

STATE OF PALAU'S BIRDS

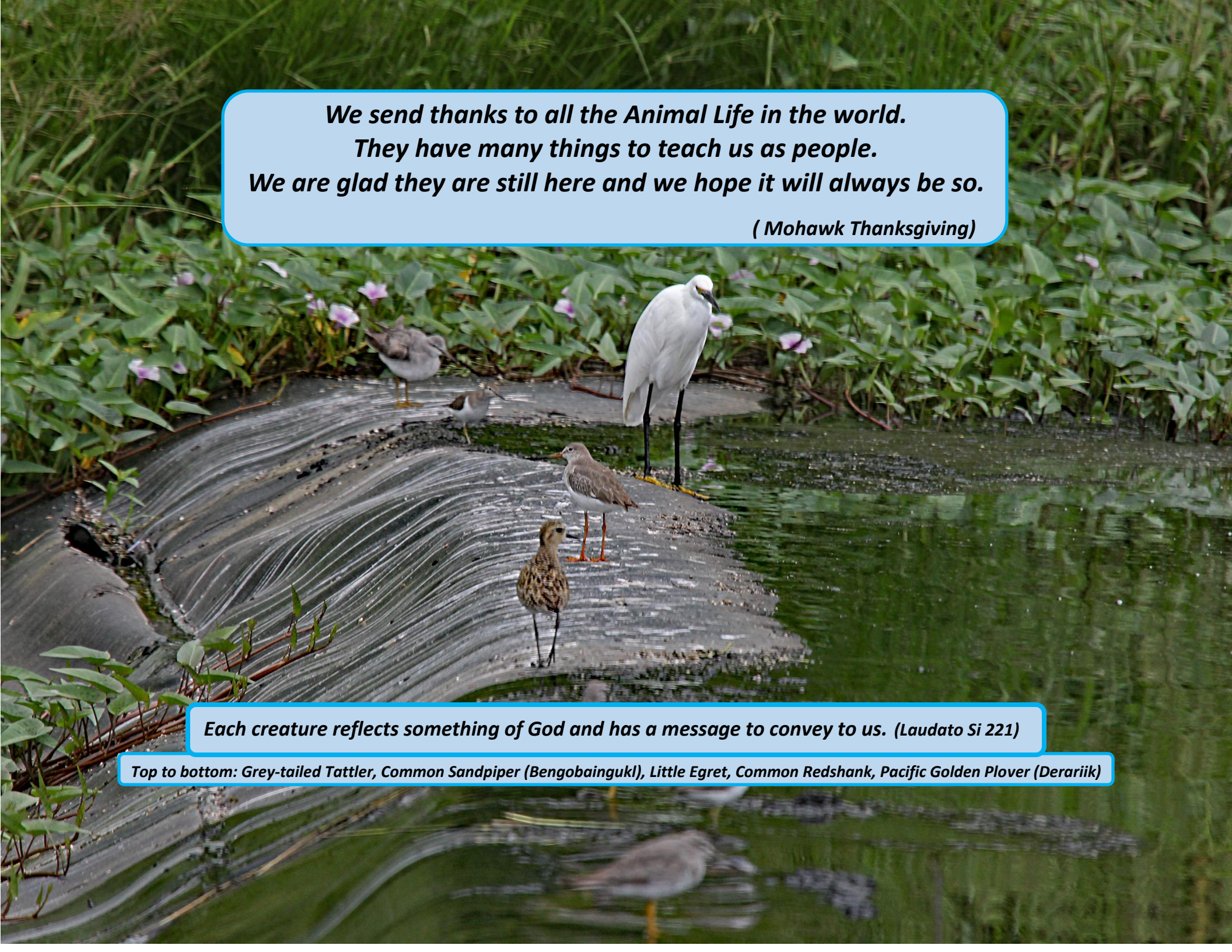
2016



Natural History Section



Belau National Museum



***We send thanks to all the Animal Life in the world.
They have many things to teach us as people.
We are glad they are still here and we hope it will always be so.***

(Mohawk Thanksgiving)

Each creature reflects something of God and has a message to convey to us. (Laudato Si 221)

Top to bottom: Grey-tailed Tattler, Common Sandpiper (Bengobaingukl), Little Egret, Common Redshank, Pacific Golden Plover (Derariik)

State of Palau's Birds 2016
7th Annual Report of the
National Program for Monitoring Forest
and Coastal Birds



Natural History Section



Belau National Museum

INTRODUCTION: State of Palau's Birds

THE NATIONAL PROGRAM FOR MONITORING FOREST AND COASTAL BIRDS

Pursuant to Action 2.1 of the National Biodiversity Strategic Action Plan, the National Program for Monitoring Forest and Coastal Birds is mandated to (1) monitor bird diversity and bird indicator species on a regular basis, (2) analyze the data from the monitoring activities and (3) perform other tasks that have a “positive impact on high priority national activities involving conservation, wildlife management, sustainable land management and climate change.”

Among the tasks of the national program is the operation of the Palau Bird Records Committee and the development of an official checklist of the birds of Palau – the *Palau Islands Bird List*.



