

# OURAY NATIONAL WILDLIFE REFUGE

Vernal, Utah

## ANNUAL NARRATIVE REPORT

Calendar Year 1999

### REVIEWS AND APPROVALS

*David M. Morris*  
Project Leader

3/31/00  
Date

*Larry Shanks*  
Refuge Supervisor Review

4/19/00  
Date

*Larry Shanks*  
Regional Office Approval  
*Acty GARD*

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are farmed by a cooperative farmer on a rotational basis with alfalfa, barley, and grain sorghum. Semidesert shrubland totals 2,189 acres and consists of plants species such as greasewood, big sagebrush, bud sagebrush, black sagebrush, rubber and low rabbitbrush. Grassland makes-up 1,050 acres and consists of alkali sacaton, inland saltgrass, western wheat grass, and Great Basin wildrye. Clay Bluffs total 1,461 acres on the Refuge and little is known on the roll they play as habitat for wildlife.

As of 1998 the Refuge has taken a new and innovative look at the roll of the Refuge in the Upper Colorado ecosystem. Recently adopted management strategies take into account new biological information and insight into the importance of western riparian and floodplain systems. We have come to the realization that Refuge flood plains could not easily be transformed into "Prairie Pot Hole" type waterfowl production areas. Instead, emphasis is given to the riparian habitat and to function more as a migrational stop-over for migratory birds.



Sunrise over Sheppard Bottom. (JD)



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### A.. HIGHLIGHTS

- \* The Ouray NWR Accepted Responsibility for the 518th Refuge (The Colorado River Wildlife Management Area)
- \* Draft Comprehensive Conservation Plan Nears Completion
- \* Selenium Remediation Project Proposed

### B. CLIMATIC CONDITIONS

Climatic conditions for 1999 were very abnormal with the infamous "La Nina" more than likely being the cause. Precipitation totaled 6.60 inches which is .86 inches below the 24 year average. Some weather experts theorize we are headed for a drought.

MONTH	PRECIPITATION (inches)	Hi Temp (°F)	Low Temp (°F)	Snowfall (inches)
January	.04	43	-4	0
February	.09	64	8	T
March	.01	74	18	0
April	2.32	82	19	.7
May	.82	90	27	0
June	.34	97	38	0
July	.72	102	50	0
August	1.53	93	48	0
September	.37	89	24	0
October	.05	86	16	0
November	.19	69	8	.5
December	.12	49	0	2.2
TOTALS	6.60	*	*	3.4

## 2. Management Plan

A new Trapping Plan was completed in 1999 as prompted by a Freedom of Information Act request from "The Animal Protection Institute of Sacramento, California. No major changes were made from the previous Trapping Plan. All trapping is conducted by state or federal employees primarily for the removal of nuisance animals.

## 4. Compliance with Environmental and Cultural Resource Mandates

An environmental assessment was prepared for the new refuge Comprehensive Conservation Plan. It will be released as part of the CCP for public comment in February of 2000.

In accordance with cultural resource mandates, two refuge soil moving projects were submitted to the Regional Archeologist for review prior to disturbance of the soils surface. The projects consisted of the new office building, the Sheppard selenium project, and the Leota L10 growout project.

## 5. Research and Investigations

### **"Nonnative fish removal in the Green River, Utah"**

Field work on this project by Todd Crowl and Paul Badame of Utah State University has been completed. Paul has begun writing his thesis and a first draft is expected during early spring 2000.

### **"Vegetation Study"**

Todd Crowl and Sara Goeking of Utah State University completed data collection for this project. Sara is scheduled to begin writing her thesis during 2000. Their 1999 progress report relates similar information to that of 1998 (see 1998 Annual Narrative).

### **"Invertebrate and productivity responses to levee removal"**

Todd Crowl, Jessica Gourley, Matt Townsend, and C. Nicolas Medley of Utah State University requested that their Special Use Permit (SUP) be renewed, but no progress report was provided for work done in 1999. Work on this project that was begun during CY 1996 will continue during 2000. Their SUP request states that Johnson unit 4, Leota, and Woods Bottom "were being monitored less frequently as reference sites." Thus, according to their request, intensive sampling was being conducted upstream of the Refuge. Objectives of this study are to monitor fish food organisms including, macroinvertebrate density, distribution, species and size

composition and to monitor physical parameters including temperature and dissolved nutrients like nitrogen, phosphorous, and carbon. Preliminary results from their 1998 report indicate that benthic invertebrate community structure and densities are complex and habitat (i.e., river, terrace, depression) dependent. Similarly, zooplankton densities are highly variable among years, seasons, and habitats. However, depressions seem to be more productive than terraces. Nitrogen, phosphorous, and carbon levels were generally greater in floodplain habitats than in the river. Thus potential productivity is greatest in these habitats if no other limitations exist.

### **“Levee removal and floodplain connectivity evaluation”**

No formal request for a SUP continuing this project by Utah Division of Wildlife Resources was made. Also no progress report was provided for efforts carried out in 1999 (Possible reason was because most work may have been conducted off of Refuge). The objectives are fourfold and include: 1) evaluation of reconnection of floodplains to the river; 2) ecosystem responses to levee removal; 3) assessing importance of timing and duration of inundation of managed sites; and 4) designing and implementing adaptive management strategies. Preliminary results indicate the following: Depression sites can support endangered fishes.; Reaching sound conclusions about native fish responses are difficult given the small number of native fish that were sampled.; Aquatic vegetation seems to be correlated with higher densities of native fishes.; Native fish use of floodplains is directly related to timing and duration of peak flows.; Sites that flood from the downstream side are dependent on rising river water to fill the site and entrain fish larvae.; Sites that are designed for water flow-through may be better at entraining larval fish at all levels of flooding.; Nonnative fish dominate all sites making up more than 98% of the fish captured. Management recommendations to date include introducing razorback suckers into the sites for evaluation, reconfiguring sites to improve entrainment of sucker larvae, and integrating nonnative fish data from all relevant studies into future analysis.

