



Coral Reefs Program and Projects Overview

Summary of Tasks

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OBJECTIVES

Provide a comprehensive view of PR DNER coral reef systems program and projects developed during FY 06.

Discuss potential management gaps and tools for the Local Action Strategies in Puerto Rico.

Provide next steps action to follow in order to reduce potential impacts on PR Coral Reef Ecosystem.





PRIORITY – LAS AREAS

Lack of Public Awareness

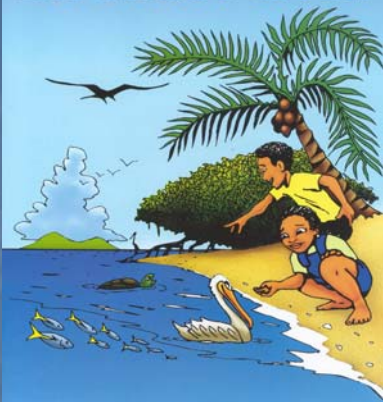
Overfishing

Recreational Overuse

Land-based Sources of Pollution



Los Niños y el Mar



Un libro de pintar sobre el cuidado y conservación de los océanos

EDUCATION AND OUTREACH OVERVIEW

- A reproduction of 1,000 prototype coloring book were produced related to the conservation and protection of coral reef ecosystem. These books were distributed among public libraries, first grades schools and in activities related to the coral reef program.
 - The themes covered within the coloring book are the impacts related to sedimentation, illegal sewage discharges and impacts due to gas and oil spills by recreational vessels.



Los arrecifes de coral parecen piedras. Estos están hechos del esqueleto de los pólipos de coral, un animal pequeñito. Diferentes tipos de plantas y animales viven y dependen del arrecife de coral. Para poder sobrevivir el arrecife de coral necesita aguas claras. Cuando nosotros destruimos el manglar y las yerbas marinas, el sedimento que viene de la tierra afecta la calidad del agua y daña los corales. Los corales son frágiles al tocarlos, pisarlos y tirar anclas sobre ellos los pueden destruir.





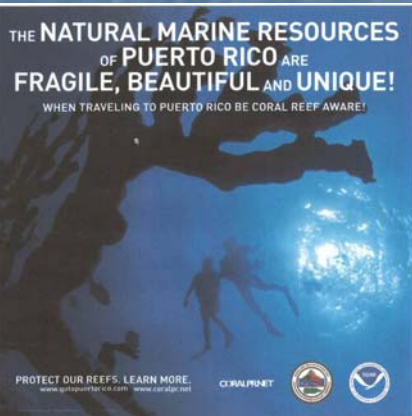
EDUCATION AND OUTREACH OVERVIEW

- A presentation folder was created as part of the material to be distribute at the Coral Reef Symposium to be held in March 2007.
- The presentation folder has a message warning recipients of the importance of protection and conservation of PR coral reefs.



EDUCATION AND OUTREACH OVERVIEW

- A high impact visual public awareness media campaign was developed to reach all tourists traveling to the Islands from the US East Coast. This media campaign is placed at JFK US International Airport among others.
- Production of a series of PSA Video-DVD Format Coral Reef Awareness Messages and Images that eventually will be Broadcast via TV and thru Internet website.
- The Campaign also includes the placement of the Visual Media in Puerto Rico and the US Virgin Islands. The Media is produced in both English and Spanish and includes the International Airports of Puerto Rico and the US Virgin Islands. Additional Media will be placed near sensitive Coral Reef Zones of both Puerto Rico and the US Virgin Islands.



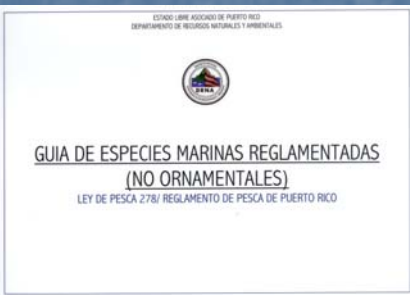
EDUCATION AND OUTREACH OVERVIEW

- Installation of informational and/or educational signage in areas of high frequency of diving, snorkeling, kayaking and jet skiing over ecologically sensitive areas.
- With the assistance of a group of Eagle Boy Scouts, 10 educational signs related to coral reef ecosystem conservation were installed at the Cordillera Reefs Natural Reserve; Icacos (1) and Palominos (1) Cays; Buyé beach (2), Cabo Rojo; Flamenco (1) and Tamarindo, Canal Luis Peña Natural Reserve (1) beaches at Culebra; Mona Island (2) (Sardinera and Pájaros beaches); Caja de Muertos Island Natural Reserve (1); Parguera (1).