PALAU BIRD RECORDS COMMITTEE and THE *PALAU ISLANDS BIRD LIST*

The Palau Bird Records Committee recently compiled the first official checklist of the birds of Palau. Based on a review of historical records and recent reports of new sightings, the committee's checklist increases the total number of species known to occur in Palau to 169 resident and migratory bird species. The new checklist includes recent changes in the status of species that are newly recognized as endemics such as the Palau Cicadabird, Rusty-capped Kingfisher and Palau Nightjar. The official *Palau Islands Bird List* will appear in an upcoming issue of the prestigious journal *Western Birds* published by Western Field Ornithologists. The committee will continue to update the official *Palau Islands Bird List* on a regular basis.

Background: "From Ridge to Reef" mural on the grounds of Belau National Museum

INTRODUCTION: State of Palau's Birds

RESEARCH REVEALS NEW ENDEMIC SPECIES

For many years, scientist thought that three of our local forest birds were also widespread outside Palau. Recent DNA studies and other research revealed that the Palauan versions are actually endemic species found only in Palau. Scientists gave the birds unique new names in recognition of their new status as Palau endemic species: Palau Cicadabird (Kiuidukall), Rusty-capped Kingfisher (Cherosech) and Palau Nightjar (Chebatcheb). The Palauan language names, of course, remain unchanged.

Below: Two of the new-found endemics are often spotted at Long Island Park

KIUIDUKALL

Palau Cicadabird, *Coracina monacha*



CHEROSECH

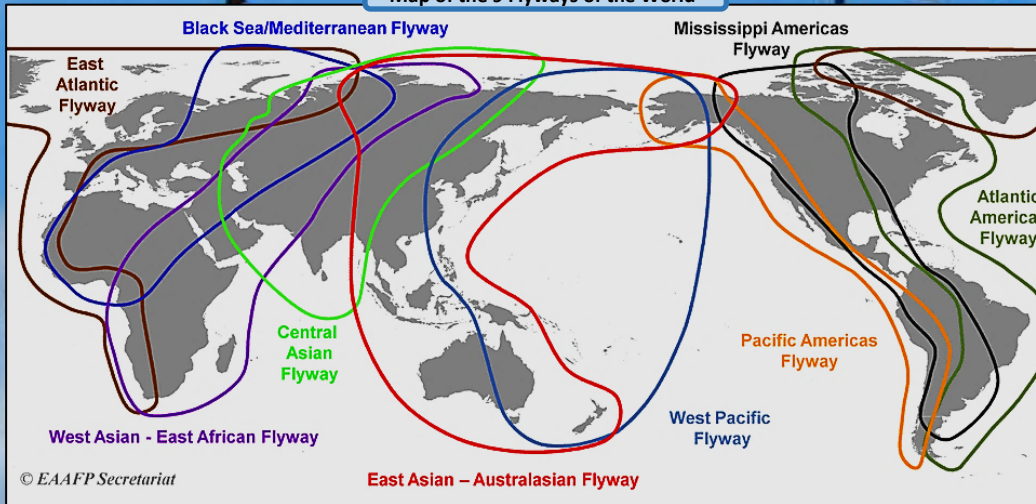
Rusty-capped Kingfisher, *Todiramphus pelewensis*



EAST ASIAN-AUSTRALASIAN FLYWAY PARTNERSHIP (EAAFP)

Palau is geographically located within the boundaries of two major flyways for migratory shorebirds – the West Pacific Flyway (WPF) and, more importantly, the East Asian-Australasian Flyway (EAAF). Of the major flyways of the world, the EAAF hosts the richest diversity of migratory bird species including 54 migratory species of shorebirds. Unfortunately, the EAAF shorebird populations are rapidly declining due to the recent losses of coastal wetlands in Eastern Asia that are critical stopover points where the birds rest and replenish their food reserves before continuing their exhaustive migrations.

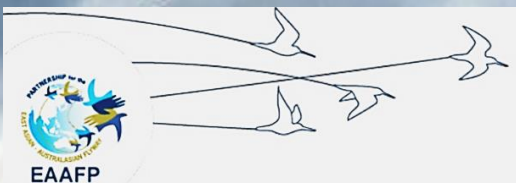
Map of the 9 Flyways of the World



Map of the EAAF



According to the Palau Bird Records Committee, 41 migratory species of shorebirds are known to visit Palau during their migratory journeys to and from their breeding grounds in Asia. At least 25 species occur on the sandflats ("lkes") of Peleliu Island, making Peleliu a globally important destination for almost half of the migratory species of shorebirds in the EAAF and over 60% of the shorebirds of Palau.



The East Asian-Australasian Flyway Partnership (EAAFP) is a coalition of 13 countries in the EAAF that operates under the Ramsar Convention on Wetlands to address the threats to the migratory species of shorebirds of the flyway. The EAAFP Secretariat is located in Korea. Membership includes Australia, Japan and the U.S.A. Supporting organizations include BirdLife International, IUCN, WWF and Wetlands International.



THE MOST IMPORTANT SHOREBIRD AREA IN MICRONESIA

Northern Peleliu Lkes – A New Important Bird Area (IBA)

A community-based assessment of the migratory shorebirds of the State of Peleliu found that the northern sandflats and associated islets provide a globally important habitat for a range of migratory shorebirds. In 2016, BirdLife International confirmed that the large numbers and rich diversity of the shorebird populations at the site meet international criteria for a globally important shorebird refuge. BirdLife International designated the site as a new Important Bird Area (IBA) named Northern Peleliu Lkes and declared the IBA the most important shorebird site in Micronesia.

Globally endangered shorebird species found at the IBA include:

Far Eastern Curlew
Great Knot
Bar-tailed Godwit



Other EAAF migratory populations of shorebirds that are high priority for conservation include:

Grey-Tailed Tatter
Asiatic Whimbrel
Red-Neck Stint
Ruddy Turnstone.

