



FY 2003 Superintendent's Annual Report

Glen Canyon National Recreation Area



and

Rainbow Bridge National Monument



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I. MANAGEMENT

Kitty L. Roberts remained as superintendent with Bill Pierce as deputy. However, Bill accepted the position of superintendent at Redwoods National Park and left in early October 2003. Char Obergh remained as management assistant.

Management continued to focus a great deal of energy and time on the personal watercraft (PWC) issue in getting the Final Environmental Impact Statement and Rule-Making process complete. The Final EIS was released May 12, 2003, with the Record of Decision (ROD) signed on June 27, 2003. The Final Rule was published and became effective September 26, 2003, authorizing the immediate implementation of the ROD. The preferred alternative in the Final EIS allowed for continued PWC use on Lake Powell with some management restrictions.



PWC Rally on Lake Powell

The completion of this planning effort was not without some challenges. A lawsuit was filed in March 2003, by the Utah Share Access Alliance, Inc., and others against the National Park Service to seek declaratory and injunctive relief due to the closure to PWCs on Lake Powell that was implemented as a result of the servicewide rule November 6, 2002. The lawsuit was retracted after an agreement was reached by all parties on May 10, 2003, to reopen Lake Powell to PWC use through September 30, 2003, with some restrictions, to allow sufficient time for the NPS to complete the environmental planning process and

rule-making. Had it not been for the diligence of park staff, the director's staff, and our solicitor, it is doubtful this timeframe would have been met.

Low water and providing continued public access to Lake Powell was another challenge faced by park staff. All public launch ramps were extended as well as both ferry ramps. Over \$2 million was spent this fiscal year on ramp extensions and utility upgrades (larger pumps and lift stations) and it is estimated another \$2.8 million will be required in FY 04. However, due to the lowering lake level, ramps were unusable at Stateline, Antelope Point, Hite and both ferry ramps by August. As a means of keeping our visitors informed on lake access, the park issued bi-weekly ramp and area updates to local businesses and visitors through the website and news releases. This information was the most visited link on the park's website.



Castle Rock Cut - 2003

The declining lake level closed the Castle Rock Cut in September 2002 and all boat traffic was required to follow the main channel going uplake from Wahweap. For boater safety, a wakeless zone was established at the intersection of Wahweap Bay near the dam and the main channel.

The most noticeable change to the lake with the lower lake levels occurred at Hite. Due to the lower lake levels and silt from the Colorado River, all water-based facilities at Hite Marina were moved downlake to either Bullfrog or Halls Crossing Marinas. The land-based facilities remained open and a new river-runners take-out point was created on the west side of the river near the location of the original Hite Marina, located off SR 95, between mileposts 41 and 42.



Hite Marina - September 2003

January 27, 2003, the Director signed the new contract for the Antelope Point Marina and Resort. This new



Antelope Point Groundbreaking – May 5, 2003

contract will provide a marina and resort on both NPS and Navajo Nation lands at Antelope Point. The new concessioner is Antelope Point Holdings, LLC. A groundbreaking celebration was held May 5, 2003, and attended by several hundred including the NPS Director, Regional Director, and several Navajo Nation dignitaries. This contract finalized over 30 years of NPS efforts to jointly develop a resort and marina on our adjoining boundary with the Navajo Nation.

Several changes were made to the Incidental Business Permits (IBP) program this year with the goal to better manage commercial activities within the recreation area. Many of these changes were not met favorably by some of the local businesses and as a result, the park received numerous congressional inquiries on behalf of those businesses. Several companies/individuals who had been illegally brokering boats on Lake Powell were sent letters to cease and desist. One such company, Executive Boat & Yacht Brokerage, Inc., filed suit in the U.S. District Court of Utah seeking an injunction against the NPS based on this decision. The NPS filed a Motion to Dismiss the First Amended Verified Complaint on October 20, 2003. During this year, park staff was successful in working with the U.S. Magistrate and Assistant United States Attorney's Office in get convictions on two separate individuals for conducting illegal business within the recreation area.

The superintendent and deputy superintendent met regularly with both the Arizona and Utah delegations and their staffs and county representatives to update them on the IBP program changes, low water, and other park issues.

The contract for the Wahweap wastewater treatment facilities project to construction a pipeline from Wahweap to the existing sewage treatment facilities within the City of Page was finalized and awarded to Ryan Company of Taunton, Massachusetts. This has been a long sought after project to remove the treatment of sewage from the recreation area and to bring wastewater operations at Wahweap back into compliance with the State of Arizona. The project will enhance our ability to continue to protect water quality and help the City of Page operate its facility more efficiently and economically. This partnership with the City of Page took the diligence and cooperative efforts of park staff working with representatives of the City of Page to make it work.

Safety of park visitors and employees continues to be the number one priority for management. The Central Safety Committee was lead by Deputy Superintendent Pierce through this year with a renewed emphasis in providing employees a safety work environment. The STOP program was implemented and all employees were empowered to recognize and stop unsafe activities.

EQUAL EMPLOYMENT OPPORTUNITY COMMITTEE

Marianne Karraker was named chairperson with the resignation of Chris Cook. Ken Coss, Eileen Martinez and Marianne Karraker continued on as EEO Counselors. Recruitment efforts continue in order to fill several vacancies left by out-of-park transfers and several new members have been inducted into the EEO Committee.

The Committee met on a monthly basis to address issues brought before it and to find proactive methods to promote Glen Canyon's EEO principles and policies. In addition, various members of the committee attended other meetings and training sessions to become more knowledgeable about current EEO policies and procedures. This information was then shared with the park employees.

The EEO Committee welcomed NAVA National Monument representation this year as part of an ongoing partnership between the two NPS units. The Committee By-laws were revised and updated to reflect this addition along with other changes in membership.

Mandatory EEO sexual harassment training, along with general EEO training, was presented to the employees of Glen Canyon NRA, both permanent and seasonal, in six separate sessions. The deputy superintendent took part as a facilitator and presented a segment on safety training as well. The sessions were well attended and appreciated based on feedback from employees both uplake and downlake.

The Committee initiated the revival of a parkwide awards committee. That group researched and rewrote the awards program guidelines and is in the process of breaking

away from the EEO Committee to function independently under the direction of the deputy superintendent.

The EEO Committee continues to function as a vital part of management's effort to ensure equal opportunity issues are in compliance and are actively pursued. Together, we strive to assure the staff are trained, educated, and informed about the EEO policies of the park, NPS, and the federal government.

II. ADMINISTRATION

ACQUISITION AND PROPERTY MANAGEMENT

Acquisition

Contracting activity for Glen Canyon NRA during FY03 is shown in the table below:

| Glen Canyon NRA Contract Totals for FY03 | | | |
|--|----------------|--------------|----------------|
| COMPANY | AWARD \$ | HUBZONE | 8(A) |
| EPC | \$285,000.00 | 285,000.00 | \$285,000.00 |
| EDAW | \$150,000.00 | | |
| Harward & Rees | \$50,000.00 | 50,000.00 | |
| Muchiando | \$92,025.00 | | |
| Crowley | \$76,000.00 | \$76,000.00 | |
| Lake Powell Const. | \$379,500.00 | | |
| Brown Bros | \$54,000.00 | 54,000.00 | |
| Smith & Loveless | \$351,520.00 | | |
| Lake Powell Const. | \$105,922.00 | | |
| Munchiando | \$245,220.00 | | |
| Empire Electric | \$25,000.00 | | |
| EPC | \$180,000.00 | 180,000.00 | \$180,000.00 |
| Munchiando | \$49,905.00 | | |
| The Ryan Co. | \$2,079,421.00 | | |
| EPC | \$127,000.00 | \$127,000.00 | \$127,000.00 |
| EDAW | \$48,959.00 | | |
| EPC | \$34,645.00 | \$34,645.00 | \$34,645.00 |
| Baker Engineering | \$46,300.00 | | |
| EDAW | \$50,453.00 | | |
| Brown Bros | \$130,305.00 | \$130,305.00 | |
| Candelaria General | \$429,468.00 | \$429,468.00 | \$429,468.00 |
| Harward & Rees | \$265,000.00 | 265,000.00 | |
| PBS&J | \$151,343.00 | | |
| EPC | \$303,761.00 | \$303,761.00 | \$303,761.00 |
| Candelaria General | \$97,000.00 | \$97,000.00 | \$97,000.00 |
| Harward & Rees | \$157,114.00 | \$157,114.00 | |
| Munchiando | \$103,650.00 | | |
| EDAW | \$88,130.00 | | |
| Lake Powell Const. | \$123,943.00 | | |
| Harward & Rees | \$245,100.00 | 245,100.00 | |
| | | | |
| Totals | \$6,525,684.00 | 2,434,393.00 | \$1,456,874.00 |
| | | | |
| Percentages | 100.00% | 37.30% | 22.33% |

Individual procurement accomplishments included:

- warrant training in Denver
- learned IDEAS and used successfully to process many DI-1's
- sold 3 boats, 30 motors, fire truck, van, truck, and loader
- transferred Homeland Security property to BOR
- sorting out vehicle credit cards
- completed necessary year-end reports for region
- Contracting officer training in Santa Fe
- disposed of, via donation, all old computer equipment to Colorado City schools
- disposed of trailers at Wahweap, Hite, and Halls Crossing. Wahweap trailer was used for fire training, the other 3 were donated to Colorado City schools
- disposed of scrap metal pile at Wahweap, still trying to dispose of scrap items at Wahweap and Bullfrog boneyards
- updated some of the inventory records; working on the remainder
- disposed of lost and found property from previous summers

AIRCRAFT SERVICES

Glen Canyon operated its new Cessna 206, N2PS, for the full year accumulating approximately 600 flight hours. The new aircraft is equipped with a digital radio for government operations, an integrated TCAD and GPS system for enhanced flying safety, a SAR homer to aid search and rescue efforts, and an AirCell telephone to improve communications with law enforcement and dispatch activities.



N2PS

The old DOI fleet Cessna 206 was transferred to the Kane County (UT) Sheriff's Office after that transfer was authorized in the FY03 DOI Appropriations bill.

BUDGET, FISCAL AND TRAVEL

The budget assistant position was vacated in October 2002, and not filled until the beginning of FY 2004. The administrative support assistant and the fiscal clerk took on these additional duties and responsibilities throughout FY 2003. The administrative support assistant position description was reviewed and rewritten resulting in an upgrade to a GS-6. The fiscal clerk position was re-described.

Sources and amounts of funding for FY 2003 for Glen Canyon National Recreation were as follows:

Glen Canyon National Recreation Area (Fund 01)

| | |
|---------------------|--|
| \$ 9,280,700 | Operation of the National Park Service Base |
| 32,850 | Seasonal Sanitarian |
| 4,500 | VIP Program |
| 25,000 | Regional Botanical Center |
| 35,000 | Whirlwind Mine Clean-up Land Exchange |
| 4,900 | Law Enforcement/Fugitive Apprehension |
| 66,800 | Homeland Security |
| 15,000 | Plesiosaur Excavation and Late Cretaceous Paleontological Research |
| 25,000 | Regional Botanical Center |
| 26,000 | Restore Springs and Riparian Zones in GLCA |
| 7,000 | Contribute to Colorado Pikeminnow Restoration |
| 10,000 | ARPA – FY 2003 |
| 2,300 | Criminal Investigator Pay increase |
| <u>10,000</u> | <u>Drug Funding FY 2003</u> |
| \$ 9,545,050 | Subtotal |

SAR Accounts (Fund 01)

| | |
|------------------|-----------------------------|
| \$ 1,084 | Parks SAR |
| 780 | Fry SAR |
| 943 | Thompson SAR |
| 7,246 | Huang SAR |
| 585 | Skinner SAR |
| 5,636 | Farris SAR |
| 758 | Canyon Ren Too SAR |
| 1,210 | Protzman SAR |
| 1,702 | Bullfrog Fuel Dock Fire SAR |
| 1,148 | Werdine SAR |
| 26,718 | Beckner SAR |
| 1,228 | Walling SAR |
| 2,603 | Slizewski SAR |
| <u>12,281</u> | <u>Kadleck SAR</u> |
| \$ 63,922 | Subtotal |

Special Park Use (Fund 01A)

| | |
|-------------------|----------------------------|
| \$ 34,940 | IBP Permits |
| 16,609 | Special Park Use (Filming) |
| <u>66,398</u> | Construction Set-Aside |
| \$ 117,947 | Subtotal |

Corrective Action (Fund 01)

| | |
|------------------|----------------------------------|
| \$ 76,900 | Halls Crossing Corrective Action |
| \$ 76,900 | Subtotal |

Cultural Cyclic (Fund 01)

| | |
|------------------|---|
| \$ 35,000 | Perform Cyclic Maintenance at Defiance House Ruin |
| \$ 35,000 | Subtotal |

Maintenance Cyclic (Fund 01)

| | |
|-------------------|---|
| \$ 368,910 | Chip Seal Halls Crossing Access Road |
| 237,000 | Refurbish/Paint Water Tanks Wahweap/Bullfrog |
| <u>50,000</u> | Crack Seal and Chip Seal Bullfrog Ferry Access Road |
| \$ 655,910 | Subtotal |

Repair/Rehab FY 2002/2003 (Fund 07)

| | |
|---------------------|--|
| \$ 64,100 | Replace Sewage Flow Meters Lakewide |
| 45,300 | Sewage System Odor Control for Bullfrog and Wahweap |
| 235,500 | Provide a Reliable Potable Water Source at Dangling Rope |
| 20,200 | Replace Failing Water Well |
| 60,000 | Emergency Utility Services Repair Lakewide |
| 495,000 | Rehab Fire Hydrants |
| 36,500 | Replace Obsolete Self Contained Breathing Apparatus |
| <u>603,200</u> | Account Adjustment GLCA 56764 & 61849 |
| \$ 1,559,800 | Subtotal |

Repair/Rehab FY 2003/2004 (Fund 07)

| | |
|-----------|---|
| \$ 12,900 | Dangling Rope Fire Protection |
| 400,000 | Extend Antelope Point Public Launch Ramp |
| 320,000 | Replace Sewage Lift Station at Wahweap Gas Station |
| 390,300 | Repair Water System Components Bullfrog/Hite/Halls Crossing |
| 390,000 | Emergency Utility Services Repair-Lakewide |
| 492,000 | Rehab Dangling Rope Courtesy Docks |
| 76,000 | Claim Settlement for Halls Crossing Sewage |

| | |
|---------------------|---|
| 17,200 | Relocate Cattle Fence to Protect Bullfrog Housing Development |
| 490,000 | Wahweap Water Quality Lab Rehab Project |
| 490,000 | Repair Public Docking Facilities at Rainbow Bridge NM |
| 77,900 | Air Supply System for Emergency Operation; Structure |
| <u>250,000</u> | Rehab Wahweap Ranger Station |
| \$ 3,406,300 | Subtotal |

Equipment Replacement Fund 05)

| | |
|------------------|-----------------------|
| <u>\$ 74,500</u> | Replace Truck Trailer |
| \$ 74,500 | Subtotal |

Housing Rehabilitation Project (Fund 05)

| | |
|---------------------|---|
| \$ 720,000 | Replace 3 Trailers with 2 Duplexes Halls Crossing |
| 531,370 | Replace 2 Trailers with 4 Plex Bullfrog |
| <u>906,420</u> | Replace 3 Trailers with 2 Duplexes Hite |
| \$ 2,157,790 | Subtotal |

Construction (Fund 05)

| | |
|---------------------|---|
| \$ 151,343 | Provide Sanitary Sewage System Wahweap |
| <u>2,079,421</u> | Provide Sanitary Sewage System at Wahweap |
| \$ 2,230,764 | Subtotal |

Quarters (Fund 34)

| | |
|-------------------|--------------------|
| \$ 250,305 | Permanent Quarters |
| <u>44,631</u> | Temporary Quarters |
| \$ 294,936 | Subtotal |

Reimbursable Accounts (Fund 06)

| | |
|---------------------|---|
| \$ 32,460 | Banner Health Services |
| 36,581 | Environmental Compliance (BOR) |
| 5,570 | Old High Water Zone (BOR) |
| 6,816 | Monitor Grazing (USGS) |
| 25,080 | Field Assistance and Logistical Support (BOR) |
| 20,487 | Water Income, Non-Concessioner |
| 3,917 | Electric Income, Non-Concessioner |
| 659,427 | Water Income, Concessioner |
| <u>445,515</u> | Electric Income, Concessioner |
| \$ 1,235,853 | Subtotal |

Fee Demo 70% Projects (Fund 22)

| | | |
|----|---------------|-----------------------------------|
| \$ | 59,444 | Antelope Point Project Management |
| \$ | 59,444 | Subtotal |

Fee Demo 20% Projects (Fund 25)

| | | |
|----|---------------|--|
| \$ | 5,000 | Survey/Eradication of Exotics – San Juan River |
| | 15,000 | Control Exotics in Escalante Drainage |
| | 18,400 | Irrigation System at Lees Ferry/Lonely Dell |
| | 20,000 | Repairs to Glen Canyon Dam Overlook Trail |
| \$ | 58,400 | Subtotal |

Fee Demo 80% Projects (Fund 25)

| | | |
|----|------------------|---|
| \$ | 754,267 | Cost of Collection |
| | 5,138 | Cost of Collection-Utilities/Maintenance for Fee Booths |
| | 13,192 | Collection Capital Improvement |
| | 8,323 | Prospectus Development Wahweap Visitor Services |
| | 116,000 | Concessioner Facilities Improvement Program |
| | 150,741 | Update Wahweap DCP |
| | 45,240 | Parkwide Ruins Preservation Plan |
| | 18,229 | Paleontology |
| | 23,173 | Invasive Plants |
| | 8,533 | History of Glen Canyon National Recreation Area |
| | 20,511 | Action Plans |
| | 25,000 | Survey/Inventory Reptile |
| | 45,018 | Bio Studies at Springs and Hanging Gardens |
| | 698 | Invasive Plant Species Riparian |
| | 298,902 | Low Water Shoreline Sanitation |
| | 21,949 | Outreach Program |
| | 15,269 | Interagency Regulations Brochure |
| | 8,907 | Carbon Monoxide Brochure |
| | 42,806 | Lakewide Graffiti Removal |
| | 10,070 | Wahweap Amphitheater AV System |
| | 3,677 | Upgrade Exhibits |
| | 379,509 | Wahweap Picnic Area |
| | 2,637 | Personal Watercraft Survey and Planning |
| | 34,645 | Remove and Replace 4 Leach Fields |
| | 411,000 | Narrow Band Radios |
| | 10,000 | Replace ROV Sonar System |
| \$ | 2,473,434 | Subtotal |

FY 2003 Fee Demo 80% revenue \$1,617,276.82, FY 2002 carryover \$1,712,826.73

Concession 70% Projects

| | | |
|----|---------------|-----------------------------------|
| \$ | 59,844 | Antelope Point Project Management |
| \$ | 59,844 | Subtotal |

Concession 80% Projects

| | | |
|----|----------------|---|
| \$ | 150,000 | Wahweap Contract and Financial Analysis |
| | 137,000 | Personal Property Valuation |
| | 25,000 | Prospectus Development for Wahweap Visitor Services |
| | 70,000 | Real Property Evaluations |
| \$ | 382,000 | Subtotal |

FY 2003 80% Concession Franchise Fees \$389,573.19 – FY 2002 carryover \$101,661.

Donation Projects

| | | |
|----|---------------|------------------------------|
| \$ | 5,114 | Interpretation |
| | 12,519 | Resources Management |
| | 1,242 | Resources/Visitor Projection |
| | 4,988 | Facilities |
| | 3,257 | Education Program |
| \$ | 27,120 | Subtotal |

FY 2003 Donations \$22,283 – FY 2002 carryover \$25,380.

Federal Highway Funding (Fund 44)

| | | |
|----|--------------|----------------------------------|
| \$ | 3,000 | Rehab Bullfrog & Hite Area Roads |
| \$ | 3,000 | Subtotal |

Grand Total of All Funding Sources for FY 2003 was \$24,517,914.

