

LINKS ACROSS THE NATIONAL AVIARY

Coordinated Hispaniolan Parrot Conservation Initiative

Steven Latta, Ph.D.

Few zoos have managed to integrate their conservation and field research programs with their on-site animal husbandry and training staff. One of our goals as we build the Department of Conservation and Field Research (DCFR) is to learn from others' experiences and to build our programs so that they integrate as well as possible into the framework of the existing aviary. A regular feature in Flight Path will be "Links Across the National Aviary" — a column that will highlight some of the connections between the DCFR and other departments at the National Aviary.

The Hispaniolan Parrot (*Amazona ventralis*) is under serious threat because

it is often removed from the wild and kept in captivity. The traditional practice of keeping caged parrots as pets in the Dominican Republic creates demand for parrot chicks every breeding season. Parrot chick poachers destroy natural nesting cavities in the Sierra de Bahoruco mountains and in other areas to extract the nestlings. These cavities are rendered useless for other cavity nesting birds, including endemic parakeets and trogons.

The demand for these birds was less, and the practice was perhaps more sustainable, when the human population on Hispaniola was lower. But now many parrot chicks die in the process of

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Photo: Eladio Fernandez

Hispaniolan Parrot (*Amazona ventralis*).

Human Population and Biodiversity

Todd Katzner, Ph.D.

One of the greatest challenges facing conservation today is that places best for human habitation are also often best for wildlife. A great example of this can be seen in the arid American West. Out west, people congregate in riparian areas — near water in lowlands where climates are less harsh and agriculture is more feasible. Likewise, the density, diversity and richness of wildlife is greater in these same riparian lowlands than it is in

higher, dryer spots.

For example, consider Jackson Hole, Wyoming — prime habitat for both America's rich and famous, and for wintering elk and bison from Yellowstone Park. The importance of the site for people and for wildlife has created no small amount of stress for all parties.

Whenever people and animals congregate, there is high potential for

conflict. These are conflicts that wildlife invariably lose. A recent paper (Burgess et al., 2007: "Correlations among species distributions, human density and human infrastructure across the high biodiversity tropical mountains of Africa." *Biological Conservation* 134:164–177) explored whether it was simply the number of people that was the primary driver of human impacts on wildlife or whether it was the effects of the way

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LETTER FROM THE EDITOR

Welcome to *Flight Path*, the newsletter of the National Aviary's Department of Conservation and Field Research. The department was created in 2005 with a generous endowment from an anonymous donor, and Dr. Todd Katzner was hired as Director. In September 2006 the department's staff doubled with the addition of Dr. Steven Latta as Assistant Director. Together our goal is to establish and conduct programs that are meaningful to the conservation of birds, to contribute substantially to the education of students and potential conservationists worldwide, and to produce research results suitable for publication in peer-reviewed scientific journals. We are also concerned with the role that human population growth and consumption of natural resources play in threats to biodiversity and environmental systems.

Flight Path will be published twice a year, and all National Aviary members and friends will receive it in addition to *Bird Calls* magazine. With the creation of *Flight Path* we hope to inform members, conservation biologists, and the broader national and international communities about the many and varied activities of the Department of Conservation and Field Research.

From tracking eagles on migration from Kazakhstan to Iran, to determining habitat needs of endangered hummingbirds in the high Andes of Ecuador, to assessing the value to migrating birds of regenerating forests in the Caribbean, to evaluating the potential threat to birds of wind power generators in Pennsylvania, the staff in the Department of Conservation and Field Research are contributing to bird conservation efforts around the globe.

Flight Path is the vehicle by which we will introduce you to these efforts, to excite your imagination, to explore solutions to environmental issues, and to show you what is possible when we struggle together to meet the challenge of the biodiversity crisis the world faces.

We hope you enjoy *Flight Path*, and we welcome your questions and comments.

—*Steven Latta, Ph.D. Editor*



SHORT TAKES

Pittsburgh-Hispaniola Consortium Formed

The island of Hispaniola faces enormous pressure from human populations and resource use, yet it has received little attention by ornithological science. For this reason, the island is one



of our priority research areas.

