

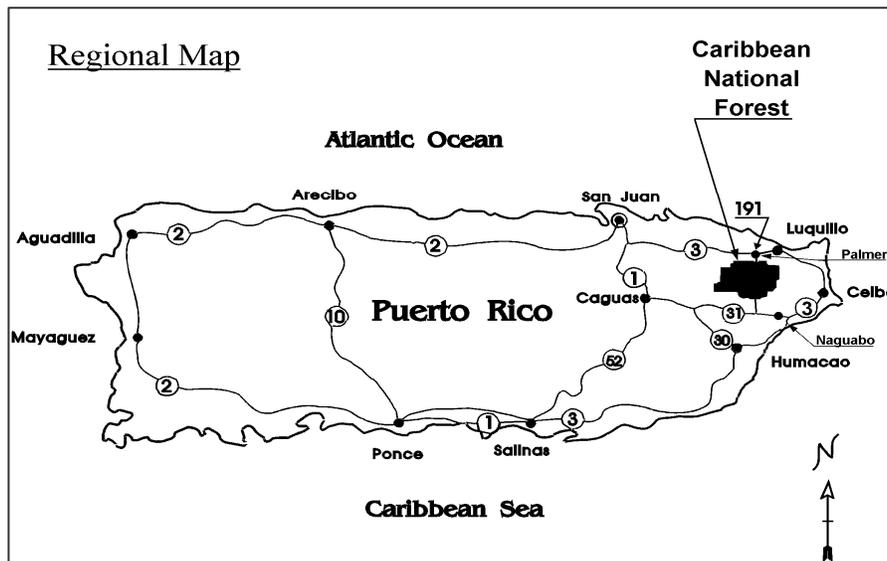
Forest Supervisor's Certification

I have evaluated the monitoring results and recommendations in this report. I have directed the Forest Planner and Inventory and Monitoring Program Manager to develop an Action Plan to respond to the issues, concerns and opportunities that exist in order to evaluate the monitoring effectiveness. I have considered funding requirements in the budget necessary to implement these actions.

The Revised Forest Plan is sufficient to guide forest management for fiscal year 2007, unless ongoing monitoring and evaluation identify further need for change. Any amendments or revisions to the Revised Forest Plan will be made using the appropriate National Environmental Policy Act (NEPA) procedures.

Pablo Cruz

Forest Supervisor



2004 Monitoring and Evaluation Report Caribbean National Forest

Executive Summary

Highlights for Fiscal Year 2005 (FY05):

1. Local implementation of agency Business Operations changes, including local implementation of the Information Solution Organization (ISO), Albuquerque Service Center (ASC), while managing IT and FM residual work.
2. Safety – a new safety committee was created to review and to provide feedback on the reasons and solutions to unsafe working conditions and unsafe practices.
3. HFRA/HFI local implementation by addressing Forest Health, Invasive Species, and Noxious Weed Management.
4. New Planning Rules, 36 CFR 219, and EMS local implementation.
5. Executed E-government initiatives by addressing and updating local web sites.
6. Forest Name change.
7. Awarded construction contract for the Rio Sabana Picnic Area and reconstruction of 0.8 miles of access road (PR191), and for the new Aviary.
8. Rio Mameyes, La Mina, Icacos Wild and Scenic River corridor Management Plan.
9. Working with the Puerto Rico Department of Transportation (PRDOT) to complete Mass Transit Alternative study. Completed interagency agreement that authorizes the collection of \$68,000 for the NEPA analysis for the Mass Transit project.
10. Drafted Grange Thye permit for the Naguabo municipality to operate the Rio Sabana Picnic Area.
11. Actively participated in cooperation with the Tongass NF on the America's Rainforest Project transmitted by PBS stations.
12. Worked with the PR Planning Board, Land Use Office to the Island-wide Land Use Plan.
13. Worked with congressional staffers on the Proposed Wilderness Boundary maps and language for legislative bill.

Introduction

The Caribbean National Forest (CNF) annually monitors and evaluates its programs and projects to determine progress toward achieving Revised Forest Plan goals, objectives, and standards and guidelines.

The approved Caribbean National Forest Revised Land and Resources Management Plan (Revised Forest Plan) was formally released to the public July 11, 1997. The appeal period extended from July 11 through October 14, 1997. No appeals of the Revised Forest Plan were received. Three Forest Plan Amendments were completed in 2004.

This 2004 report is structured to correspond with the monitoring direction in Chapter 5 of the Revised Forest Plan. Information for each monitoring element includes: desired condition(s); parameters to measure progress toward those conditions; and results of monitoring of these parameters during fiscal year 2005.

Monitoring and evaluation is an ongoing process, documented through annual reviews by the Forest Supervisor and Forest staff. Monitoring indicates whether management direction in the Revised Forest Plan is being effectively carried out and points out needed modification of that direction. It also shows whether effects of implementing the Forest Plan are occurring as predicted; whether the application of management area prescriptions responds to public issues and management concerns; and the costs of implementing the Forest Plan.

Description of the Soil and Water Environment

Significant changes to soil and water resources as described in the Land and Resource Management Plan (LRMP) Final Environment Impact Statement (FEIS) occurred. On September 15, 2004 Tropical Storm Jeanne passed over the island of Puerto Rico. On September 16 a combined two-day total of 15.84 inches of rain were recorded officially at the USGS Mameyes River-NR Sabana, PR water gauge station. This event combined with saturated terrain caused by prior rains (accumulation of 1.05 inches on September 14, 2004) produced severe flooding in all of the Forest's rivers and multiple landslides on all main access routes.

Watershed Condition

Forest watershed condition was impaired in Rio Mameyes and Rio Blanco Watersheds. The Forest initiated treatment identification for landslides surveyed on September 17, 2004. The most obvious damage on the Forest was debris on roads, trails, and river riparian areas. Landslides triggered by heavy rains caused 24 acres bare of vegetation. These slide areas shed high amounts of sediments.

The following table summarizes the number of landslides and affected areas as of October 1, 2004. The final inventory resulted in the following:

<i>WATERSHED</i>	<i>Number of Landslides</i>	<i>Affected Area (Acres)</i>
Rio Blanco	6	11
Rio Mameyes	17	17
Rio Espiritu Santo	5	5
Rio Sabana	3	3
Rio Fajardo	1	5
TOTALS	20	24

The project received \$98,000 for improvements.

Water Quantity

Quantitative in stream flows were not established in FY 05. Flow regimes considered during plan development were not modified. Water resource use remained the same since no intakes were upgraded. One special use permit for water single household was renewed. No management events in FY 05 altered the amount of water flowing from the Forest as stated in the plan. Annual stream flow data (cubic feet/second) for Water Year (WY) 2004 was:

Rio Mameyes at Sabana	78.8
Rio Mameyes at Mameyes	109.9
Rio Espiritu Santo near Rio Grande	60.5
Rio Sabana at Sabana	26.7
Rio Blanco near Florida	122.8

All values were higher than WY 03 (WWW USGS, 2006).

Water Quality

A Water Quality Monitoring Plan was completed in FY 05. The plan calls for establishment of 6 permanent monitoring sites on Río Mameyes, Río Espiritu Santo, Río Sabana, Río Fajardo, Río Pitahaya (Río Chiquito) and Río Blanco. The plan implementation is scheduled for August 2006.

During FY 05, constructions the Sabana Picnic Site and Jimenez Parrot Aviary did not

result in sediments discharge to streams due to effective contract inspection (Forest Service Engineer) and utilization of recommended soil and water conservation practices. The total sediment yield (tons/year) was estimated at 22 for road reconstruction and picnic area. The total sediment yield (tons/year) was estimated at 43 for building site, access road and deposit site.

Monitoring Conclusions

Are projects complying with design, LRMP and NEPA?

Project compliance with design, LRMP, and NEPA can be evaluated in the Sabana Picnic Area and Jimenez Aviary construction. Technical inspections by the Ecosystem Management Team Leader, Forest Hydrology Trainee, and Supervisory Field Technician occurred during the construction period. The Aviary Project is located in the Rio Espiritu Santo Watershed. The Sabana Project is located within the Rio Blanco Watershed. A major factor that affects water quality of the Rio Blanco watershed is sedimentation.

“Best Management Practices” as defined in the Standards and Guidelines for the Revised Forest Plan, were added as mitigation measures to reduce the potential for increased sedimentation and help stabilize current sources (Sabana Picnic Area FEIS, 2003). Practices were incorporated into design and contract. Project monitoring activities included evaluation on the implementation and effectiveness of the FEIS mitigations during construction. Implementation monitoring was conducted by site visual inspections. Effectiveness monitoring was conducted by visual inspections of nearby streams. Both projects complied with NEPA.

Are we following S & Gs?

The use of Standard and Guides can be evaluated in Jimenez Aviary and Sabana River Recreation Area construction conducted by contractors. The Caribbean National Forest Revised Land and Resource Management Plan (LRMP) places the Sabana River Recreation area within Management Area 2 (Developed Recreation) and the Jimenez Aviary within Management Area 1 (Administrative Site) after a Caribbean National Forest Plan amendment. Some of the LRMP goals and standards required to the Aviary project were:

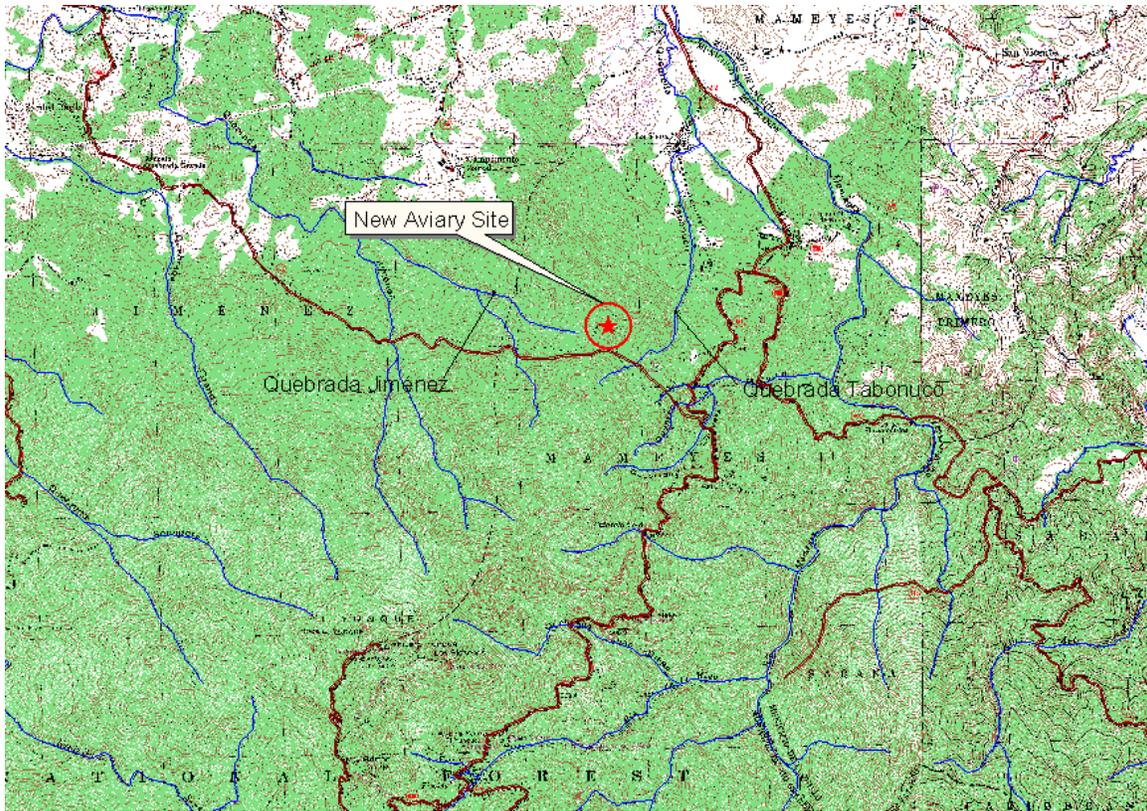
1. Limit clearing of vegetation to the minimum required for the project and delineate the site boundary.
2. Require contractors to prepare and implement an erosion and sediment control plan.
3. Place silt fences, hay bales or other sediment entrapment devices around potential sediment sources during earthmoving phases of construction. Place erosion control mats on areas of steep soils, low vegetative cover, or unstable soils.

4. Re-establish vegetation on disturbed areas or exposed soil to prevent erosion and sedimentation using native vegetation.
5. Require that vehicle maintenance occur at least 100 ft from streams and preferably off-forest.
6. Use only native vegetation or exotic species already established in the area for landscaping, rehabilitation or stabilization.
7. Store wastes generated during construction in containers and dispose of them in an authorized landfill.
8. Install a construction limitation fence on site. month after project completion.
9. Visually inspect turbidity of Quebrada Jimenez headwaters and Rio Tabonuco on a weekly basis until construction activities are completed.
10. Remove excavated organic matter from construction activities and place in the previously excavated site at the El Portal Administrative site to aid in restoration of that site and ensure that the material is properly disposed of. This site will be protected by a gabion structure to retain fill material.
11. The trees that are to be removed from the aviary site will be cut into manageable sizes and be dispersed along with the topsoil removed. The removed material needs to be spread out evenly along the site.
12. Use retention structures as needed to retain any possible movement of soil. These may include gabions, erosion control mat and silt fences. These structures will remain in place until the soil becomes stabilized and revegetated.

Five field inspections were conducted by the Hydrologist Trainee and Natural Resources Team Leader. The Jimenez Aviary Construction represents an example of compliance with standard and guidelines.