INFORMATION MANAGEMENT AND TELECOMMUNICATIONS

A new automated work request system was developed internally and implemented. This system now allows computer users to access the work order system without IT support. This system was brought on line in the middle of July and since then has logged over 350 work orders to date 12/10/2003.

Because the preponderance of work items consists of discrete work tasks, the following summary of support to the parks (GLCA, RABR, and NAVA) is provided:

- Attended training on Vesta and installed the equipment in Dispatch and the PBX room in the Headquarters. Vesta is the enhanced 911 equipment used to take emergency calls in Dispatch and is PC based with logging and management support built in. It is owned

by the State of Arizona and maintained by us and Qwest. Installed a new TEAC recorder to meet the needs of Vesta.

- Redesigned the National Park Service/Glen Canyon NRA Extended web pages.
- Installed new radio tower for Navajo NM and upgraded all antennas to meet FCC regulations.
- Completed new telephone cable installation for Wahweap between the DRO and the maintenance complex. Assisted maintenance in conduit and cable install. Procured splices and fabricated grounding straps as needed. Converted all telephones to the new cable and abandoned the old cable.
- Set up satellite training for park staff.
- Setup an antenna at the airport for the new LE channel that BRCA and the BLM will use to communicate with Dispatch. Under agreement GLCA will provide dispatch services to the BLM and the surrounding agencies that need help.
- March FY03, Attended the Annual DOI radio work shop in Las Vegas. Reviewed digital radios with vendors and consulted with other techs on equipment needs and funding issues.
- Turned up satellite data services for Navajo NM and tested bandwidth availability. The old service was 56kbps and the new tested at 400/128kbps.
- Installed new microwave link on Wahweap DRO to Navajo Mountain for Marine 16 and tested. Dispatch now has channel 16 on Navajo Mountain. It has had a license to do so for 15 years and has never been able to use it until now. Dispatch now receives calls from as far away as Lake Mead.
- Worked with Regional Radio Liaison Dale Sorrels and placed 250 digital portables with encryption on order as directed by the Department and projected by the PMIS project submitted earlier. We have obligated \$450k so far with more to come. During FY04 we are projected to acquire base stations and repeaters with 80 mobiles if available.



Telecommunications Specialist Gene Thompson Programming new Digital Portable Radios

- Presented training to all personnel as required on new radios, new computer systems, software, telephones and systems, and associated equipment.
- Installed additional wiring in several locations to provide connectivity for user computer systems.
- Programmed voicemail mailboxes and provided user training as needed.
- Coordinated with and provided requirements to GSA for new site in Navajo Mountain.
- Installed and configured software to help in the control of operating system, and program critical updates. Also established new procedures for handling these updates.
- Approved the order and installed over 50 new computers for users at both Navajo NM and Glen Canyon NRA.
- Upgraded all servers with the exception of the domain controllers to Windows 2003 Server.
- Provided support to all employees at Navajo NM and Glen Canyon NRA on issues concerning computer systems, and telecom systems.

HUMAN RESOURCES

The Human Resources Branch was fully staffed for the first time since August 2001 with the addition of Valerie Hunter as a human resources assistant in January 2003. The staff, which includes the human resources officer, the human resources specialist, two human resources assistants and the civilian payroll technician, provides all human resources/payroll support to 160 permanent and 75+ temporary/seasonal employees at Glen Canyon. The branch also provides employee relations services, recruitment, classification, and personnel processing support to Navajo NM.

The reorganization of the Fee Collection Branch was completed this year, moving all fee operations from the Division of Resource and Visitor Protection. Fee collection operations were moved under the supervision of the Division of Interpretive Services. PMIS, fee remittance, and auditing operations are now under the supervision of the Division of Business Management. The human resource specialist worked with staff of the two divisions and the Fee Branch to make appropriate changes to the organization charts and assisted them in rewriting position descriptions.

Retirements

Retirements were processed for Dan Rudd (facility manager), Sonja Jones (budget analyst), and Bob Davis (maintenance worker) during the year.

Recruitment and Staffing

The following (19) positions were vacant at the end of FY03, were expected to be vacated prior to the end of calendar year 2003, or new incumbents had not yet entered on duty:

Deputy Superintendent, GS-14
 Safety & Occupational Health Spec., GS-12
 Revenue & Fee Business Analyst, GS-11
 Secretary (Concessions), GS-6
 Human Resources Officer, GS-12
 Budget Analyst, GS-12
 Budget Analyst, GS-09
 Chief Ranger (RM/VP), GS-13
 Halls Crossing Subdistrict Ranger (P), GS-11
 (2) Park Rangers (P), GS-09
 Facility Manager (Asst Chief/Maint), GS-12
 Environmental Specialist, GS-12
 Environmental Engineer, GS-12
 Maintenance Worker (Diver), WG-8
 Uplake Maintenance Mechanic Supervisor, WS-10
 Uplake Maintenance Mechanic, WG-9
 (2) Uplake Utility Systems Repairer-Operators, WG-8

Thirty-three permanent positions were filled during FY03:

| <u>POSITION TITLE</u> | <u>SELECTEE</u> | <u>EOD</u> |
|---|-----------------------|------------|
| Maint. Mechanic Supv (BF) (PFT), WS-10 | Eric Smith | 10-06-02 |
| Archeologist (PFT), GS-12 | Chris Kincaid | 10-06-02 |
| Chief, Interpretation Division (PFT), GS-13 | Glenn Gossard | 11-03-02 |
| Admin Support Asst (PFT), GS-5 | Gayle Hartline | 11-17-02 |
| Dispatcher (PFT), GS-5/6 | Patrice Hutton | 12-01-02 |
| Chief, Concessions/Bus Mgmt, GS-13 | William Patrick Quinn | 01-12-03 |
| HR Assist (PFT), GS-5/6/7 | Valerie Hunter | 01-12-03 |
| Park Ranger (P-BF) (PFT), GS-7/9 | Elaine Smith | 01-12-03 |
| Park Superintendent (NAVA), GS-13 | Roger Moder | 02-09-03 |
| Park Ranger (P)(LF SDR)(PFT), GS-11 | Kathy Krisco | 02-09-03 |
| Mnt Mech (Mar. Eqmt)(PFT),WG-10 | Alan Walsh | 02-23-03 |
| Dispatcher (PFT), GS-5/6 | David McClaren | 03-09-03 |
| USRO (HX)(PFT),WG-6/7/8 | Domanic Martinez | 03-23-03 |
| VUA (Lead) (BF) (STF), GS-05 | Fred Robinson | 03-31-03 |
| Park Ranger (P) (HX)(STF), GS-5/7/9 | Kathy Lloyd | 04-06-03 |
| Park Ranger (P)(DR SDR)(PFT), GS-11 | Richard T. Moore | 04-06-03 |
| Park Ranger (P)(HX)(STF), GS-5/7/9 | Mark McCool | 04-06-03 |
| Park Ranger (P)(WW)(STF), GS-5/7/9 | Shannon Hope | 04-06-03 |
| Park Ranger (P)(BF)(STF), GS-5/7/9 | Jason Lux | 04-06-03 |
| Park Ranger (I)(DR)(STF), GS-5/7/9 | Charles Smith | 04-20-03 |
| Rangeland Mgmt Spec (SCEP),GS-9/11 | Steven Bekedam | 05-04-03 |
| Park Ranger (P)(WW)(SCEP), GS-5/7/9 | Kenneth Barend | 05-11-03 |
| Park Ranger (P)(BF)(PFT), GS-5/7/9 | Jason Bauwens | 05-18-03 |
| Park Ranger (P)(BF)(STF), GS-5/7/9 | Chad Marin | 06-15-03 |
| VUA (Remit)(HQ)(STF), GS-05 | Sandra Baughman | 06-29-03 |

| | | |
|-----------------------------------|----------------|----------|
| VUA (Remit)(BF)(STF), GS-05 | Ricky Steele | 06-29-03 |
| Environmental Spec (PFT), GS-9/11 | Brian Wright | 06-29-03 |
| Electrician (HV)(WW)(PFT), WG-11 | Tod Goodall | 07-13-03 |
| Maint Mech Ldr (BF)(PFT), WL-10 | Stanley White | 08-10-03 |
| Fac Mgmt Asst (HQ)(PFT), GS-06 | Pamela Havens | 08-24-03 |
| Secretary (PFT), GS-06 | Susan Perkins | 08-24-03 |
| Supv Park Rgr(P-DR) (PFT), GS-12 | Rick Bennett | 09-21-03 |
| Supv Park Rgr(P-DR) (PFT), GS-12 | Steve Luckesen | 09-21-03 |

Position Classification

New Permanent Positions Established:

Concessions Mgt Spec., GS-1101-12
 (2) VUA, GS-303-05
 Supv Park Ranger (Chief, Interp), GS-025-13
 Park Ranger (Sci Ed Spec), GS-025-07/09
 USRO, WG-4742-08
 Maint. Worker Supv, WS-4749-05 (NAVA)
 Maint. Worker, WG-4749-06 (NAVA)
 Student Trainee (Admin Tech), GS-399-05 (NAVA) Establish new position

New Term Positions Established:

Biologist, GS-401-09

New Temporary Positions Established:

MVO, WG-5703-07
 Bio Science Tech, GS-404-05

Other Classification Actions:

From:

Rangeland Mgt Spec., GS-454-11
 classification
 Supv. Concessions Mgt Spec., GS-1101-13
 1101-13
 Secretary (OA), GS-318-06
 classification
 Conc. Mgt Asst. GS-1101-07
 Budget Analyst, GS-560-12
 classification
 Budget Tech, GS-561-06
 Admin Support Asst, GS-303-05
 Fiscal Clerk, GS-503-05
 Contract Spec., GS-1102-12
 Supv. Park Ranger (Chief, RM/VP), GS-025-13
 classification

To:

Redescribed, no change in
 Conc. & Business Mgt Spec., GS-
 Redescribed, no change in
 Conc. Mgt Spec., GS-1101-09
 Redescribed, no change in
 Budget Analyst, GS-560-09
 Budget Tech, GS-561-06
 Budget Tech, GS-561-05
 Contract Spec., GS-1102-13
 Redescribed, no change in

| | |
|---|-----------------------------------|
| Criminal Investigator, GS-1811-11 | Criminal Investigator, GS-1811-12 |
| Supv Park Ranger (Dist Interp), GS-025-11 classification | Redescribed, no change in |
| Facility Mgr, GS-1640-12 classification | Redescribed, no change in |
| Environmental Spec., GS-401-12 classification | Redescribed, no change in |
| Facility Mgt Asst, GS-303-06 classification | Redescribed, no change in |
| Electrician, WG-2805-11 | Electrician (HV), WG-2810-11 |
| Maintenance Mechanic, WG-4749-10 4749-10 | Maint. Mech. (Marine Eqpmt), WG- |
| Maint. Mechanic Leader, WL-4749-10 classification | Redescribed, no change in |

Office of Workers Compensation Program

In FY03 there were 26 new on-the-job injury claims processed. Seven of these incidents resulted in lost time. There were 718 Continuation of Pay hours during this period.

Incentive Awards

Glen Canyon National Recreation Area presented the following awards to employees:

| | |
|-----------------------|----|
| Time-Off Award | 38 |
| Star Award | 11 |
| Quality Step Increase | 1 |
| Non-Monetary Award | 5 |

Drug Testing

All required drug testing of permanent and temporary employees was completed and negative results were established for all employees tested.

Employee Development

Training courses offered at Glen Canyon National Recreation Area this year included:

- DOIMOCC
- Fee Collection Training
- Law Enf. Refresher
- CPR
- Cultural Diversity
- Dive Training
- HazMat

Retirement Workshop
Seasonal Orientation
SmartPay Credit Card
Safety Courses/Exercises
Structural Fire

III. BUSINESS MANAGEMENT

“Changes” and “challenges” were the operative descriptors for the previous Division of Concessions, reorganized into the Division of Business Management. The Divisions of Management, Concessions, Interpretation, and Resource and Visitor Protection were all affected by a reorganization plan that was gradually implemented during the 2003 fiscal year. In November, Chief of Concessions Kathy Fleming transferred to Denver as a Contract Specialist with the WASO Concession Program and Management Assistant Charlotte (Char) Obergh served out the remainder of calendar year 2002 as Acting Chief.

The function of Fee Collection was removed from the Division of Resource and Visitor Protection and further divided into fee collection remittance and audit and fee collection operations. The collection of fees was integrated into the Interpretation Division while the responsibilities for fee collection remittance and audit fell under the organizational control of Business Management. The special park use coordinator position, previously within Management, was also added to form the new division made up of revenue producing activities. William P. Quinn, chief of operations at Petrified Forest NP, accepted the newly established position of chief, business management in January of 2003. These organizational changes brought a staff of different personalities and expertise together to face a variety of interpersonal, functional, operational and business management related challenges and issues. Throughout the year the division continued to experience staffing changes, operational and functional reconfigurations and issues that overall resulted in work efficiencies and the sharing of workload. In addition, the staff focused on strategies and methods to improve the flow of information to the public, increase business and user compliance with permit conditions, and oversee and increase compliance of NPS laws, regulations, and policies by the visiting public and business entities engaging in illegal or inappropriate activities.

The majority of the staffs’ time and efforts were spent on the issues of concession contracting, boat brokering, unauthorized timeshare/rental use, homeless boats, moorage/storage lease, Antelope Point construction management, and updates to the Incidental Business Permit Conditions.

CONCESSIONS CONTRACTS

ARAMARK Sports and Entertainment Services, Inc., d.b.a. Lake Powell Resorts and Marinas, CC-GLCA003-69 (Downlake)

ARAMARK marketing and advertising staff did a tremendous job identifying visitor vacation packages for houseboat rentals and lodging and other recreational opportunities this season. Retail outlets received new flooring and displays. The Wahweap campground store, showers/laundry construction was completed and opened for the summer season adding another quality visitor facility.

ARAMARK and National Park Service staff continued open communications on several issues including the new boat brokerage program, slip renter agreements and closing the loop on the homeless boat program. ARAMARK continues to excel in their approach to

recycling and other avenues such as alternate fuel vehicles and household cleaning products that are environmentally friendly.

Accessibility to water facilities continued to challenge ARAMARK with lower lake levels. New temporary low water parking, loading and unloading areas were developed to provide visitors with much needed accessibility. On a daily basis, walkways were being moved further out as pictured below. At boat rentals, ARAMARK continued providing free porter service at Stateline for transporting visitor's supplies to rental boats.



Wahweap Docks/Walkway

ARAMARK Sports and Entertainment Services, Inc., d.b.a. Wilderness River Adventures, CC-GLCA001-93

The concessioner continued providing quality interpretive visitor services this year under another extension to their authorization. The Colorado River Recreation Survey is 97-percent completed and will provide information that can be used in developing a prospectus for guided interpretive river trips for the future.

A total of 38,988 passengers enjoyed the guided interpretive river trips on the 15-mile stretch of the Colorado River through Glen Canyon to Lees Ferry in FY 2003. Wilderness River Adventures provided backhauling services for 60 kayak/canoe/dory boat customers on the river this past year.

Downlake Concessions Specialist Jacki Blais served on a concessions contract panel for river operations at Buffalo National River to provide her with the expertise to develop the prospectus for the river contract next year.



Concessioner Float Trip on Colorado River

Arizona Department of Economic Security, d.b.a. Lake Powell Glen Canyon Gift Shop, CC-GLCA017-95

Homeland security became a driving force in implementing security measures for the Carl Hayden Visitor Center managed by the Bureau of Reclamation (BOR) where the Lake Powell Glen Canyon Gift Shop was located. The gift shop had operated under extension letters in providing services after their authorization expired on December 31, 2000. Through discussions with Arizona Department of Economic Security, the National Park Service and Bureau of Reclamation, the decision was made to extend the gift shop authorization through February 28, 2003 to allow the current operations to transition to a new location.

The gift shop continued providing quality merchandise and service for visitors until December 31, 2002 after which they moved their operations to another location out of Glen Canyon National Recreation Area.

ARAMARK Sports and Entertainment Services, Inc., d.b.a. Lake Powell Resorts and Marinas, CC-GLCA002-88 (Uplake)

Low water problems continue to have a significant impact on the concessioner's operations. The changing lake levels required continual relocating of docks and breakwaters and the addition of new anchors.

Due to heavy silt loads on the Colorado River and Bureau of Reclamation projections for lower lake levels this fall and winter, the floating facilities at Hite Resort and Marina were moved downlake to either Bullfrog or Halls Crossing marinas. The buoy field remained in the Hite area. The land-based facilities (store, fuel, housekeeping units, dry storage, and camping areas) also remained open to the public.

As a result of the lowering lake levels and the many challenges it has brought, the National Park Service will initiate a planning effort next fiscal year to address how to meet these challenges and continue to protect park resources and provide quality visitor services. This planning effort will cover the entire uplake area including Hite, Halls Crossing, and Bullfrog.



Hite Marina

The ferry docking station for Halls Crossing continues to be at the public launch ramp and the docking station at Bullfrog has been moved from the public launch ramps to several locations at Hobie Cat Beach to allow this service to continue as the water level drops.

Antelope Point Resort and Marina, CC-GLCA007-03

The concessions contract for Antelope Point Resort and Marina was signed by the Director on January 21, 2003. The Navajo Nation Business Site Lease and the Bridge Agreement between the Navajo Nation and the National Park Service have both been signed.

The project began in May 2003 with a completion date of 2013. The development provided for in the concession contract with the National Park Service will include a marina complex with 300 rental slips, boat rentals, interpretive boat tours, and other marina services.

Phase I building improvements on Navajo Nation land is to include marina/boat rental parking areas, boat repair facility, boat dry storage area, RV campground, formal tent campground, camp store, shower/laundry facilities, RV/porta-potty sanitation dump station and infrastructure development for water and electrical distribution.



Construction at Antelope Point Marina

Page Hospital, CP-GLCA021-94

The staff in the Bullfrog Medical Clinic extended the operating season by opening on weekends in April and by staying open several weekends after the normal closing date. Work has started on the prospectus for a category II contract for the medical services in the uplake area.

The staff operated the clinic an extra 12 days this season. The patient load for the seasonal operation was 1,186 patients which was 128 less than last year.

High Desert Adventures, CP-GLCA020-95

High Desert Adventures concession permit was not renewed by the National Park Service when it expired by its terms December 31, 2002. The Incidental Business Permit program provided opportunities to continue to conduct commercial activities within Glen Canyon National Recreation Area.

FEE DEMONSTRATION PROGRAM

The fee kiosks opened the first week in March and were closed in late October which was earlier than in previous years. This was done to help reduce the cost of collection. Additionally, the reception desk at headquarters was set up for collection of commercial business and special use permit sales.

Revenue for this year was down 16.2%. Hite Marina launch ramp and camping areas at Bullfrog South and North, Stanton Creek, and Farley Canyon were either closed or inaccessible. All of the closures were due to the low water level of Lake Powell. Visitation economics were slower due to the wars and higher gasoline prices. Antelope Marina was operational which also affected our revenue percentage.

In years past, the entire Fee Program had been administered by the Division of Resource and Visitor Protection but was restructured this year and was divided into two separate functions, money collection and fee operations. The Business Management Division now verifies money collection and the Interpretation Division now handles fee operations. This creates a division between collection and verification of funds within the Fee Program which is structurally a very sound method of accountability for the revenues collected.

The Fee Program assisted with the training for employees at Antelope Point Holdings entrance station for the summer season. We opened and operated their fee booth, then handed off a smooth running fee collection operation which enables consistency park-wide for our visitors.

Golden Age Passport swipe cards were implemented this year, and Fees was asked to replace all old (paper) Golden Age Passports. This is a newly upgraded program, integrated into the recreation area's existing Advantage program which then enables WASO to track these cards when they are used at parks on the same program.

The entire uplake remit operation was moved to the existing downlake operation and this will continue next year as a pilot program. This change will allow us to establish continuity in the remit operation. We also had no personnel uplake to fill the vacant remit positions. Housing was not available for these positions and is one of the major issues.