In late October, a diverse group of

professionals met in Pittsburgh to form the Pittsburgh-Hispaniola Consortium. With the leadership of the Friends of Hôpital Albert Schweitzer's Timber Re-Introduction Project, and the National Aviary's Department of Conservation and Field Research, we teamed up to begin an interdisciplinary dialogue in the hope that we may build a collaborative consortium to enable advanced interdisciplinary research and other positive works on the island.

With 17 participants from the Carnegie Museum of Natural History, Carnegie Mellon University's Tech Bridge World, Global Links, Pennsylvania Biodiversity Partnership,

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let your spirit soar

"Flight Path" is published for the members and benefactors of the National Aviary.

The National Aviary inspires respect for nature through an appreciation of birds.

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Coordinated Hispaniolan Parrot Conservation Initiative

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transport and those that survive live out their lives in the confines of very small cages where it is difficult to even stretch their wings.

The consequences of this pet trade are severe, and populations of Hispaniolan Parrots are declining so quickly that the International Union for the Conservation of Nature (IUCN) has declared the species “threatened.” Hispaniola is one of several priority areas for the National Aviary and so we have provided initial funding to the Sociedad Ornitológica de la Hispaniola (SOH) to combat the parrot trade.

SOH’s efforts involve an integrated program consisting of an education campaign, the creation of a volunteer parrot protection watch group, and the refurbishment of damaged nesting cavities. An aggressive advertising campaign through local newspapers in urban areas helps educate potential buyers about the tremendous threat of

extinction caused by the pet bird trade. A poster campaign backed by a series of presentations in rural communities focuses both on potential buyers of parrot chicks there and on the poachers themselves.

SOH has also coordinated teams of paid volunteers who patrol sites within the Sierra de Bahoruco National Park where poachers take significant numbers of parrot nests every year. These teams are composed of off-duty park guards and local volunteers. The role of the patrols is to inform local authorities about any parrot poaching activity in the area.

Finally, because nesting cavities are rare, SOH is helping to repair nesting cavities destroyed by poachers.

Financial support for this broad conservation effort has come primarily from the National Aviary. This past summer the National Aviary’s free-flight bird show “Wings of the World” raised money for conservation of Hispaniolan

parrots. Unlike so many conservation programs, the National Aviary doesn’t take overhead costs from such funds. All the money we raise goes directly toward addressing the conservation problem at hand. In addition, Pittsburgh native Molly Schachner, a professional advertising designer, and local artist Barry Shields donated their time to create artwork for the poster (see inset) used in the community education program of the parrot campaign.

Armed with these tools and our financial support, SOH has distributed posters and brought significant



“One bird flying is worth 100 in the hand.”

press attention to the problem of the pet trade in Hispaniola. In addition, this year they have created a new bird conservation group for youths and students in the town where much of the parrot poaching takes place. In the field, a total of 19 poached nesting sites were identified in the National Park and each was repaired.

Finally, SOH patrols have identified poachers and allowed local police to apprehend two major traffickers of parrot chicks, meanwhile rescuing the 12 chicks being transported for sale. This activity was possible because of SOH’s close collaboration with the Secretary of the Environment, the Secretary of Armed Forces, and the National Zoo in Santo Domingo.

Projects like these are an important part of our mission. National Aviary programs connect people to nature and help solve conservation problems in the wild. Few zoos are able to make this connection effectively. With hard work and your continued support, the National Aviary will play a crucial role in the successful conservation of this beautiful parrot.

Photo: Eladio Fernandez



Parrot nest cavity destroyed by poachers.



PARTNERING FOR CONSERVATION

Powdermill Avian Research Center

Todd Katzner, Ph.D.

We so often see announcements of individual achievement that it is easy to forget that success in conservation is almost never achieved alone. In the Department of Conservation and Field Research, we are well aware of the role that our national and international partners play in helping us to achieve our organizational goals and to complete projects. In this column we will feature one of our many key partners with whom we collaborate in meeting our research, conservation and education objectives.

Our feature partner in this inaugural issue of *Flight Path* is the Powdermill Avian Research Center (PARC) of the

bird banding, ornithological natural history studies, and training for aspiring ornithologists worldwide. In recent years PARC has focused on developing their research programs, and, with the creation of the Department of Conservation and Field Research (DCFR) at the National Aviary, the timing for partnerships couldn't have been more auspicious.

