

# Migratory Shorebird Project

## Annual Progress Report

July 2020 – July 2021



*Compiled by*

Matthew Reiter, Blake Barbaree, and Mark Dettling - [Point Blue Conservation Science](#)

Eduardo Palacios - [CICESE](#) and [Grupo de Aves del Noroeste](#)

Diana Eusse - [Asociación Calidris](#)

Rob Clay and Salvadora Morales - [Manomet](#) and [WHSRN](#) Executive Office

David Bradley - [Birds Canada](#)

Photos: *Shorebirds in Nicaragua* (top-left; S. Morales); *Project partners doing a survey in Guatemala* (top-right; V. Sagastume); *Project partners doing a survey in Panama* (bottom; R. Miro)

The Migratory Shorebird Project is a collaborative partnership-driven international research and monitoring program with the objectives to identify shorebird population status and trends, assess threats potentially impacting populations, apply data to inform conservation actions, and build capacity for long-lasting conservation of shorebird and their habitat. After nearly 10 years of collaborative effort the Migratory Shorebird Project is now active in all 13 countries with shorelines on the Pacific Coast of the Americas. With yet another year of successful surveys, trainings, data analysis, and outreach the MSP is continuing to build capacity and increase the knowledge base needed for coordinated conservation of shorebirds and their habitats across the Pacific Americas Flyway. It is only through the extensive network of partners that a project of this scale is even possible, but it is essential to conserve the wide-ranging migratory shorebirds that we care about. With a global pandemic, 2020-2021 was a unique year for MSP. While many workshops were moved online and international travel cancelled, surveys were still completed, and the network stayed in touch through a WhatsApp group.

## General Developments

- Completed tenth year of surveys at most sites (November 2020 – February 2021) in North America, seventh year in Central America, and the eighth year in South America.
- Launched Spanish versions of the Migratory Shorebird Project data map (<http://migratoryshorebirdproject.org/explore-data/interactive-map/>) and the Migratory Shorebird Project data summary app (<http://migratoryshorebirdproject.org/explore-data/figures-and-tables/>).
- Published three peer-reviewed manuscripts based on MSP data that summarized the MSP survey framework, analyzed the impact of drought in California and, highlighted shorebird use along the Pacific Coast of Colombia.
- Based on MSP data, three coastal wetland sites received special recognition. The Gulf of Nicoya in Costa Rica and the Canal de Jambeli in Ecuador were added to the Western Hemisphere Shorebird Reserve Network as sites of regional and international importance, respectively. Estuario de Virvila in northern Peru was recognized as a site of international importance by Ramsar.
- Two webinars were held with the presentation of the annual results of the MSP 2020 in South America (four presentation <https://www.youtube.com/watch?v=ptWYqAFd5G4>) and Central America (seven presentation <https://www.youtube.com/watch?v=hX7BSvYkXaM>).
- Continued participation on the steering committee for the Pacific Americas Shorebird Conservation Strategy and on the advisory board for the Coastal Solutions Fellows program (<http://www.solucionescosteras.org/>).



Roosting Marbled Godwits (*Limosa fedoa*)



## Canada

### *Personnel involved (organization/institution)*

- David Bradley (Birds Canada); Program Director
- Graham Sorenson (Birds Canada); Projects Coordinator
- Catherine Jardine (Birds Canada); Data Analyst

### *Field Surveys*

- 209 units surveyed by 161 volunteers and 333 assistants representing 1,475 individual surveys in 2020-2021.
- Contributed data to Environment and Climate Change Canada (ECCC) update of “The Birds of the Fraser River Delta: populations, ecology and international significance report.”
- Shared all data with Environment and Climate Change Canada. Also shared data with many environmental consultants and NGOs.
- Incorporated data entry portal into [Nature Counts](#) to enhance data sharing and management. Data were requested and approved for use by students, environmental consultants, Environment and Climate Change Canada and NGOs.

