Hi Jim,

Attached is my report from the trip. Sorry I'm a bit late. I had to leave Johnston for a while after I returned, and I wanted to get you the whole thing in about the same time frame you requested for a summary since it isn't that lengthly. The only thing lacking in the report is photos I took of the wetland on Angaur. I'll be sending those with comments as soon as I receive prints from the slides.

Let me know if there is anything else you need or if there is something in my report that needs clarification. Thanks again for allowing me to accompany the team. I had a great time.

Best wishes,

Roger DiRosa

PALAU - TRIP REPORT
RAPID ECOLOGICAL ASSESSMENT

SEPT. 26 - OCT. 9, 1992

BY

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KAYANGEL ATOLL

SEA TURTLES

KAYANGEL ISLAND

The beaches around the island were surveyed for sea turtle nests by me and Mike Guilbeaux on Oct. 2. The island possesses extensive beaches that apparently have received large amounts of turtle nesting activity in the past. The following observations were made:

1 likely nest but it appeared to have been excavated by humans. It was approximately a few weeks old.
5 sandy pits indicating possible nest sites were found but ages were unknown and probably ranged from 1 to 4 months.

Additional Observations

I spent three hours in mid-afternoon observing from the beach a 150-200 meter stretch of seagrass bed located in the lagoon. No sea turtles were seen.

I spent two hours the same afternoon conducting a survey of the above grass beds. The seagrass, Thalassia, was thick and appeared healthy but I saw no evidence of green turtles having fed on the seagrass. Therefore, if there was feeding activity appeared to be light.

No sea turtles were seen in the water at any time during our stay at Kayangel.

I gave consideration to the possibility of green turtles having modified their feeding behavior to accommodate hunting pressure. Anecdotal evidence indicated this may be the case. An island resident indicated there were no more turtles in the lagoon, but during the night they came from Ngeruangel to feed on the seagrass.

There was a 28.5 inch recently butchered green turtle carapace and assorted hawksbill turtle scutes found under the dock.

Early each morning for three mornings I walked the entire west

beach area which appeared to offer the best probability of encounting new turtle crawls. Each morning I observed an individual walking the entire beach as well, presumably looking for nests. No nests were noted.

Dogs freely roamed the island.

All large pigs seen were tethered but the young ran freely about.

The following observations were made by Mike on the adjacent islands (see his report for additional detail):

NGERIUNGS ISLAND

3 possible nest sites that were 3-5 months old were discovered.

NGEREBELAS ISLAND

1 3-4 day old crawl was found. The nest had been excavated by people.

2 possible nest sites or attempts to nest that were 1-2 weeks old were found.

1 crawl 1-3 days old was found but there was no evidence of a return crawl to the water. It was likely that the gravid turtle was taken by people.

ORAK ISLAND

Not suitable for sea turtle nesting.

CONCLUSIONS

No definite conclusions can be drawn from the limited data gathered, however, some reasonable assumptions can be made based on the observations. It is significant that no turtles were seen during our three day stay at the atoll. The area is a protected and potentially very rich feeding ground, and apparently turtles were common in the past during the day. If turtles are coming in at night to feed then this is an interesting behavioral change to normal feeding habits and could indicate heavy hunting pressure and/or harassment during the day. It would also mean that younger turtles are at a greater degree of risk from predators, particularly sharks, if they can not remain in the protected lagoon and have to travel to the foraging beds from other areas.

Virtually all turtle nests can be located easily by the local human population. It would not be difficult to take every nest, and this may be occurring. It is almost equally easy to take as many nesting females as the community would want and even more so if the turtles were marketed in Koror. The green turtles are no doubt easy pickings during the nesting season but the number taken would depend on several factors, especially the degree of market hunting.

It is my opinion that the nesting sea turtle population at Kayangel is in serious jeopardy if the above assumptions are correct. If all nests are being taken then there is no recruitment into the population, and the nesting females can be slowly eliminated, faster if market hunting exists. Obviously, the size of the feeding or nesting population can not be estimated, but I would predict that it has been rapidly declining and is currently at a low level compared to the past.

