previously banded this season, so they were more alert and animated. Once each nestling was fitted with their bands, they were gently tucked back into the box and the team took different paths out of the meadow in order to limit attracting predators to the box. It was a successful day to mark the end of a busy and successful season.

This was our best season in terms of the number of boxes available and the total number of birds banded.

We banded a total of 51 nestlings and 11 adults at 13 occupied boxes at locations in Vermont and New Hampshire. Each nest averaged four nestlings with a maximum of five and a minimum of two. Along with standard aluminum bands issued by the US Geological Survey, birds were outfitted with color bands that display a unique number and letter code. These color bands help researchers and birders re-sight them from a distance. Any report of these bands informs us where our birds travel after the breeding season. Color banding also allows us to determine which pairs return to each box the following year and if any young return to their nesting area.

During the banding process, we drew blood samples in order to continue monitoring potential causes of kestrel decline. These samples were sent to the American Kestrel Partnership to test for agricultural contaminants like pesticides. We also took feathers from adult birds and sent them to Middlebury College for analysis of mercury levels. Rodenticides, pesticides, and other contaminants in the environment are possible factors contributing to the decline of kestrels. These chemicals often accumulate at higher concentrations in predator species and can lead to mortality or reproductive decline.

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A Special Message

As we celebrate another year of adventure and learning, we are aware of the varying climate. As an environmental organization, we share hope for the future, acclimating to this ever-changing world and better serving our communities. VINS plans to continue to expand the research aspect of our mission both on our campuses and throughout the state to better understand the change.

We look to engage the community in environmental conservation by increasing knowledge of the natural world through field studies and collaboration with like-minded organizations.

Between our Nature Center in Quechee and our Old Pepper Place Nature Reserve in Washington, we are in a position to observe and record natural trends through the years. We generate data through our research projects at both locations to create a dataset of useful information for the future.

Our Education Department has exceeded all expectations with day-to-day learning in schools, on-site programs, community outreach, field trips, and Nature Camps. The growth of these programs has led us to set historical numbers of participants all year, reaching a vast population throughout New England and beyond.

Mary Davidson Graham, who has been a part of the VINS family for the past 14 years and has been the Assistant Executive Director for the past eight, is transitioning to a consulting role. Mary's management of operations and development has played a key role in VINS' growth and success. Mary's important contribution cannot be overstated. We feel fortunate that she will remain involved in the VINS mission.



Field trip students walking on the nature trails at the VINS Nature Center.

We also welcome our new Senior Director of Development, Brooke Duffy. Fundraising has a major part to play in our ability to deliver on our mission. Brooke brings a range of experience to her new position and we look forward to her bringing that experience to VINS.

This November, we will begin the second season of our very special exhibit, the VINS Forest of Lights, where visitors bask in the glow of thousands of lights as they experience the Forest Canopy Walk after dark. With expanded hours and days, we will be able to welcome more people to this unique atmosphere. We hope you can join us.

We wish you all great hope and peace during this fall and winter season. Thank you for your continued support of our important work.

— Charles F. Rattigan
Executive Director



A Message from Mary Davidson Graham

Thank you for the many years together as a marketing team! The VINS Marketing Team has worked hard to create brand awareness and promote the organization's programs and services.

Our website design, brochures, print advertising, and social media would not be possible without the creativity and dedication of Julie Tallman, Marketing & Design, and Emily Beach, Interactive Media Coordinator.

Also a very special thank you to our corporate sponsors, media outlets, and supporters throughout the years.

— Mary Davidson Graham
Assistant Executive Director, Emeritus



From left to right: Julie Tallman, Marketing and Design, Mary Davidson Graham, Assistant Executive Director, Emeritus, Emily Beach, Interactive Media Coordinator.

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It is difficult to discern any trends from our network at this point since we have monitored for three seasons and are adding new boxes each season. Increasing the number of boxes monitored over multiple seasons will allow us to conduct analyses for trends in our monitoring area.

We know that kestrels are declining throughout the North American portion of their range.

Studies of areas with active nest box monitoring programs show kestrel populations may see an initial increase before experiencing a decline to match more closely with overall trends. Therefore, each box that we install could prove critical for this species as suitable habitat and natural nesting options decline. Kestrels require open areas, like agricultural fields, and dead-standing trees to successfully breed. Conversion of farmland and removal of tree snags is another potential cause for the decline of this species. Boxes can provide replacements for tree snags as long as there is viable habitat and food source nearby.

This fall will allow us to monitor birds while they migrate through the state. We will install more boxes to prepare for spring 2024. Several successful territories were identified this year and are priorities for box installations.

