

BROWNS PARK NATIONAL WILDLIFE REFUGE

Maybell, Colorado

ANNUAL NARRATIVE REPORT

Calendar Year 1986

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

REVIEW AND APPROVALS

BROWNS PARK NATIONAL WILDLIFE REFUGE
Maybell, Colorado

ANNUAL NARRATIVE REPORT



The Green River is not always green when we get run-off from Red Creek upstream in Utah. 10/21/86-17 JC.

Jamesa Creasy
Refuge Manager

_____ Date

Bonnie Schuch
Refuge Supervisor Review

3/19/87
Date

Dale Henry *3-20-87*
Regional Office Approval Date

Mary Plant *3/23/87*

INTRODUCTION

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Browns Park National Wildlife Refuge is located in an isolated mountain valley in extreme northwestern Colorado. It lies along both sides of the Green River, entirely within Moffat County, 25 miles below Flaming Gorge Dam. It contains 13,375 acres of river bottomland and adjacent benchland. The Utah-Colorado state line delineates the western boundary and to the south it shares a mutual boundary with Dinosaur National Monument. The remainder of the refuge shares a mutual boundary with Bureau of Land Management lands. The refuge is 53 miles northwest of Maybell, Colorado, on State Highway 318, 50 miles northeast of Vernal, Utah over Diamond Mountain, and 95 miles south of Rock Springs, Wyoming via State Highway 430 or 70 miles via State Highway 191 and Clay Basin, Utah.

The primary purpose of Browns Park Refuge is to provide high quality nesting and migration habitat for the Great Basin Canada goose, ducks, and other migratory birds. Before Flaming Gorge Dam was constructed in 1962, the Green River flooded annually, creating excellent waterfowl nesting, feeding and resting marshes in the backwater sloughs and old stream meanders. The dam stopped the flooding, eliminating much of this waterfowl habitat. Pumping from the Green River, along with water diverted from Beaver Creek, now maintains nine marsh units comprising approximately 1,430 acres. The river covers approximately 1,000 acres along with sedimentary river bottomlands, well vegetated grasslands interspersed with cottonwood, willows, salt cedar, greasewood and sage covering approximately 4,000 acres. The remainder of the refuge is alluvial benchlands (6,000 acres) and steep rocky mountain slopes. Elevations vary from 5,355 to 6,200 feet above sea level.

On August 20, 1963, the Migratory Bird Conservation Commission approved acquisition of Browns Park National Wildlife Refuge to develop and manage waterfowl habitat in that portion of Browns Park within the state of Colorado. The private land was purchased with funds from the Migratory Bird Hunting Stamp Act. On July 13, 1965, the first tract of private land was acquired. At this time, 5,276 acres have been purchased at a cost of \$594,976, 6,794 acres have been withdrawn from public domain lands, and 1,305 acres are leased from the State of Colorado (State school sections). There are still two private in-holding on the refuge, one tract of 200 acres and another of 80 acres.

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ANNUAL NARRATIVE REPORT

BROWNS PARK NATIONAL WILDLIFE REFUGE

1986

A. HIGHLIGHTS

The Canada goose production for this year was slightly better than last year's. Loss to nest predation was down (Section G, 5).

Duck production was a record high for the refuge (Section G, 5).

A cow moose was observed on the refuge during the fall (Section G, 9).

The March 1-June 15 closure on the refuge was removed (Section H, 3).

B. CLIMATIC CONDITIONS

Total precipitation for 1986 was 10.87 inches, 1.56 inches more than in 1985 and 1.75 inches above the yearly average. The coldest temperature was -3^o F. in December. The highest temperature recorded for the year was 101^o F. during mid-August.

The first snowfall for the year was January 5, when three inches were recorded. This soon melted and only a few light snows were received the rest of the winter. The area received high winds the first of February and again during the first of April. April was the wettest month of the year with 1.94 inches of rain recorded.

High winds prevailed during the first of October, but "typical" fall weather occurred the remainder of the month. Temperatures were down to the teens by mid-November, causing the refuge marshes to freeze over. But, by the end of the month, temperatures had warmed considerably for several days, creating open water again. By this time, most of the waterfowl going south had already departed. Temperatures dropped again during the first of December and marshes remained frozen the rest of the year. Only a few light snows were received during November and December.

C. LAND ACQUISITION

1. Fee Title

Negotiations for the purchase of the 80 acre Jones tract in Grimes Bottom has been initiated by Realty. It is hoped the refuge will also be able to acquire the only other private inholding in the near future. That inholding consists of 200 acres of grassland and cottonwood groves located at the southeast end of the refuge across the Green River.

3. Other

The refuge continues to lease two school sections (1,305 acres) within its boundaries from the State of Colorado.

D. PLANNING2. Management Plans

The new Land Management Plan is still undergoing revision. Although many of the proposed projects are underway, such as rest-rotation grazing, wildlife food patches, cottonwood tree plantings, and a small haying program.

The Annual Water Management Plan was submitted and approved.

During the summer, work progressed on the Refuge Sign Plan. It was submitted to the Regional Office and approved during September.

E. ADMINISTRATION1. Personnel

2 4 1 3

Photo 1. 12/22/86, PC



5

Photo 2. 2/2/87, PC



6

8

Photo 3. 8/21/86, JC



10 11

Photo 4

1. James A. Creasy, GS-11, PFT Refuge Manager
EOD 9/1/74
2. Donald R. Clapp, GS-9, PFT. Assistant Refuge Manager
EOD 8/28/83
3. Robert E. Harding, WG-8, PFT. Maintenance Worker
EOD 4/18/82
4. Lynn A. Barber, WG-8, PFT Engineering Equipment Operator
EOD 3/5/84
5. Norma A. Wardle, GS-5, PFT. Refuge Assistant
EOD 11/30/64
6. James Osborn, GS-4, I Biological Aid
6/8/86-8/23/86
7. Jenita Jeter Calton, GS-4, TFT. Biological Aid
6/10/85-9/27/85, Reinstated 12/23/85-4/18/86
8. Joleen Vollers, GS-4, TFT Biological Aid
EOD 6/8/86
9. James A. Creasy, JR. Volunteer
EOD 7/20/83
10. Penny M. Creasy Volunteer
EOD 9/1/74
11. Louise E. Clapp Volunteer
EOD 8/28/83

The Refuge Assistant for the refuge, Norma A. Wardle, is stationed at the U.S. Fish and Wildlife Office in Vernal, Utah. Norma also has administrative duties for Ouray National Wildlife Refuge.