## **E. ADMINISTRATION**

### **1. Personnel**

Dan Alonso, GS-12, PFT.....Project Leader, EOD 3/98

Dan Schaad, GS-11, PFT.....Supervisory Refuge Operations Specialist, EOD 10/92

Manuel De Leon, GS-11, PFT.....Wildlife Biologist, EOD 9/98

Jennifer De Leon, GS-9, PFT.....Outdoor Recreation Planner, EOD 9/98

Pam Burton, GS-7, PFT.....Administrative Support Assistant, EOD 10/94

transferred 8/12/99 to Alamosa NWR

Dolores Manning, GS-7, PFT.....Administrative Support Assistant, EOD 10/99

Gary Mecham, WG-10, PFT.....Engineering Equipment Operator, EOD 2/82

Steve Breakfield, WG-8, PFT.....Maintenance Worker, EOD 8/97

Pat Kerins, WG- 8, TFT.....Maintenance Worker, EOD 6/99

Staffing for the refuge remains 1.5 FTE's short of meeting the minimum staffing objective.

Pam Burton transferred to Alamosa NWR in August 1999 and was replaced by Dolores Manning in October of 1999. A temporary full-time wage grade 8, Maintenance Worker, was added through flood relief funds for a period not to exceed 2 years. Leon Chea worked in this capacity from March 1998 until he transferred to the Bureau of Reclamation (BOR) in February 1999. Leon was replaced by Pat Kerins in June of 1999.

## 2. Youth Programs

The Youth Conservation Corp Program continued with one enrollee, Vicente Medina, of Vernal. Vicente assisted with numerous maintenance and biological projects.

## 4. Volunteer Program

The volunteer effort for 1999 totaled 2438 hours. The majority of these volunteer hours were logged in assisting with the mist netting station, the Refuge Open House, by Retired Volunteer Rv couple Anne and Bud Woods, and three student interns, Ross Conover, Brian Tonihka, and Sara Cameron. Conover, a student at Unity College in Maine, and Tonihka, a student at University of New Mexico-Albuquerque assisted RB De Leon with small mammal, invertebrate and herp inventories, and anything else that needed to be done. Cameron assisted with office work and by organizing the slide and photo file. The Refuge continues to seek any and all types of volunteer assistance to help with numerous refuge programs.

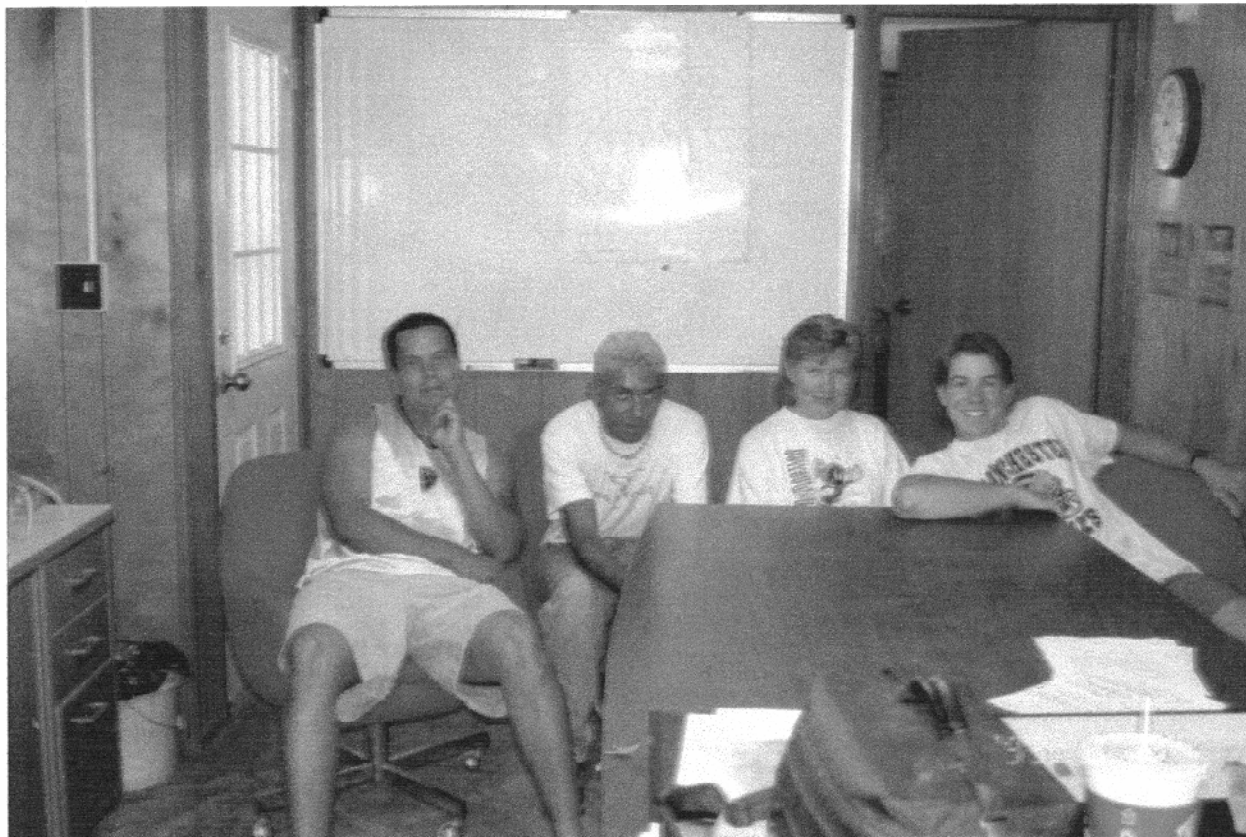


Ouray NWR Staff L-R Back Row: SROS Dan Schaad, RM Dan Alonso,  
MW Steve Breakfield, EEO Gary Mecham, Volunteer Ann Woods,  
ORP Jennifer De Leon, Volunteer Bud Woods.  
Front Row: ASA Dolores Manning, RB Manuel De Leon, MW Pat Kerins. (JD)





Full time RVers Bud and Ann Woods. (JD)



Brian Tonihka, Intern; Vicente Medina, YCC; Sara Cameron, Volunteer;  
Ross Conover, Intern. (JD)

## 5. Funding

<b>Project</b>	<b>FY 97</b>	<b>FY 98</b>	<b>FY 99</b>
1261 (Operations)	\$367,250	\$328,327	\$312,361
1262 (Maintenance)	65,700	0	0
MMS	48,000	81,000	181,200
8610 (Qtrs)	2,578	7,034	2,300
YCC	0	0	1,400
Volunteers	0	0	1,200
1230 (Mig. Bird)	4,700	3,800	3,800
2858 (Flood Relief)	78,600	151,661	0
CRRP (Woods Bt)	0	0	15,000
9251 Fire Preparedness	3,800	5,300	8,800

## 6. Safety

Safety meetings were held quarterly and numerous tail-gate sessions conducted primarily during the field season. Topics included CPR refresher training, Standards for Survival refresher training, ATV operations, fire engine operations, air boat safety. EEO Mecham served as collateral-duty safety officer. There were no accidents resulting in lost time in 1999.