Use of silt fences at Jimenez Aviary.



Location of Aviary Construction Site near perennial streams.

Some of the LRMP goals and standards required to the Rio Sabana Picnic Site Construction were:

1. Limit clearing of vegetation to the minimum required for the project. Require contractors to prepare and implement an erosion and sediment control plan.
2. Place filter strips or other sediment entrapment devices around potential sediment sources during earthmoving phases of construction. Place erosion control mats on areas of steep soils, low vegetative cover, or unstable soils.
3. Re-establish vegetation on significantly disturbed areas or exposed soils to prevent erosion and sedimentation. Apply appropriate amounts lime and fertilizer to accelerate revegetation.
4. Keep machinery out of stream channels. Require that vehicle maintenance occur at least 100 feet from streams, and preferably off the Forest.
5. Require preparation of a plan for prevention and cleanup of spills of petroleum products or any other hazardous materials.
6. Use only native vegetation or exotic species already established in the area for landscaping, rehabilitation or stabilization.

7. Dispose of all waste materials and overburden or excavated soil off-Forest and in accordance with Commonwealth regulations. Require that all materials be removed within one month after project completion.

Seven field inspections were conducted by the Supervisory Field Technician, Hydrologist Trainee and Natural Resources Team Leader. The Jimenez Aviary Construction represents an example of compliance with standard and guidelines.

Is Soil and Water DFC met?

Desired Condition: Watershed condition is restored, enhanced, or maintained.

Measurement: Sediment losses from treated vs. non-treated areas; assessment of vegetative cover.

Results: The Forest's watershed condition and water quality, adversely affected by September 2004 Tropical Storm Jeanne Event improved after restoration of 15 acres. Vegetative cover of approximately 70% was achieved during the first year. The Sabana Picnic Site and Aviary Site Constructions did not altered watershed characteristics.

Desired Condition: Water quantity and quality are adequate to support healthy populations of aquatic animals. Stream flows are not reduced below natural minimum flows.

Measurement: Water quantity and quality at permanent gauging stations. Review of USGS data for Rios Mameyes, Rio Blanco, Sabana and Espiritu Santo Rivers showed higher annual discharge values when compared to the previous water year (USGS, 2006).

Review of USGS data for Rio Mameyes showed suspended sediments concentrations (mg/l) of 8.7. This value is lower than previous year.

Desired Condition: Water used and development is balanced.

Measurement: Determine amount and location of water extracted for consumptive use.

Results: The estimated amount of water extracted for consumptive use remains the same as stated in the 2004 Monitoring and Evaluation Report.

No additional special use permits for intake facilities were received.

Are soil and water resources goal and objectives meet?

Forest Plan Goal: Cooperate with research scientist to develop best management practices for watershed protection.

Results: Support to the research community was provided to University of Puerto Rico Hydrology for the Environment, Life and Policy Project

(<http://luquillohelp.upr.edu/environment.htm>). The project focused on integration of scientific, government and general public interests. In addition, support was given to the Long Term Ecological Research Station at El Verde (LTER) Canopy Trimming/Hurricane Simulation Experiment Environmental Analysis for the second year.

Forest Plan Goal: Emphasize watershed improvement activities in areas of highly erosive soils and areas of concentrated recreation use.

Results: Watershed improvement needs activities were focused on these areas through Tropical Storm Jeanne Recovery Project.

Water Resource Management Conclusions

The overall conclusion is that the Forest continues to manage water resources as an emphasis items. Watershed management operations increased due to additional storm recovery funds. Additional human resources were available through the Hydrologist Trainee program. Water remained an issue for FY 05 period. Forest water resource management activities need to concentrate efforts in quantification of resource data, development of quantitative in stream flows, and implementation of its water quality plan.

Primary Forest

Desired Condition: Primary forest in all four-forest types is protected. Acreage of primary forest is not reduced.

Measurement: Visual inspection of primary forest to determine acres altered by trail construction or other development.

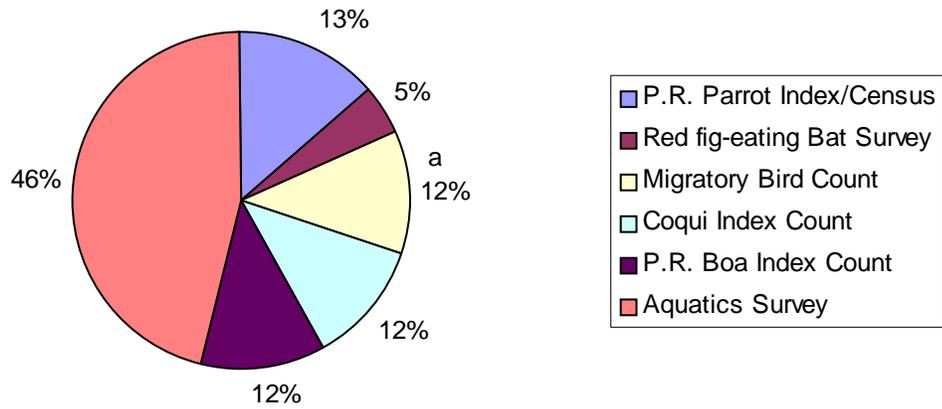
Results: No trail construction occurred in primary forest during 2004.

Wildlife and Fisheries

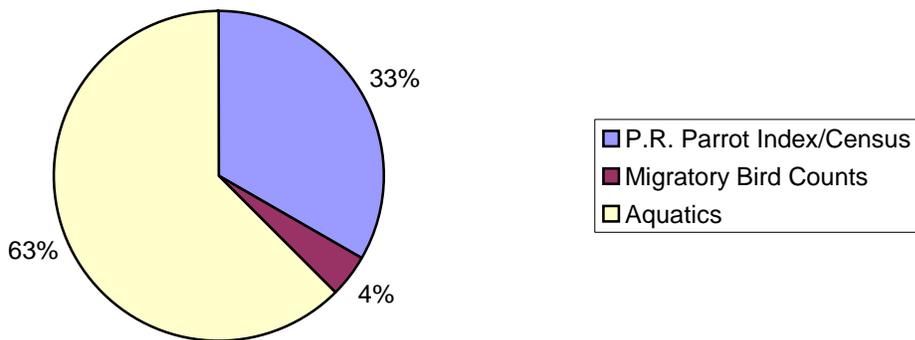
Since the adoption of the National Forest Management Act the management indicator species concept has been review and critiqued by the scientific community (Caro and O'doherty 1999). Management indicator species (MIS) are species selected because their population changes are believed to indicate the effects of management activities (36 CFR219 (a) (1)).

The following section has information on long-term monitoring of the Puerto Rican Parrot (*Amazona vittata*), forest bird counts, Red fig-eating bat (*Sternodurnum rufus*), Coqui counts, Puerto Rican Boa (*Epicrates inornatus*), and fisheries surveys on the Caribbean National Forest.

Days designated to each survey FY03 out of total of 43 monitoring days



**Days designated to each survey FY04
24 days**



Desired Condition: The Puerto Rican Parrot Population remains stable or increases.

Measurement: 1) Successful nesting attempts indices of the wild population.
2) Sustain the number of active breeding parrot nests.

Results: A coordinated U.S. Fish and Wildlife Services index on the Caribbean National

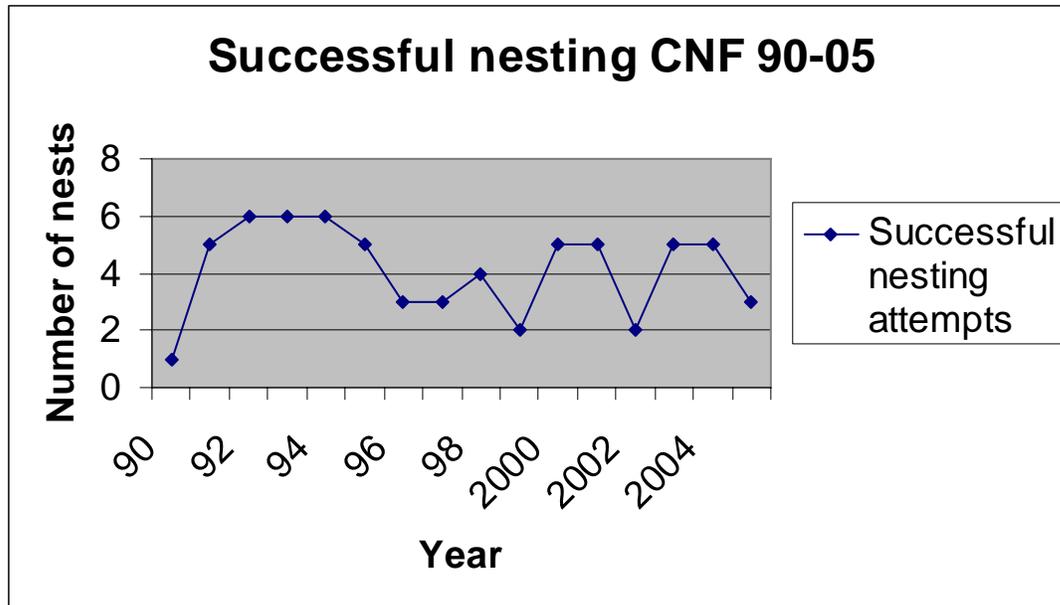
Forest (CNF) involving two other agencies to conduct population estimates and provide protection for the last wild flock.

CNF personnel constructed two (2) new artificial/natural cavities and improved seven (7) nests for the recovery effort. The CNF also constructed one (1) new lookout platform to support the continuing index process. Access to the parrot nesting area and points of interests is a concern that the CNF met, improving approximately three (3) miles of existing trail with long-lasting results.

The third release of Puerto Rican Parrots (PRP) occurred in May 2003 to add to the number of wild parrots in the Forest. Plans to establish a second population of parrots in the wild is still in the planning process between the U.S. Forest Service, U.S. Fish and Wildlife Service and the Puerto Rico Department of Natural Resources.

Summary of Puerto Rican Parrot Recovery From 1990 to 2005												
Year	90	91	92	93	94	95	96	97	98	99	00	01
Successful Nesting Attempts	1	5	6	6	6	5	3	3	4	2	5	5
Total Young Produced in the Wild	2	8	10	13	13	14	7	7	10	3	13	14
Young Fledged into the Wild	2	7	11	15	14	15	8	7	9	3	7	5

Year	02	03	04	05
Successful Nesting Attempts	2	5	5	3
Total Young Produced in the Wild	2	5	7	5
Young Fledged into the Wild	1	4	7	4

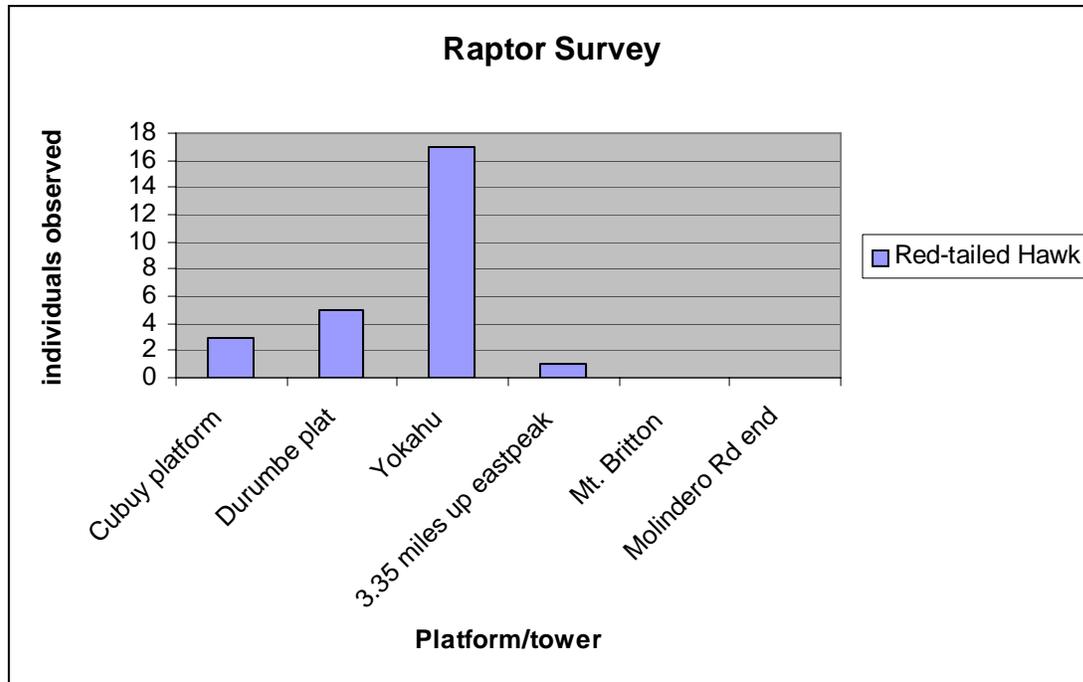


Discussion: Although the PRP has improved since Hurricane Hugo there seems to be a limited carry capacity for the parrots in the present nesting area. There are an ample number of artificial nests available with improving knowledge over the birds' preference. The bird itself may be displaying irregular population trends and many different factors can be attested to this pattern. The CNF had great results in reconstructing the trail and platform system. There is hope that the second wild population will be able to prosper in a much more hospitable climate than the Forest, but that will require time to see if it becomes a success.

Desired Condition: Sharp-shinned and Broad-winged hawk populations are increasing.

Methodology: Point Counts. In coordination with a Red-tailed hawk index the CNF, conducted in FY 02, to document any occurrences of the two endangered hawks subspecies.

