JULY 1984 Vol. 1 No. 9

ENDANGERED SPECIES

Technical Bulletin Reprint

Wildland Management Center
The University of Michigan

From the World Wildlife Fund-U.S.

THE DARK-RUMPED PETREL: SAVING AN ENDANGERED SPECIES OF THE GALAPAGOS ISLANDS

by
Keith C. Pitchford

Wildlife conservation may not always produce the results of restoring the population of a species even when large amounts of money and time are invested. Success in restoring a population of threatened or endangered species, such as the Dark-rumped Petrel (Pterodroma phaipygia), encourages continued wildlife conconservation efforts.

The Dark-rumped Petrel breeds only on the Galapagos and Hawaiian Islands. The birds spend most of the year at sea, returning to the islands each year during the breeding season. These petrels are ground-nesters, constructing small burrows on the thickly vegetated slopes (above 180 m) of Santa Cruz, San Cristobal, James, Isabela and Floreana Islands of the Galapagos archipelago. When not excavating burrows in the soft, sandy soil, the petrels may make nests on cliffs, in caves and in holes under rocks. For the most part, however, their nests are exposed.

Prior to the beginning of human impacts in the Galapagos Islands in 1535, the Dark-rumped Petrel nests were not threatened by the presence of predators. Increased human activity on the islands brought with it the introduction of rats and domestic stock. Rats pose the greatest threat to the petrel population by feeding on their eggs and young chicks, but domestic cattle, goats and pigs also effect the birds by destroying available nesting habitat. Though once extremely large, the Dark-rumped Petrel population on the islands has significantly declined over the past 50 years. The petrel was originally listed as an endangered species by the U.S. Fish and Wildlife Service in 1966.

In 1982, an effort to save this seabird was undertaken by ornithologist Dr. Malcolm Coulter and Felipe and Justine Cruz, two dedicated Galapagos residents. The World Wildlife Fund-U.S. had funded the original petrel census in 1961 and now supports the conservation work on Coulter's project. Initial studies by Coulter indicated that the Dark-rumped Petrel populations on at least two of the Galapagos islands were declining by 33% per year since 1978. According to the ornithologist, the petrels may have become extinct in the Galapagos within 10 to 15 years. A contributing factor to the dramatic decline is the adult petrel's behavior of not laying another egg if the solitary egg or chick is lost. The need to reduce predation on chicks and eggs and slow the loss of nesting habitat put Coulter and the Cruz's in the animal control business. Reducing the rat population was the major focus of the control project along with protection of nesting sites. Controlling cattle presents some complex sociological issues touching on the multiple use of park lands, but this aspect of the management issue was beyond the scope of the study and conservation work.

Despite the heavy predation pressures and the short time frame, the petrel project has already yielded some success. Prior to 1982 nest success was between 15-30%, but by 1983, Coulter recorded nesting success at 47%, this in the face of damaging rainstorms that swept the islands in association with El Nino. So far the 1984 results indicate nesting success at over 70%, a direct result of predator control on the nesting grounds. Coulter and the Cruz's work has certainly been beneficial to the Dark-rumped Petrel populations on the Galapagos Islands, but it has also been encouraging to all those with a concern for wildlife conservation.

Cincinnati Zoo Celebrates Embryo Transfer Success

by
Kathleen Rude

The stork delivers babies, or so folklore would have us believe; but for the endangered bongo, scientists have taken over the role and rewritten all of the rules. The bongo's offspring are flown cross-continent before they are ever born. The mothers that give birth to them are not the same ones that conceive them. And what's more, these surrogate mom's aren't

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"OPERATION FALCON" EXPOSES BLACK MARKET IN BIRDS OF PREY

In June, U.S. Fish and Wildlife Service special agents and State conservation officers arrested over 30 individuals in 14 States in a crackdown against illegal commercialization in birds of prey. Agents also seized a large number of live raptors (such as Arctic gyrfalcons and endangered peregrine falcons), as well as cars, trucks, and aircraft the Government charges were used in the violations.

This action culminates a 3-year undercover investigation which exposed a thriving international black market in federally protected birds. Altogether, more than 80 felony charges are now pending.

A number of United States Attorneys also helped to direct this multi-district investigation, which was centered in the office of the United States Attorney for the District of Montana. The United States Attorneys for Colorado, Central District of California, Northern District of Illinois and 12 other districts also participated in this effort. Through undercover techniques, the agents were able to infiltrate the networks of individuals involved in illegal raptor taking and trading, and to obtain evidence of violations by subjects throughout the United States.