## F. HABITAT MANAGEMENT

### 1. General

The following table has been updated and modified according to information in the Draft Comprehensive Conservation Plan and the recently completed National Wetland Inventories for the Refuge.

<b>Refuge habitats and acreage.</b>	
<b>Vegetation/Land Use Type</b>	<b>Acres</b>
Riverine	1,180
Riparian (Classified Wetlands)	4,392
Uplands	
Semidesert Shrubland	2,672
Grassland	1,520
Clay Bluffs	1,935
Agriculture/Farm Fields	150
Ouray National Fish Hatchery	83
Moist-soil Units	50
Headquarters, Shop, and Residences	5
<b>Total</b>	<b>11,987</b>

Water management, prescribed burning, herbicides, mowing, and farming are some of the management tools used to benefit habitat and wildlife. Additionally with the aid of Geographic Information System (GIS), the results of some of these manipulations may be better tracked, documented, and quantified. For example in 1999, we mapped the prescribed burn units and wildfire areas on and off the Refuge to document and quantify acreage burned (see the following maps).

### 2. Wetlands

National Wetland Inventory (NWI) maps were drafted during the latter part of 1999 and should prove useful for completion of the Comprehensive Conservation Plan (CCP). The NWIs were developed under ideal conditions as the base color infra-red photographs were taken in 1983, a 100-year flood event period. These maps depict the full potential of the wetland habitats existent

on the Refuge.

Prescribed burns were used to reduce cattail and bulrush densities in Sheppard Bottom (see fire management section for more detail). These fuel reductions should also aid in preventing potential wildfires spreading into the adjacent cottonwood stands. Additionally, access was gained to mow and chemically treat some salt cedar in these units, especially in Sheppard Unit 4. Burning standing cover, also, facilitated discing in portions of Sheppard Units 2 and 3.

As has been the trend since 1992, we continued to have yet another wet year. This was due in part to very cool spring weather which delayed the snowmelt runoff. An indication of this was that on 18 May, the snowpack in the Yampa River Basin was 127% and the Green River Basin 170%!

As the year began, water was present in all Leota units; Sheppard S-3, S-4 and S-5; all Parker units, Woods Main Pool; and Johnson J-2, J-3, and J-4. The remaining units were dry. The first open water appeared in the Parker units on 19 February. By 25 February all Parker units were open and the Leota and Johnson units half-open. All wetland units were ice-free by 4 March.

The first water to be diverted was from Pelican Lake to fill all Parker units (22 March- 3 April, 57 acre-feet). These moist soil units were slowly drawn-down until all units were dry (except P-2) by late June; P-2 was dry by the end of July. These units were left dry until late September, when we began filling all units for the fall migration period. All units were filled by 3 October (55 acre-feet). This was the only Pelican Lake water actively used for wetland management purposes in 1999. It should be noted that we were requested by the Ouray Park Irrigation Co. to run excess Pelican Lake water through the Roadside Draw, 3-9 May (178 acre-feet) because the lake was about to overflow.

Green River flows increased notably in late May and began flowing into Leota L-7 (via levee removal site) on 25 May when flows were approximately 15,000 cfs. During this time period (5/26 - 5/28) we also diverted 119 acre-feet of Green River water through the gravity-flow inlet. All Leota units were full by 2 June. Flooding through the Johnson Bottom levee removal site began on 26 May and all units were full by 27 May. Water flowed into the Woods Bottom levee site starting on 26 May; the backside pool was filled on 30 May and the main pool by 31 May. Water was diverted through the gravity-flow inlet into Wyasket Pond 20-26 May. On 26 May, flows at Jensen were in excess of 18,000 cfs and over-bank flooding into Wyasket Lake began 27 May. Wyasket Pond was filled to capacity by 1 June and Wyasket Lake by 9 June. Even though there was no Green River water actively diverted to Sheppard Bottom, sub-up water first began to appear in S-1, S-2, and S-3 on 11 May; all units were half-filled (by sub-up water) by 22 June.

The peak flow for the Green River occurred on 2 June at 20,700 cfs, which was recorded at the Jensen gauging station. The peak flow for the Yampa River occurred on 1 June at 14,000 cfs, which was recorded at Deer Lodge Park, Colorado.

Duration of connection between the Green River and refuge wetlands (through levee removal sites) were as follows: Leota Bottom (25 May - 4 July), Johnson Bottom (26 May - 23 June), and Woods Bottom (26 May - 30 June ).

Some active drainage of water back to the Green River occurred in lower Leota Bottom (intermittently from the end of June through December), Johnson Bottom (15 November - 31 December) and Woods Bottom (September).

Total water use for the year was 9,308 acre-feet (including 1,200 acre-feet for the Ouray NFH and 271 acre-feet for cropland irrigation). At years end there was water present in all Leota units, Sheppard S-5, all Parker units, Woods Main, Wyasket Lake, and all Johnson units. All wetland were 100% ice-covered by 6 December.

## 2a. Moist Soil Units

The five Parker Tract moist soil units which total 50 acres are now in their third year of operation. These units were constructed in part, as mitigation for the loss of the Roadside Ponds which were filled due to selenium contamination. The Refuge continues to experiment with different flooding and draw-down regimes. So far the units are quite productive and are being utilized by numerous species of ducks, geese, and shorebirds.

Mowing in these units was conducted prior to late-summer/fall flooding. Objectives were to provide easier access to food for granivorous birds (e.g., sparrows, doves, etc.), to reduce kochia and tumbleweed cover, and to increase organic matter for invertebrate production after flooding.

## 3. Forests

Cottonwood stands adjacent to the river are considered the only forested areas to occur on the Refuge. The understory is composed of such woody vegetation as willows and squaw bush with some interspersions of Russian-olive and tamarisk. Herbaceous cover includes wheatgrass, wild rye, and other grasses and forbs, but has become mostly invaded by giant whitetop. Spring runoff and regulated flows from Flaming Gorge Dam, which are highly variable, determine the amount of disturbance in this habitat.

On 1 July, interns Conover and Tonihka, ORP De Leon, MW Kerins, YCC Medina, and RB De Leon planted 75 squaw bush, 75 currant, and 75 silver buffaloberry seedlings in a levee (road) removal area in Wyasket Bottom. Seedskaadee NWR acquired these plants from Bitterroot, Inc., in Montana, and offered these extras to Ouray NWR. The deer really enjoyed these fresh pickings. Although browsing had occurred about 70% had survived through August.