INCIDENTAL BUSINESS PERMITS

The Incidental Business Permit (IBP) program saw a change in personnel as Valerie Hunter moved on to a position in Human Resources in January 2003. Rick Moore, Fee and Revenue Business Manager, took over the program in addition to his own duties.

The annual Business Partner's Workshop was held in Page in February 2003 to recognize partnerships between the National Park Service, IBPs, and local community groups. The workshop provided specific informative presentations and allowed group interaction and opportunity for participants to attend presentations geared toward their specific interests or needs.

FY 2003 saw a major overhaul of the IBP program. Current permit holders were advised of this review and their permits were extended until all aspects of the permitting process including clarification of conditions and requirements of the permits could be reviewed and revised where necessary. By October 2003, review and revision of IBPs for Boat Caretaking, Incidental Repair, Launch & Retrieval, Hiking Tours, and Land based Tours had been completed and new application packets had been sent out to current permit holders and other interested parties. It was anticipated that the new IBPs for Fishing Guide – Colorado River and Fishing Guide – Lake Powell would be completed by

November 2003. Work continues on IBPs for Hunting Guide, Specialty Services, Kayak/Canoe Tours, Scuba, Waterski/Wakeboard Instruction, and Marine Salvage.

Because of the time and energy that goes into the permitting process, IBP fees including the nonrefundable \$125 application fee and the \$300 permit fee were determined to be annual in nature and will be charged regardless of status of an application, be it “new” or “renewal.” The cost of any permit monitoring is included as part of the permit fee.

Because of the revision of the IBP program and the extension on existing permits, relatively little gross revenue was collected and deposited for the IBP program in FY 2003. Cost recovery for the fiscal year was \$14,515.00. Cost recovery will be substantially higher for FY 2004 with the roll-out of the revised IBPs.

FY 2003 began with a total of 148 active IBPs and ended with a total of 133 as noted below:

| <u>October 02</u> | <u>Incidental Business Permit</u> | <u>September 03</u> |
|-------------------|-----------------------------------|---------------------|
| 28 | Boat Caretaking | 26 |
| 27 | Incidental Boat Repair | 25 |
| 10 | Specialty Services | 9 |
| 33 | Launch & Retrieval (all types) | 29 |
| 20 | Fishing Guide Service | 18 |
| 13 | Hiking (w/ and w/o packstock) | 11 |
| 2 | Hunting Guide Service | 1 |
| 1 | Instruction (Water Ski/Wakeboard) | 0 |
| 9 | Kayak Instruction/Excursions | 9 |
| 2 | SCUBA | 2 |
| 2 | Land Tours | 2 |
| <u>1</u> | Salvage | <u>1</u> |
| 148 | | 133 |

SPECIAL PARK USES

Marianne Karraker continued in the position of special park uses coordinator as the position was moved from Management to the Business Management Division in January 2003.

Filming in the park began to show a rebound with 33 film permits issued in FY 2003 compared to 27 in FY 2002 and 37 in FY 2001. However, there was a decrease in the number of other special use permits for activities such as weddings, fishing tournaments, and 1st Amendment activities. In FY 2003, 41 such permits were issued as compared to 51 in FY 2002 and 29 in FY 2001.

Commercials and advertisements, particularly still photos, continue to generate the most filming at GLCA. Projects included the following:

- Feature film segment for “The Hulk” from Universal Studios
- Automobile advertisements for Subaru, Jeep, Lexus and Toyota
- The Sports Illustrated swimsuit edition
- Various travelogues and documentaries particularly aimed at foreign audiences
- Numerous fashion and product shoots

Locations included the Wahweap developed area, Lone Rock, Padre Canyon, Muley Point, Cathedral in the Desert, Antelope Point, Romana Mesa, Rainbow Bridge National Monument, Navajo and Labyrinth Canyons, the Hite area, the Colorado River and Lees Ferry.

There were 78 permitted shooting days in FY 2003 with a total film permit cost recovery of \$29,839.00. This is in contrast to FY 2002 with 60 permitted shooting days and a cost recovery of \$12,319.75. Although we haven’t recovered to the level witnessed in FY 2001 (133 filming days and \$57,717.00 in cost recovery), there are definite signs that filming at Glen Canyon NRA is on an upswing.

Foreign crews seem to be returning to the United States to film even though the U.S. dollar is still relatively strong compared to other currencies. U.S. based crews are “discovering Glen Canyon NRA” via the internet, information they receive from other park units, and area location scouts. Unfortunately, the Arizona Film Commission did not survive budget cuts and so we have lost a great partner in filming within the state. The Utah Film Commission continues to operate but relatively few film crews were referred to Glen Canyon by the commission in FY 2003.



Filming at Glen Canyon NRA

Special use permits were also issued for other activities including the following:

- 7 fishing tournament schedules
- 14 church services, baptisms, and weddings

- 10 community group, youth group or school activities
- 1 search & rescue type training session
- 4 four-wheel-drive or ATV safaris

One permit request for a “wake surfing” rally was turned down for several reasons. This “new” sport involves a person on a surfboard surfing the wake of a powerboat. The requesting party was less than honest about their intentions and the commercial aspect of the rally. It was also discovered that they had been advertising the event on a website before the permit had been approved. Additionally, it was researched and determined that the risk of Carbon Monoxide poisoning from such an activity was too great to promote such activity at Glen Canyon.

There were 98 permitted activity days associated with other special use permits in FY 2003. Locations utilized included the Wahweap developed area (particularly the picnic area and swim beach), Lone Rock, Wahweap and Warm Creek Bays, the Hole-In-The-Rock Road, Lees Ferry, and the Bullfrog area.

Total special use permit cost recovery for activities other than filming was \$4,200.00.

In addition to coordinating special park use permits, Marianne also serves on the Glen Canyon NRA/Navajo NM EEO Committee as the chairperson and as an EEO counselor.

IV. INTERPRETATION

FY03 BUDGET

| | |
|--------------------------------------|---------------------|
| Glen Canyon ONPS | \$ 516,000 |
| Rainbow Bridge ONPS | \$ 14,500 |
| TOTAL, ONPS | \$ 530,000 |
| Out Reach Program | \$ 19,616 |
| Interagency Reg. Brochure | \$ 14,992 |
| Carbon Monoxide Brochure | \$ 8,907 |
| Lakewide Graffiti Removal | \$ 41,582 |
| Low water shoreline Sanitation | \$ 43,926 |
| WW Amphitheater AV System | \$ 10,419 |
| Upgrade Exhibits | \$ 3,677 |
| Cost of Collection | \$867,211 |
| Cost of Collection Capital | <u>\$ 9,743</u> |
| TOTAL, Other Sources | \$1,020,073 |
| TOTAL, ONPS and Other Sources | \$ 1,550,073 |

STAFFING

7.0 permanent FTEs
4.9 temporary FTEs
11.9 total FTEs

Glenn Gossard was chosen as the new chief of interpretation in November. However, due to his acting detail as superintendent at Navajo National Monument, the position continued to be filled through acting designations until mid-January. The subdistrict interpreter position at Rainbow Bridge was filled by Chuck Smith. The education specialist term position ended in May. Joan Mayer a permanent, subject to furlough, education specialist was hired in September.

VISITOR CONTACTS

| | |
|--|---------|
| Carl Hayden Visitor Center | 482,635 |
| Navajo Bridge Interpretive Center | 41,683 |
| Bullfrog Visitor Center | 3,426 |
| Wahweap amphitheater programs | 1,720 |
| Defiance House (due to difficult access because of low water & limited staff Defiance House was not staffed this year) | |
| Petroglyph Panel | 3,561 |

| | |
|--|--------|
| Roving assignments—general | 52,445 |
| Roving—lake water quality/low water shoreline initiative | 7,859 |
| Special events | 569 |
| School programs | 1,163 |

Total Interpretive Contacts 595,061

Interpretation continued to support the Critical Incident Stress Debriefing (CISD) program this year. We also performed CISD’s for NPS, local EMS providers, concession employees, and visitors.

PARK-WIDE ACCOMPLISHMENTS

This year was the beginning of a new reorganization park-wide. All the park’s fee collectors were placed under the supervision and management of the Interpretation Division. It was hoped that this move would provide better training for fee collectors so they could improve the quality of information given to visitors. It was also seen as an opportunity for those fee collectors interested in getting cross-training in interpretation to be able to spend some time doing interpretive activities. It was a learning year for everyone, but overall, it was successful in meeting both goals. Fee collectors were able to spend time nearly every week going out with interpreters on land and water, making visitor contacts, and getting “hands on” experience in the differences between information, education, and interpretation. Nearly everyone agreed the experience was a positive one and expressed a desire to continue the program next year. With the lessons learned from the first season, the program should be even more successful next year.

No Carbon Monoxide (CO) Related Deaths at Glen Canyon in FY03! One of the reasons for this accomplishment was an intense effort to provide information and interpretation on CO poisoning to our visitors. This effort took place in the form of; development and printing of a special brochure, the park newspaper, booths at boat shows, personal contacts with visitors in the park and outreach efforts coordinated with park partners.

During FY03, visitor center staff park-wide responded to 6,463 requests for information (5018 phone, 1445 email or letter).



Park-wide seasonal training included our partners in interpretation - Glen Canyon Natural History Association, ARAMARK, Utah Parks, Navajo Parks and Recreation, the Bureau of Reclamation, and Navajo National Monument. Our student intern from Northern Arizona University used a wheelchair for mobility which provided new challenges and wonderful leaning experiences for the team.

Interpretive seasonal training



Page School Children Learning from Botanical Learning Center

NPS and Page Unified School District staff along with dozens of enthusiastic hard working volunteers transformed a long neglected fallow greenhouse into a sensational botanical learning lab for students, teachers and community members within a few short months of this monumental restoration effort. Using grant money from NPS and other sources, the facility now grows hundreds of native plants destined for public and private re-vegetation projects in the local area. Students and teachers are central to the success of the greenhouse. Their delight in learning and zest for inquiry will steer the center toward its major

objective; which is to offer an exceptional opportunity for students to connect with and respect their “own back yard”- a theme central to the mission of the National Park Service. Glen Canyon NRA is fortunate to have such a responsive school system and willing community to partner with on this project. We hope the Botanical Learning Center contributes to the academic assets of this community while improving the ecological integrity of the Colorado Plateau. Numerous NPS volunteers have contributed to the center becoming a reality. This center will produce transplantable native species for regional restoration efforts and provide a curriculum based science education opportunity for students from this region.

DOWNLAKE DISTRICT

Carl Hayden Visitor Center Subdistrict

Staffing was reduced this year at Carl Hayden Visitor Center (CHVC). One permanent park guide position was eliminated. The primary staff consisted of one permanent full-time supervisor; one full-time park guide and two seasonal employees. (Three STF park guides, fee collection supervisors, were also used for short periods of time throughout the winter.)

A big project this year has been the continued work on the exhibit rehab at CHVC. We have been working on a Comprehensive Interpretive Plan (CIP) for this facility. The CIP will be used to develop an exhibit plan for this facility and as we go before the Development Advisory Board to justify funding for this plan. We have been very successful in getting the BOR staff to understand the value of interpretation and they have been very willing to work with us on the CIP.

The CHVC supervisor edited and published Glen Canyon Reflections, the park newspaper, with extensive help from all park staff.

CHVC hosted 482,635 visitors during 2003, a drop of 5%. We continue to see a reduction in visitation at least partially due to broader and more stringent security measures that were implemented at the



Carl Hayden Visitor Center

dam after September 11th. The audio-visual program was viewed by 38,567 people. CHVC is normally open year-round, with the exception of Thanksgiving, Christmas, and New Year's Day, with extended hours (8 a.m. – 7 p.m.) mid-May through mid-October.

Wahweap Subdistrict

Staff included one permanent full-time ranger, six seasonal rangers, one SCA, and four volunteers.

The downlake water quality patrol program was led by interpretation in harmony with Protection, Resource Management and Maintenance. Joint patrols (Resource Protection and Interpretation) took place a couple of times with great success. There was only one beach closure this year. The success of this program is due to the commitment of the interpretive staff to provide personal interpretive contacts with visitors using the park resources in the field.



This was a great year for cooperation between the park concessioner, ARAMARK, and the Interpretive Division. Eileen Martinez, acting downlake district interpreter, worked closely with the Wilderness River Adventures staff in implementing a stronger interpretive element to their raft trips. This led to the best year ever for providing interpretation to visitors on the one day float trip from the base of the Glen Canyon Dam to Lees Ferry.

Colorado River Float Trips

Eileen received the Colorado Plateau Cluster Freeman Tilden Award for her involvement in this program.

The graffiti ranger and the Graffiti Removal and Intervention Team (GRIT) really got off the ground this year. A houseboat was donated to the park as a base of operation for the **True GRIT** program. One seasonal and a volunteer were the leaders of this program. The seasonal, Dale DeVries, worked to get all the supplies needed for the program including getting the houseboat equipped. He also worked to get volunteers for the program. The primary volunteer, Joy Dennis, successfully completed the Department of the Interior, Boat Operator Certification Course and was the primary pilot and leader for volunteer groups who went out to remove graffiti. This program entailed volunteer coordination, personal contacts, media development and close cooperation with Resource Management and Protection.



True GRIT Cleanup Project

Eileen Martinez, Wahweap Subdistrict Interpreter chaired the Lake Powell Water Safety Council. This involved tracking projects funded by private/public partners, planning and running the Lake Powell Water Safety Council meetings (every other month), coordinating and distributing the 'Visitor of the Week' award and leading the outreach subcommittee. She collaborated with agency personnel and the NHA to complete and print the Interagency Boating Regulation brochure. This brochure helps visitors to understand the regulations within the park as it puts the federal and both state regulations in one place for easy access by the visitor.

Increasing emphasis was placed on having park personnel attend three boat shows. Personnel attending shows in Arizona, Utah, and Colorado provided information and interpretation, in addition to seminars. This participation continues to be one of our most effective and efficient communication tools.

Lees Ferry Subdistrict

Navajo Bridge Interpretive Center (NBIC) hosted 41,683 visitors during FY03. The facility opened in mid-April and closed in mid-November. It was staffed 50% by NHA employees and 50% by GLCA seasonal interpreters and a student intern. The NHA employed 2 maintenance and 2 bookstore staff. Sales of interpretive items were up this year. NBIC is getting closer to being self sufficient but is still being supported by sales from other locations in the park.



Navajo Bridge Interpretive Center

Lees Ferry interpreters worked at Navajo Bridge frequently which allowed them to provide extra coverage at this facility.

This year at Lees Ferry we were able to establish a 24/36 seasonal position. We were able to get half of the funding for this position from the Grand Canyon. Our seasonal, Allen Malmquist, has done an outstanding job of not only interpreting the resource but also getting the historic structures to a point where they can be viewed by the public. Allen has worked closely with the Resource Management staff to follow through with many cleaning and stabilization projects within the two historic districts.

Coordination with BLM (Paria/Vermilion Cliffs NM) is ongoing in efforts for signage and interpretive messaging and with the Peregrine Fund in interpreting the daily presence of California Condors at the Navajo Bridge Interpretive Center. We are also working on a partnership with the BLM in support of NBIC.

Dangling Rope/Rainbow Bridge Subdistrict



Rainbow Bridge National Monument

Operations at Dangling Rope and Rainbow Bridge were covered pretty well although the seasonal staff was cut from two to one.

Chuck Smith and Paul Nelson were both very committed to providing a high quality program at Rainbow Bridge and visitors were well served by both of them. Due to the length of the trail at low water and the extreme heat of the canyon, visitor safety was their top priority.

UPLAKE DISTRICT

Bullfrog Subdistrict



Bullfrog Visitor Center/Uplake District Office

Bullfrog Visitor Center saw 3,426 visitors during FY03, a significant decrease from the previous year. The Visitor center was open from mid-April through September. It was open weekends only through mid-October. A new Glen Canyon Natural History Association (NHA) clerk, Danny Rhodes, was hired at the beginning of the September and brought a new enthusiasm along with fresh ideas to the job. Retail sales in September and October nearly equaled the sales from mid-April through

August. The NPS still relies on the NHA to staff the visitor center. This year, because of reduced interpretive staff, the visitor center was closed when the clerk was not working. The visitor center retail operation does not support itself but is critical in orienting park visitors within the uplake district.

With declining lake levels and dwindling budgets, the uplake interpretation operation faced many challenges this year. There was no lead seasonal position this year and only two seasonal interpreters on staff from May through September, a 50% reduction. Max King was the uplake district interpreter (DI) and the only permanent interpretive staff in the Uplake District.

No overnight water quality patrols were possible this year and no joint patrols (Interpretation and Protection) were undertaken. This was due in part to having only one boat available and in part due to reduced staff. Increasing demands of fire duty and Homeland Security details often left the law enforcement division short-staffed. However, daily water quality patrols continued and were, in fact, the primary focus of the interpretive operation uplake. The scope of these patrols has broadened in terms of the kind of information and education they provide to visitors. No longer is the emphasis *only* on water quality (though it still continues to be a primary topic).

Carbon monoxide safety information, general boating safety, and low water issues also dominated our conversations with visitors. For the first time in several years, there were no carbon



monoxide-related fatalities on the lake. This program remains very popular with the public and is still our primary venue for educating and informing the public on a variety of park issues.

Interpretation was very involved in the low water issues this summer. With the lake nearly one hundred feet below full pool, it was critical that visitors receive accurate and up-to-date information on conditions. When possible, the interpreters worked the launch ramps on busy weekends to help ensure safe launching and inform visitors of lake conditions. Because of the low water, the Defiance House archeological site was very difficult to access this year. Interpreters made only four or five trips to the site during the season. This may have been a blessing in disguise, since it would have been impossible to maintain coverage at Defiance House and keep the water quality patrols going with any kind of regularity.

Two popular vehicle-accessible camping beaches, Bullfrog North & South, were also closed due to low water conditions. This left only one primitive camping area, Stanton Creek, open. Interpreters spent time roving there when they were not out on the water.

With the park's web pages consuming more and more time, the DI turned over webmaster duties to the Information Technology branch. However, he still reviews all web page content before posting and works with the Interpretation Division to create new web pages.

Interpretation provided direct logistical support to the Protection division in the way of assistance with SAR's, body recovery, and investigations. Boats and personnel were provided for SAR's and body recoveries. We also provided maps and other graphic support for several law enforcement operations. DI continued to serve as a Peer Counselor this year, providing Critical Incident Stress Debriefings for park personnel, concession employees and family members involved with fatalities.

Halls Crossing Subdistrict

Due to staff cuts, there was no seasonal stationed at Halls Crossing this year. Interpreters from Bullfrog were scheduled to spend some of their time at the contact station and the marina; however, this only averaged a total of about 8-16 hours per week.

In early August, we were able to obtain the services of Ollie Goulet as a Volunteer-In-Park. He worked at the contact station and the marina, making visitor contacts and providing information and education on a variety of relevant topics.

Hite Subdistrict

This Subdistrict was staffed by one seasonal.



Low Water Conditions at Hite

Hite was severely impacted by low water this year. So much so, that by August, water based operations at Hite essentially shut down. The marina operation, including boat rentals, slips, gas dock, and marina store moved from Hite downlake to either Bullfrog or Halls Crossing Marinas. None of the popular camping areas (Farley Canyon, White Canyon, and Dirty Devil) had any lake access and were virtually deserted by mid-summer. The only camping around Hite with limited lake access was at the Hite Marina and even that became unusable by the end of August. As the summer wound down, the lake retreated south and the Colorado River returned to Hite.

The park's lone seasonal interpreter, Deanne Haut, was kept busy at Hite dealing with the impacts of low water on visitors. She assisted other Hite rangers in providing information to visitors, helping people launch at the temporary launch ramp, and directing visitors to other alternative recreation sites on the lake.

