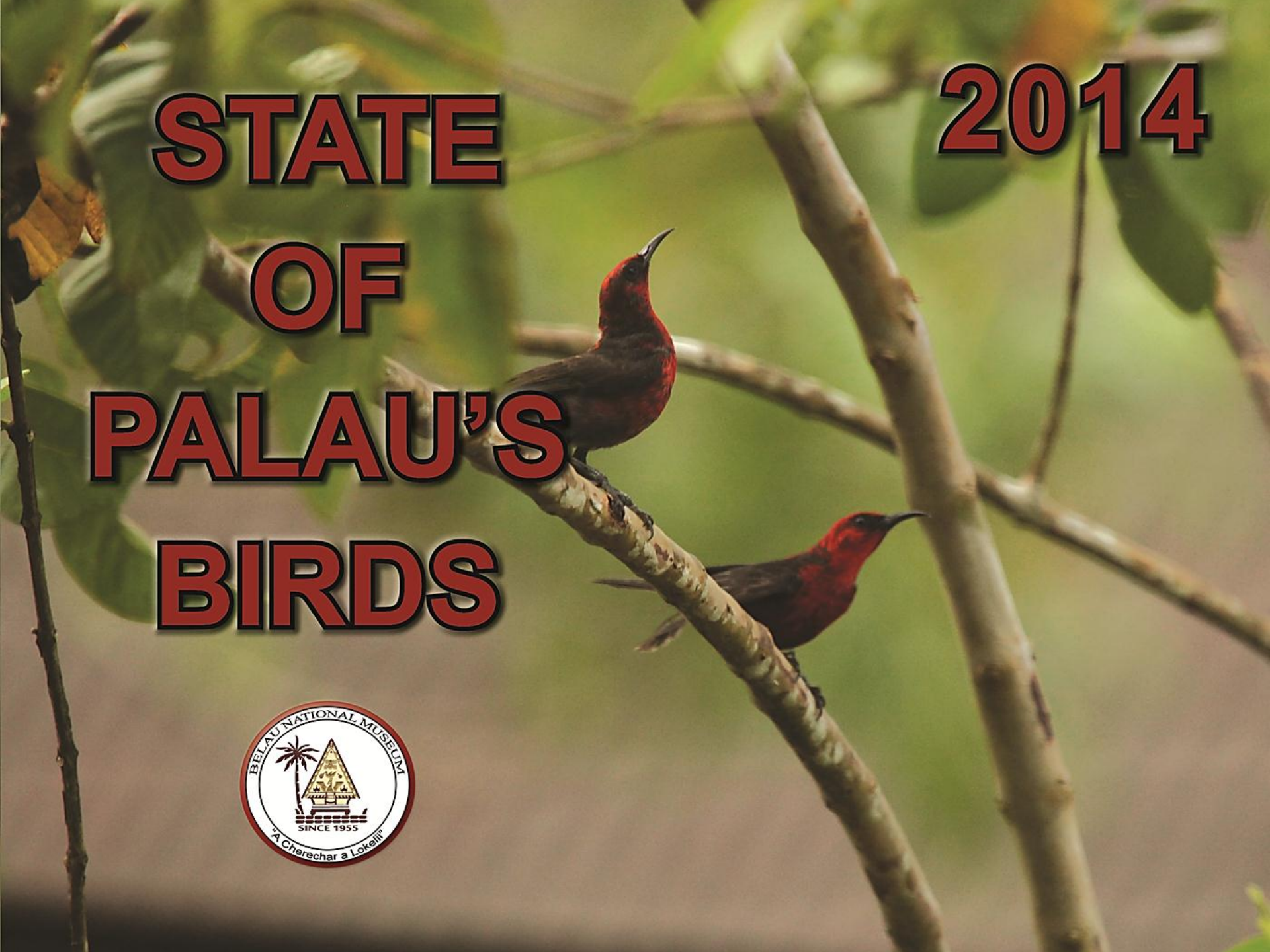
STATE OF PALAU'S BIRDS

2014



BELAU NATIONAL MUSEUM
SINCE 1955
"A Cherechar a Lokelii"

Fr. John Bizkarra, S.J. †1998

State of Palau's Birds 2014 is dedicated to the precious memory of Palau's beloved "Father Huan," the Jesuit missionary who served over 50 years as parish priest in the communities of Angaur and Peleliu and who led parishioners in building the shrine of the Immaculate Conception on Angaur Island.

It is reliably witnessed that during his burial ceremony on Angaur, several iconic White Terns briefly hovered over the open grave and then settled in a nearby tree for the duration of the ceremony.

State of Palau's Birds 2014

5th Annual Report of the National Program for Monitoring Forest and Coastal Birds

The Importance of Palau's Birds and Biodiversity

Palau's Honeyeater (Chesisebangiau), *Myzomela rubratra kobayashi*

With their bright colors, cheerful song and acrobatic antics, honeyeaters enrich the quality of daily life for people all over Palau even in densely populated towns and at popular tourist destinations. The honeyeaters on this page posed for their pictures in the locales indicated on each photo.