Last year PARC and the DCFR initiated a research project to investigate the impacts of wind power development on the migration of birds of prey. Wind power is an important resource to reduce human impacts on the environment and our dependence on fossil fuels.

Our research program is a coordinated effort that takes advantage of Dr. Katzner's 10+ years of experience conducting scientific research on eagles, the Pennsylvania natural history knowledge of Robert Mulvihill of PARC, and the bird trapping skills and eagle knowledge of PARC's Michael

Lanzone and Trish Miller. Already our coordinated efforts have resulted in

successes greater than we could have achieved on our own.

Last fall we trapped several golden eagles and outfitted them with satellite radio-telemetry tracking devices. We have since been tracking these birds' movements through the Appalachian states. This spring we received funding from the Pennsylvania State Wildlife Grant program to expand this project. We are now searching for more funds to support the training of a graduate student who can focus the time and energy that this project deserves. For more details on our birds and wind power studies, see our web page at www.aviary.org/dcfr.php.

Our department is bigger than eagles though, and there are other studies we are exploring in conjunction with the expert ornithologists at Powdermill. Dr. Latta is currently writing comprehensive proposals in conjunction with PARC and other partners to study Pennsylvania's avifauna on breeding, migration and wintering grounds. These broad-based projects incorporate the knowledge and skills that each partner can bring to the table and greatly increases the likelihood of success that each project will have. We will update you as we learn which of these projects are funded and which will move forward from planning into the implementation stage.



Photo: Todd Katzner

Powdermill's Trish Miller and Mike Lanzone with a golden eagle wearing a telemetry backpack.

Carnegie Museum of Natural History. PARC has for years been a center of

Pittsburgh-Hispaniola Consortium Formed

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and others interested in the interconnections among the natural environment and human and economic health, we engaged in a lively and wide-ranging discussion of forestry, bio-fuels, birds and bugs, environmental

pathogens, data systems, and many more features of the island, with the goal of identifying opportunities for collaborative research and program development.

Logical connections were made between and among

many of our individual initiatives, and many more opportunities were identified to link them through joint grant applications and project design. As a group, we decided that continued contact among ourselves would be valuable,

and that we would develop a mechanism to facilitate that contact. We plan on coming together as a group at least every six months, and expect that small subsets of people will find the opportunity to get together in the meantime.



Human Population and Biodiversity

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those people lived.

To conduct this experiment the authors studied three mountain ranges in Africa and looked for relationships among the number of people, the diversity and threat of wildlife, and the extent of development of human infrastructure in those areas. As expected, they found that the areas with the highest animal species diversity and numbers were the same areas with the greatest number of people.

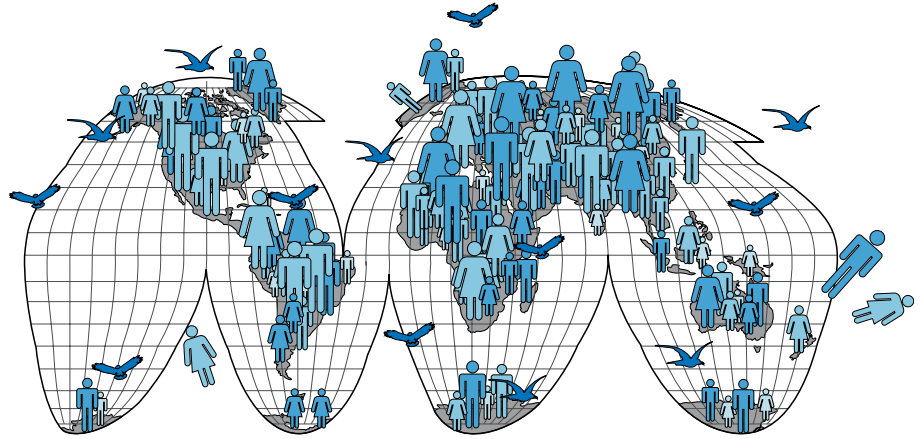
They concluded that, plain and simple, people and wildlife like the same kind of things. However, perhaps surprisingly, the largest proportion of wildlife that were threatened or endangered was not found where human density was highest, but instead where the development of human infrastructure was greatest. Again, plain and simple, the greatest threats to animals were incurred not because of the number of people, but because of how people used the land.