Results: No Sharp-shinned or Broad-winged hawks were observed in either of the indices. In FY 05 no specific raptor survey was conducted.



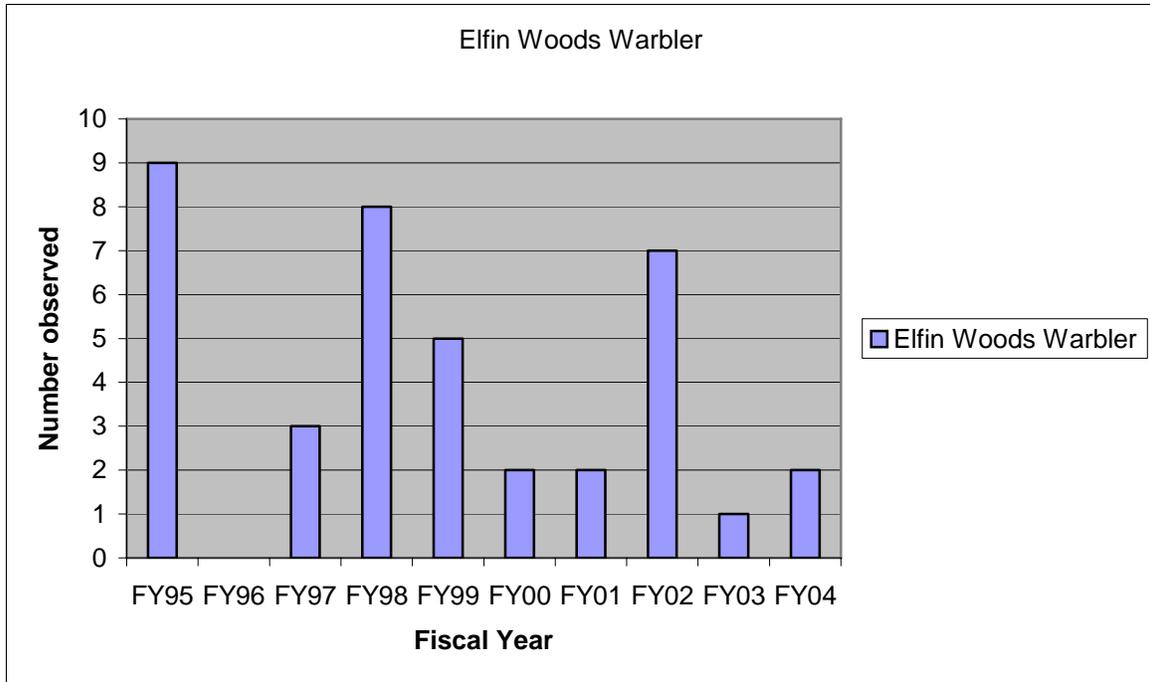
Discussion: Most of the raptors are included in the breeding bird survey or Christmas counts. No count was conducted for this species specifically. The endangered species raptors have simply not been observed, but that is not stating they are not on the Forest. In other occasions they have been documented.

Desired Condition: Elfin woods warbler populations are stable or increasing.

Measurement: Breeding bird point counts

Results: The Christmas Bird Count for Caribbean National Forest covers some of the warbler's habitat on the Forest. Numbers of elfin woods warblers on these Christmas counts for the past nine years:

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Elfin Woods Warbler	9	0	3	8	5	2	2	7	1	2



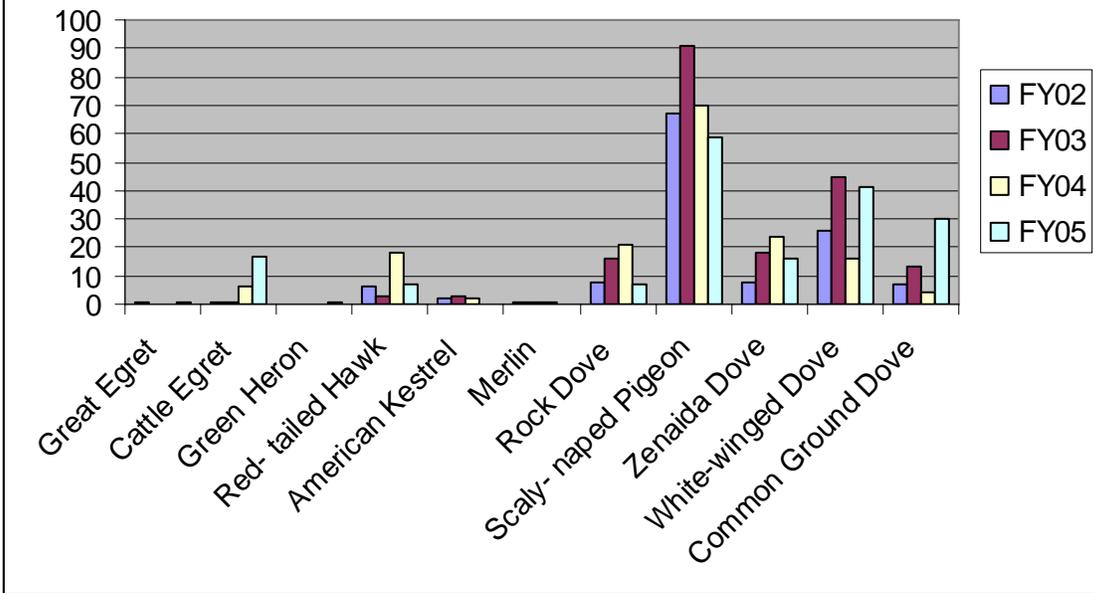
Discussion: Elfin Woods Warbler is obvious dipping. Until a scientific study comes out with a conservation assessment of the species there will be precise estimate of the species on the island.

Desired Condition: Populations of the Forest’s birds are stable or increasing.

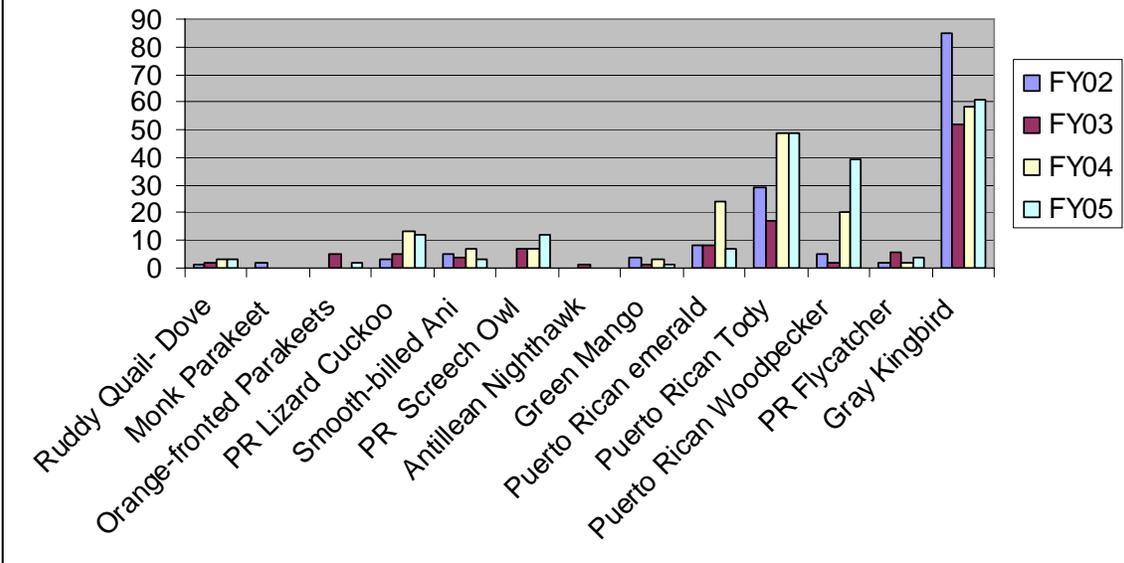
Measurements: FY02 Christmas Transect counts

Results: A five-part graph displaying species found on the forest and just outside of the forest boundary (Colinas del Yunque).