Jenita Calton completed her appointment on April 18. We hated to see Jenita leave as she was an able, willing and cheerful worker. We were fortunate to be able to hire Joleen Vollers (our SCA Volunteer in 1985) and Jimmy Osborn as Biological Aids. Joli is a graduate of Kearney State in Nebraska with a double major in Biology and Geography. Jimmy was a Senior at Colorado State University majoring in Wildlife Management and graduated in December 1986. Both are very capable and enthusiastic and a welcome addition to the staff.

We were able to get Lynn Barber switched to an Engineering Equipment Operator and upgraded to WG-8.

	<u>Permanent</u>		<u>Temporary</u>	<u>Total FTE</u>
	<u>Full-Time</u>	<u>Part-Time</u>		
FY 1986	4*	3 (Volunteers)	3	5
FY 1985	4*	4 (Volunteers)	2	5
FY 1984	4*	4 (Volunteers)	2	5
FY 1983	3*	3 (Volunteers)	2	4
FY 1982	3*	1 (Volunteer)	1	3

*Does not include Norma A. Wardle, Refuge Assistant.

4. Volunteer Programs

This year we had three volunteers in the Fish and Wildlife Service volunteer program. They were Penny Creasy, Louise Clapp, and Jamie Creasy.

Since there is no Clerk at the refuge headquarters, Penny Creasy provided valuable assistance answering the telephone, radio, and questions from refuge visitors. Penny also performed various typing tasks associated with the refuge office.

Louise Clapp helped out at the refuge sub-headquarters by checking the daily weather recording station and answering public inquiries.

We got some maintenance work out of Jamie this year when he wasn't on his regular job as a Police Officer at Green River, Wyoming.

We did not utilize the Student Conservation Association volunteer program this year. We had a problem with them last year as our volunteer did not receive her subsistence allowance on time. They also increased their charges drastically.

5. Funding

Funding for FY 86 was adequate and also appears to be adequate for FY 87. Electrical costs for pumping water from the Green River to maintain our marshes has been increasing rapidly over the past few years. This year we are looking at alternative ways to get water from the river into the marshes.

<u>FY</u>	<u>Activity</u>	<u>Amount</u>	<u>Total</u>
1987	1260 (Includes 73,000 for AARMs and 10,000 Resource Problems)	\$225,000	\$239,400*
	6860	5,000	
	8610	9,400	
1986	1260 (Includes \$56,900 6860 for AARMs)	211,900	224,900
	8610	5,000	
		8,000	
1985	1260 (Includes \$35,000 for AARMs)	172,000	185,700
	6860	5,000	
	1994	8,700	
1984	1260 (Includes \$32,000 for AARMs)	177,000	192,500
	6860	10,000	
	1994	5,000	
1983	1210 (Originally \$125,000)	100,000	126,900
	1220	5,000	
	1240	10,000	
	6810	10,000	
	1994	1,900	

*\$40,000 is for a new front-end loader.

6. Safety

No lost time accidents occurred this year. The lost time record is now 3,581 accident-free days. Safety meetings were held monthly.

One employee did strain his knee while crossing Beaver Creek during power fence construction. It did require medical attention, but no time was lost.

F. HABITAT MANAGEMENT

1. General

The Browns Park Refuge was listed as one of the areas with preliminary contaminant issues of concern and classified in Category C. This

indicates a priority need for additional monitoring of selenium samples in the Green River. Samples taken in 1980 near Ouray indicated that selenium may be accumulating in the environment as a result of agricultural drainage water. However, all of the lands in Browns Park are strictly range lands, not agricultural lands. Priorities for future studies are to be decided later by an Interior Task Group, since there presently is no available funding.

2. Wetlands

Before the Flaming Gorge Dam was completed during the early 1960's (25 miles upstream from the refuge on the Green River), seasonal flooding of the bottomlands created excellent waterfowl habitat. After the dam was completed the flooding ceased, thus eliminating the natural waterfowl nesting areas. Since the establishment of the refuge, pumping from the river along with a diversion ditch from Beaver Creek presently create approximately 1,430 acres of marsh. There are nine marshes on the refuge (Photo 5).



Photo 5. Warren Marsh along the dike looking south.
7/8/86-43, JC.

Marshes were filled by the first of March in preparation for spring waterfowl nesting.

A new motor was installed on the Hoy pump. The old one was about fifteen years old and finally quit working. The Spitzie pump had been pumping less than half its full capacity. The pump was pulled and worn parts replaced.

One marsh, Grimes, was kept dry this year. The marsh does not hold water well and future rehabilitation is planned.

The Green River was higher than normal during the summer, at 8,200 cubic feet per second. The higher levels created havoc with a couple of the pumps by silting them shut. Some benefits resulted though, as less pumping than usual was required by using the gravity flow ditch into Hog Lake.

Water levels in the Green River had receded to around 1,500 cfs by late summer. During that time, the head box that had been sanded shut at the Hoy pump was cleaned out and put back in operation. Fortunately, the marsh remained near optimum level throughout the waterfowl nesting season.

The Nelson and Horseshoe Marshes were not refilled during the fall. The marshes were left dry to allow vegetation control prior to the 1987 waterfowl production season.

3. Forests

Narrow and broad-leafed trees grow along Beaver Creek. There are several groves of broadleaf cottonwoods in the bottoms along the Green River. Since the establishment of Flaming Gorge Reservoir in the early 1960's, there are fewer young cottonwoods. Care is taken to protect the existing trees and to encourage new tree growth.

The cottonwood trees on the refuge are used by numerous forms of wildlife, including raptors, nesting great blue herons, wintering bald eagles, and an occasional nesting goose.

During the spring, a cottonwood rehabilitation project was initiated in the Carr Bottom near the southeast portion of the refuge. Approximately 600 cottonwood shoots were planted along the river in a cottonwood grove which had been damaged during a wildfire in the summer of 1984. During May and June, when the plantings were monitored, many appeared to be growing and doing well. But, by late summer, all of the shoots had died (Photo 6).



Photo 6. Cottonwood trees in the Carr Bottom. We are getting cottonwood reproduction along the irrigation and water delivery ditches. 10/12/86-114, JC.

4. Croplands

During September, three plots totaling three and one-half acres were plowed, disked, harrowed, and seeded to winter wheat and alsike clover. The area is in an old hay field where much of the vegetation is saltgrass, sedges, and some tame grasses. Soil Conservation Service samples indicate the soil is suitable for both crops and marshland. The intent is to provide browse for Canada geese and other wildlife. This will be a rest-rotation procedure. About four more acres of wheat and clover will be planted in the same area during the fall of 1987. Alternate plots will be re-seeded every other year. The field is situated so that the plots may be irrigated and the lower areas flooded. Although, this fall the plots were not irrigated due to adequate precipitation (Photo 7).



