SIMPOSIO S-PIF-16

MULTI-NATIONAL MONITORING PROGRAMS FOR WATERBIRDS IN CENTRAL AMERICA – BUILDING A REGIONAL BASELINE FOR CONSERVATION ACTION

PROGRAMAS MULTINACIONALES DE MONITOREO DE AVES ACUÁTICAS EN CENTROAMÉRICA - CONSTRUYENDO UNA LÍNEA DE REFERENCIA REGIONAL PARA ACCIÓNES DE CONSERVACIÓN

S-PIF-16-01. OPPORTUNITY FOR GREATER IMPACT THROUGH COORDINATION AND COLLABORATION OF MULTI-NATIONAL WATERBIRD MONITORING PROTOCOLS AND PROGRAMS IN THE WESTERN HEMISPHERE

OPORTUNIDADADES PARA UN MAYOR IMPACTO A TRAVÉS DE LA COORDINACIÓN Y COLABORACIÓN DE PROTOCOLOS Y PROGRAMAS MULTINACIONALES DE MONITOREO DE AVES ACUÁTICAS EN EL HEMISFERIO OCCIDENTAL

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There are multiple existing and emerging multi-national monitoring programs for non-breeding waterbirds in the Western Hemisphere. Existing waterbird monitoring programs vary in objectives, protocol, timing of surveys, geographic extent, focal species, and availability of funding but frequently rely on the same organizations and volunteers to complete the work and, when assessed critically, provide some common data types. The ability to leverage these programs to maximize the value of the information gathered into the future is necessary to inform the conservation and management of waterbirds and will require open dialogue and cooperation among many partners who already rely on limited funding to sustain these important sources of data. Over the last two years, we have organized a series of workshops with the leaders of many of the multi-national non-breeding waterbird monitoring programs active in the Western Hemisphere. These workshops have helped develop (1) a common understanding of objectives of each monitoring program, protocols applied, data management, and analysis/application of the data; (2) a list of cross-program and cross-scale research questions or information objectives that could be achieved with collaboration; (3) a list of efforts needed to enable cross-program integration to achieve identified objectives; and (4) input for a draft strategy to facilitate collaboration among programs. Based on the work to date, we provide network development and survey design, protocol, and data management guidelines to (1) enable the analysis of integrated non-breeding waterbird monitoring data from different existing programs to address common objectives; (2) serve as a foundation for expanded collaboration; and (3) establish a framework for the development of new monitoring programs.

S-PIF-16-02. MONITORING THE SUCCESS OF FLYWAY-SCALE CONSERVATION INVESTMENT STRATEGIES

MONITOREANDO EL ÉXITO DE LAS ESTRATEGIAS DE INVERSIÓN EN CONSERVACIÓN DE LA RUTA DE MIGRACIÓN

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The multiple existing and emerging multi-national monitoring programs in the Western Hemisphere have the potential to provide invaluable information regarding the size and trends of waterbird populations. Such information is essential to evaluating the success of conservation efforts, varying from focused local efforts to measuring progress towards meeting global biodiversity targets for conservation and sustainable development, such as the Aichi Biodiversity Targets and the Millennium Development Goals. Many waterbird species are dependent on full lifecycle conservation across large geographic and cultural landscapes. Such a "flyways approach" to conservation must coordinate research, conservation, management and monitoring efforts of many groups across many political boundaries. Recently, three such approaches have been developed for migratory shorebirds in the Americas: Arctic Migratory Bird Initiative, the Atlantic Flyway Shorebird Initiative, and the Pacific Americas Shorebird Conservation Strategy. Recognizing the challenges of monitoring waterbird species on a hemispheric scale, these conservation investment strategies have recommended three distinct levels of monitoring resolution: 1). Effectiveness monitoring, which yields immediate results, and allows managers to adapt quickly in response to unexpected outcomes and situations; 2). Index monitoring, which helps demonstrate the species are responding to conservation actions as expected; and 3). Population monitoring, which provides the big picture of success at restoring populations. Examples will be provided of each level of monitoring, to illustrate how waterbird monitoring efforts in Mesoamerica can and are contributing to measuring the success of the flyway-scale conservation strategies, and helping to ensure efficiency of conservation efforts, and that action is being directed where it is most needed.

