

CONBOY LAKE NATIONAL WILDLIFE REFUGE

Glenwood, Washington

ANNUAL NARRATIVE REPORT

Calendar Year 1992

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

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Calendar Year 1992

Review and Approvals

<u>Harold E. Cole Jr</u> Submitted By	<u>5/3/94</u> Date	<u>Bruce Wiseman</u> Refuge Manager	<u>5/5/94</u> Date
<u>John C. Sekora</u> Associate Manager, ID/OR/WA	<u>9/28/94</u> Date	<u>John H. Deibel</u> ARD, Refuges and Wildlife	<u>11/3/94</u> Date

INTRODUCTION

Conboy Lake National Wildlife Refuge is located in the northwest corner of Klickitat County, Washington. Headquarters is located 8 miles southwest of the small ranching and logging community of Glenwood.

The Glenwood Valley, formerly known as Camas Prairie, lies on the eastern slope of the Cascade mountains at approximately 1,800-foot elevation. High ridges that surround the valley, and 12,286-foot Mt. Adams, 17 miles north of headquarters, give an illusion of much greater elevation. The refuge includes much of the lakebed of historic Conboy Lake, which occupies the southern portion of the valley. The lake was drained in the early 1900's in an attempt to increase farmable land.

The refuge was established in 1964, primarily for migratory waterfowl. Excellent habitat diversity also provides for a wide variety of resident wildlife species. The refuge occupies 5,814 acres of lakebed and surrounding uplands. The original proposal to the Migratory Bird Conservation Commission was for over 10,000 acres (later reduced by 1,000 acres by administrative decisions).

Acquisition history has been stormy, with some land being condemned and later reverted due to political pressure. Current ownership is a broken pattern, and habitat restoration plans remain on hold pending future consolidation or acquisition.

INTRODUCTION

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A. HIGHLIGHTS

- Acquisition of 160 acres of "Myers Place" (Section C. 1, Fee Title, page 10).
- Progress toward acquisition of several tracts (Section C. 3, Other, page 13).
- Archaeological survey completed (Section D. 4, Compliance with Environmental and Cultural Resource Mandates, page 13).
- Sandhill crane nesting progress (Section G. 4, Marsh and Water Birds, page 40.)

B. CLIMATIC CONDITIONS

Table 1. Climatological Data (1992)

Month	Temperature		Precipitation (Inches)	
	High	Low	Rainfall	Snow
January	53	17	3.73	1.5+
February	57	20	4.71	T
March	67	18	0.93	0.00
April	76	20	2.43	T
May	90	23	T	0.00
June	98	32	0.24+	0.00
July	95	37	0.80	0.00
August	95	27	0.13	0.00
September	83	23	3.20	0.00
October	83	16	1.26	0.00
November	52	14	4.39	6.00+
December	45	04	5.46	45.02
Totals	--	--	27.28	52.52+

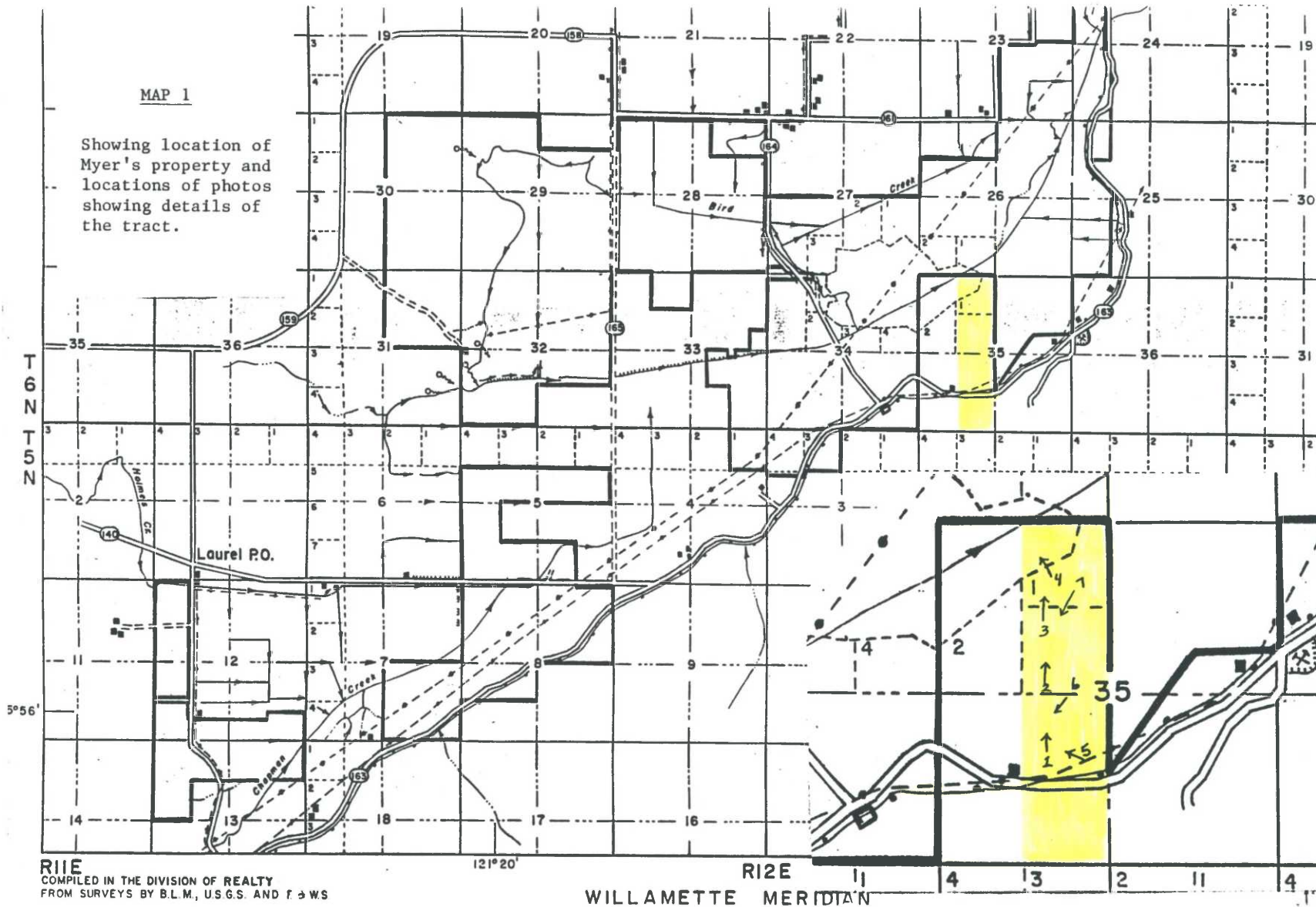
Table 1 shows weather conditions for 1992. This information is supplied courtesy of Mr. and Mrs. George Hathaway, official weather service observers at Glenwood.

Precipitation for the year was well below the 34-inch average. The moisture came at the right time to allow adequate water for winter and spring waterfowl use. Water levels held well until May, with deeper portions of the lake holding brood water into July. Fall rains and irrigation water allowed flooding of about 120 acres of hayed meadows, but there was limited fall migrant use. Cold weather in late November brought ice up and all areas remained frozen until early in 1993.

A windstorm with gusts to 64 mph, in late December, uprooted several trees and broke the tops out of many more.

MAP 1

Showing location of Myer's property and locations of photos showing details of the tract.



C. LAND ACQUISITION

RIIE
COMPILED IN THE DIVISION OF REALTY
FROM SURVEYS BY B.L.M., U.S.G.S. AND F & WS

RI2E
WILLAMETTE MERIDIAN



Looking north from uplands toward lakebed.

HC-92



Same view as above, closer to lakebed. Note camas in bloom. HC-92



Same view, closer to lakebed. Note deadfurrow ditch from past farming adjacent lake.

HC-92



Same view, at edge of lakebed. Buttercup is on lake edge; area beyond is lakebed. Dark line is brush along Camas Ditch. HC-92



Upland timber and grasslands, looking north.

HC-92



Looking south/southwest. Barn is on west half of property (private) and has since been razed by owners.

HC-92



Looking south toward uplands. Wooded portion above barn extends to clearcuts on three sides.

HC-92

1. Fee Title

The refuge finally added 160 acres of the "Myers Place" (Tract 46) to its holdings in 1993. The U.S. Fish and Wildlife Service ("Service") acquired the east half of the 320-acre property that had been in undivided ownership between the Conboy and Kreps families since the 1800's. The land was originally homesteaded by Peter Conboy in the early 1870's and is located on the south shore of the lake that still bears his name. After Conboy's death, his wife married a man by the name of Myers and the property has been known by that name since. The Conboy side of the family eventually inherited one-half interest and the Kreps family the other one half. It was jointly managed for many, many years, usually with some disagreement. Mrs. Grace Avery (the last in her generation of Conboys) contacted refuge staff several years ago, first with an offer to donate her portion and later with an offer to sell. The Service was reluctant to obtain one-half interest in the property because of the possible management conflicts. During 1991, Mrs. Avery cleared up ownership of her half by buying out a niece and nephew, leaving her with an undisputed one-half interest. With the help of refuge staff and realty, she was able to reach an agreement with the Kreps family (O.T. Kreps Trust) to divide the property in half, north to south, and sell her half to the refuge. The refuge YCC crew dismantled the remains of the Myers house after it was well recorded in photographs and drawings by Regional Archaeologist, Anan Raymond.



Regional Archaeologist, Anan Raymond, and Lewis Semoe (JTPA) take down vital information on old Myers house prior to dismantling.

HC-92



Dismantling begins; most of the building was already down from natural causes when crew started.

HC-92



Debris was burned after first fall rains (and snow).

HC-92

Because the Kreps family does not want to sell their 160 acres, our goal is to acquire the property through a land exchange agreement with them. Such an exchange would virtually complete Service ownership of the eastern portion of the refuge (approximately 1,800 acres), and allow management and reestablishment of historic Conboy Lake and its associated wetland habitat.