Photo 7. Winter wheat that sprouted in one of the wildlife food plots in the Swinging Bottom. 11/15/86-149, JC.

5. Grasslands

Refuge grasslands are located on benches, river bottoms adjacent to marsh units, and in meadows along Beaver Creek. The meadows along Beaver Creek are irrigated from the creek by the grazing permittee as long as a minimum water flow remains in the creek.

During the fall of last year, the Zone Supervisor and Land Use Specialist from the Regional Office visited the refuge for the purpose of developing a Land Management Plan for the refuge. This plan primarily consists of the grasslands being grazed, but also covers the small haying and cropland areas. Since that time, progress included changes in format of the plan from the RO resulting in two re-writes of the draft and an attempt at the third one. Then, the refuge received a mini-plan from the RO to use for the refuge grazing for one year.

6. Other Habitats

During the first part of February, refuge personnel attempted a controlled burn of approximately 30 acres east of Crook Campground. The soil, which is very alkaline, supports a dense greasewood stand with little grass other than scattered open areas. Since the area failed to burn, due to insufficient fuel to carry a fire, a D-6

dozer was used to pull a drag. First, a railroad rail was used with little results. Then, an excess cattleguard was dragged behind the dozer. Refuge personnel then hand seeded the area with wheatgrass and sweet clover seed. Later, due to spring rains, a fair stand of grass appeared. Although it is primarily cheatgrass, this is still more desirable than the matted stand of greasewood that had existed there. At least two duck nests were observed there during the spring and more deer have frequented the area. Hopefully, the dragging treatment will have rejuvenated the grass stand enough to allow controlled burning of the area in the near future (Photos 8 and 9).



Photo 8. Greasewood flat that we tried to burn, but to no avail. After photo was taken we railed it, knocking the greasewood down to try and increase the grass undergrowth. 1/28/86, JC.



Photo 9. Greasewood (area bounded by road) that we failed to increase grass undergrowth. Although the greasewood came back, several species of grass, primarily Great Basin wild rye and cheatgrass, increased. 7/8/86-40, JC.

During early spring, some rotary mowing was done in the Spitzie marsh and Hog Lake area to control greasewood growth and rejuvenate grass stands around the marshes. Some mowing was also done during mid-summer along the Green River to control invading salt cedar and willows.

7. Grazing

A mini grazing plan was developed by Regional Office staff after some deliberation between refuge staff, Regional Office personnel, the permittee and Extension Range Specialists. This was initiated on a trial basis for the 1986-87 grazing season. The plan made allowances for many of the concerns expressed by the permittee, such as undue stress to pregnant cows caused by frequent moving to different pastures, loss of AUM's and the spreading of noxious weeds to Bureau of Land Management and private lands. It was agreed upon, as a trial basis, to graze the refuge lands on the south side of the Green River similar to past years with no rest-rotation grazing. However, changes implemented were the separation (by existing fences) of the uplands from the bottomlands and grazing the uplands during December instead of in the spring, as was done in previous years. The number of AUM's allowed is similar to previous

years--2,346. The grazing dates have been altered slightly. Instead of November 15 through March 31, it is now December 1 through March 31.

On the first of December, 286 cows were turned into the uplands on the north side of the Green River. The entire herd was moved through seven units. These units varied in size from 275 to 585 acres and totaled 2,860 acres. Length of time that cattle were held in the units varied from three to six days (depending on unit size).

Much of the dominant vegetation on the uplands is sagebrush, shadscale and cheatgrass, with some Galleta grass and Indian ricegrass. The stocking rate computed for these units was 0.1 AUM per acre (Photos 10, 11, 12 and 13).



Photo 10. Cattle in pasture 5, an upland unit.
12/8/86-176, JC.



Photo 11. Pasture 5 prior to grazing. This is an upland unit and the abandoned road was seeded with a mixture of grasses, but intermediate wheatgrass was dominant. 12/8/86-169, JC.



Photo 12. After 286 head of cattle grazed this 585 acre pasture for six days, they were moved to the next pasture. Hopefully, this treatment will reduce the cheatgrass and improve the upland browse plants. 12/14/86-195, JC.



Photo 13. Vollers and Harding constructing an enclosure in pasture #2. 11/8/86-141, JC.

After the end of December, the cattle on the north side of the refuge will be turned into and rotated in three bottomland units (1,160 acres total). The dominant grasses are western wheatgrass and alkali sacaton. The stocking rate for the bottomlands has been set at 0.95 AUM's per acre and the herd size will then be increased to 367 head.

One hundred and seventy-five head of cows were turned into the upland units on the south side of the refuge. After the end of the year, they will be moved into the bottomland units and 119 more cows will be added (Photos 14 and 15).



Photo 14. Ungrazed area inside fence, grazed area outside fence at Nelson Bottom along the Green River. 12/31/86, JC.



Photo 15. The electric fence is hardly noticeable in the Great Basin wild rye in Spitzie Bottom prior to being grazed. 12/86, JC.

Refuge grazing fees for the 1985-86 season were raised to \$5.00/AUM from \$4.50/AUM for the 1984-85 season. Rates for the 1986-87 season have been increased to \$5.35/AUM.

The 1986 grazing AUM's and receipts are:

Wright Dickinson (11/15/85- 3/31/86)	2,779 AUM's X \$5.00 = \$13,895.00
Don Clapp (horses)	54 AUM's X 5.00 = 270.00
Bob Harding (horses)	72 AUM's X 5.00 = 360.00
Bob Mangus (horses)	18 AUM's X 5.00 = 90.00
TOTALS:	<u>2,923</u> <u>\$14,615.00</u>

8. Haying

This is the first time in several years there has been any haying on the refuge. During July, an old hay meadow in the ryegrass area of the refuge was hayed. The meadow consists of approximately 40 irrigated acres, primarily brome and wheatgrass. There is a small water impoundment at the end of the meadow, still under construction. All of the meadow was hayed this year to clear out the old vegetation. It is planned to divide the meadow into two separate units and hay each unit every year to enhance waterfowl nesting.

The refuge permittee's share was 109 tons and the refuge share was 23 tons (46 round bales). The permittee was allowed an 80 percent share for this year because of the old vegetation in the meadow. The refuge share of the bales will be used on the marshes for goose nesting structures (Photo 16).



Photo 16. Don Clapp and Steve Berlinger look over impoundment site at ryegrass. We started on the dam last year before freeze up. This year the site was too wet to get any work done. 5/22/86-36, JC.

9. Fire Management

During January, a fire line was built around the Horseshoe marsh. The fringes of the marsh were mowed, raked, and disked. It was burned in February with good results. The marsh was then pumped full of water prior to the waterfowl nesting season (Photos 17 and 18).



Photo 17. Firebreak around Horseshoe marsh. 2/4/86-10, JC.