NWIs also classified wetlands in these areas as forested (FO) or scrub-shrub (SS); providing insight to mature cottonwood forest versus potential nonnative vegetation sites (e.g., salt cedar). The NWI information provides a baseline and will aid in tracking future health and recruitment



Lower Leota Impoundments under flood conditions. (DS)





YCC Medina, MW Kerins, Intern Tonihka, RB De Leon,  
and Intern Conover planting shrubs on levee  
removal sight in Wyasket Bottom. (JD)



of riparian associated vegetation. Again this information should prove useful for completion of the CCP.

In Sheppard Bottom, fuels adjacent to mature cottonwood stands were reduced by prescribed fire in units 2 and 4. All units in Sheppard, except for 1, were eventually burned (see Fire Management section for more information).

#### 4. Croplands

Ouray NWR's cropland management program covers 152 acres and is handled by one cooperator. In 1999, 102 acres were planted to an alfalfa/grass mix, 26 acres in an alfalfa/grass/haygrazer" (grain sorghum) mix, and 24 acres in barley. The cooperator's share consisting of alfalfa/grass/haygrazer, totaled 108 acres and the refuge share of barley, totaled 24 acres. Field D (19 acres of alfalfa/grass) was not counted toward the cooperator's share since he supplies the irrigation equipment on this field.

A change that was made this year in the administration of the farming program was to require that the cooperator provide the refuge with an annual summary/report of the economic benefits and costs associated with this program.

This year the cooperator only harvested two cuttings of alfalfa/grass on all fields because of equipment and weather related problems. Whenever possible we are now allowing a third cutting of hay on approximately half the cooperator's share as it appears that migratory bird use (primarily geese) is higher in fields having lower regrowth in the fall.

The refuge share of barley was left standing for wildlife and was not mowed in the fall as has been done in past years. We decided to delay cutting, to allow some carry-over of grain for the spring migration, primarily to benefit sandhill cranes. Even without mowing, this field received heavy use by Canada geese and mallards. This was perhaps due, in part, to using a shorter variety of barley ("Triumph").

In addition to migratory birds, mule deer, elk and ring-necked pheasants heavily utilized the croplands. The proximity of these fields to the auto-tour route also provides refuge visitors excellent wildlife viewing opportunities.

#### 5. Grasslands

Grasslands are located on the benchland areas west of the river and are highly dependent on annual precipitation. Interns and other staff checked perimeter fence to minimize/reduce potential of trespass grazing in all areas of the Refuge.



Desert Evening Primrose. (MD)

## 9. Fire Management

There were three prescribed burns conducted and two wildfires suppressed on the Refuge and we also assisted in suppressing one wildfire adjacent to the Refuge. Prior to this, the most recent burns on the Ouray NWR were the Leota 10 prescribed burn (April 1996) and Leota 4 wildfire (May 1995). Prescribed burning should be used in the future as a tool to reduce hazardous fuel loads within refuge impoundments on a 3-5 five year rotation to prevent "blow-ups" from occurring such as the S-2 burn described below..

"Hanks Fire" was the first wildfire of the year and occurred on 2 March. A landowner adjacent to our north boundary attempted to burn rangeland in Brennan Bottom which escaped into riparian habitat with heavy fuels and large cottonwood trees. State Lands and Forestry, Avalon Fire Center and Ouray NWR personnel suppressed the blaze, but most of the damage had been done. There were numerous mature cottonwood trees damaged, two outbuildings destroyed and an oil pumping station threatened by the fire. The fire was declared out on 3 March and burned 51 acres.

The "Woodbottom" wildfire occurred on 27 March. This fire originated from an unattended campfire located along the Green River near the dike separating the Woods Bottom Main and Backside Pools. It appeared that someone had been catfishing at this location and did not do an adequate job of extinguishing the fire. The fire was pushed by 20+ mile/hour winds and suppression efforts carried out by Bureau of Indian Affairs (BIA) Forestry and Ouray NWR personnel. The fire was contained by burning out the south and east sides and constructing handline along the north side. Uintah Basin hookless cactus were protected on the south side with engine support. The main fire was controlled on the 27<sup>th</sup> but required additional mop-up. The fire was declared out on 31 March and covered 21 acres.

The Sheppard S-4 prescribed burn was conducted on 5 April. The objectives of this burn were to reduce salt cedar stem density and height by 50% (30-50% acceptable) and reduce emergent vegetative cover by 70-80% (50% acceptable). Burn objectives were met as 85-90% of emergent vegetation was burned and salt cedar stem density was reduced by at least 30%. It should be noted that fire was used as a tool only to reduce the top growth of salt cedar and the regrowth chemically treated (see Pest Control section). The burn was conducted by Ouray NWR and BIA Forestry personnel. Mop-up operations were conducted intermittently until the fire was declared out on 12 April. The fire burned 43 acres of emergent vegetation and 28 acres of saltgrass/salt cedar.

The Sheppard S-2 prescribed burn was conducted on 26 October. The objective of this burn was to reduce emergent vegetation by 70-80% (50% acceptable). This impoundment had not been burned since January 1994 and had large/dense monotypic stands of cattail and hardstem bulrush. Extremely dry conditions were prevalent as well. The point of ignition was along the northeast side of S-2. At the time of ignition, winds were from the southwest (as forecasted), but after the fire was lit, wind direction shifted, coming from the northeast and creating a headfire. Ouray

NWR and BIA fire crews attempted to fire along the flanks ahead of the fire, but this could not be accomplished due to heavy fuel loads and increasing wind speeds. Large fire whirls (40-60' high) developed and the fire spotted across the auto-tour route between S-2 and S-3. Fire crews back-fired along the south side of S-3 and from desert bluffs west of S-3/5 containing the head fire. Flank fires were extinguished near the South Roadside Draw and the northwest corner of S-4. Prescribed burn objectives for S-2 were easily met (90-95% emergent vegetation burned). S-3 and S-5 had been scheduled to be burned at a later date. There were 150 acres burned in S-2 and 319 acres in S-3/5. A lot of effort was put into mop-up operations over the next two days, but even with these efforts the fire re-ignited on October 28 and the resulting wildfire burned south and east of S-2.