Contacts that began 2 years ago with the Ziegler family regarding purchase of at least 80 acres of their property adjacent to the refuge, continued. The property is outside the original approved refuge boundary, which followed the boundary of Drainage District #1. Their 80 acres includes wetlands and a portion of the historic lakebed that could be flooded or altered by future development of refuge wetlands. Acquisition of the property would correct this 'oversight' and allow logical development of historic wetlands. Price continued to be a stumbling block. Zieglers want approximately \$900/acre, plus the value of timber remaining on the land. Realty had included the timber in the offer of approximately \$900/acre. The Zieglers harvested a portion of the remaining timber, and we suspect they found the value of the property to be close to our appraised value rather than the higher figure they had been expecting. Timber prices continue to climb, so a future appraisal could well be in their favor. Perhaps we will be able to reach an agreement next year.

The Service made a formal offer to purchase a 1-acre inholding (Tract 31a), owned by Mr. and Mrs. Claude Boyatt. The offer was quickly put on hold, due in part to Mrs. Boyatt's illness and her reluctance to sell. The property includes the "Lakeside School," a turn-of-the-century school building that has been a private residence for many years. The Boyatts bought the property several years ago (before the FWS could move to acquire it), and have made many improvements and use it as a second home for outdoor activities throughout the year. Mrs. Boyatt passed away late in the year and refuge staff will be contacting Mr. Boyatt in 1993 to see if the property is available.

Very informal contacts were made with several other owners of inholdings. Most have no need or desire to sell at this time but all are willing to discuss the issue. That has not always been the case at the refuge.

The refuge staff was again contacted by Mr. and Mrs. Henry Bonham of Panakanic, a small valley just across the ridge south of the refuge, regarding sandhill crane use of their property and their interest in selling the 300+-acre ranch to the Service. The ranch includes wetlands, grass uplands, and some timberlands. It is a "mini-Conboy" in its diversity and provides valuable wildlife habitat, and the wetlands could be vastly improved if developed with cranes and waterfowl. A proposal will be submitted to determine the possibility of purchasing the property.

3. Other

The refuge "acquired" its first Farmers Home Administration tract this year. Two tracts near Goldendale, 40 miles east of the refuge, were originally reviewed by refuge staff and John Grettenberger of Enhancement. The Harris property, which had several units with existing wetlands that already supported a diverse wildlife base apparently went back to its original owner by agreement with FHA. The Holthusen property, which includes a reclaimed and farmed portion of Swale Creek near Centerville, was signed-off for easement protection. It has wetland values but will require a lot of work to return it to a productive wetland area.

D. PLANNING

4. Compliance with Environmental and Cultural Resource Mandates

A final report on the Cultural Resource Survey of the refuge that was initiated in March 1990 was finally received in May. The project was contracted to Oregon State University and field work was done by Bill Adams and various archaeology students. The report listed sites, both historic and prehistoric, and concluded that virtually all of the upland areas of the refuge contained some evidence of past Native American use. A copy of the report was forwarded to Greg Cleveland, Archaeologist of the Yakima Tribe, and Bill Yallup, Tribal Chairman (formally with the Cultural Resources office) for review and/or comment. We received no response from either of them.

5. Research and Investigations

A new research project involving the control of meadow knapweed that is invading habitat occupied by the state, listing long-bearded sego lily, was started this summer. Dr. Ben Roche, Washington State University weed control specialist, working with Marty Hudson, Klickitat County Weed Supervisor, designed test plots to determine the effectiveness of various chemical control methods. The project is similar to, but on a smaller scale than, a knapweed control project that was begun in 1986 by Dr. Roche. That study concluded that a combination of chemicals and fertilizers (see 1987 NR for specifics) was effective in controlling knapweed, but we did not know how they would effect the lily. The current study included several plots that were treated with different concentrations of chemicals and fertilizers (very similar to those used in the original 1986 study), as well as control plots. John Gammon with the Washington Natural Heritage Program assisted by sampling and recording the number of lilies in a portion of each plot prior to treatment. As results of the project become available next year, we plan to begin control measures on the knapweed stands that include the lily.



John Garner, technician for county weed control,
places stakes to set up test plots.

HC-92



View of layout of test plots.

HC-92



Close-up in one of test plots. Much of the "green" is knapweed leaves. Darker pink blossoms are knapweed; ones appearing white or light pink are sego lily.

HC-92



John Gamon, WNHP botanist, recording sample data on a number of sego lily vs. knapweed in one of larger test plots.

HC-92

A permit was issued to David M. Green, Associate Professor of Herpetology at McGill University in Montreal, Canada, to collect several spotted frogs from the canal near headquarters. Professor Green is studying "Genetic Divergence and Speciation in the Spotted Frogs, *Rana pertiosa* complex: Identity and Status of Southern Washington Populations." He has a permit from the state to conduct the study. He collected six frogs--three adults and three juveniles--when he visited on August 21.



Marc Hayes and David Green placing spotted frogs in plastic bags for transport.

HC-92

E. ADMINISTRATION

1. Personnel

Current staff consists of Refuge Manager, Harold E. Cole, Jr., GS 9/8, PFT. The refuge has never had more than one full-time staff person since it was created in the mid-1960's.



YCC and refuge staff, left to right: Richard Christensen, YCC crew leader; Todd Bales, YCC; Jennifer Bean, YCC Youth Leader; Velma "Katie" Valdez, JTPA; Joe Dean, YCC; Jon Cole, YCC; Lewis Semoe, JTPA; Colby Doolittle, YCC; Tara Mains, YCC; Harold Cole, Refuge Manager, and "Jeb."

HC-92

Kent Olson was hired as Carpenter WG 9/2 for 6 months, working on the Whitcomb Cabin restoration. Kent averaged 1-2 days per week on the cabin.

Ridgefield NWR's Project Leader, Bruce Wiseman, provided guidance as necessary and visited the area on occasion to stay up-to-speed on projects. Refuge Assistant, Mary Kirby, and Clerk, Joan Goodson, keep the manager on track with excellent support.

2. Youth Programs

This was the 15th year that Conboy Lake NWR has had a YCC program. As usual, the crew worked on a wide variety of projects. YCC has always been popular in the community. The distance to other potential work sites makes jobs for local high school students particularly hard to find.



Crossing Cascade Creek, Mt. Adams Wilderness Field Trip.

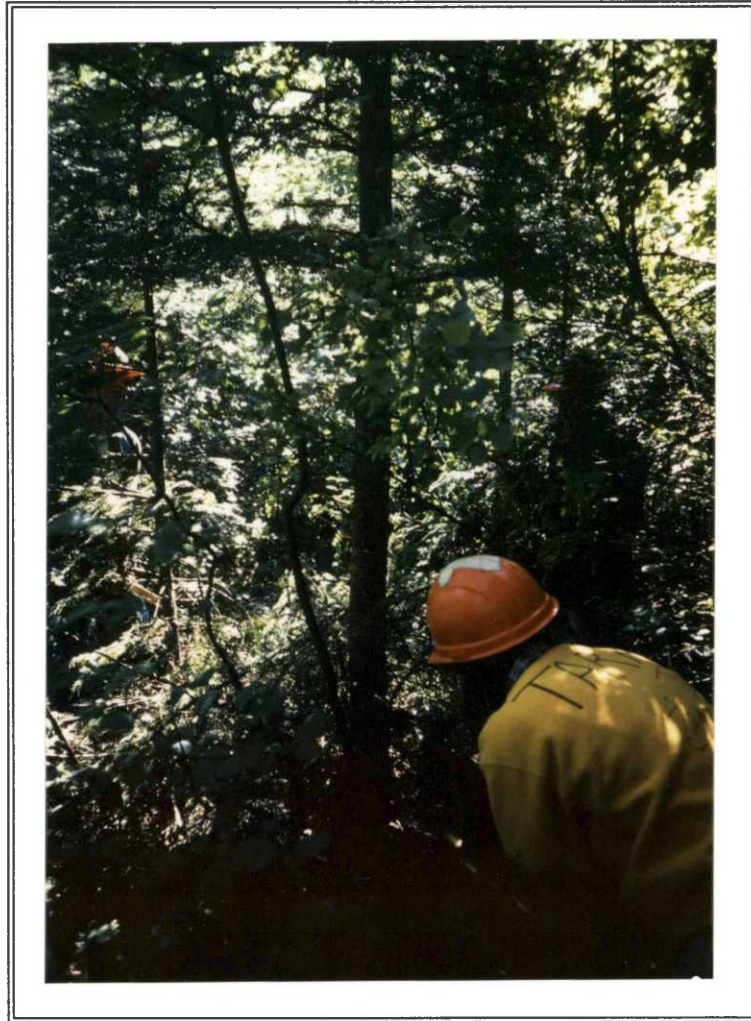
HC-92

Crew Leader, Dick Christensen (who has been with YCC since its first year), kept enrollees busy with jobs such as trail maintenance, fence construction, tree removal and building and grounds maintenance. Dick's experience with YCC keeps the program moving smoothly, and almost effortlessly, from the refuge manager's point of view.



Refuge boundary line before...

HC-92



during...

HC-92



...and after brushing by YCC crew.

HC-92

3. Other Manpower Programs

The refuge had two participants from the Job Training Partnership Act (JTPA) during the summer months. This program is sponsored by the Washington Employment Security Department to provide jobs for youth, 15-18 years of age. Katie Valdez and Lewis Semoe worked alongside the YCC enrollees. This made the program effective with a minimum effort. Without these two programs and the young folks they employ, many necessary refuge projects would never be completed!

4. Volunteer Programs

Linda Cole continued to provide volunteer assistance as needed. This includes answering the phone, monitoring the radio, moving vehicles and equipment, running errands, etc. Heather Cole (age 17) and Jon Cole (age 15) are also official volunteers.