S-PIF-16-03. NON-BREEDING GROUND MONITORING FOR SHOREBIRDS THAT NEST IN CANADA

MONITOREO EN ÁREAS DE PASO Y ESTADÍA INVERNAL DE AVES PLAYERAS QUE NIDAN EN CANADÁ

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Many species of waterbirds (including shorebirds) that nest in Canada migrate and overwinter in Central America, South America and the Caribbean, approximately 38% of migratory birds that breed in Canada spend at least half of the year in areas south of the United States. In order to meet its mandate to conserve and protect Canada's wildlife, and to ensure that migratory bird populations remain within their target population ranges, Environment and Climate Change Canada provides support for international migratory bird conservation initiatives. The Environment and Climate Change Canada approach for international bird conservation has four main elements (1) support for the delivery of large-scale monitoring in order to identify key sites, prioritize threats and conservation actions, (2) support for conservation initiatives such as the Shorebird Flyway Conservation Plans, (3) projects focusing on key species and habitats (4) the use new technologies to identify important areas. For the large-scale monitoring of waterbirds and shorebirds, Environment and Climate Change Canada has provided support for the Neotropical Waterbird Census and the Central American Waterbird Census since they started in 1991 and 2012, respectively, and during the development of the Caribbean Waterbird Census. A key deliverable from these programs has been the identification of important sites for shorebird species that are of high conservation concern for Canada. This in turn has led to increased awareness on the importance of wetlands and their international relevance as migratory bird

habitat, as well as the delivery of habitat conservation through regional programs and international designations under the auspices of the Ramsar Convention, the Important Bird and Biodiversity Areas (IBA) program, and the Western Hemisphere Shorebird Reserve Network (WHSRN) program.

S-PIF-16-04. MIGRATORY SHOREBIRD PROJECT: CONNECTING COMMUNITIES OF THE AMERICAS THROUGH CONSERVATION SCIENCE

PROYECTO DE AVES PLAYERAS MIGRATORIAS: CONECTANDO A LAS COMUNIDADES DE LAS AMÉRICAS A TRAVÉS DE LA CIENCIA DE LA CONSERVACIÓN

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The Migratory Shorebird Project is the largest annual survey of wintering shorebirds on the Pacific Coast of the Americas. It was initiated in 2011 and is a cooperative effort to conserve shorebirds and wetlands from Alaska to Chile by connecting communities, standardizing data, and applying science across the Americas. The objectives are to: (1) quantify spatial and temporal trends in distribution and abundance of individual sites and across their wintering range; (2) measure the response of shorebirds to management and conservation actions; (3) evaluate specific hypotheses about the factors influencing population changes, including habitat change, predators, and sea-level rise; and (4) raise awareness in communities around all sites about shorebird conservation and their connectivity to other communities along the Pacific Coast of the Americas. To achieve our objectives, we developed a framework to critically evaluate specific hypotheses about the factors influencing population changes, designed a survey protocol and a centralized data management platform to coordinate surveys, and gather and share data about shorebirds and habitat conditions. We also established partnerships around important sites with NGO´s, managers, governments, local communities and researchers to use the framework and protocols and train volunteers to be citizen scientists who participate in the surveys. Each year, the MSP's annual survey (December–February) collects data on 1.5 million shorebirds representing >35 species in 75 sites across 12 countries using 500 volunteers and 50 organizational partners. To date we have applied MSP data to identify new important sites in the WHSRN directory, to support linking monitoring programs to management actions, to deliver information to support take-decisions, to determine what habitat characteristics influence use of coastal landscapes by shorebirds, and given sea-level rise and other environmental changes where should we prioritize coastal conservation and management actions today to benefit shorebirds and people both today and for future generations.