Photo 18. Prescribed fire at the Horseshoe marsh.
2/4/86-15, JC.

In early spring an attempt was made to burn approximately 30 acres of a greasewood alkali flat east of the Crook Campground. The area failed to burn due to a minimum grass cover.

A road grader was used to establish a fire line around an old irrigation channel on the approximately 30-acre Swinging Bottom field near the south side of the Green River. There was a solid stand of saltgrass and phragmites in the field which burned off during a controlled burn the first of March. The area was burned to rejuvenate the grassland and to allow preparation of the seed bed for wheat, alfalfa, and clover food plots for waterfowl and other wildlife (Photos 19, 10, 21 and 22).



Photo 19. The Swinging Bottom prior to burning.
3/3/86-19, JC.



Photo 20. The Swinging Bottom fire in progress.
3/3/86-24, JC



Photo 21. The Swinging Bottom after it was burned.
3/3/86-26, JJC.



Photo 22. The Swinging Bottom was fenced this
summer to keep the cattle out of the wildlife food
plots planned for the bottom. 7/23/86-56, JC.

During March, refuge personnel attended a cooperative fire meeting at Meeker, Colorado, to establish a cooperative agreement between Federal and State agencies. As a result of the meeting, a Memorandum of Understanding was established between the refuge, the National Park Service and the Bureau of Land Management.

Approximately 100 acres of upland sagebrush burned on the refuge during the first of August. It apparently was started from a campfire at the Swinging Bridge campground. Refuge personnel used the fire pumper, road grader and hand-built fire lines to contain the blaze. Shifting southwest winds were prevalent. National Park Service personnel from the Lodore Ranger Station at the Dinosaur National Monument assisted with their fire pumper (Photo 23).



Photo 23. A wildfire that started near the road at the Swinging Bridge Campground was probably started by blowing embers from a nearby campfire, but we couldn't prove it. 8/4/86-70, JC.

10. Pest Control

Mormon crickets were seen during late spring in some of the draws south of the refuge. Large numbers of crickets were on the Crouse Canyon road to Vernal, Utah. Since the crickets tend to forage on much of the vegetation along their path, the Bureau of Land Management annually applies pesticides on the heaviest cricket concentrations. Normally, the crickets never reach refuge lands. However, this year several were seen on the refuge along the south side of

the Green River in the vicinity of the Nelson and Warren marshes. Fortunately, they were not very numerous and various birds apparently enjoyed feeding on them (Photo 24).



Photo 24. Mormon crickets made it to the refuge this year on the south side of the Green River. Several bands moved off Diamond Mountain on the refuge in late June, but only a few managed to get across the river. 6/86, Personal photo, JC.

12. Wilderness and Special Areas

There are four National Historic Sites registered in Moffat County, Colorado. Three of them are located on the refuge. One is the Two-Bar Ranch, headquarters of one of the largest cattle and sheep ranch operations in the west during the late 1800's. It is protected from vandals and is being allowed to yield to the effects of nature without interference.

The Lodore Hall was built in 1911 and was the first district-funded school in the area. It presently serves as the Community Hall for Browns Park residents. The Browns Park Homemaker's Club has a Special Use Permit for the building and grounds with the stipulation that they maintain and repair the building when needed.

The Third National Historic Site on the refuge is the White-Indian Contact Site. It is believed to be the site of Fort Davy Crocket, an old fur trading post. The area was partially excavated by Scientific Applications in 1980, then re-covered by refuge personnel. Since then it has been protected from further disturbance (Photos 25 and 26).



Photo 25. The Two-Bar ranch house is slowly deteriorating at one of the two historical sites on the refuge. 7/24/86-61, JC.



Photo 26. The bunkhouse at the Two-Bar historical site is in better shape than any of the other buildings at the site. 7/24/86-62, JC.

G. WILDLIFE2. Endangered and/or Threatened Species

A few bald eagles were seen on the refuge during the winter. Numbers peaked at 15 in March.

Peregrine falcon are occasionally observed on the refuge. One was sighted in May near the Flynn Marsh.

During May, personnel with the Colorado River Fisheries Project electro-shocked the Green River through the refuge for Colorado River squawfish, but none were observed. One CRFP crew returned in August and, with refuge personnel assisting, electro-shocked most of the river through the refuge. This time one Colorado River squawfish was found.

3. Waterfowl

As many as 40 tundra swans were seen on Flynn marsh during November and December (Photo 27).



Photo 27. Tundra swans stayed around until after the marshes froze over. 11/15/86-161, JC.

Close to 400 Canada geese were using the refuge during January; by April numbers had increased to 500. The year ended with around 400 geese remaining on the refuge.

The Canada goose nesting survey was conducted during mid-April. Eighty-two nests were found. Nearly ten percent were destroyed by predators. The survey results were comparable to 1985, except that loss to predation was higher that year at eighteen percent (Photo 28).



Photo 28. Harding and Calton preparing for goose nesting survey at the Flynn marsh. 4/11/86-30, JC.

Nine Canada goose nests were observed on islands or along the banks of the Green River. The rest were found on nesting structures or islands in the marshes. Approximately 334 goslings were produced.

A lone snow goose was sighted on Hoy marsh during November. This is the third year in a row that a snow goose has been observed on the refuge, although intermittent refuge records dating as far back as sixteen years indicate one snow goose using the refuge.

There were around 220 ducks on the refuge at the beginning of the year, mostly mallards and gadwalls. By mid-April, there were nearly 8,200 ducks and coots present. Due to unusually mild weather the last of November, around 700 ducks remained until the marshes froze over after the first week in December. After that, only two or three hundred were left.

The breeding pair count for ducks was conducted May 12-13. The formula used to estimate brood size was 6.1 for dabblers and 6.3 for divers. Survival rates of 0.45 for dabblers and 0.60 for divers were used.

Duck production this year was a record high for the refuge--6,382. The big increases were: gadwall 257, blue-winged and cinnamon teal 586, wigeon 572, and ruddy ducks 259. Canvasback (132) and redhead (415) production was nearly identical to last year's.

Table 1. Waterfowl production from 1972 through 1986.

<u>Year</u>	<u>Geese</u>	<u>Ducks</u>	<u>Coots</u>
1972	139	2,285	1,100
1973	150	3,200	5,700
1974	150	3,275	2,000
1975	250 (69)	3,200	2,000
1976	150 (61)	3,100	500
1977	225 (75)	3,060 (1,001)	1,500
1978	290 (85)	2,450 (807)	4,300
1979	225 (73)	2,725 (953)	3,150
1980	170 (60)	2,855 (955)	2,280
1981	245 (72)	4,025 (1,391)	2,500
1982	264 (76)	4,318 (1,427)	2,600
1983	305 (106)	4,406 (2,491)	3,600
1984	296 (107)	4,112 (1,376)	2,330
1985	277 (145)	4,036 (1,396)	1,772
1986	334 (106)	6,382 (1,957)	3,000

* Breeding pair counts in parenthesis.