### *Workshops & Presentations*

- Public presentation and training sessions were cancelled in 2020-2021 due to Covid restrictions.
- 7 online presentations given to 300 people on the BC Coastal Waterbird Survey.
- The BC Coastal Waterbird Survey annual newsletter was completed and distributed in December 2020, and it and past versions have a dedicated page on the Birds Canada website. ([https://birdscanada.b-cdn.net/wp-content/uploads/2021/01/Newsletter\\_2020\\_EN-4.pdf](https://birdscanada.b-cdn.net/wp-content/uploads/2021/01/Newsletter_2020_EN-4.pdf))

### *Science*

- Published a 20-year trend analysis including all shorebirds counted from 1999-2019 in Avian Ecology and Conservation titled “[Twenty years of coastal waterbird trends suggest regional patterns of environmental pressure in British Columbia, Canada](#)”.
- The findings mentioned above were presented online in December 2020 to volunteers and was attended by 45 people. Results were also presented to 78 people at a virtual presentation to Nature Vancouver in February 2021, to 25 international partners in the Puget Sound Ecosystem Monitoring Program, and to 40 Environment and Climate Change Canada staff as part of the Pacific Wildlife Research Centre seminar series.
- Compiled an update to the 1987 report on the Fraser River Estuary and published this in BC Birds titled “[The status, ecology and conservation of internationally important bird populations on the Fraser River Delta, British Columbia, Canada](#)”.

- Worked closely with Environment Canada to include the BC Coastal Waterbird Survey in Joint Venture work, and an analysis of the Coastal Waterbird Survey data from JV conserved lands and control areas is underway.
- 3 new Motus Wildlife Tracking stations set up near Vancouver at Iona Island, Robert's Bank, and Richmond with the Canadian Wildlife Service to track *Pacifica* Dunlin and Western Sandpiper during spring and fall migration in 2020-2021, a further 2 stations are being set up in late 2021 in the Fraser Estuary.
- 45 *Pacifica* Dunlin tagged with VHF transmitter between October-December 2020 for detection with the Motus network of receivers in the Fraser Estuary to assess habitat use and migration chronology.
- A new postdoctoral student will join Birds Canada to assess the occurrence and potential consequences of plastic pollution in migratory shorebirds utilizing Motus and the Migratory Shorebird Project partnership to re-sight leg-flagged birds.

### ***Outreach / Education / Awareness***

- Completed [blog post highlighting the Migratory Shorebird Project manuscript](#) published in Avian Conservation and Ecology

## **United States**

Also see [www.pointblue.org/pfss](http://www.pointblue.org/pfss) for more detail on the US portion of the Migratory Shorebird Project; the Pacific Flyway Shorebird Survey.

### ***Personnel involved (organization/institution)***

- Matt Reiter (Point Blue Conservation Science); MSP Steering Committee Chair
- Catherine Hickey (Point Blue Conservation Science); Conservation Director
- Blake Barbaree (Point Blue Conservation Science); Pacific Flyway Shorebird Survey Project Manager
- Mark Dettling (Point Blue Conservation Science); Pacific Flyway Shorebird Survey Coordinator
- More key leaders and partners:  
<http://data.prbo.org/apps/pfss/index.php?page=volunteer>  
<http://data.prbo.org/apps/pfss/index.php?page=partners>

### ***Field Surveys (United States)***

- Surveys of 26 coastal estuaries and 76 routes of interior shorebird habitats throughout California, Oregon and Washington, 15 Nov 2020 – 20 Jan 2021.
- Data collected by >200 partner biologists and volunteers including >35 federal and state agencies, universities, and NGOs.
- Counted approx. 255,000 shorebirds. Count was lower due in part to no coverage of Humboldt Bay.
- We redesigned the survey of Bandon Marsh NWR because portions of the original survey route were no longer accessible.
- Created new partnership with Altacal Audubon Society and continued partnership with Fresno Audubon Society to apply for a small grant to support survey coordination in the Central Valley, CA.