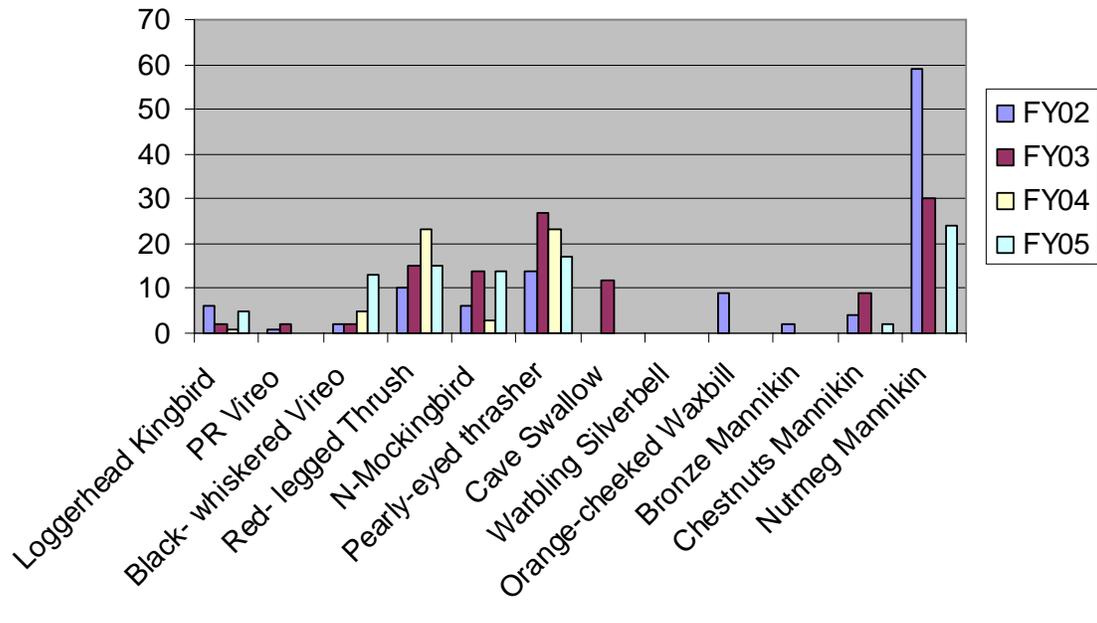
Christmas bird count part 1



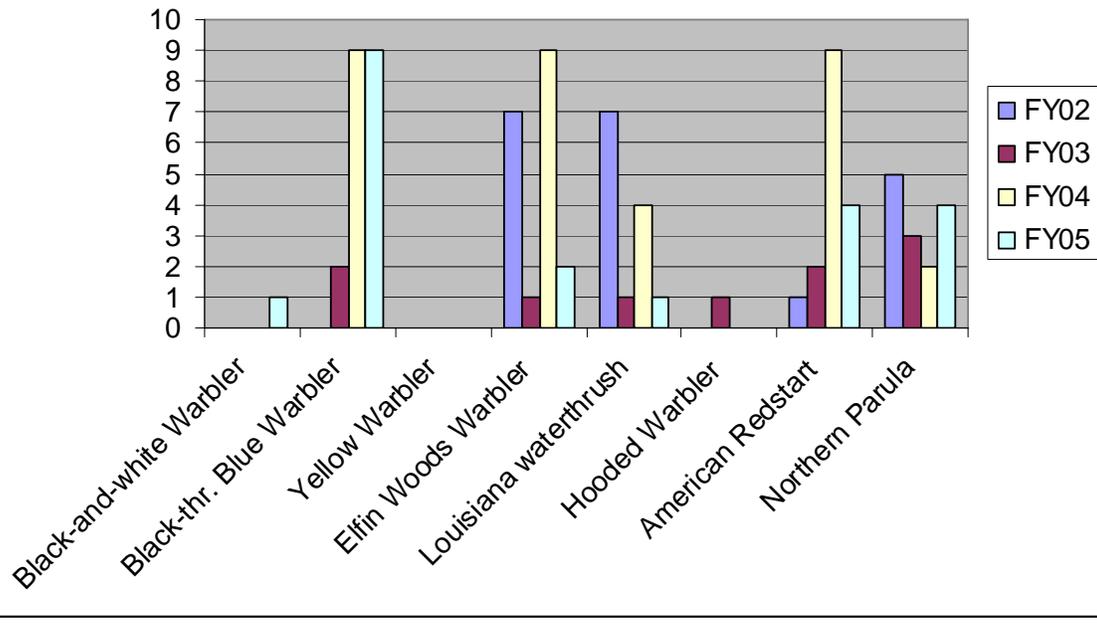
Christmas bird counts part 2

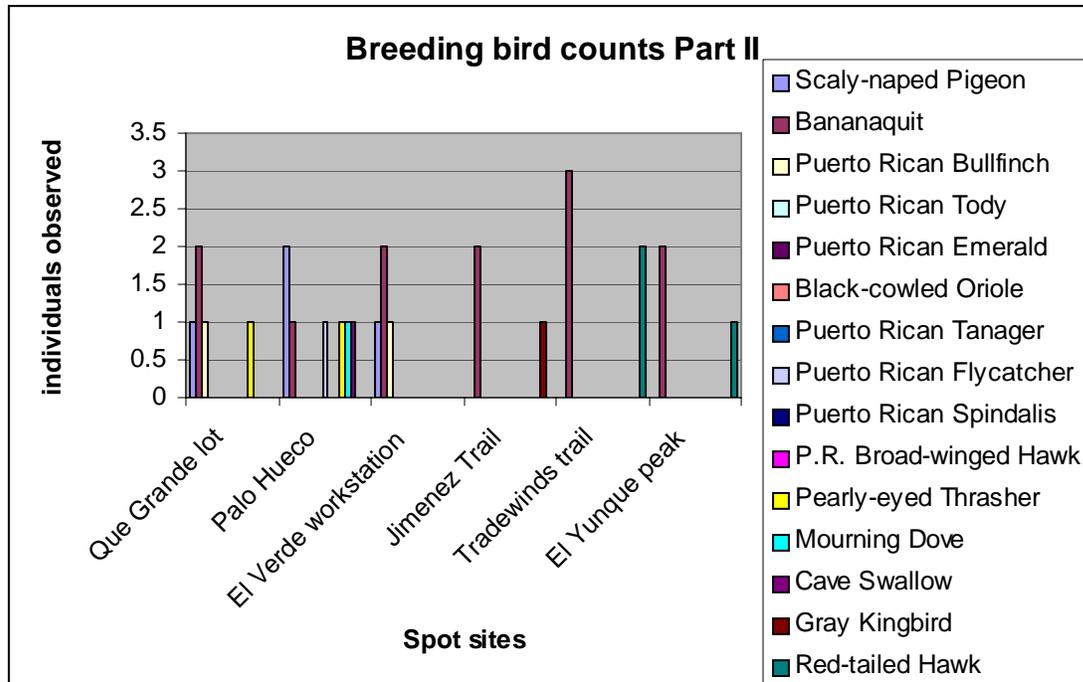


Christmas bird count part 3



Christmas bird count part 4





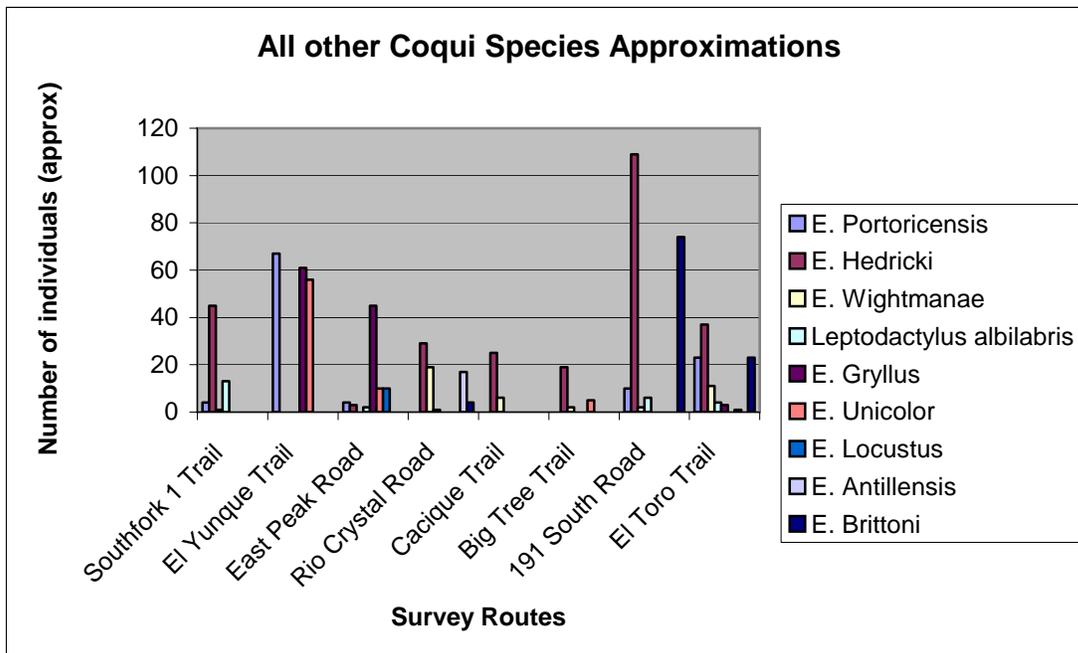
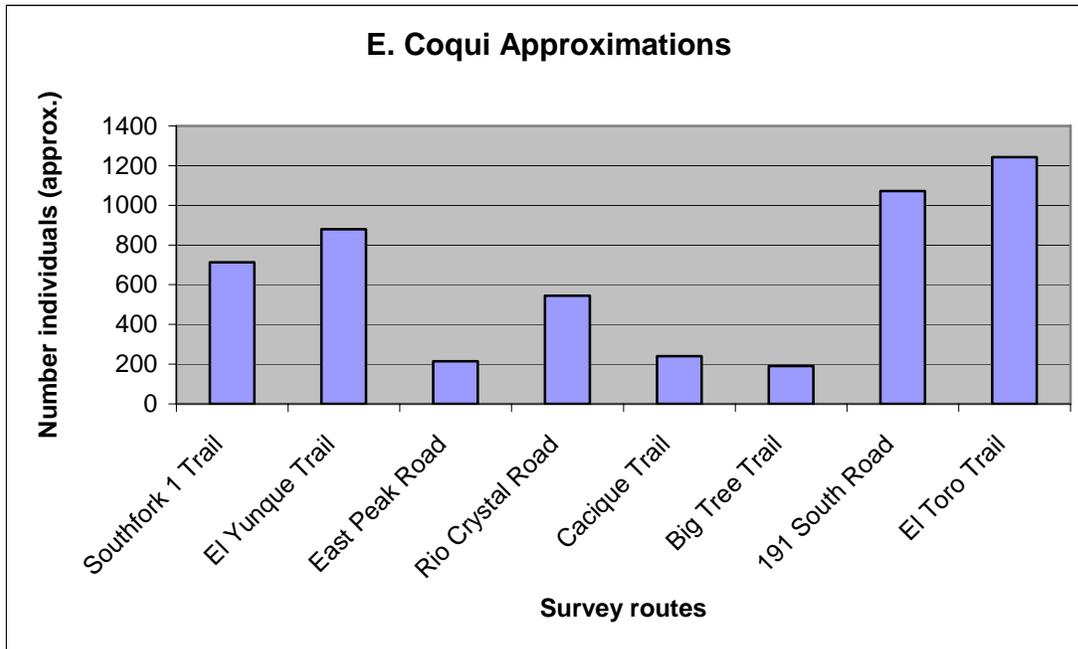
For FY 05 the results for the entire Forest are in the following table:

	FY03	FY05
Scaly-naped Pigeon	11	27
Bananaquit	18	16
Puerto Rican Bullfinch	4	14
Puerto Rican Tody	1	7
Puerto Rican Emerald	1	3
Black-cowled Oriole	1	0
Puerto Rican Tanager	1	4
Puerto Rican Flycatcher	2	1
Puerto Rican Spindalis	1	0
P.R. Broad-winged Hawk	2	0
Pearly-eyed Thrasher	2	4
Mourning Dove	1	0
Cave Swallow	1	0
Gray Kingbird	1	0
Red-tailed Hawk	2	0
Puerto Rican Vireo	0	4
Puerto Rican woodpecker	0	4
Puerto Rican screech owl	0	3
Elfin woods warbler	0	2
Domestic chicken	0	4
Black-whiskered vireo	0	6
Louisiana waterthrush	0	1

Desired Condition: Coqui populations are stable or increasing.

Measurement: Predetermined Transects with multiple spot points.

Results: Fiscal Year 2003 graph of Coqui observations on the Forest.



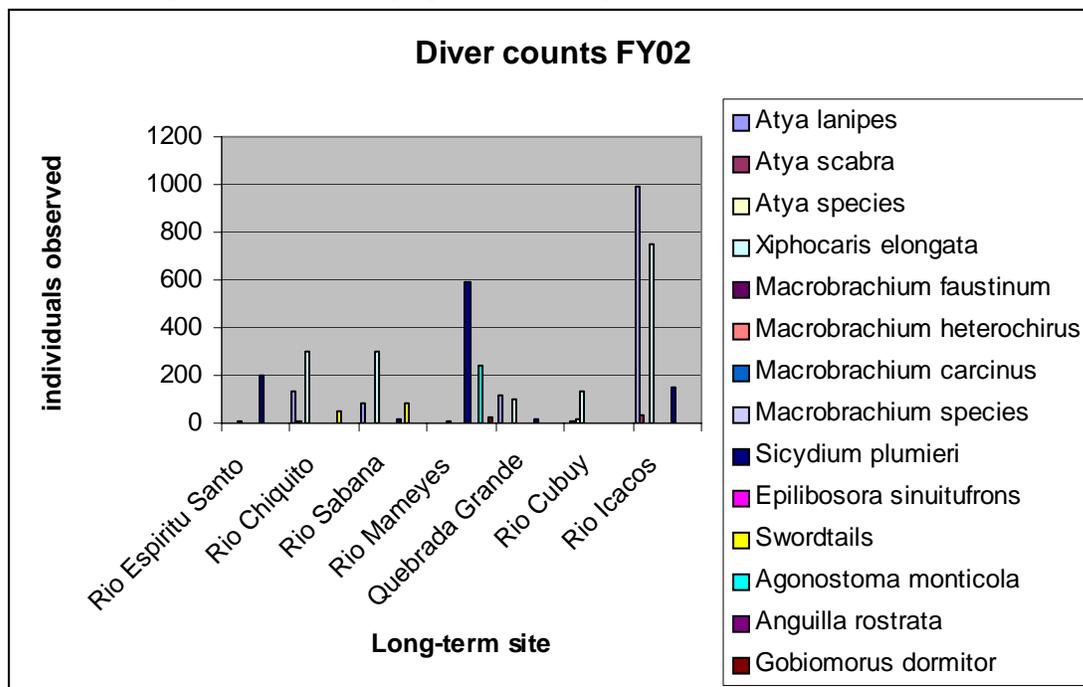
Desired Condition: Sustain a healthy and robust aquatic ecosystem on the Forest. Monitoring any potential barriers to migration of fish or crustaceans.

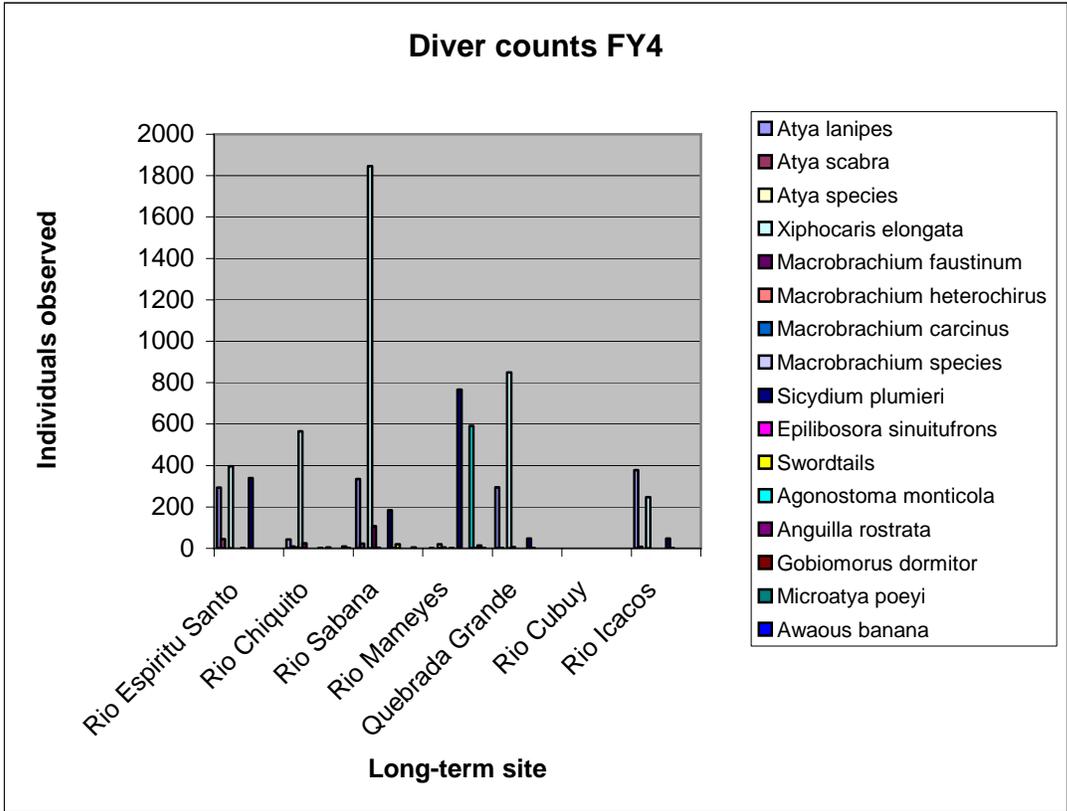
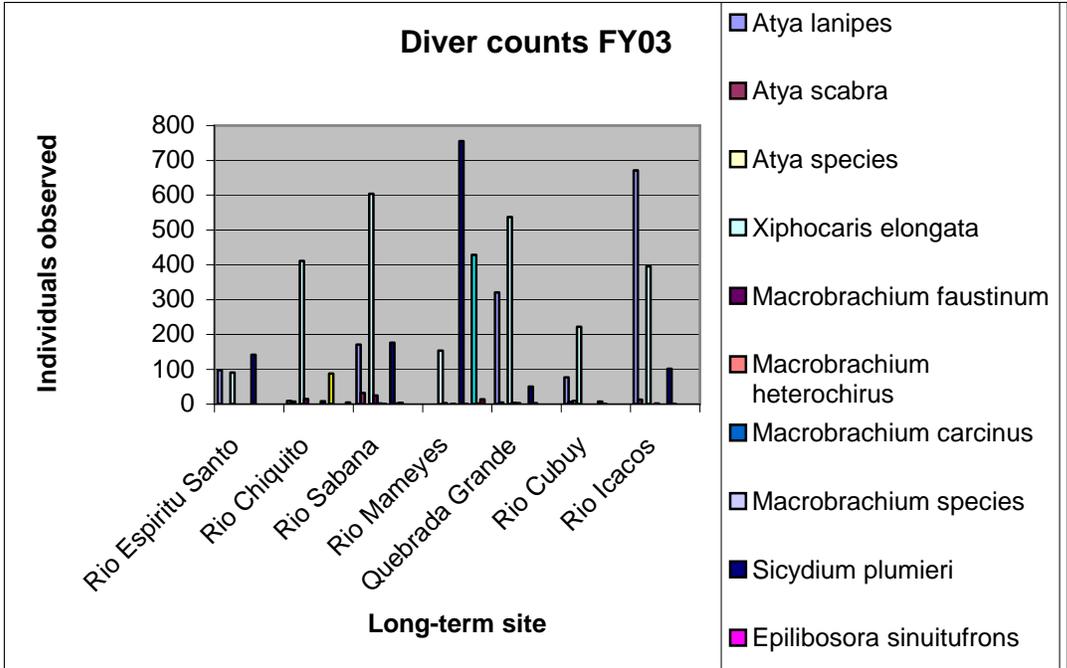
Measurement: Electro-fishing and snorkel stream surveys developed by the Center of Aquatic Technology Transfer to establish data for aquatic species and habitats. Annual monitoring of selected stream reaches.