4. Marsh and Water Birds

Great blue heron production was slightly higher this year. Herons used approximately 15 nests in a rookery near the Green River. An estimated 25 young were fledged.

Black-crowned night herons nested in several of the refuge marshes.

As many as 170 white-faced ibis were seen during the spring. Nesting was not observed.

Migrating sandhill cranes were seen passing over the refuge during the spring and fall months. Sixty-five stayed in the Nelson Marsh area for a few days around the first of September.

Snowy egrets are occasionally seen on the refuge. Four were sighted in the Hoy Marsh area during June.

Common loons are infrequently seen on the refuge. One was observed on the Green River in March. This was the first sighting since 1983.

Marsh and water birds often seen on the refuge are: western grebe, horned grebe, pied-billed grebe, American bittern, and sora rail.

5. Shorebirds, Gulls, Terns, and Allied Species

Wilson's phalarope are abundant during late spring. Approximately 400 were on the refuge by mid-June.

A few California and ring-billed gulls were along the Green River from March through October.

Forester's terns are seldom seen on the refuge. This year, 15 were observed along the Green River during June.

Black-necked stilt and American avocet are often seen around the refuge marshes during spring and summer.

Other birds using the refuge are: common snipe, lesser yellowlegs, western willet, spotted sandpiper, and killdeer.

6. Raptors

Golden eagles are seen year-round and occasionally nest on the refuge. They appeared more abundant than during previous years. The peak number recorded was 20 in March.

Turkey vultures are commonly seen from March until December and often nest on the refuge. Approximately 50 were observed during August.

Red-tailed hawks, American kestrel, merlin, northern harriers, and great-horned owls are common year-round residents and nest on the refuge. Rough-legged hawks are often seen during the winter. Cooper's, sharp-shinned, Swainson's, and ferruginous hawks are occasionally seen on the refuge.

7. Other Migratory Birds

There seemed to be fewer mourning doves on the refuge this year, around 300. They stayed later into the fall than usual; many were still around during mid-October.

As many as 30 or 40 common nighthawks were observed around the refuge sub-headquarters during summer evenings.

Black-chinned and rufous hummingbirds were frequent visitors to the feeders (Photo 29).



Photo 29. Black-chinned hummingbirds getting their daily handout. 8/86-72, JC.

8. Game Mammals

Approximately 40 pronghorn antelope used the refuge most of the year. Few fawns were sighted.

The river bottoms on the refuge are popular wintering areas for mule deer. By February, approximately 1,300 were on or adjacent to the refuge. Numbers began declining in March as they began moving to higher elevations. Buck to doe ratios do not seem to be very high, but have increased since the severe winter of 1983-84.

Elk are occasionally seen on the refuge during February, since they winter in nearby draws. This year, approximately 100 were observed on the south side of the refuge.

10. Other Resident Wildlife

A cow moose frequented the refuge during September and was last seen in mid-October. The last time a moose was observed on the refuge was 1984. They are a rare sight here, but are fairly common west of the refuge in the Uintah Mountains of Utah.

Coyotes and rabbits are both quite common on the refuge. Porcupine, badger, raccoon, and skunk are occasionally seen.

Sage grouse use the refuge year-round and are often seen in the Swinging Bridge vicinity or near the Utah state line. Seventy were seen on the refuge in January.

There is a small, but fairly stable, chukar partridge population adjacent to the refuge. A few were occasionally seen on the south side of the refuge during August.

Both muskrat and beaver frequent the Green River, Beaver Creek, and many of the refuge marshes. Their lodges are often beneficial as goose nesting sites.

11. Fisheries Resources

The Green River passes through the refuge and is a major sport fishery. Rainbow, brown, and cutthroat trout are the species most often caught. Catfish and carp are occasionally caught.

Beaver Creek supports a moderate population of brook trout, as well as a few rainbow and cutthroat.

12. Wildlife Propagation and Stocking

During the summer, Browns Park Sportsman's Club members released around 90 chukar partridge adjacent to the refuge.

15. Animal Control

Very little animal control was achieved this year, although two skunks and two feral cats were "eliminated" near the refuge headquarters.

H. PUBLIC USE

1. General

Total refuge visitor use was slightly higher this year--3,565. Average annual visitor use (over the past five years) is 3,357. Many of the refuge visitors travel from Craig (85 miles) or Steamboat Springs (140 miles), Colorado, and camp on the refuge for the weekend or a few days. Much of the day use visitation is during the spring or early fall.

5. Interpretive Tour Routes

This year approximately 1,450 visitors used the seven-mile auto tour route. The road is parallel to the Green River and overlooks three marshes.

7. Other Interpretive Programs

Due to the remoteness of the refuge, the opportunity to present interpretive talks and tours seldom arises. During April, a slide program was presented to approximately 160 people during a Chamber of Commerce meeting held in Craig, Colorado. In May, a talk was presented to 50 Cub Scouts and their leaders from Steamboat Springs,

camped at the refuge campground. A slide program of the refuge was presented to 13 members of the Craig Garden Club during September.

Refuge leaflets are available at the Browns Park Store, the Maybell Store (60 miles), Craig Chamber of Commerce and Bureau of Land Management in Craig, Colorado (85 miles). Leaflets are also sent to the Dinosaur National Monument, and the Powell Society in Denver.

8. Hunting

The entire refuge, except posted areas around residences and buildings, is open to rabbit and mule deer hunting. The Green River and 100 yards either side, plus Hog Lake, Butch Cassidy marsh, and Beaver Creek, are open to waterfowl hunting.

Archery deer season was August 16-31 (bucks only) and September 1-20 (either sex). Muzzle loading season lasted from September 7 until September 20. There were few hunters on the refuge during either season and only one deer was reportedly taken, a three-point buck, during muzzle loading season. It was shot on the Colorado State Management Area, just north of the refuge.

There were three separate rifle deer seasons this year. The first one was October 11-15. The second season was October 18-29. Some limited doe licenses were allowed during the second and third seasons. The first and second seasons carried restrictions of three points or better for the bucks. Hunter participation was fairly low during both seasons, although a few big bucks were taken on or near the refuge (Photo 30).



Photo 30. The big one didn't get away this year. This 6X6 buck had a 34" spread. The blaze orange didn't reproduce well in the photo, as you can see. 10/25/86-124, JC.

