

AFO Afield



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Biological Field Stations

By Reed Bowman

For a field ecologist, a biological field station is a little heaven on earth. In this case, Paradise includes a managed and protected landscape where access is controlled and data exist on a variety of important ecological factors and where field experiments can be conducted and long-term data amassed. Most of us dream of such an ideal field site and yet, over 200 biological stations distributed over 40 states or provinces are members of the Organization of Biological Field Stations (www.obfs.org), an association of member-stations dedicated to increasing the effectiveness of their research, education and outreach programs. Although the facilities may vary among stations, most have the most precious of all resources, especially for field ecologists—land. If not their own, many have cooperative agreements to conduct research on adjacent public lands, such as National Forests.

The diversity of endangered landscapes that can be found—and studied—at field stations is breathtaking. From the unique tallgrass prairies of the Flint Hills at Konza Prairie Biological Station in Kansas, the coastal sage scrub of California at the Starr Ranch, virgin old growth of the Pacific Northwest at the H. J. Andrews Experimental Forest, or the xeric oak scrubs of Florida at Archbold Biological Station, field stations provide the opportunities to understand the ecological dynamics of our most endangered places. Conservation is a central theme of most field stations, so habitats are managed under natural ecological regimes and site-based research informs adaptive management. Many field stations conduct long-term monitoring of weather and climatic variables, ecological disturbances such as fire or storms, even nutrient fluxes and hydrological patterns and these data often are available to visiting researchers. Many have excellent satellite and aerial imagery of their sites and the surrounding landscapes. The habitats, management activities, and monitoring data provide an essential foundation from which ecological hypotheses can be launched and the protected landscapes invite long-term perspectives from which patterns and processes often not evident in shorter-term studies can emerge. The National Science Foundation has recognized the inherent values of such sites through the establishment of the Long-Term Ecological Reserve Network (LTER). The program was established in 1980 to develop a network of preserves through which ecological



Main building at Archbold Biological Station on the Lake Wales Ridge of south-central Florida. Most research at Archbold is conducted in its managed preserve of Florida's endemic xeric oak scrub, which supports one of the largest collections of rare organisms in the world.

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2007 E. Alexander Bergstrom Research Award Winners

by Cecelia A. Riley

I would like to begin by saying thank you to our esteemed Judges: John Arvin, Andy Farnsworth, Scott Johnson, and Lee Robinson.

This year we received 39 domestic and 13 Latin America applications for the E. Alexander Bergstrom Research Award. As always, the program is highly competitive and the decisions were difficult! For ranking purposes, each reviewer read and scored all applications. There were two reviewers for each application submitted. An average of those scores resulted in the final rank.

The 2007 awards were funded as in years past with \$5,000 for the domestic category, and \$4,500 for the Latin American category. I have listed the winners (and their proposal titles and abstracts) below. All applicants have been notified the outcome (via email) of the results of this year's competition. Treasurer George Mock has taken care of payment to the winners.

For next year's award program I would like for another member of our council to consider serving as chair. I have held this position for 10 years now and am ready for someone else to take the lead on this rewarding and important AFO program. Please give this some thought and let me know before the July annual meeting if you are interested.

Winners' Abstracts—Domestic Category

Lauren Brudney, University of Minnesota—Piping Plover Chick Mortality: A Contribution to Great Lakes Population Recovery.

The Great Lakes Piping Plover (*Charadrius melodus*) population is federally endangered; <60 pairs nested in 2006. Recovery efforts are diverse but reduction of egg and chick predation is a major management focus. Use of predator exclosures has increased hatching success (currently ~85%), but does not provide protection to mobile chicks. Chick survival to fledging is typically about 50% of eggs hatched. Identification and evaluation of predator impacts over spatial and temporal scales is needed to increase chick survival and ultimately improve likelihood of population recovery. I propose to study Piping Plover chick mortality in the Great Lakes region by: (1) Evaluating historical nesting records to examine causes and variability in chick mortality among breeding sites, (2) Identifying avian and mammalian predators present at the breeding sites, (3) Examining timing of predator activity during the chick rearing period, and (4) Quantifying relative abundance of avian and mammalian predators at the breeding sites.