The results of this paper are not the last word on the subject. These findings make good sense in tropical Africa where rates of species diversity are extremely high, population densities are fairly low, and many people live with low impacts on the land. But the research is probably less applicable here in North America where species diversity is lower, human population densities can be very high, and

a large proportion of the population has a heavy impact on the landscape.

The Department of Conservation and Field Research (DCFR) at the National Aviary was founded in large

with the results used to predict similar processes in humans. It has been only recently that some geneticists have moved beyond fruit flies to the human genome, and research on human genetics has



part to explore relationships such as those among human population density and threats to biodiversity. At present our approach to this problem follows a traditional scientific method — we are exploring issues of biodiversity in “model systems.” For biologists, model systems are systems that are easy to work with, and where simple mechanisms allow for a more precise understanding of underlying processes.

For example, for the first 45 years, research in genetics was mostly focused on the DNA of fruit flies and mice,

kicked into high gear.

In our own studies at the DCFR, we are looking at human impacts on the environment right here at home, and we are also studying population effects on wildlife in two model systems — the Dominican Republic and the Philippines. Each of these island countries is rich in biodiversity, but with high and highly variable human population densities. It is our goal to apply the lessons we learn studying those islands to more general human population impacts.

MEETING REPORTS

Dr. Steven Latta recently attended the IV North American Ornithological Conference in Veracruz, Mexico. The Ornithological Congress is held every four years and provides an opportunity for biologists from all of the major ornithological societies in

North America to meet. This year there were more than 1,700 attendees. Dr. Latta was invited to present a paper at a special symposium on “Migrant Birds in Winter.” The title of his talk was “Avian demographics and survival in regenerating broadleaf forests following

agricultural clearing.” This talk summarized data from a four-year study in the Dominican Republic where wintering neotropical migratory birds occur in a variety of habitats. The research seeks to understand how well regenerating scrub habitat suits these birds, and

how these sites compare to older, well-established forest habitats. In countries where human populations are increasing and forest clearing is rampant, it is vitally important that we know how habitat conversion such as this will impact bird populations.



SHORT TAKES

New Hispaniolan Field Guide Published

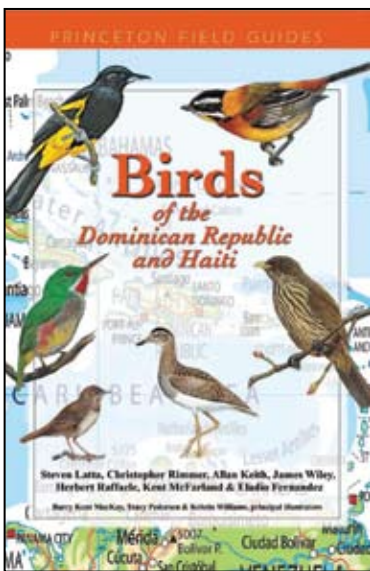
The National Aviary recently announced the publication of a new field guide, *Birds of the Dominican Republic and Haiti*. This field guide, prepared by the Assistant Director of the Department of Conservation and Field Research, Dr. Steven Latta, along with co-authors Chris Rimmer, Eladio Fernandez, Alan Keith, Jim Wiley, Herb Raffaele and Kent McFarland, is now available from Princeton University Press or from the National Aviary gift shop.

All 306 species of birds recorded on the island have been illustrated by principal artists Barry Kent MacKay, Tracy Pedersen

and Kristin Williams, or by supporting illustrators Cynthie Fisher and Bart Rulon. The guide promises to fill a large void in the birdwatching, conservation, and environmental education needs of both the Dominican Republic and Haiti as it is the first comprehensive field guide devoted to the birds of the island.

Beyond providing a means of identifying bird species, the guide also provides current information on the biology and ecology of Hispaniola's avifauna, and hopes to inspire a new generation of birdwatchers, ornithologists and conservationists.

