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RAPID AND WIDESPREAD APPEARANCE OF BAIT-FISHING, A FORM OF TOOL USE, BY BLACK-CROWNED NIGHT HERONS IN HAWAI‘I

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The use of a tool, in this paper the placing of a “bait” item, to attract fish is extremely rare among birds (Ruxton et al. 2011). The Green Heron *Butorides virescens* and its sister species the Striated Heron *B. striatus* have, however, become notorious for it (Boswall 1977, 1983; Wood 1986; English 1987; Foxall & Drury 1987; Davis and Kushlan 1994; McCullough & Beasley 1996; Kushlan & Hancock 2005), and have been the subject of photo montages in several popular publications (Sisson 1974, Norris 1975, Birder’s World staff 1989) as well as video posted on the internet (http://ibc.lynxeds.com/species/green-backed-heron-butorides-striatus; http://xmb.stuffucanuse.com/xmb/viewthread.php?tid=5914). The first report of baiting by Black-crowned Night Herons *Nycticorax nycticorax* was that of R. J. Beasley, who observed and photographed them using bread as bait in Heritage Park in Irvine, California (McCullough and Beasley 1996). Riehl (2001) later observed similar behavior by wild night herons on the grounds of Audubon Park Zoo in New Orleans, Louisiana. Until recently, these were the only reports of baiting by this species anywhere in its cosmopolitan range, which includes the Hawaiian Islands where it is the only indigenous heron. Although auku‘u, as they are known locally, belong to the North American subspecies *N. n. hoactli*, and unpublished studies found no morphological differences (P. L. Bruner, pers. comm.), Hawaiian birds differ behaviorally in being more active throughout the day (pers. obs.), undoubtedly because they are the only heron normally present.

In July 2008, several golfers reported to Denny that Black-crowned Night Herons at the Wailua Golf Course on Kaua‘i were baiting for fish. L. Miyamoto (pers. comm.) stated that golfers had been placing seeds near a water hazard midway along the fairway of the 11th hole to attract human-habituated Red-crested Cardinals *Paroaria coronata*. The heron reportedly often picked up some of the seeds, carried them to the edge of the water, dropped them in, and waited for small fish, probably introduced tilapia (sp.?) to swim in to feed on the seeds, whereupon the fish were caught by the heron. N. Nakamatsu and G. Fujioka (pers. comms.) also reported the unusual behavior, but they saw 2 birds baiting with bread tossed by people. Over the next few months, the golfers, who play 3 days per week, often tossed bread to the herons and continually observed them bait-fishing. On 9 and 10 February 2009, Fujioka (pers. comm.) obtained several video clips, now archived in the Macaulay Library (ML) of the Cornell Laboratory of Ornithology, documenting this distinctive behavior. He threw a piece of bread on the ground near the bird, and the bird then picked up the bread and tossed it into the water with a quick side motion of the head (ML *474*). The bird sometimes carried the bread in its bill (ML *446-447*), but usually tossed it sideways, and often repositioned it in the water, where it was often eaten by koi (Japanese ornamental carp) *Cyprinus carpio* that were much too large for the heron to eat (ML *757*). On one occasion (ML *476*), the bird appeared to “rescue” the bait by tossing it back onto the bank when a koi appeared, and another time lifted the bread out of the water as a koi approached (ML *447*), and once literally snatched it from the jaws of the big fish (ML *477*). Eventually, the heron caught a medium-size fish attracted to the bait (ML *449*). In several instances, when the bread in the water had all been eaten, the heron returned to the bread source in a grassy area a few feet away and tossed in another piece. If the bread fell short, the bird tossed it again toward the water. On one occasion (ML *478*), the heron ate some of the bread, which is not inconsistent with this species’s opportunistic and varied food habits (Davis 1993). The first bird was later joined by a second adult (ML *478*) that watched the first bird intently, but did not place any bait in the water. It may have been engaging in passive bait-fishing, wherein the bird positions itself near bait but does not place or manipulate it. On 14 February 2009, Denny, assisted by Fujioka and Nakamatsu who tossed bread, obtained a sequence of still photographs documenting most of the aforementioned behaviors (Fig. 1).