Jennifer Mortensen, Villanova University—Conservation ecology and social organization of the endangered White-breasted Thrasher on St. Lucia, West Indies

The White-breasted Thrasher (*Ramphocinclus brachyurus*) is an endangered mimid endemic to the islands of St. Lucia and Martinique. Research in 2002–2004 established that the population comprises ca. 600 breeding pairs, 83% of which inhabit dry forest along the east coast of St. Lucia in two subpopulations, Praslin (ca. 450 pairs) and Petite Anse (ca. 50 pairs). This work also revealed that the thrasher is a facultative cooperative breeder. The Praslin subpopulation is now facing an immediate threat: a resort under construction will destroy or fragment habitat containing up to 30%

of the global thrasher population. Here I examine the effects of habitat loss associated with resort construction on White-breasted Thrasher social ecology and reproductive success. During 2006 I gathered breeding-season data on group membership, nest success, predation rates, philopatry, and survival in areas adjacent to ongoing resort development, at a second, comparison site ca. 1.5 km away, and within fragments on the resort. My approach was to capture, band, and take blood samples from thrashers in the three study areas, and monitor territories and their associated nests to investigate the parameters listed above. This work revealed that cooperatively breeding groups increased from 34% of the population in 2002–2004 to 71% in 2006, with group size increasing from 2.4 to 2.9 birds. 2006 Mayfield nest success estimates were highest in the site adjacent to the resort development, intermediate in fragment nests on the development site, and lowest at the comparison site. My research in 2007 will further examine the role of indirect mechanisms in magnifying overall impacts of habitat loss, as well as the degree of site fidelity of thrashers living in fragments on the development site, and the effects of fragment size on their tendency to maintain territories and group stability. This research advances our understanding of White-breasted Thrasher status and threats, and should influence future decisions about habitat protection on St. Lucia

Alejandro Pietrek, University of Florida—Assessment of factors that influence distribution of threatened species in Araucaria forests of NE Argentina.

Atlantic Forest of South America, which is a global biodiversity hot spot, harbors some of the most threatened ecosystems and wildlife of the world. One of the endangered forest types within the southern part of the Atlantic Forest is Parana Pine forest, also known as Araucaria (*Araucaria angustifolia*) forest. In northeastern Argentina, only 2 % of original Araucaria forests remain in small, isolated fragments. Loss of this forest, primarily due to commercial timber harvest, has led to endangerment of the Araucaria tree and associated fauna. Araucaria plantations have been established, often beyond the boundary of species range making biogeographical considerations important, but these plantations now are being replaced by pine after harvest. Factors that determine distribution and persistence of wildlife in remnant Araucaria forest patches have not been identified. Also, the biodiversity value of Araucaria plantations is unknown. I will examine factors that influence the distribution of four threatened species historically associated with Araucaria forests. First, I will use a patch occupancy approach corrected for detectability to determine factors that influence presence of Araucaria Tit Spinetails (*Leptasthenura setaria*) at three scales: patch, landscape and biogeographic region in Araucaria remnants and plantations. Also, I will assess patch occupancy for four other endangered species that already are exceedingly scarce: Vinaceous Parrot (*Amazona vinacea*), the Azure Jay (*Cyanocorax caeruleus*) and the Black capped Manakin (*Piprites pileata*). This research will provide data and habitat models for identification of habitat factors and forest patches critical for species persistence, support restoration and reforestation programs, and contribute to planning of reserve networks to protect this unique fauna.

Bobby Huang-Suo Hsu, University of Hawaii at Hilo—Transfer of maternal antibodies in Hawaii ‘amakihi.

The introduction of avian malaria had a devastating impact on the endemic avian taxa of Hawaii. Recently, studies provided evidence for a comeback of native honeycreepers at low elevations after nearly a century of absence. Surveys showed that many lowland Hawaii ‘amakihi (*Hemignathus virens*) are reproducing, and many of the hatch year birds have resistance to avian malaria soon after fledging. Malaria-resistant females may improve the survival of their offspring by depositing maternal antibodies in their eggs as an added form of protection against disease in the nestling and early fledgling stage. If maternal-natal antibody transfer is beneficial to reproductive success, we might expect to observe this phenomenon in a wild population of Hawaii ‘amakihi at low elevations where avian malaria is prevalent (but no antibody transfer at malaria-free high elevation). To determine whether transfer of maternal antibodies occurs in Hawaii ‘amakihi, we will exam 15 to 20 breeding female ‘amakihi and their eggs at low and high elevation sites on Hawaii. The blood and egg samples of ‘amakihi will be tested using Enzyme-Linked ImmunoSorbent Assay (ELISA) to determine the presence of antibodies against avian malaria.