With the support of Dominican co-sponsor Grupo Leon Jimenez, the guide will appear in Spanish as *Aves de la República Dominicana y Haiti*, while the World Bank, National Aviary, and two Haitian banks have financed the translation and printing of a French edition for use in Haiti, where it will appear as *Les oiseaux d'Haïti et de la République Dominicaine*. Proceeds from the sale of the book will go toward research and conservation efforts on Hispaniola.



Save A Tree!

If you would prefer to receive future issues of *Flight Path* as a downloadable .pdf, please email our editor at steve.latta@aviary.org, making sure to provide your mailing address from this issue.

National Aviary Supports Partner Organization in Dominican Republic

National Aviary staff traveled to Santo Domingo, Dominican Republic, in February 2006 to help our partner organization, the Sociedad Ornitológica de la Hispaniola (SOH) better define their mission and to explore ways in which international partners can best support the organization.

Along with SOH officers, attendees included representatives from Fundación Moscoso Puello, Vermont Institute of Natural Science, PRBO Conservation Science (California), and the National Aviary.

The group hammered out a mission statement for SOH, discussed a number of new projects to initiate in the coming months, and also identified potential sources of funding for these projects. An international Advisory Board was created with the appointment of Dr. Steven Latta (National Aviary),



Chris Rimmer (Vermont Institute of Natural Science), Dr. Jose Ottenwalder (Santo Domingo), Dr. Joseph Wunderle, Jr. (U.S. Forest Service, Puerto Rico), and Philippe Bayard (Société Audubon Haiti).

The Advisory Board will be essential in helping to develop and refine SOH's programmatic focus, especially with regard to the scientific aspects of their mission. The Board also will provide input on funding priorities and the implementation of on-the-ground bird conservation projects in both the Dominican Republic and Haiti.

HOW YOU CAN HELP

You can support the goals and projects of the National Aviary's Department of Conservation and Field Research! To make an unrestricted gift that will go toward projects with the greatest need, use our secure online donation form on the National Aviary website — www.aviary.org. Select SUPPORT US, then MAKE A DONATION.

In the "Donation Information" section, check the box for *Conservation and Field Research* — *Unrestricted*. To target your donation, please contact our staff.

Thank you!