Seeking further information, Denny posted the golfers’ report on the HawaiiBirding listserv (http://groups.yahoo.com/group/HawaiiBirding/; Message 3917) on 14 July 2008. The report prompted M. Walther to recall a newscast by Carol Cox on Honolulu television station KITV in September 2007 (KITV.com 2007) that had reported similar behavior by a Black-crowned Night Heron on O‘ahu. The TV spot had shown an adult bird at Roy’s Restaurant at the Ko ‘Olina Golf Club on the western, or Wai‘anae, coast of O‘ahu using pieces of bread offered by patrons as food for ornamental waterfowl, to attract small fish in much the same manner as the bird on

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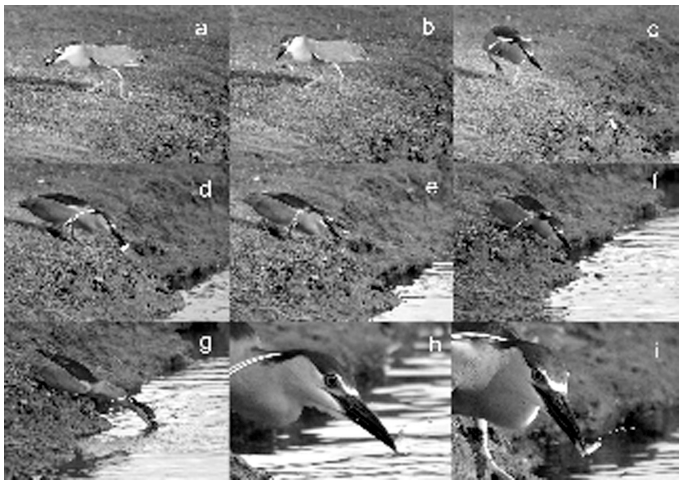

Figure 1. Action sequence of bait-fishing by a Black-crowned Night Heron at the Wailua Golf Course, Kaua'i, 14 February 2009: a-c) the bird flings a piece of bread toward the water but it falls short; d-f) the bird repositions the bread onto the water surface; g-i) the heron catches a small minnow apparently attracted by the bait. Photos ©

Kaua'i. The Walthers went to Ko 'Olina at ca. 11 AM on 20 July 2008 equipped with both still and video cameras. They walked to the edge of the pond near the restaurant and noted four adult and two immature night herons, along with twelve ornamental Black Swans *Cygnus atratus*, twenty-five domestic Mallards *Anas platyrhynchos*, and a presumably wild drake Northern Pintail *Anas acuta*. The restaurant staff said that "Hank," as they had nicknamed the heron, was still habitually bait-fishing 10 months after the TV report. An employee of a golfer's snack shop immediately adjacent to the pond began throwing bread into the water close to the bank. An immature heron approached the bread and began repeatedly pushing it down into the water. After a few seconds, the heron caught a fish. It repeated this behavior successfully four times over a ten-minute period (Fig. 2). The Walthers then threw some bread on the grass near the pond and, over a half-hour span, the bird picked up several pieces of bread, moved them to the water, and caught fish. The bird's behavior at this point seemed to the Walthers "disinterested or not quite expert" at this more complicated fishing sequence, but noted that the bird had recently eaten several fish obtained using bread already in the water, and the swans constantly stole the bread or otherwise interfered. When they tried a similar experiment with a nearby adult Black-crowned Night Heron by placing bread within its reach about 60 cm from the water's edge, the bird unhesitatingly picked up a piece of bread, dropped it into the water, and caught a fish, apparently being more accustomed to placing bait in the