Ked, Airai

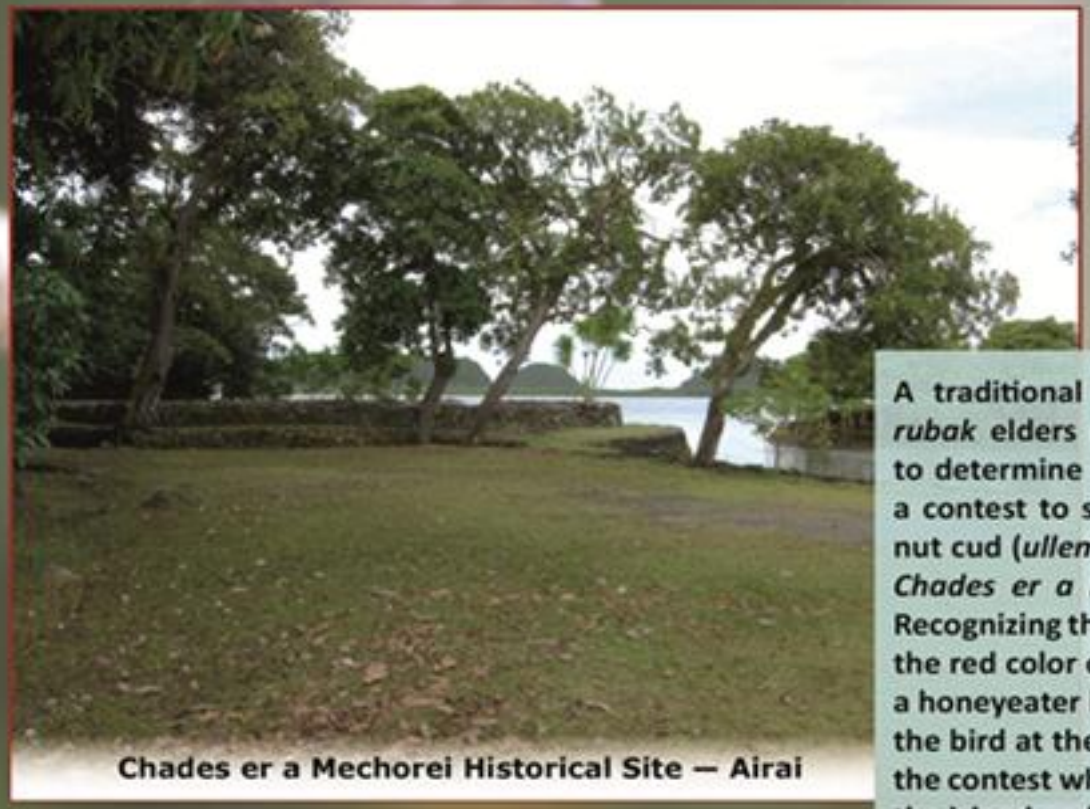
Ngerbeched, Koror

Ulong Island

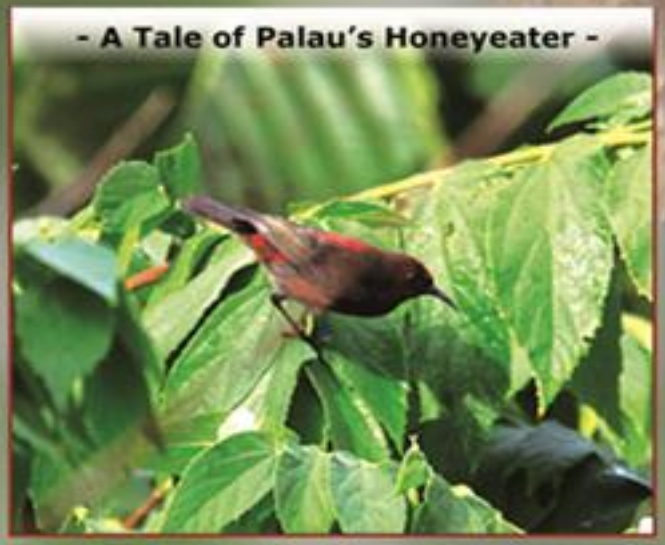
Ngerkebesang

Belau National Museum

The Importance of Palau's Birds and Biodiversity



Chades er a Mechorei Historical Site — Airai



A traditional Palauan folk tale relates how a group of *rubak* elders met at *Chades er a Mechorei* (pictured left) to determine ownership of an offshore island by a holding a contest to see who could throw his partly-chewed betel nut cud (*ullemachel*) the farthest across the water from the *Chades er a Mechorei* stone platform toward the island. Recognizing that the rich red color of a honeyeater resembles the red color of a betel nut cud, one clever *rubak* concealed a honeyeater in his hand and when it was his turn, he threw the bird at the island as if it were his betel nut cud, winning the contest when the honeyeater flew across the water, over the island and out of sight.