They provide many hours of time giving an "extra hand" when necessary. Together, the three have provided several hundred hours of assistance this year.

Sue Hall of Husum, Washington, provided many hours of effort to the observation of sandhill cranes on the refuge. She continued and expanded the efforts started by Jessica Wachtel (Cooperative Education student from Ridgefield NWR) last year.

A volunteer "workday" was held to complete the re-roofing of the north side of the Whitcomb Cabin. Bruce Monk, Joy Olson, Ernie Reynolds, and John Salter spent the day with Kent Olson and Harold Cole installing new shakes that had been split by past YCC crews.

5. Funding

Funding is included in the Ridgefield NWR budget. The manager at Conboy participates in planning and budgeting for both Ridgefield and Conboy.

Table 2. Ridgefield/Conboy Lake Funding Summary FY 1988-1992

Fund	1988	1989	1990	1991	1992
1261/1262	260.4	248.8	318.0	337.1	375.5
YCC	25.4	25.4	25.0	25.0	25.0
1971 Steigerwald(a)	50.1	33.0	72.7	70.7	48.3
7201 Pierce(b)		14.4	44.4	49.3	38.6
6860	2.0	2.0	2.0	2.0	2.0
9120 Fire Presuppression				36.2	9.5
1240/9110 Fire Management	4.7	12.8	66.3	13.0	
126X Fire				5.5	0.5
1262 Large ARMMS/MMS			38.2	85.7	98.4(c)
1262 Small ARMMS			3.0		
1230 Collar Reading				12.0	12.0
1261 Contaminant				2.0	10.0(d)
8610 User Fees	1.0	2.6	2.6	3.7	2.6(e)
Totals	343.6	339.0	601.2	691.9	625.4
Construction - R.O. Engineering	115.5				2.5(f)
Regional Office Farm Bill (1120 Funds)	10.8				4.0(g)
Private Lands - Johnson Project					3.0(h)

- (a) Special congressional appropriation expended for initial planning and development of Steigerwald NWR.
- (b) Contributed dollars established by Lena H. Pierce Trust Fund for management of the Pierce NWR.
- (c) Included purchase of entrance signs (\$7.5K), tractor replacement at Conboy (\$35K), and building demolition at Ridgefield (\$55.9K). The Regional Office issued the contract for the latter.
- (d) Pierce Dump - Analysis and clean-up; an additional \$13K was committed to the project by Portland Fish and Wildlife Enhancement office (AFWE).
- (e) Estimate based on the recreation user fees collected by Ridgefield NWR.
- (f) Funds transferred from Regional Office Engineering for construction of water recorder shelters.
- (g) Berg project - FmHA easement.
- (h) Johnson project - Private Lands initiative - Refuge expenditures paid by Olympia AFWE.

Of the total Ridgefield budget, approximately \$85,750 was expended at Conboy NWR during FY 1992, which included \$12,766 (14.9%) for the YCC program. Figure 1 depicts the expenditure of funds, excluding fire dollars.

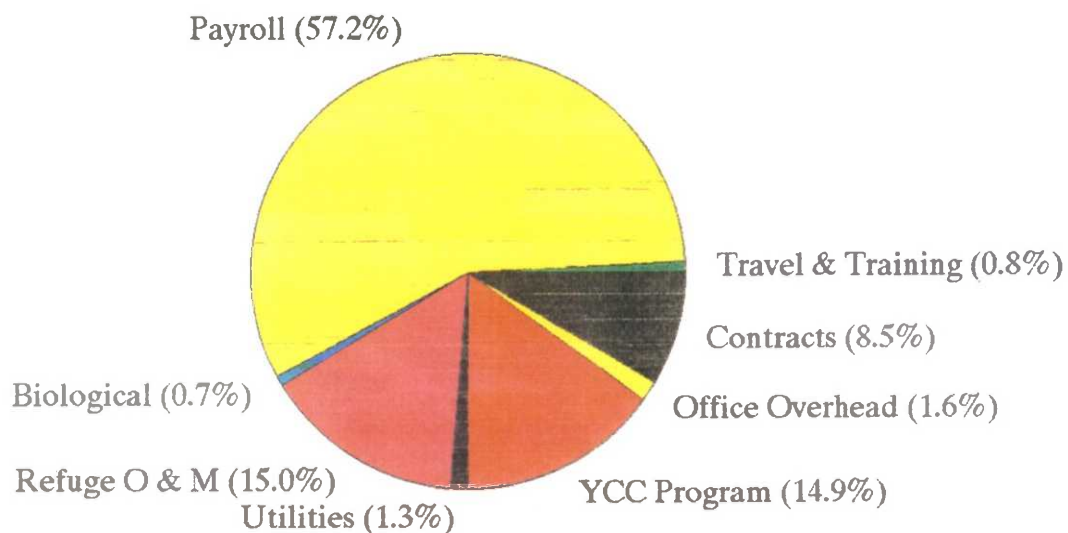


Figure 1. Conboy Lake NWR Expenses for 1992

A revenue sharing check for \$49,946 was presented to the Klickitat County Treasurer's Office on June 29, 1992.

6. Safety

No accidents or injuries were reported by refuge staff or YCC this year.

Safety is always a prime concern when working on a refuge that is 35 miles from medical facilities. YCC and JTPA members received a complete safety orientation on their first day of work, and daily sessions with each new tool or job.

Refuge Manager Cole and his wife are both certified Emergency Medical Technicians and certified cardiopulmonary resuscitation (CPR) instructors. These advanced medical skills provide extra insurance for staff, visitors and community members. A CPR class was presented to the Ridgefield NWR staff.

The Station Safety Plan was reviewed and updated as was the Aviation Pre-Accident Plan. Fire extinguishers received annual servicing.

Conboy staff attended safety meetings at Ridgefield NWR, whenever possible.

Manager Cole is a certified Firearms Safety Instructor and assists with annual hunter education training for local youngsters.

Cole is also a member of the Regional Safety Committee. No meetings were held this year.

7. Technical Assistance

Manager Cole continued to meet with representatives of the Gorge Audubon Society and the Port of Klickitat regarding rehabilitation of Bingen Lake. The Port had asked Audubon to assist in developing a public use plan and lake rehabilitation guidelines. Cole gave the groups a few ideas about foot trails and marsh improvement techniques, and put them in contact with Service Enhancement staff to ensure that all environmental compliance mandates were met.

F. HABITAT MANAGEMENT

1. General

Most of the refuge lands have been "idle" since the mid-1970's, when livestock grazing was eliminated. This has allowed many areas, particularly upland sites, to recover from years of abuse. About 1,400 acres of lakebed reed canarygrass is hayed annually. Other portions of the refuge are beginning to show a need for vegetative manipulation to improve plant vigor and increase desirable habitat conditions. Three years ago we implemented a prescribed burning program to improve woodland habitat, and we are considering re-instituting grazing and/or burning programs to improve other areas.

2. Wetlands

Wetland areas that have been re-created during rehabilitation of water control facilities provide permanent or semi-permanent wetland habitat for nesting waterfowl. The eastern portion of the refuge provides the best example of this improvement. The north bank of Camas Ditch forms a low dike that holds water in the portion of the old Conboy lakebed that we own. The level is not as high as we would like, but is an improvement over the total lack of development that drew criticism from past Government Accounting Office audits



Small trees invade meadows and upland without some form of control.

HC-92



Control begins...

HC-92



...and is completed.

HC-92

and refuge critics. Standing water is available throughout the summer. This is about the best we can do with current land ownership patterns. We cannot hold water levels so high that they spill-over onto adjacent private lands.

3. Forests

YCC continued its efforts to slow the spread of lodgepole and Ponderosa pine into refuge meadows. This invasion of trees resulted largely from the elimination of grazing in 1976 and, if left unchecked, would result in the loss of much of the meadow habitat. Prescribed burning may be used in the future to provide control on select areas of the refuge.

Several trees were marked for removal along Lakeside Road to allow for greater traffic safety and ease of snow removal.



"X" marks the spot. One of the trees adjacent to Lakeside Road removed by county to make snow removal easier and improve traffic safety.

HC-92

Trees adjacent to Troh Road that were downed or damaged by high winds in December of last year were not salvaged by logging. None of the local loggers contacted by the refuge were interested since most sell their products to Champion International, which cannot buy government timber because of export concerns. Most of the trees can be removed by firewood cutters through Special Use Permits, with far less potential for damage to soils. Disturbance of long-bearded sego lily on the site would have been a concern had logging been used.

Comments by refuge staff on a proposed timber sale in the "Dymond Gap" area south of the refuge, resulted in some changes to the layout of the sale in order to minimize impact on the resident elk herd that uses the stand as cover and a travel corridor.

4. Croplands

Although not technically cropland, a parcel of about 30 acres is being farmed in an attempt to restore an old farm field that has a heavy knapweed infestation. More details can be found under the pest control section. (Section F. 10, Pest Control, page 31.)

5. Grasslands

Grasslands are still recovering from years of grazing abuse. At this time they are providing adequate habitat for ground-nesting birds such as meadowlarks. We are evaluating the possibility of using prescribed fire on portions of the grassland, primarily unhayed canarygrass, to improve habitat.

7. Grazing

Grazing was eliminated on the refuge in 1976. Since that time, we have had periodic requests to reinstate some form of a grazing program. Many areas have recovered from past grazing abuse and could benefit from a controlled grazing program.

Grazing canarygrass in the fall, after the meadows are cut for hay, would improve the area for the spring goose browse. One of the major problems of implementing a grazing program is the lack of adequate fencing in the "lakebed." Adjacent landowners do not seem to complain much when their cows stray through unrepaired fences (ice and water movement during the winter makes fence maintenance difficult at best) but they would not stand for "refuge" cows straying onto their property.

