



Migratory Shorebird Project: Annual Progress Report May 2014 – June 2015

Compiled by

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General Developments:

- Completed fourth full year of surveys (November 2014 – January 2015).
- Enhanced the online map-based data summary application to show spatial distribution of shorebirds based on project data from nearly all sites (www.prbo.org/pfss/datamap).
- Final report submitted to the USFWS summarizing expansion of project in the Pacific NW of the United States but also across the Migratory Shorebird Project.
- Updates to the project website to include training and workshop materials and summaries www.migratoryshorebirdproject.org
- Pacific Flyway Shorebird Survey (lead contributing program to the Migratory Shorebird Project) received endorsement from the Pacific Flyway Council.
- Survey design and implementation workshops for partners in (1) Peru and (2) Central America.
- Survey design and protocol, data analysis, and conservation application workshops for partners in Mexico, Nicaragua, Colombia, and Peru.

Country / Region Report: US and overall coordination

Also see www.pointblue.org/pfss for more detail on the US contribution and the Pacific Flyway Shorebird Survey.

Personnel involved (organization/institution)

Matt Reiter, Catherine Hickey, Dave Shuford, and Khara Strum (currently with Audubon California)

Field Surveys (United States)

- Surveys of 24 coastal estuaries and 64 routes of interior wetland habitat throughout California, Oregon and Washington, 15 Nov 2014 – 15 Jan 2015
- Data collected by >34 partners from federal and state agencies, universities and NGOs and >280 volunteers
- Counted >400,000 shorebirds.
- Piloted interior survey design for Willamette Valley.
- Helped coordinate surveys across 11 countries.
- Translated components of the California Avian Data Center Project Leader application into Spanish to improve functionality for Latin American partners.

- Entered data into CADC.

Workshops & Presentations

- Developed online training video reviewing the survey protocol and datasheet (see Resources tab at www.prbo.org/pfss).
- Presented “The Migratory Shorebird Project: Connecting Communities of the Americas through Research for Conservation” at the Waterbird Society meeting La Paz, Mexico, November 2014.
- Presented “The Migratory Shorebird Project: Connecting Communities of the Americas through Research for Conservation” at the Stikine Shorebird Festival and the Kachemack Bay Shorebird Festival in Alaska – May 2015.
- Coordinated four meetings of the project steering committee.
- Completed data analysis workshop in Cali, Colombia in April 2015 to assess strategies to analyze project data.
- Completed data application workshop with partners in Mexico and in particular representatives of Mexico’s protected area commission (CONANP) to identify strategies for project data to inform conservation and management decisions within protected areas.

Science

- Continued to refine interactive data summary tools designed for the PFSS that can be applied to this project.
- Completed data query application that compiles survey data and spatial data for use in models of factors influencing shorebird distribution and abundance.
- Developed species distribution models for 8 species using the Pacific Coast of the United States.
- Centralized spatial data resources from across the project that can be used to model species distributions as well as the effect of hypothesized threats to shorebird populations.
- Developed manuscript and analysis outline for evaluating the impact of habitat change, disturbance and raptors in shorebird abundance and behavior.
- Published: Reiter ME, Wolder MA, Isola JE, Jongsomjit D, Hickey CM, Carpenter M, Silveira JG. 2015. Local and landscape habitat associations of shorebirds in wetlands of the Sacramento Valley of California. *Journal of Fish and Wildlife Management* 6(1):29–43; e1944-687X. doi: 10.3996/012014-JFWM-003.

Outreach / Education / Awareness

- Continued development of project webpage: www.migratoryshorebirdproject.org; particularly adding bi-lingual capacity.
- Completed art

Levered Contributions

- \$225K (2-years) from Packard Foundation
- \$75K (1-year) from the USFWS

Country Report: México

Personnel involved (organisation/institution)

- Eduardo Palacios (CICESE, and Grupo de Aves del Noroeste (GANO))
- Guillermo Fernández (UNAM, GANO)
- Cesar Guerrero Ávila (Terra Peninsular, A.C.)

Field Surveys

- One Winter surveys (during Jan. 2015) conducted at 26 sites in NW Mexico as part of ongoing CRIMBI WESA/DUNL monitoring project; 217 sampling units data compilation, data entry and review ongoing. 50+ volunteers engaged.
- Main species observed: Western Sandpiper, Dunlin, Marbled Godwit, Willet, Black-bellied Plover, Sanderling, Greater Yellowlegs, Dowitcher spp, Snowy Plover.
- The *Ostreros Group* (American Oystercatcher Working Group in Mexico) partners monitored AMOY at 10 breeding sites with support from the Ornithological Council.
- As part of GANO, we continued the Snowy Plover Working Group in Mexico. Partners are working on four projects in four sites during breeding and Winter season. Support from Tracy Aviary.