The Importance of Palau's Birds and Biodiversity

PALAUAN GREENSPACES

Greenspaces are places where natural habitats are preserved. They play a key role in maintaining healthy ecosystems and healthy people. Palau is blessed with several types of greenspaces that enrich our lives and livelihoods.

Traditional Taro Patches (right) are essentially artificial wetlands that often harbor a rich diversity of wildlife to enhance the quality of life in nearby villages. A common resident of taro patch wetlands is the brilliantly-colored Palau Purple Swamphen, a rare endemic subspecies found only in the traditional taro patches of Palau.

Mangrove Wetlands (below) are natural greenspaces found throughout Palau, including densely populated areas. These wetlands provide refuge for a variety of migratory birds whose journeys contribute to our quality of life during their sojourn in Palau and to the quality of life of people in distant lands at journey's end.

Purple Swamphen (Uek)
Porphyrio porphyrio pelewensis
in a traditional taro patch (mesei)

Migratory gatherings of the Cattle Egret (Keremlal Sechou), *Bubulcus ibis*, in the mangrove wetlands offshore Long Island Park

The Importance of Palau's Birds and Biodiversity

Bird Diversity

An Index of the Quality of Life in Villages and Towns

In the words of Roger Tory Peterson, "Birds undeniably contribute to our pleasure and quality of life." People around the world appreciate the contributions of bird diversity and abundance to the quality of their lives, especially in suburban or rural settings. For example, bird diversity is regularly monitored as one of the 15 national indicators of the quality of life in the United Kingdom. Figure 1 depicts trends of the U.K. quality-of-life bird diversity indicators. Conservationist Aldo Leopold once mused that, "It's barely possible that God likes to hear birds sing and see flowers bloom."

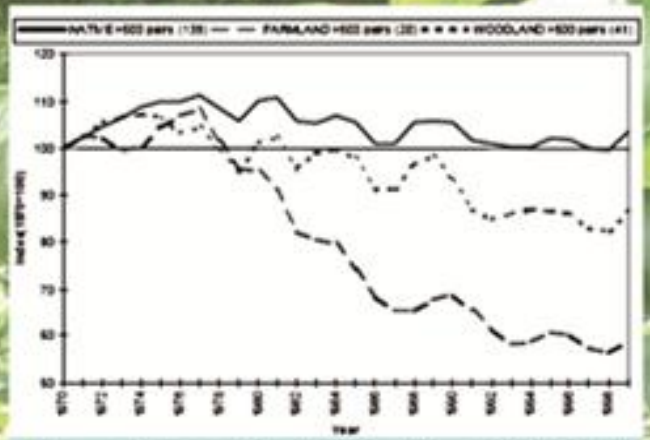


Figure 1. Trends in U.K. Quality-of-Life Bird Diversity Indicators

Palau's Bird Diversity

A Quality-of-Life Indicator

The National Program for Monitoring Forest and Coastal Birds regularly monitors bird diversity as an indicator of the quality of life in Palau. Figure 2 at right depicts trends in bird diversity at Long Island Park in Koror. The solid straight line represents the minimally acceptable quality index threshold (10 species). The wavy lines represent actual counts of species diversity of native birds and of woodland birds. The bird diversity counts indicate that the quality of life in the vicinity of Long Island Park is good to excellent.

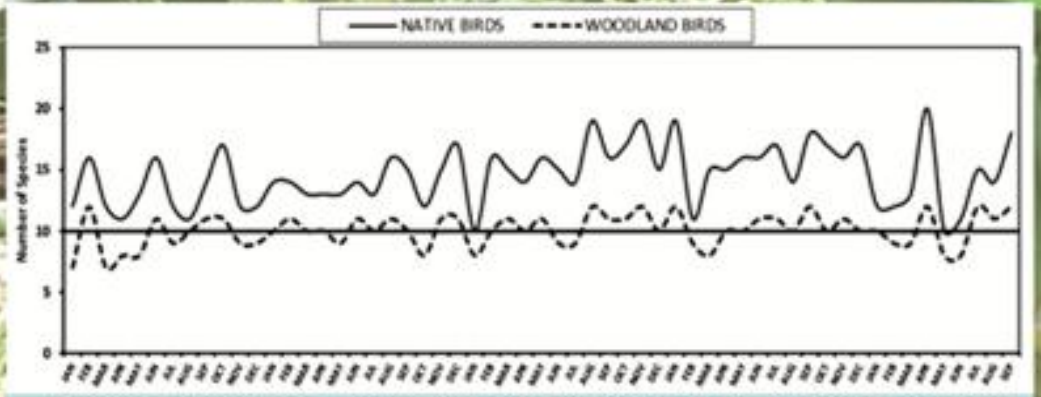


Figure 2. Trends in Palau Quality-of-Life Bird Diversity Indicators Long Island Park: 2010 - 2014

The Importance of Palau's Birds and Biodiversity

Ngermalk Island/Long Island Park – A Palauan Greenspace

Much like Central Park in New York City, Long Island Park in Koror is a tranquil greenspace amid a stressful urbanized environment. Located along the causeway connecting Koror to Malakal, this State Conservation Area features a picnic area, swimming lagoon and nature trail in a setting of the rich biodiversity of the fabled Rock Islands. The park and conservation area are home to 28 species of resident forest and coastal birds, bringing to mind the words of Enru Lin, "... if you see a bird in a place, it's a good place, a safe place, a place that sustains life."