Results: The CNF accomplished a total of 7.5 miles of streams surveys. Stream surveys focus on habitat availability, while electrofishing centered on species occurrences.

Please refer to the included data sheets for surveys conducted in FY05.

The following are diver count graphs in the long-term sites on the Forest.





Desired Condition: Populations of the Endangered Puerto Rican Boas are stable or increasing.

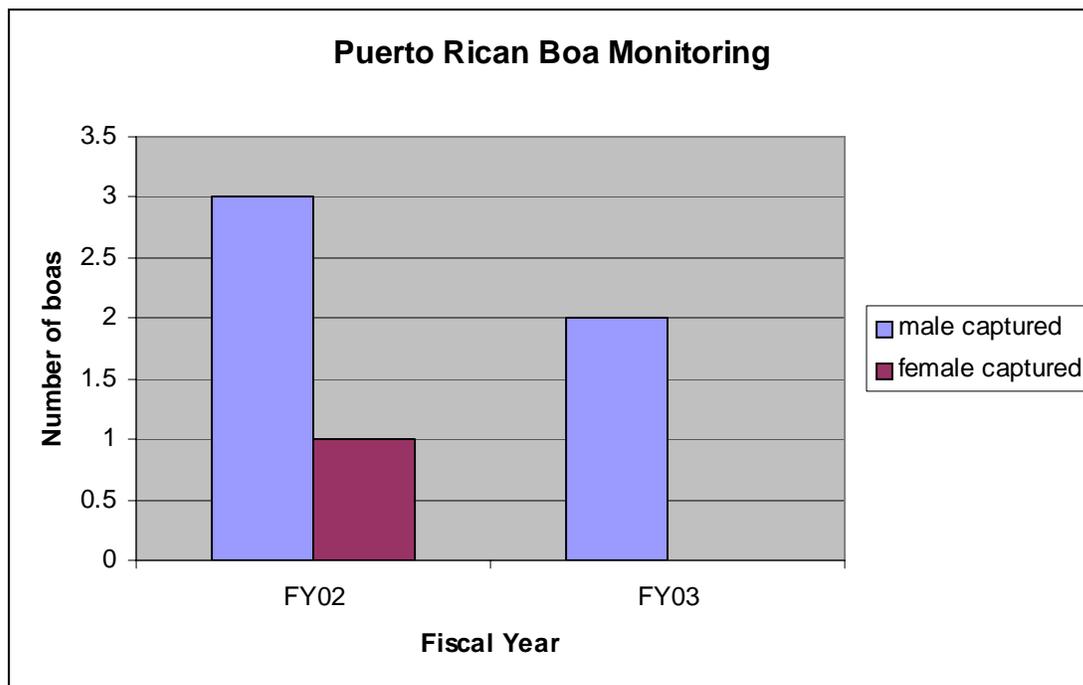
Measurement: Delineated Road night surveys.

Results: The survey is derived by the same survey method used in Dr. Joseph Wunderle's initial study into the biology of the endangered boa on the island.

	Total Length (cm)	S-vent length (cm)	Weight (g)	Capture Place
1	118	108	515	Close to bridge 191
2	192	183	124	Close to sign on 988
3	170	146	1502	Next to Fence on 988
4	54	44	30	R. 192 platform house

	Capture date	Capture time (pm)	Pit Tag Number	Sex	Additional notes
1	4/29/2002	8:23	36096859	M	30.6 mileage (New tag)
2	5/7/2002	9:21	36098515	M	New tag
3	5/8/2002	10:00	36026595	M	New tag
4	5/10/2002	7:48	/////	F	Newly born

	Capture date	Capture time	Pit Tag Number	Sex	Additional notes
1	5/14/2003	8:17pm	/////	M	Specimen escaped at night
2	5/15/2003	9:40pm	035809783	M	New tag



Bat surveys by Dr. Michael Gannon of the Pennsylvania State University funded by U.S. Fish and wildlife conducted on the Forest in FY 03.

Results: A graph showing the trends of bats on the Forest.

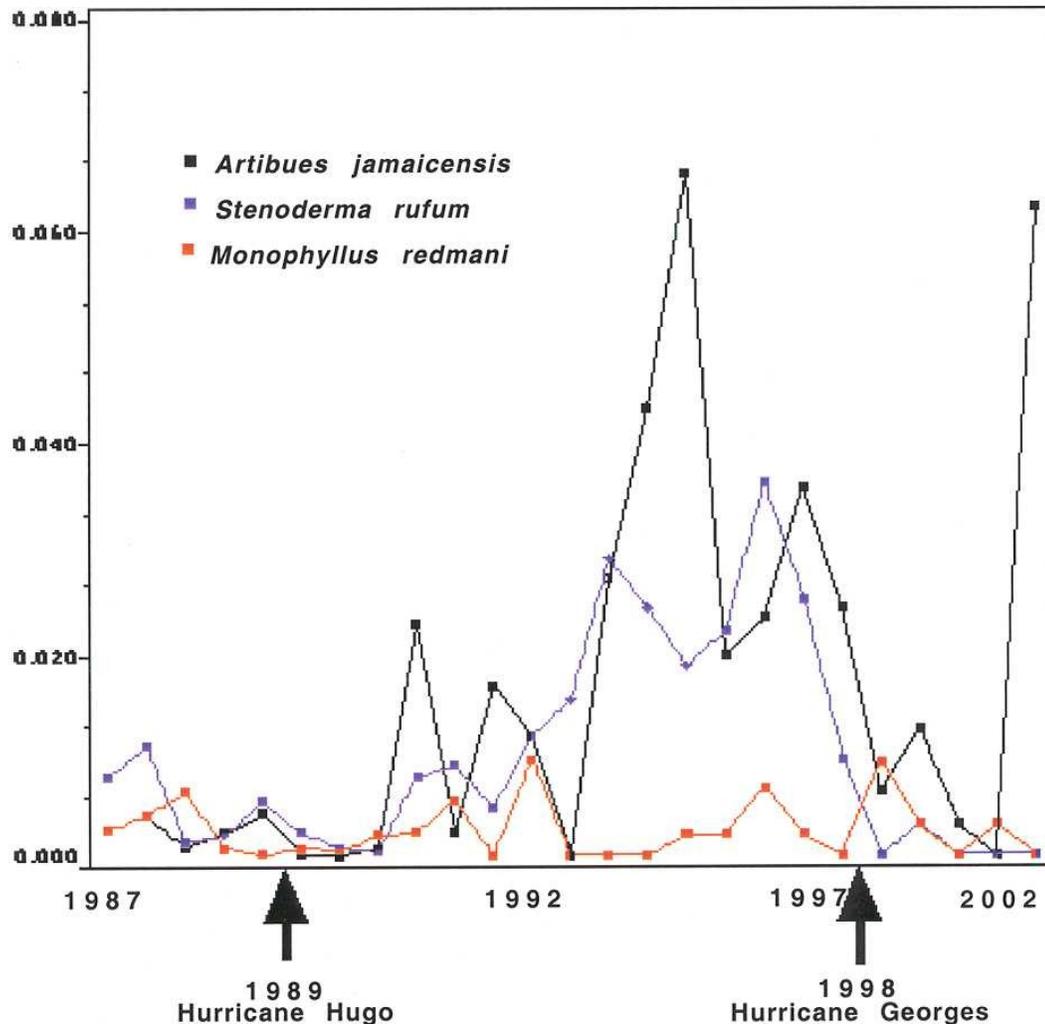


Fig. 2 – Graph of long term population monitoring data (bats captured per net hour vs. year) from the Luquillo Experimental Forest. Three dominant species are graphed, *Artibeus jamaicensis* (open black box), *Stenoderma rufum* (blue diamond) and *Monophyllus redmani* (Orange closed box). Years 1988 – 1995 were sampled twice, once in the rainy season (summer) and once in the dry season (winter). All other years were sampled only once during the rainy season.

Integrated Pest Management

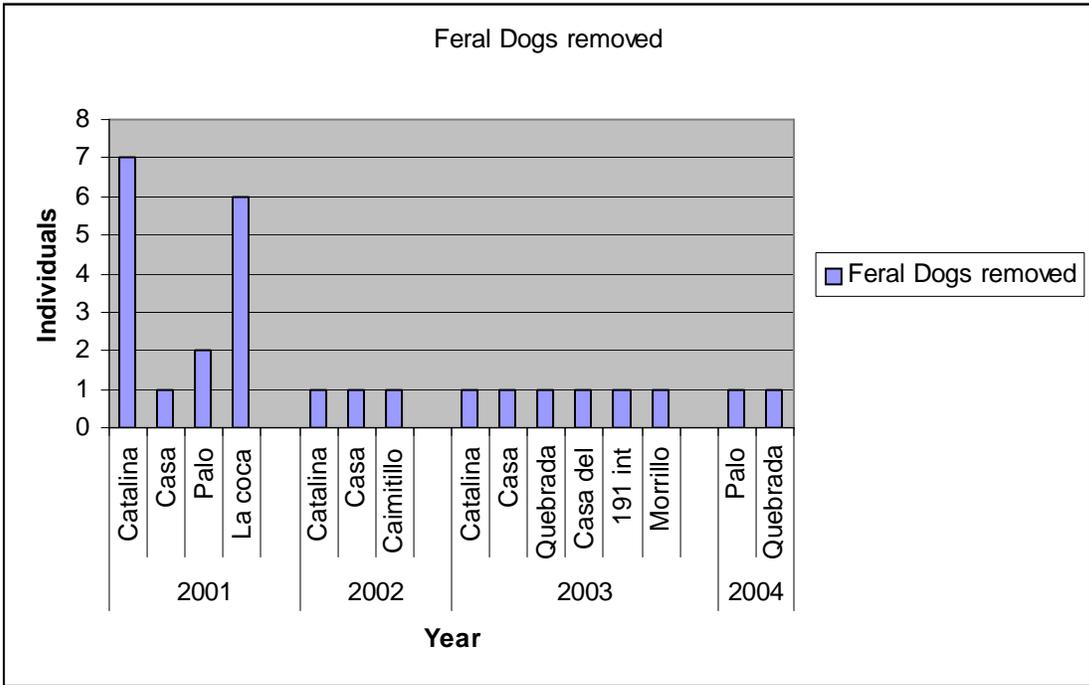
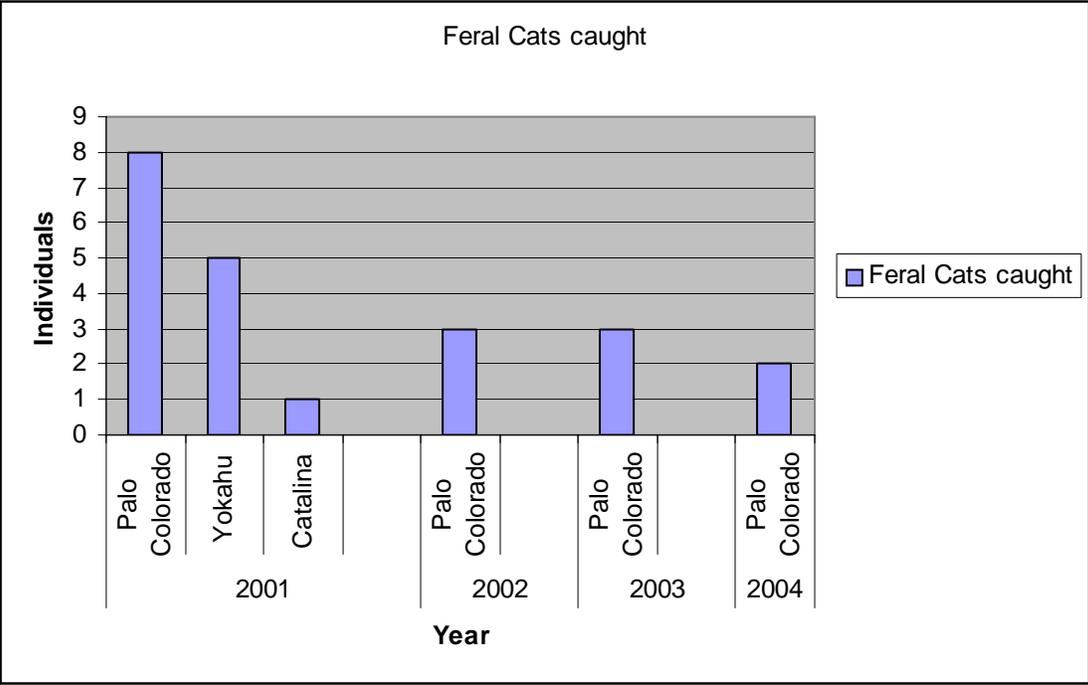
Objective: Identify forest pest problems through routine observations. Implement control in an integrated pest management approach.