Deanne also spent time on a special project assigned by the district interpreter. She put together a complete development plan for the Hite Overlook. This overlook, on the west side of the river, is directly adjacent to Highway 95, the only paved route through the area. It is a natural stopping place for people traveling this road and is utilized by many people who, otherwise, would not receive any information about Glen Canyon NRA. Deanne did general design work for facilities, exhibits, trails, restrooms, and picnic areas. She got estimates for facilities and materials, identified sources and alternatives, and checked all regulatory requirements. She presented this final pre-plan to the district interpreter in a well organized, easy to use form. Due to her diligent work, this project could begin immediately if a funding source is found.

VOLUNTEER-IN-PARKS PROGRAM

The Volunteer Program at Glen Canyon National Recreation Area continues to provide opportunities for active stewardship at Lake Powell and in our rugged backcountry. Our Graffiti Removal and Intervention Team led a two-pronged approach to removing non-historic graffiti from the beautiful sandstone walls of Lake Powell. Regional community groups, including several Boy Scout troops, spent entire days scrubbing with wire brushes, supplemented by sprayed water, the primary tools we use to remove this blight. Groups of volunteers also set sail on the newly donated anti-graffiti houseboat, "True GRIT," removing these unsightly markings from secluded coves and narrow inlets, during their five-day stints on the lake.



Trash Tracker Crew after a Successful Trip

The Trash Tracker program, in partnership with Lake Powell Resorts and Marinas, Inc., for more than a decade, had another very successful year. ARAMARK provides a houseboat, chase boat, and pilot and we provide volunteers. Many volunteers returned for their 3rd or 4th time. Almost 60,000 pounds of trash was removed from 461 miles of Lake Powell's shoreline, including 28,815 aluminum cans, over 4,000 feet of rope, and 1,582 golf balls.

Local volunteers continue to support our interpretive and outreach programs, guiding visitors and local residents on challenging four-wheel drive trips and other interpretive adventures. Volunteers also provided invaluable assistance to our resource management programs, participating in bird counts, water quality assessment, and other data collection activities. Our cadre of volunteer stewards is growing daily. As mentioned under the Park-Wide Accomplishments Section above, volunteers have been critical to our success in getting the Botanical Learning Center operational.



Local Volunteers at Work on Botanical Learning Center

GLEN CANYON NATURAL HISTORY ASSOCIATION

The post 9-11 challenges the Association has faced carried over into FY 2003. With visitation continuing to drop, sales also fell and all remaining cash reserves were used to fund the Association through the winter of 2002-2003. In December, 2002, Operations Manager Janine Kelly was seriously injured in an automobile accident. In January, 2003, Executive Director Lynn Baca resigned. Cindy Adams agreed to serve as acting Executive Director until the Board could find a permanent replacement. Cindy guided the Association through a very difficult winter, selling off old inventory in order to raise cash.

In April 2003, the Board hired Kirk W. Robinson as the new Executive Director. Kirk had been an Association Branch Manager at Denali National Park & Preserve, as well as General Manager of both Barnes & Noble and Borders bookstores. To raise cash quickly, Kirk completed the liquidation of the old inventory and fully automated the Association's administrative and operational systems. This automation allowed Kirk to consolidate the work-load of three employees and saved the Association about \$30,000 for the fiscal year. The Association also launched a new web site, considered to be the finest of any cooperating association.

Through April and May, the Association brought in over 100 new book titles appropriate for GLCA and the Colorado Plateau. These new books helped to improve sales and create interpretive opportunities. In June, the Association began a new membership program that brought in 200 new members before the end of the fiscal year. The Association also renegotiated its relationship with the Bureau of Reclamation. This allowed the Association's Glen Canyon Dam Tour Guides to interact directly with NPS Interpreters in order to deliver a more cohesive message to visitors.

The Association administered the grant funding for the Regional Botanical Learning Center, a community project spearheaded and supported by GLCA. Due to staffing and procedural reorganizations by the grant provider, grant approval was delayed. The Association was able to keep the project going by funding it through the Association during the months of June and July.

By the end of the fiscal year, the Association's sales revenues had increased by 7% over the previous year. The Association has raised enough money to pay off all of its debts while still meeting GLCA's aid requests. Fiscal 2004 promises to be a strong year. With additional revenue sources planned, the Association should continue to grow in strength while contributing significant aid.

Gross Sales FY 2003 - \$305,121

Direct Aid-to-Park - \$ 6,140

Indirect Aid-to-Park - \$ 63,528

V. RESOURCE AND VISITOR PROTECTION

PERSONNEL

During fiscal year (FY) 2003 multiple changes in personnel were seen in all areas of the Resource and Visitor Protection division. Chief Ranger Cindy Ott-Jones transferred to Bent's Old Fort National Historic Site in August and Assistant Chief Ranger Mike Mayer was selected for her position. Within Dispatch, Patrice Hutton joined us in December 2002 and David McClaren in March 2003. This brought dispatch up to full staff with six permanent full-time positions. With the filling of the two seasonal positions, dispatch saw a 50% change in staff.

Downlake District

Richard Moore accepted the Dangling Rope Sub-district Ranger position in April 2003. Dangling Rope subject to furlough (STF) Ranger Kevin MacLean entered FLETC during the winter but suffered a major leg injury during training and went on OWCP for the majority of the year. Leslie Wells accepted a seasonal position for the summer to replace Kevin MacLean during his time on OWCP. Kristopher Davis accepted a summer seasonal position to backfill for the second vacant STF position at Dangling Rope. In November Kevin MacLean accepted a transfer to Joshua Tree NP. Currently both STF positions at Dangling Rope are vacant. Kathy Krisko accepted the Lees Ferry Sub-district Ranger position in February 2003. At Wahweap, one of the three permanent, STF positions was lapsed and replaced by a seasonal position bringing the total of seasonal rangers hired for the summer to 7. Out of the 7 seasonal rangers 2 were GS-7's, 2 were GS-5's and the remaining 3 being GS-4 STEP hires from Northern Arizona University (NAU). Julie Yucker moved into Matt Fisher's position after Matt transferred to Organ Pipe Cactus National Monument in March 2003. Kenny Barend was hired into the Fee subject to furlough (STF) position and Shannon Hope into the remaining 6-month STF position.

Uplake District

Four permanent, three STF, and one seasonal position were vacated throughout the year, along with the district ranger position. All positions were filled, along with three seasonal positions. Dave Schneider transferred to Grand Teton National Park in December 2002 and Elaine Smith accepted the Bullfrog permanent full-time position in January. Kathy Lloyd accepted the vacant Halls Crossing permanent full-time position (vacated by Smith) along with Mark McCool's acceptance of the vacant STF position at Halls Crossing in March 2003. Jason Lux and Chad Marin accepted the two vacant STF positions at Bullfrog in May 2003. Mark Dowdle transferred to Yosemite National Park in May 2003 and Jason Bauwens filled that vacant position in June 2003. Greg Moss transferred to Yukon-Charley River & National Preserve in June 2003 and Steve Luckesen accepted the District Ranger position (vacated by Moss) in September 2003.

Dispatch

Glen Canyon entered into an agreement with Bryce Canyon National Park and Bureau of Land Management, Grand Staircase Escalante to provide 24 hour dispatch services in exchange for the shared cost of a seasonal dispatcher. BLM came on board in January and Bryce Canyon joined us in March. This agreement resulted in 8 dispatchers to work the 2003 season giving us double coverage (two people on duty) from 8am until midnight five days a week.

We were asked to share our access records database with seven other parks. Dispatch deployed fire fighter personnel through the ROSS, fire management system. Through dispatch, Glen Canyon continues to provide law enforcement personnel (as available) for Homeland Security, two rangers are assigned call every three weeks. Dispatch worked with Jane McCammon (NIOSH) and Dr. Baron (Good Samaritan Hospital) on carbon monoxide and other visitor injury issues.

Glen Canyon Dispatch continued to provide emergency and general dispatch services for the NRA, receiving, dispatching and recording 4900 case incidents. These numbers are down from 5,400 case incidents in 2002 and 6,000 case incidents in 2001, reflecting a continued drop in visitor related incidents. We continue to be the backup system for Page Police Departments Enhanced 911 system in addition to be the answering agency for 911 and marine band calls in and around the park.

Statistical Information (Calendar Year)

Visitation to Glen Canyon NRA in January through November 2003 totaled 1,859,371 visits as compared to 2,089,569 visits recorded in 2002 for the same time period. 2003 visits represent a percent change of -11.02% from 2002 statistics. Visitation to Rainbow Bridge National Monument totaled 98,648 visits for 2003 compared with 165,945 visits for 2002. This represents a percentage change of -40.55% from 2002 statistics. Contributing factors in decreased visitation include: low water, negative news media publicity regarding lake levels, a depressed national economy and heightened security issues for travelers. This decrease in visitation is reflected system-wide within the National Park Service with a percent change of -5.1 % for the period of January through October 2003.

Criminal Activity (Calendar Year)

| | <u>2003</u> | <u>2002</u> | <u>2001</u> | <u>2000</u> | <u>1999</u> | <u>1998</u> | <u>1997</u> |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Part I Offenses | 84 | 92 | 103 | 38 | 156 | 145 | 208 |
| Part II Offenses | 1061 | 1168 | 1919 | 4229 | 1453 | 1686 | 1777 |
| Arrests | 147 | 121 | 195 | 187 | 195 | 159 | 311 |
| Total Incidents | 5776 | 5403 | 6078 | 7169 | 6084 | 6366 | 7745 |

Total incidents, above, include minor vehicle and boat violations, and non-traffic incidents.

A commissioned staff that numbered 27 Rangers, one Special Agent, and 15 seasonals handled these incidents. Eight of these rangers were STF, working six months. Six permanent and two seasonal dispatch personnel handled dispatch operations.

Offenses (Calendar Year)

| | <u>2003</u> | <u>2002</u> | <u>2001</u> | <u>2000</u> | <u>1999</u> | <u>1998</u> | <u>1997</u> |
|---------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Drugs | 56 | 75 | 96 | 132 | 103 | 159 | 101 |
| Alcohol | 94 | 407 | 428 | 436 | 276 | 310 | 264 |
| Weapons | 18 | 49 | 38 | 68 | 77 | 81 | 98 |

Magistrate System

Special Agent Jennifer Sypher served as a shared Court Officer for Glen Canyon NRA and Grand Canyon National Park during FY2003. Special Agent Sypher made 16 trips to Glen Canyon for pre-trial conferences and court proceedings. The court officer position is funded by both Glen Canyon NRA and Grand Canyon NP.

Most court proceedings before U.S. Magistrate Judge Stephen L. Verkamp were held either at the Wahweap Ranger Station or the Federal Court in Flagstaff, Arizona. The Magistrate traveled to Wahweap eight times during FY2003 to preside over Glen Canyon’s court cases. U.S. Magistrate Judge Bennion Redd held court during Memorial Weekend at the Uplake District Office in Bullfrog.

Warrants are still retained within Dispatch for suspects who live within 80 miles of the NRA; all other warrants are sent to the U.S. Marshall’s Service in Flagstaff, Arizona.

Search and Rescue Operations (Calendar Year)

| <u>2003</u> | <u>2002</u> | <u>2001</u> | <u>2000</u> | <u>1999</u> | <u>1998</u> | <u>1997</u> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 115 | 118 | 165 | 146 | 150 | 225 | 138 |

Emergency Medical Services (Calendar Year)

| | <u>2003</u> | <u>2002</u> | <u>2001</u> | <u>2000</u> | <u>1999</u> | <u>1998</u> | <u>1997</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Total Medical Incidents | 358 | 410 | 539 | 680 | 721 | 671 | 350 |
| Advanced Life Support (ALS) | 77 | 68 | 75 | 77 | 97 | 83 | 189 |

| | | | | | | | |
|--------------------------|-----|-----|-----|-----|-----|-----|-----|
| Basic Life Support (BLS) | 167 | 266 | 343 | 395 | 296 | 387 | 161 |
| First Aid/AMA/EMD | 114 | 76 | 121 | 208 | 267 | 201 | --- |

The First Aid, Against Medical Advise (AMA) and Emergency Medical Dispatch (EMD) category includes minor cases or cases in which the patient received assistance but refused or did not require transport to a medical facility.

Visitor Fatalities (Calendar Year)

| | <u>2003</u> | <u>2002</u> | <u>2001</u> | <u>2000</u> | <u>1999</u> | <u>1998</u> | <u>1997</u> |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Accidental Death | 7 | 7 | 7 | 5 | 6 | 10 | 23 |
| Natural Causes | 1 | 1 | 7 | 1 | 3 | 5 | 2 |
| Suicide | 1 | 0 | 0 | 1 | 1 | 2 | 1 |
| Homicide | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| Undetermined | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Total Fatalities | 9 | 8 | 14 | 8 | 12 | 17 | 26 |

DOWNLAKE DISTRICT

Wahweap Sub-district

Priorities for the Wahweap Rangers this season were: increased emphasis on boating safety patrols, water quality and dealing with continuing low water issues such as launch ramp closures, re-designating public parking lots, and access and response times to various lake areas of the district. Wahweap Rangers conducted 40 special emphasis patrols on the lake.

Water Quality

Wahweap rangers visited 271 camps with a total of 1,171 people contacted during Water Quality patrols resulting in 5 citations issued for no sanitation devices. Joint water quality patrols, made up of Protection and Interpretation personnel, were also conducted.

Law Enforcement

During the Threat Level Orange condition, Wahweap Rangers participated in enhanced security patrols around the Glen Canyon Dam and designated spots in the Wahweap developed area. Wahweap Rangers also participated in details to various Homeland Security assignments throughout the Service, primarily back East. Wahweap Sub-district Ranger Eric Scott was deployed twice with the NPS Central Incident Management Team to Mt. Rushmore and the Hurricane Isabel Recovery in Virginia. Rangers Larson and Yucker were sent to Fresno to complete the NPS Park Medic course. Ranger McNally participated in a two week detail to the Federal Law Enforcement Training Center (FLETC) to convert their cache of M-16 rifles.

Wahweap Rangers responded to the officer down report for a Garfield County Sheriff Deputy. The Deputy was shot to death by two armed assailants who fled into the Grand Staircase-Escalante National Monument by vehicle. Rangers McNally, Scott and Traub all played key roles in coordinating the safe apprehension of the suspects.

Wahweap Rangers were involved in 39 law enforcement mutual aid calls from Kane County Sheriff's Department, Utah Highway Patrol, AZ DPS and Coconino County Sheriff's Department. The mutual aid calls included: responding to multiple domestic violence cases in Big Water, Grenehaven and Church Wells; a suicide in Big Water; two high speed pursuits with felony vehicle stops that originated in Utah and terminated in the NRA; and several fatal vehicle accidents outside the NRA in Utah. Wahweap Rangers made 135 arrests this year and participated in a Utah multi-agency undercover drug taskforce which netted 15 arrests and 24 felony charges. Arrests included driving under the influence (DUI), public intoxication, domestic violence, assault, disorderly conduct, possession of controlled substances, theft and fugitive warrants.

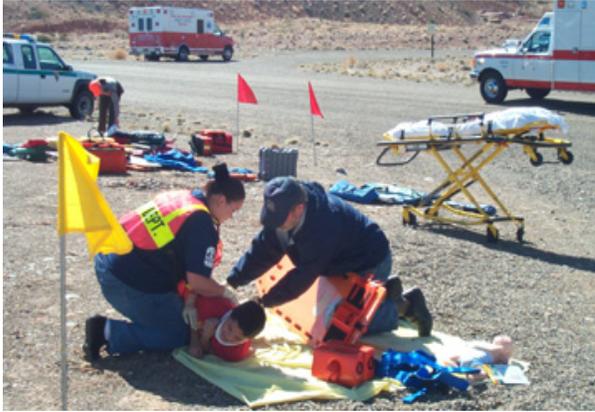
EMS and SAR

Wahweap Rangers have had over 31 mutual aid calls from Page Fire for structural fire and Emergency Medical Service (EMS) responses. Some of these included a two-story house fire, motor vehicle accidents with fatalities with extrication, and two responses to the Page Airport for aircraft fires. Rangers Larson and Wells were primary responders to a near fatal overdose in Big Water. Wahweap Rangers responded to a Multi-Casualty Incident (MCI) involving a large houseboat with a collapsed roof. Rangers Larson, St. Clair, Moore, Lake and Arnberger were responsible for saving the life of a near-drowning patient.

Wahweap Rangers conducted 58 search and rescue missions on water and land. The majority of these involved overdue and disabled boaters or EMS calls on the lake.

Training

Wahweap Rangers participated in a multi-agency MCI drill that involved City of Page Fire Department, Page Hospital, Arizona Department of Public Safety (AZ DPS), Coconino County Sheriff's Department, Big Water and Grenehaven Fire Departments. Along with MCI training, Wahweap hosted an 80 hour Structural Fire class that involved students from Glen Canyon NRA, other NPS areas and ARAMARK concession employees.



Dangling Rope Sub-district

Fire

Dangling Rope Rangers responded to two wildland fires in the sub-district. In addition Richard Moore completed two interagency fire assignments outside the park. Two employees were red-carded. The sub-district responded to one boat fire on the lake, which was extinguished before arrival. No fires occurred at the marina or in the developed area.

During the summer the fire suppression system at the Dangling Rope Marina failed, as did the fire suppression booster pumps at the Dangling Rope water plant. A temporary pump was put into place at the marina pending the purchase of a new system. The booster pumps at the water plant are scheduled to be replaced as part of a future water plant upgrade, date unknown. Over twenty-five new fire extinguishers were installed as part of the ongoing service and inspection program.

Law Enforcement

Three custodial arrests occurred for boating under the influence with other related charges. Common violations included vessel registration and equipment issues, speed and proximity infractions, disorderly camps, and pets off leash or in closed areas. One park Incidental Business Permit (IBP) holder was prosecuted for multiple violations after he was observed disposing of fuel-contaminated water and other trash in the sub-district.

EMS, SAR and Other Major Events

Rangers responded to the usual high number of medical and search and rescue calls. On average a Dangling Rope ranger responded to these calls alone or until an air ambulance team could arrive. Rangers Richard Moore and Leslie Wells were Advanced Life Support (ALS) providers, while Kris Davis performed duties at a first-responder level. Two fatalities occurred within the sub-district, one a cliff jumping accident in the San Juan Arm, and the other a drowning at the mouth of Last Chance Bay necessitating a major multi-day underwater recovery operation managed under a type 3 Incident Command System (ICS) organization. A possible save occurred after rangers responded to a report of a nine year old girl suffering from multiple deep propeller cuts in Last Chance Bay; the visitors attempting to take her by boat to Wahweap after the accident made a wrong turn and became lost until located by Rangers Wells and Davis who stabilized the patient until an air ambulance crew could arrive. At the request of the San Juan County Sheriff's Office, Dangling Rope Rangers coordinated several search and rescue responses outside NPS jurisdiction on the trail between Rainbow Bridge and Navajo Mountain. Several searches were accomplished in side canyons after flash flooding to locate possible stranded boaters or hikers. Multiple night boat missions were accomplished for SAR and law enforcement incidents.

Rainbow Bridge

Due to the continuing low water levels managing visitor use at Rainbow Bridge National Monument proved to be problematic despite lower visitation numbers this year. Trail washouts occurred several times during periods of flash flooding; often repairs took days to complete. Regular violations of the pet and re-vegetation closures in the monument were reported. Visitors continually attempted to hike the 2 1/2 mile round trip to the Bridge in 100-plus degree temperatures without water or proper footwear and clothing despite new posted signs warning of environmental conditions. Interpretation and Protection personnel were beset with heat related medical complaints ranging from mild to serious, occasionally requiring air evacuation. Many more problems were prevented by the interdivisional effort to maintain a presence at the monument to educate - and often hydrate - visitors during peak periods despite the other demands of the sub-district.

Lees Ferry Sub-district

Emergency Medical Services

Kathy Krisko was assigned the collateral duty as park-wide EMS Coordinator; Stephen Clary continued as the Downlake District EMS Coordinator and Jason Bauwens became the Uplake EMS Coordinator.