Whimbrels



Northern Peleliu Lkes Important Bird Area

The creation of the new IBA is especially important for international efforts to conserve the rapidly declining populations of the migratory shorebirds of the East Asian-Australasian Flyway. Details of the designation of the Northern Peleliu Lkes IBA are available online at <http://www.birdlife.org/datazone>.

Godwits



As a party to the UN Convention on the Conservation of Migratory Species of Wild Animals, Palau is obliged to conserve our new shorebird IBA

ENDANGERED MIGRATORY SHOREBIRDS OF THE NORTHERN PELELIU LKES IBA

Far Eastern Curlew – *Numenius madagascariensis* – An Endangered Species

The Far Eastern Curlew is the largest (24 inches) migratory shorebird in the world. It is categorized as an endangered species due to a sharp decline in its numbers as a result of the destruction of coastal wetland habitat along its migratory route through China and Korea. Far eastern Curlews breed in eastern Asia and migrate through Palau to Australia and New Zealand during the nonbreeding season. This species is thought to be the archetype of *Delerrok*, the fabled Palau Money Bird of Palauan folklore.



Map showing the range (brown areas) of the Far Eastern Curlew



Representation of Delerrok, the Palau Money Bird from a traditional *abai* meeting house

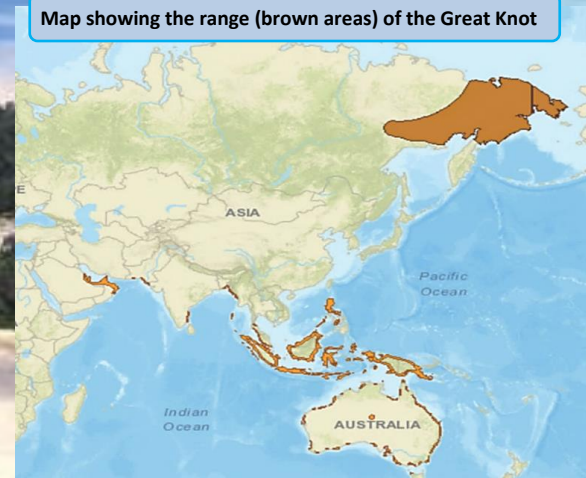
ENDANGERED MIGRATORY SHOREBIRDS OF THE NORTHERN PELELIU LKES IBA

Great Knot – *Calidris tenuirostris* – An Endangered Species

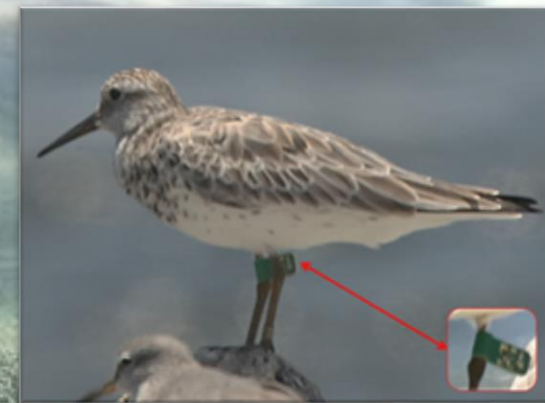
The Great Knot is one of the larger (11 inches) sandpiper-like shorebirds to visit Palau. In 2015 it was declared an endangered species due to a sharp decline in its numbers as a result of the destruction of coastal wetland habitat along its migratory route along the coast of East Asia. Although Great Knots breed exclusively in arctic areas of northeastern Asia within the East Asian-Australasian Flyway, some Great Knots migrate to areas outside the flyway such as the Indian subcontinent and the Middle East (see map).



Great Knot
Above: Peleliu
Below: Ngiwal



Map showing the range (brown areas) of the Great Knot



The Great Knot pictured above was photographed on the tidal flats of Ngiwal in April 2016. It was originally tagged with a green leg flag (arrow) in 2015 at Turkey Beach in Queensland Australia.

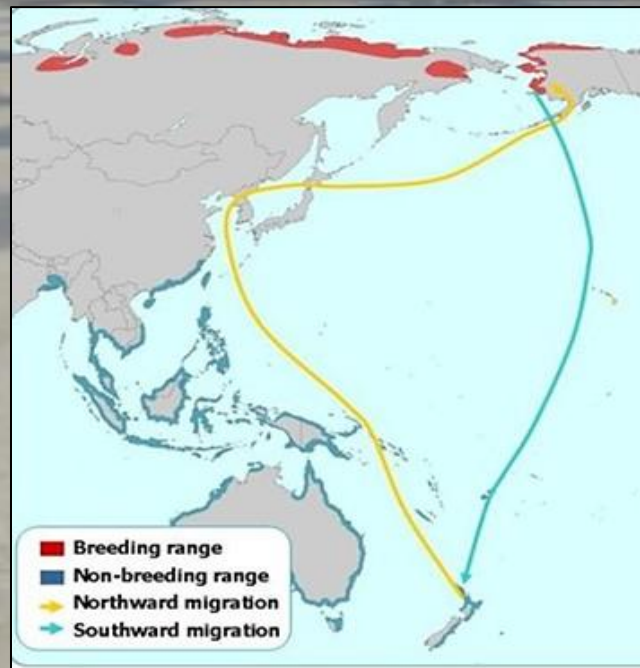
ENDANGERED MIGRATORY SHOREBIRDS OF THE NORTHERN PELELIU LKES IBA

Bar-tailed Godwit – *Limosa lapponica baueri* – An Endangered Species and World Record Holder

The Bar-tailed Godwit holds the world record for the longest nonstop migration flight by a shorebird. Bar-tailed Godwits that were tracked by satellite were found to fly nonstop from their breeding grounds in Alaska to their overwintering grounds in New Zealand, a journey of over 6,800 miles. The extremely long migration route is traced by a green line on the map, lower right. The birds fly for more than eight days over open ocean without landing until they arrive in New Zealand. On their return journey to Alaska, the same birds follow a different route (yellow line) that allows some of them to stop over at the Northern Peleliu Lkes in Palau.