Clockwise from top left: A rare Blue-Faced Parrotfinch arrives on Long Island at dawn to feed on seeds of the ngas (ironwood) trees along the shore. Hidden in the hillside forest of the park a Palau Fruit-Dove (Biib) sings a mournful song, waking a roosting Black Noddy (Bedaoch) and White Tern (Sechosech). Later, flocks of White-eyes (Charmbedel and Chetitalial) forage through the lower levels of the forest looking for insects and seeds to eat, often intruding on the territories of the Palau Fantail (Melimdelebteb).

Come join Belau National Museum at Long Island Park on the First Saturday of every month at 6:00 AM to learn more about the birds of this peaceful urban greenspace.

The Importance of Palau's Birds and Biodiversity

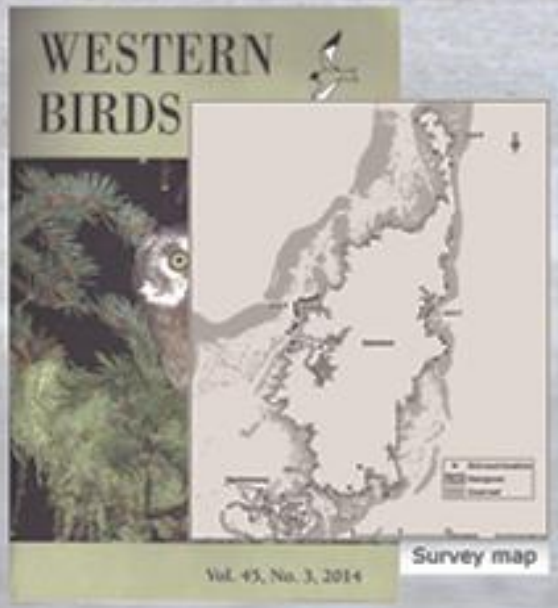
CHECKLIST: RESIDENT BIRDS OF NGERMALK ISLAND/LONG ISLAND PARK

COMMON NAME	SCIENTIFIC NAME	PALAUAN NAME
White-tailed Tropicbird	*Phaethon lepturus*	Dudek
Yellow Bittern	*Ixobrychus sinensis*	Cheloteachel
Pacific Reef-Heron	*Egretta sacra*	Sechou
Rufous Night-Heron	*Nycticorax caledonicus*	Melabaob
Buff-banded Rail	*Gallirallus philippensis*	Terriid
Black-naped Tern	*Sterna sumatrana*	Kerkirs
Brown Noddy	*Anous stolidus*	Mechadelbedaoch
Black Noddy	*Anous minutus*	Bedaoch
White Tern	*Gygis alba*	Sechosech
Nicobar Pigeon	*Caloenas nicobarica*	Laib
Palau Fruit-Dove	*Ptilinopus pelewensis*	Biib
Micronesian Imperial-Pigeon	*Ducula oceanica*	Ieb
Sulphur-crested Cockatoo	*Cacatua galerita*	Iakkotsiang
Palau Owl	*Pyrroglaux podargina*	Chesuch
Palau Swiftlet	*Aerodramus pelewensis*	Chesisekiaid
Micronesian Kingfisher	*Todiramphus cinnamominus*	Cherosech
Collared Kingfisher	*Todiramphus chloris*	Tengadidik
Micronesian Honeyeater	*Myzomela rubratra*	Chesisebangiau
Cicadabird	*Coracina tenuirostris*	Kiuidukall
Morningbird	*Pachycephala tenebrosa*	Tutau
Palau Fantail	*Rhipidura lepida*	Melimdelebteb
Palau Flycatcher	*Myiagra erythrops*	Charmelachull
Palau Bush-Warbler	*Cettia annae*	Wuul
Citrine White-eye	*Zosterops semperi*	Charmbedel
Dusky White-eye	*Zosterops finschii*	Chetitalial
Giant White-eye	*Megazosterops palauensis*	(no Palauan name)
Micronesian Starling	*Aplonis opaca*	Kiuid
Blue-faced Parrotfinch	*Erythrura trichoa*	(no Palauan name)