8. Haying

All designated haying units were cut this year. Eleven permittees cut 1,300+ tons of canarygrass on approximately 1,400 acres of lakebed. This was down about 250 tons from 1991, apparently the result of drought and also of frost at key times in the spring. Permittees paid \$5 per ton, totaling about \$6,500 in receipts. Removal of this hay prevents a large residual build-up and provides a short, green crop for spring goose use if fall re-growth is not excessive.

As more land is acquired and wetland areas are developed, haying will be reduced because of increased water levels. Such sites may need periodic manipulation to maintain optimum conditions for wildlife.

9. Fire Management

Fire has definitely re-taken its natural place in the timberlands of Conboy Lake NWR. Fire was a natural part of the history of the area and was used by Native Americans and early white settlers to manipulate vegetation. Prescribed burns in both 1989 and 1991 have proven valuable in reducing fuel hazards and habitat improvement. Determining how much of the area needs treatment, and how often, will continue to challenge refuge staff. It is important to consider the lands surrounding the refuge when making these decisions. Without a doubt, the entire refuge could benefit from periodic fires, however, with intensive logging and grazing practices that occur on adjacent lands, it may be beneficial to wildlife to continue to exclude fire from some areas, to provide dense cover and seclusion. We will be working to keep this balance as we proceed with future-prescribed burns.

Both the 65-acre burn in 1989 and the 30-acre burn in 1991 were considered very successful. The goals of opening the forest canopy by setting back succession and reducing fuel accumulation were met. No formal quantitative study has been conducted on either site, but photo plots have been set up to provide documentation of the changes that take place. We have also had field visits from the Forest Service, Bureau of Indian Affairs, and local foresters to discuss the results at both sites. All seemed encouraged by the results of the burns. The Washington State Department of Natural Resources has conducted

three prescribed underburns in similar habitat the last 3 years, at least in part as a result of our success.

Fire could play an important role in managing grasslands on the refuge, as well. In a livestock community, grass is a valuable commodity and burning it rather than feeding it to livestock will require careful planning to avoid political fallout.

DNR provides fire protection for refuge lands at a cost of \$4,242 (\$.75 per acre). Klickitat Fire District #8 provides building protection, however, its station is 8 miles away and is a volunteer department. Improvements in the refuge water system 3 years ago were designed to provide protection to headquarters structures until the local department could arrive.

The refuge slip-on fire pumper was serviced and tested regularly, and the fire cache was inventoried and updated at the beginning and end of the fire season.

10. Pest Control

Three species of knapweed are of concern on refuge lands. Meadow knapweed (Centaurea pratensis) is the most abundant, and efforts to-date have been aimed at control rather than eradication. Diffuse knapweed (C. diffusa) is very limited in numbers and efforts are aimed at total elimination of the weed. Bachelor button (C. cyanus) has received limited control effort.

Efforts begun in 1989 to gain control of our most dense stand of meadow knapweed on a 20+-acre abandoned farm field in the south central portion of the refuge, have been largely unsuccessful to-date. This field was last farmed in the mid-1970's by a refuge permittee. The field was never seeded back to a natural vegetative cover and was largely occupied by "weeds," including meadow knapweed. This was the site of our earlier work with bio-control agents and is also Dr. Roche's test plot area. Under a cooperative farming agreement the field was farmed, and planned seeding during the fall of 1989 to a grass-legume mix prescribed by the county weed control officer, was not completed prior to the first fall rains. This may have been a blessing since the fall and early winter weather was mostly clear, and the seeding could have been harmed by the resulting frost. The area was re-farmed and most of the acreage was seeded just prior to the fall rains in 1990. The crop just got a good start, when it was nearly wiped out by the extremely cold weather in December. The only thing that survived was the winter wheat that was planted as a cover crop and a small amount of Burnett. We decided to allow the wheat to mature for wildlife use and, hopefully, farm the acreage again in 1992. During 1992, no additional effort was made to reform the area because of the difficulty finding anyone willing to take on the project. We continue to explore other options to gain control of the knapweed and return the area to productive upland.

No effort was made to evaluate progress of biological control agents that have been introduced into the knapweed infestation over the past several years. Both seedhead, gall-forming flies, and root-boring, gall-forming beetles have been released. It is apparent that biological control is not the entire answer to the knapweed problem. Perhaps, if the infestation can be reduced by mechanical and/or chemical treatments, the bio-control agents will be able to keep the knapweed within acceptable limits.

A complicating element in the knapweed situation is the presence of the long-bearded sego lily (Calochortus longabarbatus var. longabarbatus) in portions of the infested area. Efforts to control the knapweed will have to be tailored around the lily, which is on the Washington sensitive species list. As a result of continuing discussions with Dr. Roche and the new Klickitat County Weed Supervisor, Marty Hudson, a study with test plots was

initiated this summer. John Gamon with the Washington Natural Heritage Program assisted in setting up the plots. The study will determine the effects of several potential control methods on both the knapweed and the sego lily.

Refuge staff sprayed several isolated populations of knapweed with Weedmaster herbicide using a Spotlight sprayer mounted on the refuge 4-wheel ATV. County weed control employees used the same herbicide on several acres of knapweed on the refuge, using a pickup-mounted sprayer as well as backpack sprayers.

11. Water Rights

The issue of Yakima Tribal water rights vs. Hellroaring Irrigation Company water rights to creeks flowing off the east slopes of Mt. Adams (reservation lands) continued through the year. Efforts by the company to get a bill through the state legislature, allowing it to file on water rights that inadvertently missed a 1974 filing deadline, continued with little success. Last year's efforts to get such a bill passed were unsuccessful because of Yakima Tribal concerns and the tribe's lobbying effort in Olympia. Representatives of the company made many trips to Olympia to meet with legislators and tried several times to meet directly with tribal representatives. At year's end, the issue is no closer to resolution. It is difficult to predict just what the outcome of this conflict will be. It certainly could have an effect on the refuge, since the company provides water that is used to keep ponds filled during the summer and to re-flood meadows in the fall after haying season.

The refuge receives water from several sources: snowmelt and rain; flows from Bird Creek, Frazier Creek, Holmes Creek, and Chapman Creek, and year-round and seasonal springs. Waters from Bird and Frazier Creeks have long been adjudicated and controlled by Bird and Frazier Creeks Water Users Association.

Efforts in 1991 by Regional Office water rights personnel, Bob Oser and Dave Langman, resulted in a complete documentation of refuge water rights for the above-mentioned waters and good maps of the location of these rights. We had planned to get them back in 1992 to plan the installation of water-measuring devices at key locations, however, work schedules and other issues prevented this from happening. We hope to accomplish this in 1993.

Cole attended annual meetings of the Hellroaring Irrigation Company and the Bird and Frazier Creeks Water Users Association. These meetings determine the work to be done on the systems each year and what the annual assessment will be.

12. Wilderness and Special Areas

Work continues on the restoration of Whitcomb Cabin, our National Register of Historic Places' loghouse. The cabin was built in the late 1800's by pioneers of German descent. The cabin is significant in that it is one of the few remaining examples of this type of construction in the area.

Most of the effort in 1992 was directed at replacement of the roof of the main cabin and daubing all of the interior walls of the first story. The daubing was accomplished by the YCC crew under the direction of carpenter, Kent Olson.



YCC'er Todd Bales places new daubing over wood chinking. HC-92



YCC'er Joe Dean smoothes the daubing with a putty knife, while Bales looks on. HC-92

The crew was given initial directions, reminded of the significance of the project and the need for quality work, and monitored closely until they developed a satisfactory system. After that, they worked at their own pace and did an excellent job. They took a lot of pride in the project and gained a new respect for the efforts of their pioneer ancestors.



New daubing in place.

HC-92

The replacement of the cabin roof with hand-split shakes was accomplished by a combination effort of refuge staff and volunteer labor. The shakes had been split by past year's YCC crews. Refuge staff, including personnel from Ridgefield NWR, installed the south half of the roof and a group of volunteers, hand-picked by Kent Olson, did the north half.

Many smaller tasks were also completed during the year. Work on this structure is necessarily slow and meticulous in order to maintain authenticity required by the National Register folks. Kent consults regularly with his brother, Greg, an historic building preservation professional, to ensure that all work will meet standards. We continue to be encouraged with the progress. Major tasks such as the new roof, drastically improve the appearance of the building and offset those periods of seemingly endless detail work. As each of these projects is completed, the house begins to look more like a home.



Removal of metal roofing that was placed on the south side of the cabin in 1975 begins...

HC-92



...and continues. Note old shakes had been removed prior to metal being installed.

HC-92



Removal of metal from north side begins (white shakes on right are sun bleached--one sheet of metal blew off last fall)... HC-92



...and is completed. Note metal-covered old shakes on this side.

HC-92



Removal of old shakes! Good kindling!

HC-92



Several of these furring strips had to be replaced, but only one rafter. HC-92



Shakes at peak near old chimney and stovepipe exit. Note charring from past fires. We are lucky to still have a Whitcomb Cabin.

HC-92



New roof in place.

KO-92

It has become more and more apparent the amount of work that has been done over the years, as we try to explain to visitors that are unfamiliar with the project just what the place looked like when we started. The photographic documentation we have maintained will be invaluable for later reference. We have both still pictures and video of most of the work that has been done.

The Gorge Heritage Museum continues to support the restoration project and again held its summer board meeting at the cabin. A picnic supper, followed by a tour of the cabin, brought members up to date on the progress of the work.

G. WILDLIFE

1. Wildlife Diversity

The current variety of refuge habitat, from permanent water to uplands to forest, provides ideal, natural diversity.

2. Endangered and/or Threatened Species

Bald eagle use normally coincides with waterfowl concentrations, usually from late October until early June. An occasional eagle may pass through the refuge any time of the year. Eagle numbers varied from one to 20 birds.