Range Map: Bar-Tailed Godwit
Northern breeding grounds in the Arctic Circle are shown in red. Overwintering grounds (blue) include coastal wetlands of East Asia, Southeast Asia, Indonesia, Papua New Guinea, Australia, New Zealand– and Palau.



Migration Route: Bar-Tailed Godwit
The green line shows the record-holding 6,880-mile journey of a Bar-tailed Godwit that flew nonstop from Alaska to New Zealand. The yellow line shows the route that the same bird followed on its return trip to its breeding grounds in Alaska.

AN ENDANGERED RESIDENT BIRD OF THE NORTHERN PELELIU LKES IBA

Palau Megapode – *Megapodius laperouse senex* “BEKAI” – An Endangered Species
Although not shorebirds, Palau Megapodes have several active nesting mounds (“Ongiong”) on the island of Ngedebus in the Northern Peleliu Lkes IBA. The megapodes share their forest habitat on Ngedebus with flocks of shorebirds that roost in the treetops.

Palau Megapode



Megapode nesting mound on Ngedebus Island



EGRETS AND HERONS OF PALAU

A white egret with a long, sharp beak and long, thin legs stands in shallow, rippling water. The bird is facing left, and its reflection is visible in the water below it. The background is a soft-focus view of the water's surface.

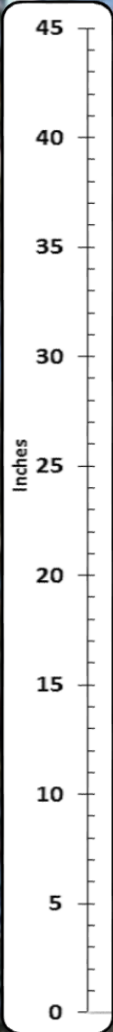
One hundred years ago, the Little Egret (left) was almost hunted to extinction to provide feathers for the fashion industry

THE MIGRATORY BIRD TREATY ACT OF 1916

The year 2016 marked the 100th anniversary of the Migratory Bird Treaty Act. This landmark legislation launched the first international agreement to protect migratory birds from indiscriminate hunting. The founding parties to the treaty included the U.S.A., Canada, Mexico and Japan. In addition to establishing hunting seasons for game species such as ducks and doves, the treaty ended the hunting of egrets and other birds for their feathers, which were much in demand for the fashion industry of the era. The demand for feathers for high-fashion hats and clothing seriously depleted the populations of large birds such as egrets and herons. The Migratory Bird Treaty Act saved these magnificent birds from extinction by halting the relentless hunting of egrets and herons for their plumage. The modern world, Palau included, enjoys healthy populations of these beautiful birds due to the Migratory Bird Treaty, which is still in force to this very day.

IDENTIFYING THE MIGRATORY EGRETS OF PALAU

The four species of migratory egrets that visit Palau are all large, white birds. Telling the difference between the species is a matter of observing the size, the color of the beak, and the length of the neck. The pictures on this page depict the relative sizes of adults of each species measured against a scale (left) divided into inches.



Cattle Egret
22 inches tall
Orange beak
Short neck



Little Egret
26 inches tall
Black beak
Long neck



Intermediate Egret
28 inches tall
Orange beak
Long neck



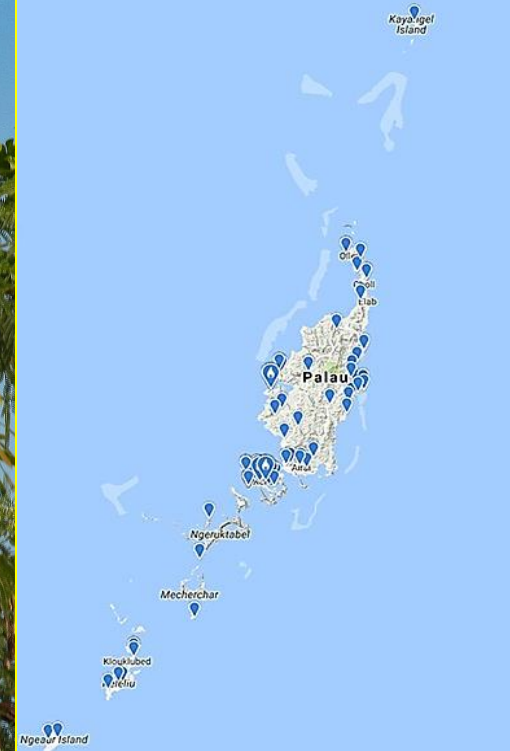
Great Egret
41 inches tall
Orange beak
Very long neck



EASTERN CATTLE EGRET – *Bubulcus coromandus*



Map showing the locations (blue markers) where Eastern Cattle Egrets have been seen in Palau



The Eastern Cattle Egret is the most common migratory egret in Palau. It is also the smallest at 19-21 inches tall. They are often seen along roadsides and in grassy areas where they hunt for insects and other prey. Flocks of Eastern Cattle Egrets may number over 100 birds, especially when the birds gather at staging points to prepare for their migratory journey to breeding grounds in Asia and Japan. At that time (April-May) the flocks include many birds that are transitioning into breeding plumage.