CAPACITY BUILDING – ENFORCEMENT WORKSHOP

- A coral reef and fisheries enforcement Capacity building workshop was held in May 2006 in San Juan, Puerto Rico.
- An identification guide of the regulated fish species and the pertaining restriction for each one species was distributed.
- Training in marine species identification was also part of the workshop.
- A communication exchange workshop between enforcement, hearing officers, judges, state's attorneys and biologists will be held the first week of November 2006 to strengthen case preparation.



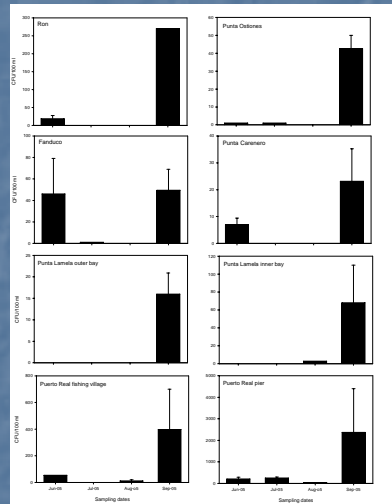
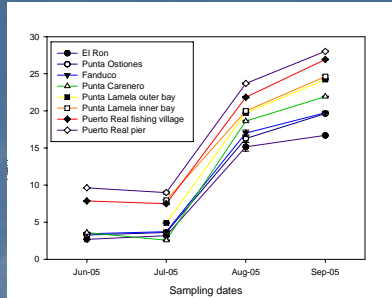
CAPACITY BUILDING WORKSHOPS WATERSHED PROTECTION

- A workshop was carried out in July with the participation of the following agencies: Planning Board, Environmental Quality Board, Municipalities, DNER, NOAA, NRCS, Corps of Engineers, Home Builders Association and Others.
- Improve implementation of erosion and sediment control measures in the Loiza watershed.
- Discuss roles and responsibility upon erosion control, stormwater and coral reef protection.