A new drug exchange and purchasing system was implemented with Page Hospital and Bullfrog Clinic to allow Park Medics to restock and exchange drugs. A new interim General Agreement was developed and put in place with Page Hospital and Bullfrog Clinic, continuing our billing agreement and restocking in-kind agreement. New

ambulance run prices were put into effect. A draft EMS Needs Assessment was developed in accordance with draft RM-51 and progress was made on developing a charging system for vessel transports of patients.

Two permanent Wahweap employees, Julie Yucker and Erik Larson, became Park Medics, bringing the park's number of permanent Park Medics to six. An EMS refresher was held in the spring, while Dr. Baron continued as our Medical Advisor and provided 11 Tape and Chart sessions in Wahweap and Bullfrog.

Homeland Security/Weapons of Mass Destruction Personal Protective Equipment (WMDPPE)

60 sets of WMDPPE were received at the park and 35 sets were disseminated to permanent personnel, with the remainder designated for seasonals. Homeland Security training tapes were obtained from region. A Fit Tester for the masks was obtained using Homeland Security funds; it is to be used by Intermountain Region parks but is based out of Glen Canyon.

Carbon Monoxide (CO) Monitoring

Four new Toxi-Ultra Carbon Monoxide Monitors were received as a donation. They were disseminated to the field and are being used to monitor CO levels on park boats as well as for CO testing during incidents. The monitors can be used to test exhaled breath for CO.

Lees Ferry Operations

GLCA and GRCA Lees Ferry rangers continued to work together and responded to a number of mutual-aid incidents outside the park, including an RV roll-over on Highway 89 and a vehicle 70 feet down an embankment near Jacob Lake. Other notable incidents included a 90-foot climber fall; the rescue included Protection Rangers from Glen Canyon and Grand Canyon, along with Glen Canyon interpretation and maintenance personnel, and a Classic Lifeguard helicopter.

In the spring, Lees Ferry participated in heightened-awareness Homeland Security operations, with some nighttime staffing and an extra detailed employee. Lees Ferry personnel supported Wahweap sub-district during busy weekends. Swift water Rescue Training, Waterborne Hazardous Materials training, and two training dives occurred at Lees Ferry this year. The dive team also responded twice to vehicles in the water.

Campground Hosts Bud and Darlene Davids returned this fall for their 3rd season.

Field Training and Evaluation Program (FTEP)

The new NPS FTEP was developed and put in place. Glen Canyon was chosen as a Field Training Park and four employees were chosen as the park's Field Training Lead and Field Training Rangers, with two completing training at FLETC during Fiscal Year 2003.

Trainees from FLETC are expected in the park in late February or early March 2004; they will participate in the first ever formal FTEP within the NPS.

UPLAKE DISTRICT

Training

Greg Kouns, Jason Bauwens, and Kathy Lloyd completed Federal Law Enforcement Training during the year. Jason Lux and Jason Gaskin are currently at FLETC training. In January, six rangers attended a HazMat Refresher. Five rangers attended the LE Refresher in February and nine attended in May. Two Tape & Chart sessions were held at Bullfrog this year with attendance of eight rangers, four rangers also attended five Tape & Chart sessions in Wahweap. Dave Bauer attended the Incident Qualification and



Certification System Training at ZION in February. Laurie Axelsen attended Mass Casualty in March and SAR coordinator Greg Kouns was sent to technical search and rescue training at CANY. Six rangers attended intoxilyzer training in April. Three Bullfrog fire brigade members trained for several days with the Ticaboo Volunteer Fire Department and the State of Utah on two live fire building burns. In early April Kathy Lloyd and Mark McCool were sent to Wahweap for two weeks to acquire certifications as Type 1 & 2

Structural Firefighters. Five rangers attended four separate Structural Fire Training sessions.

Laurie Axelsen joined the dive recovery team in the spring and attended four separate trainings. During April, nine rangers attended Rifle training and Weapons Qualifications and during June there were six attendees. Jason Lux and seasonal ranger Tim Sveum completed NPS Level II structural firefighter training the beginning of May. Also during May, Mark McCool and seasonal ranger Bob Elliott acquired certifications in DOI-MOCC. District Ranger Steve Luckesen provided the Halls Crossing staff and district interpretive staff with training on boating inspections and over-board discharge systems. Rangers were able to attend some EMS continuing education at the May Emergency Medical Technician (EMT) refresher. A day of ALS training was hosted by Bullfrog and several small lecture sessions were offered by the Bullfrog Clinic. Several tailgate safety sessions took place at sub-district meetings and the Bullfrog crew trained with the Tri-county Deputy and UT State Parks to practice law enforcement skills and tactics. Dave Bauer attended SACS training in February, the Integrated Fire/Resource Management session at GRCA in April, a Fire Refresher class in May and a Law Enforcement Refresher in June. Seasonal Ranger Brett Timm was able to complete his Helicopter Crewmember task book.

Law Enforcement

Memorial weekend was not as busy as in past years but there were still six arrests made in May, five in conjunction with the holiday. Rangers worked well with the Utah

Highway Patrol, county deputies and other officers invited to supplement law enforcement coverage on Memorial weekend and the 4th of July, leaving the rangers more available to direct traffic at the launch ramp, to respond to medicals and work the water. Many alcohol and drug cases were identified by park rangers this summer and turned the cases over to the state for prosecution. There were 19 arrests processed at the Bullfrog jail this year, not including three heavily intoxicated juvenile females unable to care for themselves who spent one night while waiting for parents to arrive from Salt Lake City. Rangers took many accident and damage reports due to low water hazards and congestion at the launch ramp and in parking lots. Also there have been an increased number of thefts from vessels investigated this year. During 2003, the Halls Crossing sub-district remained primarily a water-based law enforcement operation. Halls Crossing contacted over 3,500 boaters with 78 total boat patrols. 17 violation notices were issued, one arrest, and many verbal / written warnings and safety contacts were conducted.

SAR and EMS

Uplake District responded to 125 EMS calls and 40 ambulance responses; 21 medicals required advanced life support procedures. The Bullfrog Clinic saw 1186 patients May through October. There were 25 Search and Rescue operations.

Fire

The district filled 14 wildland fire resource orders with GLCA employees. The district completed task books for 2 GLCA employees and initiated task books for 2 others.

Halls Crossing Rangers received a report on July 11, 2003 that ARAMARK housing trailer #10 was on fire. Rangers Luckesen (IC), McCool, Elliott, Lloyd, and Taylor as well as the Halls Crossing volunteer fire brigade responded with Engine 61 to find the back half of the trailer fully engulfed in flames. Two hoses were deployed and an initial exterior attack was performed with ventilation efforts. Approximately 40 minutes after the initial report, the fire was extinguished and controlled. There were no injuries and the Halls Crossing fire crew was able to save one of the rooms of the trailer with limited personal belongings. The cause of the fire was suspected to be an undetermined electrical spark in a wall socket located in the back living room.



New Smeal Engine 54 arrived at Bullfrog in October 2002. Responses included two major boat fires, a small car fire, two wildland fires near the lakeshore, and several responses out-of-park for motor vehicle accidents on Highway 276. Bullfrog and Halls Crossing Rangers responded to a house boat fire located at the Bullfrog Fuel Dock on

July, 26 2003. The fire completely destroyed a 55 foot house boat and approximately 75 feet of the Bullfrog Fuel Dock. Damage was estimated to be over \$800,000. The two month investigation involved the U.S Coast Guard, insurance investigators, manufacture investigators, over 20 witnesses, and a Root Cause Analysis involving ARAMARK and NPS Representatives. Our investigation revealed that gasoline fire and vapor explosion was caused by an accumulation of gasoline vapors in the enclosed engine compartment which was ignited on the starboard rear engine compartment by an undetermined electrical spark associated with the starting of the starboard engine.



Structural fire project work this season included the removal of 6 Halls Crossing hose boxes due to hose safety, personnel safety, and maintenance concerns. The replacement of all the fire hydrants located in Halls Crossing is scheduled to be put into effect sometime this winter. All of the Halls Crossing Self Contained Breathing Apparatus (SCBA) bottles are in being hydrostatic tested before the start of next season and all SCBA bottles over 15 years old have been taken out of service.

Dave Bauer wrote Glen Canyon's 2003 Wildland Fire Response Plan and assisted in the ongoing development of the park's Fire Management Plan

Backcountry

The Uplake District conducted 24 backcountry patrols, contacting over 113 visitors and campers. There were 26 special patrols during the spring and summer, mostly consisting of Archaeological Resource Protection Act (ARPA) site monitoring, assisting researchers, and assisting Bureau of Land Management (BLM) gain access to particular sites in order to conduct surveys. In addition, land-based patrols rangers made 33 contacts for camping outside of the designated area and 16 contacts for off-road driving.



Boating and Water Quality Patrols

Rangers conducted a total of 139 boating safety and water quality patrols, documenting 62 contacts for boating safety violations. Of the 638 camps visited, there were a total of 45 non-compliant camps/individuals contacted, 37 verbal warnings and 8 violation notices issued. In addition to the local area patrols in Bullfrog Bay and nearby canyons, rangers conducted 12 extended range patrols downlake toward the San Juan Arm and Escalante and uplake beyond Buoy 108 to Good Hope Bay in order to enforce PWC restrictions. Rangers took reports on 34 vessel and jet-ski accidents. Rangers logged a total of 760 boating hours. While on patrols this summer, 3 sunken vessels were located and documented.

This summer a new Glen Canyon Boating Policy was signed and put into effect by superintendent Kitty Roberts. The United States Coast Guard (USCG) Auxiliary used the Halls Crossing Ranger Station to conduct courtesy marine safety inspections and assist with boating operations during the Independence Day and Labor Day weekends.

Law Enforcement, Fire and Special Events Details

Jason Gaskin was on detail to NAVA starting in October 2002 until March 2003. Mark Dowdle and Greg Kouns went out on GLCA Dam Security details in March and April. Seasonal ranger Tim Whelan went on a 21 day fire detail and seasonal ranger Brett Timm went on two separate fire details during July and August. Greg Kouns worked a security detail at WASO in September. Dave Bauer worked a detail for FEMA on the Columbia Shuttle Recovery during February as well as five Special Events Team (SET) details for Homeland Security in April (JENA), June (LIBI), July (MORU), September (WASO), and November (CORO).

VI. FACILITIES MANAGEMENT

FUNDING AND SPECIAL PROJECTS

| | |
|--|--------------------|
| ONPS funding GLCA & RABR allocation | \$3,158,900 |
| Electrical Income | 449,525 |
| Water/Sewer Income | 679,943 |
| Housing Permanent (includes carryover) | 341,115 |
| Housing Seasonal (includes carryover) | <u>41,272</u> |
| | <u>\$4,670,755</u> |

Comparison with previous year (FY02) \$4,479,739

Fee Demo 80%

| | | |
|---------------------------|-------------------|-----------|
| PWC Survey and Planning | \$ 25,198 | COMPLETED |
| Wahweap Picnic Area Rehab | \$ 379,500 | COMPLETED |
| Lees Ferry Leach Fields | \$ 99,950 | ONGOING |
| Low Water Sanitation | <u>\$ 160,000</u> | ONGOING |
| | \$ 664,648 | |

Federal Highways

Road Construction \$ 200,000 COMPLETED

Line Item Construction

Pipeline to Page Sewer \$3,079,421 ONGOING

Equipment Replacement

Replaced Semi Truck \$ 74,897 COMPLETED

Repair/Rehab/Cycle/NPS

| | | |
|---------------------------------------|-----------|-----------|
| Replace Sewage Flow Meters | \$ 64,100 | COMPLETED |
| Potable Water Source Dangling Rope | 236,500 | COMPLETED |
| Rehab Fire Hydrants | 495,000 | ONGOING |
| Chains Area Assessment | 29,000 | ONGOING |
| Halls Crossing Corrective Action | 76,900 | ONGOING |
| Wahweap Wells Abandonment | 21,300 | COMPLETED |
| Rehab Wahweap DRO | 250,000 | ONGOING |
| Relocate Cattle Fence BF | 17,200 | ONGOING |
| Air Supply for Emerg ops | 77,900 | ONGOING |
| Replace Sewage lift Station Stateline | 300,000 | ONGOING |

| | | |
|------------------------------------|-------------------|-----------|
| Claim Settlement HC Sewage | 76,711 | COMPLETED |
| Repair Water Systems Uplake | 390,300 | ONGOING |
| WW Water Lab Rehab | 490,000 | ONGOING |
| Dangling Rope Fire Protection | 12,900 | ONGOING |
| Emergency Utility Repairs Lakewide | 390,000 | COMPLETED |
| Rehab Rainbow Bridge Docks | 490,000 | ONGOING |
| Extend Antelope Point Ramp | 503,200 | ONGOING |
| Rehab Dangling Rope Docks | 492,000 | ONGOING |
| Refurbish Water Tanks BF,WA | 368,910 | ONGOING |
| Chip Seal BF Ferry Road | 50,000 | COMPLETED |
| Chip Seal HC Roads | <u>\$ 300,000</u> | COMPLETED |
| | \$5,131,921 | |

Trailer Replacement

| | | |
|--------------------------------|----------------|---------|
| Replace 3 trailers fourplex HC | 720,000 | ONGOING |
| Replace 2 trailers fourplex BF | 531,370 | ONGOING |
| Replace 3 trailers 2-duplex HI | <u>906,420</u> | ONGOING |
| | \$2,157,790 | |

CONCESSION SPECIAL ACCOUNTS PROJECTS

The Capital Improvement Account (CIA) collected \$1,572,793 and expended \$2,814,847.

The Campground Improvement Fund (CIF) collected approximately \$28,900 and expended \$56.00. The Construction Set-aside (CSA) fund collected \$5,300,488 and expended \$4,202,449.

The Government Improvement fund (GIA) fund collected \$80,000 and expended \$3,479.

PROJECTS COMPLETED IN FY03

CSA 47III Wahweap campground store
 CSA 90 WW public launch ramp extended to low water
 CSA 91 Stateline public launch ramp extended to low water
 CSA 92 Bullfrog public launch ramp extended to low water
 CSA 93 BF/HC ferry ramps extended to low water

PROJECTS UNDERWAY IN FY03

- CIA 11 Wahweap marina restroom
- CIA 12 BF marina restroom
- CIA 23 Lake-wide concessioner housing master plan
- CIA 25 WW Marina electrical system upgrade
- CIA 27 DR front access ramp and walkways
- CIF 15 BF A/B/C loop design
- CSA 43 WW fire station
- CSA 80 WW waste water system pipeline to Page
- CSA 87 BF/HC lift station replacement

- CSA 88 HI DCP update
- CSA 90 WW public launch ramp extension
- CSA 91 SL public launch ramp extension
- CSA 92 BF main public launch ramp extension
- CSA 93 BF/HC ferry ramps extension
- CIF 14 HC replace campground grills
- CIF 16 HC campground improvements

MAINTENANCE ACCOMPLISHMENTS

FY03 was a busy year for all facilities staff. Reduced budget, reduced staff and lowering water levels all played parts in increasing work loads. Staff rose to the challenge and was fully successful in maintaining their responsibilities. Additionally, facilities committed staff to Glen Canyon fire, emergency medical services, and search and rescue functions. Staff assistance was also given to Canyonlands NP, Arches NP, Natural Bridges NM, Hovenweep NM and Navajo NM in implementation of their Facility Management Software System. Navajo NM was also given staff support for several other facilities projects.

TRAINING

Training for maintenance staff this year included: Dive training, pest control, hazmat, water/wastewater treatment, backflow prevention and certification, fire, OMC and Mercury marine engine technical schools, DOIMOCC, electrical training, sexual harassment prevention, safety, COTR, and COR Refresher.

Staff provided instruction and assistance at three DOIMOCC courses.

UPLAKE DISTRICT

The Uplake Facilities crew had a successful FY-03 despite many unforeseen challenges relating to low water, staff shortages and equipment failures. There were no lost-time accidents in the Uplake Facilities Division during FY-03. Outlined are significant accomplishments that are in addition to the normal day-to-day operational accomplishments of FY-03.



Hite

The low water situation has severely impacted the operations in the Hite Subdistrict. Efforts were made to maintain a viable launch ramp in the marina area. We received both material and manpower resources from Canyonlands NP in this effort. We were successful in maintaining a small primitive ramp for some time, but by late summer launching and retrieving was not possible at Hite.



Through cooperation with the Ranger Division and river use organizations we were able to locate a suitable site for a river raft take-out. A small earthen ramp and parking area was constructed on the western shore of the Colorado River just north of the Hite marina. This take-out helped river runners by allowing them to preclude towing their rafts to Bullfrog or Halls Crossing for take-out.

The take-out, now called, Hite West Access will be improved along with its parking area during winter FY-04. Other issues related to low water levels were the closure of all floating facilities at Hite area and relocation of these facilities to the Bullfrog area. The surface water treatment plant which supplies Hite with potable water was also shut down due to the lake level. No site with water having turbidity levels low enough to treat could be located. Though not successful for long periods of time, several attempts were made at relocating the lake pump and its related piping to keep the treatment plant in service. Potable water for Hite is being supplied by hauling 6,000 to 12,000 gallons per day from Bullfrog. The 65+ mile trip takes approximately 5 hours round trip for hauling 6,000 gallons of water. Two houses at Hite, HI910 and HI911, were completely repainted on the interiors. A new furnace and air handling ducts were installed in HI911.



Halls Crossing

Halls Crossing was impacted by low lake levels though less than any other area on the lake. Under water terrain forced the boat sewage pump-out to be moved from the marina area to the area adjacent the launch ramp. This required installation of a new electrical transformer and other utility hook-ups. An intermediate lift station had to be installed to keep the pump-out in operation. The area above the pump-out's new location was leveled laterally to ensure the area was a viable location for the pump-out as water levels begin to rise. This will save resources in the future precluding a forced move back to the marina area. Break water was installed in the launch ramp area to protect the pump out and courtesy docks. The courtesy dock was taken out of service and moved away from the launch ramp area for later removal from the lake and disposal. A courtesy dock from

Bullfrog was moved to the Halls Crossing launch ramp and placed in service. The ferry ramp was extended 400 feet but water levels did not raise enough to allow ferry operation on that ramp. Repairs were made to three severely damaged sections of the entrance road. Power generation “bugs” have been nearly all worked out and unscheduled power outages have been nearly eliminated. Emergency repairs were conducted on the pump-out dock and lift station #2 during FY-03.

Bullfrog

Low water impacts in the Bullfrog area are widespread. Closures in the area were

necessary. Bullfrog North and South primitive campgrounds were closed to vehicle access. Impact on the visitor was minimal however due to new areas becoming accessible at Stanton Creek primitive campground. Existing micro-flush comfort stations at Stanton Creek were moved to camping areas near the water’s edge. Additional micro-flush comfort stations were moved from the Bullfrog North and South areas to Stanton Creek.



Narrowing of the launch ramp forced the removal of one courtesy dock. The dock was taken to Halls Crossing and utilized there. The remaining courtesy dock was eventually moved from the launch ramp the area adjacent the ramp. This was due to further narrowing of the ramp later in the year.



to

The launch ramp was extended (full width) 100 feet to an elevation of 3605. Large amounts of military landing mat were removed from the launch ramp on four occasions this fiscal year. Under water terrain and narrowing access forced relocation of the government dock from the marina area to the area east of the launch ramp. The same factors forced the relocation of the pump-out to the area west of the launch ramp. Utilities had to be extended for the pump-out move.



The ferry ramp was extended 130 feet, lake levels allowed use of that ramp for a period. Ferry operations were moved to the Hobie Cat Beach area when use of the ferry ramp was no longer possible. The road to Hobie Cat Beach was improved by placing additional road base on the road’s surface and extending it to the ferry loading area.

Improvements were made to the water system during FY-03. Wells #2 and #3 were completely replaced along with their piping and wiring. The area where the 10” water main washed out was “hardened” and a culvert was placed to channel flood waters.

Emergency repairs were performed on Lift Stations #1, #5 and #6. Emergency replacement of the lateral sewer line from housing unit BF706 was performed. Emergency reconstruction of ½ mile of Stanton Creek road was required because of flood damage.