- Conducted 3<sup>rd</sup> year of a partial shoreline survey from the ground at Salton Sea, continuing our partnership with USFWS, Audubon California, California DFW and Oasis Bird Observatory. Further evaluation of the effort is needed to identify a permanent strategy moving forward.
- Renewed partnership with Ecostudies Institute to lead coordination of the survey at Puget Sound, WA. Ecostudies had not coordinated the survey since 2017.
- Chaired the steering committee of the Migratory Shorebird Project and helped coordinate surveys across 13 countries.
- Data management and support using CADC for entire MSP network.

### **Workshops & Presentations**

- Coordinated three meetings of the Migratory Shorebird Project steering committee.
- Gave presentation about the Migratory Shorebird Project to Skagit Audubon
- Gave presentation about Pacific Flyway Shorebird Survey to Marin Audubon

### **Science**

- Published two papers using project data:
  - Barbaree B. A., M. E. Reiter, C. M. Hickey, K. M. Strum, J. E. Isola, S. Jennings, L. Max Tarjan, C. M. Strong, L. E. Stenzel, W. D. Shuford. 2020. [Effects of drought on the abundance and distribution of non-breeding shorebirds in central California, USA](#). PLoS ONE 15(10): e0240931.
  - Reiter, M. E., E. Palacios, D. Eusse-Gonzalez, R. Johnston González, P. Davidson, D. W. Bradley, R. Clay, K. M. Strum, J. Chu, B. A. Barbaree, C. M. Hickey, D. B. Lank, M. Drever, R. C. Ydenberg and R. Butler. 2020. [A monitoring framework for assessing threats to nonbreeding shorebirds on the Pacific Coast of the Americas](#). Avian Conservation and Ecology 15 (2):7.

### **Outreach / Education / Awareness**

- Implemented Spanish translation of online data summary applications ([www.migratoryshorebirdproject.org/datamap](http://www.migratoryshorebirdproject.org/datamap); [www.migratoryshorebirdproject.org/exploredata](http://www.migratoryshorebirdproject.org/exploredata)).
- Completed a Point Blue blog focusing on how migratory shorebirds and the Migratory Shorebird Project Network has helped keep us feeling connect despite a global pandemic. [Staying Connected Through Shorebirds](#)

### **Levered Contributions**

- \$275K (2-years) from the David and Lucile Packard Foundation
- \$90K from USFS International Programs
- \$25K from anonymous donor

## **México**

### **Personnel involved (organization/institution)**

- Eduardo Palacios (CICESE, and GANO); Project Coordinator
- Guillermo Fernández (UNAM, GANO); Sonora and Sinaloa Partner
- Cesar Guerrero Ávila (Terra Peninsular, A.C.); Executive Director
- Lucía Alfaro Rodríguez (Terra Peninsular, A.C.); Data entry technician
- Abril Copalli Heredia Morales (Terra Peninsular, A.C.); Research assistant

### **Field Surveys**

- Nonbreeding Shorebird Monitoring: Completed the annual non-breeding midwinter shorebird surveys at 21 sites across northwest Mexico. These sites included 250 sampling units that are surveyed by about 50 volunteers in northwest Mexico.
- Nonbreeding American Oystercatcher Monitoring: Completed winter surveys of roosting aggregations of American Oystercatchers during high tides at five wetlands of southern Sonora, and two wetlands of Sinaloa.
- Snowy Plover Nonbreeding Surveys: During January 2021 we coordinated with the Snowy Plover midwinter window survey along the Pacific coast of United States to conduct Nonbreeding Snowy Plovers surveys in five sites in northwest Mexico (Estero de Punta Banda, Bahía San Quintin, Laguna Atotonilco, Marismas Nacionales and Bahía Ceuta).
- Waterbird surveys in southern Mexico. One winter survey in 21 sampling units of the wetlands of Isthmus of Tehuantepec.

