

HAVASU NATIONAL WILDLIFE REFUGE
Needles, California

Annual Narrative Report
Calendar Year 1981

U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM

PERSONNEL

1.	Ty Berry	Refuge Manager	GS-12	PFT
2.	Dick Gilbert	Assistant Manager	GS-11	PFT
3.	Les Peterson	Assistant Manager (Bill Williams Unit) EOD 12/13/81	GS-09	PFT
4.	Jim Krakowski	Assistant Manager (trainee) Transferred 4/4/81	GS-07	PFT
5.	Cynthia Lawson	Assistant Manager (trainee) Transferred 4/4/81	GS-07	PFT
6.	Dorothy Thuston	Office Assistant Transferred 2/7/81	GS-05	PPT
7.	Bill Wiesenborn	Office Assistant EOD 5/19/81	GS-05	PPT
8.	Leonard Walters	Engineering Equipment Operator	WG-10	PFT
9.	Carl Freeburg	Maintenance Worker	WG-08	PFT
10.	Frank Peterson	Maintenance Worker	WG-08	PPT
11.	Ted Miller	Police Officer	GS-04	Int
12.	Laura Hudgins	Biological Aid	GS-04	Tem
13.	Wendy Cooper	Y.A.C.C. (EOD 2/23/81)		

Ty Berry

8-24-82

Submitted By

Date

Regional Office Review Date



Refuge Manager Ty Berry behind office building
in Needles, CA. (Gilbert)



Assistant Manager Dick Gilbert in front of
refuge office. (Berry)



Assistant Manager Les Peterson in front of his home (Q-134) (Berry)



Police Officer Ted Miller (Berry)



Engineering Equipment Operator Leonard Walters
(Berry)



Maintenance Worker Frank Peterson.
(Berry)



Maintenance Worker Carl Freeburg at
Pintail Slough pump site. (Berry)

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A. HIGHLIGHTS

After 14 years the Bill Williams Unit withdrawal is consumated. (Section C.3)

Cottonwood trees at Bill Williams Unit severely damaged by flooding. (Section F.2)

Developer proposes multimillion dollar marina project and requests a channel 1,000 feet long through refuge for access to the Colorado River Delta. (Section J.1)

Refuge fire costs station \$16,364. (Section F.9)

Assistant manager wounded in line of duty. (Section E.6)

Problems at Catfish Paradise concession. (Section H.19)

Television movie filmed on refuge (Section J.3)

Fort Mojave Indian tribe builds trespass pump site. (Section C.2)

Illegal guided feral pig hunts in vogue. (Section H.17)

New buildings and boat houses completed and new equipment received. (Section I.)

B. CLIMATIC CONDITIONS

Below normal rainfall during the winter of 1980-81, the critical period for desert uplands, resulted in poor nesting and feeding conditions for resident wildlife. The gambel's quail population suffered the most as numbers crashed and huntable populations were nonexistent in the fall.

Our normal rainfall in Needles, California is 4.66 inches, but this year we received only 3.95 inches. Most of this amount occurred in late summer and early fall which caused severe flooding with damage to the South Dike and other roads.

At the refuge shop the high temperature was 124° F. on August 27 and the low was 24° F. on December 24, 1981.

C. LAND ACQUISITION

1. The Havasu National Wildlife Refuge presently contains 45,432 acres. Of that total, only 1,576 acres are in fee title. This acreage was acquired in 1977 from the Planet Ranch, through the Nature Conservancy, for expansion of the Bill Williams Unit.
2. Easements

The Fort Mojave Indian Tribe had constructed a trespass pump site on our inlet canal. They were willing to grant us an easement for our unauthorized use of the inlet canal in Section 28 in exchange for permission to use their pump for one year. It was recently discovered that the Reclamation withdrawn land in Section 28 had previously been withdrawn for Reservation purposes, which voided the subsequent withdrawal. Negotiations have slowed on the easement exchange, and BIA must take the next step.

3. Other

After 14 years, the 2,781-acre withdrawal, which rounds out the Bill Williams Unit, was finalized on October 8, 1981. Reclamation reserved a 70 acre aggregate site within the area for use on the Central Arizona Project, but that will revert to the refuge sometime in 1982. The Bill Williams Unit is now rounded out to a manageable, continuous 6,105 acres.

D. PLANNING

1. Master Plan
Nothing to report.
2. Management Plan
Nothing to report.
3. Public Participation
Nothing to report.
4. Compliance with Environmental Mandates
Nothing to report.
5. Research and Investigations

During the 1980-1981 waterfowl season, duck gizzards were collected at Pintail Slough and analyzed for ingested shot. Of the 286 collected, 78 were visually inspected and found to contain 2.5 percent

ingested shot. The remaining 208 gizzards were x-rayed, then visually examined. These contained 6.7 percent ingested shot. Since 5.5 percent of the gizzards collected contained ingested shot and we wintered 15,000 ducks, there was a lead poisoning potential of 825 birds.

The San Bernardino County Health Department is conducting a mosquito study on the refuge and adjacent areas. Melanie Serina began a study of the rare Bell's vireo for the California Fish and Game Department in April. Her study area included portions of the refuge.

E. ADMINISTRATION

1. Personnel

We began the year without an assistant manager at the Bill Williams Unit and almost concluded the year the same way. Les Peterson arrived on December 13, 1981 from Matagorda Island to give us much needed help on the lower refuge unit.

Assistant manager trainees Cynthia and Jim Krakowski left on April 4, and had not been replaced by the end of the year. Jim transferred to the San Bernard NWR as the GS-9 assistant manager in charge. Cynthia found employment with ecological services in the area.

Our GS-5 office assistant, Dorothy Thuston, was enticed by the local BLM office into taking a GS-6 position. Dorothy left on February 7, and was replaced by Bill Wiesenborn on May 19. Bill had previously been a biological technician at the Crosby Wetlands office in North Dakota.