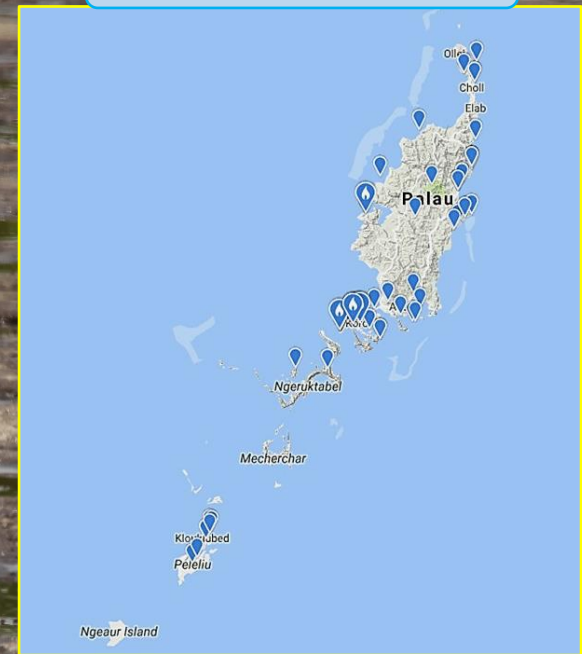


Breeding plumage

LITTLE EGRET – *Egretta garzetta*



Map showing the locations (blue markers) where Little Egrets have been seen in Palau



Every September, Little Egrets migrate southward from their breeding grounds in central Asia and Japan. The ones that migrate to Palau normally spend the non-breeding season (September through April) on Babeldaob, Koror and Peleliu. A few young ones that are not old enough to breed may stay in Palau instead of returning to their breeding grounds. At a height of 22 to 28 inches, the Little Egret is only “little” when compared to other egrets that visit Palau.



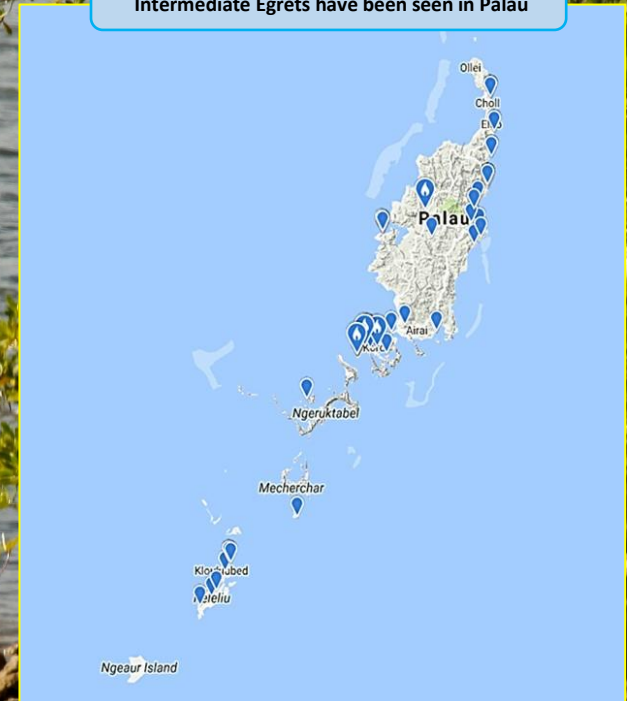
Breeding plumage

INTERMEDIATE EGRET – *Ardea intermedia*



Intermediate Egrets migrate southward from their breeding grounds in central Asia and Japan and a few spend the non-breeding season (September through April) on Babeldaob, Koror and Peleliu. In Palau, they usually accompany Little Egrets in mixed flocks. The Intermediate Egret is somewhat taller (22 – 28 inches) than the Little Egret and the beak and feet are a different color. Little Egrets have black beaks and yellow feet, Intermediate Egrets have orange beaks and black feet.

Map showing the locations (blue markers) where Intermediate Egrets have been seen in Palau



Intermediate Egret (left) and Little Egret (right)



GREAT EGRET – *Ardea alba*

The Great Egret is the largest bird known to occur in Palau. Although the Great Egret has a global distribution, the subspecies that visits Palau probably dispersed from breeding grounds in Japan. The first report of a Great Egret in Palau was a single bird sighted in the mangroves of Peleliu on March 1, 2000. Since that time, the species has been reported from Angaur, Koror, Airai, Ngatpang, Melekeok, Ngiwal and Ngaraard. According to the eBird website, relatively large groups of Great Egrets appeared at Choll State Beach in Ngaraard on March 31, 2014 (15 birds) and Medal Ngediull Marine Protected Area in Airai on August 8, 2016 (5 birds).