Stephen Agius, University of Maine – Can Patterns of Energetic Condition Explain Differences in the Productivity of Arctic and Common Terns (*Sterna paradiseae* & *S. hirundo*) at Petit Manan Island?

In the state of Maine, Arctic Terns (*Sterna paradiseae*) are listed as a threatened species and Common Terns (*S. hirundo*) are listed as a species of concern. For the past century the two species have responded differently to conservation efforts and the basis for these differences remains unclear. Identifying the physiological factors that continue to limit the two species from full recovery is critical for the conservation of their populations. To better understand the basis for different responses in recovery between the two species, I am comparing the physiological condition of the birds throughout key periods of the breeding season. I will examine the condition of the terns when they first arrive to the island, and throughout the incubation and chick rearing stages. The changes in physiological condition throughout the breeding season will be examined within and between species using several measures of energy use and reproductive state.

An individual's ability to meet their energetic demand is dependent on their physical condition upon arrival at the nesting colony, and will influence their subsequent breeding success. In an effort to determine how well an individual is meeting their energy demands, I will examine baseline corticosterone (the major energy-regulating steroid), plasma metabolites (indicators of the processes of putting on or using fat) and breeding hormones (indicators of reproductive state) and link these with breeding success. Measurements of parental effort will be monitored to better document individual activity related to clutch productivity. Based on my preliminary data, Arctic Terns arrive at their breeding colonies in a reduced condition and remain in poorer condition than Common Terns. The differences in fitness between the two species may explain the discrepancy in nesting success and population recovery.

Winners' Abstracts—Latin America Category

Claudia Alejandra Lizana Moreno, Universidad de Costa Rica—The effect of forest age on the ecology and energy intake of the ocellated antbird (*Phaenostictus mcleannani*), an obligate army-ant-following bird.

The loss of biodiversity in tropical areas has increased in recent years and it is necessary to generate evidence-based conservation practices to mitigate this loss. Insectivorous understory birds that join mixed-species flocks are among the most sensitive birds to forest fragmentation and disturbance in the neotropics, but the mechanisms causing their decline are still unknown. I propose a study to document and preliminarily evaluate a potential mechanism responsible for the decline of one of these birds: the ocellated antbird (*Phaenostictus mcleannani*). Based on previous observations, I hypothesize that forest disturbance causes reductions in food availability that are responsible for population declines in this species. The project will be conducted at La Selva Biological Station, Costa Rica, which includes a mosaic of old-growth forest, and secondary forests of different ages. I propose to (1) measure the effect of those forest types on the distribution and abundance of this species, and (2) determine the influence of those forest types on energy intake. My methods for the first goal include the use of Geographic Information Systems to analyze the distribution of >1500 foraging, roosting and nesting locations recently recorded at La Selva, according to forest type, and the direct quantification of foraging group sizes in each forest type. The methods for the second goal include the direct measurement of food and energy intake rates in each forest type, and the theoretical determination of the minimum field metabolic rate and food intake rate required for this species to survive. The main contribution of this project is the identification and initial evaluation of a potential proximate mechanism that could cause the decline of ocellated antbirds and similar species following forest disturbance, i.e. decrease in energy intake below required metabolic levels in disturbed areas.

Nestor Damian Fariña, Parana Pine Forest Project-Misiones, Argentina—Anidación del loro vinoso (*Amazona vinacea*), una especie bandera del bosque Atlántico de Argentina.

El loro vinoso (*Amazona vinacea*) es una especie globalmente vulnerable. Es endémica del bosque Atlántico del sudeste de Brasil, este de Paraguay, y la provincia de Misiones en Argentina. Hemos estimado que Argentina cuenta con poco más de 200 individuos.

