Parrot's Best Friend

A precast concrete tank provides the perfect solution to help save the endangered Puerto Rican parrot.

BY BRIDGET MCCREA

Photo by Barger and Sons

One of the 10 most endangered birds in the world, the Puerto Rican parrot once was abundant throughout Puerto Rico and its offshore islands. A conspicuous, foot-long emerald green forest dweller with a red forehead, wide white eye-rings, and flesh-colored bill and feet, the bird teeters on the edge of extinction. The bird was declared federally endangered in 1967, and by 1975 just 13 individual parrots occupied a patch of rainforest habitat in the Caribbean National Forest.

Thanks to a government-sponsored research program that was initiated in 1968 and the teamwork of groups like the U.S. Fish and Wildlife Service, the USDA/Forest Service the Puerto Rican Commonwealth Department of National and Environmental Services, the parrot's future is looking brighter. This year, the bird's survival chances will get even better, thanks in part to a precast concrete grease interceptor at the Luquillo Aviary.

Manufactured by C.R. Barger & Sons Inc. of Harriman, Tenn., the 5,000-gallon grease interceptor will be used to store rainfall, which the parrots will use for consumption. Made in two pieces (top and bottom), the tank took two days to manufacture, and was shipped to Puerto Rico in November 2005.

The grease interceptor is part of a 19-year-old formal recovery plan for the Puerto Rican parrot. Through the program, management and research are directed toward maximizing breeding productivity both in the wild population and at two captive breeding grounds, one of which is the Luquillo Aviary. Situated deep in the rainforest of Puerto Rico, the remote site presented challenges for the engineers and contractors involved in the project, according to Daniel Wintermeyer, president at Atlanta-based Urban Engineers Inc., the project's civil engineer.

"Location-wise we had no infrastructure to speak of," Wintermeyer says. "There were no water lines available at the aviary, which is halfway up a mountain in a national forest. The resources were pretty limited."

Accessible by road, the site was the perfect staging ground for a precast concrete grease interceptor, rather than a cast-in-place option, says Wintermeyer. Higher quality control was possible, as was the opportunity to install a more watertight product. "It was pretty easy to load the precast product on the back of a truck, haul it up there and do the final installation out in the field," he says.

To get the grease interceptor to Puerto Rico, Eric Barger, C.R. Barger & Sons project engineer, first spoke with the U.S. Department of Commerce, which walked him through the process of filling out a pro forma invoice and bill of lading that included items like taxes, port fees and loading fees. Using international freight forwarder John S. James Co. of Knoxville, Tenn., the precaster filled out more paperwork, obtained insurance and submitted the shipping quote to the project contractor.

After getting the thumbs up, the precaster investigated specific shipping options, which included either enclosed trailers or flatbed transportation. They opted for the latter. "The tanks didn't move off the truck until they got to Puerto Rico," Barger says. "At the destination, all they had to do was pull the trailer under a crane, detach it and move it onto land."