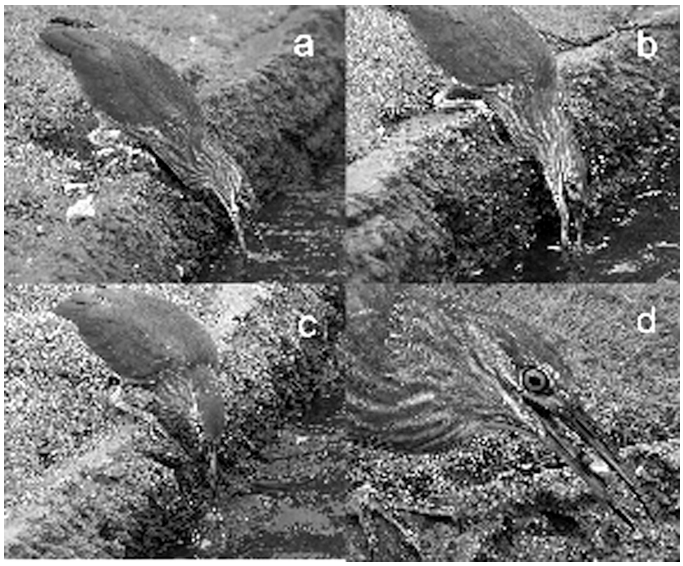

Figure 2. Action sequence of bait-fishing by a juvenile Black-crowned Night Heron at Roy's Restaurant, Ko'Olina Resort, O'ahu, 20 July 2008: a) picking up bread; b) positioning the lure; c) waiting; d) a successful catch. These photos may be seen in color at http://oahunaturetours.com/photogallery/birds/indexblackcnheron.html. Photos © Michael Walther.

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water than the juvenile had been. None of these herons ate any of the bread. Videos of all of these behaviors may be viewed at the Oahu Nature Tours website http://oahunaturetours.com/photogallery/birds/indexblackcnheron.html or that of the Macaulay Library http://macaulaylibrary.org/advancedSearch.do?&searchIscis=MW&searchOrderId=3&searchOutputId=1. The Walthers returned to Ko ʻOlina at 8 AM on 14 February 2009 and found 2 adult and one immature aukuʻu, along with nine Black Swans, twenty Mallards, and a drake Northern Pintail, presumably a subset of the birds present on their previous visit. The snack shop operator was again throwing bread into the water for the birds. The Walthers threw bread on the grass, and very soon, one of the adult night herons picked up a piece, ran to the water's edge, and dropped it in. It pushed the bread under the water, and soon caught a medium-sized fish (Fig. 3a-c). The bird's fishing was hampered again by the waterfowl and large koi that quickly ate any bread in the water. At one point, an adult night heron carried a piece of bait ca. 25 m along the water's edge, apparently searching for a place to fish, but was pursued by a Black Swan the entire way. To distract the waterfowl, the Walthers put large quantities of bread at a remote part of the pond. With the ducks and swans lured away, they threw a piece of bread near an adult night heron that immediately picked it up, carried it to the water, and dropped it in. Within seconds the bird caught an enormous fish (Fig. 3d), which it attempted to swallow for ca. 15 minutes before flying off with it and dropping it into the pond. On this date, both of the adults and the immature bird engaged in bait-fishing with bread.

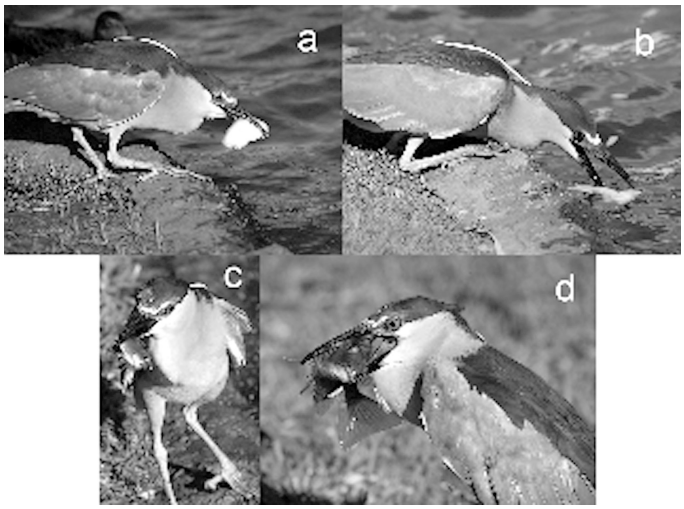

Figure 3. Action sequence of bait-fishing by an adult Black-crowned Night Heron at Koʻolina Resort, Oʻahu, 14 February 2009: a) transporting a piece of bread to the water; b) dunking and positioning the bread; c) a successful catch; d) a subsequent catch, too big to swallow. Photos © Michael Walther.