### **Science**

- Snowy Plover workshop in Bahía Ceuta, Sinaloa: Along with our partners we organized a workshop in Ceuta to train participants in deploying GPS receptors on Snowy Plover. Two new sites will be activated for the conservation and monitoring of the Snowy Plover in Mexico.
- Application of shorebird data: Mentored graduate students on data analysis and interpretation for use in conservation and management.
  - Daniela Michelle Valdez Gámez finished her M.Sc. thesis at UABCS in June 2021 by using MSP data to study the ecology of Wilson's Plover in the Ensenada de La Paz.
  - Jennifer Hernandez is finishing her M.Sc. thesis at UABCS using shorebird data from Ensenada de La Paz collected by MSP.
  - Jonathan Vargas, a Coastal Solutions Fellow finished his project on reducing human disturbance on the western Snowy Plovers in Baja California.
  - Estefanía Muñoz is about to finish this her M.Sc. thesis at CICESE on the abundance and distribution patterns of three large shorebirds in California and northwest Mexico in relation to weather, also using the data from MSP.
- Outreach publication: Heredia, A., E. Palacios, and M. Reiter. In Prep. Human disturbance types and its potential impact to nonbreeding shorebirds in a WHSRN site.

### **Outreach / Education / Awareness**

- Protection of Habitat: In order to protect the nests of Snowy Plovers and California Least Tern in May 2021 we installed a temporary fence on three nesting beaches of Estero de Punta Banda, northwest Baja California. This action also includes monitoring of the two species breeding season. The fence will remain installed until August. See: <https://youtu.be/qMfv25Z2ZYg>
- Protection of Habitat: To protect the public beach of the City of Ensenada, Terra Peninsular signed a Co-Management Agreement with Pacifica, a residential development in Ensenada, B.C. This real estate company holds the concession of the federal zone which is a nesting ground for the Snowy Plover. This agreement will provide the legal background to control disturbance and promote best management practices in this beach. See: <https://youtu.be/JMNGnHzrTI>
- Member of the steering committee for the Pacific Americas Shorebird Conservation Strategy.
- Mentor of Jonathan Vargas, fellow of the Coastal Solutions Fellows program. He finished his program last February.

### **Levered Contributions**

Cash:

- \$ 15,000 from Tracy Aviary to GANO to monitor Snowy Plovers on four sites during breeding and winter in Mexico.
- \$5,000 from Southern Wings to expand shorebird surveys in southern Sonora

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).

## **Central America**

### **Personnel involved (organization/institution)**

- Salvadora Morales, Manomet/WHSRN, Central America Project Leader
- Varinia Sagastume y Byanca Bosareyes, Guatemala Coordinator
- Vicky Galán, SalvaNatura, El Salvador Coordinator
- John van Dort, Asociación Hondureña de Ornitología-ASHO, Honduras Coordinator
- Ericka Reyes, y Michael Gutiérrez, Quetzalli, Nicaragua Coordinator
- Luis Sandoval, Unión de Ornítólogos Costa Rica Coordinator
- Rosabel Miro y Esther Carty, Sociedad Audubon Panama, Panamá Coordinator

### **Field Surveys**

- Data collected at 85 sites including 194 sampling units (10 sites and 51 sampling units in Guatemala, 33 sites and 43 sampling units in El Salvador, 13 sites and 13 sampling units in Honduras, 20 sites and 44 sampling units in Nicaragua, 7 sites and 20 sampling units in Costa Rica and 2 sites and 23 sampling units in Panamá) by 15 volunteers and 47 assistants in 2020-2021
- Data collected by >14 partners from federal and state agencies, universities and NGOs.
- Counted 101,875 shorebirds representing >30 species.
- Gulf of Fonseca was surveyed in a Trinational effort in March 2021. 32 volunteers participated in the count in El Salvador, Honduras and Nicaragua.
- Joined with other initiatives: International Shorebird Survey (ISS), Waterbird Census in Central America, Coastal Solutions Fellows program (Guatemala).