Laura Hudgins was hired for the summer as a GS-4 biological aid, and Wendy Cooper was with us most of the year as a YACC enrollee, primarily doing office work.

Frank Peterson was promoted to WG-8 maintenance worker on June 28. All these personnel changes left us without three professional employees during most of the year.

Table #1 - Staffing

	<u>Permanent Full-time</u>	<u>Permanent Part-time</u>	<u>Temporary</u>	<u>Total</u>
FY81	6	2	1	9
FY80	7	2	1	10
FY79	7	2	0	9
FY78	8	1	0	9
FY77	8	0	0	8

2. Youth Programs

Y.A.C.C. enrollee Wendy Cooper started her one-year appointment on February 23, which coincided with her grandmother's transfer on February 7. Wendy assumed many of the duties of the GS-5 clerk and performed admirably.

3. Other Manpower Programs

Nothing to report.

4. Volunteers Program

Nothing to report.

5. Funding

Table #2 - Funding

<u>Year</u>	<u>1210</u>	<u>1220</u>	<u>1240</u>	<u>1400</u>	<u>1994</u>	<u>Pay Act</u>	<u>Total</u>
FY81	134,000	3,000	87,200	1,000	9,800		235,000
FY80	124,000	5,000	84,000			4,400	217,400
FY79	122,500	4,300	80,300			15,500	222,600
FY78	94,000	4,000	74,000	29,900		3,300	205,200
FY77	96,800	4,000	64,100	29,900		30,000	224,800

Funding through various sources, excluding BLHP, has varied only 13 percent during the last five years. If we assume a conservative nine percent inflation rate each year during that same time, the results are obvious. We simply have not been able to keep ahead of inflation and salary creep.

In 1981, our payroll and fixed expenses totalled \$217,000, which left us with \$18,000 to operate the refuge and maintain one-half million dollars' worth of BLHP equipment and facilities.

6. Safety

Safety meetings were held monthly except for December when most of the refuge staff was on annual leave.

Havasu Refuge did not have a good safety record in 1981. Seven accidents that required medical attention were reported.

Maintenance Worker Carl Freeburg strained an elbow on January 30, while helping Assistant Manager Krakowski remove buoys from the Colorado River. On September 16, Freeburg sprained his left knee, accounting for two lost days, while working on an underground irrigation pipeline.

Maintenance Worker Frank Peterson suffered an elbow strain, while threading pipe, which continued to be bothersome for several months. On April 20, Peterson was removing a chain over the tailgate of a pickup truck when the end of the chain whipped up, hitting him above the eye between his hard hat and safety glasses. The laceration required several stitches.

Refuge Manager Ty Berry received an abdominal strain while attempting to load a front tractor tire into a pickup truck on April 6. On September 27, Berry was involved in a minor parking lot accident with a Mercedes, resulting in a \$541.35 tort claim.

On October 23,, Assistant Refuge Manager Dick Gilbert was slightly wounded by shotgun pellets while performing law enforcement duties during waterfowl season. A wild shot, from about 30 yards, by a reckless hunter left one shotgun pellet imbedded in his right cheekbone, approximately one inch below his right eye. Several other pellets hit his chest, but did not penetrate the clothing.

Needless to say, there will be a renewed effort in 1982 to prevent the preventable accidents that occurred in 1981.

7. Technical Assistance

Nothing to report.

8. Other Items

Nothing to report.

F. HABITAT MANAGEMENT

1. General

Overall, habitat conditions were poor compared to the past several years. Below normal rainfall during the winter of 1980-81, the critical period for desert uplands, resulted in poor nesting and feeding conditions for resident wildlife.

Only 3.95 inches of rainfall were recorded in the Needles, California, area throughout 1981. Most of this amount occurred in late summer and fall causing some flooding and damage to roads and dikes.

2. Wetlands

Topock Marsh - The water management program for the 4,000 acre Topock Marsh is closely regulated by the Arizona vs California Supreme Court decree dated March 1964. Water enters Topock Marsh from the Colorado River by way of a four mile-long inlet canal. The water level is maintained at an elevation of approximately 456.25 feet above mean sea level (MSL) through the spring and summer. This level allows us to stay within our water allotment and reduces the possibility of water

temperatures rising high enough to be detrimental to aquatic plant production and the fisheries during the months of intense summer heat.

The marsh elevation is lowered in the fall to expose aquatic vegetation to the migrating and wintering waterfowl and to stay within our consumptive use allotment. Since water diversion from the Colorado River did not exceed our consumptive use allotment, no water was released from Topock Marsh again in 1981. Water levels were allowed to drop to the winter minimum, approximately 455.50 MSL through evaporation and transpiration.

In 1981 Topock Marsh was held between 454.58 feet and 456.60 feet MSL. Water levels dropped almost one foot below winter minimum because extremely low river flows during November and December 1981 prevented water from entering the marsh through the inlet canal. Regardless of our water allotment, irrigation and electric demands dictate river flows.

Submergent vegetation was not as abundant as in past years. Spiny naiad was absent from the majority of Powell Lake and Beal Lake this year. Most of the sheltered bays and the dense stands of dead mesquite trees had good spiny naiad growth. These areas were heavily used by waterfowl, particularly in December when marsh levels dropped below normal.

Due to the shallowness of the marsh, water turbidity from wave action as well as an abundance of carp hampers aquatic plant growth. Sedimentation from the Colorado River is also a factor.

Pintail Slough - The Pintail Slough wetland area is part of an old river channel separated from Topock Marsh by the north dike. It contains about 60 acres. The slough bottom was periodically flooded, through a gravity ditch and a series of water control structures, from May through September. Good stands of wild millet, smartweed, joint grass, Tridens sp. and Marsilea sp. were produced throughout the slough.

