

# THE PUERTO RICAN PARROT- A STORY OF AN AMAZING RESCUE

*By Alan Mowbray*<sup>1</sup>

## HISTORY

Five hundred and twelve years ago, on his second voyage to the New World, Christopher Columbus dropped anchor off the Caribbean island he named San Juan Bautista. He and his crew of Spanish explorers saw white sand beaches bordered by high mountains covered with lush forests. They were warmly greeted by the native Taino inhabitants who gave them gifts of gold nuggets they had plucked from the island's rivers. Hundreds of noisy bright-green parrots with beautiful white-ringed eyes swooped overhead. The Taino called these birds "Higuaca."



At the beginning of the sixteenth century, Spanish colonists estimated that there were nearly a million of these beautiful birds living in the island's forests.

Today there are less than thirty *Amazona vittata* living in the wild on the island we now know as Puerto Rico. Although there are future plans to expand the wild population to other locations on the island, at the moment, the 28, 000 acre (19, 650 hectare) Caribbean National Forest, known locally as El Yunque, is the sole remaining forest habitat where the few surviving wild

Puerto Rican parrots find trees with cavities suitable for nesting and seeds and fruits to forage.

*Amazona vittata*'s near disappearance is not unique. Of the three parrot species that inhabited U.S. territory at the turn of the twentieth century, all but one, the Puerto Rican Parrot became extinct by the 1940's. There are 332 known *psittacine* (parrot) species. Approximately 31 of them are of the Neotropical *Amazona* genus that inhabits central and South America and the Caribbean islands. Of these, 11 are considered threatened or endangered. *Amazona vittata* is the only Neotropical parrot that barely survives within US territory. The decline of the island's parrot population over five centuries is directly related to the rise in

human population. As more colonists arrived, they cut-down forests and converted land for agriculture. The habitat on which the species depended began to disappear. The remaining parrot population which had retreated to the Luquillo Mountains was further threatened when the cutting of forest timber for charcoal production was encouraged beginning in the 1900's.

The story of the last-ditch recovery effort to save this extraordinary bird from extinction is an amalgam of scientific intervention, agency cooperation and management strategy which started as a gamble with no guarantee of ultimate success. In 1968 when the Puerto Rican parrot population had dwindled to around two dozen individual birds in the wild, a concerted mutual effort to save the species was launched. Called the Puerto Rican Parrot Recovery Plan, it involved scientists and managers from the US Fish and Wildlife Service, the US Forest Service and the Puerto Rico Department of Natural and Environmental Resources, with added support provided by the World Wildlife Fund. By 1989, the Puerto Rican Parrot Recovery Plan had been in operation for over a decade. Through scientific intervention the parrot population in the wild had increased to 47 birds. Then suddenly disaster struck. On September 18<sup>th</sup> hurricane Hugo roared across the Luquillo mountains destroying more than half the parrots in the wild. By year's end a small population of 22 birds remained. By early 1994, the wild population had again risen to 39 birds and 6 breeding pairs. Today's parrot population continues to hover near to that level.

Intense research and management strategies by the three cooperating agencies over the ensuing years have prevented the ultimate extinction of the Puerto Rican Parrot.

### **US Forest Service (USFS).**

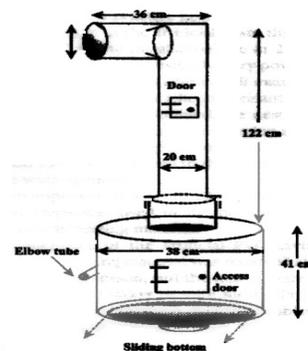
With the help of the Fish and Wildlife Service, US Forest Service biologists and technicians are creating and managing nesting sites in the parrot's habitat. Their efforts ensure the availability of nests for the wild flock, construction and maintenance of canopy platforms and blinds for ongoing flock research, development and maintenance of service trails into the nesting areas and the control of parrot flock predators and nest competitors. Forest Service experts also train Fish and Wildlife and Puerto Rico Department of Natural and Environmental Resources personnel in how to safely climb-up into the forest canopy. Caribbean

NF nature interpreters also provide information about the Puerto Rican Parrot and the parrot recovery program to over 600,000 visitors to the forest each year.

Scientists deploy rat-bait boxes at the bases of trees in the nesting area to discourage the scavenging of parrot eggs from nests. Alternative nesting boxes are used for the Pearly-eyed Thrasher (*Margarops fuscatus*) an aggressive resident bird that if not prevented from doing so will lay its own eggs on top of the parrot eggs when the nest is untended causing them to be abandoned by the parrot parents. Mongoose (*Herpestes auro-punctatus*), introduced exotic rodent predators are trapped in the area surrounding the parrot habitat just prior to breeding season to ensure safe breeding. During breeding season, traps are also set for exotic bees, another increasingly common parrot nest competitor. Forest Service and Fish and Wildlife Service biologists and technicians take a census of the wild parrot flock before and after each year's breeding season, climbing to the top of the forest's canopy and remaining there from dawn to dusk counting the individual birds to determine if the wild flock has increased, decreased or remained stable.

The design of artificial parrot nests was a collaborative effort, between Forest Service biology technicians and USFWS biologists that evolved over the years. Early in the recovery program it was recognized that natural nesting cavities in the parrot's preferred Palo Colorado (*Cyrtilla racemiflora*) trees were deteriorating. Natural nests in these trees also lacked a means to protect the parrot eggs and fledglings from the incursion of exotic and native predators and nest competitors.