Size Comparison
Rufous Night Heron (left) versus Great Egret (right)

PACIFIC REEF HERON— *Egretta sacra* "SECHOU"

The Pacific Reef Heron is a non-migratory, year-round resident of Palau. There are two distinct color forms (morphs), pure white and pure black. Occasionally, an intermediate form occurs that is white with black streaks. Pacific Reef Herons prefer rocky areas, especially the coral reef, where they hunt for small fish, crabs and other marine creatures. This picture of a contrasting pair of reef herons was taken in the offshore waters of Ngaremlengui.

The Pacific Reef Heron is found in coastal areas from Japan to Australia/New Zealand and from Southeast Asia into the western and central Pacific Ocean (map). Pacific Reef Herons are common throughout Palau, from Kayangel to the Southwest Islands. Although the black morph is the dominant form over most of its range, Palau is unusual in having an exceptionally high percentage (almost 50%) of white morphs.



PACIFIC REEF HERON— *Egretta sacra* "SECHOU"

The white morph of the Pacific Reef Heron resembles two of the migratory egrets that visit Palau, the Eastern Cattle Egret and the Little Egret. All three species are medium-sized (20-25 inches tall) white birds that often share the same coastal habitat. The key to telling the difference between them is to look at the beak and legs. The Pacific Reef Heron has a heavy beak that is usually colored dark above and light below and light green legs that are relatively short compared to the other two species. The Eastern Cattle Egret has a bright yellow-orange beak and black legs while the Little Egret has a slender black beak and long black legs.

The pictures below compare the differences between the Pacific Reef Heron (left), the Eastern Cattle Egret (middle) and the Little Egret (right)

Pacific Reef Heron
(resident species)



Eastern Cattle Egret
(migratory species)



Little Egret
(migratory species)



RUFIOUS NIGHT HERON – *Nycticorax caledonicus pelewensis* "MELEBAOB"

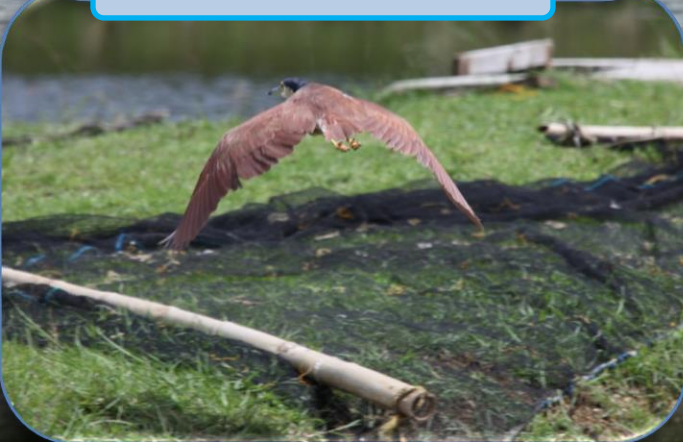
A medium-sized (58cm) cinnamon-brown heron with a black crown and nape, the Rufous Night Heron is a non-migratory subspecies of the Nankeen Night Heron. The subspecies occurs only in the Palau and Chuuk. The resident population in Palau is approximately 1,200 birds. Their natural habitat is coastal wetland with mangroves for roosting and tidal flats for feeding grounds. The Rufous Night-Heron is the flagship coastal species for the National Program for Monitoring Forest and Coastal Birds. As a conspicuous apex predator, it has practical value as an indicator of the health and productivity of Palau's coastal wetlands.



Rufous Night Heron - Adult



Rufous Night Heron - Immature



Map showing the range of the Nankeen Night Heron (brown areas) and the Rufous Night Heron subspecies (red arrows)



Black-crowned Night Heron – *Nycticorax nycticorax*

A medium-sized (28 inches tall) heron, the Black-crowned Night Heron is a cosmopolitan migratory species found throughout the world. An adult Black-crowned Night Heron is similar in appearance to the non-migratory Rufous Night Heron that lives in Palau. The chief differences are in the colors of the plumage and eyes. The Black-crowned is dark grey to black with white breast and abdomen. The eyes are blood-red. The Rufous is chocolate brown and white with yellow eyes.

Black-crowned Night Heron - Adult



Black-crowned Night Heron - Immature

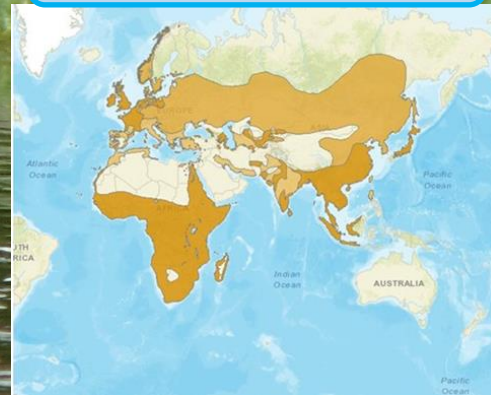
GREY HERON – *Ardea cinerea*

The Grey Heron is a large (39 inches tall) migratory wading bird that prefers swampy areas with trees for roosting. One or two Grey Herons visit Palau almost every year where they can be found in coastal mangroves and near ponds. The species has a wide range outside of Palau, including Europe, Asia and Africa. Major nesting colonies of this species are located in northern Japan.



Adult Grey Heron
Ngemai Marine Protected Area

Map showing the range (brown areas) of the Grey Heron



Immature Grey Heron
Ngatpang Aquaculture Facility

CHINESE POND HERON – *Ardeola bacchus*

These small (20 inches tall) herons breed in China and Southeast Asia and they overwinter in Indonesia and the Philippines. One or two may stray from the Philippines to Palau during the overwintering season. The wings of this species are pure white. In breeding season, the head and neck turn a rich brown color.