We are extremely grateful for all the support we received throughout the season from our volunteers, landowners, and kestrel adopters. Their contributions supported a successful year and directly aided in kestrel conservation. We welcome any new connections for hosting boxes or kestrel adopters in the 2024 season. To commemorate the season, VINS Nature Store has kestrel artwork inspired by the season's fieldwork available from our current Field Research Technician, Emily Blaikie.



American Kestrel at a nest box.

For more information visit: www.hawkmountain.org/birdtracker

Vermont transmitters were funded by a generous grant from the Butler Foundation. Contact Jim Armbruster at jarmbruster@vinsweb.org to learn how you can support this program.



Broad-winged Hawk fitted with a GPS transmitter.

Broad-winged Hawk Project

This July, VINS was joined by Laurie Goodrich, Director of Conservation, and Rebecca McCabe, Research Biologist, from Hawk Mountain Sanctuary Pennsylvania to collaborate on their Broad-winged Hawk Project. Hawk Mountain's goal while in Vermont was to attach GPS transmitters that look like miniature backpacks to some of our local birds. Data from this collaborative project provides information on broad-winged hawk migration and their nesting success.

Since the VINS logo is a broad-winged hawk silhouette, we couldn't think of a better project to contribute to!

VINS staff and volunteers began preparing for this collaboration in advance by monitoring for these elusive forest hawks as soon as they migrated from their winter territories to their breeding territories across the state of Vermont. We spent many hours across the spring of the 2022 and 2023 field seasons finding active territories in the hope of locating nest sites.

Several nests were identified within a few minutes of the VINS Nature Center, including one directly across from campus. This site had a confirmed nest in 2021 and a pair was observed in a similar location in 2022. This season we were able to watch them bring food from campus across Route 4 back to the nest. Trapping included luring adult birds from near their nests using a robotic Great Horned Owl decoy and recordings of these owls' calls. As birds attempted to defend their nesting territory, they were quickly and safely extracted from nets in an effort to minimize stress. The team then collected data on each bird's size and condition. In total, we were able to get three birds in hand with one bird being the proper size to be fitted with a GPS unit. All three birds received color bands to help us track them in future seasons. Birds included the male and female at one nest and the male at another. All birds continued caring for nestlings after release and were observed bringing prey back to the young.

— Jim Armbruster
Research Coordinator

VINS School Spotlight

Over the past thirteen years, the early childhood program at VINS has expanded from one school to over 30 who participate in our Wee Wonders program (for toddlers ages 18 months to 3 years) and our Small Wonders program (for preschoolers ages 3 to 5 years).

Throughout this exciting journey, the Lyme Nursery School in Lyme, NH has been a partner every step of the way.

After so many years, it is fitting that we recognize the amazing work they are doing with children in our School Spotlight this year.

The Lyme Nursery School is housed in a sweet little red building that looks like a one-room schoolhouse. They have raised garden beds and a wonderful outdoor play space. Their focus on spending time outside exploring the world around them fits in beautifully with the VINS mission and focus of our early childhood school programs. Kelly Downing, the Director of the Lyme Nursery School reports, “we love the VINS Small Wonders program and Ms. Hannah. Hannah has been coming into our classrooms both inside and outside for the past 13 years. Our children can’t wait to see Hannah once a month; ‘when is Ms. Hannah coming again?’ The Small Wonders program is hands-on explorative learning and the children are actively engaged with whatever the topic of the day might be. A few of our favorite topics have been: Turtles, Magical Magnetics, Pullies, and Deer & Moose. Small Wonders has had a big impact on our children and deepened their connection to nature and their understanding of science.”

Music in Early Childhood Classrooms

The Wee Wonders and Small Wonders lessons at VINS are in increasingly high demand, and this popularity is due in part to the developmentally appropriate curriculum and the engaging teaching style our educators use. We incorporate puppets, movement, songs, and poetry into our science lessons in a seamless way that creates a dynamic and fun lesson. A lesson about chipmunks and squirrels has us singing, scampering, collecting acorns and pinecones, and peering into a hollow log. We have observed the teachers and students still singing the catchy tune long after the lesson is over.