At ca. 9:30, to determine whether bait-fishing by herons was occurring at nearby ponds, the Walthers moved to another pond in the complex where they found two adult and one first-year Black-crowned Night Heron. They tossed a piece of bread onto the grass and immediately one of the adults picked it up, carried it to the water, and positioned it as a lure. The other adult later fished with bread bait as well, but neither was seen to catch a fish. When pieces of bread were tossed to the first-year bird, it immediately ate them, but it took larger pieces to the water and dipped them in, apparently to make them easier to swallow rather than to prepare them as bait. This young bird never engaged in bait-fishing.

At ca. 10:00, M. Walther walked to another nearby pond, more secluded than the others, and found 2 herons. The first flew away when bread was tossed in its direction. The other, perched in a pandanus *Pandanus tectorius* tree, ignored bread tossed on the ground beneath. Obviously not all aukuʻu at Ko ʻOlina have learned the baiting trick, especially those in places less often frequented by people. Which of the 2009 Koʻolina adults, if any, was the original "Hank" we cannot say, because all adult Black-crowned Night Herons look much alike (Berger 1981; Pratt et al. 1987). However, because the birds defend their feeding territories quite vigorously (Fig. 4; Davis 1993), the dominant bird on the first pond could well be the one that had been a TV star, now with a mate and one offspring that had learned the baiting technique.

Figure 4. Territorial interaction of two Black-crowned Night Herons at Koʻolina Resort, Oʻahu. Photo © Michael Walther.

Meanwhile, Gavin and Solomon (2009) observed passive bait-fishing by a bird in Ala Moana Beach Park in Honolulu 6-7 January 2009, and the following month saw both active and passive baiting by as many as 4 birds simultaneously at Hamakua Marsh in Kailua on the opposite side of the island. One of these birds carried bread to the water rather than tossing it. In both localities, the birds took advantage of the bird- and fish-feeding activities of people, which appears to be an important component of this behavior in all instances reported so far. Distances between the Oʻahu sites suggests that none of the birds observed by Gavin and Solomon (2009) were the same as those observed earlier by the Walthers.

The immature heron observed on Oʻahu apparently learned this behavior by observing others, but the distribution of observations suggests that several different Black-crowned Night Herons in Hawaii independently figured out how to fish with bait, apparently facilitated by observing people feed fish or waterfowl. Whether passive bait-fishing is an intermediate

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stage of the learning process, as suggested by Lovell (1958), in Hawaiian Black-crowned Night Herons remains to be determined. That bait-fishing appeared nearly simultaneously and apparently independently on two different Hawaiian islands is quite remarkable considering its rarity worldwide (Ruxton et al. 2011), as is the stereotypical nature of the behavior wherever it occurs. Perhaps this behavior is more widespread among Black-crowned Night Herons than the few published reports suggest, and is simply unnoticed or unreported by observers. As such, it would be more noticeable in Hawai'i because of the absence of other herons and the diurnal nature of the island population. In fact, Hawaii offers a unique opportunity to study the spread of a newly learned behavior in a local population. Observers on islands other than Kaua'i and O'ahu should be alert for bait-fishing by auku'u, especially around resorts where people feed fish or waterfowl. With the rapid adoption of this behavior by Hawaiian birds, the Black-crowned Night Heron appears to be second only to the Green/Striated superspecies in frequency of this behavior, which Higuchi (1988) suggested is "sporadic in time and place."