Three plant species found on the refuge are listed on the Washington Endangered Threatened and Sensitive Species list. Long-bearded sego lily, Oregon coyote thistle, and Ames milk vetch are all listed as threatened, and each species is listed with a site on the Washington Registry of Natural Areas. Staff from the Washington Natural Heritage program visited the refuge to check each site during the year. Efforts to control knapweed to reduce

competition with the sego lily are ongoing. The other two species seem to be doing well and no action was taken except monitoring the populations.

Greater sandhill cranes, which are on the Washington Endangered Species list, nest on the refuge. This continues to be the only known nesting pair of cranes in the state. (Section G. 4, Marsh and Water Birds, below.)

3. Waterfowl

Waterfowl numbers did not differ much from the past few years. Spring duck use varied from 5,000-8,000 birds, consisting mostly of mallards, pintails, and teal. Goose numbers ranged from 6,000-9,000 for the same period. Tundra swans peaked at less than 500 birds. It appears that the swans have chosen to spend most of their time at Franz Lake on the Columbia River, where open water and rich beds of wapato are available all winter. Those birds often make sorties into the Glenwood Valley and will stay if water conditions are favorable, and move north as water conditions in the Columbia Basin allow.

Spring rain and snowmelt provided adequate water for broods into May. We were able to pond limited water on the eastern end of the refuge well into July, and duck broods there did well. No formal brood counts were made due to manpower constraints and dense vegetation, but production was estimated at a slightly below the average level of 350 birds. There were at least two broods of Canada geese produced.

Fall migrant numbers were comparable to last year, with several hundred ducks (mostly mallards) and a few geese present for the opening of waterfowl season. Fall rains, irrigation water, and snowmelt were used to fill about 120 acres of the lake. Cold weather in late November caused an ice-up which held until early 1993. Open water and mild weather in early January 1993 allowed geese to return and local hunters enjoyed a few good days of hunting.

4. Marsh and Water Birds

Conboy is home to the only known nesting Greater sandhill cranes in Washington State. There were at least three nesting pairs for the third year in a row, and each had some success. The first cranes arrived in February and began establishing territories. A pair nesting near the Myers tract was incubating two eggs in mid-April. A nest was located on private land in the southwest portion of the valley (SW 1/4 Sec. 7). It was unsuccessful--a cow track in the middle of the nest may or may not have been the cause of abandonment.

Two aerial crane surveys were flown this year. They covered the refuge, the Panakanic Valley to the south, and the Yakima Indian Reservation to the north and east. No cranes were seen off the refuge, but tribal biologists indicated occasional sightings on reservation meadows north and east of Mt. Adams.

To the best of our knowledge, at least three colts survived to flight stage. We suspect that as these birds are becoming more numerous, predators like coyotes and ravens are learning to hunt young and take eggs at the nest.

Refuge volunteer, Sue Hall, was able to spend time observing cranes this year, but still not enough to get a clear picture of habits and production.



Young Bittern.

HC-92

5. Shorebirds, Gulls, Terns, and Allied Species

Common refuge species of this group include killdeer, common snipe, lesser yellowlegs, and black terns.

6. Raptors

Raptors common to the refuge include red-tailed hawk, American kestrel, and great-horned owl. Less common are Cooper's hawk, goshawk, rough-legged hawk, short-eared owl, screech owl, and saw-whet owl. Bald and Golden eagles can occur at any time of the year but are most likely to be found here in late winter and early spring, when waterfowl populations peak.

7. Other Migratory Birds

Limited numbers of mourning doves use upland portions of the refuge for nesting and move into hayed canarygrass fields in late summer.

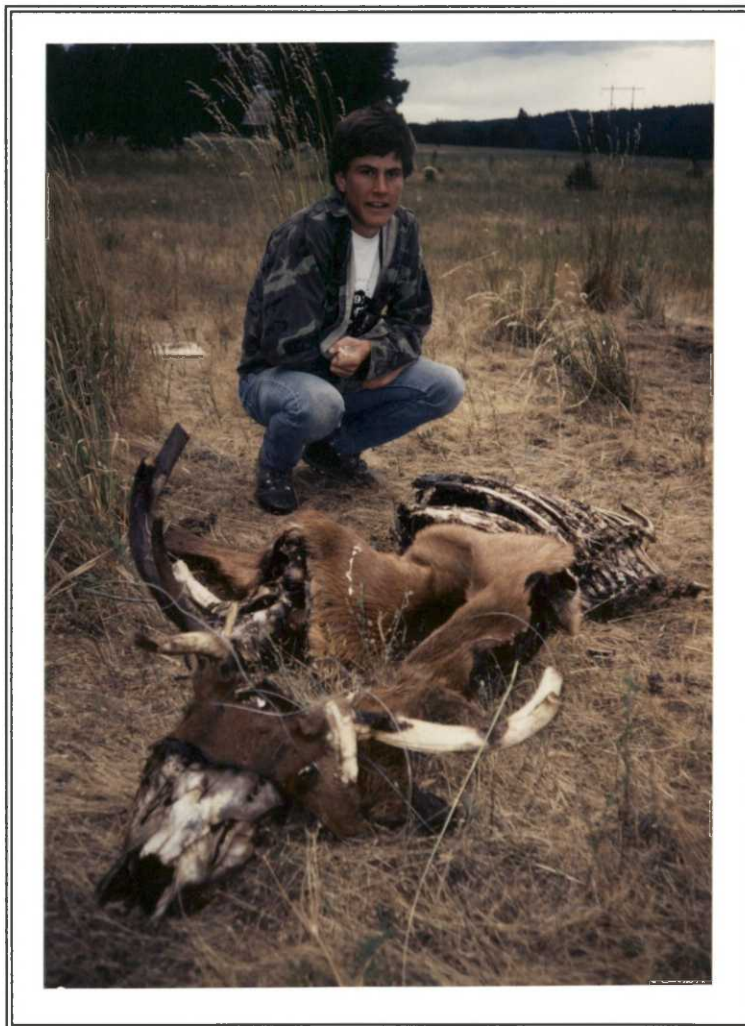
8. Game Mammals

Black-tailed deer use the timbered portions of the refuge for cover, and feed in the meadows and grasslands until snows drive them out of the valley onto winter ranges to the south and east. The refuge deer population is estimated to average 25 animals.

Elk numbers in the Glenwood area continue to increase slightly in spite of heavy hunting pressure. It is estimated that approximately 60 animals use the refuge and surrounding area. They spend much of the summer in timber interspersed with meadows in the south central portion of the refuge, and move onto adjacent private lands as the mood suits them. Hunting pressure is

increasing as the elk population increases. The area surrounding the refuge is open to either sex hunting, as the Washington Department of Wildlife (WDW) attempts to "keep elk out of Klickitat County" to prevent orchard damage and competition with deer for forage. As in past years, several elk spent most of the hunting season on closed portions of the refuge, tempting passing hunters. While portions of the refuge is open to deer hunting, elk hunting is not allowed.

A bull elk was found dead in the south central portion of the refuge. It apparently died from entanglement in a long strand of electric fence wire.



Jon Cole examines remains of dead elk. Note fine strands of electric fence wire wrapped around antlers. It also was around his neck and 30-feet trailed in the grass. It is unknown if it caused death outright or was just a factor.

HC-92

10. Other Resident Wildlife

Coyote and beaver are common residents. Coyote numbers appeared to be high again this year. Beaver numbers remained low, but those present "enjoy" filling culverts and water control structures.

River otters were sighted twice and sign was seen along Camas Ditch and Cold Springs Ditch several times during the winter months.

Many other small mammals, over 140 bird species, and numerous reptiles and amphibians reside on the refuge during at least a portion of the year.

Brenda Cunningham with WDW, alerted Manager Cole of a reported "wolf sighting" on October 17, just northeast of the Agnes Miller residence on refuge land. The weather was overcast and a little foggy. The reporting party was Matt Brady of Tumwater, Washington. Cole checked the area on October 22 and found no evidence of wolf activity. Occasional reports such as this occur in the area. We suspect this one was a coyote.

11. Fisheries Resources

Limited numbers of brook and rainbow trout and bullhead catfish are present in refuge waters. A small public fishing area allows limited use of these resources.

17. Disease Prevention and Control

There were no reported or known instances of wildlife disease on the refuge this year.

H. PUBLIC USE

1. General

Public use continues to increase each year. We have not attempted to quantify this change, however, it is apparent that folks have "discovered" the area and are telling their friends. We are slowly updating our visitor contact points to accommodate these new visitors. YCC made several improvements in the new parking area near headquarters.

2. Outdoor Classrooms - Students

The refuge hosts several field trips each year for area schools. Groups (totaling over 300 students) from Glenwood, Goldendale, and White Salmon, Washington, and Hood River, Oregon participated this year. Each group is given a short guided tour on the Willard Springs Trail and a lecture about wildlife and refuges.

3. Outdoor Classrooms - Teachers

Teachers are encouraged to visit the refuge before bringing their classes. No formal teacher education program is used but for those interested, a tour and briefing of what the refuge has to offer is provided. Most teachers have been here many times and know what they want to do. Several local teachers have been through the Project WILD training and use it in the classroom and on the refuge.

4. Interpretive Foot Trails

The Willard Springs foot trail provides refuge visitors an opportunity to view habitats representative of the entire valley. It offers views of the valley floor and Mt. Adams. An observation deck built by YCC in 1983 continues to be one of the highlights of the trail. The YCC crew made several improvements to portions of the trail this year.

5. Interpretive Tour Routes

County roads around the valley and across the lakebed provide good vehicle access for viewing wildlife and scenery on the refuge. A parking lot on the Glenwood-BZ Corners road provides information for visitors.

7. Other Interpretive Programs

Cole participated in the annual Glenwood Grade School field trip to Camp Cispus at Randle, Washington. He accompanied John Wehrman of Champion International Corporations Glenwood office for a day, discussing environmental issues with the students. He led the group through the dissection of owl pellets, while Mr. Wehrman demonstrated core sampling of trees to determine their age.