The last season was November 1-9 and there were no antler restrictions. Approximately 55 hunters hunted on the refuge. Twenty-four bucks and eight does were taken. Very few big bucks were taken during this season; most were two points or less.

The Browns Park delayed goose season ran from October 25 through December 7, with one goose allowed for the bag limit and two for the possession limit. Approximately ten hunters participated during opening weekend. Success for the entire season was around 35 percent.

Browns Park is in the Pacific Flyway. The duck hunting season was split--October 4-17 and November 8 through January 11, 1987. Success was fair, mostly gadwall and mallard were bagged. Little duck hunting was done after the first of December, since all the marshes had frozen over and only a few hundred ducks remained along the Green River.

9. Fishing

Previously, the portion of the Green River running through the refuge had been closed to fishing each year March 1 through June 15 to reduce disturbance to nesting waterfowl. This year it was decided to remove the closure, since most of the nests found in the past have not been in areas of frequent public use. Consequently, this was welcomed by the fishing public and the previous opening weekend rush was eliminated. For this year, at least, the removal of the closure did not seem to have an adverse effect upon waterfowl production along the river.

Around 2,000 visitors fished on the refuge this year. This is a thirty percent increase over the past three years. Much of the increase is no doubt due to the closure removal.

Rainbow, cutthroat, and brown trout are caught most often in the Green River. Fishing success was down during much of the summer due to high water levels, although during the spring a few brown trout weighing several pounds were caught. Beaver Creek is also open to fishing and offers good brook trout fishing to those willing to walk the stream and fish the deeper "pockets."

12. Other Wildlife Oriented Recreation

The majority of the refuge visits are wildlife oriented. Visitors usually camp in one of the two refuge campgrounds and hunt, fish, or just observe wildlife. Boaters and rafters are often seen on the Green River (Photo 31).



Photo 31. Crook Campground on Memorial Day weekend. 5/31/86, RH

17. Law Enforcement

Refuge law enforcement is low-key, but highly visible. Special enforcement patrols are performed during the deer hunting seasons. Those fishing, and other refuge visitors, are often contacted in conjunction with other refuge duties (especially during weekends, since a Maintenance Worker with law enforcement authority works weekends).

Six people were cited for refuge violations this year. In January, a rabbit hunter was cited for hunting without a license, which resulted in a \$50 fine. In September, an individual was cited for camping on the refuge in a non-camping area and later paid a \$50 fine. During October, two hunters were cited for the unauthorized taking of wildlife (sage grouse) and each paid a \$100 fine. Another hunter was cited for hunting with an unplugged shotgun and his partner was cited for hunting without a license. Each paid \$50 fines.

During February, refuge personnel confiscated an unauthorized steel trap set on the refuge. A note was left at the site requesting the owner to report to the office. Needless to say, no one showed up to claim the trap.

I. EQUIPMENT AND FACILITIES

1. New Construction

During July and August, refuge personnel installed metal sheeting on the roof and sides of a steel frame that had been erected last year. Refuge personnel had dismantled and removed the 40' X 150' Butler equipment storage building from the Bear River Migratory Bird Refuge in 1984.

Most of the original material was used during the re-construction, except for the roofing, which was purchased new. Although the building itself is completed, the overhead doors have not been installed yet (Photos 32 and 33).



Photo 32. Work continued on the Butler building that was acquired surplus from Bear River MBR. 7/30/86, JC.



Photo 33. When we couldn't find anything else to do, we could always work on the Butler building. By the end of the year all we had left to do was put on the doors and windows. 8/86-80, JC

During the summer, three-fourths of a mile of three-strand barbed wire fence was constructed by refuge personnel around the Swinging Bridge Field. The project turned out to be fairly time consuming because of the rock out-cropping surrounding the field. Three small wildlife food plots of alfalfa, clover and wheat were planted in the area during mid-September. The fence was built to keep the refuge permittee's cattle out.

During the last of November, a field representative for Colorado Power Fencing Company delivered electric fencing material to the refuge and instructed personnel on how to properly construct the fence.

Refuge personnel spent the entire month of December building electric fencing for seven upland rest-rotation grazing units and six river bottom units on the north side of the refuge. Approximately six miles of fence was completed.

Towards the end of the year, three 150' X 150' barbed wire fence enclosures were constructed along the north side of the refuge. The purpose of the enclosures is to provide ungrazed (by cattle) areas for evaluating and monitoring range conditions under the new refuge rest-rotation method of grazing.

2. Rehabilitation

During October, the Swinging Bridge Campground road was re-graveled and graded.

3. Major Maintenance

In February, the placing of flat "moss" rock was completed around the sloped banks surrounding the refuge office. The rock replaced the light colored rock that the Regional Office Interpretive Specialist recommended replacing because it did not "blend well" with the surroundings.

4. Equipment Utilization and Replacement

The refuge acquired a new 6080 Allis Chalmers four-wheel drive tractor in March to replace the old 4020 John Deere.

5. Communication Systems

During the spring of 1985, the refuge and all other Union Telephone customers (on the Colorado side only) in Browns Park were informed the rates would be raised approximately 1,300 percent. The alternative being the removal of the phone lines. Since that time, thanks to the Public Utilities Commission (PUC), there has been a series of proposed rate increases and threatening of phone service termination, all of which have been thwarted so far by the PUC. Penny Creasy was selected as one of the interveners to represent the Browns Park customers, along with assistance of the PUC. Penny has spent many hours writing letters and talking on the phone concerning the telephone "issue."

8. Other

In July, a surplus 20' X 60' double-wide mobile home was acquired from the Bureau of Reclamation (BR) at Fort Duchesne, Utah. It was several years old, but in good condition. The mobile home replaced a smaller trailer (10' X 55") at the refuge sub-headquarters occupied by the refuge Engineering Equipment Operator.

During August, another surplus mobile home was acquired from BR at Fort Duchesne. This one (14' X 70') was also several years old, but in good condition. A new concrete septic tank was installed for the trailer. Also, trenches for electrical and septic leach lines were dug. The trailer was set up southeast of the Refuge Manager's residence to provide housing for temporary refuge employees (Photos 34, 35 and 36).



Photo 34. Preparing to move 10' X 55" mobile home for replacement with a 20' X 60' mobile home. 7/86-48, JC.



Photo 35. The 20' X 60' mobile home that was acquired surplus from the Bureau of Reclamation to replace the 10' X 55'. 8/86, personal photo, LB.



Photo 36. Joli Vollers puts skirting around the 14' X 70' mobile home we acquired surplus from the Bureau of Reclamation. It will be used to house temporary employees. 11/14/86-147, JC.

During November, an old refuge house trailer was declared surplus and was acquired by Valentine NWR personnel.