En Argentina, la gran mayoría de los loros vinosos (por lo menos 167 individuos en 2005) habitan la zona rural entre Tobuna y San Pedro. Y por eso sufre la captura de sus pichones en sus nidos. El primer objetivo de este trabajo es determinar el tamaño de huecos que utiliza el loro vinoso para nidificar. El segundo objetivo es anillar a los pichones en los nidos, para decidir si es factible estudiar su dispersión y supervivencia con este método. El tercer objetivo es dar a los lugareños una oportunidad de ayudar en el estudio de los loros vinosos, para que disfruten a estas aves en su estado silvestre. En 2006, con la ayuda de los lugareños de Tobuna, ubiqué nueve nidos activos de loro vinoso. Como los loros suelen re-utilizar sus huecos, visitaré estos huecos nuevamente

en septiembre de 2007, y seguiré a parejas de loros para dar con otros nidos. Cuando encuentro un nido, si está a menos de 15 m de altura, lo revisaré con una pequeña cámara montada en un poste telescópico. Si el nido está arriba de los 15 m, y si es seguro para subir (árbol vivo) subiré con un sistema de sogas y harnés especiales para escala de árboles. Con este sistema, tiro la soga sobre una rama firme, y trepo la soga usando deslizadores y eslingas. Este estudio será el primero en determinar qué tamaño de huecos usan los loros vinosos para nidificar, y el porcentaje de nidos que son exitosos. Al tener pichones anillados, podremos evaluar el uso de anillamiento para poder estudiar la supervivencia y dispersión de juveniles. Para los lugareños, participar en el estudio de los nidos en sus propiedades significaría un paso hacia la conservación de los loros en su estado silvestre.

Miêko Ferreira Kanegae, University of Sao Paulo, Brazil—Habitat use and population size of endemic and threatened birds of Cerrado at the Ecologic Station of Itirapina, São Paulo.

Cerrado is the second largest ecological region in South America. Today it is ranked among the 25 most important terrestrial hotspots and, in Brazil, is the second biome in the numbers of threatened species, especially to those that are endemic and threatened. The greatest challenge Brazilian ornithologists have to face is the lack of information on the basic biology of rare species, as well as the increasing number of threatened species. However basic information on many species is meager or nonexistent. The objectives of this study are: (1) Investigation of habitat use of *Alectrurus tricolor*, *Culicivora caudacuta* and *Melanopareia torquata*; (2) Estimation of

density and population size of endemic (*Melanopareia torquata*, *Saltator atricollis*, *Eothenya fasciata*, *Cypsnagra hirundinacea*, and *Cyanocorax cristatellus*) and threatened species (*Culicivora caudacuta*, *Alectrurus tricolor* and *Poystictus pectoralis*). (3) Investigation of *Melanopareia torquata* territory defense by male and female; (4) Conservation strategies recommendations. Two spatial scales were established to analyze the habitat use: microhabitat and macrohabitat. Independent and punctual observations of *M. torquata*, *A. tricolor* (vulnerable) and *C. caudacuta* (vulnerable) have been registered to obtain the microhabitat (IUCN 2004). The vegetation structure is analyzed around a radius of 10 m from the bird place. The method utilized to estimate habitat selection will be based on use-availability. In this analysis the individual distribution of the species observed in each habitat type will be compared with the expected number of individuals, considering the availability of the referred habitat. In order to obtain the density and population size, point counts were systematically placed also known as variable circular plots. The total of 120 point counts were disposed at 100 m of distance to the road and 50 m to backfire. Each point count has been estimated during a period of 10 minutes. They were sampled twice a year on altered order in the morning and in the afternoon, from August to January from 2007 to 2008, when the birds vocalize more. The population size will be estimated using the total area of available habitats multiplied by estimated density of the species. This study could be useful as a support to analyze the threatened category of Cerrado bird and could allow the establishment of conservation strategies.

(continued from page 1)

processes could be investigated over long temporal and broad spatial scales, while promoting synthesis and comparisons among vastly different ecosystems. The network also recognizes that we cannot effectively understand modern ecological process divorced from human activities. Two of the over 25 LTER sites specifically address urban ecosystems and interactions between ecological systems and human socio-economic systems.

The mission of most field stations is tri-partite, emphasizing research, education, and conservation. There seem to be opportunities for everyone, from K-12 through established researchers. Many stations offer internships, a chance for fledgling scientists to work with researchers in the field, often conducting independent projects of their own conception and design. Opportunities for graduate research are endless. As resources for taxon-oriented field courses at Universities become increasingly scarce, many field stations provide them. Recently I had the good fortune to join the Biology of Birds course at the University of Michigan Biological Station at Douglas Lake. After a morning of exquisite birding in a boreal swamp, we were treated to an open-fire breakfast of bacon and eggs. With the dew still fresh, the dawn chorus still echoing, and campfire smoke curling around our ears, who wouldn't get excited about science, ecology and, in this case, birds! Field stations provide the opportunity for us to find our inner naturalist, to see the world with a fresh perspective, and to begin to ask questions again. They then provide us with all the resources to answer those questions using the most modern ecological methods. If you haven't already, visit the OBFS web page, find a station near you, visit it and dream of the opportunities.