Workshops & Presentations

- Palacios, E., Amador-Silva, E.S., y D. Galindo-Espinosa. 2014. Populations, threats, and conservation of Snowy Plover, Least and Gull-billed Tern in Mexico. 38th Annual Meeting of the Waterbird Society. 4-7 Noviembre 2014, La Paz, BCS, Symposium “Snowy Plovers, Least Terns, and Gull-billed Terns: shared status, threats and conservation needs across North America”.
- Palacios, E. 2014. De cazador con resortera a ornitólogo. V Jornadas Académicas de Biología marina. UABCS. 25-26 noviembre, 2014. La Paz, B.C.S.
- Galindo-Espinosa, D., y E. Palacios. 2014. Population ecology of the Snowy Plover, *Charadrius nivosus*, in northwestern Baja California, Mexico. 38th Annual Meeting of the Waterbird Society. 4-7 Noviembre 2014, La Paz, B.C.S.
- Reiter, M.E., Hickey, C.M., Strum, K.M., Davidson, P., Palacios, E., Clay, R., Eusse, D., Chu, J. 2014. The Migratory Shorebird Project: Connecting communities of the Americas through conservation science. 38th Annual Meeting of the Waterbird Society. 4-7 Noviembre 2014, La Paz, B.C.S.

Science

- Gómez del Ángel, S., Palacios, E., y A.E. De Sucre-Medrano. 2015. Dimorfismo sexual en tamaño y marca frontal en el chorlo nevado (*Charadrius nivosus*). Huitzil, Rev. Mex. Ornitol. 16:21-27.
- Cruz-López, M., D. Galindo-Espinoza, A. DeSucre-Medrano, S. Gómez del Angel, E. Palacios, et al. 2014. Monitoring Snowy Plovers (*Charadrius nivosus*) at four important wintering sites in Mexico. Report to Tracy Aviary. Salt Lake City, Utah. 22 p.

- Cruz-López, M., D. Galindo-Espinoza, A. DeSucre-Medrano, S. Gómez del Angel, E. Palacios, et al. 2014. Monitoreo de tres poblaciones reproductoras del Chorlo nevado (*Charadrius nivosus*) en diferentes regiones de México. Report to Tracy Aviary. Salt Lake City, Utah. 14 p.
- Graduate Student: Daniel Galindo Espinoza. Doctorado. Ecología reproductiva del chorlo nevado, *Charadrius nivosus* (Aves: Charadriidae), en el Complejo Lagunar San Quintín, Baja California, México. Programa: Doctorado en Ciencias Marinas. CICIMAR. Director: Eduardo Palacios Castro. Exit June 2015.
- Graduate Student: Jonathan Natael Vargas Vega. Maestría. Efectos del disturbio en la densidad y comportamiento de aves playeras. Programa: Maestría en Ciencias Marinas y Costeras. UABCS. Director: Eduardo Palacios Castro. En proceso.

Levered Contributions

Cash:

- 7,000 from Ornithological Council to study breeding American Oystercatchers in NW Mexico
- 12,000 from Tracy Aviary to monitor Snowy Plovers on four sites during breeding and Winter in Mexico.
- 14,000 from CRIMBI to study Red Knots in Oaxaca and in NW Mexico

In-kind:

- CICESE, UNAM, Terra Peninsular, CIBNOR, UABC, UABCS, UAS shorebird research professors and research associated time (\$83K). NW Mexico Survey (\$20K ann. operating cost, 150 person-days survey time).

Country / Region Report: Panama and North of South America: Panama, Colombia, Ecuador and Peru

Personnel involved (organization/institution)

- Diana Eusse, Richard Johnston, Carlos Ruiz, Patricia Falk-Fernandez, Jessica Suarez, Vianey Ramirez and Fernando Castillo *Colombia team- Asociación Calidris*
- Rosabel Miro, Karl Kauffman, Yennifer Diaz and Michelle Caballero, *Panama team, -Aububon Panama*
- Ana Agreda, *Ecuador team- Aves y Conservación*
- Frank Suarez Pingo and Mariella Scarpi, *Manglares de San Pedro-Peru team- Naturaleza y Cultura*
- Stive Marthans, Patricia Saravia Juan Pisconte, *Paracas Perú team- Paracas Natural Reserve*

Summary

- 4 Countries and 10 sites involved in project
- More than 70 volunteers
- Data from 6 species with hemispheric conservation status
- Workshops for conservation plans and strategies, get new partners and identify new sites and to plan how to reduce threats
- Two post-graduate research about threats in habitats and two undergraduate about site conditions and distributions patterns
- Data analysis to know how and why shorebirds use sites in Pacific coast
- Habitat management, research and communication strategy to reduce human disturbance on habitat shorebird
- Outreach and education activities to local stakeholders and training for volunteers and researcher