High water levels were maintained from October through March to provide waterfowl feeding habitat and recreational hunting. Shorebirds and wading birds used this area heavily during spring and fall migrations.

Some problems with cattail and bullrush have been controlled by a combination of mowing and disking, but cattail and bullrush stands have continued to spread due to the periodic flooding required to produce moist soil plants.

Pea trees, Sesban macrocarpa, have been a constant problem. This legume is utilized by waterfowl, but it grows so well in this area that it shades out more desirable moist soil plants. Pea trees were mowed just prior to maturity in portions of Pintail Slough to prevent them from dropping their seed. The most promising control method seems to be drowning the young pea trees.

When the pea trees were four to six inches tall the slough bottom was flooded with enough water to completely cover them. Water was held on the area for ten days. We still maintained a dense stand of wild millet and could control each germination of pea trees by this method.

Two problems are associated with this method of control. First, the constant watering of the slough bottom is probably encouraging the spread of cattail stands. By keeping the slough bottom wet, it is difficult to mow or disk the cattails to keep their growth in control. Second, the constant watering is producing dense stands of wild millet four feet tall. Hunters complain that they have no open water to set out their decoys and that they have trouble finding the ducks they shoot.

Bill Williams Unit - Bill Williams River flows averaged 100 CFS throughout 1981. The severe floods in February 1980 cut a deep channel through most of the unit eliminating some wetland areas and beaver dams adjacent to the original river channel. Some new wetlands were formed toward the lower end of the unit. These received some waterfowl use, but due to limited access this unit was rarely visited during 1981.

3. Forests

The Bill Williams Unit contains one of the largest remaining stands, 700-800 acres, of Fremont cottonwoods along the Lower Colorado River. Due to the extensive flooding in February 1980, and subsequent high releases from Alamo Dam by the Corps of Engineers, it is now apparent that about 90% of the mature cottonwoods did not survive. Some regrowth of cottonwoods is occurring in isolated locations, but saltcedar and willow regrowth is occurring at a much faster rate.

Mesquite, willow, and cottonwood trees at one time covered extensive areas on the flood plain of the Lower Colorado River. Vast areas north of the Topock Marsh Unit have been cleared for agriculture and urban development. The Topock Marsh Unit and neighboring Arizona State and BLM lands now contain the largest remaining block of this valuable habitat type.

4. Croplands

The Pintail Slough Management Unit is the major force account farming operation on the refuge. The flood irrigated cropland is divided into five fields containing 130 acres.

Fields 1 and 2 (51 acres) were planted to grain sorghum in July. Seeding rates were 15 lbs/acre on both fields. Three hundred lbs/acre of 27-14-0 fertilizer was applied at planting. Two applications of UN32 at 50 lbs/acre each were made during the growing season.

Field 4 (17 acres) was seeded to Japanese millet in August. Three hundred lbs/acre of 27-14-0 fertilizer was applied at planting.

Field 5, which had not been irrigated in the fall of 1980, or farmed in early 1981 due to energy reductions, began to revert to saltcedar and tumbleweed. Consequently, two weeks were spent again clearing ten-foot tall saltcedars with a TD-15 dozer and brush rake in this 41-acre field.

The 1980 wheat planting in field 3 (18 acres) was combined by a local farmer for refuge seed. The farmer received the crop on field 1 for payment.

Fields 3 and 4 received heavy use by mourning and white-winged doves through September. Dove hunting was good to excellent throughout the month.

Fields 3 and 5 were planted to winter wheat in late October at 100 lbs/acre. Fertilizer was applied at 300 lbs/acre of 27-14-0 at planting time. One application of UN32 at 50 lbs/acre was made at joint stage of development.

Fields 1 and 2 received heavy snow goose use on the sorghum stubble. Fields 3 and 5 received moderate use on the young wheat by Canada geese.

The 83-acre Bermuda grass field at the Topock Farm was irrigated through August and September. Three-fourths of the field is irrigated by seven powerized wheel lines and the other one-quarter by old tow lines. One hundred lbs/acre of 46% urea was applied through an injector system. This field, located within the no hunting zone, was the major feeding area for the wintering snow goose population during 1981.

The Bill Williams Unit contains 280 acres of irrigated cropland cooperatively farmed by the Planet Ranch. The flooding in 1980 washed out the main road and river crossings between the farm fields and Planet Ranch. No farming was accomplished in 1981 due to lack of funding to rebuild roads and river crossings.

Current agreements between the Corps of Engineers and Bureau of Reclamation allow releases from Alamo Dam of up to 2,000 CFS at the request of BR for irrigation purposes. Construction of new roads and river crossings to replace the ones that were designed to handle 500 CFS will be a long time coming under current funding.

One 30-acre field in the Bill Williams Unit was completely lost during the heavy river flows. The concrete irrigation ditch was destroyed and three to four feet of silt were deposited over the entire field.

5. Grasslands

Nothing to report.

6. Other Habitats

Riparian - The Topock Gorge Unit includes approximately 20 miles of the Colorado River. This is one of only a few remaining natural stretches of the Lower Colorado River.

The riparian habitat along the river supports a wide variety of nesting game birds, song birds, and marsh and wading birds. Emergent vegetation in backwaters along the main stream of the river provides excellent fishing as well as nursery areas for largemouth bass, crappie, and channel catfish.

The delta portion of Topock Gorge, where the Colorado River enters Lake Havasu, has been expanding due to silt deposits. In the last 20 years, sandbars have extended approximately two miles downstream creating large expanses of cattail and bulrush. Snowy egrets, black-crowned night herons and the endangered Yuma clapper rail now nest in these areas.

Trespass cattle from the Chemehuevi Indian Reservation are destroying riparian habitat and established Yuma clapper rail nesting areas in several locations in Topock Gorge.

