

NestStory Data System Hatched on LBI and Now Going Global

Co-developer's Art Show Fundraiser
Reception Friday, Aug. 2, at Ann Coen
Gallery



Michelle Stantial removes a GPS backpack from Captain Jack the piping plover in Barnegat Light. Captain Jack wore the unit for a year, flying all the way from LBI to the Bahamas and back with it. The data on the unit showed exactly how and when the birds make this epic migration. Jim Verhagen

Jim Verhagen is a data scientist by trade, a wildlife photographer and champion by choice, and a man with little free time by coincidence. Michelle Stantial is a doctoral student in wildlife biology and management at the State University of New York College of

Environmental Science and Forestry, and a piping plover luminary. Together, the duo hatched their NestStory data management system right here on Long Beach Island, and it has, as Verhagen noted, "changed the world of bird science."

The project was fertilized five years ago, in LBI's wildlife bookends, Holgate and Barnegat Light.

"I noticed the scientists were living in the dark ages regarding electronic data collection, so I wrote an app," said Verhagen. "Five years later, it is a huge data system being used by all kinds of people from Alaska to Florida, and of course in New Jersey," where the software now manages the entire population of bald eagles, kestrels, peregrine falcons, piping plovers, oystercatchers, least terns, skimmers and other avian species.

Verhagen co-developed NestStory with Stantial as part of her research on piping plovers in Holgate. Stantial, whose work focuses on factors such as habitat or predators limiting the plover population in New Jersey, recalled the discussion she and Verhagen began years ago "about data entry, management and sharing among organizations.



A piping plover chick wears a radio transmitter so it can be located if it goes missing. This helps understand how they die. (Chicks have even been dug out of ghost crab burrows on the beach thanks to these transmitters.) Jim Verhagen

"As a PhD student," she said, "I was tasked with

communicating with many different conservation organizations across the state of New Jersey regarding my research, often on a daily basis. My research heavily depends on data collected by organizations other than SUNY, and coordination of activities and data sharing were often done through emails and text messages.

“However, as the conversation with Jim and I continued, he had some great ideas for how to simplify and strengthen communication and data sharing through the use of a web-based app to collect and share data through. NestStory has revolutionized the ease at which data is shared among the various groups that are monitoring piping plovers across New Jersey and often allows for management decisions to be made in real time.”



Michelle Stantial always engages beachgoers when she is working with LBI's native animals. Jim Verhagen

Verhagen, last week, traced the program's footholds, including the adoption by the N.J. Department of Environmental Protection Division of Fish and Wildlife's beachnesting birds crew within the Endangered and Nongame Species

Program, which has now been using the software for three years. The Bald Eagle Project in New Jersey, meanwhile, latched on two years ago, followed by the Peregrine Falcon Project.

Kathy Clark, from the DEP's Endangered and Nongame Species Program, manages all the state's falcons and bald eagles with NestStory. "Jim and his team made changes to NestStory so that we could collect monitoring data on bald eagle nests in New Jersey," she explained. "We rely on about 100 nest observers who volunteer their time and talents to keep tabs on nests, so the record-keeping task is substantial. Now, data can be entered by people in the field, or more conventionally on home computer, and it is in a standardized format. As a state biologist, I love having all that data available in real-time. I'm able to tally information as needed, but most importantly, I can respond to the near-daily questions about status of a particular nest.

"In 2019," she added, "we also used NestStory for tracking peregrine falcon nests statewide. A large percentage of this species is banded (in both N.J. and the eastern U.S.), so the band identifications of adults and their offspring are a big part of population tracking. NestStory has a 'pedigree' application that allows us to see the known history – genealogy – of individuals, which is something that is nearly impossible to do on paper. It's one of the most elegant parts of NestStory so far.

“In case you can’t tell, I’m a big fan!”

Todd Pover, of Conserve Wildlife Foundation of New Jersey, concurs. CWF, he stated, “monitors and manages all the beach nesting birds at Edwin B. Forsythe National Wildlife Refuge, Holgate and Little Beach units, through a cooperative agreement (i.e. contract) with the refuge. I oversee the project, and we typically hire five field technicians to conduct the monitoring.



Michelle Stantial and a Barnegat Light lifeguard release a piping plover after banding. Jim Verhagen



Ben Wurst of Conserve Wildlife Foundation uses NestStory on a

CWF has used NestStory for the past three years, first for piping plovers, then adding the American oystercatcher. Now, the organization uses it for all the colonial nesters, including least terns, black skimmers and common terns. “So, as of this year, we use it to collect data for all five species that we monitor, plus for band sighting on migratory piping plover surveys,” said Pover.