Field Surveys

- Surveys of 10 coastal estuaries 15 January – 15 February 2015, in four countries: Panama, Colombia, Ecuador and Peru
- Non-winter surveys in one site in Colombia: July and November 2014. This survey also used a roost survey protocol.
- Eight of these 10 sites are part of the Western Hemisphere Shorebird Reserve Network.
- Data collected was led by >5 partners from protected areas and NGOs and >49 volunteers (biologist, students, birdwatchers, protected areas staff and local people). Between 2012-2015 we had >70 volunteers
- Counted >53.000 shorebirds and at least 49.000 waterbirds more. Data from 29 shorebird species and 37 species of other waterbirds groups.
- Recorded data of shorebird species with hemispheric conservation status like Whimbrel (*Numenius phaeopus*), Western Sandpiper (*Calidris mauri*), Wilson's Plover (*Charadrius wilsonia*), American Oystercatcher (*Haematopus palliatus frazari*, *H. p. palliatus*), Short-billed Dowitcher (*Limnodromus griseus*), and Marbled Godwit (*Limosa fedoa*).
- Trained volunteers in shorebirds counting and identification, MSP field protocol and data entering into CADC website, through workshops, field trips and data management
- Identified 15 new sites in Peru coast

Workshops & Presentations

Migratory Shorebird Project workshop. Paracas-Peru. August 12nd-14th 2014

Attended by 24 people from Peru

Presented and discuss the research project hypothesis

Trained participants in the protocol field and show them the online application data management

Identified new sites for Peru

Protecting and managing wintering habitat for shorebirds along the Pacific flyway workshop. Cali-Colombia. April 14th – 16th 2015

Shared aims and challenges in each site/country

Discussed about perturbation protocol and field design

Built a communication strategy to reduce human perturbation in shorebird important sites

Planned shorebird data analyst

Taller Nacional de Expertos sobre Aves playeras en Ecuador. April 24th 2015

Discussed about shorebird conservation actions in Ecuador

Identified main threats that endanger shorebirds and their habitats and approaches for analyzing our data to understand the impact of these threats.

Identified some actions to be conducted at important sites

Next steps: Shorebird Conservation Plan for Ecuador

Migratory Shorebird Project workshop. Chinandega-Nicaragua. May 28th – 29th 2015

Attended by 11 people from Nicaragua, Guatemala, El Salvador, Costa Rica, Honduras

Presented and discuss the research project and hypothesis matrix

Shared shorebirds knowledge and gaps in each country

Trained participants in field design and the protocol field and format

Showed online application data management CAD/C and map and analyst tool

Reviewed data that are now include in CAD/C

Science

Data analysis: we are exploring shorebird abundance spatial distribution patterns on survey site in the Pacific coast, and calculate density and population trends using GIS tools and effects of landscape and climate variables on shorebirds. These analyses will be complete for November 2015.

Influence of predators on non-breeding shorebird distributions and predator evasion mechanisms used by shorebird (Richard Johnston doctoral thesis-Simon Fraser University, Canada).

The aim is to give a close look of the role of avian and mammal predators on shaping non-breeding shorebird distributions, and provide some background to evaluate predators hypothesis relate with shorebird declines.

This research will be using survey data, behavioral observations, measures of habitat quality and shorebird captures and measures of escape performance (take-off speed videos).

This research is being conducted on Bocana Iscuandé WHSRN site and PNN Sanquianga (Colombia) and it has the support of

Toxicological evaluation (heavy metals) in foraging shorebirds areas. Saskatchewan University - Canada (Lab of Dr. Christy Morrissey).

This study seeks to determine the risk of exposure of organic pollutants on shorebirds in important stopover and wintering sites. So far we have collected sediment samples in Bocana Iscuandé and Salinas de Ecuasal sites. These samples are in laboratory tests phase and we expect to have results in the first half of 2015.

Protecting and managing wintering habitat for shorebirds along the Pacific flyway

With Aves y Conservación (Ecuador), Point Blue (USA), CISESE y Terra Peninsular (México), Bird Studies of Canada and Paracas National Reserver (Peru) prepared a proposal to NMBCA grants. The main goal of this proposal is to reduce human disturbance in MSP sites. Project sites are Delta del Río Colorado, Laguna Ojo de Liebre y Guerrero Negro and Bahía de San Quintín, (México), PNN Sanquianga and Bocana de Iscuandé (Colombia), Salinas de Ecuasal (Ecuador) and Reserva Nacional de Paracas (Perú). Between 2014 and 2016 we will evaluate the effect of human disturbance and habitat decrease on shorebirds in these 7 sites WHSRN.