J. OTHER ITEMS

1. Cooperative Programs

A weather station was maintained at the refuge sub-headquarters and daily temperatures and precipitation recorded in cooperation with the Weather Bureau.

3. Items of Interest

During February, Jim Creasy attended the Holistic Resource Management Course I in Albuquerque, New Mexico.

Creasy attended the Advanced Manager's Training at Washington, D.C. for three weeks in March.

Jim Creasy, Don Clapp and Lynn Barber attended a Cooperative Fire Meeting in Meeker, Colorado, in March. The meeting was held to establish working cooperative agreements between Federal, State and municipal agencies.

During March, the refuge hosted the Tri-State Big Game Meeting. Officials from the Bureau of Land Management, Colorado Division of Wildlife, Utah Division of Wildlife Resources, and Wyoming Game and Fish were present. Hunting results from the 1985 season were presented and the upcoming 1986 hunting season was discussed.

Don Clapp and Bob Harding attended the Law Enforcement Refresher Training in Denver, March 10-14.

In April, Creasy attended 36 hours of Law Enforcement Refresher Training offered by the National Park Service at Grand Junction, Colorado.

Jim and Penny Creasy attended a Public Utilities Commission rate hearing concerning the Union Telephone Company at Craig, Colorado.

In April, Creasy, Clapp and Barber went to Ogden, Utah, to bring back surplus materials and equipment stored there from the Bear River Migratory Bird Refuge.

Steve Berlinger, Regional Office Land Management Specialist, was at the refuge for a week during May to assist with setting up the Land Management Plan. Berlinger and refuge staff also met with the refuge grazing permittee to discuss the new grazing plan.

Greg Rowlett, Regional Office Staff Specialist, visited the refuge in May to inspect refuge historical and archeological sites.

The in-lieu of tax check (\$8,005.00) was presented to the Moffat County Treasurer. The check arrived much later than usual this year, the last of May.

During June, Creasy attended the Holistic Resource Management Course II at Casper, Wyoming.

Dave Soker and Sandy Hutchcroft, from Realty in the Regional Office, visited the refuge in July concerning an 80-acre inholding appraisal.

In July, refuge personnel qualified on the fire fighting step test, except for Clapp who had previously chosen to run one and one-half miles to qualify.

Creasy attended the Savory Grazing Seminar at the Lacreek National Wildlife Refuge, August 4-6.

Creasys and Barbers assisted the Browns Park Sportsman's Club with their annual Antelope Hunter's Supper at Maybell, Colorado, during September.

During September, Creasy and Clapp attended the Project Leaders Meeting in Denver. Clapp, Jim and Penny Creasy also attended a "going away party" for Phil Norton, Refuge Supervisor for Colorado, Utah and Kansas.

Zone Supervisor Barney Schranck toured the refuge on October 8.

On October 27, Zone Supervisor Barney Schranck and Land Management Specialist Steve Berlinger met with the refuge staff, the refuge permittee, and Extension Range Specialists, to discuss the proposed changes in the refuge grazing program.

During December, Jim and Penny Creasy attended a two-day pre-retirement seminar in Denver.

Refuge personnel attended the annual Browns Park Ladies Club's turkey shoot and assisted.

The Creasy and Barbers attended monthly meetings of the Browns Park Sportsmen Club.

4. Credits

Don Clapp wrote Parts A, B, C, D, F, G, H, I and J. Jim Creasy wrote Part E and did the organization and narration of the photographs and edited the report. Norma Wardle typed and assembled the report.



Photo 37. The Swinging Bridge in "The Good Old Days."

(Next page)



Photo 38. Cattle crossing the Swinging Bridge.
3/31/86-28, JC. used to house temporary employees.

11/14/86-147, JC.

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Photo 37. The
Swinging Bridge in
"The Good Old Days."

(Next page)



Photo 38. Cattle crossing the Swinging Bridge.
3/31/86-28, JC. used to house temporary employees.

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BROWNS PARK

NATIONAL WILDLIFE REFUGE



THE REFUGE

Browns Park National Wildlife Refuge lies on the Green River in the far north-western corner of Colorado, between the Utah-Colorado stateline and Dinosaur National Monument. The Refuge is managed by the U.S. Fish and Wildlife Service as a nesting and resting area for migratory waterfowl.

In pristine times, annual flooding of the Green River maintained the wet meadows preferred by nesting waterfowl. Flaming Gorge Dam now prevents this flooding. Consequently, refuge personnel now pump water from the river to maintain approximately 6,000 acres of developed waterfowl habitat.

This semiarid region receives less than 10 inches of precipitation annually. Ducks, geese, and other water birds travel hundreds of miles to utilize this unique habitat.

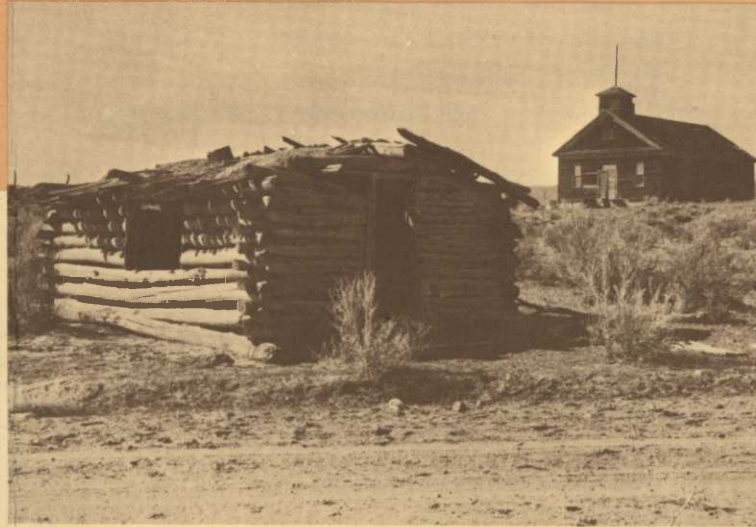
Spitzie Marsh - U.S.F.W.S. photo - J.L. Sellers.



HISTORY

The sheltered valley and abundant wildlife of the Green River lured Indians and fur trappers. "Browns Hole", as it was then called, was a favored winter rendezvous as far back as 1826. By the 1890's, Butch Cassidy and other cattle rustlers used this remote area to rest and hide their stolen herds. Browns Park was the winter headquarters for some of the larger livestock operations in the West, including Ora Haley's Two Bar Ranch.

*Lodore School National Historical Site - U.S.F.W.S. photo - Jim Creasy.
Two-Bar Ranch National Historical Site - U.S.F.W.S. photo - Jim Creasy.*



WILDLIFE

Mallards, redheads, teal, canvasbacks, other ducks, and Great Basin Canada geese nest on the Refuge. About 300 goslings and 2,500 ducklings are hatched annually and production should increase when more habitat is developed. The waterfowl population swells by thousands during the spring and fall migrations. Wading birds, shore birds, song birds, and a variety of hawks and eagles also use the Refuge during various seasons.