There were several housing improvements during FY-03. New carpet was placed in units BF703A and BF704A. The Interior of BF715B was rehabbed. New bathroom vanities, kitchen cabinets, counter tops, cupboards and linoleum was placed in unit BF704A. A bucket truck was acquired from reutilization for mast lighting, and tree maintenance.



Personnel Changes Uplake

- Dave Paquette from Maintenance Mechanic Leader WL-10 to Water Treatment Plant Supervisor WS-08 (Rocky Mountain NP)
- Ken Coss from Maintenance Mechanic (Carpenter) WG-09 to Maintenance Mechanic WG-09 (Dinosaur NM)
- Stan White from Water Treatment Plant Operator WG-09 to Maintenance Mechanic Leader WL-10
- Eric Smith from Maintenance Mechanic Supervisor WS-10 to Facility Manager GS-12
- Domanic Martinez new hire as Utilities Systems Repairer Operator (separated to return to military service after only 6 months)
- Selected Roger Drake, Water Treatment Plant Operator Yellowstone NP, to replace Stan White EOD early FY04

DOWNLAKE DISTRICT

The Downlake Facilities crew experienced increased work loads in all areas due to low water during FY-03. These challenges were successfully met. Lake access and visitor services were maintained throughout the year. There were three lost-time accidents during FY-03 in the Downlake Facilities crew. Root cause analyses were conducted on the accidents and lessons learned have been applied. Outlined are significant accomplishments that are in addition to the normal day-to-day operational accomplishments of FY-03.

Dangling Rope/Rainbow Bridge NM

Low water has required an increase of trail length at Rainbow Bridge NM to approximately one and a half miles. Extending the trail as water levels fell required a large commitment of manpower resources. Emergency repairs to the trail because of flood damage were conducted two times during FY-03. Courtesy docks and floating walkways had to be continually moved. Anchor and cables needed adjustment on a regular basis. Project design is underway for replacement/upgrade of the courtesy docks at Rainbow Bridge NM.

Erosion around the new battery building was addressed. Eroded areas were stabilized with Tri-Lock from the Uplake District. The erosion control effort will continue into FY-04. Batteries from the old battery building were barged to Wahweap for disposal. New batteries were barged to Dangling Rope for installation in the new battery building. The new batteries have been put into service and have exhibited some problems. Efficiency of the Photovoltaic system has not been optimal during FY-03. Testing of the battery bank and consulting with the battery manufacturer have been extensive during this fiscal year. This will continue into FY-04 for warranty claims.

A rehab of well #2 at Dangling Rope was started during FY-03 and will continue into FY-04. The total barging operations for Dangling Rope Marina and Rainbow Bridge NM

consisted of 100 trips. Breakdown of these trips are: 24 propane, 58 PV battery replacement support, 12 Rainbow Bridge trail/docks, and 6 well#2 project support.

Antelope Point

Low water levels during FY-03 left the launch ramp at Antelope Point unusable. The Downlake roads and trails crew performed an extensive civil grading project and prepared the area for extension of the ramp. The concrete ramp was extended 410 feet in length to lake elevation of approximately 3605'. The two courtesy docks and breakwater at Antelope Point were rehabbed during FY-03. The courtesy docks and breakwater were towed by water to Wahweap for these repairs. 27,000 yards of material was hauled at Antelope Point for repair of area behind curbs.



Wahweap/Stateline/Lone Rock/Page

Low water impacted the operations in the Wahweap/Stateline areas just as every other area on the lake. Continuous relocation and extension of floating facilities, their anchor and shore support materials were necessary. Launch ramp extensions were accomplished at both Wahweap and Stateline. 70 foot extensions were made to approximately 3605' elevation. Stateline launch ramp was closed for a period during FY-03 and will be closed for some time into FY-04. The decking and bang board was replaced on the courtesy docks at the Wahweap launch ramp. Two courtesy dock access ramps were rehabbed at the Stateline launch ramp.



The electrical system on the government dock was upgraded. Swim beach area was cleaned and groomed three times due to falling water levels. Lone Rock Beach also required grooming and several relocations of restroom facilities. An old low water parking area and road to that parking area were re-constructed in the Wahweap marina area. The road to the tour boat dock was also extended three times. Closure of the Stateline pump-out was necessary for a period during FY-03 due to low water.

All sewage and water lines on the Wahweap and Stateline pump-outs were replaced to accommodate higher pressures caused by low water. Intermediate sewage lift stations were installed at both pump-outs to overcome the higher head pressures. The Chains Road and Sunrise Hill Road were repaired with new base course. Approximately 900 tons of base course was used for the repairs. Wahweap lodge parking area was crack sealed and striped.

Ten boats had engines replaced in FY-03. Hull repairs were made on nine boats. Undercarriage rehab was conducted on the Caterpillar loader. Downlake maintenance staff and equipment were utilized for sewage pumping operations at Lone Rock during FY-03. This proved to be a significant savings over contracting the service as was done in past fiscal years. Emergency power transfer switches were repaired and upgraded at Swim Beach and Stateline sewage lift stations. A new 50 pair telecommunications cable was installed from the Wahweap warehouse to the District Ranger's Office/Visitor Center. Safety cages were designed, fabricated and installed on all three Wahweap potable water reservoir ladders. New potable water lateral (600 lf) was installed from the water main to the swim beach area for improved potable water quality.

Accomplished several Arizona Department of Environmental Quality required projects. This included demolition of the old pressure system at well #3, demolition of old sewage force main at Wahweap ramp, painting of all water system piping and accessories at Wahweap well #4, Wahweap well #3 pressure building, and Lone Rock pressure building.

The sign shop fabricated 28 signs for other parks or agencies in addition to 169 signs for Glen Canyon. Support was given to several Navajo NM projects in the form of personnel resources. Personnel and equipment resources were also utilized in support of Navajo Bridge.

Six housing rehabs were accomplished in the Downlake District during FY-03. The units were PG0003, PG0005, PG0007, PG0010, PG0011 and PG0012. Interiors of four other housing units, WW114A, WW114B, WW114C, and WW119B were repainted.

Lake-wide Aids to Navigation/Dive Program

The Aids to Navigation crew made 532 repairs to buoys in FY-03. Lowering lake levels required constant adjustment of all buoys on the lake. There were four major moves of the main channel during FY-03. These moves were at Padre Butte, Gregory Butte, Anchovy Point, and Face Canyon. The moves required and additional three adjustments

each. The realignment of the main channel added 16 miles and 20 new navigational aids to the trip between Wahweap and Dangling Rope. Issues with the lighting of ARAMARK's navigational aids were resolved during FY-03. Park divers were utilized in inspecting and repair of docks and breakwater at Halls Crossing, Bullfrog, Dangling Rope and Stateline. A three-day under water search and rescue training seminar was conducted with the Utah Department of Public Safety. Eight successful underwater search and rescue missions were conducted by the dive team.

Lees Ferry

Lees Ferry water levels have not been affected by the lowering lake levels. A chain link fence was constructed around the river intake for the potable water system. During the spring of FY-03 the Lees Ferry launch ramp had become covered with algae and was very slippery. Two vehicles slid into the river and had to be recovered by NPS divers. The surface of the ramp was cleaned as far as the road broom would reach into the water and no further incident was reported. An erosion control project was completed at No Name Wash. One half mile of Spencer trail was washed out by floods and had to be repaired.

Personnel Changes Downlake

- Alan Walsh hired as Boat Mechanic, WG-4749-10
- Tod Goddall hired as Electrician, WG-2810-11

PROFESSIONAL SERVICES

Professional Services went through two different organizational reviews, which are currently being addressed. Staff was busy providing project management for a number of major construction projects, related to low water or ramp extensions along with the Pipeline to Page project which has finally started, Wahweap Fire Station is currently under construction with completion in early 2004, Wahweap Marina Electrical system upgrade under construction, Wahweap Marina Restroom project is under construction this project went from one to five restrooms, Bullfrog Boat Rental/Restroom project fully under construction, Lees Ferry Restroom rehab project just competed, Spot Improvement Project to upgrade and improve safety of Lone Rock Road and State Highway 89 intersection, project was completed this summer. Wahweap Campground Store which was Phase 3 of Campground Improvement Project was completed this year, additionally the Fee Demo project Wahweap Picnic Area Improvement Projects was also complete.

Tim Windle, Park Engineer went on a 120 day detail to Glacier National Park to provide assistance a supervisor project manger. Completed EIS for Personal Watercraft (PWC) Use within Glen Canyon National Recreation Area. Completed update of Wahweap Development Concept Plan (DCP) and Environmental Analysis. Completed the draft Hite Development Concept Plan and Environmental Assessment, but due to the level of Lake Powell with no lake access at Hite this plan is useless and will be used for reference

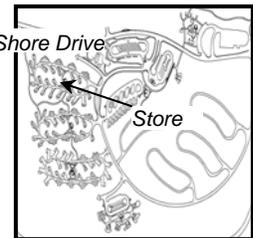
etc. Completed twenty-five NEPA project reviews and approvals using an interdisciplinary team that provides guidance and stipulations to projects.

Personnel Changes Professional Services

- Suzy Schulman from Environmental Specialist GS-0401-12 to same Grand Teton National Park
- Brian Wright from (term) Outdoor Rec. Planner GS-0023-07 to NEPA Writer GS-401-09 USDA Forest Service Laona, WI
- Brian Wright NEPA Writer GS-0401-09 USDA Forest Service, Laona, WI to Environmental Specialist GS-0401-09/11 GLCA
- Russ Balch resigned to join Peace Core
- Brian Wright resigned returned to school

Wahweap Campground Store – Phase 3 Campground Improvements – Construction Set-aside Project - (Completed June 2003)

This project represents the third phase of improvements to the Wahweap Campground. The campground store includes a retail area for camping supplies and snacks, visitor registration, coin-operated laundry and a range of shower facilities that include private family accessible restrooms as well as spa-style stalls in group restrooms.

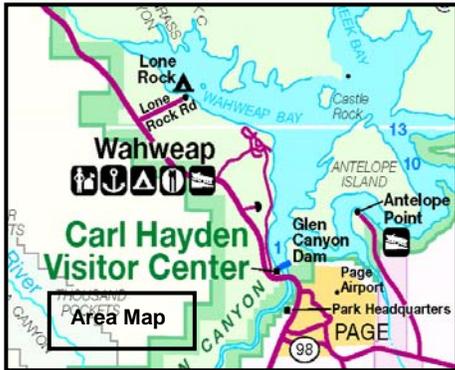


***Campground Plan
the
building
serves as a
point of
orientation
and
entrance to
the
campground
loops.***

Several sustainable features were incorporated into the design of this building including:

- ***Solar-heated water system to reduce energy demands for showers and laundry***
- ***Water-conserving shower heads***
- ***Skylights to reduce lighting requirements***
- Shade structures sheltering significant portions of the building elevations from heat gain and creating a protected walkway for visitors.
- Use of high R-value recycled styrofoam/cement masonry blocks
- ***Energy conserving light fixtures with motion and photo-cell controls***
- Native plant landscaping and water-conserving drip irrigation system

Update Wahweap Development Concept Plan (DCP) and Environmental Analysis (EA) – GLCA 90082 - (Project work was completed throughout FY 03 although approved in FY 04)



The Wahweap Development Concept Plan and Environmental Assessment consisted of long range planning and compliance for future development in the Wahweap District over the next 10 to 15 years. Project work began in December of 2002 and involved public participation, GLCA staff collaboration, NEPA and NHPA 110 and 106 compliance.

Consultation with the Arizona State Historic Preservation Office and other state and federal agencies was conducted during the project to ensure a thorough understanding of potential issues effecting the project proposals. Conceptual designs were also developed to refine project cost estimates as part of the final product. The project was approved and signed by the park superintendent and the regional director in early November 2003.

Wahweap Picnic Area Improvements – GLCA P9900024 - (Completed 6/2003)

This project consisted of upgrades to the deteriorating picnic area adjacent to the swim beach in the Wahweap district.

This is the primary facility in Wahweap for day-use picnicking with tables, grills and fire rings that will accommodate large groups like family-reunions and school groups.



Old comfort station and shade structures/ site furniture

A key feature to the project was the replacement of the comfort station and redesign of the walkway system to provide ADA accessibility to shade shelters and other picnic area features. Other successful elements of the project include:

- Upgraded water and sewer utilities with fire hydrant expansion to the area





New comfort station and accessible picnic shelters

- Replacement of flood irrigation system with water-conserving drip irrigation system
- Removal of exotic vegetation from area perimeter to protect mature native landscape and increase access to scenic views
- Incorporation of energy conserving building features including skylights for day-lighting, high R-value recycled Styrofoam/cement masonry blocks
- Utilization of energy conserving light fixtures and bulbs along with photocell and motion control devices for efficient lighting
- Installation of accessible picnic tables, fire rings and barbeque grills at several shade shelters

VII. RESOURCE MANAGEMENT

In 2003 Congress passed Public Law 108-43 authorizing a land exchange of 312 NPS acres for 122 acres of privately owned land east of Highway 89, immediately north of the Utah border. This exchange will protect the scenic viewshed as visitors enter the recreation area from Utah. The law also changed the authorized acreage of Glen Canyon NRA to 1,255,000 acres.

The Glen Canyon Research Coordinator, Norm Henderson, continued his detail as Colorado River Coordinator in Salt Lake City, working for the Utah State Coordinator. Steven Bekedam joined the staff in a SCEP appointment. He is working on his masters in range management at Oregon State University which he will complete next spring. Jesse Granet joined the staff in a TERM appointment in the Water Quality program in a position funded in part by the Grand Canyon Monitoring and Research Center.

Viking Explorations, which holds an oil and gas lease in the Circle Cliffs, has approached Glen Canyon NRA and the BLM regarding utilizing a contractor hired by the company to complete the EA required to get the APD approved and the agencies began preliminary discussion of procedures and compliance requirements.

AQUATIC RESOURCES (WATER QUALITY)

Public Health

The Beach Monitoring Program continued in collaboration with the Utah and Arizona Departments of Environmental Quality per the 1996 Strategic Plan to Protect Water Quality at Lake Powell. The Resource Management Division participated in the Lake Powell Technical Advisory Committee, which evaluates field and lab procedures and provides technical guidance for the Beach Monitoring Program. The Glen Canyon NRA Beach Monitoring Program serves as a model for other National Park Service units including Lake Mead NRA, Chattahoochi River NRA, and Zion National Park as well as other entities beginning new programs.



Water Quality Sampling

Glen Canyon NRA continued to operate the Wahweap and Bullfrog labs during the 2003 season. Class II Laboratory Certification for Environmental Testing was maintained in the Wahweap Laboratory through the Utah Department of Health, Bureau of Laboratory Improvement. The Quality Assurance Manual and Standard Operating Procedures for Glen Canyon NRA Water Quality Labs was revised and approved prior to the 2003 sampling season. New requirements under the National Environmental Laboratory Accreditation Program were fully

incorporated into the laboratory quality systems in 2003.

Through a decision of the Technical Advisory Committee and approval of the states of Utah and Arizona, beginning with 2002, all fecal indicator testing at Glen Canyon NRA has been accomplished with *Escherichia coli* bacteria using the Colilert® System from IDEXX Inc. *E. coli* has been shown in numerous studies to be the best indicator of fecal pollution in water and highly correlated with the risk of human illness from recreation contact.

Twenty-one routine sites were sampled for bacterial concentration at least every other week between Memorial Day and Labor Day of 2003, resulting in 211 samples processed from routine sample sites. An additional 391 samples were processed from non-routine and random beaches throughout the lake and suspected problem areas. Sampling of random and non-routine beaches and suspected problems is intended to locate potential problem areas that may require regular monitoring. Random sampling also maintains the high standards of public health protection set at Lake Powell by maintaining the current level of sampling as sampling sites are dropped from the routine list due to good water quality.

Of all the water samples analyzed for *E. coli* during the 2003 season, eight exceeded the maximum allowable limit of 126 MPN *E. coli* per 100 milliliters of water. Of the total number of samples collected (602), eight samples represents 1.3%. There was one beach closure during the 2003 season; Lone Rock Beach was closed from May 30 – Jun 6. The number of high counts detected in 2003 is about the same as detected in 2002, despite the fact that visitation was lower in 2003 than 2002. 2001 had no high counts at all. Possible explanations for the high counts detected include issues related to lower lake levels, which concentrate recreation in side canyons that are all reduced in surface area and volume. Many other factors may have contributed to the increase in high counts such as changes in the Lake Powell Water Quality Education and Enforcement programs due to funding limitations and grazing. It is important to stress that although more fecal contamination was detected in 2003 and 2002 than 2001, the sanitary water quality of Lake Powell is still excellent. Lake Powell remains one of the cleanest reservoirs



Gunsight Canyon



Hydrocarbon Sampling

in the country and one of only very few that are monitored.

NPS/US Geologic Survey projects

A cooperative study between the U.S. Geological Survey (USGS) and NPS to examine levels of Hydrocarbon contamination in Lake Powell was approved in 2003 for funding in 2004 through 2006. Funding will be through the USGS/NPS Water Quality Assessment and Monitoring funding source. This study will involve three years of sampling to develop baseline hydrocarbon contamination levels. Baseline data is critical to the development of a hydrocarbon monitoring program to mitigate for the continued use of personal watercraft on Lake Powell.

Two proposals for cooperative projects between the NPS and USGS were funded for 2001-2003. One study is examining the effects of visitor use on the side canyons of Lake Powell. Three similar canyons with varied visitor use were selected using a geographic information system model. The second year of field work was completed in 2002 with the measurement of water quality parameter profiles, collecting depth specific water samples for analysis of nutrients and contaminants, and measuring micro-currents. Knowles Canyon was closed for the duration of the field study and reopened in September of 2002. Laboratory and data analysis are finished, and a final report is currently under USGS internal review.



Colorado River Sediment Delta

Another cooperative study examines the Colorado River sediment delta for the presence of contaminants. There is great interest in the levels of contaminants being sequestered in the deltas of Lake Powell. The Lake Powell watershed includes most of the western range of the Rocky Mountains. There is potential for contaminants to be transported in the Colorado River. Many contaminants tend to adhere to sediment particles. The large accumulation of sediment in the inflows of Lake Powell may provide a sink for these contaminants that could present a threat to public health and

water quality. Cores were collected from the accumulated sediment during 2001 to test for potential contaminants. Laboratory analysis of the sediment cores is finished. A final report will be completed early in 2004.

Limnology

The Aquatics Program in cooperation with the Grand Canyon Monitoring and Research Center



Measuring Limnological Profiles

(GCMRC) has continued to collect limnological data on Lake Powell. In 2003, water quality parameter profiles were measured at 20 to 25 established stations along the Escalante Arm, San Juan Arm, and the main stem of the Colorado River Channel, as well as above and below the dam. Depth specific water samples are also collected for evaluation of nutrients and contaminants. The focus of the program is to assess the impacts of Glen Canyon Dam operations on water quality resources in Lake Powell and downstream. In 2003, the GCMRC increased their annual funding to the Aquatics Program to increase NPS assistance in the Lake Powell limnology program.

Aquatic Nuisance Species

Glen Canyon Aquatic Resources Management continued to participate in the Utah Aquatic Nuisance Species Action Team (UANSAT) to coordinate protection of Utah's waters from exotic species. All surface waters of Utah are at risk, but Lake Powell is considered a very likely port of entry for nuisance species because of high visitation. Aquatics Program staff have assisted UANSAT in the development of a Memorandum of Understanding, sign and brochure design, distribution of educational material, and the development of a prevention strategy within the State of Utah. Aquatics program personnel have produced educational materials including posters, mailer inserts, and a peer reviewed publication on the Glen Canyon Zebra Mussel Prevention Program.