Among other heron species, possible examples of active baiting in the wild have been reported for the Gray Heron *Ardea cinerea* (Post et al. 2009), Goliath Heron *Ardea goliath* (Hunter et al. 2004), Squacco Heron *Ardeola ralloides* (Prytherch 1980), Little Egret *Egretta garzetta* (Post et al. 2009), and anecdotally for the Snowy Egret *E. thula* (Grant 1993). Passive baiting has been reported in the Great Egret *Ardea alba* (Lovell 1958) and the Great Blue Heron *Ardea herodias* (Zickefoose and Davis 1998). Bait-fishing by birds other than herons is quite rare, with reported examples including Black Kite *Milvus migrans* (Roberts 1982), Sunbittern *Eurypyga helios* (Boswall 1977), Herring Gull *Larus argentatus* (Henry and Aznar 2006), Lesser Black-backed Gull *Larus fuscus* (Sinclair 1984), Pied Kingfisher *Ceryle rudis* (Boswall 1983), and Hooded Crow *Corvus corone cornix* (Hasson undated).

Acknowledgments

We thank L. Miyamoto, N. Nakamatsu, and G. Fujioka for sharing their initial observations and Fujioka for archiving his video. Nakamatsu and Fujioka also assisted Denny in taking the action-sequence photos. Denny thanks the management of Wailua Golf Course for allowing him to photograph on their property. The Walthers thank the staff of Ko 'Olina Resort and Roy's Restaurant for their hospitality and help. Greg Budney and Ed Scholes of the Macaulay Library at the Cornell Laboratory of Ornithology assisted in archiving the videos. Janet Edgerton, librarian at the North Carolina State Museum of Natural Sciences, assisted in locating some of the more obscure references.

Literature Cited

Berger, A. J. 1981. *Hawaiian birdlife*. 2nd. Edition University of Hawaii Press, Honolulu.

Birder's World staff. 1989. Photo essay: fish tales. Birder's World 3(4):24-30.

Boswall, J. 1977. Tool using by birds and related behaviour. Avicultural Magazine 83:88-97.

Boswall, J. 1983. Tool use and related behaviour in birds: more notes. Avicultural Magazine 89:94-108.

Crous, R. 1990. Green-backed Heron fly-fishing. Babbler 20:27.

Drinkwater, H. 1958. Black-crowned Night Herons using bill motion to lure prey. Wilson Bulletin 70:201-202.

Davis, W. E., Jr. 1993. Black-crowned Night-Heron (*Nycticorax nycticorax*). *In* The Birds of North America, No. 74 (A. Poole and F. Gill, Eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D. C.

Davis, W. E., Jr., and J. A. Kushlan. 1994. Green Heron (*Butorides virescens*). *In* The Birds of North America, No. 129 (A. Poole and F. Gill, Eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D. C.

English, M. 1987. More on fishing green-backed herons. Bokmakierie 39:124-125.

Foxall, C. D., & D. Drury. 1987. Green-backed Heron 'bait-fishing' in Nairobi National Park. East African Natural History Society Bulletin 17:11.

Gavin, M C., and J. N. Solomon. 2009. Active and passive bait-fishing by Black-crowned Night Herons. Wilson Journal of Ornithology 121:844-845.

Grant, D. 1993. Some notes on wading bird feeding behavior. Underwater Naturalist 21(3):pages not given. http://ux.brookdalecc.edu/staff/sandyhook/dgrant/field/wading.htm , accessed 5 February 2009.

Hasson, O. Undated. Bait-fishing in crows. http://www.orenhasson.com/EN/bait-fishing.htm accessed 15 February 2009.

Henry, P.-Y, and J.-C. Aznar. 2006. Tool-use in Charadrii: Active bait-fishing by a Herring Gull. Waterbirds 29:233-234.

Higuchi, H. 1986. Bait-fishing by the Green-backed Heron *Ardeola striata* in Japan. Ibis 128:285-290.

Higuchi, H. 1988. Bait-fishing by Green-backed Herons in South Florida. Florida Field Naturalist 16:8-9.

Hunter, M. L., A. Calhoun, and D. S. Wilcove. 2004. Goliath Heron fishing with an artificial bait? Waterbirds 27:312–313.

Keenan, W. J., III. 1981. Green Heron fishing with mayflies. Chat 45:41.

KITV.com. 2007. Clever bird shows off fishing skills. http://www.kitv.com/news/14031597/detail.html, accessed 5 February 2009.

Kushlan, J. A., and J. A. Hancock. 2005. *Herons*. Oxford University Press, Oxford, U. K.