The "Refuge" (S-2) wildfire was discovered by SROS Schaad the night of 28 October. A frontal passage with wind gusts up to 39 miles/hour (per Pariette Draw RAWS) re-ignited smoldering embers possibly along the dozer line south of S-2. Four Ouray NWR firefighters began initial attack in an attempt to prevent the fire from entering large cottonwoods south of the auto-tour route. Additional forces were called in to assist, including two BIA engines, two Bureau of Land Management (BLM) engines and one UT State Lands and Forestry engine. IC responsibilities were turned over to the BIA at that time. The south flank of the fire was contained by back-firing along the auto-tour route south of S-2. By this time, wind velocities decreased, allowing firefighters to directly attack and extinguish fire that was headed towards the old fish hatchery. The 196 acre "Refuge" wildfire was controlled on the morning of 29 October, but mop-up occurred from 29 October through 3 November when the fire was declared out. It may be too soon to tell, but preliminary indication of resource damage to the cottonwood riparian habitat south and east of S-2 appears to be minimal. The L-10 prescribed burn was conducted on 16 November. The objective of this burn was to remove emergent vegetation by 80-90% (60-70% acceptable) to enhance habitat for migratory water birds and to prepare this impoundment for use as a grow-out pond for razorback suckers. Burn objectives were met but only 60-70% of existing emergent vegetation burned. Fuel moisture was higher than desired due to saturated soil conditions and fuels were not continuous which contributed to the spotty burn. Assistance was provided by the BIA Department of Forestry and Brown's Park NWR. Post-burn operations and mop-up were conducted by four Ouray NWR personnel on the 17<sup>th</sup> and the burn was declared out on the 18<sup>th</sup>.

Ouray NWR continues to be a cooperator with the Uintah Basin Interagency Fire Center in Vernal. Other participating agencies include the U.S. Forest Service, BLM, BIA, National Park Service and Utah State Lands and Forestry.

RM Alonso, MW Breakfield, ORP De Leon, RB De Leon, and SROS Schaad attended Standards for Survival refresher training on 26 July at the Interagency Fire Center in Vernal. The course was taught by U.S. Forest Service personnel.

SROS Schaad completed his task book on the S-2 and L-10 prescribed burns and is now RxB3 qualified.



FFT2 De Leon igniting the north side of S-2. (BIA)



Refuge staff discing cattail and bulrush stubble in S-2. (DS)

## 10. Pest Control

We are currently working under an Integrated Pest Management (IPM) Plan that was initially developed in 1996, providing guidance for the next three to five years. Limited funding continues to hamper our ability to gain control of this non-native "wildfire."

The primary non-native plant species of concern are perennial pepperweed (*Lepidium latifolium*), salt cedar (*Tamarix spp.*), Russian olive (*Eleagnus angustifolia*), and Russian knapweed (*Centaurea repens*). Ouray NWR produces large numbers of mosquitoes in northeast Utah and as a result, mosquito abatement is a major issue in the Uintah Basin.

A more detailed description of IPM activities can be found in the 1998 IPM Plan located in the Refuge files.

The best tools we currently have to deal with non-native plants are primarily mechanical and chemical techniques. The only biological control agent currently available is a soil nematode *Subanguina picridus* for Russian knapweed. We are working closely with the Uintah County Extension Office, Uintah County Weed Department, and other land management agencies in an effort to improve communications and control techniques. We are also stepping up efforts to inform the public about the non-native plant dilemma.

In June, Uintah County Weed Department personnel treated 80 acres of perennial pepperweed using a tank mix of Escort/2-4, D along the auto-tour route and Leota/Sheppard dikes. Roads and dikes are being targeted first, to minimize seed dispersal via motor vehicles. We have been treating these areas since 1995 and the results are mixed. On sites where there is a healthy grass component such as salt grass, the response has been positive. Results are marginal in areas where there is bare soil beneath the pepperweed. With the recent purchase of a John Deere Gator and an 80-gallon tank, Refuge Personnel will continue treating the roadside areas and other areas as time and resources allow.

In addition to the County's efforts, RM Alonso and RB De Leon established 3 100' x 100' experimental plots to evaluate different control techniques for pepperweed (see map below). In plot A, Escort at a rate of 1 oz/ac was applied on 18 August 1999. Also on 18 August, pepperweed was mowed and then immediately sprayed with Escort at an oz/ac in plot B. Plot C was mowed on 7 October and is scheduled to be sprayed sometime during the spring 2000 regrowth. Another plot was later established to complement Plot C in that treatment with Escort would occur on early spring regrowth but without mowing prior to spraying.

Preliminary results look promising for the mow and spray treatment, but it is still too early to tell. For example, on 21 September RB De Leon counted pepperweed rosettes within plots A & B and a random adjacent area that was untreated (i.e., control). In plot A, 115 rosettes were counted in half of the plot (ca. 100' x 50'). In plot B, 21 rosettes were counted within the entire plot. All 21 rosettes were in a single straight line. Thus possibly indicating that boom/spray overlap was not



sufficient. In an adjacent 10' x 10' area >100 rosettes were counted. Future monitoring may provide better insight into the "best" control treatment. Pepperweed in the north roadside draw was treated by YCC Medina (see pesticide use table).

While pepperweed seems to be the biggest concern with the County, perhaps the biggest threat to the riparian habitat on the Refuge is salt cedar. Several factors contribute to the increased distribution and abundance of this plant on the Refuge, including altered river hydrology, past indiscriminate use of fire, an abundance of alkaline soils, and a long growing season.

Mechanical treatments (mowing) and burning followed by chemical application are currently the best tools we have for treating salt cedar at Ouray. In areas where salt cedar is greater than four feet high we use a rotary mower to remove the top growth. Next a carpet-roller applicator is used to wick chemical on the regrowth when it is approximately one to two feet high.

This year on 5 April we conducted a prescribed burn in Sheppard Bottom Unit 4 (see Fire Management Section). Prior to this RB De Leon established an acre plot to monitor the effects of mowing, prescribed burning, and chemical treatment on salt cedar control. Salt cedar was mowed while still dormant and then the unit was burned on 5 April. Salt cedar regrowth within half of the plot was treated with an Arsenal tank mix and the other half was treated with a 50% Arsenal and 50% Roundup tank mix in August. Preliminary results seem to indicate no difference in control between "straight" Arsenal and Arsenal/Roundup mix. However, results should be better gaged this year (2000). Other areas outside of the plot were also treated with the carpet applicator and sprayers on ATVs (see pesticide use table).

MW Kerins and RB De Leon assisted UDWR and the Salt Lake ES office with spraying of salt cedar at Stewart Lake Wildlife Management Area during the last week of September.