Repeated "trial and error" design efforts by biologists and technicians ultimately produced sophisticated artificial nesting cavities constructed of virtually indestructible, industrial-grade polyvinylchloride (PVC) plastic which the parrots found acceptable, especially after a section of hollowed-out tree trunk was attached to the PVC entrance tube to make it appear more natural. The artificial nests accomplished the goal of protecting parrot eggs and nestlings from predators and nest competitors until they had fledged and left the nests. The final nest



design (drawing at right<sup>2</sup>) was deployed at tree nesting cavities in the Caribbean National Forest in 2001. Since 2002, all wild flock nesting pairs have used these artificial nests, and 28 chicks have been fledged over the five ensuing breeding seasons.



### **US Fish & Wildlife Service (US FWS)**

The U.S. Fish and Wildlife Service is directly responsible for biological research and the direct management and handling of both the captive and wild parrot flocks. FWS scientists monitor the breeding productivity, movement, and habitat use of wild and released parrots in the

Caribbean NF. Monitoring scientists watch from blinds to protect nesting parrots and their offspring from predators, nest competitors and parasites and provide veterinary service when it is needed. Careful observation of nesting success is key to their efforts. Every year newly fledged wild chicks are equipped with radio transmitters that allow the scientists to study their movements, survival rates, and causes of mortality. The FWS operates the captive parrot aviary (photo above left<sup>3</sup>) presently located on the grounds of a former World War II army camp in the Caribbean National Forest. Here captive adult parrots are trained, conditioned and released. Breeding pairs are kept in nesting cages where they mate, eggs are hatched and nestlings are fledged. Fledged chicks that show promise are transferred to a much larger “flight cage” where human interaction is restricted. Here the young parrots learn how to survive in a close approximation of their future environment before being released into the wild.

Earlier this year ground was broken for construction of a new aviary. Management of the design and construction of the new aviary was provided by US Forest Service experts from the Caribbean National Forest.

It is being built in a more compatible section of the forest that will have better logistics and will provide easier access. If all goes well, construction of the new aviary should be completed and it will begin operation at the start of the 2007 breeding season. The new aviary will provide greatly improved facilities in support of the Puerto Rico Parrot Recovery Program.

## **Puerto Rico Department of Natural and Environmental Resources (PR DNER)**

Biologists and technicians of the Puerto Rico Department of Natural and Environmental Resources have become increasingly involved in the PR Parrot Recovery Program. In 1989, 30 Hispaniolan parrots (*Amazona ventralis*) from the Dominican Republic were transferred to the Jose J. Vivaldi Aviary in Rio Abajo to test this PR DNER facility for its suitability as an alternate PR Parrot Aviary. The program proved so successful, that in 1993, a group of PR parrots (*Amazona vittata*) was transferred from the El Yunque Aviary to the Rio Abajo location. Since then, this facility has successfully produced *Amazona vittata* fledglings.

### **The Future**

Starting in 2009, the US Fish and Wildlife Service will periodically release captive PR parrots for introduction into the existing wild flock in the Luquillo Mountains. From 2006 to 2008, plans also include releasing birds to start a new wild parrot flock in the Rio Abajo State Forest, adjacent to the Rio Abajo Aviary. But before that can happen, biologists and technicians from the US Forest Service will pass-on to the DNER scientists and technicians the hard-earned lessons they have learned over the past decades in the logistical support of the El Yunque wild parrot flock, so they can properly plan the infrastructure for the Rio Abajo Forest. Such important skills as recommending trail building and maintenance methods, suggested predator suppression and nest competition abatement techniques will be transferred to State Forest Managers. Once these policies are agreed upon and put in place, introduction of a new flock can begin with a much better chance of ultimate success.

### **What Have We Learned?**

*Amazona vittata* has been kept from the brink of extinction. The recovery process is frustrating and very difficult. It has been going on now for nearly four decades and success is still not a certainty. For the most part, the program has progressed because of the unselfish, dedicated and unceasing cooperation between scientists, managers and grass-roots workers of Federal, Commonwealth and private agencies and organizations. The Puerto Rican Parrot Recovery Program owes the success it has seen to the implementation and continuity of this unique union of concerned conservationists, that serves as a template for similar

endangered and threatened species recovery programs throughout the world.

### **Related Websites and Recommended Reading:**

**[www.fws.gov/southeast/prparrot/](http://www.fws.gov/southeast/prparrot/)** The PR Parrot website of the USFWS.

Snyder, N. F. *et.al.* : 1987, The Parrots of Luquillo; Western Foundation for Vertebrate Zoology.

White, T. H., *et al.*; 2005, Survival of Puerto Rican Parrots Released in the Caribbean National Forest, “The Condor”, © The Cooper Ornithological Society, 2005.

Memorandum of Understanding (MOU) between Federal and Commonwealth agencies on the PR Parrot Recovery Program; (View and download at the CNF [PLANS & PROGRAMS](#) page here.)

### **Credits:**

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- 2. Drawing used with permission; US Fish and Wildlife Service.**
- 3. Photo used with permission; US Fish and Wildlife Service.**