### **Workshops & Presentations**

- Two webinars were held with the presentation of the annual results of the MSP 2020 in South America (four presentation <https://www.youtube.com/watch?v=ptWYqAFd5G4> ) and Central America (seven presentation <https://www.youtube.com/watch?v=hX7BSvYkXaM>
- Webinar: *The challenge of estimating flocks of shorebirds*, how do you do it? series of talks where all the partners of MSP participated. <https://www.youtube.com/watch?v=k0Zrcswytw0>
- Volunteers from the NGO Vivamos Mejor and members of the BirdZone Atitlan Club in Guatemala were trained on different topics: Waterbird monitoring, monitoring of sites in migratory season.
- Participatory workshops were held with shrimp producers in Guatemala and Nicaragua.
- Bird festival during world wetlands day in Guatemala with additional support of PNUD and WCS. In Nicaragua a shorebird festival was held in December 2020 in collaboration with SEAJOY Shrimp producer.

- Talks about shorebirds to students from two schools in the Delta del Estero Real shorebird reserve in Nicaragua coordinated with CAMANICA/PESCANOVA.
- Additional monitoring was carried out during the migration season in three MSP sites (Paredón, Salinera el Jardín and Barra Nahualate) in Guatemala.
- Webinar organized for the Panama Sanitation Program of the Ministry of Health: Panama presented “Actions for the conservation of the Bahía de Panamá wetland”.
- Two presentations at the First virtual congress of the Mesoamerican Society for Biology and Conservation (SMBC). The student Christian Torres with the support of Audubon Panama presented the theme “Disturbances in feeding and roosting areas of migratory shorebirds in the Bay of Panama”. This presentation is part of a thesis advised by Eduardo Palacios. The other presentation during the congress was Bahía de Panama and Bahía de Parita: two important sites in the western hemisphere: General results of shorebird monitoring in Panamá.
- Presentation Epicenter of maritime routes and migratory bird routes, talk organized by the environment commission of the Panama Maritime Chamber.
- Panama: Epicenter of migratory bird routes, presentation made during the conference ‘The migratory route of birds through the Pacific wetlands’ organized by the Municipal Authority of the Pantanos de Villa (PROHVILLA), Peru.

### **Science**

- Logistic support for the thesis about the effect of disturbances on the beach of Bahía de Panamá by a student at the University of Panama and advised by Eduardo Palacios. This work is in the final phase of review by the main advisers of the University of Panama.

## **South America**

### **Personnel involved (organization/institution)**

- Diana Eusse and Dina Estupiñan (Asociación Calidris - Colombia); Marcela Cabanzo González (Fundación Guandal – San Andrés de Tumaco Birding), CC Esfuerzo Pescador, PNN Saquianga Staff,
- Danixa Del Pezo y Ana Agreda (Aves y Conservación); Ecuador Coordinator. Aves y Conservación; Ecuasal C.A.; Asociación de Cangrejeros de Balao; Refugio de Vida Silvestre Isla Corazón y Fragata (REVISICOF), Socio de la Cooperativa de Pesca Artesanal Puerto Concheros
- Fernando Angulo (Corbidi); Rosa García (jefatura del Santuario Nacional Los Manglares de Tumbes); Jhonson K. Vizcarra y Gilbert Christian Riveros (Servicio Nacional Forestal (SERFOR); Igor Lazo (Corbidi).
- Sharon Montecino y Ivo Tejeda (ROC-Chile)

### **Field Surveys**

- Surveys of 31 sites (coastal estuaries, tidal flats, salt and shrimp ponds) in 4 countries, between 15 Jan – 15 Feb 2021.
- Data collected by > 5 partners from NGOs, 3 governmental agencies and 2 local communities with 53 volunteers.
- Surveys were supported by local and national governmental agencies (COL, PER), salt producers (ECU: Cooperativa de Pesca Artesanal Puerto Concheros, PER), academy (PER: training of park rangers and students participating in the count) and local communities (COL, ECU, PER)
- Counted 102.000 shorebirds, 25 species and 219 sampling units
- Chile and Colombia included 2 new sites and 12 sampling units.
- Disturbance protocol was implemented for the 3rd year.