Desert - The desert uplands, which consist mostly of palo verde; mesquite, acacia, creosote bush, brittle bush and several cacti; support a wide variety of wildlife. Unfortunately the most prolific is the feral burro. Although the Bureau of Land Management removed burros in 1979 and 1980, damage to the fragile desert environment continues from excess burros.

7. Grazing

Nothing to report.

8. Haying

Nothing to report.

9. Fire Management

In January 1981, a small fire occurred in the riparian habitat along the Bill Williams River due to a truck accident on the highway bridge. The fire burned approximately 190 acres of cattails along the south side of the Bill Williams River before reaching a rock formation which extended to within 15 feet of open water. At this point, employees of a contractor working on the Central Arizona Project had trampled the cattails down into the water preventing the fire from advancing further upstream into the wooded portion of the Bill Williams Unit. No expenses were incurred for suppression.

In May, while burning tumbleweeds in a concrete irrigation ditch at Pintail Slough, a dust devil picked up a burning tumbleweed and carried it across our boundary and onto Fort Mojave Tribal lands. The fire burned out of control for two days.

Fire fighting units from seven fire departments, as well as equipment from Mohave County, Fort Mojave Indian Tribe, Bureau of Land Management, and the Bureau of Reclamation assisted in suppression efforts. Most of the area was inaccessible due to heavy cover and marshland.

A fire break was constructed from the Glory Hole on Topock Marsh to levee road just north of our maintenance compound to check the advance of the fire. The fire burned itself out near the end of the second day just before reaching the fire break.

The fire covered approximately 1,000 acres of which 200 acres were refuge, 200 acres were Indian lands and 600 acres were BLM lands. Assistance from Mohave County and the Fort Mojave Indian Tribe came to a total of \$16,364.85.

10. Pest Control

Since the farm fields on the Bill Williams Unit are still inaccessible, no pest control was carried out by the cooperative farmer, Planet Ranch.

One and a half gallons of roundup herbicide were used to control Bermuda grass and Russian thistle along the concrete irrigation ditch at Pintail Slough.

11. Water Rights

Havasu Refuge received water rights in the Supreme Court decision on Arizona vs. California in 1964. To fulfill the purpose of the refuge, we are allowed to divert 41,839 acre-feet of water from the mainstream of the Colorado River. However, 37,339 acre-feet may be used consumptively. In years where river flows allow us to divert our total allotment, 4,500 acre-feet of water must be returned to the mainstream of the Colorado River.

In 1977, 1,576 acres of Planet Ranch properties were purchased through the Nature Conservancy and 2,781 acres were withdrawn from public lands in 1981. Along with these acquisitions we also obtained water rights on six irrigation and domestic wells totaling approximately 1,509 acre-feet annually.

12. Wilderness and Special Areas

There has been no action to date on the 1974 Needles Wilderness Proposal which encompasses 2,510 acres along the California side of the Topock Gorge Unit.

The Bill Williams Natural Area, which consists of 440 acres of cottonwood/willow habitat was severely damaged during the 1980 floods and subsequent high water releases from Alamo Dam.

13. WPA Easement Monitoring

Nothing to report.

G. WILDLIFE

1. Wildlife Diversity

Over 280 species of birds have been recorded on Havasu Refuge. In April 1981, a little blue heron was observed feeding in Pintail Slough, adding another new species to our bird list.

2. Endangered and/or Threatened Species

The annual Yuma clapper rail census was conducted in May and June 1981 using recorded calls. A total of 256 rails was heard or sighted during the census period. This is the highest count since the rail census was initiated in 1972.

Due to personnel shortages, the Bill Williams Unit and the southern half of Topock Marsh were not surveyed in 1981. These areas probably would have accounted for another 35-45 rails.

Only two bald eagles (1 adult, 1 immature) were on the refuge in early 1981. Four bald eagles (2 adults, 2 immatures) returned to the refuge in December 1981. The eagles favor the shallow waters of Beal Lake and the north end of Topock Marsh as their feeding sites.

Only one peregrine falcon was sighted in 1981, at Pintail Slough.

3. Waterfowl

Duck use days were down slightly from the 848,058 recorded in 1980. The 1981 duck use days totaled 817,320 for 18 species. Major duck species included mallard, pintail, widgeon, gadwall and three species of teal. Several wood ducks showed up in the hunter's bag at Pintail Slough again this year.

Goose use days were up from the 215,088 recorded in 1980. The 1981 goose use days totaled 246,741. Snow geese were the most abundant accounting for 79% of the use. Great Basin Canada geese comprised 20% of the use and white-fronted geese only 1%. The goose population peaked at 3,300 during 1981 and included 2,600 snow geese and 700 Canadas.

Through January and February 1981, the snow geese normally used adjacent agricultural lands and the farm fields at Pintail Slough. From their arrival in October through the end of the year the snows fed almost exclusively on the Bermuda grass field in the no hunting zone. The Canada geese moved freely between the marsh, adjacent farm lands, and refuge farm lands adjusting their feeding habits according to hunting pressure in each area.

Whistling swan use days totaled 420 and American coot use days were estimated at 3,774,000. This year saw a dramatic increase in coot use over past years. In December 1981, 80,000 coot use days were recorded compared to 12,000 in 1980.

4. Marsh and Water Birds

Due to a shortage of personnel, a nesting survey of double-crested cormorants and great blue herons was not conducted this year. A cursory look at nest sites while performing other duties indicated a decline in great blue heron nests, from 47 in 1980 to probably 38-40 in 1981. Cormorant rookeries appeared stable at around 30 nests. Estimated production was 50 great blue herons and 50 cormorants.

Snowy egrets and black-crowned night herons nest in Topock Gorge. The cattail island where nesting was discovered in 1980 is again being used, but dense cover prohibits the actual counting of nests. Common egret, green heron and least bittern nesting is highly probable, but dense cattails and shallow water prevent confirmation.