8. Hunting

Waterfowl hunting was generally slow, with only a few hunters, mostly locals taking advantage of the opportunity. Late season thaws brought geese back into the valley, and hunting was good for the few hunters that were able to take advantage of brief opportunity. Several locals limited out regularly. An estimated 100 visits totaling nearly 400 hours were spent in pursuit of waterfowl. Another 10-12 hunters' visits for 24 activity hours were spent seeking grouse and deer.

Big game hunters heavily use the lands adjacent the refuge in pursuit of both deer and elk. The refuge is open to deer hunting but sees little action. Only one deer was known to be taken on the refuge this year. Elk hunters spent considerable time watching elk on the refuge, and occasionally caught one, off refuge, coming toward or leaving the closed area. As the pressure increases on these animals, they are expanding their range to try to avoid hunters. They have included "the plateau" area southeast of the refuge, where Champion International has started a road closure program.

The refuge hunting plan was revised. In an attempt to both "clean up" refuge regulations and address compatibility issues with regard to certain species, the draft revision included closing the refuge to hunting of deer, doves, grouse, pheasant, quail, band-tail pigeons, and partridge, and continuing waterfowl hunting. Deer, doves, and grouse occur in very limited numbers on the refuge and it was felt that hunting them was inappropriate. Pheasant and partridge do not occur on the refuge, and quail and pigeons only occasionally. The fact that the area was open goes back to the formation of the refuge in the mid-1960's, when the Washington Department of Game (now WDW) was involved with put-and-take hunting and thought the area would be a good place for such a program. Only token attempts at "plants" occurred and the program statewide has been severely cut back in recent years. An informational meeting was held in Glenwood to inform local hunters of the situation and solicit their input. With only minor concerns expressed, the group of 14 hunters felt the revised refuge plan made sense. Early in 1992, the plan was sent to WDW for review. The Regional Manager was very reluctant to agree with any of the closures we proposed. He felt that the land base for hunters is constantly eroding and

was not in favor of closing any of the area or species to hunting because it further limited "the opportunity" for hunters. It did not seem to matter that there were, in the case of pheasants and partridge, no birds there to hunt. A compromise resulted in leaving the area open to deer, waterfowl, and dove hunting but closing it to the other species. This will be reviewed annually and with the new compatability standards, further changes may be necessary. Manager Cole assisted with the annual Hunter Education Program in Glenwood this fall. He has been a certified instructor for several years.

9. Fishing

A small public fishing area along Outlet Creek-Camas Ditch in the northeast corner of the refuge, receives very little pressure after the first weekend of the fishing season.

10. Trapping

Trapping is not allowed on refuge lands.

11. Wildlife Observation

Wildlife observation is best in early spring when waterfowl concentrations are present and vegetation is short enough to allow viewing. County roads adjacent the refuge provide adequate access for viewing most areas of the valley. Many local residents enjoy a drive out to look at the elk herd when they frequent the refuge. Each year there seems to be an increase in the number of people visiting the area from Portland, Vancouver, and Seattle. Word is spreading about the recreational opportunities in western Klickitat County. When the wind is not blowing in the Columbia River Gorge, 30 miles away, bored windsurfers wind up in the valley, also.

12. Other Wildlife-Oriented Recreation

The scenic beauty of the Glenwood Valley attracts many photographers. Fall colors are brilliant and Mt. Adams provides a fantastic backdrop.

13. Camping

Camping is prohibited on the refuge. The Washington Department of Natural Resources provides several campgrounds within a few miles of the refuge. Recreational vehicle parks are available in Glenwood and Trout Lake.

14. Picnicking

No formal facilities are available for this activity, but some visitors use the headquarters lawn. This has proven satisfactory because of the low numbers using the refuge. As public use increases, a small picnic area might prove a wise and logical step.

15. Off-Road Vehicling

Off-road vehicles are prohibited. No known violations occurred this year.

16. Other Non-Wildlife-Oriented Recreation

Such use is discouraged, with requests to ice skate and canoe the lake or canals heading the list. These activities have been prohibited for many years and there are no plans to open the area for these activities.

The Columbia River Gorge (30 miles away) is one of the finest wind-surfing or board-sailing areas in the United States. We have had an increasing number of visitors with boards on cartop racks inquiring about using the refuge for their sport. We continue to say no. A few have tried wind surfing on adjacent private land, but the shallow water apparently makes falls particularly hazardous and painful. Several hard-core sailors have tried ice sailing when the lake is frozen. So far, they have stayed on adjacent private land.

17. Law Enforcement

Waterfowl enforcement was minimal due to the low number of hunters. With waterfowl numbers low during most of the season and weather conditions unfavorable, only hunters familiar with the area spend much time here. This means "locals" for the most part, since they can quickly respond to changes in waterfowl numbers or weather conditions. Most know the rules and follow them since they expect to be checked on a regular basis.

Enforcement during big game seasons continues to occupy considerable time. There are many more folks afield during that time and many hunt land adjacent the refuge for both deer and elk. Patrol of these areas is vital to minimize impact on the refuge, itself. Several state violations for loaded weapons in a motor vehicle were turned over to local wardens for prosecution. The violators we encounter in routine patrol are not always the nice family person out for a day of enjoyment afield. One incident during elk season brought this point quickly home. Cole was patrolling the closed area in the south central portion of the refuge at dawn. He had observed a large bull elk in a refuge meadow on his first pass by on the county highway. When he returned a few minutes later, he observed a pickup truck parked across the road from where the elk had been. When he approached the driver to ask for licenses and check the rifle in the seat beside him, the subject started to drive away slowly. Cole opened the door to try to get the person to comply. The driver then accelerated rapidly with Cole hanging on to him and the steering wheel. It quickly became apparent that discretion was the better part of valor in this case, and Cole released his hold and jumped free of the truck and slid to a stop on his belly in the middle of the highway. He ran to his vehicle and turned it around to pursue the subject just in time to meet the truck returning his direction at a high rate of speed. No other county or state law enforcement units were available or close enough to respond in time to apprehend the subject. To make a long story short, the subject has not been identified and the case remains open. As was stated last year, "Things aren't like they used to be in the refuge law enforcement field. A refuge officer today needs to be able to deal with virtually all types of criminal elements; those individuals like to hunt and fish, too, and they can be encountered at any time."

Road closures by Champion International in "the Plateau" area southeast of the refuge in past years, and a new closure this year just north and west of refuge headquarters, rendered much of those areas unavailable to hunters who like to drive a vehicle everywhere they go. This forced these hunters to seek new areas and many moved to lands closer to the refuge.

An unauthorized aerial survey marker was found on the south central portion of the refuge. It had been placed without our knowledge or consent by a BIA, GPS

survey crew. They were warned that "Unauthorized Entry Prohibited" meant them too!



Volunteer Jon Cole next to a GPS photo survey marker placed by BIA on refuge without FWS knowledge or permission. HC-92

Refuge Manager Cole is a certified Refuge Officer Firearms Instructor and provided fall requalification for personnel from Umatilla, Toppenish, McNary, Columbia, Ridgefield, Willapa, and Julia Butler Hansen Refuge for Columbian White-tailed Deer.

Cole attended annual law enforcement refresher training in Marana, Arizona in March and April, as Regional Refuge Law Enforcement In-Service Coordinator, student, and firearms instructor. He also attended a Smith and Wesson Field School and Transition Training update at Marana.

Cole was assigned the position of Regional Law Enforcement In-Service Training Coordinator following Bill Kent's transfer to Alaska. He attended the Regional Law Enforcement Coordinators meeting in Ashland, Oregon in June. This job required considerable time and effort since the in-service training for 1992 was switched to Marana, Arizona from Sacramento, California, where it had been held for several years.

Cole assisted other Regional Firearms Instructors with two Semi-Automatic Pistol Transition courses. The first was in Fresno, California in late August and the second in Vancouver, Washington in December. About 40 refuge officers completed the transition from S&W Model 66 revolvers to S&W Model 4046 .40 cal. semi-automatic pistols.



Semi-Auto Pistol Transition at Camp Bonneville, Washington. TC-92



Dave Johnson and Robert Little work on techniques for field stripping the Model 4046 Smith and Wesson pistols. HC-92

Cole also assisted special agents and refuge officers (Salton Sea NWR) with the dove season opener near El Centro, California following the transition training in Fresno.

I. EQUIPMENT AND FACILITIES

1. New Construction

A limited amount of work was accomplished this year on roadway changes and parking lot construction at refuge headquarters. These changes are part of a new headquarters site plan that was completed several years ago. Last year the new parking lot received base rock and a finish layer of rock which were obtained at no charge from the U.S. Forest Service. YCC started bases for new interpretive signs adjacent the lot, and laid out new foot trails to proposed interpretive sites and to the Whitcomb Cabin. Additional work will be completed as funds and manpower are available. This project will eventually move most of the public use away from the headquarters shop and equipment storage area, and provide needed restroom and interpretive facilities.



Moving parking bumpers into place in new headquarters parking lot.

HC-92

2. Rehabilitation

Portions of the Bird Creek channel near where it enters the refuge were cleaned with the refuge backhoe. This is an annual project that slows the siltation of downstream portions of the ditch. Spoils from this cleaning were spread on adjacent ditch banks.

Shelves were installed in the hazardous materials building.

4. Equipment Utilization and Replacement

All vehicles and equipment received the recommended maintenance throughout the year. Most of the heavy equipment is very old (over 25 years) and has seen a lot of use. A new D-3 Caterpillar was received as replacement for our old D-4 model. The low ground-pressure dozer was purchased with funds from the Regional Office. A new John Deere 2355 4WD wheel tractor was delivered this year, purchased with Maintenance Management System funds. This unit replaces a small Ford wheel tractor that was traded-in in the early 1980's to obtain two new tractors for the then Lower Columbia River Refuge Complex. We also purchased a 6-foot mower and a 100-gallon sprayer unit for this tractor.