Lefebvre, L., N. Nicolakakis, and D. Boire. 2002. Tools and brains in birds. Behaviour 139:939-973.

Lovell, H. B. 1958. Baiting of fish by a Green Heron. Wilson Bulletin 70:280-281.

McCullough, D. D., and R. J. Beasley. 1996. Bait-fishing herons. Bird Watcher's Digest 18:48-51.

Norris, D. 1975. Green Heron (*Butorides virescens*) uses feather lure for fishing. American Birds 29:652-654.

Post, R. J., C. P. K. Post, and J. F. Walsh. 2009. Little Egret *(Egretta garzetta)* and Grey Heron *(Ardea cinerea)* using bait for fishing in Kenya. Waterbirds 32:450-452.

Pratt, H. D., P. L. Bruner, and D. G. Berrett. 1987. *A field guide to the birds of Hawaii and the tropical Pacific*. Princeton University Press, Princeton, N. J.

Preston, C. R., H. Moseley, and C. Moseley. 1986. Green-backed Heron baits fish with insects. Wilson Bulletin 98:613-614.

Prytherch, R. 1980. Squacco Heron possibly using insects as bait. British Birds 73:183-184.

Pyle, R. L. 1997. Checklist of the birds of Hawaii - 1997. 'Elepaio 87: 129-138.

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Riehl, C. 2001. Black-crowned Night Heron fishes with bait. Waterbirds 24:285-286.

Roberts, G. J. 1982. Apparent baiting behaviour by a Black Kite. Emu 82:53-54.

Robinson, S. K. 1994. Use of bait and lures by Green-backed Herons in Amazonian Peru. Wilson Bulletin 106:567-569.

Ruxton, G. D. and M. H. Hansell. 2011. Fishing with a bait or lure: A brief review of the cognitive Issues. Ethology 117:1–9. doi: 10.1111/j.1439-0310.2010.01848.x

Sinclair, J. C. 1984. Baiting behaviour in a captive Lesser Black-backed Gull. Cormorant 12:105-106.

Sisson, R. F. 1974. Aha! It really works! National Geographic 146:143-147.

Walsh, J. F., J. Grunewald, & G. Grunewald. 1985. Green-backed Herons (*Butorides striatus*) possibly using a lure and using apparent bait. Journal of Ornithology 126:439-442.

Wood, P. 1986. Fishing green backed heron. Bokmakierie 38:105.

Zickefoose, J., and W. E. Davis, Jr. 1998. Great Blue Heron (*Ardea herodias)* uses bread as bait for fish. Colonial Waterbirds 21:87-88.

One of the first Black Footed Albatross Chicks to hatch on Midway this year!!

Photo submitted by Nicole Galase

ENDANGERED SPECIES DAY

Celebrate Endangered Species Day with the Hawaii Audubon Society Saturday May 21st at the Honolulu Zoo. This years events will begin at 9am and end at 2 pm join us and many other groups for a fun filled day at the Zoo come to our booth and make your very own bird nest and play some endangered bird Sudoku! There will be lots of great local groups with tons to share! Hope to see you there!!

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White Tern/ Fairy Tern ?

By Ron Walker

The name of the official bird of the City and County of Honolulu has recently been questioned by a member of the Hawaii Audubon Society. This is one reason scientists have insisted on latin names that all agree upon; common names differ from place to place around the world.

For years, local wildlife biologists called our bird the "Fairy Tern", much because of its' beautiful, delicate, ethereal appearance. Somewhere along the line, it was decided that the name "White Tern" would be more appropriate to differentiate it from the Fairy Tern found only in the Australasian area of the world.

"Fairy Tern", Sterna nereis. Found only in Australia, New Zealand and New Caledonia. Length, 8 ½ to 10 ½ inches; wingspan 19 ½ inches. Bill, legs, feet orange or yellow. Black crown and nape, upper parts and upper wing grey. Bill bright yellow. Forked white tail.