Western grebe nests were censused in the back bays of Topock Gorge in July and August. The number of nests increased from 77 in 1980 to 280. The 1981 census is comparable to the 1979 figures. The low 1980 census is probably due to extremely high water levels, drastic fluctuations in river flows and excessive recreational boating in back bays during high water levels.

Other marsh and water birds that nest on the refuge include the American coot, common gallinule and pied-billed grebe.

5. Shorebirds, Gulls, Terns, and Allied Species

The Colorado River serves as a flyway for many migratory shorebirds. Topock Bay, Topock Gorge, Pintail Slough and the Bill Williams River Delta are shallow areas which receive significant use. Large flocks of American avocets and black-necked stilts were abundant in the spring and fall. Some of the more common shorebirds are the killdeer, common snipe, long-billed dowitcher and least sandpiper. Long-billed curlews, willets, godwits and Wilson's phalarope are less common, but easily visible during migration.

Ring-billed and California gulls, Forester's, caspian and black tern frequent the Colorado River and Topock Marsh during the summer months.

Use days for these combined species totaled 415,975. These figures are probably not very accurate, as censuses are infrequent and usually in conjunction with other management activities.

6. Raptors

The refuge's most common raptors include the American kestrel; marsh, red-tailed, sharp-shinned and Cooper's hawks; great-horned, barn and burrowing owls. Some infrequent visitors include the prairie falcon, osprey, golden eagle, peregrine falcon, long-eared owl, screech owl and short-eared owl. Combined use days for these species were 41,295.

7. Other Migratory Birds

Mourning and white-winged dove use was down approximately 20% compared to 1980. Cutbacks in force account farming due to the high cost of energy prevented us from planting the normal amount of wheat in late 1980.

The mesquite/saltcedar habitat in the Topock Marsh and riparian habitat along the Colorado and Bill Williams Rivers provide the last large blocks of good nesting cover for these two species. Doves were abundant during nesting season but moved to adjacent farm fields to feed by late summer.

8. Game Mammals

Desert bighorn sheep occur on the Bill Williams Unit and in the Needles Peaks of the Topock Gorge Unit. Sheep numbers have remained stable on the Bill Williams Unit. One hunting permit has been issued annually by the Arizona Game and Fish Department for an area that includes the southern half of this unit.

Sheep numbers have been declining in the Needles Peaks. Average sightings during the last four annual aerial censuses have been seven sheep. Compared to the 20+ average in previous years censuses. There is some evidence of possible poaching activity, although the exact cause of the decline is unknown.



Topock Gorge Unit with Needles Peaks in background.
(Berry)

A small herd of mule deer, six to eight animals, frequents the Bill Williams Unit. Their numbers have remained stable over the last five years.

9. Marine Mammals

Nothing to report.

10. Other Resident Wildlife

Gambel's quail, cottontail and black-tailed jackrabbit populations were quite low this year due to a dry spring. Quail numbers were estimated at only 20% of the previous three to four year average.

Feral burros, which inhabit all three units of the refuge, seem to be as numerous as ever. The 656 burros removed by BLM in 1979 and 1980 from the refuge and adjacent lands seem to have found their way back to the refuge. Burro sightings are as common now as they were prior to 1979.

The feral horse population remains stable. Three separate bands totaling 30 animals reside in the Topock Marsh and Topock Gorge Units.

The feral pig population seems to have declined slightly. Increased poaching activity by local residents and organized hunts by hunting clubs from the Los Angeles area seem to be responsible. The estimated population is still 250-300 animals.

11. Fisheries Resources

No fish stocking was accomplished in Topock Marsh this year. Seine surveys showed adequate numbers of largemouth bass, channel catfish and crappies.

The striped bass fishery has declined over the last two years. Most fish caught in 1981 averaged in the six to seven pound class. Fewer large stripers were caught this year. A 56 1/2 pound striper, the largest of the year, was caught in Topock Gorge.

12. Wildlife Propogation and Stocking

Nothing to report.

13. Surplus Animal Disposal

Nothing to report.

14. Scientific Collections

Nothing to report.

15. Animal Control

Nothing to report.

16. Marking and Banding

Nothing to report.

17. Disease Prevention and Control

Nothing to report.

H. PUBLIC USE

1. General

In 1981 approximately 3/4 million people visited the refuge. Fewer problems than in past years were encountered during summer river patrols. It appears that the 1981 boating population was from a higher economic level than in the past. More family groups and fewer groups of young adults were encountered. More canoeists were also evident.

2. Outdoor Classrooms - Students

Nothing to report.

3. Outdoor Classrooms - Teachers

Nothing to report.

4. Interpretive Foot Trails

Nothing to report.

5. Interpretive Tour Routes

Nothing to report.

6. Interpretive Exhibits/Demonstrations

Nothing to report.

7. Other Interpretive Programs

Five off-site slide shows and lectures were given to civic and school groups involving 210 people.

Refuge tours, involving 510 people, were conducted during the year. The tour groups included elementary and high school students, cub scouts, brownies, college and business groups. The interior refuge roads and four observation towers located around Topock Marsh are used on conducted tours.

Five leaflet dispensers, located at entry points around the refuge, and the office in Needles, California, are the primary sources of interpretive materials.

Reduction in staff due to transfers prevented a more active I&R program.

8. Hunting

The 1981 hunting program remained the same as in previous years. Topock Marsh, except for the closed area, was open to hunting in accordance with Arizona State regulations.

Pintail Slough was open to hunting on Fridays, Saturdays and Sundays throughout the hunting seasons. This area is becoming too crowded during waterfowl season and many waterfowl hunters are complaining about the deteriorating quality of the hunt in this area.

Topock Gorge uplands were open to dove, quail and rabbit hunting. A four mile stretch of the Colorado River at the south end of the gorge was also open to waterfowl hunting. Upland game hunting was permitted in the Bill Williams Unit in Yuma County, Arizona only.