New D-3 Caterpillar will prove a valuable addition to the refuge. It replaces a 30+ year-old D-4 model.

HC-92



New John Deere 2355 adds a wheel tractor to the refuge equipment list. The last wheel tractor we had was traded-in on a new tractor for Ridgefield in the early 1980's.

HC-92

5. Communications Systems

Our radio systems provide contact with the Klickitat County Sheriff's office, Washington State Patrol, and the Department of Natural Resources. They certainly provide that extra element of safety when working alone, especially on law enforcement duties.

An FWS repeater was installed on Mt. Defiance, west of Hood River, Oregon, in August 1990. We had hoped this location would allow dependable contact with both Pierce and Ridgefield Refuges. It did allow good but sporadic contact with Pierce, however, contact with Ridgefield is still not adequate. The system was checked by Boise Interagency Fire Center radio technicians and found to have either antenna or internal electronic problems. It will cost several thousand dollars to repair and there was no money in this year's budget to do so.

Radio frequencies were corrected in several mobile units to make the radios within the complex match, and allow easier communication for all personnel.

7. Energy Conservation

There seems to be little left to accomplish with energy conservation at Conboy. Everything has been insulated and weather stripped for several years.

Distance to the Ridgefield NWR office is 115 miles, one way. A trip around the valley to check the refuge is 30 miles. We have cut the number of trips to a bare minimum and use horses or ATV's to get around the refuge, when practical.

J. OTHER ITEMS

1. Cooperative Programs

A Special Use Permit issued to Champion International Timber Company for access across refuge lands to harvest timber on their adjacent property, was renewed for a fifth year. The logging area is south of the Glenwood-BZ Corners road in the south central portion of the refuge. Old roadbeds from prior logging activity in the area were reopened to allow access for harvest and replanting. The company has agreed to limit access during these operations and restore the disturbed area when they complete the project-- hopefully, within the next year.

3. Items of Interest

Other Activities by Refuge Manager Cole:

- Guest on KHR radio talk show re: Conboy NWR and Whitcomb Cabin.
- Assisted Julia Butler Hanson Refuge with elk-trapping effort.
- Attended Regional Conference held in Portland, Oregon.
- Member of Klickitat County Shorelines Advisory Committee.
- Member of Board of Directors of Gorge Heritage Museum in Bingen, Washington.
- Attended annual meetings of Camas Prairie and Vicinity Pioneer Association (elected secretary).
- Member of Klickitat County Flood Control Advisory Committee.

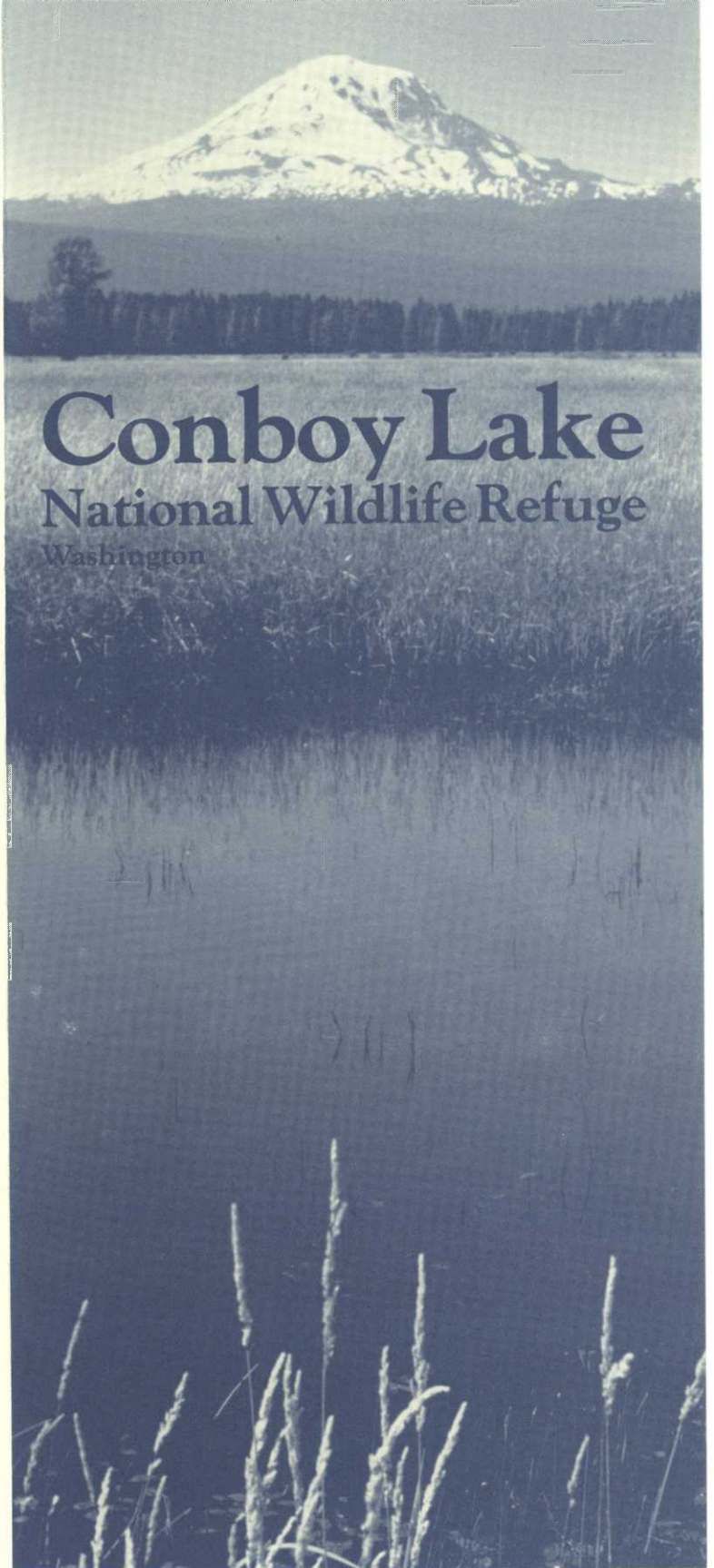
4. Credits

This report was prepared by Refuge Manager Cole and reviewed by Project Leader Wiseman. The initial draft was typed by Cole, however, the credit for the final form goes to Mary Beth Fleming.

Photo credits: HC, Harold Cole; KO, Kent Olson; TC, Toni Cherry.

K. FEEDBACK

1. Information Packet (inside back cover)



Conboy Lake

National Wildlife Refuge

Washington

For More Information

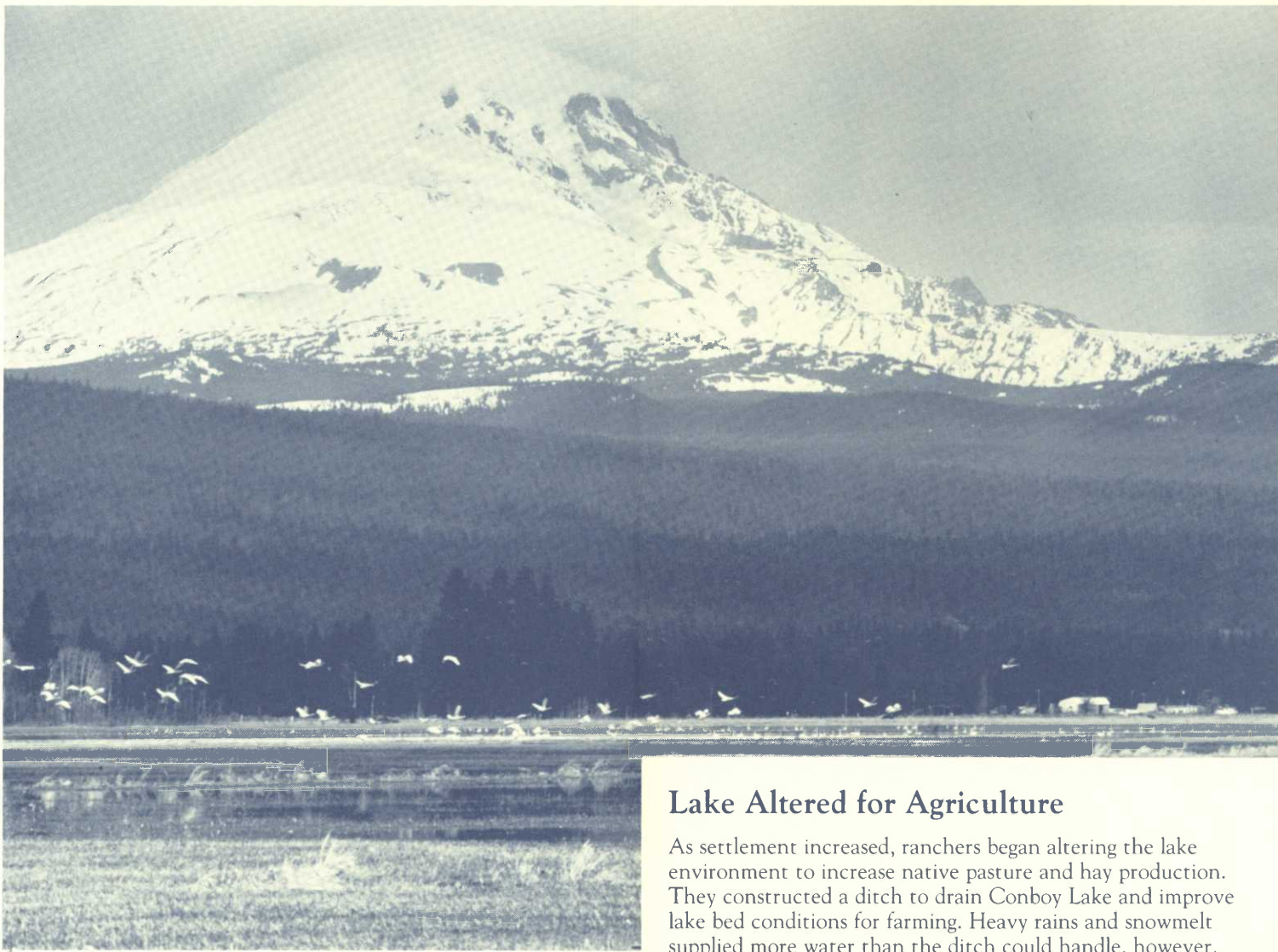
Refuge Manager
Conboy Lake National Wildlife Refuge
100 Wildlife Refuge Road
Box 5
Glenwood, WA 98619
Telephone (509) 364-3410



Department of the Interior
U.S. Fish and Wildlife Service

RF13522 September 1990

☆ U.S. GOVERNMENT PRINTING OFFICE: 1990—791-034/20,012 REGION NO. 10



Mountain Oasis for Waterfowl and People

Nestled at the base of Mount Adams, Conboy Lake is a large seasonal marsh on a land of dense pine and fir forests. For centuries, swans, geese, ducks and sandhill cranes have used this mountain oasis for nesting, and for resting and feeding during spring and fall migrations.