S-PIF-16-05. CENTRAL AMERICAN WATERBIRD CENSUS OBJECTIVES, PROTOCOLS AND OVERVIEW OF RESULTS TO DATE

CENSO CENTROAMERICANO DE AVES ACUÁTICAS: OBJETIVOS, PROTOCOLO Y RESULTADOS GENERALES HASTA LA FECHA

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The Central American Waterbird Census (CAWC) was launched in 2011 by the Waterbird Conservation Council in coordination with Wetlands International and BirdLife International and is currently coordinated by the WHSRN Executive Office. The census is a sister program of the International Waterbird Census (IWC), a waterbird census established in Europe in 1967 by Wetlands International and also covers censuses in Africa, Asia and South America since the 1990s. The main objectives of the CAWC are to promote knowledge, appreciation and conservation of waterbirds in Central America; to generate data as a basis for waterbird population estimates, trends and seasonal fluctuations of species; to identify, monitor and promote sites that qualify as wetlands of importance to waterbirds, and to provide information for key decision makers. The CAWC has been implemented following the methodology of the Neotropical Waterbird Census, with census data being collected on two forms, one describing the site and one for the count data. All waterbirds observed are counted from a specific spot or by walking through a site. Sites are completely or partly covered, depending on size, but standardized between years. Generally one census is carried out in January-February each year; however, participants are encouraged to implement a second count in July. Over the years, the CAWC has gradually been growing in significance, both in terms of the sites and species surveyed, and the number of volunteer participants across the seven countries. During the census in January-February 2017 a total of 150 volunteers from all seven countries of Central America participated. A total of 152 sites and sub-sites were visited and a total of 229.241 waterbirds were counted, comprising 111 species.

S-PIF-16-06. TRI-NATIONAL GULF OF FONSECA SHOREBIRD SURVEY

CONTEO TRINACIONAL DE AVES PLAYERAS EN EL GOLFO DE FONSECA

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The geography of the Gulf of Fonseca offers extensive habitats suitable for shorebirds, yet little is known about shorebird numbers in the Gulf. To learn more about shorebirds visiting the Gulf of Fonseca, and specifically to establish baseline, a simultaneous shorebird count was organized. During 28 and 29 January 2017, a total of 72 locations were visited by twelve teams in the three countries that share the Gulf of Fonseca, on the Pacific coast of northern Central America. Between El Salvador, Honduras and Nicaragua, a total of 40,078 shorebirds representing 27 species were counted in six different habitat types: tidal mudflat, estuary, aquaculture, seasonal wetland, beach, and rocky coastline. Shorebird densities found in these six habitat types were extrapolated to available surface area per habitat, as determined through remote sensing, to arrive at rough estimates for each of the 27 shorebird species. It is estimated that the Gulf of Fonseca offers approximately 61,000 ha of suitable shorebird habitat in the form of tidal mudflat (25%), estuary (5%), aquaculture (66%) and seasonal wetland (4%), as well as 118 km of suitable coastline for feeding or resting shorebirds in the form of beach (52%) or rocky coast (48%). Not each habitat type was sampled in the same proportion: habitats deemed important to shorebirds, such as estuaries and seasonal wetlands, were relatively better sampled than more peripheral habitats, such as aquaculture, or habitats difficult to access, such as tidal mudflats. Except for aquaculture, shorebird densities were extrapolated based on densities per habitat found in the current study to available habitat, based on the assumption that these densities were stable or similar throughout the available habitat. It is estimated that 195,000 shorebirds were present in the Gulf of Fonseca that weekend. The results of this survey include globally significant numbers of Wilson's Plover *Charadrius wilsonia* with 2,898 individuals counted and 9,112 estimated as present. Notable numbers of shorebirds were found in the Delta Estero Real (Nicaragua), a RAMSAR site in the southeastern corner of the Gulf of Fonseca, where observers counted 18,000 shorebirds of 18 species, or 44% of the overall count. About 13,000 shorebirds of 22 species were counted in the Salvadoran part of the Gulf, while Honduran counters logged 9,000 individuals of 22 species. Caution should be used in interpreting the count results, as under-sampling of certain habitat types, variation in shorebird identification skill levels among observers, and difficulty of site access, may have influenced the results.