Waterfowl season began with good numbers of ducks on Topock Marsh and at Pintail Slough. Through November and December, hunting success was sporadic due to lower than usual waterfowl numbers.

Goose hunting was only fair this year, with below normal numbers of Canada geese. Also, reductions in force account farming provided less

green browse at the Pintail Slough farm fields to attract geese into a huntable area. Overall, waterfowl hunting was only fair, with 7,669 activity hours recorded.

Dove hunting activity hours dropped from 5,139 in 1980 to 3,039 in 1981. This was because energy cutbacks forced the refuge to reduce force account farming, providing less feeding habitat.

It was also a very poor year for upland game hunting. Lower than normal late winter rains (January - March) were responsible for poor upland conditions. Quail and rabbit numbers were estimated at 20% of last year's populations.

After four years of low census numbers, Arizona Game and Fish Department finally decided not to issue a bighorn sheep permit for the Needles Peaks area of the Topock Gorge Unit this year. One permit was issued for State Unit 44A, which includes the Yuma County portion of the Bill Williams Unit. The permit holder was successful.

9. Fishing

Recreational fishing is a year-round activity on the refuge. Approximately 320,000 activity-hours were for warm water fishing. Largemouth bass in the five to six pound class were caught throughout the year on Topock Marsh. Good catches of channel catfish and black crappies were also common.

Cold water fishing accounted for 60,800 activity-hours. As the news spreads about the good striped bass fishing in the Lower Colorado River, more pressure is placed on this resource. Although one striper weighing 56 1/2 pounds was caught on May 2, 1981 in Topock Gorge, the majority of stripers taken this year were small compared to last year. The Colorado River also offers good black crappie, largemouth bass and channel catfish angling.

10. Trapping

Havasu Refuge has remained closed to trapping. The riparian habitat and desert uplands provide a good reservoir for the four species highly sought for their fur. Trapping pressure has, of course, increased with the increase in fur prices, creating extreme pressure on the bobcat, coyote, gray fox and kit fox. Desert coyotes may bring as high as \$85.00 each. Beaver and muskrat populations, which are low normally, have stayed stable, and no trapping to remove problem animals has been needed.

11. Wildlife Observation

Wildlife observation by boat, foot and land vehicle totaled 720,000 activity-hours. An increase in birding by foot and canoe has been evidenced by the number of requests for information and contacts in the field. Several Audubon Society Chapters are making three to four visits a year as they discover the best birding areas and migration times. Use by school and college groups has increased as they become more aware that the refuge contains a fast disappearing and unique habitat.

Some conflicts occur during the summer months as wildlife-oriented boating and canoe groups must use the same waters as the speed boaters. It is difficult to enjoy an area as unique as Topock Gorge, with a constant 80-90 decibel noise level in the background.

12. Other Wildlife-Oriented Recreation

Camping is permitted at the two concessions on Topock Marsh. The majority of camping occurs by fishermen, canoe groups and vacationers seeking a quiet weekend. Approximately 32,000 activity-hours were recorded at the concessions.

13. Camping

Camping, other than at the concessions, is allowed on a two mile stretch of the Arizona shoreline at the south end of Topock Gorge. This area receives moderate use by boaters and canoeists. Approximately 14,500 activity-hours were recorded.

14. Picnicking

Although picnicking does occur in conjunction with boating, canoeing and camping, it has not been recorded in past years.

15. Off-Road Vehicling

Off-road travel is a major problem. It is occurring on all units of the refuge and is virtually uncontrollable. Fences, cables or gates are not a deterrent. Constant effort is required to repair cut fences and damaged barriers. As the population of this area continues to increase, so does the vehicle trespass problem. There is no solution other than constant patrol of the approximately 100 miles of refuge boundary. Damage to the fragile desert environment is severe in some areas along the Arizona portion of the Topock Gorge Unit.

Vehicle entry into bighorn sheep habitat in the Needles Peaks occurs regularly even though we try to maintain locked barriers at all access points. The off-road vehicle problem will only get worse without increased funding and manpower.

16. Other Non-Wildlife Oriented Recreation

On the Colorado River, public use patterns have long been established. This area is the playground for the affluent Los Angelesans. Approximately half of our public use occurs through the summer months by speed boaters and waterskiiers. In 1981, 352,000 non-wildlife oriented visits occurred. This type of use conflicts with wildlife-oriented use such as fishing, wildlife observation and those visitors trying to enjoy a tranquil area.

The heaviest boating occurs during the nesting season of the Yuma clapper rails, western and pied-billed grebes, snowy egrets and black-crowned night herons. The effect of boat wakes and high noise levels on these nesting birds is unknown.

Another watercraft gaining in popularity is the jet ski. The jet ski is to the water what the snowmobile is to the land. Shallow backwaters that are inaccessible to boats and heavily used by nesting marsh and water birds are easily accessible to the jet ski. The jet ski is registered as a boat, and the Colorado River is a navigable waterway, so there is little we can do to control this problem.

17. Law Enforcement

The major law enforcement effort centers on the Colorado River during the summer months. Seventeen miles of the Colorado River in Topock Gorge are closed to skiing, camping and fires.

This year, 138 citations were written compared with 225 in 1979, and 179 in 1980. The decline in the number of violations does not indicate fewer problems. This represents the loss, through transfer, of the assistant manager at the Bill Williams Unit in February 1980 (this position finally filled in December 1981), and the transfer of a second assistant manager in April 1981, reducing the full-time staff with enforcement authority by 40%.

Five cases were suspended and two were dismissed, for a 95% conviction rate. The suspensions were all due to non-response by the violator.

Table #3 - Breakdown of Citations Issued in 1981

Boating	-	51
Waterskiing	-	35
Hunting	-	22
Camping	-	15
Fishing	-	5
Vehicle Trespass	-	5
Miscellaneous	-	3
Narcotics	-	2

Due to staff shortages, time-consuming violations such as illegal fishing (trotlining) were not given adequate attention. This is unfortunate because we have established good rapport with local residents that will let us know when these activities are occurring.