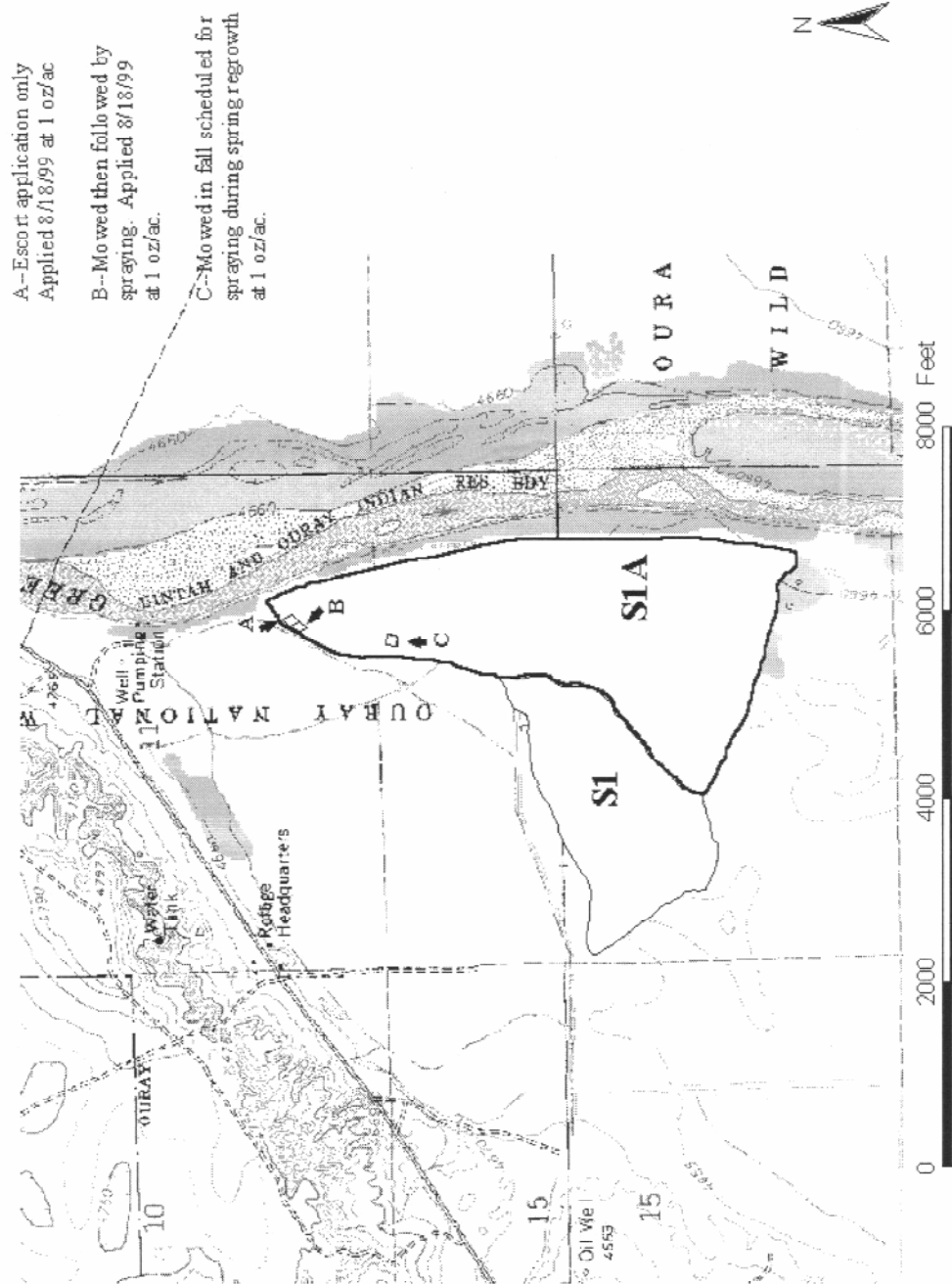
Uintah County Weed Department personnel sprayed 29 acres of Russian knapweed using Escort/2,4-D on Refuge croplands.

The Refuge is in dire need of a more intensive and extensive non-native vegetation control. Both past, and the present efforts have not and are not sufficient to gain control of the rapid rate of spread of salt cedar, pepperweed, Russian knapweed and Russian olive. Much more can be accomplished with a little added funding. The Refuge has increased the priority for the replacement of equipment under MMS which is used for non-native vegetation control.

An ASV or PosiTrack unit was added to the existing weed control arsenal. Among the several implement attachments available for the ASV is a tree shearer that aids in cut-stump treatment of Russian Olive. The addition of this equipment is foreseen as a major step towards Russian Olive control. Stay tuned!



# Location of Experimental Plots for Control of Perennial Pepperweed in S1A Using Escort and Other Treatments



Integrated Pest Management Report  
(Pesticides, Mechanical, Biocontrol or Cultural Controls)  
<sup>1</sup>Station or Substation Ouray NWR Date CALENDAR YEAR 1999

Pesticide Use Proposal No	Common name of Pesticide	Type of Mechanical, Biocontrol, or Cultural	Habitat Type (Cropland, Grassland, Water)	Primary Target Species	Acres Treated	<sup>2</sup> Total Pounds of AI or AE Applied	Chemical Costs (Service Costs only)	Estimated all Other Costs (Labor, Contr)(Service Costs Only) <sup>3</sup>
ORY99001	ESCORT 2,4-D AMINE	CHEMICAL	ROADWAYS	PERENNIAL PEPPERWEED	45	2 56	1,227.60 164.93	500.00
ORY99002	ESCORT	CHEMICAL	RIPARIAN GRASSLAND	PERENNIAL PEPPERWEED	3	0.08	40.92	270.00
		MOWING	RIPARIAN GRASSLAND	PERENNIAL PEPPERWEED	0.3 <sup>1</sup>	NA	NA	12.00
ORY99003	2,4-D AMINE	CHEMICAL	FARM FIELD	RUSSIAN Knapweed	29	27	79.72	60.00
ORY99004	ARSENAL ROUNDUP SURFACTANT	CHEMICAL	WETLAND	TAMARISK	1	2 2.5 4	190.74 31.20 4.76	123.8
ORY99005	ARSENAL SURFACTANT HIGHLIGHT	CHEMICAL	WETLAND SHRUBLAND	TAMARISK	9	13 11 NA	1433.52 15.52 65.00	2287.20
ORY99006	ARSENAL SURFACTANT HIGHLIGHT	CHEMICAL/STUMP TREATMENT	WETLAND GRASSLAND	RUSSIAN OLIVE	1	0.32 0.28 NA	35.64 1.25 NA	163.40
		MOWING	WETLAND	TAMARISK	5 <sup>2</sup>	NA	NA	490.20
ORY99007	BTI BTI MALATHION	BIOCONTROL BIOCONTROL CHEMICAL	WETLAND GRASSLAND	MOSQUITO	9,600 <sup>3</sup> 112 <sup>4</sup> 170 <sup>4</sup>	113 22 31		33,520.00 1,000.00 <sup>5</sup>

<sup>1</sup>EXPERIMENTAL PLOT USING MOWING THEN SPRAYING THEREFORE THESE 0.3 AC ARE PART OF THE 3 ACRES TREATED WITH ESCORT.