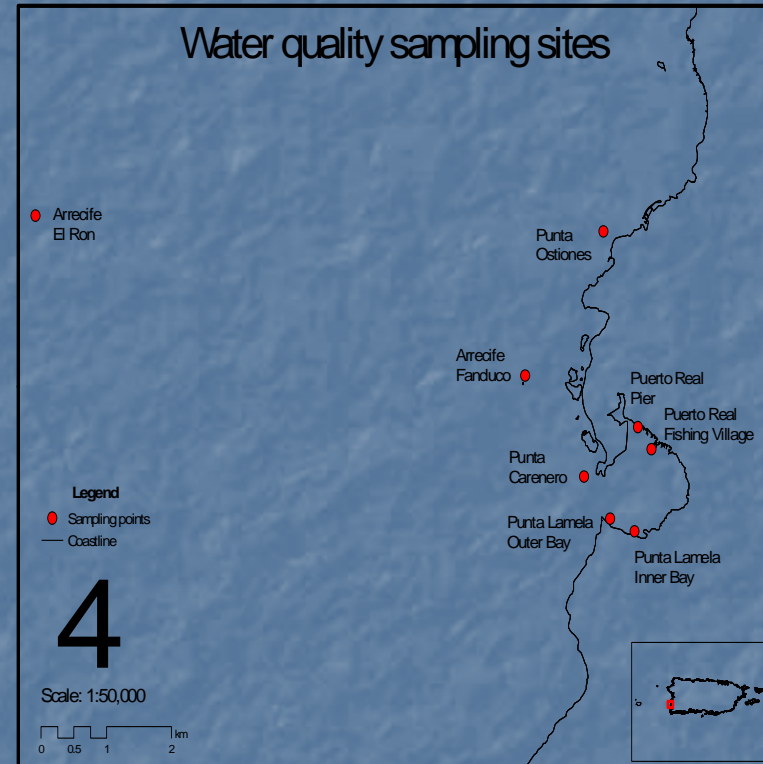
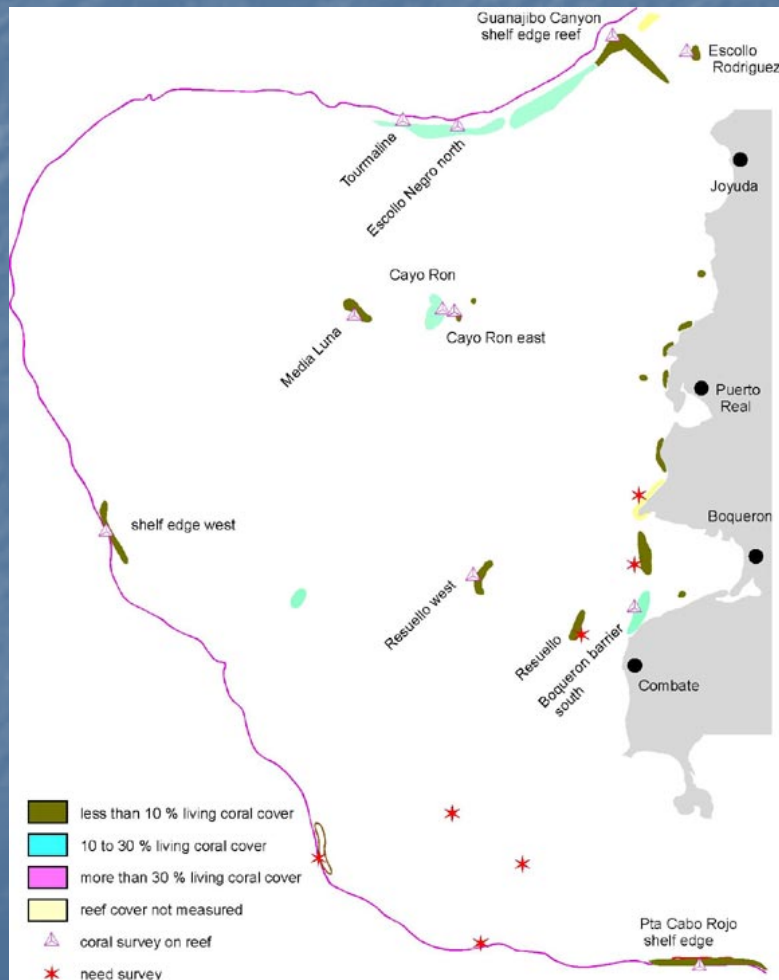
OVERVIEW LAND BASE SOURCES OF POLLUTION

- Land base sources of pollution at Berverede Natural Reserve work is divided in two phases:
 - An inventory of septic tanks.
 - Sampling and quality analysis of underground and coastal water that impact coral reefs.
- Sampling frequency of once/month for turbidity and microbial densities.
- Results: water turbidity and fecal coliforms higher on inshore waters. Nonetheless, fecal pollution pulses were found in offshore areas.