AVIFAUNA

Structured bird surveys were not conducted but observations were made where possible when travelling around the islands. Attempts were made to search in a limited manner for Micronesian Megapode nests and listen for their calls.

KAYANGEL ISLAND

I and Mike recorded bird observations as each of us walked around the island searching for sea turtle nest sites. I made additional observations as I walked the beach in the mornings and when I was doing other things. Nothing significant was noted. I was able to identify all birds I saw but several calls from unseen birds were unfamiliar to me.

No evidence of nesting or roosting seabirds was seen. The only seabirds seen were feeding around or traveling across the lagoon. The following birds were seen on the survey around the island:

White terns were common.
Black-naped Terns were common.
1 White-tailed Tropicbird
Collared kingfishers were common.
5 or more Barn Swallows were seen over the beach early each morning
2 Pacific Reef Herons
1 Cattle Egret
3 Common Sandpipers
1 possible Vanikoro Swiftlet
1 Cardinal Honeyeater
Several Red Junglefowl that appeared domesticated

No megapodes were seen or heard nor were any nests located, however, no search of the interior was conducted. This was not unexpected. According to Engbring in his March-April 1979 Ngcheangel (Kayangel) Atoll Bird Survey he found no megapodes or nests, even though natives indicated there were a few nests on Kayangel Island. During Engbring's 1991 Land Bird Survey of Palau he also visited Kayangle Island and found no megapodes or nests, however, he did not conduct an extensive survey (personal communication, October 1992). While I was there I spoke with an old man who indicated there were no megapodes north of the elementary school but said there were some south of the school. I took this to mean nests were located on the southern one-quarter of the island. For reasons unknown our group was not allowed off the

beach in this area so only the areas adjacent to the beach could be surveyed. However, in retrospect I think he probably meant the smaller southern islands of the atoll contained the megapodes. Another individual told me there were no megapodes on Kayangel.

Vegetation

The area still showed the effects of the 1990 typhoon. Many trees had been toppled and the opening of the overstory had allowed dense vegetation to grow over much of the island. Much of the interior was inaccessible due to the dense low vegetation, especially that covered with mats of vines. A broad-leaf vine and a wire-like vine with no leaves but bearing small groups of green "berries" had literally covered many plants in open areas. When I asked a villager about the status of the vines and trees before the typhoon he indicated the vines were not present until after the storm and there was much more tree cover. Most likely, the vines were present but the newly opened areas have allowed sunlight in and encouraged these apparently pioneer species to proliferate. If there were nesting megapodes I feel they may have lost a lot of potential nesting cover due to the dense growth of vegetation in the interior and many areas adjacent to the beaches.

NGERIUNGS, NGEREBELAS and ORAK

I did not survey these islands. Mike made limited bird observations while conducting sea turtle nesting surveys. (See his report for details.) The following was taken from his field notes:

NGERIUNGS

Large open forest patches were visible which appeared to be damage from the typhoon. There were only a few large trees left on the island, and most were covered by a climbing broad-leaf vine.

Birds observed:

Several unidentified small plovers
1 Pacific Reef Heron

Two possibly active megapode nest mounds were investigated. There was evidence of soil/organic matter having been scratched around the mound area. No megapodes were seen or heard during the late afternoon inspection. Both mounds were accessible by a well traveled trail originating at the edge of the island. The island had numerous trails, but the one selected by Mike appeared well traveled and to go deeper into the interior than the other trails. It also appeared that the trail ended at the nest mounds which could mean the sole purpose of the trail was to gain access to the nests.

Vegetation

Mike reported that vines "covered" this island. There seemed to be

a lot of megapode habitat left but large open areas and trees were covered with vines.

Discussion

Engbring reported in 1979 that megapodes occurred on Ngeriungs in abundance. He estimated the island to contain perhaps as many as 80 to 100 birds. He counted 15 nest mounds, about half of which were active. During his 1991 Forest Bird Survey of Palau he visited this island but did not conduct an intensive survey. He classified his activities as just a "walk-through" since the atoll was not part of the Forest Bird Survey (personnel communication, October 1992). During the walk-through he observed at least 6 megapodes and stated that he felt the birds were common, but he could not make a comparison with observations from 1979. Therefore, the actual status of the megapode on this island is unknown.