<sup>2</sup>EXPERIMENTAL PLOT USING MOWING THEN SPRAYING THEREFORE THESE 5 AC ARE PART OF THE 10 ACRES OF TAMARISK SPRAYED.

<sup>3</sup>AERIAL APPLICATION WHICH INCLUDES REPEAT VISITS TO CERTAIN AREAS DUE TO RIVER FLUCTUATIONS IN 1999.

<sup>4</sup>GROUND APPLICATION <sup>5</sup>PRICE INCLUDES BOTH BTI GROUND AND MALATHION APPLICATION. BOTH OF THESE COSTS (33,520 + 1,000) WERE COVERED BY UTAH COUNTY MOSQUITO ABATEMENT DISTRICT.

<sup>1</sup>If a complex, submit separate reports for each substation.

<sup>2</sup>If a mixture, enter pounds for each chemical separately.

<sup>3</sup>If the same pesticide is applied by both the Refuge and the permittee, list on separate lines with no cost data for permittee



Experimental plots for weed control in Sheppard Bottom. (MD)  
5-4



RB De Leon using a carpet roller applicator for salt cedar control. (PK)



MW Kerins spraying salt cedar. (MD)

#### 10a. Mosquito Control

As has been the case for many years, Refuge staff continued to work cooperatively with the Uintah County Mosquito Abatement District (UCMAD). Research has documented the enormous mosquito production that occurs on the Refuge and throughout the Upper Colorado watershed. In addition to the nuisance factor, a primary concern in the County is the potential for incidence of mosquito-borne Western Equine and St. Louis Encephalitis. UCMAD's primary method of mosquito control on the Refuge is the application of the larvicide *Bacillus thuringiensis israeliensis* (BTI). Malathion is also used, but only as a last resort when disease vectors are present and the areas fogged are on administrative and upland sites.

UCMAD applied BTI mostly by fixed-wing aircraft but also by ATV or ground applications. Aerial applications occurred between mid-May and early June, while periodic surface or ground applications occurred from May through August. Amount of acres treated, active ingredient applied, and cost are presented in the pesticide use table.

#### 11. Water Rights

Ouray NWR currently holds water rights from the Green River for 139.06 cfs for fish and wildlife propagation and 6,185 acre-feet for irrigation, for a total of 23,452.12 acre-feet. These water rights are commingled and can be used anywhere between a point N 130 24' W 2167.8 feet from the SE Corner Section 24, T7S, R20E, SLB&M and a point E 2175 feet and S 3000 feet from the NW Corner Section 22, T8S, R20E, SLB&M.

The Refuge also has 860 shares of Pelican Lake water which is used to irrigate refuge croplands and to supply water to impoundments in the Parker Tract and Sheppard and Leota Bottoms. Pelican Lake water is managed by the Ouray Park Irrigation Company. The amount of water provided varies according to availability and ranges from 1.5 up to 3.0 acre feet/share.

Free water (no water rights) is also received from seeps and excess irrigation water from private agricultural operations above us and flows through the Roadside Drainage. This is the water source that is high in selenium, which is periodically impounded (not by choice) in Sheppard S-5 and to some extent S-3.

We now have the ability to measure (via Parshall flume) Green River water diverted through gravity-flow inlet structures into Leota, Sheppard, and Woods Bottoms. However, by removing sections of protective levee in Leota, Johnson, and Woods Bottoms (to allow natural flooding) it has again made it difficult to accurately measure water use in refuge impoundments.

To correct this problem we installed new full-length staff gauges in all impoundments and had them surveyed by the BOR in December. Tying in the staff gauges to a known elevation and using elevation/area/capacity tables provided by FLO Engineering should allow more accurate water measurements, even in impoundments inundated by flood waters. To enhance water

measurement capabilities, data-loggers will be installed on staff gauges in the future. The survey work and staff gauges were paid for by the Water Resources Division.

## G. WILDLIFE

### 1. Wildlife Diversity

Diversity in wildlife habitat on Ouray ranges from bottomland/riparian woodlands to greasewood and sagebrush flats and from barren clay bluffs to uplands covered with Indian ricegrass, needle-and-thread and sand dropseed. This diversity in habitat serves as an attractant to many resident wildlife and migratory birds. Ouray hosts up to 212 bird species, 30 mammal species, 9 reptile and amphibian species, 248 plant species, and 28 fish species, but the list for some keeps growing!

### 2. Endangered and/or Threatened Species

Bald Eagles are a common sight during the fall and winter months. This was a banner year as up to 100 Bald Eagles were seen throughout the months of January and February. The peak occurred on 17 February with 122 Bald Eagles present on the Refuge; 96 of those were observed in the vicinity of Woods Bottom. As in the past, the latter part of February, early March saw their departure but November saw their arrival with up to 19 eagles seen throughout November and December.

Peregrine Falcons are also becoming a more common sight as they have been observed on various occasions throughout the Refuge. Peregrines are seen perched on the clay bluffs or flying over the Refuge.

Ouray National Fish Hatchery stocked 36 imprinted 1992 year class Colorado Pikeminnow into the Green River on the Refuge. All fish were PIT tagged and the average length and weight were 16 inches and 14 ounces, respectively.

During 1999 the CRFP and the UDWR conducted several fish sampling efforts on the Refuge which included the Levee Removal, Woods Bottom draining and Basin Wide Monitoring projects. Sampling methods included electroshocking, fyke nets, seines, trammel nets and drift nets. Endangered fish species captured and released from waters within the refuge include fish sampled from the Green River and from its adjoining inundated floodplains. Twenty-two Colorado pikeminnow and nine razorback suckers were captured from the river between river miles 250.0 and 256.0. Fishes captured from the rivers floodplains areas include one adult and two larval razorback suckers and six Colorado pikeminnow from L-7; four Colorado pikeminnow and eight razorback sucker from Woods Bottom Main; three Colorado pikeminnow from the outlet of Woods Bottom and one razorback sucker from Johnson Bottom.