To achieve this, we proposed some activities like (1) secure the legal protection of 863 ha of habitat for shorebirds in Punta Mazo, MX; (2) reduce the level of disturbance experienced by shorebirds in eight WHSRN site (106,000 ha); (3) improve the capacity of local groups and national agencies in eight countries to evaluate changes to shorebird populations and implicate practical management techniques that contribute to improving shorebird habitat (500,000 ha) and (4) contribute knowledge regarding the effect of wintering habitat loss on shorebird populations in the American Pacific.

Outreach / Education / Awareness

Migratory shorebird Festivals, in Salinas de Ecuasal (Ecuador) and Bocana de Iscuandé (Colombia). We linked these two festivals and provide an opportunity for different site habitants were known and see the landscape. About 600 people, including children, youth and adults, participated. During the two festivals, we noted that “Maurita the peep” is an important element that participants remember and associate with the importance of the sites.

Technical publication about Birds of Mudflats in Sanquianga National Park. It show the main results obtained in these three years of surveys. The Sanquianga Park joined to this project and succeeded in developing their monitoring component of mudflats, a conservation objective. This publication presents the most relevant results on the distribution and abundance of waterbirds (including shorebirds) in the area. This publication was written in conjunction with researchers from Calidris, Park staff and community members who participated in the surveys. Writing, proofreading and discussion of results, was conducted through workshops, so this process is also an interesting result and a great experience.

Levered Contributions (kind and Cash)

Aves y conservación- Ecuador	\$ 50 000
Asociación Calidris – Colombia	\$ 25 000
Sanquianga National Park –Colombia	\$ 15 000
Consejo Comunitario Esfuerzo Pescador-Colombia	\$ 10 000
RN Paracas-Peru	\$ 45 000
Audubon Panamá	\$ 20 000
Protecting and managing wintering habitat for shorebirds along the Pacific flyway- NMBCA project	\$ 183 266

Country / Region Report: Canada

Bird Studies Canada staff involved

- David Bradley, Karen Barry, Krista Englund, David Hope, Catherine Jardine, Pete Davidson

Canadian Collaborators (organisation/institution)

- Mark Drever, Kathleen Moore (Environment Canada – Canadian Wildlife Service)
- Ron Ydenberg, Dov Lank (Simon Fraser University)

Volunteer-based Field Surveys

- Monthly surveys (Sept-March) conducted at 177 pre-defined sites by over 250 volunteers as part of ongoing *BC Coastal Waterbird Survey*; web-based data entry and review is ongoing.
- Main species captured: Dunlin, Black-bellied Plover, Sanderling, Greater Yellowlegs, and rocky shore specialists (Black Turnstone, Black Oystercatcher, Surfbird).

Training Workshops & Presentations

- Delivered a training workshop to volunteers for conducting fall migration surveys for Western Sandpipers, utilizing the shorebird identification and flock estimation guides developed earlier in the project.

Science

- David Hope continued his PhD with Simon Fraser University, with Bird Studies Canada as the NSERC industrial partner, developing and testing predictions for leading indicators of shorebird change, based on existing data and new data collected in BC during fall migration. BSC is closely involved in the scientific design and approach, including official supervision, and led the coordination of the volunteer network that collected the data, identification of survey sites, recruitment of volunteers and protocol training.
- Published a manuscript in PLoS One entitled “Biofilm Consumption and Variable Diet Composition of Western Sandpipers (*Calidris mauri*) during Migratory Stopover”, which documents Western Sandpiper diet in the Fraser Delta – Boundary Bay system based on stable isotope analyses of droppings, surface samples and invertebrates, including recommendations for further study and considerations for development scenarios.
- Data from BC Coastal Waterbird Survey integrated into larger Migratory Shorebird Project database stored in the California Avian Data Center.

Outreach

- Promoted *BC Coastal Waterbird Survey* to the public at various festivals and community events, and at Vancouver Bird Week 2015, which comprises a week-long series of events partnered with the City of Vancouver, Vancouver Parks Board, Tourism Vancouver, Stanley Park Ecology Society and Nature Vancouver.

Conservation

- Successfully applied for a three year grant to address recreational disturbance at key shorebird stopover sites in British Columbia, using a social marketing methodology, to change recreational disturbance behaviors and monitor the impacts, in collaboration with recreational user groups and local governments, and evaluate the hypothesis that human disturbance is a factor driving change in distribution and abundance of shorebirds.

Fund-raising

- Cash: \$30K Environment Canada – Canadian Wildlife Service for BC Coastal Waterbird Survey
\$20K Environment Canada – Disturbance project for 2015-2016
\$18K NSERC grant to David Hope for PhD
- In-kind: BC Coastal Waterbird Survey skilled volunteers (440 person-days survey time)
Simon Fraser University shorebird research professor and research associate time (\$10K+)