NGEREBELAS

Birds observed on the north side sand spit:

20 Brown or Black Noddies (unable to make a positive identification)
15 White Terns
25 Black-naped Terns

On his limited survey Mike discovered no megapodes or nest mounds.

Vegetation

The natural vegetation seemed intact, and there was no evidence of large amounts of vine growth that was occurring on Kayangel and Ngeriungs.

Discussion

In 1979 Engbring found one nest mound and felt that at least several pair resided on the island. It is noteworthy that there now exists several houses on the island but some had been severely damaged by the typhoon. Engbring felt in 1979 that one reason the megapode was doing so well on Ngeriungs was because no people, dogs or cats inhabited the island. Therefore, the discovery of houses on 13 hectare Ngerbelas can lead to speculation that the island's small megapode population may have been negatively influenced by human and/or dog and cat activities. Also, how much the typhoon may have impacted any of the islands' avifauna is unknown.

Conclusion

In his 1979 Survey Engbring mentioned numerous seabirds of several species flying about, roosting and/or nesting on the islands of the atoll. He also indicated in personal communication in October 1992 that seabirds were present but no numbers were specified. Our

recent limited survey found very few seabirds inhabiting the islands compared with Engbring's past observations. No explanation for the difference can be offered. However, it is possible that the typhoon has disrupted the seabird colonies and/or our short time on the atoll occurred at a time when many seabirds were not present for reasons unknown. It is unknown if the recent El Nino had any effects on the seabirds.

No conclusions can be developed about the megapode population on the atoll. However, it would seem that the population may be lower than when Engbring estimated it in 1979. Considering its endangered status a good survey might be in order to determine how the population has been affected in the last 13 years by humans and any habitat change.

I recommend that Engbring's past (1979) data and unpublished observations from his recent visit be reviewed, compared and incorporated, if warranted, in any assessments or evaluations of the atoll's avifauna and habitat.

NGARUANGL ISLAND (NW of Kayangel Atoll)

I did not survey this island which is nothing more than a small outcropping of sand and coral rubble containing no vegetation and lying within Ngaruangl Atoll. It was reported by Engbring in 1979 to harbor colonies of nesting seabirds.

I did observe the island from a distance when I was at the adjacent reef diving and collecting fish specimens on Oct. 3. I saw no evidence of large flying aggregations of seabirds over the island that is characteristic of colonial nesting seabirds. I do not believe there was much, if any, seabird nesting activity occurring on the island at that time.

NGAREGUR ISLAND (off the north end of Babeldaob)

On Sept. 28 I walked around the island looking for evidence of sea turtle nesting and recording observations of birds as I conducted the turtle nest survey. The bird survey was cursory as it only involved a 1 hr. 15 min. walk around the island along the beach.

SEA TURTLES

I found a few sites that appeared to be old nest pits and may have been excavated by people or pigs. The sites were at least several weeks old. No recent nest sites or crawls were found.

I saw numerous tracks of pigs on the beaches and observed 5 adult pigs and 5 piglets all feeding or resting on the beaches or tidal flats. I heard others in the brush. I also saw two dogs belonging to a young man.

While on the island I met a young man who said he lived there and his father brought him supplies from Balbeldaob. I asked him about

sea turtles and pigs on the island and received the following information:

About 15 to 20 turtles come ashore to nest during the summer when the moon is full. There were many more in the past. He and others take the eggs, but I could not obtain a more definitive answer.

Most of the turtles traveled up the two largest beaches on either side of a low, narrow, sandy area to nest on top in the sand and grass, vines and coconut palms.

He had little to say about people catching the nesting adult turtles when I inquired about those activities. He only indicated that sometimes a turtle was taken.

About 15 adult pigs and 50 young pigs existed on the island, he said.

Discussion

There are several beaches that appear to offer good nesting substrate and apparently receive turtle nesting activity but to what degree is unknown.