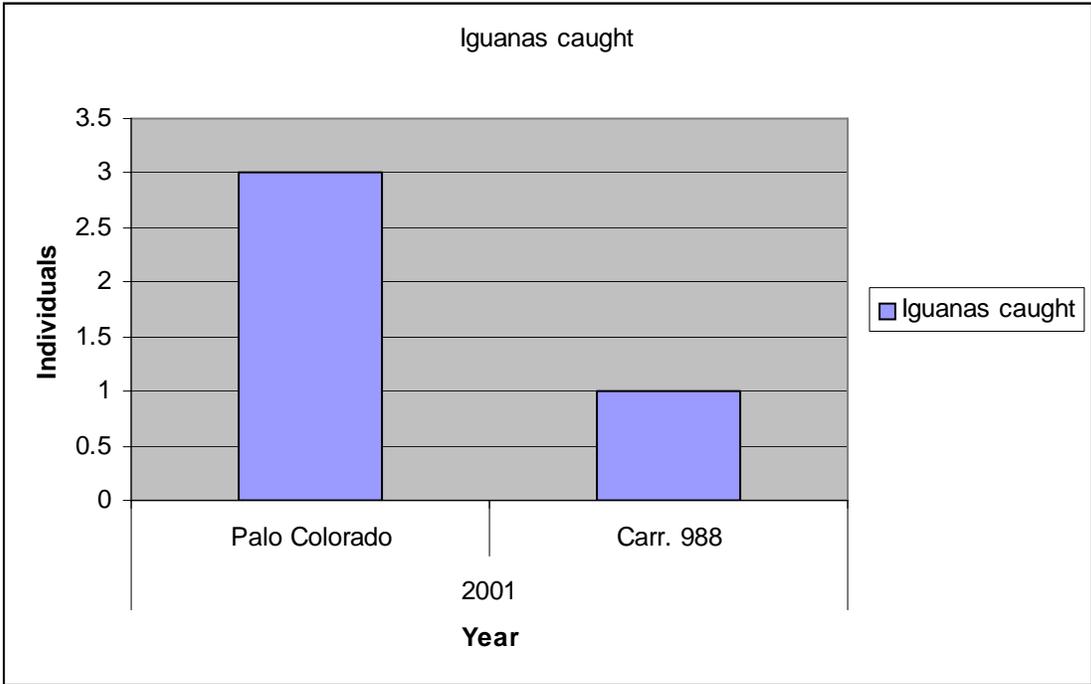
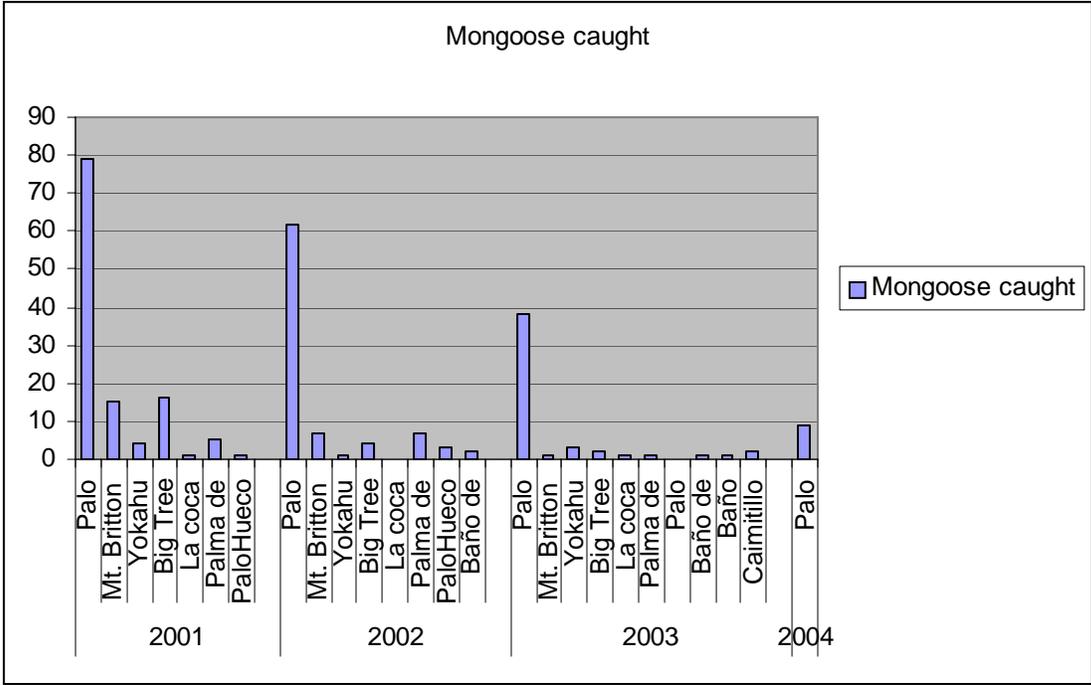
Results: The Forest has determined that the mongoose removal strategy will be applied, when “problem” animals are found in recreation areas. The Forest has defined “problem” animals as individuals that appear to have become habituated to seeking food from humans.

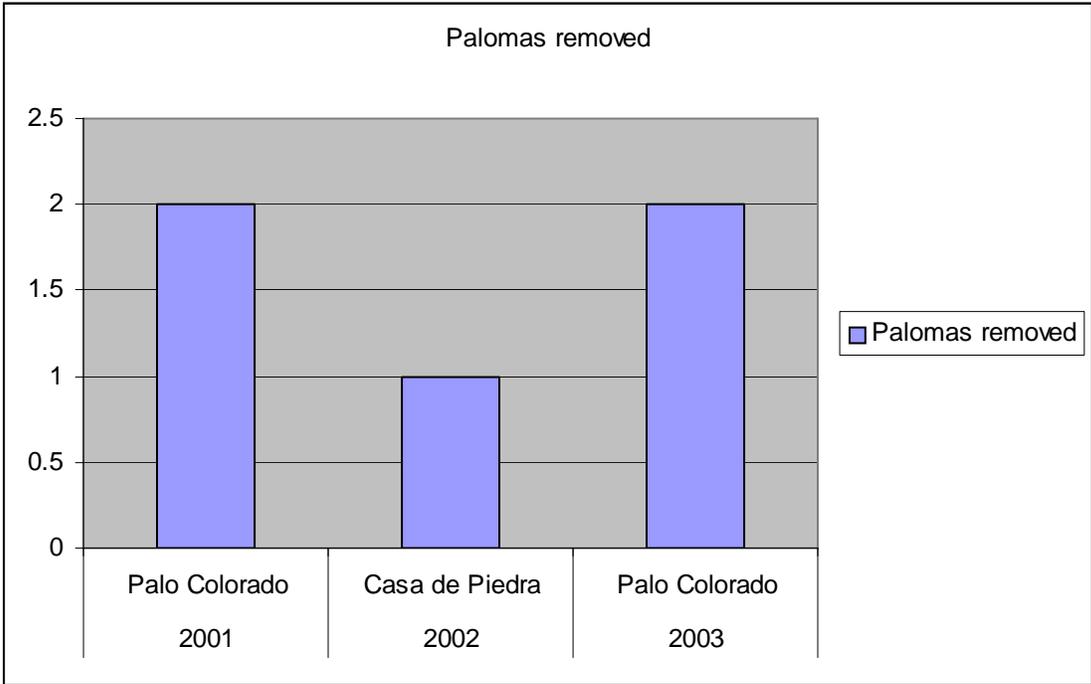
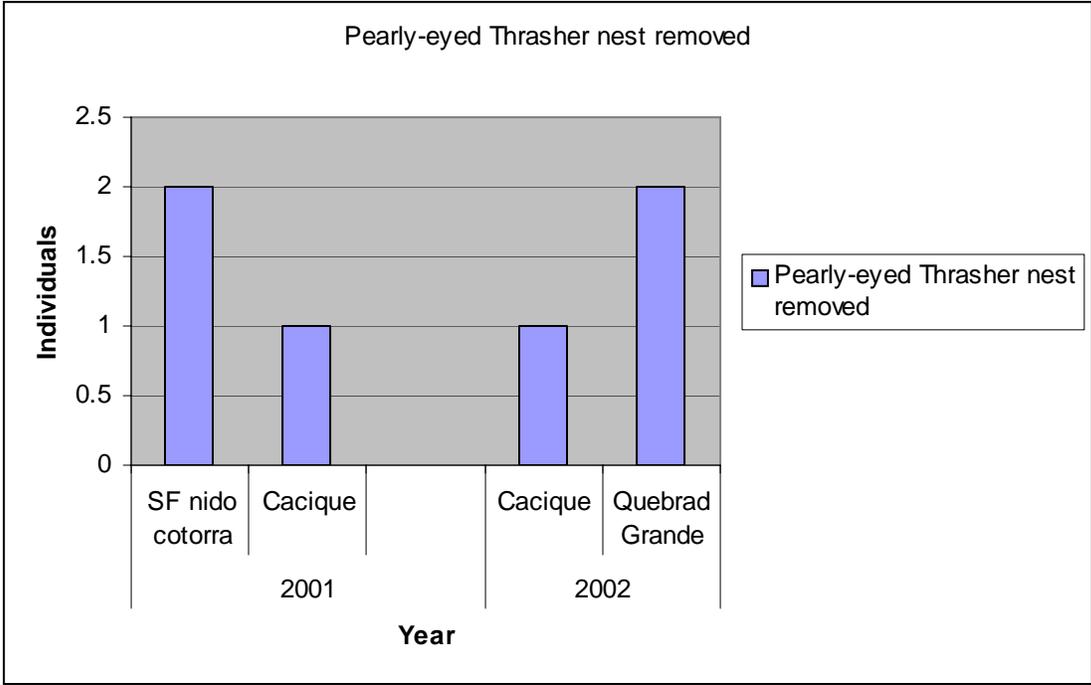
The honeybee is an introduced species, which can be undesirable in developed recreation areas and is a major problem for the Puerto Rican parrot recovery effort. The recent arrival in Puerto Rico of the more aggressive Africanized honeybee has made the problem more acute. Five (5) bee traps baited with attractant pheromones are placed around parrot nests and in high human-use areas in order to intercept swarms. Monitoring of bee activity indicates that bee populations are highly variable from year to year. The most active year recently was 1994, with a dramatic decrease in 1995. Activity was low during 1998, but increased during in 1999 & 2000. Activity was moderate in 2001, 2002, and 2003 with honeybees removed from two (2) parrot nests.

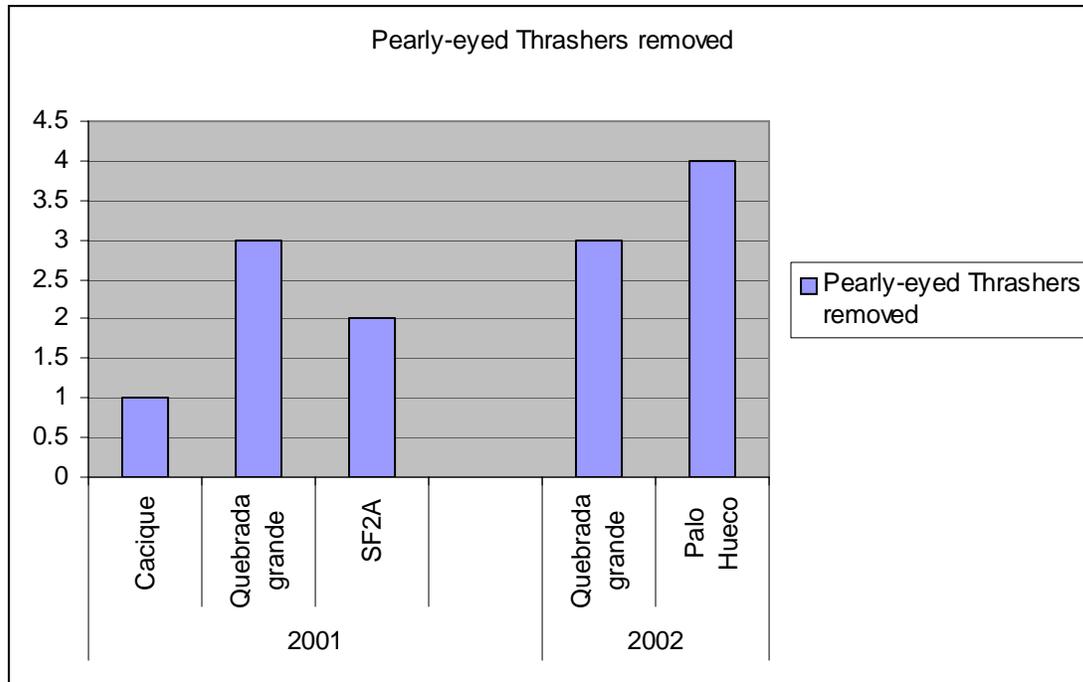
Other pest management activities related to parrot recovery included control of rats and pearly-eyed thrasher management. The thrasher is a competitor of the parrot, and a potential predator of parrot nestlings. Thrasher management strategy consists of providing them two (2) nest boxes near parrot nests so that thrashers don't try to usurp the larger cavities the parrots need, while also establishing a territory around the nest they defend against other thrashers.