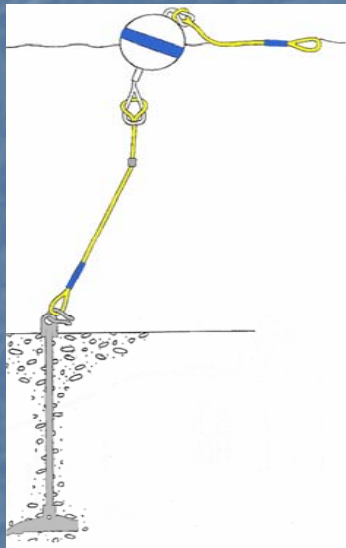


OVERVIEW WATERSHED PROTECTION

Belvedere Reserve



RECREATIONAL OVERUSE – CANAL LUIS PEÑA RESERVE

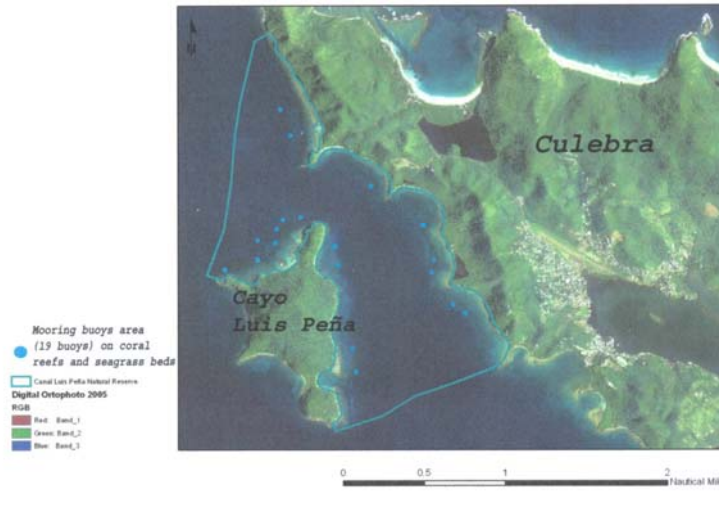


- Protect critical marine habitats against anchoring from recreational vessels.
- A professional contractor was hired to start work in November 2006.
- Nineteen (19) mooring buoys deploy at Canal Luis Peña. Anchoring system are single eye bolts, Manta Ray and Halas system.
- Depth ranges between 13 to 38 feet. Work to be performed at insular shelf platform on seagrass beds, coral reefs and sand bottom.



RECREATIONAL OVERVIEW – CANAL LUIS PEÑA RESERVE

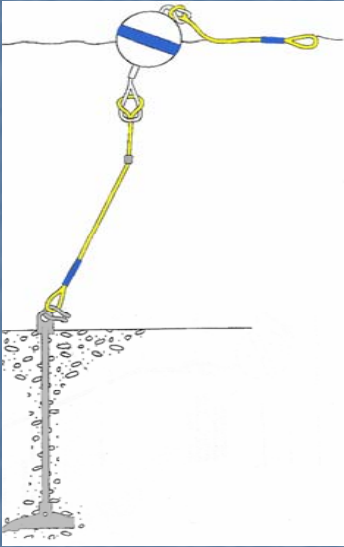
Canal Luis Peña Natural Reserve, Culebra, Puerto Rico



Navy EOD Inspection for Proposed Mooring Buoys
For Canal Luis Peña Nature Reserve, Culebra PR.
April 26/ 27, 2005
NDD.DDDD

Num.	Sites	Lat (n)	Long (w)	Depth (Feet)	Navy EOD Inspection
1A	Carlos Rosario Beach 1	18.32776	65.33217	34	No Ordnance observed
2	Carlos Rosario Beach 2	18.32640	65.33168	23	No Ordnance observed
3	Luis Peña Cay -N1	18.31152	65.33917	33	No Ordnance observed
4	Luis Peña Cay -N2	18.31211	65.33655	23	No Ordnance observed
5	Luis Peña Cay -N3	18.31192	65.33478	13	No Ordnance observed
6	Luis Peña Cay -N4	18.31431	65.33393	20	Empty luminary shells
7A	Luis Peña Cay -N5	18.31463	65.33322	18	No Ordnance observed
8A	Luis Peña Cay -N6	18.31286	65.33477	18	Empty luminary shells
9	Rompe Anzuelo Point	18.31913	65.32340	14	No Ordnance observed
10A	El Banderote Reef	18.31535	65.31866	16	No Ordnance observed
11	Prieta Point	18.31393	65.32847	38	No Ordnance observed
12A	Luis Peña Cay -I:1	18.30434	65.32710	25	No Ordnance observed
13A	Luis Peña Cay -I:2	18.30172	65.32638	23	No Ordnance observed
16A	Tarja Bay -1	18.30771	65.31432	13	No Ordnance observed
17A	Tarja Bay - 2	18.30731	65.31408	12	No Ordnance observed
18	Tamarindo Chico Point- 1	18.31106	65.31709	17	No Ordnance observed
19	Tamarindo Chico Point- 2	18.31026	65.31749	12	No Ordnance observed
20	Luis Peña Cay -N 7	18.31550	65.33257	22	No Ordnance observed
21	Luis Peña Cay -NE 1	18.31229	65.32980	18	Empty luminary Shells

RECREATIONAL OVERVIEW – LA PARGUERA NATURAL RESERVE



- Protect critical marine habitats against anchoring from recreational vessels.
- Ten (10) mooring buoys were deployed at La Parguera Natural Reserve.
- Anchoring system are single eye bolts, Manta Ray system.
- Supporting materials included aids to navigation and markers.
- Depth ranges between 3 to 18 feet.
- Lettering purpose was to alert boaters of grounding sites areas.
- Project ended September 30 2006.