It is my opinion that probably all the turtle nests are taken by people, pigs or both. If the young man was correct in his estimate of the island pig population then it is quite high and the pigs would probably find most, if not all the nests. Their sense of smell is quite keen, and they will learn to find and excavate nests and even learn to increase their search activities during the turtle nesting season. It does not appear that there is much recruitment into the sea turtle population from this island, and the adult females are probably taken whenever possible.

BIRDS

Nothing significant was noted. The following birds were seen during the sea turtle survey conducted along the beach:

Black Noddies were numerous but no nesting areas were observed. However, a colony could easily exist since I did not survey the interior nor could I see it because of the cliffs.

Barn Swallows were numerous
1 White-tailed Tropicbird
4 Common Sandpipers
6 White Terns
4 Pacific Reef Herons
Collared Kingfishers were common
Several unidentified shorebirds
3-5 Palau Morningbirds
Heard several cooing calls but could not identify the bird - believed to be Palau Fruit-Dove
Heard several different calls but was unable to positively identify

the birds

ANGAUR

WETLANDS

While on Angaur I and Ms. Heidi Hirsh conducted a search for wetland areas located in the NW portion of the island. We attempted to conduct quick surveys of those areas we located. We were escorted over the vegetation enclosed, back roads by a local individual named Thomas who knew the area but was most familiar with the phosphate pit lakes and not wetlands and wetland vegetation.

The tree and brush growth was thick along the small dirt roads which made trying to spot wetlands a little difficult. We located several areas that would qualify as wetlands on the bases of apparent vegetation type. However, the vegetation was so thick, especially the tall grass, that they did not appear to have much value to wetland species. There probably were other wetlands that we were not able to locate within the limited time we had to search.

One small wetland was located that contained mud flats, open grassy areas and ponds. It corresponded to a distinct area appearing on the aerial photo and was about 3-4 acres. We surveyed it at 2:00 PM on Oct. 7 and returned the following morning at 8:00 AM for another survey. The water table in the wetland is strongly affected by tidal action from the water table below ground. In the afternoon we found two ponds with muddy shorelines and a small, muddy open area. During the next morning survey we found the area completely covered with water and no mud flats or clear shoreline existed. There was no shorebird habitat available. The degree of water fluctuation with the tides or rainfall is unknown. However, there was about 10 to 12 inches water depth difference between the two observations. (See photos.) There is a delay between ocean high tide and the period of highest water level in the wetland we surveyed.

The following birds were seen at the above mentioned wetland:

2 Whimbrel
15+ Ruddy Turnstone
20+ Rufus-necked Stilt
3 Wood Sandpiper
1 Grey-tailed Tattler
1 Black-winged Stilt
Barn Swallows were common
Lesser Golden Plovers were common along the dirt roads
A duck was seen in the wetland on both days but positive identification was not possible. It could have been a Grey Duck but there are a few other species known to occur in the area that look very similar.
An unidentified raptor was seen soaring overhead.

It was common to see individual fruit bats flying overhead.

Phosphate Pit Lakes

We took about one hour on the morning of Oct. 8 to make observations at these lakes. Nothing unusual was noted. However, a stump-tailed monkey that looked surprising like a stump-tailed macaque was seen the day before. Other monkeys that were seen were the long-tailed crab eating macaque.

The following birds were observed:

2 Common Moorhen
Micronesian Starlings were common
Collared Kingfishers were common

During a discussion with a local individual he indicated there was at least one 8 ft. crocodile in the lake. He said he tells no one about it for fear it would be killed. He is not a native Palauan but a U.S. expatriate living on Angaur. He also said there were fish, called milk fish, that had been introduced into the lakes.

The lakes have very limited shoreline that is not steep cliff or heavily brush covered. It appears that they offer no or very little value to wetland species of wildlife.

FINAL COMMENT

The observations contained in this report were made supplementary to my original duty as a volunteer participant on, an assistant to the marine resources assessment team. Therefore, it represents only "point in time" or cursory information and should not stand alone but be incorporated into other existing or future data.

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