A new enforcement problem, guided pig hunts, began in early 1981. In the space of eight days, ten pig poachers were apprehended on the refuge. The first group consisted of four individuals affiliated with a hound club in the Los Angeles area. They had entered the refuge with a pack of hounds and were caught after playing hide-and-seek for about two hours. Fines ranged from \$100 to \$150.

The second group was four Phoenix, Arizona residents; and the last two hunters were locals. By the end of March, 12 rifles, shotguns and revolvers were in storage at the refuge office.

Through the spring, several other groups from Los Angeles and the local area were contacted along the refuge boundary and warned of the consequences of hunting on a national wildlife refuge. Warnings seem to

have no effect. The great pig poaching saga will continue in the 1982 Narrative Report, so stay tuned.

The law enforcement effort during the hunting season was concentrated on the Pintail Slough Management unit. Waterfowl season began as usual, with a white-faced ibis being bagged in mid-morning the opening day. Fewer violations occurred at Pintail Slough this year, but due to staff shortages Topock Marsh was not patrolled adequately. Topock Gorge and the Bill Williams unit received virtually no law enforcement effort.

Vandalism associated with pig poaching and vehicle trespass is exceeding the amount of time and money we can spend repairing fences, signs, cables, barriers and equipment. As the population increases and the economic situation worsens, these problems continue to grow.

The amount of time spent in law enforcement activities by the PFT staff members increased to 23% in 1981 as compared with 20% in 1980. Physical evidence of serious violations, that are directly causing damage to the resource, indicate that our law enforcement efforts should be double the current level. The mass of paperwork, reports, and other reports that simply duplicate information already submitted prevent adequate monies to cover extra hours needed to provide the level of enforcement being done presently. The amount of compensatory time that could be claimed becomes absurd. Hazardous duty pay, although provided for in the Refuge Manual, is not covered by adequate monies in the budget.

In 1981, pig poaching and the associated vandalism (fence cutting and damage to facilities) occurred throughout the year. Trotlining on Topock Marsh became almost as common as legal fishing methods. Dove and quail hunting began at several locations on the refuge in early summer. Camping and camp fires, which are prohibited except at the concessions, were common occurrences on all units of the refuge. Vehicle trespass, fence cutting and damage to barriers occurs continuously.

In April 1981, a refuge jon boat and 20 hp outboard motor were stolen from the boathouse on Topock Marsh. The boathouse was locked and the boat and motor were chained to a 16-inch piling.

Theft of parts from refuge vehicles, and tools and equipment out of locked vehicles and locked tool boxes is a recurring problem at the refuge office.

The law enforcement regime at this refuge over the last four years has been only that amount of time and effort required during known problem periods. Other major law enforcement effort takes place on information from reliable informants. Unfortunately, due to the number of obvious violations that are occurring, it is beginning to appear as though we are not meeting our objectives in refuge law enforcement.

18. Cooperating Associations

Nothing to report.

19. Concessions

Two concessions, Five-Mile Landing and Catfish Paradise, operate under 20-year contracts on Havasu Refuge. Both concessions are located on the Topock Marsh unit. The concessions provide temporary trailer spaces, camping areas, tackle, some grocery items, boat docks, boat fuel and rental boats.

Monthly inspections are conducted by the refuge staff. These inspections are to insure compliance with all local, state and Federal safety regulations, and to insure that the concessions are providing services and facilities that will enhance visitor use.

The concessionaires are required under the terms of their contracts to pay an annual franchise fee and 2% of their annual gross earnings. Since the Bureau of Reclamation has primary withdrawal rights (the refuge's are secondary) on these lands, all monies collected are transferred to BR.

Five-Mile Landing is managed by the concessionaire who lives on site. The concessionaire has been very cooperative in rectifying any deficiencies that are found during monthly safety inspections. The concessionaire also keeps us informed of potential problems and game law violations. This concession more than meets the objectives established for concession management.

Catfish Paradise is owned by a corporation (Catfish Paradise Incorporated) and managed by employees of the corporation. Over the last several years the facilities and the quality of services have deteriorated. Monthly safety inspections in 1981 have shown gross safety violations on the boat docks, restroom facilities, and a general disregard for routine maintenance.

In April 1981, the Mohave County Health Department, at our request, inspected the restroom facilities and perishable food facilities at the store. At the end of this inspection, the concession was issued a 72-hour notice to make repairs to restroom walls, floors and shower stalls, and correct several deficiencies regarding sanitary conditions in the store. None of these items had been corrected by the end of 1981.

In October, 1981, an inspection team, including Messrs. Giezentanner, Monson (Regional Safety Manager), and Ray Johanningsmeier, an electrical engineer for the National Park Service, conducted thorough inspections of both concessions. Catfish Paradise was found to have very serious violations in the electrical service to the trailer sites as well as the previously mentioned health and safety violations.

Catfish Paradise Incorporated has also been consistently late in paying franchise fees and the 2% of gross. At times ten months have elapsed between due dates and when payments are finally received. In contrast, Five-Mile Landing's payments are on time and usually in advance of due dates.

The Catfish Paradise contract is due for renewal in June, 1983. If the contract is renewed, hopefully some drastic changes in contract wording will be made, thereby allowing us to take some action to insure compliance with local, state and Federal regulations.

I. Equipment and Facilities

1. New Construction

Valco Construction completed erection of the (40' x 100') metal storage building and the construction of the (25' x 35') automotive shop with floor hoist. This was funded with \$81,428 of BLHP money.