The operation was carried out by 150 Fish and Wildlife Service special agents and an equal number of State wildlife officers who served research and arrest warrants in Arizona, California, Colorado, Idaho, Illinois, Louisiana, Minnesota, Missouri, Montana, Nevada, New Mexico, New York, Texas, and Utah. Those arrested were charged with violating various Federal wildlife statutes as well as smuggling, conspiracy, mail fraud, and making false statements.

At the same time, in a closely coordinated enforcement effort, wildlife officials in Ontario, British Columbia, Alberta, and the Yukon, assisted by the Canadian Federal Department of Justice, served 15 search and arrest warrants involving similar violations in Canada.

Government surveillance and undercover activities substantiated earlier information that the multi-million dollar illegal black market in birds of prey is a worldwide problem of serious proportions.

"The Department is greatly concerned about the impact illegal trade is having on wild populations of birds, converting a public trust to a private gain," Interior Secretary William Clark said. "We intend to review in depth the existing regulatory mechanism that has apparently been defied on such a large scale. In the meantime, we will use available resources to combat schemes to commercially exploit falcons and other birds of prey that belong to the American people. We hope that the successful prosecutions of those who have allegedly violated the law will convey our dedication and commitment to wildlife protection."

U.S. Attorney General William French Smith said: "Illegal trafficking in protected wildlife has become an enormous problem. A multi-million dollar illegal market is threatening the existence of some species, and creating an incentive for organized international criminal activities. I am encouraged, however, by our highly effective effort to penetrate the networks of illegal trade in raptors through cooperation, not only among Federal and State agencies, but also with foreign governments. This type of cooperation is essential if we are to eradicate this unlawful commerce before it eradicates our protected wildlife."

More than 5 years ago the Fish and Wildlife Service started collecting intelligence on falconry activities and the international black market in falcons. Information developed convinced Service agents of widespread violation of Federal laws applying to falconry and to raptor propagation projects. As a result, an undercover "sting" operation was launched.

Agents found that young raptors (known as eyasses) and raptor eggs taken from the wild were being smuggled across United States borders to provide highly prized species for the illegal trade. They estimate that between 1981 and 1984 as many as 400 birds were illegally taken from the wild with many being offered for sale to buyers in the United States, Europe and the Middle East, where they were used primarily for falconry purposes. Smuggling techniques included many used by drug traffickers, such as utilizing small aircraft to cross the U.S.-Canadian border, illegally crossing remote sections of the border by car or truck, and carrying illegal eggs in false-bottom luggage or strapped next to the body. Service investigators estimate that the mortality of illegally taken wild birds runs as high as 50 percent.

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a forum for information exchange on endangered species from

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Annual subscriptions for the *Endangered Species Technical Bulletin Reprint* are $12.00. Send check or money order (made payable to: The University of Michigan) to:

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Embryo Transfer Success continued

necessarily of the same species!

Far-fetched as this story sounds, the Cincinnati Wildlife Research Federation hopes such practices will save exotic endangered species from extinction. Presently Federation researchers are working with nonsurgical embryo transfer techniques to increase the birth rate and genetic diversity of captive populations of bongo, a rare and endangered African antelope.

This summer, Dr. Betsy Dresser, Director of the Federation, announced the first two successful transcontinental transfers of fresh embryos from this exotic species of antelope. Two healthy bongo calves are the result. The first calf born was appropriately named "E.T." - for embryo transfer.

Both calves are full siblings to each other, and yet their birthdays are a month apart and they have two different mothers, one a bongo and the other an eland, the world's largest antelope. Without the use of surgery, Dr. Dresser extracted fresh embryos from the calves' natural dam at the Los Angeles Zoo and flew them to the Cincinnati Zoo. That same day scientists implanted the embryos in five potential surrogate mothers, four elands and one bongo. Only one eland and the bongo became pregnant and gave birth.

"These births. . .give us hope for increasing the numbers of rare and endangered species," stated Dr. Dresser, "a goal towards which all zoos have been working."

Embryo transfers can increase the number of young born to any one female. A female's capacity to produce embryos exceeds her capacity to bear young. When embryos of an individual bongo are implanted into surrogate mothers of a more numerous species, this female actually produces more young than if she was allowed to reproduce solely on her own.