Native Americans regularly visited the lake to gather camas roots, berries and nuts, and to hunt waterfowl and deer. Settlers arrived in the 1870s, attracted by explorers' tales of the broad valley and abundant resources.

Lake Altered for Agriculture

As settlement increased, ranchers began altering the lake environment to increase native pasture and hay production. They constructed a ditch to drain Conboy Lake and improve lake bed conditions for farming. Heavy rains and snowmelt supplied more water than the ditch could handle, however, and the lake remains full of water from mid-December through April each year.

Swans and sandhill cranes stopped nesting here before the turn of the century and duck and goose nesting declined as agricultural development increased. Large numbers of ducks and geese continue to visit Conboy Lake during migration.

Refuge Established to Preserve Wildlife Habitat

Conboy Lake National Wildlife Refuge was established in 1964 to preserve the remaining wildlife habitat and to restore the lake as a nesting area for waterfowl and sandhill cranes. Approximately 5,500 acres of the proposed 10,000 acre refuge have been acquired.



A Whisper of Past Richness

Since not all of the lake bed is in public ownership, management actions that involve lake restoration have been limited. Wildlife use of Conboy Lake remains only a remnant of what it was a century ago.

As the warming spring sun melts the mountain snow, tributary streams such as Bird, Holmes and Chapman Creeks, run high, flooding much of the original lake bed. Northward migrating swans, geese and ducks converge on the lake in February and March to feed on rich plant life and then move on.

A few ducks and geese stay to nest as the blooming camas paints the lake shore blue in early summer. Other nesting species, such as snipe, songbirds and sandhill cranes arrive. The only known nesting pair of sandhill cranes in the state has been returning to the refuge annually since 1975. Three pairs of cranes nested on the refuge in 1990.

In the pine forests of the refuge uplands, deer and elk raise their young. Occasionally a black bear wanders through the refuge, while smaller mammals such as coyote and beaver are permanent residents.

The level of Conboy Lake drops through the summer until only the lowest parts of the lake bottom hold water. Ranchers cut introduced Reed canarygrass and native marsh grasses for hay. Fall migration brings flocks of ducks and geese to the reduced lake for brief stops. Birds that spend the summer here also move south.

In the forests, berries and seeds ripen while autumn rains increase the flow of water into the lake bed, changing it once again from prairie back to lake.

Enjoying the Refuge

You are invited to explore the refuge and enjoy its wildlife. The best times to visit to see wildlife are in spring and fall when flocks of migrating birds are present.

These refuge regulations help protect visitors and resources.



Wildlife Observation — See and photograph wildlife in their natural environments. Photographers find the scenic vistas of Mount Adams particularly attractive.



Hiking — The two-mile Willard Springs Trail follows the lake shore and passes through upland pine forests to provide a variety of wildlife viewing opportunities.



Environmental Education — The refuge offers space and guidance to teachers and educational groups to conduct outdoor classroom activities.



Hunting — Certain designated areas of the refuge are open to hunting of deer, ~~pigeons~~, doves, ~~pigeons~~, geese, ducks, coots, common snipe, ~~grouse~~, and ~~quail~~ in accordance with State and Federal regulations. All other species are protected. Temporary blinds may be constructed but they must be available for use on a first-come basis on subsequent days. It is the responsibility of the person constructing the blind to remove it at the end of the hunting season.



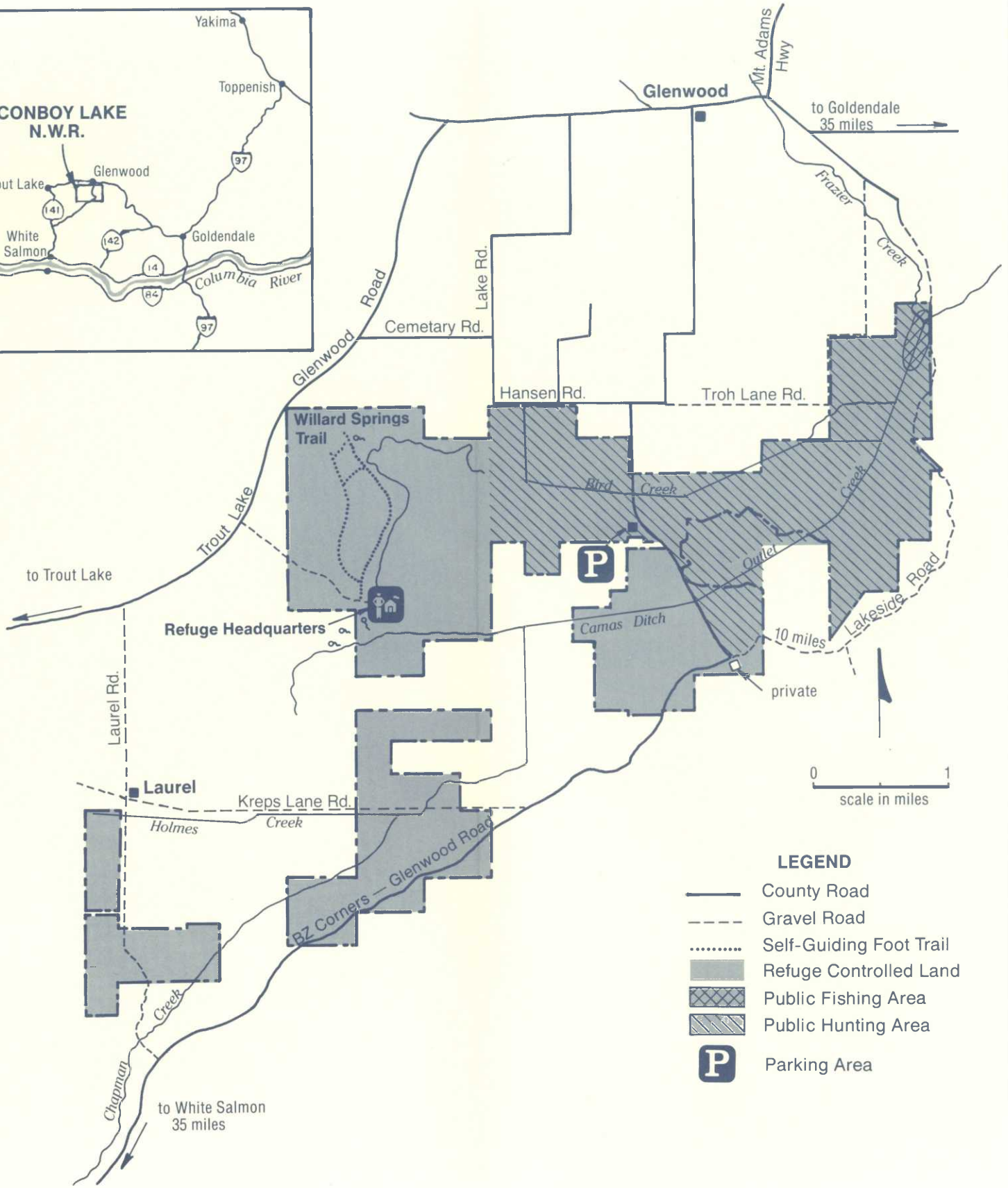
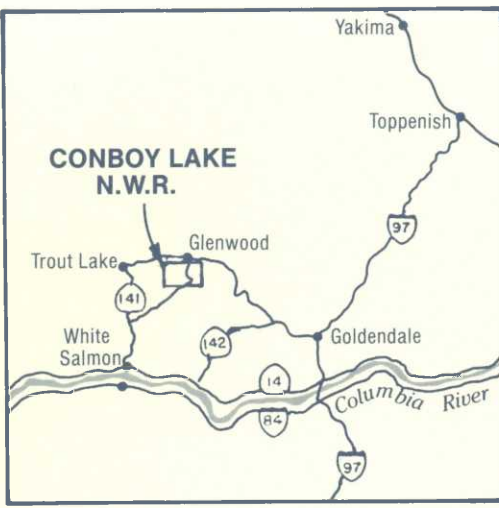
Fishing — Fishing is permitted on Outlet Creek upstream from the bridge on Lakeside Road for 1/4 mile in accordance with State regulations. Rainbow trout, brook trout and bullheads are commonly caught.



Camping — The refuge is open for day use only. Public campgrounds are located near Glenwood and Trout Lake.



Dogs — Dogs must be kept on leash except during waterfowl hunting. A good retriever will help locate and retrieve downed waterfowl that might otherwise be lost. Their use is encouraged.



- LEGEND**
- County Road
 - - - Gravel Road
 - Self-Guiding Foot Trail
 - Refuge Controlled Land
 - ▨ Public Fishing Area
 - ▩ Public Hunting Area
 - P** Parking Area