At VINS, we made the decision to make music a fundamental part of each lesson, and each educator plays the ukulele to accompany our songs. Research backs up this approach and highlights the importance of including music in early childhood education. Students who participate in a music program have greater gains in phonological awareness (Tierney, 2015), the ability to hear that spoken words are comprised of different sound parts or phonemes. This is a fundamental piece of early literacy and a building block



Laurie Goldsmith, Science Educator, plays the ukulele during a school lesson.

for learning how to read and write. Other research studies have shown that, “making music changes the brain and that these brain changes have tangible impacts on listening skills, learning, and cognition” (Kraus, 2016). VINS’ staff believe that science and nature are not only critical pieces of early childhood education but also that science education is even more powerful when we combine it with music, movement, and early literacy.

Announcing STEAM Backpacks

VINS is incredibly grateful to the Dorr Foundation for supporting the development of an exciting new program launching this fall: STEAM Backpacks. This program is tailored specifically for our Homeschool families.

Each backpack, organized by target age and theme, provides the necessary directions, background information, and scientific tools to teach a stimulating, standards-based curriculum. Themes include: Nature Explorer, Insects, Birds, Geology, Tracking, and Day and Night Sky.

These Backpacks will provide each individual with their own set of authentic naturalist tools, direct them in tool use, and suggest routines that take advantage of the tools to build academic skills and habits.

Investigating with authentic naturalist tools gives children a sense of pride and independence in answering the many questions they have about the natural world.

Looking at nature through the eye of an explorer fosters confidence in being around animals, plants, and “creepy-crawly” insects. These STEAM Backpacks will encourage children and families to explore the outdoors, wildlife, and ecosystems together and ensure that outdoor family time is a science-based experience that fosters environmental literacy and stewardship.

— Hannah Gelroth
Senior Director, Education

Kraus, N., PhD (2016, September/October). Music, hearing, and education: From the lab to the classroom. *ENT and Audiology News*, 25(4), 94-96.

Tierney, A. T., Krizman, J., & Kraus, N. (2015). Music training alters the course of adolescent auditory development. *Proceedings of the National Academy of Sciences of the United States of America*, 112(32), 10062–10067. <https://doi.org/10.1073/pnas.1505114112>



VINS Nature Camp staff with campers.

VINS Nature Camp

Attending sleepaway camp is a common “rite of passage” for youth; however, pandemic lockdowns and social distancing changed that. VINS Nature Camp now has a generation of campers who missed out on important childhood activities like sleepovers at friends’ houses or trips to visit family; experiences that prepare them to spend extended periods away from home.

As VINS re-introduced its overnight camp programs, we realized that campers may not be ready to jump right into a week-long overnight trip. In response, VINS Nature Camp has introduced a selection of offerings over the past two summers that progress youth from day to overnight camps. Beginning with a day camp that culminates with an overnight trip, campers can then move on to our longer overnight programs including a two-night overnight and our week-long offering.

The setting for these overnight camps is in the middle of VINS’ 327-acre parcel of conserved land known as the Old Pepper Place Nature Reserve. Living in this wilderness setting, campers cook over a campfire, sleep out under the stars, and develop confidence and memories that last a lifetime.

VINS Nature Camp strives to create a supportive and safe environment where children and youth feel comfortable pushing themselves to try new things and learn what they are capable of. This season’s overnight campers did just that. They stepped out of their comfort zone and proved they are brave, confident individuals. We can’t wait to see what fun and adventures 2024’s overnight camps will bring!

— Sarah Strew
Director, Nature Camp, Adult Education
& Volunteer Administrator



Farewell to a Friend of VINS

Kurt Gerrish (1937 – 2023)

We thank Kurt for his dedication as a VINS Trustee and supporter throughout the many years.

In 2004, Kurt generously donated the Honda Insight to VINS (photo on the left). The Insight was Honda’s very first hybrid car. It was a popular model due to its sleek design and efficiency, and stood out from its competition.

VINS proudly used the Honda Insight to travel for education, outreach, and events. Over the years the car served its purpose, and we remain grateful to Kurt for his generosity.

— Mary Davidson Graham
Assistant Executive Director, Emeritus



VINS Honda Insight. Photo courtesy of Car and Driver.



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Upcoming Events at the VINS Nature Center

NOV 24 – JAN 3

Forest of Lights on the
VINS Forest Canopy Walk
Pre-registration is required

DEC 15

Registration opens for
VINS Nature Camp 2024
Summer Session

DEC 27 – 29

VINS Holiday Nature Camp
Registration opens December 1

FEB 19 – 23

VINS February Nature Camp
Registration opens December 1

FEB 24

Winter Wildlife Celebration

APR 7

Sun, Moon, & Stars

APR 8

Solar Eclipse Watch Party

APR 22

Earth Day



View our full event schedule
at vinsweb.org/events/



Forest of Lights on the
VINS Forest Canopy Walk

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