Zebra Mussel

The Lake Powell Zebra Mussel Prevention Program began in 1999 and continued through 2003. This program is recognized as one of the most proactive efforts in the western United States to prevent the spread of zebra mussels. Finely tuned questions are asked by fee collection personnel to identify high-risk visitor boats. Twenty-two boats that entered Glen Canyon NRA were identified as high risk for spreading zebra mussels because they had recently been used in infested states. Each of these 22 boats was given a coupon for a free boat washing

from the concessionaire (ARAMARK). In the spring of 2003, the Superintendent's Compendium was updated to make the washings mandatory. About 10 boats redeemed coupons, provided by the program. As many as 12 boats identified as a threat may have launched on Lake Powell without being cleaned, presenting a clear threat of introduction of the organism into Lake Powell. Although the overall number of potentially threatening boats launched did not change between 2002 and 2003, there was a smaller percentage of threatening boats washed in 2003 despite the compendium change. Aquatic Resources Management will work with the Law Enforcement Division, Fee Collectors, and ARAMARK in 2004 to develop a system of



Artificial Zebra Mussel Substrate

enforcement to increase visitor compliance with the program.

The monitoring program to detect Zebra Mussels, if they exist, in Lake Powell has continued with the use of artificial substrate samplers. The samplers allow detection of settling stage zebra mussels. Prior to the use of artificial substrate samplers, only adults could potentially be detected. There have been no live Zebra Mussels found in Lake Powell.

In April 2002, the Glen Canyon Aquatic Ecologist identified the New Zealand Mudsail (NZMS) in the Colorado River below the Glen Canyon Dam. This invasive exotic species has been documented passing through the digestive system of trout undamaged. The NZMS out-competes other aquatic invertebrates for food and space. The end result is a greatly reduced invertebrate fauna that provides very little energy to higher trophic levels. Potential impacts to the “Blue Ribbon” trout fishery below the dam are already evident. Examination of voucher specimens from invertebrate monitoring by the GCMRC proves that the NZMS has existed in the Colorado River below Glen Canyon Dam since at least August of 1995. The snail had been misidentified for seven years. In 2000, NZMS density at Lees Ferry peaked at over 40,000 snails per square meter. Currently there are no feasible methods for removal.



New Zealand Mudsails

Fisheries

Sport fishery management at Glen Canyon NRA is accomplished through an integrated, interagency cooperative effort between the Utah Division of Wildlife Resource (UDWR), Arizona Game and Fish Department (AG&F), and the National Park Service.



Striped Bass

population is eliminated from the pelagic zone, leaving the striped bass with insufficient forage. Angler harvest is used as the primary tool for controlling the striped bass population to keep the fish in good condition. There is no creel limit on striped bass in Lake Powell, and all anglers are asked to keep all striped bass caught. During 2003,

Sport fisheries of Lake Powell were healthy for the 2003 season. Since the 1980's, the striped bass population in Lake Powell has gone through cycles of boom and bust in a classic predator-prey interaction with threadfin shad. Infrequent peaks in the shad population cause the striper population to increase until the shad



Threadfin Shad

shad populations were as high as they have ever been in Lake Powell. Striped bass condition was also very good.

During recent years, the smallmouth bass population has increased. Smallmouth bass also feed on shad. Competition for limited forage resources has caused a slow down in smallmouth growth. Regulations imposed in 2002 increased the creel limit on smallmouth bass from 6 to 20 in possession. It is hoped that the increased limit will increase angling mortality to keep smallmouth populations under control. With no limit of striped bass and the increased limit for smallmouth bass, Lake Powell may



Smallmouth Bass

have the most liberal creel limits in the U.S.

A gizzard shad was first collected from Lake Powell in the San Juan inflow area on June 6, 2000. No additional gizzard shad were found until August of 2002 when Utah Division of Wildlife Resources personnel collected six from the San Juan arm. By 2003, gizzard shad had moved into all of Lake Powell. The effects of gizzard shad in Lake Powell are unknown. Gizzard shad may improve the sport fishery by providing another forage source. They may also severely impact the threadfin shad population. Gizzard shad quickly grow beyond the prey size threshold for all but the largest of the predators. This could mean that gizzard shad will provide a more stable food source by virtue of maintaining a large brood stock to replenish forage for bass, or the gizzard shad may become too large to serve as forage and begin to compete with bass for the already limited food resources.



Gizzard Shad

The rainbow trout fishery in the Colorado River below Glen Canyon Dam has seen low production for the last several years. There are high population numbers, but growth rates are very low. The average trout size in the 1970s and 80s was over 16 inches; today the average size is less than 12 inches. In 2002, AG&F proposed new regulations to reduce numbers and increase size of trout. Releases from the Glen Canyon Dam were manipulated in 2003 in an attempt to reduce recruitment. By the end of 2003, the success of the fishing regulation changes and dam release manipulations was uncertain, but some improvement in Rainbow trout size and health were evident.



Photo courtesy USFWS/Duane Raver



Waterfalls in Escalante Arm

Entomology

Long-term monitoring through macroinvertebrate sampling was continued in Bowns Canyon and the Escalante River in 2003. The samples are sorted and identified by the Bureau

of Land Management Aquatic Ecosystem Laboratory in Logan, Utah, and a report is submitted to Glen Canyon NRA at no charge to Glen Canyon NRA as part of a cooperative agreement with the Laboratory. The reports produced for each set of samples includes a taxa list with abundance and suite of indices calculated. Macroinvertebrate data over time allows analysis of trends in ecosystem health.

Lake Powell Cooperators Group

The Lake Powell Cooperators group has met each year since 1990. The annual meetings create an opportunity for information exchange and fostering partnerships between agencies active on Lake Powell. Formalized by a Memorandum of Understanding in 1998, signatory agencies include the NPS, USGS, U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, Utah Division of Environmental Quality, UDWR, Arizona Division of Environmental Quality, AG&F, and Navajo Nation Environmental Protection Agency. Other participants include U. S. Bureau of Indian Affairs, U.S. Coast Guard Auxiliary, Utah Department of Health, Utah Parks and Recreation, Southwest Utah Public Health Department, Coconino County Department of Health, GCMRC, Northern Arizona University, Utah State University, University of Utah, Page High School, Navaho Generating Station, and ARAMARK.



Lake Powell near Oak Canyon

CULTURAL RESOURCES

PLANNING AND COMPLIANCE:

Adaptive Management Program: Implementation of Programmatic Agreement with Bureau of Reclamation: Glen Canyon NRA staff involvement in the Programmatic Agreement (PA) for the protection of cultural resources below the dam increased over the course of the fiscal year. Staff reviewed and prepared comments for a comprehensive Research Design and Consultation Plan, completed as separate documents funded by Reclamation. Staff attended meetings of the PA group, and consulted with the Advisory Council, the SHPO's office and GRCA staff concerning problems with the implementation of the PA and the need to proceed with site protection measures as soon as possible.

"Surplus" EIS/EA: Cultural staff began work with Glen Canyon NRA GIS staff and the Bureau of Reclamation on a water storage "surplus" action requiring 110 consultation on cultural sites (including TCP's) located below high water. Sites have been identified using the Glen Canyon NRA GIS analysis; consultation with tribes and SHPO's will proceed in FY04. It is anticipated that a sample of sites will require field checking and documentation.

Wahweap DCP: Separate 106 consultation actions were prepared for the Wahweap Trailer Village Cabins, the Lake Powell Motel, and prehistoric sites within the DCP planning area. The DCP Environmental Assessment was reviewed with comments on cultural components.

Clearances: Field inspections and follow-up 106 actions as needed were completed for the Lees Ferry leach field construction, Lees Ferry restroom upgrade, Lees Ferry bridge, Qwest trespass, and Hall's Crossing campground drainage.

Fire Management Plan: Cultural staff spent a week attending training on preparation of the cultural component of the Fire Plan. Initial meetings have been completed and preparation of the plan is pending.

Page One EA: Staff prepared the cultural section of the Page One EA and completed appropriate Section 106 compliance.

River Monitoring: Two seasonals completed monitoring of 26 of 31 Glen Canyon NRA sites on Reach 0 below the dam. Recent geomorphic models were reviewed to determine their applicability to Glen Canyon NRA terraces. Erosion patterns and rates were evaluated to develop recommendations for site treatment. Reclamation allocated \$100,000 in FY04 for development of a Treatment Plan for Glen Canyon NRA and Navajo Nation sites on this reach.

BLM Grazing: Thirty grazing leases administered by BLM contain Glen Canyon NRA acreage. Grand Staircase-Escalante National Monument is currently preparing an EIS on the re-issuance of 13 of these leases, and Glen Canyon NRA cultural staff has been developing information on approximately 550 Glen Canyon NRA cultural sites which lie within these leases. Identification of impacts will follow the development of the proposed action, which will be tied closely to a "rangeland health" condition goal. Mitigation measures sufficient to meet NPS' "non-impairment" requirement have yet to be discussed or developed.

Cultural Affiliation Study: Glen Canyon NRA has agreed to join with Reclamation at no cost in their study of cultural affiliation of tribes interested in receiving funerary objects or remains as called for under NAGPRA. Reclamation initiated this effort for collections under their care removed from Glen Canyon Reservoir and Navajo Reservoir prior to inundation. This study was initiated in FY04 and is expected to be completed in 2 to 3 years. The two components of work include a physical examination of skeletal remains, and a review of published ethnographic literature.

Glen Canyon NRA Cultural Resource Preservation Plan: The purpose of this plan is to prepare criteria for evaluating cultural resources in the park and assigning priority for treatment and protection actions. It is designed to support requests for funding developed for yearly budget cycles, and to focus monitoring and other protection actions. In FY03, Vanishing Treasures funding was used to hire a GS11 term archeologist who completed several of the background sections of this plan before leaving after 10 months. The position will be re-advertised in FY04 and work on the plan will continue.

Computerized Data Base: Steve Baumann from WACC installed the final version of the integrated GIS data cultural base onto the Division computers in February. Data included a graphic Arcview data set showing site locations; copies of all site forms, maps and photos; and two encoded data base site files, the Cultural Sites Inventory (CSI) and the Archeological Site Management Information System (ASMIS).

Efforts to utilize this data set to develop information for the BLM Grazing EIS effort were not successful due to numerous and varied problems related to configuration and compatibility of data base sets and operating software. Both the IT and GIS staff provided extensive assistance in this project. We are waiting for a follow-up visit from Steve Baumann to help get beyond these issues. In addition, however, it appears as though many site description variables must be added to the ASMIS files in order for this data to be useful for most park applications. Priority will be placed on this work in FY04.



Alluvial Deposit in Mammoth Alcove

Mammoth Alcove: This mammoth burial location, first recorded during the 1980's, was visited for the purpose of assessing its condition prior to submission of a request for funding for excavation and research. The alcove contains a unique deposit of skeletal and other organic remains in a 14 meter deposit of fluvial sediments dating to 50,000 to 100,000 year ago. The site was found to be still intact overall, although several newly exposed mammoth bones were found on the surface. Funding for research was not available in FY03.

Escalante Canyon Site Condition Assessment: Glen Canyon NRA started a project to perform condition assessments for selected structural sites in the Escalante Canyons. This CESU project focused on previously identified sites in selected canyons. Utilizing the knowledge and expertise of Backcountry Ranger Bill Wolverton, archeologists have performed detailed documentation on structures of widely variable architectural styles, dates, and cultural affiliation.

This information will be used to formulate an umbrella archeological research program for the Escalante Canyons, to be presented in the Preservation Plan. Research questions will be developed to provide context and priority for future site protection work.

Wolverton Cabin Condition Assessment: Funding was given to Mesa Verde National Park staff to develop a condition assessment for Wolverton Cabin. This site contains several wood and stone structures related to early mining and ranching in the Hans Flat area. Results of this project will be incorporated into the Preservation Plan and used to develop funding requests for protection work.

Defiance House Documentation: Funding for stabilization work at Defiance House was



Transit Mapping Defiance House in Alcove

utilized to produce a detailed baseline condition assessment of the site utilizing digital technology. Products include a digital site map, digital and 35mm photographs, and a condition assessment report including scaled drawings of each wall. Historic information was integrated to allow tracking of successive episodes of repair and stabilization; detailed analysis

of the alcove back wall documented rock art, rooflines of structures now destroyed, and other features such as

mudballs and driplines.

This is the first site in the park to receive this type of digital mapping and documentation, although the technique is widely used in parks such as Mesa Verde and the Flagstaff Group which have numerous large structures. The potential for use on additional sites at Glen Canyon NRA will be evaluated as the products are used in future site management actions.

Lees Ferry Repairs: The Historic Preservation Training Center continued stabilization of historic structures at Lees Ferry/Lonely Dell with the replacement of roofs on two



structures, and completion of additional minor repairs such as sill replacement, and repair of cellar doors at Weaver Ranch House. The final phase of repair work, involving repointing and replastering work on numerous structures, was scoped by MEVE staff and scheduled for completion in FY04.

Monitoring Notebooks: As part of the effort to maintain the improved condition of the historic structures at Lees Ferry, Monitoring Notebooks are being prepared for each structure showing baseline condition, monitoring points, and repair materials and techniques. Once these notebooks are completed, they will be utilized by Glen Canyon NRA staff in the Resources, Interpretation and Facilities Divisions to maintain the condition of

these structures.

Mortar Erosion in Post Office Building

Lees Ferry Bees: Two large bee hives were removed from Lonely Dell by a professional bee keeper. One hive was located within the historic Weaver Ranch House, one was in a dead tree near the access gate. Repairs were made to the Weaver house to prevent re-entry. Both colonies were considered to be partly Africanized.

Lonely Dell Irrigation Ditch Repairs: Public Land Corps funding was received to complete repairs on the historic irrigation system at Lees Ferry. Several hundred feet of ditch are targeted for removal of tamarisk, planting of native cottonwoods, and repair of stone lining and headgates. Water will be channeled to the orchard and gardens around existing structures. Work is scheduled to begin in spring of 2004.

COLLECTIONS

Collection Facilities Strategy: Cultural staff monitored and provided input to regional effort to plan for the centralization of collections.

Museum of Northern Arizona (MNA) Paleontology Collections: Cultural staff worked with representatives from MNA to protect materials recently collected as part of ongoing research in the park and housed at MNA. While preparations were made to remove Glen Canyon NRA materials due to loss of MNA staff expertise, this became unnecessary after MNA regained some degree of fiscal solvency and re-employed appropriate staff to protect the collection. Cultural staff prepared temporary work space in the collections area to receive, process and house materials collected during ongoing research. They also assisted in working cooperatively with the John Wesley Powell Museum in developing long term plans for paleontology displays.

Collections Program: Regular work completed as part of the collections program included responding to numerous requests for research use of the collections, completion of yearly inventory, and tracking of records. Cultural staff attended week-long training session in the spring on the new cataloging software. Assistance from the curator at the Flagstaff group was utilized in the completion of year-end reports, and in updating loan documentation and other correspondence.

TERRESTRIAL PROGRAM

Exotic Plant Control

San Juan River trips were conducted in April and June of 2003 to survey for exotic plant species. The April trip located several populations of exotics, while the June trip eradicated populations of two species, Ravenna Grass (*Saccharum ravennae*) and Russian Olive (*Eleagnus angustifolia*). All plants of Ravenna Grass found were removed from the Glen Canyon NRA boundary at Honaker Trail downstream. About 25% of all Russian Olives visible from the river were also eliminated. Work was done by a 6-man Coconino Rural Environmental Corps crew. Logistical and boat support was provided by Arizona Raft Adventures of Flagstaff, Arizona, and Glen Canyon NRA Visitor Protection. Funding was provided by the Colorado Plateau EPMT.

Two new exotic plant species were discovered during the FY2003 fiscal year. The first was Telegraph Weed (*Heterotheca grandiflora*), a native of the Mojave and Sonoran deserts. This species was located at the intersection of Highway 89 and South Lakeshore Drive. It may have been transported by boat or recreational vehicle from the Lake Mead area. This location represents a significant range extension for a primarily hot desert species. The population was removed. The second species, also from hot desert areas of the southwest, was African Mustard (*Brassica tournefortii*). Because of the relatively mild and wet early period from October-December 2002, this species appeared suddenly along roadsides throughout the Page and Wahweap areas, and also along the Colorado River near Page and the Lees Ferry area. It is a winter annual native to North Africa, and is a serious problem at Lake Mead NRA. Because of its abundance and the lack of a winter field crew, control efforts could not be initiated on this species in winter 2002-2003.

A Tehabi intern, Monica Orton, was hired to lead the Glen Canyon exotic plant control program during the summer of 2003. Monica accomplished several significant projects. First, she completed surveys for selected exotic species in down lake areas of Lake Powell that had not previously been surveyed. Help was provided by a graduate student and team from Haskell Indian Nations College. Target species included Ravenna Grass, Russian Olive, Russian Knapweed (*Acroptilon repens*), Spotted Knapweed (*Centaurea maculosa*), Perennial Peppergrass (*Lepidium latifolium*), Bindweed (*Convolvulus arvensis*), Camelthorn (*Alhagi camelourum*), Himalayan Blackberry (*Rubus discolor*), and Whitetop (*Cardaria draba*). Sixteen canyons were surveyed, and only one species, Ravenna Grass, was located. Two populations were found, one each in Cottonwood Gulch and Davis Gulch. These will be targeted for eradication in FY2004.



Telegraph Weed at the junction of South Lakeshore Drive and Highway 89

The second project was a survey of marina areas, including Wahweap, Dangling Rope, Bullfrog, Hall's Crossing and Hite. At Hite, a small population of Perennial Peppergrass was located and removed. At Wahweap, there are numerous Ravenna Grass plants that have re-sprouted after control efforts in the late 1990s. These were not removed due to lack of time and personnel. A mesquite (*Prosopis glandulosa*), a locust



Monica Orton at work in a patch of Ravenna Grass.

(*Robinia* sp.) and several Siberian Elms (*Ulmus pumila*) were removed. At Hall's Crossing, a Mesquite was removed. Throughout these marina areas, numerous young and escaped Russian Olives were found, originating from planted trees. The spread of this species from landscaped areas is becoming a serious problem, as it is extremely invasive and has potentially disastrous consequences for native riparian vegetation in Glen Canyon NRA. The landscaped area at the new Hite Ranger Station was visited, and the planted Mexican Evening Primrose, *Oenothera berlanderei* was still present. An official request had been made in 2002 to remove this potentially serious invasive species, but it was not done. The plants were removed in the summer of 2003.

At Lees Ferry, control of Russian Olive was initiated in 2003. In addition, all plants of Ravenna Grass in the area were removed mechanically by a combined team from Glen Canyon NRA and Grand Canyon NP. This collaboration was extremely successful, and

in FY2004 a combined effort will be made by teams from the two parks to eliminate all Ravenna Grass and Russian Olive from the river corridor between Glen Canyon Dam and Lees Ferry.

Finally, several trips were completed using Wilderness Volunteer and Sirerra Club volunteer work groups to continue Russian Olive control along the Escalante River corridor. These trips were all lead by Bill Wolverton of the Escalante Subdistrict Office.

Grazing Management

The new Glen Canyon range ecologist was hired. Steven Bekedam is completing a M.S. in Range Ecology at Oregon State University, where he is working on grazing and exotic plants.

Coordination with the Grand Staircase-Escalante NM continued on their Rangeland Health EIS, with meetings every 2 weeks attended by Resource Management staff.

With the continuing severe drought and lack of vegetative growth, Glen Canyon requested that all BLM Filed Offices contact the NRA prior to allowing livestock onto shared allotments. However, this did not happen in all cases, and in particular two trespass and removal concerns were raised in two areas of Glen Canyon NRA, Lower Warm Creek Allotment and the Bullfrog area. Because of low Lake Powell levels, cattle have been able to enter the Bullfrog developed area from the Waterpocket Fold allotment. Through a coordinated effort with the Henry Mountains Filed Office these animals were finally removed. Cattle were placed on the Lower Warm Creek allotment unexpectedly in 2002, without consultation with NRA staff. An agreement was reached between the Grand Staircase-Escalante NM and the NRA that they would be removed entirely by March 9, 2003. This was not done, and cattle were still present and not completely removed until nearly the middle of April. A trespass cow in Scorpion Gulch was not removed by BLM and has now been there more than a year.