State of Palau's Birds: Monitoring Changes in Palau's Bird Diversity

Monitoring Change in Coastal Wetlands

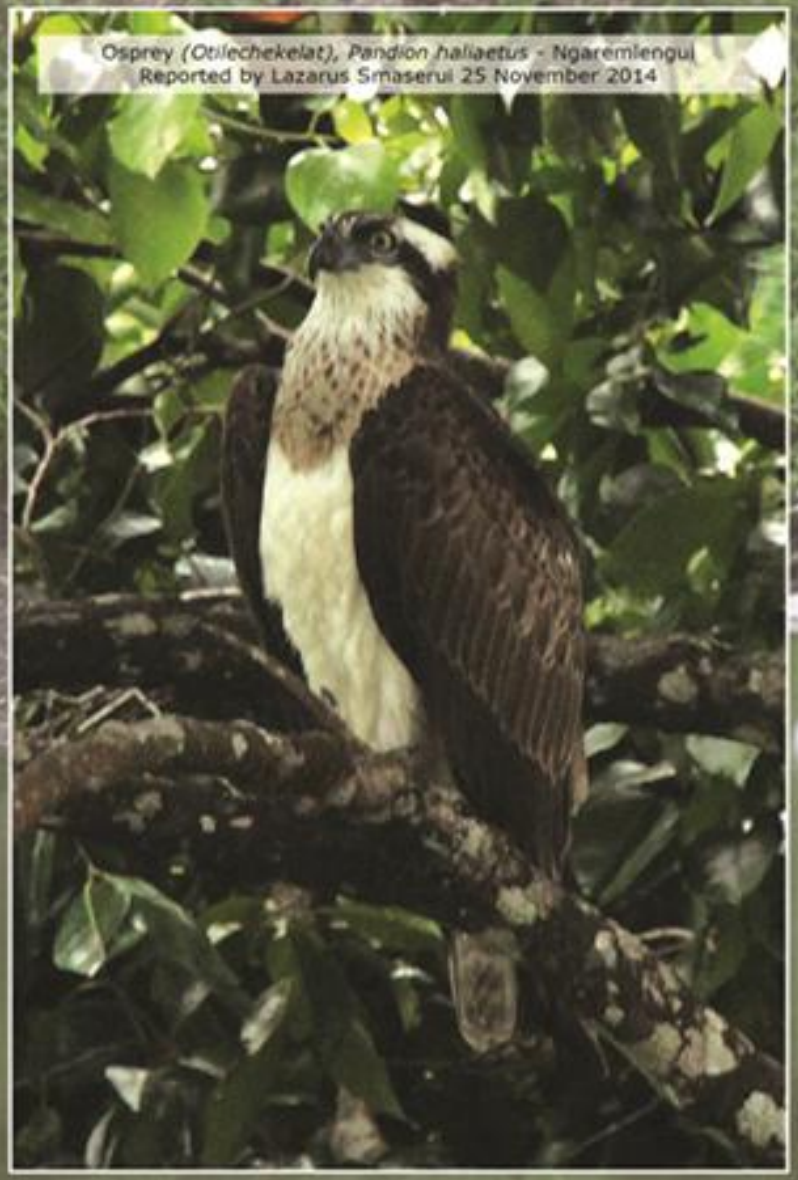
The 2012 volume of State of Palau's Birds featured a description of a survey of the Rufous Night-Heron population in Palau. The final results of the 2012 survey were published in July 2014 in the scientific journal *Western Birds* (left). The research established a baseline population estimate (1,200 adult night-herons) for monitoring this important environmental indicator species (right). The background picture shows a breeding assemblage of Rufous Night-Herons observed during the survey period. Two birds on the left are engaged in a courtship behavior called "neck-stretching."



Survey map


Rufous Night-Heron (Melabaob)
Nycticorax caledonicus pelewensis

State of Palau's Birds: Monitoring Changes in Palau's Bird Diversity



Osprey *(Otilechekelat), Pandion haliaetus* - Ngaremlengui
Reported by Lazarus Smaserui 25 November 2014

Noteworthy Migratory Events

Left: A migratory Osprey was observed by a citizen-scientist in Ngaremlengui State in November 2014. Normally, ospreys are rare visitors to Palau but in 2014 they have been spotted by alert citizen-scientists in the states of Ngaremlengui, Kayangel and Ngiwal.

Below: Exceptionally large (150 to 200 birds) flocks of migratory terns were reported by citizen-scientists in October 2014 in Airai and Koror. The mixed flocks included Whiskered Terns and White-winged Terns.

Mixed flock of migratory terns, *Chlidonias* spp., Airai
Reported by Simeon Adelbai 03 October 2014

State of Palau's Birds: Monitoring Changes in Palau's Bird Diversity

Monitoring Changes in Bird Migrations – Koror and Babeldaob

Because Palau is a waystation for birds that migrate along the East Asian-Australian flyway, it is important to monitor changes in the movements of these birds through our islands. Field Ornithologists for the *National Program for Monitoring Forest and Coastal Birds* observed changes in the sightings of migratory bird species during the Autumn 2014 migratory season. In addition to larger than usual flocks of migratory egrets (background), there were more sandpipers and related species, as well as terns and snipes, than usual. Two rare species, the Black-tailed Godwit (endangered) and the Kentish Plover appeared in Palau for the second migratory season in a row.