Map showing the range (brown areas) of the Chinese Pond Heron



Wingspread showing white color of the wings



Breeding plumage



GLOSSY IBIS - *Plegadis falcinellus*

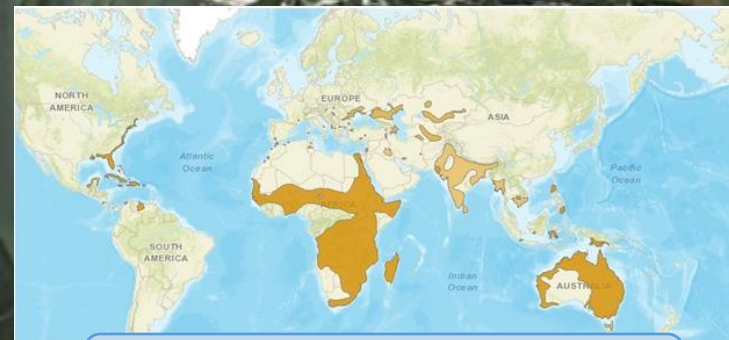
The Glossy Ibis is 23 inches tall. It is a notorious nomad, having been spotted in tropical and semitropical areas around the world. It is most abundant in Australia and Africa. Palau is the only place in Oceania where the Glossy Ibis has been found. Sightings of the Glossy Ibis in Palau include taro patches in Ngerekebesang and Ngiwal, and the aquaculture facility in Ngatpang.



Adult Glossy Ibis
Ngerekebesang



Immature Glossy Ibis
Ngatpang



Map showing the range (brown areas)
of the Glossy Ibis

BLACK-FACED SPOONBILL - *Platalea minor*

The critically endangered Black-faced Spoonbill can reach a height of 30 inches. It has a limited and fragmented range along the east coast of Asia (map). An immature Black-faced Spoonbill was sighted at Peleliu in early December 2013. The bird matured into adulthood before leaving Palau in mid-March 2014. The Black-faced Spoonbill is the most endangered migratory waterbird in the EAAF.



Black-faced Spoonbill, *Platalea minor*



Map showing the fragmented range (brown areas) of the Black-faced Spoonbill

RESPONSE: What Is Being Done to Protect Palau's Birds

The National Program for Monitoring Forest and Coastal Birds went off-island in 2016 to study how to design refuges for waterbirds. Of the seven sites that we visited, Coyote Hills stood out as an example of a design that optimizes public access and wetland conservation.

COYOTE HILLS REGIONAL PARK – San Francisco Bay, California.
The park is part of the larger San Francisco Bay Wildlife Refuge, a protected area south of the City of San Francisco. The Park features a network of boardwalks and observation points where bird watchers can view waterbirds in their natural coastal wetland habitat.

Exploring the Coyote Hills Regional Park



RESPONSE: What Is Being Done to Protect Palau's Birds

When the National Program for Monitoring Forest and Coastal Birds went off-island in 2016 to study refuges for waterbirds, Famosa Slough in San Diego stood out as an example of a community-based bird conservation program for designing wetland habitats in urban areas.

FAMOSA SLOUGH BIRD SANCTUARY – San Diego, California
The Famosa slough is a flood control canal that is landscaped and maintained as a habitat for coastal waterbirds by a group of local volunteers, the *Friends of Famosa Slough*.



RESPONSE: What Is Being Done to Protect Palau's Birds

TRAINING

NGEREMESKANG BIRD SANCTUARY

In 2016, the museum conducted on-site field training for the Conservation Officers of the Ngeremeskang Bird Sanctuary. The training included field identification of the birds of the sanctuary, keeping records of field observations and maintenance of field equipment.

Management of the Protected Areas Network visited the site during a training session in order to observe the progress of the training course. All of the Conservation Officers passed the final test of their new skills with flying colors.

On-site training session at Ngeremeskang Bird Sanctuary



AWARENESS

TV GLOBO BRAZIL

In 2016, Belau National Museum coordinated with Lake Ngardok Nature Reserve and OTV television to facilitate a photojournalism team from TV Globo Brazil in filming a documentary about the threats to Palau from climate change. The documentary will increase global awareness of the vulnerability of Palau's rich bird diversity to global warming and will enhance awareness of the importance of protected sites, such as the Ngardok Ramsar wetland and the Ngeremeskang Bird Sanctuary, in buffering the effects of climate change.

Field Ornithologist Milang Eberdong (left) with Brazilian TV crew



RESPONSE: What Is Being Done to Protect Palau's Birds

MONITORING METHOD FOR SHOREBIRDS

The National Program for Monitoring Forest and Coastal Birds completed a study to validate a field method for monitoring the migratory shorebirds that occur in Palau. The new method will be used to monitor shorebirds for the U.N. Convention on the Conservation of Migratory Species of Wild Animals at the Northern Peleliu Lkes IBA, Ngiwal coast and other sites where shorebirds gather.



Shorebird study along the Ngiwal coast was funded by Marisla Foundation via Global Greengrants

COMMUNITY AWARENESS

Belau National Museum holds educational birdwatching events at Long Island Park and Conservation Area on the first Saturday of every month. Bird observation checklists from each event are submitted to the eBird website. Bird enthusiasts are invited to join the field ornithologists from the museum at 6:00 AM on the first Saturday of every month at Long Island Park. Bring your own binoculars.