"Little Fairy-Tern, Gygis microrhyncha. Found only in Marquesas Islands and Kiribati (Phoenix and Line Islands). Length 9 inches. Similar in appearance to Gygis alba, but smaller with shallow notched tail, long narrow bill.

"White Tern", Gygis alba. Found in tropical Pacific, Atlantic and Indian oceans. Length 11-13 inches; wingspan 27 ½ to 34 ½ inches. Legs, feet blue-black. All white plumage. Black eye-ring. Bill black. Forked tail.

Mayr (1978) called Gygis alba the " Fairy Tern". Del Hoyo et al (1996) named Gygis alba the "White Tern". In the 1987 *" A Field Guide to the Birds of Hawaii and the Tropical Pacific*" by H.D. Pratt, P.L. Bruner and D.G. Berrett, the authors addressed the common name problem and offered a solution. They eschewed using the term "White Tern" as being too artificial and misleading. Instead, they suggested that for Gygis alba and Gygis microrhyncha , using the hyphenated term "Fairy-tern" would clarify things. They also thought using the common name, "Australian Fairy Tern" for Sterna nereis would be appropriate.

In summary, we should feel free to use the name "(Common) Fairy-tern" for the beautiful white bird we see flying around the Capitol complex in Honolulu.

Manuoku: Keith Rollman (C&C of Honolulu, senior advisor), April 9, 2007, Outside of Honolulu Hale. Chick is 4-5 days old.

References Used:

del Hoyo, J., A. Elliot and J. Sargartal. 1996. Handbook of the Birds of the World, Volume 3, Hoatzin to Auks. Fairy Tern, Pg. 658; White Tern, Pg. 666. Lynx Edicions. Barcelona, Spain.

Harrison, P. 1983. Seabirds; and identification Guide. White/ Fairy Tern, Pgs. 182-187. Croom Helm Ltd/ A.H. and A.W. Reed Ltd. Beckenham, Kent BR3.

Hilty, S.L. and W.L. Brown. 1986. A Guide to the Birds of Columbia. White/Fairy Tern, Pg. 184. Princeton
University Press. Princeton, NJ.

Mayr, E. 1978. Birds of the South-west Pacific. White/Fairy Tern, Pg. 27. Charles E. Tuttle Company,
Rutland, VT.

Pratt, H.D., P.L. Bruner and D.G. Berrett. 1987. A Field Guide to the Birds of Hawaii and the Tropical Pacific. Fairy-terns. Pgs.185-187. Hawaii Audubon Society. Princeton University Press. Princeton, NJ.

Calling for HAS Committee Members

If you are interested in becoming more involved with the Hawaii Audubon Society we are looking for you! We currently have many committee vacancies and would love for you to join us! We could use some help in fundraising as well as with publicity! If you are interested or for more information please contact Casey in the office by phone 528-1432 or email at hiaudsoc@pixi.com we would love for you to join us!

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I am also looking for Island contacts If you are interested in getting together with other members from your island please let me know! I would love to help you meet up with other birders near you. Please email me your name and email or phone number so that I can create and contact list by Island. I am hoping this way I can also put together fieldtrips on the outer islands let me know where is your favortte place to go birding or just to enjoy what nature has to offer!

Two Hawaiian Damselfly Species Now Listed As Endangered

Two species of rare Hawaiian damselflies were designated as endangered species by the U.S. Fish and Wildlife Service. The final rule published in today's *Federal Register* adds the flying earwig Hawaiian damselfly and the Pacific Hawaiian damselfly, found only in Hawai'i, to the federal list of threatened and endangered species.

Damselflies and dragonflies are known collectively as *pinao* by native Hawaiians. Damselflies have slender bodies and hold their wings parallel to the body while at rest, while dragonflies are stout-bodied and hold their wings perpendicular to each side of their body.

"These are the first damselfly species in the nation to receive federal protection," said Loyal Mehrhoff, field supervisor of the Fish and Wildlife Service's Pacific Islands Fish and Wildlife Office. "Insects, as well as all native plants and animals, play a vital role in the health of our environment. Recognizing the importance these colorful insects play in the natural balance of Hawai'i's stream and water systems will hopefully encourage improved protection and management of these fragile aquatic ecosystems that will benefit both damselflies and humans."