Filling a need

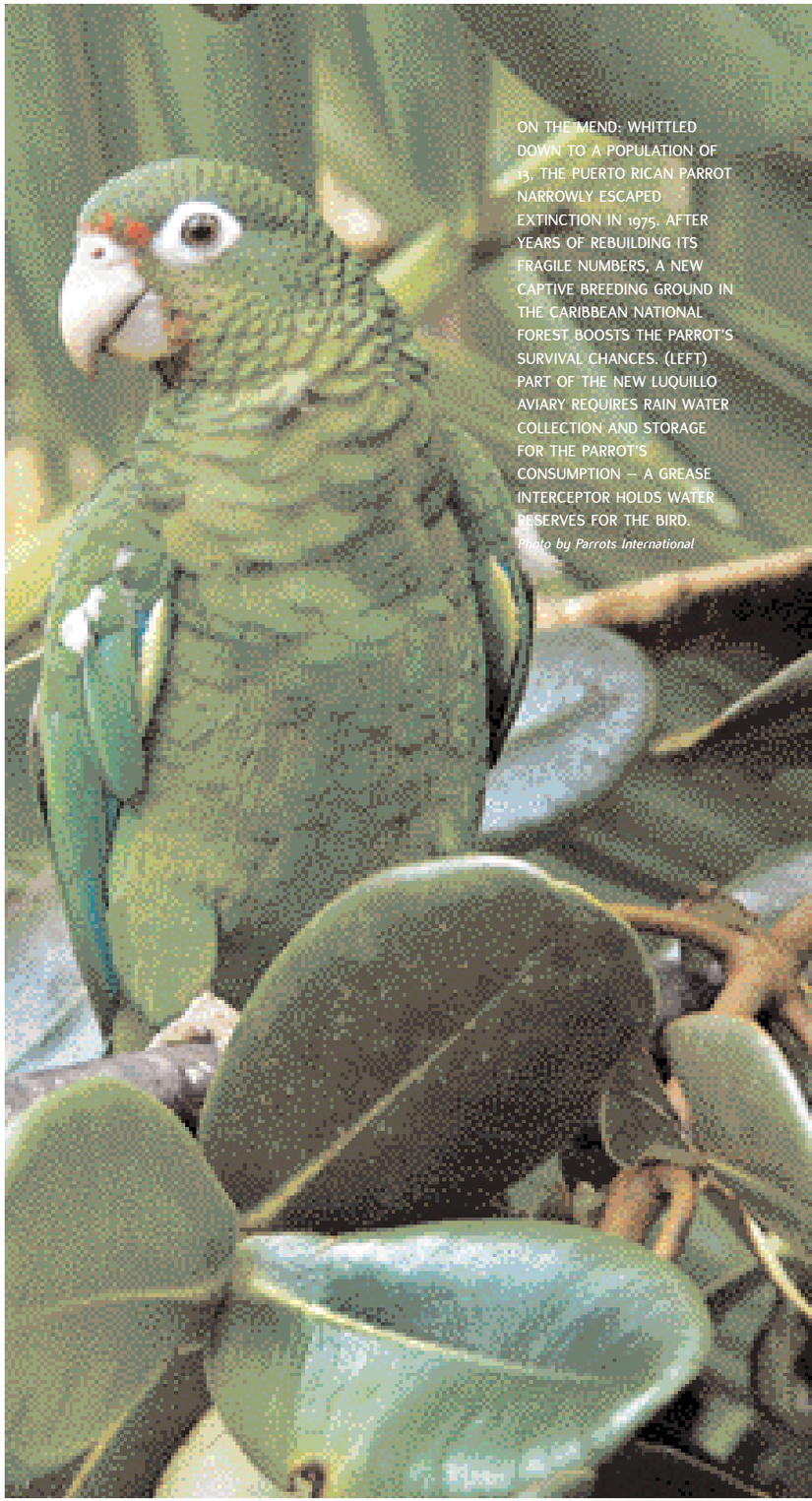
Once in place, the precast grease interceptor will be used as a storage tank or cistern and filled with rainwater that the parrots will use for drinking and bathing. The tank is part of a larger project where the U.S. Forest Service is relocating from an existing World War II-era facility that was even higher up the mountain. And while the original location had a higher potential for rainfall collection, the facility's age had led to access, space and structural problems.

The new facility brought with it a serious problem: the possibility of water contamination. The project owner had concern over separating domestic potable water containing chemicals not for avian consumption. "They wanted to be able to capture all of the rainwater that they could and store it in a cistern," Wintermeyer says. "Then that water could be pumped out and utilized by the parrots." Keeping domestic water out of the parrots' reach avoids contamination threats.

That's where C.R. Barger & Sons came in. After answering a request from a contractor on the project, the precaster got to work making the 5,000-gallon tank and shipping it to Puerto Rico.

It's not the first time the Tennessee-based manufacturer has worked with customers in far-off places, says Barger, who credits his firm's Web site (www.bargerandsons.com) with attracting foreign customers.