Many exotic animal species (in addition to honeybees and mongoose) have become established in Puerto Rico, posing varying degrees of threat to native species island-wide and within the Forest. For example the common iguana, *Iguana iguana*, of Central and South America, has become very common in coastal Puerto Rico. Populations appear to be stable within the Forest; during 2003, two (2) individuals were identified as nuisance. Contrary to previous indications, it now appears that the iguana is capable of nesting within the Forest. Possible effects on native species remain unknown.









Rare Plants

Desired Condition: Populations of proposed, endangered, threatened, and sensitive species (PETS) are stable or increasing.

Measurements: Surveys of known populations every two years during flowering and fruiting seasons. Conduct reconnaissance for new populations.

Results:

- Populations of sensitive species are increasing by means of introduction to the field (CNF) of generated seedlings at the nursery.
- One population of 5 *Styrax portoricensis* re-introduced in cooperation with PR Dept. of Natural and Environmental Resources (DNER) to Carite State Forest.
- 20 individuals of *Pleodendrom macrantum* in the process of hardening at DNER facilities to be re-introduced to Rio Abajo State Forest, in cooperation with DNER.
- Reconnaissance surveys have not produced new populations of PETS during FY05 and all known populations of PETS are stable.

Desired Condition: Recovery goals for proposed, endangered and threatened (PET) species are met.

Measurements: Surveys of known populations every two years during flowering and fruiting seasons. Conduct reconnaissance for new populations.

Results: Recovery goals are continuously in process. Actively for *Styrax portorricensis*, *Pleodendrom macrantum* and *Callicarpa ample*.

Sustainable Forest Benefits

Lands and Special Uses

Desired Condition: Landlines around all National Forest system property are established to standard within the first planning years. Established landlines are maintained every 5 years.

Measurement: Miles of landlines established and maintained.

Results: Regular funding for landline maintenance continues to be very limited. One mile was maintained in FY2004.

Legal closing procedures were completed resulting in the acquisition of a 14-acre property in the El Verde area of the Forest. The deed was presented to the property registry in September, 2004.

Work continued on the transfer of a 9-acre property in the El Verde area from the US Marshals Service to the Caribbean National Forest. Discussions continued with the Puerto Rico Department of Transportation and Public Works on the acquisition and donation of over 300 acres of land as mitigation for the construction of the Route 66, a major new transportation route between San Juan and the northeast side of the island.

Desired Condition: Special use permittees comply with all provisions of their permits.

Measurement: Special use permits compliance inspections.

Results: Long-term (more than one year) special use permits issued or administered in FY 2004 included:

- 40 outfitter-guides
- 1 organization camps
- 2 water diversions/pipelines
- 2 road rights-of-way
- 7 communication facility sites
- 1 electrical transmission line
- 4 recreation residences
- 23 research permits

Temporary permits of less than one year in 2004 included:

- 4 research permits

- 19 filming/commercial photography
- 13 non-commercial group events

Three permit amendments were issued in FY 2004 (2 for research and 1 for a commercial filming)

A special use permit was issued to the Federal Aviation Administration (FAA) for the operation of radar facilities at East Peak. Negotiations in FY2003-2004 between the Navy, FAA and the Forest Service resulted in the transfer of certain facilities from the Navy to the FAA. FAA conducted several site renovations at East Peak after the facility transfer. Work continues with the Navy for the removal of remaining facilities and equipment at the East Peak site.

In March, 2004 a food service concession, Yuquiyu Delights, was established under a Granger-Thye permit at the Palma de Sierra Recreation area. Under the permit, the holder operates a food service concession and provides maintenance to the area and the Forest Service also receives a percentage of revenues. Plans are to expand food service operations to the El Portal Tropical Forest Center in 2005.

The Institute of Tropical Ecosystem Studies (ITES), under a special use permit to administer research at the El Verde Field Station, began construction of a new dormitory facility at the site. After completing an environmental assessment and issuing a decision notice to proceed in August 2004, the ITES permit was amended to include a canopy trimming experiment to evaluate effects of predicted increased frequency and intensity of hurricanes on the forest ecosystem. The proposed research will begin in FY2005 and will include the simulation of a hurricane in six plots through the trimming of certain branches and stems of certain trees within these plots and then monitoring the plots for dynamics related to ecosystem recovery.

Administrative efforts in FY2004 focused on getting backlog bills for special use rental fees into compliance.

Scenery Resource

Desired Condition: Visual quality of communications sites improves from Maximum Modification toward Visual Quality Objective (VQO) Modification.

Measurement: Visual inspection to determine progress toward desired visual quality objective.

Results: No impacts suffered or improvements achieved to VQO during FY 2004.

Transportation System

Desired Condition: The Forest's road system is maintained to standards to serve public

demand for access, to meet management needs, and to protect resources in a cost-effective manner.

Measurement: Miles of road by maintenance standards. Annual inspection.

Results: Roadside maintenance on PRDOT jurisdiction roads continue to be below desired standards. Major effects are on inadequate sight distances and poor visual quality caused by high roadside vegetation.

A total of 11.3 miles of Forest Service Roads were inspected and 2 miles maintained to full standard.

On September 15, 2004, tropical storm Jeanne passed over the island of Puerto Rico. On September 16 a combined two-day total of 15.84 inches of rain were recorded officially at the USGS Mameyes River-NR Sabana, PR water gauge station. This event combined with saturated terrain caused by prior rains (accumulation of 1.05 inches on September 14, 2004) produced severe flooding in all of the Forest's rivers and multiple landslides and washouts on all main access routes under commonwealth jurisdiction. Most slides were small cut bank slumps blocking access and were removed by the Puerto Rico Department of Public Works (PRDPW) within one week after the event. One very large slide (5 Acres) occurred in the Rio Sabana Watershed across the closed segment of PR 191 about ½ km north of the Rio Sabana. Another significant slide (0.5 Acres) occurred across PR 9966 within ½ km west of the new Aviary Site. This slide was removed by the PRDPW within two weeks of the event to restore access but the side hill appears unstable and future slides are expected until permanent stabilization could be completed. Funding for permanent stabilization was requested through the Federal Highway Administration Emergency Relief for Federally Owned Roads (ERFO) program for work to be performed in FY05.

Forest roads (11.3 miles) suffered minor wind damages in the form of defoliation and light vegetative debris; gravel washouts; small slumps; and clogging of drainage structures and ditches.

The Forest obtained the concurrence from the Puerto Rico Highway & Transit Authority (PRHTA) for them to prepare, award, and administer a contract for a Mass Transit Alternatives Study during FY05. This study is a follow up to the *Transportation and Access Study for the Caribbean National Forest* completed in FY02 and will analyze in detail all the possible alternatives to provide a Mass Transit System into the Forest. The result of this study will be a firm proposed action to undergo Environmental Analysis. The PRHTA also agreed to provide Federal Transit Authority funding under a reimbursable agreement for the Forest to perform the Environmental Analysis. The agreement will be completed during FY05 for work to take place in FY06.

Administrative Sites

Desired Condition: Administrative sites are safe, esthetically pleasing and are universally

accessible.

Measurement: Annual OSHA inspection.

Results: Safety inspections were performed on all occupied administrative sites. The Catalina Service Center site and all buildings were operated and maintained to Forest Service Safety and Health standards throughout the year.

Recreation

Desired Condition: A wide range of recreation opportunities is provided. Heavily used undeveloped sites are developed. A variety of trail opportunities is provided with adequate safe parking in trailheads.

Measurement: Developed site capacity (persons at one time or “PAOT”). Miles of trail constructed, re-constructed, and maintained to Forest Service standards. Use levels (thousands of recreation visitor days or “MRVD”).

Results: The developed sites capacity during FY 2004 was 1503 PAOT. The offered Forest capacity was 526,067 PAOT-Days of which 398,254 were managed to standard. Total visitation to the Forest during FY 2004 was 719,015 visitors.

The conditions at El Portal Rain Forest Center continued to be excellent with no accumulation of deferred maintenance as a result of ongoing preventive maintenance and landscaping contracts.

Six miles of recreation trails were maintained to Forest Service Standards.

Desired Condition: Forest visitors enjoy safe and enriching environmental and recreational experiences.

Measurement: Evaluation of recreation use and facilities to determine if ROS objectives are met. Customer surveys.

Results: Visitation registered at El Portal during FY2004 was 214,063 people. This includes 106,417 customers brought to the Forest by outfitters that check in at El Portal but not necessarily enter El Portal. The Forest Visitor fees collected under the Recreation Fee Demo program were \$495,728. This is a slight increase (9.0%) from FY 2003 when \$454,858 was collected. Ninety five percent of the fees collected remain on site to be used for fee collection services, maintenance, and improvement of facilities and services.

The Forest Adventure Program, which was introduced in FY1999, and provides guided hikes by trained Forest Service interpreters continued in 2004 but continued to decrease from 6300 customers and revenues of \$21,300 in FY2002, to 4,550 customers and revenues of \$16,129 in FY 2003, to 3,400 customers and revenues of \$12,550 in FY2004.

Wilderness

Desired Condition: Wilderness protects the largest remaining example of Puerto Rico's original forest. Primary forest, dwarf forest and rare plants and animals are protected. Opportunities for primitive recreation experiences and solitude are provided.

Measurement: Limits of acceptable change analysis. Customer survey.

Results: Wilderness values were not altered during 2004. Bill requesting congressional designation of 10,000 acres in Management area 5 (Wilderness) was introduced in house and senate.

Wild, Scenic, and Recreation Rivers

Desired Condition: River segments eligible for Wild, Scenic, or Recreation (W/S/R) designation are managed to retain the attributes that qualify them for such designation.

Measurement: Proposed management practices are evaluated as part of project planning process. Visual confirmation that Visual Quality Objectives (VQO) of preservation is met for segments eligible for Wild and Scenic designations, and VQO of retention is met for segments eligible for Recreation designation.

Results: Three rivers within the boundaries of the Caribbean National Forest were designated as National Wild & Scenic Rivers in December 2002. The Rio Mameyes was designated as a wild river for 2.1 miles, as Scenic River for 1.4 miles, and as Recreation River for 1.0 miles for a total of 4.5 miles. The Rio De La Mina was designated as a recreational river for 0.9 miles and as Scenic River for 1.2 miles for a total of 2.1 miles. The Rio Icacos was designated a scenic river for 2.3 miles. River corridors retained the qualities that qualified them for designation.

Research

Desired Condition: Research conducted on the Forest continues to contribute to improve management. Completed studies do not preclude future studies in the same area.

Measurement: Assessment in annual IITF report.

Results: Following are some of the research findings that are applied in management.

- There is a close relationship between the research program and the management of the Caribbean National Forest in the issue of water management. Scientists from the Forest Service, the University of Puerto Rico, and several mainland universities (such as the University of Georgia) collaborate in the LTER Program to better understand the structure and functioning of aquatic ecosystems in the National Forest. These include rivers, creeks, wetlands, and other specialized

aquatic habitats in the forest (such as tank bromeliads). This research allows forest managers to allocate water for permits, understand how water extractions might impact aquatic biodiversity, protect sensitive species, and monitor these resources over the long-term. The research has resulted in specialized designs for water extraction, designation of critical rivers as wild and scenic, monitoring of harvesting of river decapods, and other. Thanks to this close relationship, the rivers and creeks of the CNF are among the best understood and managed in the Island.

- Another application of some of the research findings are being used for Wildlife Management. IITF Researchers have been monitoring bird populations in the CNF/LEF for many years. Some of these monitoring counts have sampled populations of concern such as the Elfin Woods Warbler, Broad-winged Hawk, and Neotropical migrant birds. Dr. Arendt has been conducting point counts surveys in various parts of the CNF since at least since Hurricane Hugo (1989) and this is the longest set of data available for bird populations in the forest. These point counts are general counts which include all birds and have the potential to monitor species of concern. Preliminary analyses show changes in Elfin Woods Warbler populations, the results are disclosed in the Wildlife section of this report. Dr. Arendt is completing a statistical analysis and summary of the monitoring work to date that will be translated into a manuscript for publication. Analysis of the monitoring program at this stage will allow us to identify potential population trends, which will be useful to CNF managers, and will allow us to determine if we are using the best sampling design, which might be modified for our future surveys in the CNF.
- Christmas Bird Counts have been conducted in the CNF/LEF for the past twelve years and as time goes on will provide a measure of population trends in the forest. However, data gathered in the Christmas bird counts are more variable than those from point counts and do not have the precision of the point counts for detecting population trends.
- IITF researches have designed a monitoring protocol for the endangered Puerto Rican boa in the CNF/LEF. We provided this protocol to CNF's wildlife biologist, Felipe Cano and trained Felipe and the CNF wildlife technicians in the survey (census) procedures in the field. In addition we provided CNF wildlife with pit tags and lent them our pit tag reader which enabled CNF wildlife biologists to mark all captured boas with pit tags and to use the reader to identify any captured snakes which might have pit tags. CNF conducted these boa surveys for at least two years and results are disclosed in the Wildlife section of this report.

Heritage Resources

Desired Condition: All potentially significant heritage resources are protected.

Measurement: Inspection of projects during implementation, where surveys detected presence of potentially significant heritage resources. Inspection of known heritage sites every two years, where projects are not occurring.

Results: Eight ongoing projects were reviewed, inspected and monitored for potential impacts to heritage resources. No heritage sites were adversely impacted by management activities during FY 2005. No undertaking resulted in the discovery of unanticipated archaeological property. Over 20 significant heritage sites were monitored, including visits to prehistoric petroglyph sites and historic structures.