On July 8, 2009, the Service published a proposed rule to list these two species of Hawaiian damselflies as endangered. Two public comment periods, totaling 90 days, allowed the public and other interested parties the opportunity to submit data and comments.

During the comment period, the Service received a total of 5 written comments and no requests for public hearings. Three comments were received from State of Hawai'i agencies and two were from the same nongovernmental organization. Three comments supported the listing of the two Hawaiian damselflies, two comments neither supported nor opposed the listings, and one of these comments provided additional information on both damselfly species.

The flying earwig Hawaiian damselfly has been a candidate for protection under the Endangered Species Act since 1996, and the Pacific Hawaiian damselfly has been a candidate since 1994. Federal listing of these two species will automatically invoke State listing under Hawai'i's endangered species law. Lands that support these two damselfly species are owned by various private parties, the State of Hawai'i and the Federal government.

The flying earwig Hawaiian damselfly is a comparatively large and elongated species. The males are blue and black in color and exhibit distinctive, greatly enlarged, pincer-like appendages that are used to clasp the female during mating. Females are predominantly brownish in color. The adults measure from 1.8 to 1.9 inches in length and have a wingspan of 1.9 to 2.1 inches. The wings of both sexes are clear except for the tips, which are narrowly darkened along the front margins.

Little is known about the biology of the flying earwig Hawaiian damselfly, but it is believed that the species has semi-terrestrial or terrestrial naiads (immature larval stages). Adults are often associated with thick mats of uluhe ferns on moist banks. Historically found on the islands of Hawai'i and Maui, the flying earwig Hawaiian damselfly has not been seen on the island of Hawai'i for over 80 years. Currently, the species is known only from one location on Maui.

The primary threats to the flying earwig Hawaiian damselfly are habitat loss and degradation due to agriculture and urban development, stream alterations and dewatering, feral pigs and nonnative plants, and natural catastrophes such as hurricanes and landslides; predation by nonnative species such as ants and bullfrogs; overcollection; and the small number of individuals.

The Pacific Hawaiian damselfly is a relatively small, darkly-colored species, with adults measuring from 1.3 to 1.4 inches in length and having a wingspan of 1.3 to 1.6 inches. Both sexes are largely black in color. Males exhibit brick red striping and patterns while females exhibit light green striping and patterns. This species is most easily distinguished from other Hawaiian damselflies by the extremely long lower abdominal appendage of the male, which greatly exceed the length of the upper appendage. Females lay eggs in submerged aquatic vegetation or in mats of moss or algae on submerged rocks, and hatching occurs in about ten days.

The Pacific Hawaiian damselfly was historically found on all of the main Hawaiian Islands except Kaho'olawe and Ni'ihau. Historically found at lower elevations below 2,000 feet, the species breeds predominantly in standing water such as marshes, ponds and pools along stream channels. The species has disappeared from at least 18 known localities throughout the islands and is completely gone from the islands of Kaua'i, O'ahu and Lana'i. Currently, the Pacific Hawaiian damselfly is found only on the islands of Moloka'i and Maui, and from a single population on the island of Hawai'i.

The primary threats to the Pacific Hawaiian damselfly are habitat loss and modification by agriculture and urban development; stream alterations and dewatering; nonnative plants; natural catastrophes such as hurricanes, drought and landslides; and predation by nonnative species such as fish, backswimmers, and bullfrogs.

The Service has determined that the designation of critical habitat is prudent for both damselfly species; however, the agency is unable to identify the physical and biological features essential to the conservation of these species and is therefore unable to determine areas that contain these features at this time. As a result, the Service is not designating critical habitat for these species in this final rule, but will do so when that information is available.

Copies of the final rule may be downloaded from the Service's website at http://www.fws.gov/pacificislands/

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Note to Editors: Images are available by calling Ken Foote at 808 792-9535 - *FWS* -

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Calendar of Events

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Honolulu Zoo
9am – 2pm

Saturday July 16, 2011
Service trip to Mt Ka'ala
Limit 12
Sign up before July 1, 2011
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