"We get spec'd all over, thanks to our Web site," says Barger, who posts about 90 percent of the company's



ON THE MEND: WHITTLED DOWN TO A POPULATION OF 13, THE PUERTO RICAN PARROT NARROWLY ESCAPED EXTINCTION IN 1975. AFTER YEARS OF REBUILDING ITS FRAGILE NUMBERS, A NEW CAPTIVE BREEDING GROUND IN THE CARIBBEAN NATIONAL FOREST BOOSTS THE PARROT'S SURVIVAL CHANCES. (LEFT) PART OF THE NEW LUQUILLO AVIARY REQUIRES RAIN WATER COLLECTION AND STORAGE FOR THE PARROT'S CONSUMPTION — A GREASE INTERCEPTOR HOLDS WATER RESERVES FOR THE BIRD.
Photo by Parrots International

products online, complete with PDF-based drawings and specifications.

Customers don't need an account to access this information – they are free to browse through the site to gather information and use it to make their purchase decisions.

"We look at the Web as an open source, so we let them look and do whatever they want online," says Barger, who also credits the precaster's watertight guarantee and customer service-oriented approach with helping it win projects like this one. "Our philosophy is to just put it all out there and let the customer decide."

Maurice Hoelting, regional architect with the U.S. Forest Service in Atlanta, says that upon completion, the facility will include two cisterns: one for rainwater runoff and the other for treated well water that's pumped for potable water.

Should the rainwater system go dry, a valve will switch the well pump from the potable water cistern to the rainwater cistern, thus releasing the nontreated water for the birds.

"The rainwater is for watering and spraying the birds," says Hoelting, "which only have access to the nontreated water that doesn't contain chlorine or other potentially harmful chemicals."

The remainder of the building, which is constructed from cast-in-place concrete, will include a hurricane shelter for the birds, a kitchen and food prep area, an incubator and hatching station, veterinarian work area and sleeping quarters for two. A second, smaller building will include an area for quarantined birds and large flight cages where the Puerto Rican parrots can acclimate to flying in the wild.

Project Profile

Project: Luquillo Aviary, Caribbean National Forest, Puerto Rico
Owner: U.S. Fish and Wildlife Service
Engineers: Urban Engineers Inc., Atlanta, and MOMA Architecture, Atlanta.
Precast Company: C.R. Barger & Sons Inc. of Harriman, Tenn.

WATER CONTAMINATION? NOT WITH THE GREASE INTERCEPTOR IN PLACE. THE OWNER WAS INITIALLY CONCERNED WITH SEPARATING DOMESTIC POTABLE WATER CONTAINING CHEMICALS NOT FOR AVIAN CONSUMPTION – WATER QUALITY IN THE AREA WAS SUSPECT. KEEPING DOMESTIC WATER OUT OF THE PARROT'S REACH AVOIDED CONTAMINATION THREATS. (ABOVE) CONSTRUCTION CREWS MANEUVER THROUGH THE CARIBBEAN NATIONAL FOREST TO REACH THE LUQUILLO AVIARY CONTRUCTION (RIGHT).
Photo by U.S. Forest Service

The right choice

When specifying precast concrete for the cistern, Wintermeyer says the project engineers looked not only for the easiest installation, but also for the most cost-effective solution. Wintermeyer says the federally budgeted project was the perfect candidate for a solution that required very little manpower to deliver, install and implement.

"We went with precast, thinking it would be the most cost-effective option out there," Wintermeyer says. "It's a matter of popping it into place and walking away." He says the fact that the product was manufactured in a controlled plant environment – and not on the side of a mountain – was another consideration.

According to Craig McNaughton, vice president of Atlanta-based MOMA Architecture, the project started in September 2005 and was 50 percent complete at press time. MOMA has a standing contract with the U.S. Forest Service, and as such was called on to handle the new aviary facility. MOMA, which doesn't have construction administration on the project, created the design and contract document drawings, and supported Wintermeyer's decision to use precast versus an alternate material.

To ensure that the contractor in Puerto Rico fully understood how to apply sealant to the two tank pieces that were shipped, C.R. Barger created a DVD that walks the user through the process in English.

Barger said, "Because they're not here to get face-to-face instruction, we want to make sure they get it right."