- All sites and shorebirds were upload in CADIC; sites have geometry updated. This year all the partners checked and updated data in CADIC.
- This year, a habitat assessment has been made, using a guide provided by Asociacion Calidris, to collect information on ecosystems in MSP sites-wetlands.
- In Tumaco, Colombia, ISS surveys were completed at MSP units beginning in March.

### **Workshops & Presentations**

- Training sessions on MSP Protocol including the disturbance component. Partners from different countries attended the meeting.
- Chile: Online sessions about the MSP in South America and main results in Chile (4 September 2020). Open workshop on Protocols and main results for Chile (15 de enero de 2021). This last event opened the waterbird survey season in Chile.
- Colombia: workshop to analyze data with Sanquianga National Park staff.
- Other partners offered training to their volunteers.

### **Science**

#### COLOMBIA

- MSP data were used to analyze the shorebirds distribution and abundance in tidal flats in Sanquianga National Park and Bocana de Iscuandé, Nariño, Colombia. Results were published in a [special issue](#), to celebrate the 60 years of Colombia National Parks.
- Marcela Cabanzo from Fundación Guandal-Colombia, submitted a paper named *Observaciones y registros de Charadrius vociferus en Tumaco, Nariño* (Sighting and records of *Charadrius vociferus* in Tumaco Nariño).
- Sanquianga National Park: analysis of 10 years of shorebirds surveys in Sanquianga, to incorporate into their Management Plan.
- Asociacion Calidris is developing a habitat map for the Project evaluating the effect of investing in organizational capacity building on shorebird habitat and abundance along the Pacific Americas Flyway. MSP habitat data were used to train the models.

#### CHILE

- During 2020 and 2021, ROC used the MSP data in the project “Conservation of shorebirds and their habitats in Chamiza”, which incorporates components of community involvement and citizen science in shorebird monitoring applying the MSP census methodology. The project is coordinated by the ROC in alliance with the Marine Conservation Foundation and Manomet.
- In 2020, the ROC used the data that have been collected within MSP in Chamiza, to incorporate them as background information in the WHSRN site declaration request file for the Coihuín-Chamiza wetlands.

### **Outreach, education or awareness**

- Since after the survey season 2020 and so far in 2021, partners have not carried out in person activities, due to COVID-19. Many online events were completed, like meetings, talks and trainings.

#### CHILE

- Since 2020, the ROC has participated through its executive director, Ivo Tejeda, in the group for the preparation of the National Bird Conservation Strategy (ENCA). Since 2020, the ROC has also been the organization in charge of coordinating and executing the workshops for the elaboration of the first

“Action Plan for the Conservation of Shorebirds in Chile”, which is being developed with the support of the Ministry of the Environment and Manomet.

- In 2020, the ROC designed and carried out the theoretical and practical sessions of the “Training program to strengthen the control of vehicular traffic in coastal wetlands, beaches and dunes”, which was coordinated in collaboration with the Ministry of the Environment and was aimed at Chilean Navy personnel (Maritime Governments, DIRINMAR and Harbor Master Offices). The training sessions were developed in 3 of the sites that are monitored through the MSP: the mouth of the Lluta river, Huentelauquén and the Mantagua wetland; since all present problems of vehicular traffic in non-authorized areas, which disturbs shorebirds and their habitats.

#### **COLOMBIA**

- The 1st Community Shorebird Festival in Tumaco 2021. Activities such as: two theoretical-practical workshops on shorebirds with boys and girls from local communities, a mural allusive to shorebirds, and a virtual conference session.