Embryo transfers have another special implication. "Parkay", the surrogate bongo mother, "had been considered useless in the breeding program because of three years of unsuccessful attempts at natural breeding," said Dr. Dresser. "But today's birth signifies the tremendous value of embryo transfers. Parkay is now a vital part of this important breeding program."

But even with healthy birth rates, captive populations still may not survive if they continue to breed only with members of their population. Restricting genes that can be introduced into the population leads to inbreeding, which eventually reduces the birth rates and increases mortality rates. Embryo transfers between zoos allows zoo personnel to increase genetic diversity without the serious risk and high cost of transporting live animals for breeding purposes.

With this technique, scientists will also be able to collect embryos of wild populations without permanently removing the animals from their habitat. Dr. Dresser hopes to visit Africa later this year to obtain embryos from female bongos in a wild herd discovered last fall. These embryos will be frozen for transport back to Cincinnati, which will contribute to the Federation's on-going project with frozen embryo transfers.

The Cincinnati Zoo, one of the organizations that sponsors the Federation, maintains a Frozen Zoo that contains eland embryos and semen samples from approximately 50 exotic animals. The Federation is now experimenting

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photo by Darlene Anderson

photo by Richard Norton

"E-T" with eland mother.

photo courtesy Cincinnati Zoo

Dr. Betsy Dresser with bongo, trying to increase genetic diversity in captive populations.

"Operation Falcon" continued

Another scheme to provide birds for the black market involved the illegal use of Federal raptor bands. Many birds and eggs taken from the wild were delivered to captive-breeding projects, where they were falsely documented and banded as having been bred in captivity. Under Federal regulations raptor breeding projects are allowed to sell captive-bred birds marked with non-reusable, seamless leg bands. Wild-caught birds may not be sold. "Laundering" birds in this manner may prove to be a significant drain on wild resources.

The black market price of raptors varies according to species, color, sex, and general condition, with buyers in the United States paying as much as $10,000 for white female gyrfalcons, which are larger than males of the same species. In Europe and the Middle East, gyrfalcons reportedly can bring $50,000 or more for an outstanding specimen. The popularity of gyrfalcons, an Arctic species, is based on their large size and superb hunting ability. Within the United States, endangered peregrine falcons are valued at up to $2,000; goshawks, $1,500; prairie falcons, $800; and Harris hawks, $600, while European and Middle Eastern prices for these birds are considerably higher.

Falcons, hawks and other birds of prey have been federally protected by the Migratory Bird Treaty Act since 1972. Under the Act the taking, possession, sale, purchase, barter, or offer to sell, purchase, or barter of migratory birds is prohibited except as allowed by permit. The sport of falconry and raptor captive-breeding projects are currently authorized under various Federal permit provisions. Birds held under permit for these purposes are banded with a permanent Fish and Wildlife Service band, which may not be reused upon the death of the bird. Band tampering and reuse appears to have been commonplace among those allegedly involved in the illegal trade.

In addition to the Migratory Bird Treaty Act, falcons are protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), an international agreement requiring permits to import or export listed species. Peregrine falcons are also protected by the endangered Species Act of 1973 which prohibits taking or interstate or foreign commerce in a listed species, except as specifically allowed in accordance with permit provisions. The Lacey Act Amendments of 1981 make it a Federal violation to import, export, transport, sell, receive, acquire, or purchase wildlife that has been taken, transported, possessed, or sold in violation of State, Federal or foreign law.

Penalties that may be assessed in these cases under the Migratory Bird Treaty Act are up to 2 years in prison and/or a $2,000 fine for the sale of any migratory bird or, the taking with intent to sell; under the Endangered Species Act, up to 1 year in prison and/or a $20,000 fine; under the Lacey Act, up to 5 years and/or a $20,000 fine; conspiracy, up to 5 years in prison and/or $10,000 fine; smuggling up to 5 years in prison and/or $10,000 fine; making false statements, up to 5 years in prison and/or $20,000 fine, and mail fraud, 5 years or $1,000, or both.

Embryo Transfer Success continued

with these frozen embryos. In December 1983, a full-term, normal eland calf was born, after being implanted into a surrogate eland mother as a frozen embryo. Although the calf was stillborn, it was the first exotic animal ever produced from a frozen embryo.

The Federation believes that if the genetic material from endangered species can be frozen and preserved indefinitely, it will be a great contribution to preventing the extinction of these species.

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