RECREATIONAL OVERUSE – LA PARGUERA NATURAL RESERVE



Detalles
Tamaño 12" x 18"
Borde del
Triángulo Color
"Distress Orange"
Borde Exterior-
Tape Reflectivo
Color Distress
Orange.

CANALES Y BOYAS LA PARGUERA



RECREATIONAL OVERUSE – LA PARGUERA NATURAL RESERVE



Shallow Areas poorly define at La Parguera.

New signs containing international symbol of shallow areas are currently on display on site.



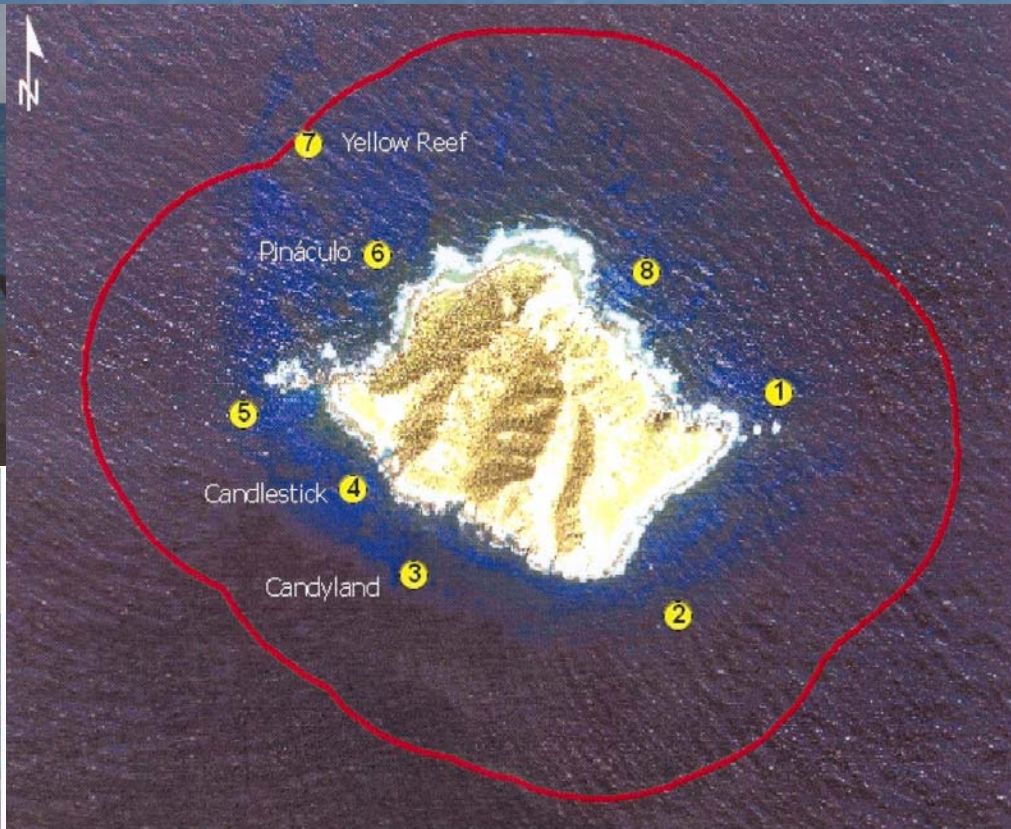
RECREATIONAL OVERUSE – DESECHEO ISLAND MARINE RESERVE



- Protect critical marine habitats against anchoring from recreational vessels.
- Eight (8) buoys were deployed displaying international signage alerting boaters of being within the Reserve boundaries and fishing closure.
- Project ended first week of October 2006.