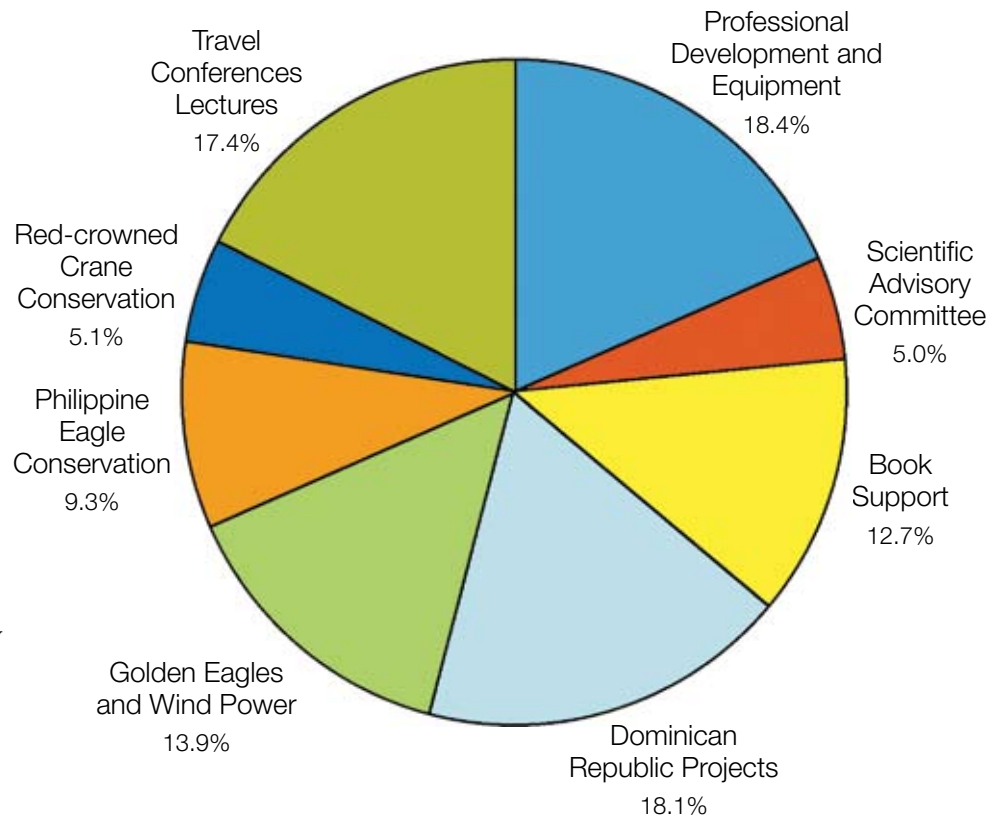


FUNDING AND EXPENDITURES

The Department of Conservation and Field Research (DCFR) of the National Aviary depends on external support to reach common conservation goals. Our current funding comes from a variety of sources, with our most significant support provided by the Avian Conservation Endowment. In 2006, \$39,280 of endowment funds was allocated toward operating expenses and conservation projects. A breakdown of the way those funds were spent is highlighted here. (For project descriptions, see our web page: www.aviary.org/dcfr.php.) In addition to these funds, we brought in a total of \$55,156 in external funding for projects and garnered another \$230,428 in collaborative grants that passed through other institutions.

A significant portion of this external funding was provided through the generosity of private donors whose support is crucial to our continued success. Donations to DCFR or to specific projects can be made online or by contacting our staff.

National Aviary endowment funds used for conservation programs, 2006.



RECENT PUBLICATIONS

A major measuring stick of the DCFR's success is publishing our research in peer-reviewed scientific journals. Producing such research is no trivial feat and also is something many conservation organizations only occasionally achieve. Each issue of Flight Path will feature a recent publication by one of our staff ornithologists.

This month we are highlighting Dr. Todd Katzner's recent paper "Using modeling to improve monitoring of structured

populations: Are we collecting the right data?" The paper, co-authored by E.J. Milner-Gulland of Imperial College London and Evgeny Bragin of the Naurzum Zapovednik, Kazakhstan, is published in the February 2007 issue of the journal *Conservation Biology*. *Conservation Biology* is the top peer-reviewed scientific journal for conservation research.

The mathematical models in this paper show that populations of eagles and other endangered or

threatened raptors could crash without warning because traditional measures of population size — like counting nests or the number of mating pairs — don't provide a complete picture of a species' health. The work has implications for the way that populations of all raptors — from eagles to kestrels — are monitored for conservation and management purposes.

The U.S. National Science Foundation and the Wildlife Conservation Society funded these studies. Because

monitoring programs are currently being developed for the U.S. populations of Bald Eagles, this study has already generated some interest and was written up as a lead article in the Health and Environment section of the *Pittsburgh Post-Gazette*. See the article by Don Hopey online at <http://www.post-gazette.com/pg/06298/732549-113.stm>.

For a copy of the original article, please see the National Aviary web page at www.aviary.org/dcfr.php.

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SHORT TAKES
Ecuadorian Student Supported

The National Aviary's efforts to further conservation and research of threatened and endangered birds through the building of local capacity has been enhanced by our support for an Ecuadorian student, Pedro Astudillo.

Dr. Steven Latta has been working with partners from Azuay University in Cuenca, Ecuador, on a series of projects in high Andean habitats to determine how birds respond to habitat structure and habitat disturbance at various levels of analyses. We are quantifying the condition of individual birds through mist netting, and recording age, sex, fat



Photo: Steven Latta

Pedro Astudillo recording bird banding information.

level, muscle mass, and parasite load. We are also monitoring individual birds to assess site fidelity and survival in human-disturbed Andean forest environments, and plan to extend these studies to

include reproductive effort and reproductive success at the same sites.

The study sites in Cajas National Park consist of a mosaic of regenerating pasture, secondary forest

fragments, and primary forest, as well as unique high-elevation forest fragments that contain a number of threatened endemic species.

We plan to assess how useful human-disturbed habitats are for bird populations and how community composition will change under scenarios of continued deforestation and reforestation. In the forest fragments, with Pedro's help, we are evaluating how patch area, shape and landscape context or connectivity influences community composition, abundance, and movement patterns of specific species.