Wood Sandpiper, *Tringa glareola*

Migratory Terns, *Chlidonias spp.*

Common Greenshank, *Tringa nebularia*

Swinhoe's Snipe, *Gallinago megala*

Black-tailed Godwit, *Limosa limosa*

Kentish Plover, *Charadrius alexandrinus*

State of Palau's Birds: Monitoring Changes in Palau's Bird Diversity

Monitoring Changes in Bird Migrations – Peleliu

In addition to providing nesting grounds (background) for the Palau Megapode and refuge for other endemic birds, Peleliu Island is a major stopover for migratory birds. The migratory birds pictured here were photographed on Peleliu during the Autumn/Winter of the 2014 migratory season.

Whiskered Tern
Chlidonias leucopterus

Gray-streaked Flycatcher
Muscicapa griseisticta

Left: Curlew Sandpiper, *Calidris ferruginea*. Middle, right: Ruddy Turnstones, *Arenaria interpres*

Sharp-tailed Sandpipers, *Calidris acuminata*

State of Palau's Birds: What Is Being Done to Improve the Status of Birds

The Palau eBird Project – Crowdsourcing Information about the Status of Palau's Birds

May 1, 2014 marked the launch of a new project to crowdsource information about the status of Palau's birds by encouraging experienced local and visiting citizen-scientists to routinely submit their field observations of Palau's birds to the eBird website. The overarching strategic goal is a constant data stream of information about the current status of Palau's birds that is available to local stakeholders and decision-makers as well as to an international audience of scientists, conservationists and eco-tourists.

Table 1 lists program activities for the Palau eBird Project. They include activities to collect baseline data for the eBird website; train citizen-scientists how to identify birds and report field observations on the eBird website; community awareness events; and distribution of educational materials.

The most important outcomes of the Palau eBird Project are the checklists of bird observations that experienced citizen-scientists contribute to the global eBird database. Table 2 summarizes the numbers of checklists that have been submitted to eBird since the launch of the crowdsourcing project in May 2014.

Table 1: Crowdsourcing Activities
Collect and submit baseline data to ebird.org
Hold training workshops for conservation officers
Conduct field training sessions for conservation officers
Analyze eBird results
Hold awareness seminars for community groups
Hold monthly community birdwatching events
Mentor citizen-scientists
Hold annual leadership seminars
Install signage at protected areas
Distribute eBird promotional materials
Prepare and present policy briefings
Publish crowdsourced environmental monitoring results
Establish a Palau Bird Records Committee

Table 2: Crowdsourcing Outcomes (May 2014 – December 2014)
Historical baseline data posted on eBird website
428 historical checklists representing baseline data from May 2006 – April 2014
Citizen-scientist crowdsourcing on the eBird database for Palau
241 new eBird checklists submitted by citizen-scientists since the project launch (excluding historical checklists noted above)
Citizen-scientist crowdsourcing on eBird contributes to the global database for monitoring of migratory birds as indicators of impacts of climate change
47 migratory bird species reported in the checklists submitted after the project launch, including three migratory species that were not previously known to visit Palau and two major migratory bird events (unusually large flocks)

State of Palau's Birds: What Is Being Done to Improve the Status of Birds

Citizen-Scientists Take Action to Improve the Status of Palau's Birds

Lower left: Heather Ketebengang, a local citizen-scientist and associate of Palau Conservation Society, who won the prestigious International eBirder-of-the-Month award (July 2014) for the observations she submitted to the eBird website. Heather received a prize of a quality pair of Zeiss HD binoculars and her achievement is featured on the eBird website.

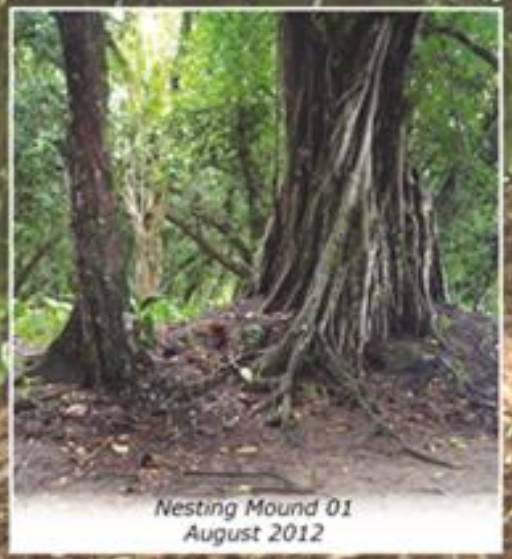
Lower middle: Forest Conservation Workshop sponsored by the Jensen Foundation and featuring bird monitoring training sessions and field trips for conservation officers of the Palau Protected Areas Network (November 2014).

Lower right: The first of four strategic planning meetings for the Palau Crowdsourcing Project (December 2014).