“We have loved NestStory from the

peregrine falcon platform to record the data from his observations. The NJ Peregrine Project has loaded more than thirty years of nesting data into NestStory for advanced analysis. Jim Verhagen

outset," he added. "It fundamentally changes, for the better, how we collect and manage our data. It is incredibly more efficient. Instead of moving from field notebooks to paper data sheets to electronic

databases, the data is collected on our phone in the field and then stored and available electronically both immediately, in real time, and for long-term data usage.

"I particularly like the mapping component; it allows us to see where our nests and broods (chicks) are located. It even aids in re-finding them after the initial discovery – not always the easiest thing given how hard they are to detect."

Biologists in Long Island and Martha's Vineyard showed interest early on; soon after, we swept all across New York and Massachusetts, the latter of which has half the breeding population of plovers, with 800 pairs (as compared to three pairs

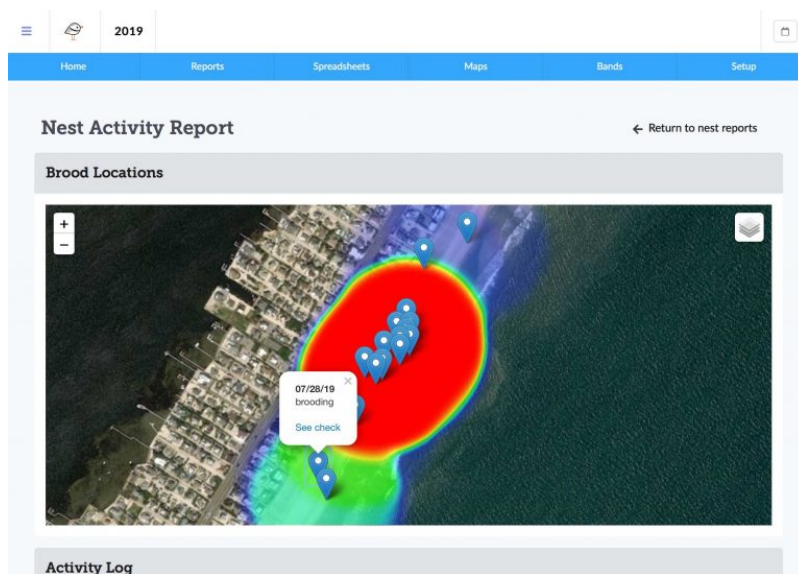


NestStory creators Michelle Stantial of SUNY ESF and Jim Verhagen of North Beach. The software they wrote to study nesting birds on LBI is now being used around the world. Jim Verhagen

in Barnegat Light). "They've really adopted NestStory and it's taken over their data system," Verhagen pointed out. "It's so easy to use," he added, and "it's the responsible thing to do," to spread and share data.

"NestStory encourages collaboration and corroboration," he emphasized. "State lines don't matter to animals; the animals don't care about our artificial boundaries."

Beyond the East Coast, the project is now managing data on Hawaiian stilts in Hawaii and hooded plovers in South Africa, and there's recent interest from scientists in Australia.



According to Verhagen, NestStory has "grown so big we've had to start hiring people to help manage it." He and Stantial created a 501(c)(3) – called the Little Egg Foundation – to

NestStory allows wildlife managers to record the location of every endangered species on the island, in real time. They can use the most up-to-date information to communicate with towns and beach patrols about where to be careful. Jim Verhagen

support the data system, so people can continue to use it for free, as well as to fund educational outreach and wildlife

research.

The first fundraiser for the Little Egg Foundation will be an art show – featuring Verhagen’s local wildlife photography – at the Ann Coen Gallery, in Surf City, this coming weekend. A reception is planned from 6 to 9 p.m. on Friday, Aug. 2. The work will be available for viewing on Saturday and Sunday as well.

Both Verhagen and Stantial will be on hand to discuss the photos, NestStory, the foundation and more.

The show is titled “An Island Without Us.” Verhagen’s introduction to the event is as follows:

The great contradiction of the modern shore is that its massive, multi-billion dollar economy runs the risk of destroying the very thing which underpins its value.

For when you get down to what really draws us to the coast, and inspires us to take such enormous risks and pay such extreme costs to be here, it is truly those things which exist most perfectly without us.

When the first Dutch settlers landed here, they named this place EggHarbor. The beaches and the marsh were so riddled with nesting bird eggs, they couldn’t have named it anything else. They discovered an island without us. A paradise, teeming with life; perfectly wild and free.

It was an Island without us which compelled those first old

timers to do the unthinkable; to embrace the foolish builder, and to risk everything building their homes in the sand, by the sea.

While we happily continue this tradition today, we do so with a far more ominous risk; one our ancestors probably never imagined.

There is very little Island without us left. And an Island without its wilderness is a far more useless and dangerous place. The fate of the Island with, and without us, is now inextricably wed.

We no longer get to pick and choose what we like and don't like about an Island without us. To have a future here, we're going to have to learn to love the whole, damn thing.

– Juliet Kaszas-Hoch

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