During the NEPA process input was provided on the Heritage component of the Wild and Scenic Rivers Comprehensive River Management Plan; the Baño de Oro Rehabilitation Project; and the designation of the El Toro Wilderness Area.

In a continuation of the NEPA process for the new Puerto Rican Parrot Aviary, the Memorandum of Understanding including a Stage III Mitigation Plan were implemented to mitigate adverse impacts to two significant historic properties. One of the two properties determined eligible for the National Register of Historic Places (NRHP) -- the Trail 37 on Zarzal Ridge dating to the Civilian Conservation Corps (CCC) era -- has been mitigated; the part of the project that will affect the other NRHP eligible property -- the Mameyes-Rio Blanco PR 191 Road -- has not started yet.

An additional 10 acres was intensively investigated, and 5 acres were shovel tested in order to evaluate and determine the limits of a Spanish Gold Mine site that is potentially eligible for the NRHP. Two new archaeological sites were discovered this year.

CNF is lending support to the Puerto Rico Army National Guard by conducting an archaeological properties survey of the Camp Santiago Training Site in Salinas; as well as providing archaeological expertise to USDA Natural Resources Conservation Service.

Law Enforcement

Objectives: The objective of the Caribbean NF, Law Enforcement and Investigations Division personnel is to ensure the public and employee safety while providing protection of Forest Resources, Cultural Resources, Wildlife and Property. Communication between Law Enforcement, the public and all other FS employees is vital for the LE program to meet its objectives.

Results: The unit assisted in the arrest of individuals for different criminal acts, such as possession of illegal weapons. Around 501 Warnings, 97 Incidents, and 678 Violation Notices were issued, investigated, and reported in the Law Enforcement and Investigations Managements Attainment Reporting System during FY 2005. Also, around 97 investigation assistances has been offered to other federal, municipal and State agencies such as the US Fish and Wildlife Service, National Park Service, NOA, ATF, DEA, ICE, Puerto Rico Police Department, Rio Grande Municipal Police and the Natural Resources Rangers Corps. Also, citations for simple marijuana possession, dumping,

public nudity and others were issued during this period. A series of assistance in Search and Rescue incidents was also offered during this period. Assistance in “dead bodies” investigations was offered to local authorities. Assistance with Criminal Background Checks was also offered to state, municipal and other federal law enforcement agencies.

Fire and Other Emergencies

Objective: The Plan has no objectives for fire. Evidence indicates that fire was not a natural part of the Forest’s ecology, although limited areas of the Forest with non-native vegetation can occasionally support limited fire activity during periods of drought. The forest is tasked to support major fire suppression efforts and other emergency responses on mainland forests.

Results: No fires occurred on the Forest in FY 2005. Due to an extended period of dry weather, and the proximity of brush fires to forest boundaries, severity was granted to the forest in April. During this time a Fire Prevention Team was dispatched to Puerto Rico and completed a plan whose goal was to educate the surrounding communities on the dangers of wildfire and ways to prevent it. A proposal for diversity training funds was approved and a Crew Boss academy was held on the forest, with 11 individuals receiving most required courses. One new crew boss was fully certified, while 7 new squad bosses were certified. One dispatch recorder was certified, as well. One crew was dispatched during this FY to assist in Hurricane Katrina recovery. Two dispatch recorders were dispatched, as well as one Forest Protection Officer. The Forest leads the Multi Agency Coordination Group. The group is comprised of federal land management agencies with interest in risk management

Business Operations

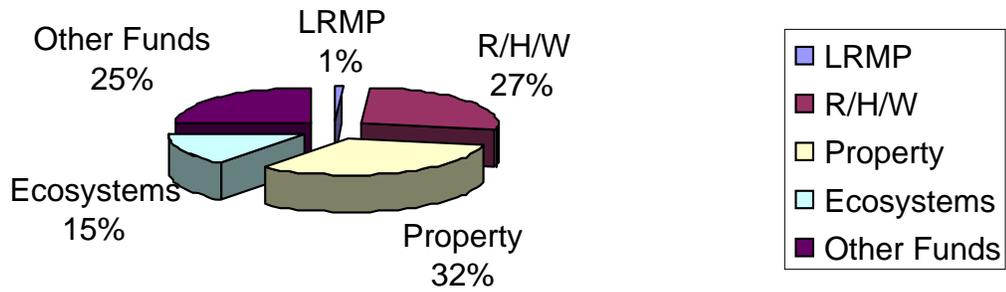
The Forest worked with an approximate of 4.6 million dollars during fiscal year 2005. This amount includes \$ 400,869 for the Senior Community Service Program, \$ 455,000 in fee collection for recreation areas, and \$ 724,000 from Cooperative Work and services provided to Federal Agencies through agreements. The highest Congressional allocation of \$1,227,000 was received for Recreation, Heritage and Wilderness Management. The lowest Congressional Allocation of \$ 500 was received for Federal Highways Administration Expense. We collected \$ 25,000 in donations.

Following is a Table with Forest Program totals:

Forest Programs	FY 2005 Budget (\$)
Land Management Planning	44,000
Landownership Management	87,000

Recreation/Heritage/Wilderness	1,227,000
Site Specific Special Fund	455,000
Facility Capital Improvement & Maintenance	711,900
Roads Capital Improvement & Maintenance	101,000
Trails Capital Improvement & Maintenance	115,300
Land Acquisition	28,732
Quarters Maintenance	3,600
Wildlife Management	275,000
Vegetation & Watershed Management	123,000
Inventory and Monitoring	224,000
Forest Fire Management	50,000
Forest Health Funds	5,000
Law Enforcement	0
Total Appropriations	3,445,532
Federal Highways Administration Expense	500
Cooperative Work	8,500
External Reimbursable	724,000
Senior Community Service Employment Program	400,869
Total Funds for FY05	4,579,401

FY 2005 Forest Budget



Personnel

Permanent Employees	37 (includes two seasonal)
Temporary Employees	10
Senior Community	
Service Employees (SCSEP)	85
Volunteers	469
Youth Conservation Corps (YCC).....	8

Youth Conservation Corps (YCC)

The Youth Conservation Corps (YCC) provides employment for 15 to 18 year-old youths to help them develop an understanding and appreciation of Forest Health and Management. Eight young adults participated in the YCC program during fiscal year 2005, four young women and four young men.

Youngster this summer worked with Eco-System team in the Caribbean National Forest. Their work load was divided between Watershed Improvement, Heritage and Biology doing fisheries, monitoring parrot recovery program. They worked in the Watershed improvement program in the restoration of 10 landslides where they used special techniques such as: matting and mulching. In the Heritage resource program performed

work conducting Archeological surface survey and shovel testing of an “Old Spanish Gold Mine”, in an attempt to find cultural material. In Wildlife, they conducted fisheries monitoring five selected sites, and also worked for the closing of five Parrot’s nests. They also helped installing “no fishing” signs in some Forest stream.

Their value was appraised at 29,497 dollars and 2,174.5 accumulated hours rendered.

Senior Community Service Employees (SCSEP)

The Senior Community Service Employees Program provides part-time enrollment for work experience and job training opportunities for low-income individuals. Our seniors are one of the Forest's most valued human resources. Their many contributions include providing information and interpretation to Forest visitors, recreation site and trail maintenance and construction, and clerical support.

They are productive and reliable individuals that enjoy the great outdoors and want to continue to work.

We are in the process of rearranging and trying to strategize as what measures to take to better educate employers and participants to obtain unsubsidized employment.

This year’s value of seniors work was appraised at 639,770 dollars and provided 67,977 hours of labor, 37.77 person years.

Volunteers

In 2005 volunteers contributed labor with an estimated value of 63,783 dollars. Four hundred and sixty nine volunteers assisted with trash removal, interpretive programs, trail maintenance, wildlife habitat improvement and monitoring, and clerical support. They divided as follows: 68 males and 90 females under 18 years of age; 127 males and 141 females between 18-54 years old; and 21 males and 22 females over 55 years old. They accomplished \$63,783 appraised dollar value and 5,154.5 accumulated hours.

The annual Clean-up Day is one activity that the community as well as the agency looks forward to. It is rewarding to participate with a diversity of age groups and the incredibly amount of enthusiasm, energy and sense of accomplishment demonstrated during this volunteering one-day activity. This year’s theme “Let’s maintain the Forest Clean with “I Clean,” I Clean is the translation for the organization that hosts our annual clean up day activity.

Monitoring and Evaluation Interdisciplinary Team

M&E Team Member	M&E Data Analyzed	Position
Carolyn Pabon	M&E report coordinator and editor, Forest Planner, Research Program liaison, Business Operations (Budget and Finance, Human Resources, Support Services, and Information Systems), and Labor Management.	Forest Planner and Administrative Team Leader
Manuel Ortiz	Recreation, Land and Special Uses, Wilderness, Wild & Scenic Rivers, Primary Forest, Scenery Resource, and Infrastructure.	Customer Service and Property Management Team Leader
Pedro Rios	Watershed, Wildlife and Fish, Rare Plants, Pest Management, Heritage Resources, and Emergency Response.	Ecosystem Management Team Leader
Jose Ayala	Law Enforcement	Patrol Captain

Actions completed in 2005

14. Local implementation of agency Business Operations changes, including local implementation of the Information Solution Organization (ISO), Albuquerque Service Center (ASC), while managing IT and FM residual work.
15. Local implementation of the records migration to ASC, new version of WorkPlan, “Managing for Results”, and Performance Accountability System.
16. Safety – a new safety committee was created to review and to provide feedback on the reasons and solutions to unsafe working conditions and unsafe practices.
17. HFRA/HFI local implementation by addressing Forest Health, Invasive Species, and Noxious Weed Management.
18. New Planning Rules, 36 CFR 219, and EMS local implementation.
19. Wild & Scenic River Management Plan and Bano de Oro NEPA work.
20. Executed E-government initiatives by addressing and updated local web sites.
21. Forest Name change.

22. Landslides stabilization work.
23. Food concession permit administration.
24. National Use Monitoring Survey (NVUM) pre-work completed.
25. Trails inventory data completed.
26. Trail bridge surveys and developed Recreation Sites condition surveys meet protocols.
27. Implemented new fee legislation locally.
28. Awarded construction contract for the Rio Sabana Picnic Area and reconstruction of 0.8 miles of access road (PR191), and for the new Aviary.
29. Cooperated with the Municipality of Naguabo on the ground breaking ceremony for Rio Sabana Picnic Area and cooperated with US Fish and Wildlife Service, PR government on the ground breaking of the Aviary construction.
30. El Yunque Water System Repairs contract completed.
31. Storm Jeanne and April 17, 2004 rainstorm damages repairs contracts completed.
32. Rio Mameyes, La Mina, Icacos Wild and Scenic River corridor Management Plan.
33. Puerto Rico Aqueduct and Sewer Authority (PRASA) permit process initiative.
34. Facility Master Plan.
35. Planning, Appeals, and Litigation System (PALS) implementation and timely SOPA quarterly reports.
36. Made the Volunteer Program more accessible to the public via internet.
37. Initiated AQM local workload analysis to reduce indirect cost pools.
38. Fire Preparedness and Readiness.
39. Established a MACG for fire in PR.
40. PRP habitat improvement activities completed.
41. Four (4) Biological Evaluations were completed for consultation with FWS.

42. CNF signed a MOU and lead PRP Executive committee by coordinating interagency Management and Advisory meetings.
43. NPS Cultural Resource Southeast Division agreement.
44. Civilian Conservation Corps thematic nomination.
45. Center for Aquatic Technology Transfer yearly assistance trip and a review of Index of Biotic Integrity methodology was conducted.
46. Forest participation of comprehensive community based water resource management strategy in cooperation with the PR Conservation Foundation as part of United Nations HELP program.
47. Re-aligned time and work distribution between the Senior Program and other local Human Resource Program and work.
48. A MOU signed and an annual and two-day share passes for access to National Park Service (NPS) National Historic sites in San Juan and El Portal Rain Forest Center implemented.
49. Working with the Puerto Rico Department of Transportation (PRDOT) to complete Mass Transit Alternative study. Completed interagency agreement that authorizes the collection of \$68,000 for the NEPA analysis for the Mass Transit project.
50. Drafted Grange Thye permit for the Naguabo municipality to operate the Rio Sabana Picnic Area.
51. Actively participated in cooperation with the Tongass NF on the America's Rainforest Project transmitted by PBS stations.
52. Gateway Community Council coordination and establishment with Rio Grande and Naguabo.
53. Worked with the PR Planning Board, Land Use Office to the Island-wide Land Use Plan.
54. PR National Guard agreements.
55. Provided technical assistance in cultural resource management to NRCS.
56. New Aviary construction underway by agreement with FWS and DNER.
57. Met and briefed mayors, senators and representatives of the Commonwealth of

Puerto Rico.

58. Organized the Clean Up Day for April 23rd, a community event.
59. Organized National Trails Day, National Public Lands Day, and the International Migratory Bird Month.
60. Completed the development and distribution, with Forest-wide input, of a strategic plan for the Caribbean NF for 2005-2010.
61. Hosted the visit of the Deputy Chief Joel Hoeltrop, and a visit of the Regional Director and Planner.
62. Urban National Forest Conference call participation.
63. Forest Wellness Program approved and implemented.
64. Labor Management work with Telecommuting and administration reorganization.
65. Worked with congressional staffers on the Proposed Wilderness Boundary maps and language for legislative bill.
66. Provided input for bills related to local issues, i.e. Mass Transit System, Schooling, Land Acquisition, Loss of Open Space, and other.
67. Labor Management work on the NFFE New Master Agreement, effective June, 2005.