Background: Local citizen-scientists discuss birds with visitors from Australia and Denmark during a recent field trip to the UNESCO Rock Islands Southern Lagoon World Heritage Site.

State of Palau's Birds: What Is Being Done to Improve the Status of Birds

UNESCO Rock Islands Southern Lagoon World Heritage Site



Nesting Mound 01
August 2012

Protecting Megapode Nesting Grounds

The Palau Megapode (right) is an endemic subspecies of the endangered Micronesian Megapode. Palau Megapodes construct and tend nesting mounds in low-lying coastal forest strands. Nesting mounds can persist for years so it is important to monitor changes in mounds as an indication of the reproductive health of a megapode population. The World Heritage Site is a refuge for the largest megapode population in Palau. The inset (upper left) shows a mound on Ulong Rock Island as it appeared in August 2012 and the background picture shows the same mound as it appears today. The obvious growth in mound size over the past few years is a sign that the megapode population in the World Heritage Site is thriving under the protection of the Koror State Rangers who patrol the site.

Palau Megapode (Bekai)
Megapodius laperouse senex

State of Palau's Birds: What Is Being Done to Improve the Status of Birds

UNESCO Rock Islands Southern Lagoon World Heritage Site

Ngeanges nesting mound 08 (20 March 2012)

Megapode Resilience to Climate Change

Rising sea levels due to climate change are causing megapodes to relocate their nesting mounds to higher ground in the UNESCO Rock Islands Southern Lagoon World Heritage Site. For example, several low-lying nesting mounds along the eastern shore of Ngeanges Island were recently abandoned by the megapodes and a new mound appeared on higher ground near the western shore. The new mound has continued to grow in size since its discovery as can be seen in the counterclockwise sequence of pictures beginning top left. Similar mound relocations to higher ground have recently been discovered on the rock islands of Kmekumer and Ngermeaus in the World Heritage Site and on Ngerduwais rock island in Airai.

Ngeanges nesting mound 08 (07 August 2012)

Ngeanges nesting mound 08 (19 January 2014)

State of Palau's Birds: Noteworthy Field Observations

Adult – dark morph

Immature Pacific Reef-Heron: — Ngemai Marine Protected Area

Adult forms (morphs) of the Pacific Reef-Heron (dark form — left inset; white form — right inset) are commonly seen on the reefs and coastal wetlands of Palau. In April 2014, Field Ornithologists of the National Program for Monitoring Forest and Coastal Birds sighted an immature form of the Pacific Reef-Heron during their routine monitoring of the Ngemai Marine Protected Area. The pictures below show different views of the young reef-heron from Ngemai, reminding us that Marine Protected Areas also provide breeding habitat for birds.

Adult – white morph

Pacific Reef-Heron (Sechou), *Egretta sacra*

State of Palau's Birds: Noteworthy Field Observations

Top row: The young Pacific Reef-Heron seen at Ngemai Marine Protected Area. Left: Ruffling its feathers, revealing pure white feathers hidden beneath its outer plumage. Center: The protruding white feathers may be an indication that this bird will grow into a white adult. Right: in flight, the wings of this young bird show a complex color pattern of dark and light feathers.

Bottom row: Immature Pacific Reef-Herons seen at Ngemelis (left) and Ngatpang (right). Although darker than the young bird seen at Ngemai, the inflight wing patterns of these birds bear similarities to the pattern of the young reef-heron from Ngemai. The longer beak and overall stature of the Ngemelis bird indicate that it is closer to adulthood than the Ngatpang bird.

State of Palau's Birds: Noteworthy Field Observations

Greater Sand Plovers

Although Palau is normally a brief stopover in the annual migration pattern of coastal birds, some migratory species apparently spend part of the winter season in Palau. For example, flocks of Greater Sand Plovers are often sighted on Babeldaob and Peleliu during the months of December, January and February. They tend to congregate on grassy fields such as ball parks and schoolyards. When the tide begins to ebb, they fly to a nearby beach to feed on invertebrates exposed by the receding tidewaters. Other plovers and related species often mingle with the Greater Sand-Plover flocks along the shoreline. The mixed flock pictured on this page consisted of mostly Greater Sand-Plovers with other species of plovers and with Gray-tailed Tattlers. The flock was observed in the Melekeok/Ngiwal area during the 2014/2015 migratory season.

State of Palau's Birds: Noteworthy Field Observations

Greater Sand-Plovers and Friends

Upper Left: Greater Sand-Plover *Charadrius leschenaultii*
Lower Left: Greater Sand-Plovers. The middle bird is entering breeding plumage.
Lower Middle: Gray-Tailed Tattlers, *Heteroscelus brevipes*
Upper Right: Pacific Golden Plover (Derariik), *Pluvialis fulva*
Lower Right: Pacific Golden Plovers. The middle bird is in breeding plumage.
Background: Mixed flock of plovers.

The Palau Crowdsourcing Project 2014 — 2017

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 BirdLife International. Although data are submitted by experienced citizen-scientists, the website's database can be explored by anyone with an interest in birds.

