

JOB PROGRESS REPORT RESEARCH PROJECT SEGMENT

STATE: Territory of Guam

PROJECT NO.: E-2-2

SUB-PROJECT: B

JOB NO.: 3

JOB TITLE: Captive Propagation of Micronesian Kingfishers

PERIOD COVERED: October 1, 1998 to September 30, 1999

SUMMARY

DAWR biologist Kelly Brock continued to act as consultant for the Micronesian Kingfisher SSP. Conceptual plans were developed for a kingfisher captive breeding facility, and grant proposals were submitted to the MacArthur Foundation and Packard Foundation for construction funds. The MacArthur Foundation declined the proposal, but the Packard Foundation continues to be interested.

BACKGROUND

The Guam Native Forest Bird Captive Breeding Program began in 1983 as a cooperative effort between the Division of Aquatic and Wildlife Resources (DAWR), member zoos of the American Zoo and Aquarium Association, (AZA) and the U.S. Fish and Wildlife Service (USFWS) (DAWR 1983, Derrickson 1986, Shelton 1986). Predation by the brown tree snake, *Boiga irregularis*, now believed to be the single most important factor in the recent drastic decline of Guam's native forest birds (Savidge 1986, 1987; Conry 1988), precipitated the need for a captive breeding program, when by 1982 at least five species of Guam endemic species or subspecies were nearing extinction in the wild. Unfortunately, by 1984, attempts at captive breeding three of these species, the bridled white-eye, *Zosterops c. conspicillata*, rufous fantail, *Rhipidura rufifrons uraniae*, and the Guam flycatcher, *Miagra freycineti*, were abandoned due to their disappearance from the wild (DAWR 1984). The Micronesian kingfisher, *Halcyon c. cinnamomina*, was successfully brought into captivity (DAWR 1983-1986), with the capture of 31 wild birds that were immediately transferred to U.S. mainland zoos.

Kingfishers were first bred in 1985 at three mainland U.S. zoos (Bronx Zoo, Philadelphia Zoo, and the Conservation and Research Center of the National Zoological Park). During FY '88, the first studbook for the Micronesian kingfisher was published by the Philadelphia Zoo (Bahner 1989). The kingfisher has been designated as a Species Survival Program species by the AZA. Beth Bahner of the Philadelphia Zoo was designated by the AZA as studbook keeper. The kingfisher program has been relatively successful, as 17 of 29 founders produced descendants (the last previously unrepresented living founder sired offspring in 1994), and the population reached a peak of 62 individuals in August 1990. However, problems such as high chick mortality, high young adult mortality, aggression, and infertility continue to limit population growth (Bahner 1993).

OBJECTIVES

1. Continue acting as field consultants to the Micronesian Kingfisher SSP.

2. Finalize construction plans for a kingfisher captive breeding facility.
3. Obtain a construction grant to build captive breeding facility.
4. Transfer 2.0 (males.females) or 1.1 kingfishers from mainland zoos to Guam to initiate captive breeding program on Guam.
5. Identify appropriate reintroduction sites for Micronesian kingfishers that meet criteria for snake control.
6. Recruit or train two additional staff to manage captive kingfishers on Guam.

RESULTS

In FY99, the living population of kingfishers increased to 64 birds. Seventeen kingfishers hatched in 4 of the 8 zoos housing the birds. Seven of those birds fledged, and only two adults died.

Gary Wiles and Kelly Brock conducted a survey for one of the kingfisher's preferred nesting trees, *Pisonia grandis*, in Area 50 as a prelude to identifying potential reintroduction sites for the species. A small clump of three living trees was found on Transect D near snake trap station eight. Area 50 will not be a suitable reintroduction site without extensive nestsite management (i.e., provision of artificial nest sites).

Kelly Brock met with Guam Department of Public Works engineers to sketch a conceptual plan for construction of a captive breeding facility for Micronesian kingfishers. A grant proposal for the construction costs was submitted to the MacArthur and Packard Foundations. The MacArthur Foundation declined the proposal, but the Packard Foundation expressed interest in seeing the proposal again as part of a block grant from a soon to be established Western Pacific consortium of colleges and natural resource agencies of Micronesia (MAREPAC, Inc.)

RECOMMENDATIONS

1. Continue acting as a consultant to the Micronesian Kingfisher SSP, coordinating all plans and activities with SSP Species Coordinator, Beth Bahner.
2. Meet with engineers to finalize construction plans for a captive breeding facility for kingfishers on Guam.
3. Pursue a Packard Foundation grant for construction of a facility.
4. Complete construction of facility by October 1, 2000.
5. Transfer 2.0 (males.females) or 1.1 Micronesian kingfishers from mainland zoos to Guam by December 2000.
6. Hire or train two staff for kingfisher management (husbandry and breeding).

PROJECT COST

The estimated cost of this project under E-2-2 is \$5,000.

LITERATURE CITED

- Bahner, E.L. 1989. 1988 North American Regional Studbook for the Micronesian Kingfisher, *Halcyon c. cinnamomina*. Zoological Society of Philadelphia, Philadelphia, Pennsylvania.
- Bahner, E.L. 1993. SSP Master Plan (1993) & 1992 North American Regional Studbook for the Micronesian Kingfisher, *Halcyon c. cinnamomina*. Zoological Society of Philadelphia, Philadelphia, Pennsylvania.
- Conry, P.J. 1988. High nest predation by the brown tree snake on Guam. *Condor* 90:478-482.
- Division of Aquatic & Wildlife Resources. 1983-1984. Job Progress Reports - Federal Aid to Fish and Wildlife Restoration. Department of Agriculture, Guam.
- Savidge, J.A. 1986. The role of disease and predation in the decline of Guam's avifauna. Ph.D. Thesis. University of Illinois, Urbana-Champaign.
- Savidge, J.A. 1987. Extinction of an island avifauna by an introduced snake. *Ecology* 68:660-688.
- Shelton, L.C. 1986. Captive propagation of the Micronesian Kingfisher. *Philadelphia Zoo Review* 2: 28-31.

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