Financial Report

2006 was a very positive year financially for AFO. It was the first year in which all editorial, printing and mailing of the *Journal of Field Ornithology* was handled by Wiley-Blackwell Publishers in Malden, MA. Total income, including membership dues, Blackwell Profit-sharing, royalty income and income/allocations from investments totaled over \$136,000.

Expenditures in 2006—including OSNA expenses, *AFO Afield* publication, web page activity, insurance and audit expenses, travel awards to students and councilors and a stipend to the Ornithological Council—totaled \$78,000. Research awards—including the Bergstrom and Latin American Research Awards and the Skutch Fund Award and Medal—totaled over \$22,000.

Thus, income exceeded expenditures by over \$36,000 and an additional \$50,000 was transferred to AFO accounts from earnings of AFO's Mist Net Operation.

AFO's budget for 2007 looks equally positive. The 2007 budget includes a new award to the Neotropical Ornithological Conference and a sponsorship of the 4th International Partners in Flight Conference. The current prospect is that 2007 income will exceed expenditures by \$30,000.

The North American Bird Banding Council— Opportunities and Challenges

Jerome A. Jackson

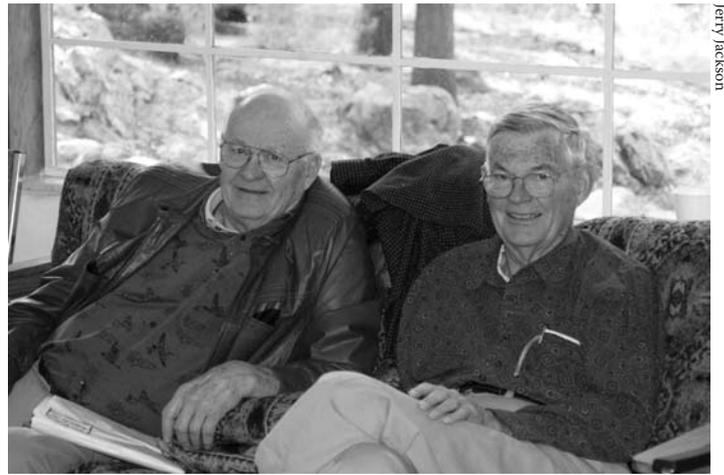
Since its origin in 1996, the Association of Field Ornithologists (AFO) has been a member of the North American Bird Banding Council (NABC), and has been represented on the Council by a principal and alternate delegate. Currently I serve as the principal delegate from AFO. John Tautin and June Ficker have served as alternate delegates from AFO in recent years. NABC was founded on the premise that ornithological organizations by working together could further our understanding of birds by enhancing the quality of data obtained through bird banding and at the same time infuse bird banding with enhanced communication among banders, uniform and comprehensive bander education, stronger purposes for banding, enhanced collaborative efforts among banders, and guidelines that focus on ethics and the welfare of the birds that we work with.

At times it seems that NABC is a well-kept secret because I know so many banders who do not have NABC certification and many who don't seem to be aware of NABC – or if they are, seem to think it is something only for those appointed as organization delegates. But then I look at the NABC web-site <<http://www.nabanding.net/nabanding/>> and see that in the few short years since its inception it includes representatives of 16 organizations, more than 80 banders who have become NABC Certified Trainers, and many more who have become NABC Certified Banders.

NABC has become known by banders around the world because of the banding manuals it has produced: *The North American Banders' Study Guide*, *The Instructors' Guide to Training Passerine Bird Banders in North America*, and individual North American banders' manuals for passerines and near-passerines, raptors, hummingbirds, and shorebirds. All of these manuals are provided free by NABC as pdf files, on CD, or as hard copy. Information on obtaining them is available on the NABC website. All are available in English and Spanish language versions, and three are available in French. More manuals are in preparation and more translations are available. These manuals present an opportunity for banders to improve banding efforts on their own, at their own pace.