The Palau Crowdsourcing Project, a partnership between Belau National Museum and Koror State Rangers, will train local citizen-scientists to identify birds and to contribute their field observations of Palauan birds to the eBird database and will encourage visiting bird enthusiasts to contribute their field observations to eBird. Other outcomes will include community awareness of bird conservation and reduced dependency on outside expert-reliant interventions for monitoring Palau's biodiversity.

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National Program for Monitoring Forest and Coastal Birds
Belau National Museum

BELAU NATIONAL MUSEUM
SINCE 1955
"A Cherechar a Lokelii"

Palau Conservation Society

BirdLife INTERNATIONAL
Together for birds and people

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SGP The GEF Small Grants Programme

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GLOBAL GREENGRANTS FUND

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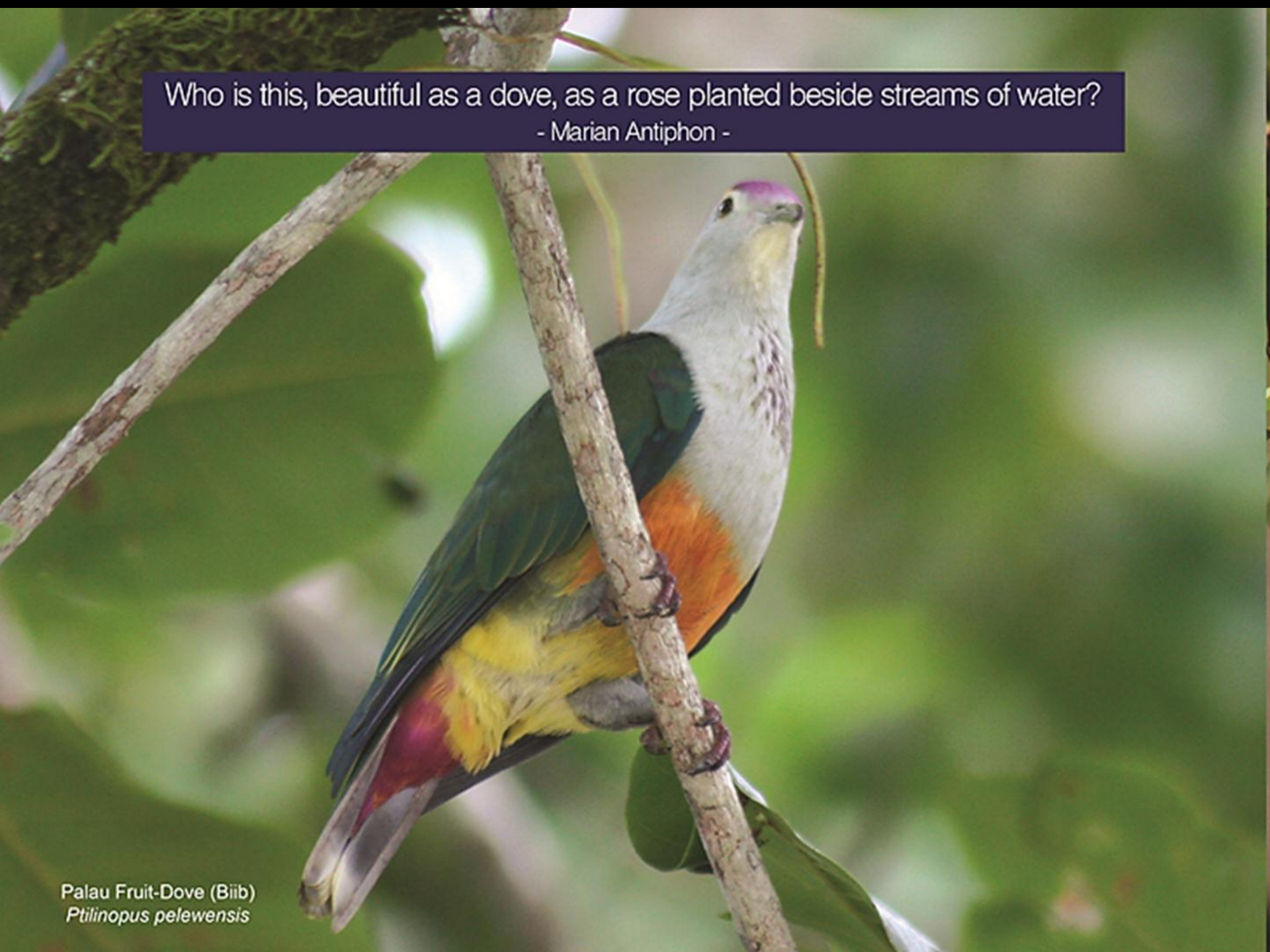
Who is this, beautiful as a dove, as a rose planted beside streams of water?
- Marian Antiphon -
Palau Fruit-Dove (Biib)
Ptilinopus pelewensis