The automotive shop building and our woodworking building were studded, panelled and insulated. The auto shop and (40' x 100') building were wired for electricity and had air lines installed. BLHP funded all this which was done force account, except the insulation and wiring. Rhino Electric did the wiring for \$3,466.18 which also included some work at our boathouse and irrigation pump. Russ Arrowsmith Company was responsible for the blown insulation at \$544.00.

Pueblo Construction completed the two boathouses in April. This BLHP project cost \$97,250 and provided a floating boathouse on the Colorado River for two patrol boats and a stationary house on Topock Marsh for smaller boats. Because of the cost, a downstream jetty was stricken from the contract. Unfortunately, by not having the jetty, the river house silted in, making it useless. Bureau of Reclamation assisted our staff in constructing the jetty, complete with riprap, and removing the upstream jetty in hope that the summer high water would flush the sandbar from the boathouse. This project was completed in November.

Roberts and Sons Construction of Provo, Utah, completed a \$130,000 fencing project funded by BLHP. They constructed 17 miles of barbed wire and 1.7 miles of cable fence (near bighorn sheep habitat). The final inspection for this project was May 26.

2. Rehabilitation

A one-quarter mile section of the Bill Williams River was channelized by Heavy Equipment Operator Walters during January and February. It was necessary to place the channel where it had been prior to the 1980 floods. The Planet Ranch was then able to rehabilitate two stretches of road so they would have access to some of the fields they had cooperatively farmed.

In September, Sacramento Wash again flowed. Consequently, Topock Bay received another good silt load and the South Dike was damaged by water flowing over it and into the marsh. Bureau of Reclamation hauled 12,000 yards of material to repair and raise the damaged portion of the dike. They also riprapped and gravelled this section.

In October, Reclamation placed gravel in our shop compound around the new 40' x 100' building. These favors by BR have never cost us anything. We continue to have excellent rapport with these folks.

Upper Pintail Slough was rehabilitated for use as a moist soil management unit. The bottom was leveled and enlarged and the dikes were fortified, all force account. Hog wire was installed around the entire circumference of the Pintail Slough Unit to prevent feral hogs from entering the farm field and, in turn, reducing poaching activity. Cattleguards were placed in the three fence openings.

3. Major Maintenance

Two residences in Needles were rewired to code. The assistant manager at the Bill Williams Unit elected to live in the building which formerly housed our resident YCC camp. Much work was done to the block/wood-frame structure in order to make it livable.

Field #5 at Pintail Slough had to be knifed and brushed again because the saltcedar was taking over after one year of non-use. The fuel shortage was responsible for this field not having been utilized.

4. Equipment Utilization and Replacement

Roy St. Coeur installed a new 25 KVA transformer for \$375.00 which was necessary to accommodate the new service at the shop area.

We received a much needed Wisconsin 700-18 flatbed tilt trailer which is large enough (28 feet) to accommodate our road grader and TD-15 dozer. This, again, was compliments of BLHP. We also acquired an 18-foot Boston Whaler patrol boat with a 150 h.p. Johnson motor and new trailer, thanks to BLHP.

In August 1979, we ordered a four-wheel drive utility vehicle. In February 1980, because of the fuel crisis, the order was amended to a compact 4 x 2 with reduced options because of the smaller size. Somewhere along the line, a "buy American" attitude surfaced, and our compact truck was changed back to a full size "American" pickup, with the same options as the compact. In April 1981, we received a Ford F-100 1/2-ton pickup with standard transmission, two-wheel drive and, best of all, no power steering.

5. Communications Systems

Since the theft of our repeater equipment the previous year, and subsequent takeover of our rented site by an FM radio station, we have been using the radio repairman's facility with our new equipment. Hendricks Electronics is still negotiating for a mountain site for



40' x 100' metal building acquired from Navy with BLHP funds. (Berry)



25' x 35' Butler automotive shop with hoist. (Berry)



Glory Hole boat house on Topock Marsh. (Berry)



Colorado River boathouse. Note light color in right foreground which is a sand bar. (Berry)



New 18' patrol boat and motor. (Berry)



New 28' Wisconsin tilt trailer. (Berry)

their repeaters, which will also give us a new and improved location for our equipment.

6. Energy Conservation

Obsolete duct work was removed from the residences to facilitate additional ceiling insulation.

As mentioned in Section 1, insulation was blown on the interior walls and ceilings of our metal automotive shop and metal woodworking shop.

7. Other

Nothing to report.

J. Other Items

1. Four special use permits were issued for 788 bee hives. One permit is annually issued to Golden Shores Marina, which operates on a Santa Fe Railroad easement running through the refuge. Part of their parking lot and boat docks are within the refuge, so they are charged a flat rental fee. The money, of course, goes to Reclamation.

A permit was reluctantly issued to Stoval Engineering to conduct a cultural resource evaluation and gather survey data for a 1,000 foot x 40 foot channel that A. L. Wulfeck Corporation desires to dig through the refuge. The corporation wants to build a multimillion dollar project consisting of a marina, golf course, hotel, RV park, shopping center, residential area and condominiums. The project apparently hinges on whether they can gain access through the refuge to the Colorado River Delta for their 350 slip marina.

2. Items of Interest

"Through the Magic Pyramid", a movie partially filmed on the refuge and directed by Ron Howard, was aired by NBC on December 6 and 13.

Assistant Manager Dick Gilbert attended a 40-hour "Supervision and Group Performance" course.

Roger Monson conducted a safety inspection on April 28.

Gene Chavez and David Yazzie conducted a personnel audit on April 13.

Lee Peterson and Robert Casaus conducted concession audits during December.

Roger Monson and Ray Johanningsmeier, an electrical engineer with the National Park Service, conducted safety inspections of the two concessions during October.

3. Credits

Sections A, B, C, D, E, I, J and K and editing: Ty Berry.

Sections E-6, F, G, and H: Dick Gilbert

Typing: The Area and Regional Office assisted in typing the first draft. The Regional Office (RF) typed the report in final form.