S-PIF-16-07. CENSOS DE AVES ACUÁTICAS EN EL DEPARTAMENTO DE CHINANDEGA AL OCCIDENTE DE NICARAGUA

CENSUS OF AQUATIC BIRDS IN THE CHINANDEGA DEPARTMENT TO THE WEST OF NICARAGUA

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Wetlands, lakes, rivers, estuaries, among other ecosystems where one of the main elements of life predominates, water, are very rich in biodiversity and have been classified as important sites for resident and migratory birds in our country; therefore these habitats have been taken into account for various studies. The Census of Waterbirds in Nicaragua has been discontinued probably due to the lack of economic resources among other factors. From 2013 and 2014 we have tried to carry out Waterfowl Censuses tracking the same sites in order to understand the dynamics of these sites a little better and try to identify some threats, however we have to increase efforts especially for involve more participants and institutions, in order to support and increase knowledge of the importance of these ecosystems to birds. The censuses are carried out at the beginning of the year in 4 sites of the department, among them seasonal lagoons and a bocana, where 15072 individuals were counted and identified 59 species, it is possible to emphasize that some sites have begun to register recently however we will follow up. The Anátidos, some Shorebirds, Storks, and Pelicans are the birds that present more abundance in the seasonal lagoons whereas in the bocana predominate the Gulls and Terns. The number of birds has not been constant since the beginning of the census, showing variations between each year and sites, probably due to the irregularity of the rainy season and the use of these bodies of water by farmers, also hunting and fishing.

S-PIF-16-08. CENSO DE AVES ACUATICAS EN EL SALVADOR 2012-2017.

EL SALVADOR WATERBIRD COUNTS 2012-2017

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El estudio de Aves Acuáticas en El Salvador inicia de manera sistemática desde 1993 por algunos años en ciertas costas del país, el Ministerio de Medio Ambiente y Recursos Naturales realiza de 2007 a 2009, un Censo Nacional de Aves Playeras. SalvaNATURA de 2007 a 2009 inicia un programa de Aves Playeras en Jiqulisco, en 2012 asume el conteo de Aves Acuáticas como parte del Censo Centroamericano de Aves Acuáticas, y retoma los conteos de aves playeras integrándose a la Iniciativa Hemisférica con Bahía de Jiquilisco, y otros sitios, en 2017 participa en el Censo Simultaneo Trinacional Golfo de Fonseca. Previo a estos esfuerzos, la información sobre aves acuáticas se consideraba aislada, general y desactualizada. Los censos se han realizado en diversos humedales del país, una vez al año en época de migración y en algunas oportunidades en época no migratoria, siendo posibles gracias al apoyo financiero de diversas instituciones y más de una treintena de voluntarios que han participado en diferentes momentos, brindando su tiempo, conocimiento. Los recursos económicos obtenidos para los censos se han optimizado, combinando proyectos y a través de la gestión de apoyo vinculando actores como: Comunidades, Centros Escolares, Instituciones Gubernamentales (MARN, PNC Medio Ambiente; y Alcaldías) ejecutando acciones de conservación: Jornadas de limpieza, Sensibilización, Capacitación, Producción y Distribución de Material Educativo,

entre otros. Los Censos de aves acuáticas iniciados en 2012, han generado valiosos datos: más de 170,000 observaciones y 78 especies, así como datos importantes de especies, permitiendo un mayor conocimiento del estado de la avifauna, y la importancia de los humedales como hábitat en las rutas hemisféricas de migración. También han contribuido con información para toma de decisiones: Designación de Sitios RAMSAR, asignación de fondos Estatales para proyectos, nominación como Sitios de la Red Hemisférica de Reservas de Aves Playeras (WHSRN).