Saturday morning birdwatch at Long Island Park with ornithologists from Belau National Museum

INTERNET ACCESS FOR CITIZEN-SCIENTISTS

Local and visiting citizen-scientists who lack easy access to the internet are able to participate in crowdsourcing their bird diversity observations on websites such as ebird.org through dedicated computer stations located at Belau National Museum, Palau Conservation Society and Koror State Ranger Office.

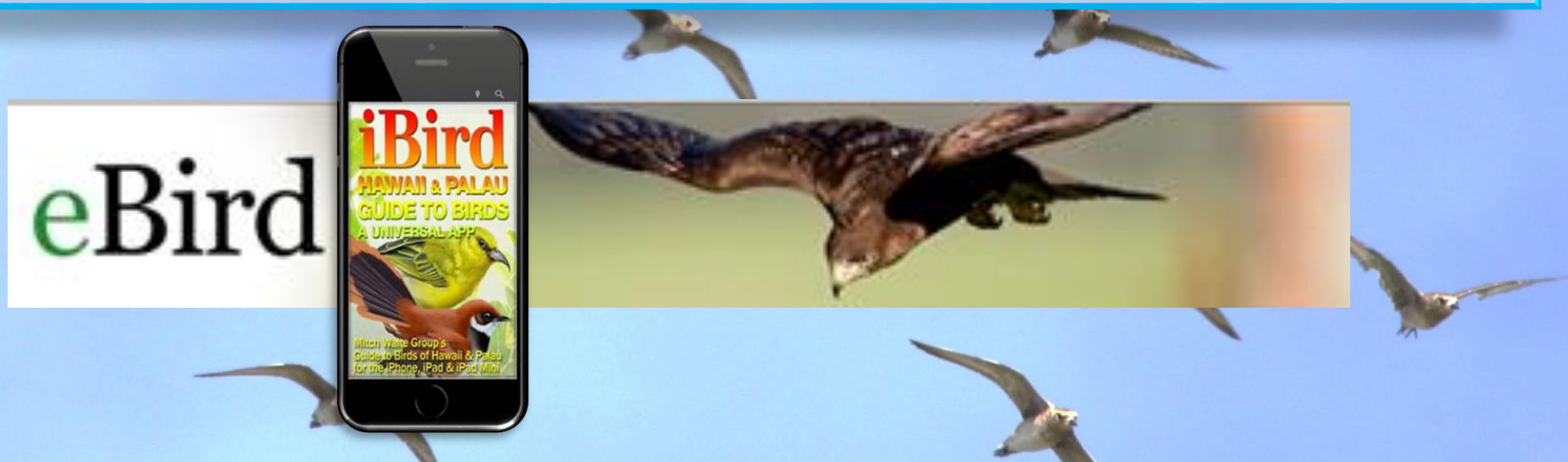
RESPONSE: What Is Being Done to Protect Palau's Birds

The Palau *eBird* Crowdsourcing Project

The *eBird* website (www.ebird.org) is a global crowdsourced database of field observations of bird activity submitted by field ornithologists and experienced birdwatchers. It is operated by Cornell University in coordination with the Audubon Society and BirdLife International. Although the data are submitted by experienced citizen-scientists, the *eBird* database can be explored by anyone with an interest in birds.

In 2015, citizen-scientists teamed up with Palau Conservation Society to develop a brand-new application for handheld devices that provides a convenient guide for the identification of the birds of Palau. The *iBird* technology complements the *eBird* crowdsourcing project by enhancing the capacity of citizen-scientists to accurately identify the birds that they report to the *eBird* website and to the Palau Bird Records Committee.

The *iBird Hawaii & Palau* application is available from <https://itunes.apple.com>.



*The Palau eBird Project is funded by the Global Environment Facility Small Grants Programme (GEF/SGP), implemented by UNDP.
The Palau iBird project is funded by the Palau Conservation Society and the Aage V. Jensen Charitable Foundation.*

ACKNOWLEDGMENTS

Board of Trustees of the Belau National Museum
Palau Bird Records Committee
Catholic Mission in Palau
Palau Conservation Society
Koror State Department of Conservation and Law Enforcement and the Koror State Rangers
BirdLife International
Island Conservation

Photographers: Milang Eberdong, Heather Ketebengang, Ron Leidich, Glenn McKinlay, Alan R. Olsen, Angelina Smaserui-Olsen

Muralists: Angelina Smaserui-Olsen, Melvin Takeshi

Birders: Ann Kitalong, Katsume Madlutk, Eric Mongami, Bloang Oiterong, Melvin Olkeriil, Jeremy Malsol Olsen, Artimgal Polloi, Paul Radley, Allen Li Rechelbang, Anfion Ridep, Leewen Shiro, Elicio Skebong, Angelina Smaserui-Olsen

Editors: Alan R. Olsen, Milang Eberdong

Maps: IUCN/BirdLife International, www.iucnredlist.org

Cornell University eBird Global Database, www.ebird.org

Wetlands International, Waterbird Population Estimates, wpe.wetlands.org

Financial Support: Global Environment Facility Small Grants Programme through UNDP, Marisla Foundation via the Global Greengrants Fund, Aage V. Jensen Charitable Foundation, Canada Fund





**Conservation is a cause that has no end.
There is no point at which we say, "Our work is finished."
*Rachel Carson***

**"Siempre adelante y nunca atrás" - St. Junípero Serra
(*Ever forward and never back*)**