The Botanist helped teach The Tehabi Range Course in May of 2003 at Grant Kohrs NHS. Subjects included were sampling and collecting data on upland birds, monitoring techniques, and analysis methods.

The draft final report on the Fee Demo grazing project to develop a resource database for grazing allotments was completed by the Tehabi Program. A second project, development of permanent photo interpretation points and vegetation cover, was completed by Jayrene Harris, a seasonal biotech. In all, 26 permanent photo points were established in typical grass and shrub communities throughout Glen Canyon NRA.

Inventory and Monitoring Program

The Botanist provided assistance to the Southern Colorado Plateau Network (SCPN) on its Phase I monitoring plan report, completed in 2003, including reviewing the document, attending scoping and plant development meetings, and writing portions of the report on

springs and tinajas. He was also assigned to the Monitoring Steering and Technical Committee of the SCPN.

A reptile and amphibian survey was initiated using NRA Fee Demo funds with the USGS Colorado Plateau Field Station providing the field personnel to conduct the surveys. Because of the ongoing drought, several species were not seen during the surveys. In all, 21 species (5 amphibians, 10 lizards, 6 snakes) were documented. Two new locations for the Northern Leopard Frog (*Rana pipiens*) were discovered in Dark Canyon and Last Chance Creek. Additional field work and data entry were provided by a second Tehabi Intern, Mike McDonough.

Spring and hanging garden surveys were continued at Glen Canyon NRA. Three canyons were surveyed, Dark Canyon, Cottonwood Canyon, and an unnamed short canyon north of Ribbon Canyon. No new populations for sensitive or rare species were found.

The Botanist visited and completed preliminary hanging garden surveys in areas of Capitol Reef National Park, Dinosaur National Monument, and the Navajo Nation with the help of park and Navajo Nation botanists. In all, 11 sites were sampled, 5 at Dinosaur NM, 2 at Capitol Reef NP, and 4 around Navajo NM and Inscription House on the Navajo Nation. Numerous records of rare and endangered species were obtained from these surveys.

A 2-year survey to inventory the flora of Glen Canyon NRA was initiated by a graduate student at Northern Arizona University, with numerous sites sampled throughout the park.

The fifth annual Glen Canyon Christmas Bird Count was held on January 3, 2003. Twelve enthusiastic birders attended, with 75 species and 6,511 individuals counted. Species new to the count included Tundra Swan, Blue-winged Teal, Osprey, White-breasted Nuthatch, Brown Creeper, Cedar Waxwing and American Tree Sparrow. A CBC database was developed, and will be used to track potential changes as the result of the recent arrival of West Nile Virus in the region.

Threatened, Endangered and Sensitive Species

Bald Eagle monitoring was accomplished in December of 2002, and January and February of 2003. The highest count ever obtained since surveys were initiated in 1991 was in January of 2003, with 46 Bald Eagles.

Annual monitoring of populations of the endangered species *Pediocactus bradyi* and Navajo Sedge (*Carex specuicola*) were completed. The cactus is continuing to decline in Glen Canyon NRA, while the population of Navajo Sedge is stable in Slickhorn Canyon.

The Utah State Division of Wildlife Resources conducted site occupancy monitoring of selected Peregrine Falcon eyries around Lake Powell in 2003. The surveys were part of

the first year of a 5-year monitoring program for the recently delisted falcon. As part of this program, 11 historically occupied eyries in Glen Canyon NRA were visited.

Research and Research Permitting

Three research projects using 80% Fee Demo funds were initiated in FY2003 through the Colorado Plateau CESU and Department of Biological Sciences at Northern Arizona University. These three projects were all related to critical needs in understanding, monitoring, and protecting hanging gardens environments in Glen Canyon NRA. The projects are:

- Sample and describe genetic variation and genotype distributions among aquatic invertebrates at gardens among taxa of low, intermediate and high dispersability;
- Inventory land snails in selected habitats associated with hanging gardens and relict woodlands around springs;
- Determine genetic structure and taxonomic status of the rare endemic garden plant species *Platanthera zothecinus* and *Zigadenus vaginatus*.



**Hanging Garden in Slickhorn Canyon, San Juan River.
Location of Navajo Sedge (*Carex specuicola*)**

Work by contractors continued on the Glen Canyon Old High Water Zone project, funded by the Bureau of Reclamation. About 35 trees of Western hackberry (*Celtis reticulata*) were cored along the Colorado River for age and growth determinations. A preliminary

vegetation map was developed and an analysis of different stage-discharge levels and their effects on riparian vegetation was run. This project will be completed in FY2004.

The Botanist continued floristic and taxonomic research on the Bryophyte Flora of North America, Moss Flora of Nevada and Vascular Plant Flora of the San Juan River Basin projects.

Resource Management and Planning

Planning and NEPA compliance was initiated on several documents during FY2003. These include the Fire Management Plan and EA, Weed Management Plan and EA, and the Page One EA. Similar terrestrial “affected environment” language will be developed that can be used in these EAs, as well as future planning and NEPA documents. Support by the Botanist was provided for the final completion of the Glen Canyon NRA Personal Watercraft EIS in the areas of T&E species, wildlife, and vegetation, and on the Wahweap Development Concept Plan.

Divisional, NPS and Inter-Agency Coordination and Collaboration

The Botanist represented Glen Canyon NRA and the NPS on the Arizona Important Bird Area Program Scientific Steering and Review Committee, with meetings in Phoenix and Bill Williams NWR. Over 40 nominations were analyzed, with about 15 selected. Two newly accepted IBA’s occur in parks, Lipan Point Hawkwatch IBA in Grand Canyon NP, and Glen-Marble Canyon IBA in Glen Canyon NRA and Grand Canyon NP. The IBA program will eventually produce a book on the IBA’s in the state of Arizona.

The Botanist prepared a grant to the National Fish and Wildlife Foundation to develop a botanical learning center and greenhouse for native plants at the Page Unified School District, which was funded. In cooperation with the Interpretation Division, the program was initiated in FY 2003.

The Botanist was asked by the U.S. Fish & Wildlife Service to review recovery plans for proposed endangered plant species for the islands of Hawaii, Oahu and smaller islands along the chain to the north. These proposals covered more than 150 plant species. The reviews were completed and submitted within the deadline for scientific reviews on the proposed plans.

The Botanist conducted two workshops in 2003. The first was for the Glen Canyon Natural History Association on flowers in the Wahweap area in May 2003. The second was on the lichens on the grounds of the Flagstaff Arboretum in August 2003.

Publications and Reports

In October of 2002, the Botanist accepted a nomination as Editor of *Utah Birds*, the journal of the Utah Ornithological Society. Two issues have been published under the

new editorship. Numerous changes to the format of the journal were introduced starting with Volume 17, 2003.

The final report on the development of criteria for sustainable rangelands was published in May 2003 by the Sustainable Rangeland Roundtable. The Botanist was heavily involved in this project as one of two representatives of the National Park Service, primarily in the development of criteria for monitoring rangeland-dependent species and communities, and threatened and endangered species and communities.

Draft final reports were completed for the biotic surveys along the Colorado River and bird monitoring in Glen and Grand Canyons.

Spence, J.R. 2003. Biotic surveys of selected springs along the Colorado River corridor in Utah and Arizona: Arches National Park, Canyonlands National Park, Glen Canyon National Recreation Area, and Grand Canyon National Park. Draft Final report to Water Resources Division, WASO. Resource Management Division, Glen Canyon NRA.

_____. 2003. Archidiaceae. Web-based treatment for the Bryophyte Flora of North America Project, Missouri Botanical Gardens (www.ridgwaydb.mobot.org/bfna/).

_____. 2003. Araliaceae. Family treatment for the Flora of the San Juan River Basin Project. San Juan College, Farmington, New Mexico.

_____. 2003. Celastraceae. Family treatment for the Flora of the San Juan River Basin Project. San Juan College, Farmington, New Mexico.

_____. 2003. Spring-supported vegetation along the Colorado River, Colorado Plateau: floristics, vegetation structure and environment". In Meretsky, V. and L.E. Stevens (eds.). Springs of the American Southwest, ecology and management. University of Arizona Press, Tucson (in press).

_____. 2003. A preliminary treatment of the Bryaceae (Bryales, Musci) for the Flora of North America. Evansia 21: in press.

Spence, J.R. and B.A. Bobowski. 2003. 1994-1997 surveys of waterfowl on Lake Powell, a large oligotrophic reservoir in the southwestern U.S. Western Birds 34: in press.

Spence, J.R. and J.A. Holmes. 2003. Monitoring of winter aquatic, winter terrestrial and breeding birds along the Colorado River from Glen Canyon Dam to Lake Mead. Draft final report to the U.S. Geological Survey, Grand Canyon Monitoring and Research Center, Flagstaff, AZ.

Shevock, J., J.R. Spence and L. Stark. 2003. Mosses new to Nevada: Part 1. Madroño 51: in press.

Stevens, L.E., A. E. Springer and J.R. Spence. 2003. Appendix R: Spring and tinaja ecosystems literature review. In National Park Service Vital signs monitoring plan for the Southern Colorado Plateau Network: Phase I report, National Park Service I&M Program, Northern Arizona University, Flagstaff, AZ

Taylor, H.T., J.R. Spence, R.C. Antweiler, K. Berghoff, T.I. Plowman, D.B. Peart and D.A. Roth. 2003. Water quality and quantity of selected springs along the Colorado River corridor, Utah and Arizona: Arches National Park, Canyonlands National Park, Glen Canyon National Recreation Survey, and Grand Canyon National Park. U.S. Geological Survey Open File Report (in press).

Criteria and Indicators for Sustainable Rangelands. A First Approximation Report. 2003. The Sustainable Rangelands Roundtable. Colorado State University, Fort Collins, CO.

GEOGRAPHIC INFORMATION SYSTEM, DATA MANAGEMENT and PALEO

Support Activities

Park safety signs and posters were produced. The Glen Canyon NRA boundary was updated incorporating the new Antelope Point and City of Page survey data provided by the Bureau Land Management's Cadastral Survey. A soundscape analysis of Glen Canyon NRA Natural Zones in support of the PWC EIS was produced. Maps for the Page One land exchange project and congressional legislation were provided.

Paleontology

In April 2003, the Museum of Northern Arizona in cooperation with the National Park Service installed the special exhibit "Plesiosaur—Terror of the Cretaceous Sea." that display plesiosaurs from Glen Canyon National Recreation Area and Grand Staircase-Escalante National Monument that were recovered during the past four years. The central display is a 20-foot-long mounted skeleton. That exhibit is tentatively scheduled to be moved in April 2004 to the Powell Museum in Page.

Paleontology fieldwork in the park in 2003 involved excavation of a partial skeleton of a very large plesiosaur, estimated to be 30-35 feet long in life, from the Tropic Shale; excavation of a complete, 5-foot-long fish from a site near the large plesiosaur; and surface collections of other fish and plesiosaurs during extensive survey and inventory.

The plesiosaur excavation was opened to the public for a 2-day interval to allow visitors a chance to see the skeleton before it was removed from the ground. This event drew approximately 150 visitors, from as far away as St. George, Utah, and Flagstaff, Arizona. As hoped, this event was entirely positive, and did not stimulate any vandalism or unauthorized collecting. Glen Canyon NRA staff from Natural Resources, Interpretation, and Law Enforcement participated in this on site open house and contributed to its success.



Excavation Site Open House

Dr. David Gillette conducted Paleontological clearances for the Wahweap DCP Environmental Impact Statement and Page One Land Exchange EA. These activities involved on site review of geology of affected areas, and an estimate of potential Paleontological resources.

Dr. Gillette and the Glen Canyon NRA staff initiated long-term exhibit and educational planning with the Powell Museum, to take advantage of the opportunities that have arisen from the fossils Dr. Gillette and his crew have collected.

Also, funding was sought and obtained for the purpose of writing a Paleontological Resources Management Plan. Glen Canyon NRA staff met with the Museum of Northern Arizona, Northern Arizona University and the National Park Service for the purpose of writing the plan. Dr. David Gillette, from The Museum of Northern Arizona and Northern Arizona University, is contracted to complete this work. The plan, scheduled for completion in FY04, will document past Paleontological efforts and be a guide for future research, excavations, interpretive programs and resource protection.

Non-park personnel involved with paleontology in the park in 2003 include David Gillette, Barry Albright, Scott Richardson, James Gilligan, Janet Gillette, and volunteers who contributed hundreds of hours of support.

Compiled, digitized and mapped initial Paleontological site locations and created new GIS overlays. Over the course of several years paleontologists have uncovered and located many Paleontological evidences and resources. These resources were recorded on various maps and sometimes a GPS was used. This data is now being compiled and mapped. Quality assurance has been initiated. Coordinates have been compared to existing resources. These sites need to be mapped using a high quality mapping GPS unit to assure their future relocation.

GIS

In the spring of 2003, the state of Utah sought guidance for reintroduction of Desert Bighorn Sheep within and around Glen Canyon NRA. Maps were created using the Glen Canyon NRA GIS Desert Bighorn Sheep Model. The model identified areas of highly suitable habitat in the Mount Holmes and Dirty Devil River areas. The state of Utah followed up by transplanting sheep into these areas.

Qwest Communications started replacement of an existing phone line between the city of Page and the Glen Canyon Dam. Construction was halted until a proper clearance of the area was performed. A GPS survey was conducted showing the disturbed area. GIS analysis tools were used to identify and assess damage and delineate areas of proposed rehabilitation. Construction was moved to the proper area of right-of-way.

To classify the Old High Water Zone between Glen Canyon Dam and Lees Ferry, Arizona, 22 centimeter multispectral imagery was obtained. Some 25 multispectral scenes were edge-matched and mosaiced together. Multispectral classifications were performed for the purpose of delineating vegetation and ground cover types. Field study is ongoing. This project is expected to be complete in FY2004.

Nine Enhanced Landsat-7 multispectral imagery layers were obtained for the purpose of identifying exotic plants. Tamarisk and Russian Olive were of particular interest. Layers were edge-matched and appended together creating a seamless coverage of the Glen Canyon NRA. Vegetation classification has begun. Project is ongoing.

Using STAR data cross-sections, created a predictive model of Glen Canyon Dam Water Releases inundation areas at water releases of 15K, 30K, 45K, 60K and 85K CFS.

Created new grazing allotment GIS layer and maps correcting previous BLM/NPS grazing allotment boundaries. Produced Geology, Soils, Topographic, Springs and Range Improvement Maps in support of Grazing EIS and Wildfire Management Planning.

The GIS Specialist participated in Fire Management Training at Grand Canyon National Park. An analysis using soils and vegetation data to produce a Glen Canyon NRA Fire Load Map in support of the Glen Canyon NRA Wildland Fire Management Plan and

upcoming EA was conducted. Data and consultation was provided to fire management EA contractors at Utah State University.

Judith Huether (Grant-Kohrs NHS Cartographic Technician) was detailed to Glen Canyon NRA from July through September 2003. Her Major task was to prepare coverages to support development of a Wildland Fire Management Plan as well as providing support where needed on projects ranging from metadata creation to grazing and fire management.

A soil survey of effected environment was provided for Page One Land Exchange EA and prepared GIS data layers for Wahweap DCP.

Federal Geographic Data Committee metadata for more than 30 Glen Canyon data layers were created. Organizational changes to the NPS Data Clearinghouse were submitted. Data layers were compiled and maps produced for the NPS/USGS springs report. The study area extended from Canyonlands National Park through Glen Canyon NRA and Grand Canyon National Park. Range Improvement Maps and the Southern Utah Geology Map were scanned and geo-referenced. BLM Aerial Photo Flight Lines, Glen Canyon NRA Boundary Plat Maps, city of Page Town-site Photos, GCMRC Colorado River Geology Maps and Viking Oil Survey Plats were scanned.

The entire Navajo National Monument GIS database and files were imported checked against inventory indexes and the data conversion process was started.

GIS obtained 16 1 Degree 30 meter Digital Elevation Models. These models were imported using standard GIS techniques and mosaiced. The data set was then used for various mapping and analysis projects in 2003. This new coverage replaces the existing Glen Canyon NRA Digital Elevation Model.

Ranger Division Support

GIS Specialist coordinated survey and provided maps of Glen Canyon NRA boundary to Escalante subdistrict rangers. He conducted a map survey with Ranger Dave Bauer for the purpose of locating the Glen Canyon NRA boundary on the ground. Maps were created showing the Glen Canyon NRA boundary. GPS locations were provided at strategic boundary crossings. Signage was then created for the purpose of informing visitors and law enforcement personnel when entering the Glen Canyon NRA.

Rangers were provided with up to date maps of Lone Rock Beach for the Incident Command and Control Center. A GPS survey was conducted, updating facilities and features used by rangers for orientation and planning. Support for the SAR Team was actively continued, providing mapping and support for several SAR efforts. Maps and graphic support was provided to investigators during the investigation of the slaying of the Garfield County deputy.

Interpretation Support

Maps and graphics were produced for the Division of Interpretation. Graphics were produced for the Glen Canyon NRA Newspaper and Trails Pamphlet. A Navajo National Monument map was also produced.

Facilities Support

Survey data was provided to the city of Page and Antelope Point developers. Underwater surveys of Glen Canyon NRA launch ramps were conducted. Field surveys were performed and maps produced for launch ramp planning purposes. A field survey was conducted at Wahweap Marina delineating well heads. GIS analysis was performed and a map produced showing distances and potential lake surface water influence on wells. GPS locations and planning maps for the Wahweap sewer line were quality checked. A GPS survey of Antelope Point roads was conducted. A map was produced in support of the Castle Rock Cut study for possible dredging activities.

The GIS Specialist calculated distances of the proposed Antelope Point Marina from the middle of the main river channel at various lake levels for planning purposes.

RESEARCH PROJECT ORGANIZATION

Glen Canyon NRA Research Study Proposal (RSP) project files contain 330 entries for natural, cultural, or paleontological projects either ongoing or completed. Included in this number are twenty projects conducted by park staff. Twenty projects conducted along the Colorado River in both Grand Canyon NP and Glen Canyon NRA as part of the Grand Canyon Monitoring and Research Center (GCMRC) program.

Research Permitting

Through the service-wide web-based research permitting process, 20 research permits were issued in 2003.

AMERICAN INDIAN LIAISON

Liaison activities regarding Antelope Point Marina development included coordinating communication between LeChee Chapter, the Dine Medicinemen Association, and Living Rivers regarding their concerns on the current impacts of natural and cultural resources. Meeting with NPS, Navajo Nation Economic Development, NTUA and LeChee Chapter to discuss the proposed operation and planning for the ground breaking ceremony and advising of employment information for the Navajo Nation Chapters which is anticipated to be an ongoing issue until the project is completed.

Personal Watercraft (PWC) activities included the PWC environmental impact statement (EIS) coordination with the affiliated American Indian Tribes and Navajo Nation Chapters.

Wahweap Development Concept Plan (DCP) liaison activities involved contacting all of the Glen Canyon National Recreation Area's affiliated tribes along with all of the Navajo Nation Chapters on the DCP planning document

The proposed boundary adjustment in Glen Canyon NRA for the Page One Land Exchange was communicated to the affiliated tribes and Navajo Nation Chapters that border the park.

Liaison assistance was provided to other agencies, parks, and organizations. The Department of Justice-Voters' Rights Program requested help from American Indians that are bilingual in Navajo/English languages. Implementation of the Civil Rights Act requires observations of ballot polling sites that are targeted due to concerns and deficiency and in 2003; assistance was given twice.

Language translations of Grand Canyon National Park's General Management Plan and other planning documents language translations was provided at several Navajo Nation Chapter meetings to ensure better understanding. Quarterly meetings hosted by the Navajo Nation Tourism Department were attended for exchange of information about tourism in other parts of the region, parks and tribal affects of visitors. The Page Unified School District has an Indian Education Program that our Liaison has been involved with and assists with the Navajo Language program in the school. She is often invited to other school activities and functions.