NABC's manuals are also study guides that help prepare banders for taking the exams for bander certification. Certification is encouraged by both the U.S. Bird Banding Lab and the Canadian Banding Office and is an excellent credential to be able to present when applying for a bird banding permit. Times and places of upcoming certification exam opportunities are posted on the NABC web-site and these are frequently updated. Exams consist of a written portion that covers material in the manuals and a hands-on portion in which certified trainers evaluate bander skills at using traps and nets, handling and processing birds, and use of banding tools and other resources such as publications by Peter Pyle and colleagues (Pyle et al.1987, Pyle 1997a, b).

NABC annual meetings are usually of 2 to 3 days duration and are intense working meetings at which organization representatives focus on the work of the Council. Representatives are all “multi-taskers” serving on multiple committees. NABC committees include



Jerome A. Jackson

Glen Woolfenden (left) and Steve Russell (right) attend the NABC meeting in 2006.

ones focusing on certification, education, outreach, international efforts, ethics and policy, publications, and editorial. I currently chair the publications committee and am also responsible for putting together the written exams for bander certification.

While NABC's manuals and certification program have been the central focus of NABC activity during its first few years, there are new projects and opportunities under development for banders. A certification program for bander assistants is being developed. This will be a program for those individuals who help at banding stations, want to know more, but do not want to deal with the personal project and reporting responsibilities of a banding permit. Ken Burton has initiated a new tool for banders – something he calls a “visual Pyle” – pulling together photographs that illustrate plumage characteristics that are described in Pyle (1997) as useful in species, age, and sex identification. The first species accounts for this project are already being reviewed by the Publications Committee and we hope will soon be available online. Others interested in this project will be offered the opportunity to prepare accounts and can also contribute to them by taking quality digital photos that might be used in them. Finally, on the NABC website, banders can also find links to numerous banding resources that have been published by others. These include not only North American resources, but also resources from around the world.

I end with four challenges to AFO members: (1) Become familiar with NABC's *Bander's Code of Ethics* and incorporate those principles into your own banding efforts. (2) Improve your banding skills by taking advantage of the banding manuals produced by NABC. (3) Test your banding knowledge and skills by seeking NABC certification as a bander. (4) Pass it on. Become a trainer and share your knowledge and enthusiasm for banding with others.

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This is the last *AFO Afield* you will receive in the mail!

This will be the last hard copy of *AFO Afield*. Future issues of the newsletter will be emailed to members. Please make sure that we have your most current email address by contacting the OSNA Business Office at <business@osnabirds.org> or by logging in to the OSNA website <www.osnabirds.org>. OSNA renewal notices have been sent out, so members can update their information when they renew. As always, any updates may also be sent to the OSNA office via the U.S. Post Office. Thank you

2007 Skutch Fund recipients

Mieko Kanegae, Brazil, to study Habitat use and population size of endemic and threatened birds of Cerrado in the Ecological Station of Itirapina, Southeastern Brazil

(1) Investigar o uso do hábitat de *Melanopareia torquata*, *Culicivora caudacuta* e *Alectrurus tricolor*; (2) estimar a densidade e o tamanho populacional das espécies de aves endêmicas e ameaçadas de Itirapina e (3) analisar se a defesa do território de *Melanopareia torquata* está associado ao sexo; (4) propor estratégias de conservação para a avifauna da Estação Ecológica de Itirapina (EEI).

Sandra V. Valderrama, Colombia, to study the natural history and landscape influence on vocal variation of a critically endangered songbird, Niceforo's Wren (*Thryothorus nicefori*), Colombia

The purpose of my research is to contribute to the knowledge of the critically endangered and poorly studied Niceforo's Wren, and to develop a bioacoustical approach to study the remaining populations and to promote their conservation. To achieve that purpose, this study has two general goals: (1) Document crucial aspects on the relationship between Niceforo's Wren and its habitat, and (2) compare and contrast the natural histories of Niceforo's Wrens and Rufous-and-white Wrens.

I have five specific objectives: (1) Record data about territory size, habitat use patterns, and vocal behavior of Niceforo's Wrens, (2) Study the influence of habitat fragmentation and connectivity on the vocal behavior and movement behavior of Niceforo's Wrens, (3) Record vocal variation of the extant populations of Niceforo's Wrens, (4) Record vocalizations of the Rufous-and-white Wren subspecies in Colombia, and (5) Perform song-playback experiments in order to evaluate differences between heterospecific and conspecific response in Niceforo's Wrens and Rufous-and-white Wrens subspecies in Colombia.