OVERVIEW PROJECTS – DESECHEO ISLAND MARINE RESERVE

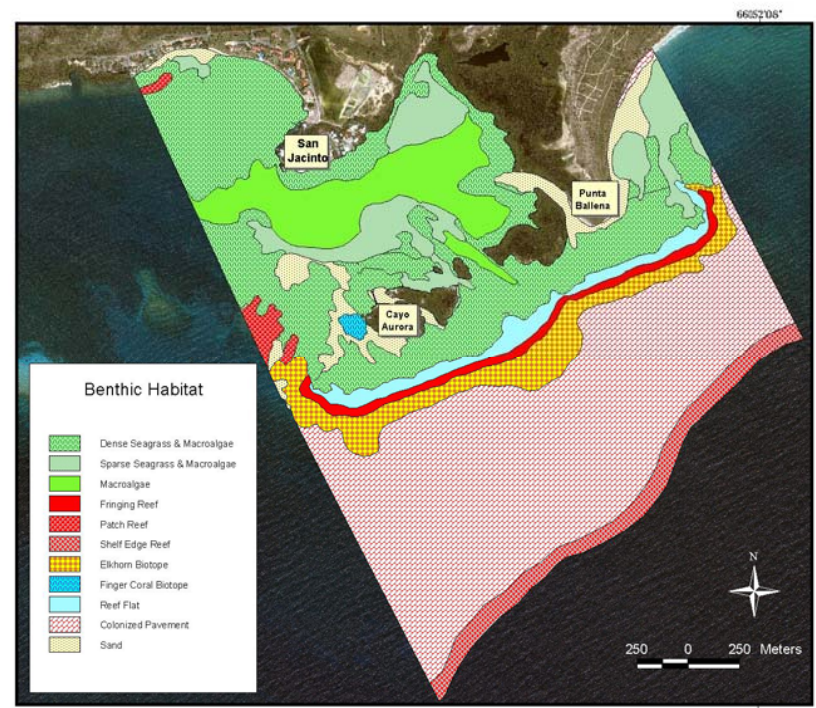
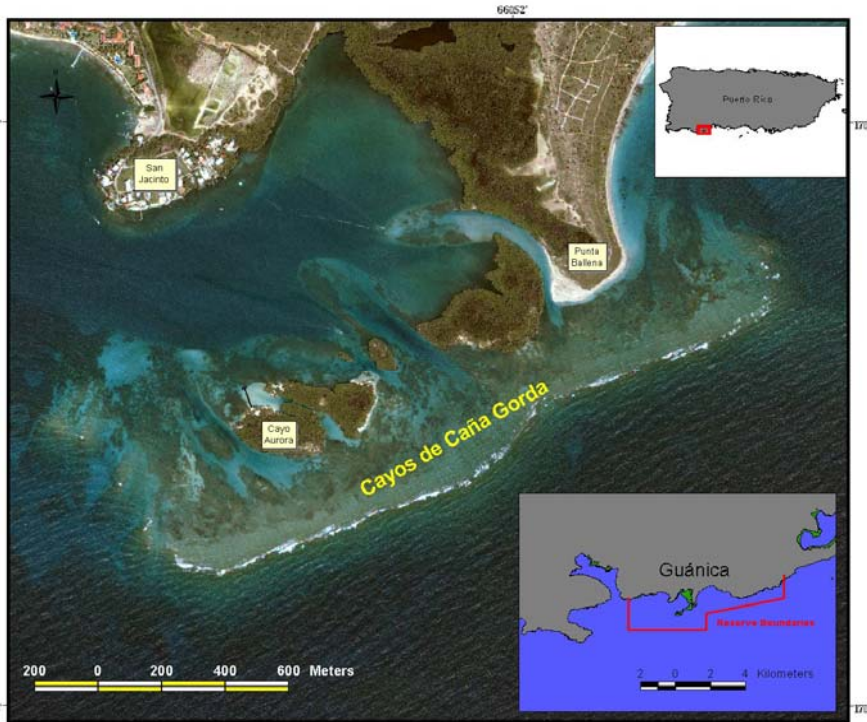


RECREATIONAL OVERUSE – CAYO AURORA NATURAL RESERVE

- Prepare zoning maps of important benthic habitats and marine oriented activities.
- Recommendations includes:
 - Installation of mooring buoys and speed limit signs
 - Preparation of educational exhibits
 - Reforestation of red mangrove of Cayo Aurora
 - Establishment of a close fishing area on the backreef
 - Increase DNER personnel during peak recreational season



OVERVIEW – CAYO AURORA NATURAL RESERVE



RECREATIONAL OVERUSE – CAJA DE MUERTOS RESERVE

- Prepare zoning maps of important benthic habitats and marine oriented activities.
- Recommendations includes:
 - Installation of mooring buoys and speed limit signs
 - Preparation of educational exhibits
 - Installation of signage portraying special use areas
 - **Refurbishing of DNER recreational educational support facilities**
 - Permanent and seasonal closed seasons for certain areas