Resident species include mule deer, antelope, chukar partridge, and sage grouse. Elk and bighorn sheep occasionally visit the Refuge.



ENJOYING BROWNS PARK

Hikers, sightseers, and photographers are welcome year round. A graveled tour road provides ample opportunities to view wildlife and wildlife habitat.

Primitive camping facilities are provided at Swinging Bridge and Crook Campgrounds. This is remote country and no services are available locally. Maybell, Colorado, and Vernal, Utah, are 50 miles away and Dutch John, Utah, is 40 miles. Visitors must bring sufficient food, water, and fuel for their entire visit.

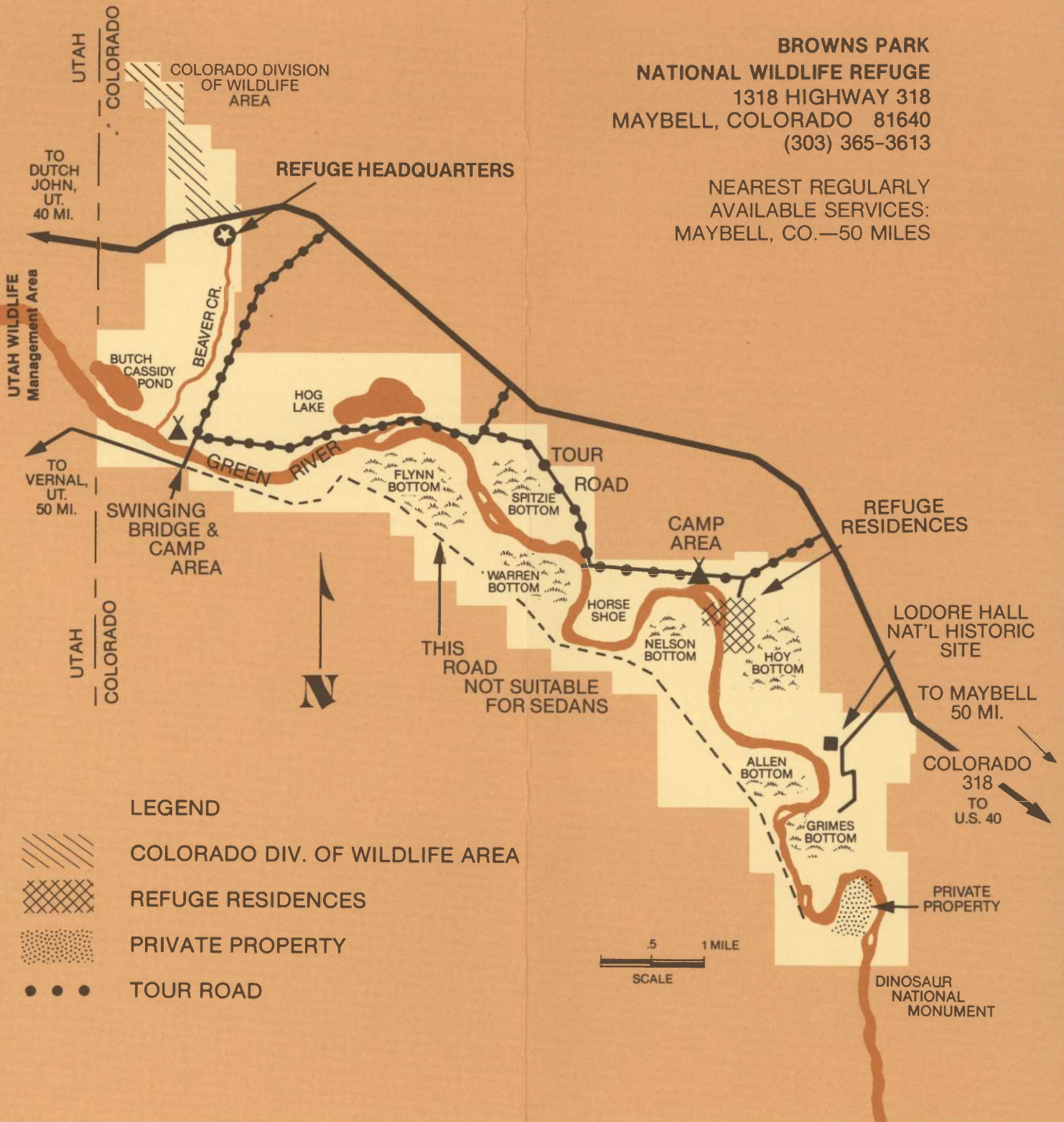
Hunting and fishing are allowed on the Refuge under State and Federal regulations. Deer and cottontails may be hunted in all areas except those posted, "Area Closed". Ducks, coots, and geese may be hunted along the Green River channel and within 100 yards of each bank. Hog Lake and Butch Cassidy Bottoms are open to waterfowl hunting in areas designated by green "Public Hunting Area" signs.

*Left: Canada Goose - U.S.F.W.S. photo - Rex Gary Schmidt. Pronghorn Antelope - U.S.F.W.S. photo - Jim Creasy.
Below: Cattle Crossing Swinging Bridge - U.S.F.W.S. photo - Jim Creasy.*




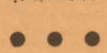


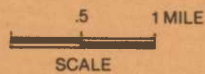
**BROWNS PARK
NATIONAL WILDLIFE REFUGE**
1318 HIGHWAY 318
MAYBELL, COLORADO 81640
(303) 365-3613

NEAREST REGULARLY
AVAILABLE SERVICES:
MAYBELL, CO.—50 MILES



LEGEND

-  COLORADO DIV. OF WILDLIFE AREA
-  REFUGE RESIDENCES
-  PRIVATE PROPERTY
-  TOUR ROAD





GENERAL REFUGE REGULATIONS

- Motor vehicles are allowed only on roads. Closed roads are marked with signs.
- Parking is permitted along roadways. Please do not block roads or gates.
- Pets must be leashed or closely supervised.
- Plants and animals are protected. Do not remove or molest them.
- Please use trash barrels or take litter out with you.
- Boating is permitted on the Green River.
- Camping is allowed only in the Swinging Bridge and Crook Campgrounds.
- Fires are permitted only in camp areas.
- Firearms must be unloaded and cased on the Refuge except during authorized hunting seasons.
- Please contact a refuge officer if you have questions on regulations or on other activities.

U.S. FISH AND WILDLIFE SERVICE
Department of the Interior



RF6-65571-1

GPO 849-261



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