To track the effects of flow level fluctuation on backwater habitats, RB De Leon provided assistance in mapping (GeoExplorer) some backwaters to CRFP. The plan is to monitor these habitats by mapping again in the future and relate response of endangered fish use within these backwaters to size and other variables. Additionally, the maps provide a base map to CRFP to work off of and documentation of their (backwaters) position in the river as their existence depends on flows (i.e., high flows could eliminate the backwater altogether).

After biologists with UDWR and BLM suggested that some Refuge habitat was similar to that found to support mountain plovers near Myton, UT, RB De Leon conducted a play-back call survey. The benchland north and east of the headquarters was surveyed 28 April with no response.

### 3. Waterfowl

No formal surveys were carried out for waterfowl (ducks and geese) production. "General Avian Surveys" were conducted throughout the year. Fourteen surveys were conducted by RB De Leon with assistance from SROS Schaad and interns Conover and Tonihka. Conditions towards the latter part of the year were similar to 1998 as most wetland sites, including most of the River, were beginning to freeze on 6 December 1999. However, the River and other surrounding areas (e.g., Pelican Lake) did not remain frozen for prolonged periods of time as in 1998. Therefore vast amounts of open water remained allowing more ducks and geese to remain during this time of year. Mallards and gadwalls were the most common duck to be found on the Refuge.

RB De Leon assisted with the Mid-winter Waterfowl Survey for the first time. A total of 113,722 waterfowl, 4,702 coots, and 143 sandhill cranes were tallied for the state of Utah. During this year's surveys, 9 state personnel and 3 federal took to the air in 2 planes and covered 1,500 miles in 19 hours, while 6 state and 3 federal representatives (1 from Ouray NWR) covered 900 miles on the ground. This year 50 miles were covered by a state employee in a boat. During this year's survey, there was almost 20,000 less waterfowl, 1,300 less coots, but 76 more cranes in comparison to the previous year's survey.





Bald eagles are a common site during the winter months in Woods Bottom. (MD)



Waterfowl on the Green River. (MD)

#### 4. Marsh and Waterbirds

According to the General Avian Surveys, the most common to least common included the following species: American coot, great blue heron, American white pelican, double-crested cormorant, Western grebe, and white-faced ibis. Other species that were observed during the counts include black-crowned night heron, American bittern, great and snowy egrets, and eared and pied-billed grebes. Sandhill cranes continued to make their presence known on the Refuge. Most of these species were observed between March and November with peaks generally occurring during May through September.

#### 5. Shorebirds, Gulls, Terns, and Allied Species

Mid-March greets the arrival of shorebirds and allied species. Observations of species like dowitchers, killdeer, and ring-billed gulls occur daily. Nesting black-necked stilts and avocets could be observed on units in Johnson Bottom and on the Parker Tract moist soil units. Most of these species were observed between March and November with peaks occurring during April and May and then again in July.

#### 6. Raptors

Wintering bald eagles, red-tailed hawks, and northern harriers were readily spotted during the early months of the year. Later in the year, red-tailed hawks, northern harriers, turkey vultures, and American kestrels become the more common sight.

#### 7. Other Migratory Birds

RB De Leon established point count stations along both sides of the Green River. Five groups with 10 stations in each group were established to complement our mist-netting efforts and to develop a long-term database for monitoring of riparian habitat on the Refuge. The first "trial-run" will be about late May to early June 2000.

#### 8. Game Mammals

The only game animals that regularly occur on the Refuge are mule deer and pronghorn. Elk use continues to increase on the Refuge. Presumably the elk are coming from the Roan Cliffs and the East Tavaputs Plateau, south of the Refuge. Concern was expressed when Sheppard Bottom was burned (prescribed) because local residents felt that the elk would be displaced, forcing the elk to search for other areas to occupy, particularly their nearby farm fields. The reputation of the Ouray "monster bucks" exists as many of the locals ask about the well being of these critters. These deer are one of the main attractants during the winter months for photographers and "deer watchers."

#### 10. Other Resident Wildlife

Pheasants continue to do well on the Refuge and remain an attraction to upland game hunters during the fall. Volunteers Anne and Bud Woods conducted pheasant crow counts over 5 days during April and May. Over the five-day period, a total of 203 vocalizations was heard and an average of 40.6 calls was heard per count date.

During a spring deer survey (30 March), Volunteers Anne and Bud Woods counted 43 antlerless deer and 19 pronghorn. Information was shared with UDWR.

An unconfirmed sighting of California quail on the Refuge was reported to SROS Schaad.

Interns Conover and Tonihka surveyed small mammals and reptiles and amphibians (herps) on the Refuge. This was the first formal attempt at inventorying this resource on Ouray. A total of 148 animals were captured by Sherman traps, pitfall traps, and active searching (Mark-recapture was not used therefore many may have been recaptures). Two herp species and two small mammal species were confirmed on the Refuge through these efforts. Species caught during this sampling are outlined in the following tables. No amphibians were caught during this sampling period.

Opportunisticly, interns Tonihka and Conover also identified insects that were being trapped incidentally in the pitfall traps. They identified band-winged grasshoppers, centipedes, wolf spiders, Mormon crickets, Jerusalem cricket, ten-lined June beetle, and red velvet-ant. Some that died in the traps were prepared as display specimens.

**Species of small mammals trapped during spring and summer 1999. Asterisk indicates confirmed for first time on the Refuge.**

Species	Number
Ord's Kangaroo Rat	50
Deer Mouse	17
Meadow Vole	3
Merriam's Shrew*	1
White-tailed Antelope Squirrel*	1

**Species of reptiles trapped/captured during spring and summer 1999. Asterisk indicates confirmed for first time on the Refuge. Double asterisk indicates that this is a subspecies of the Western Whiptail.**

Species	Number	Species	Number
Woodhouse Toad	25	Sagebrush Lizard*	12
Painted Desert Whiptail**	12	Racer	9
Western Fence Lizard*	6	Short Horned Lizard	4
Northern Leopard Frog	4	Western Whiptail	2
Gopher Snake	1	Striped Chorus Frog	1

## 12. Wildlife Propagation and Stocking

Ouray National Fish Hatchery was officially established in May 1996 as a fish refugia and technology development facility to assist in the recovery of the four listed Colorado River fish; razorback sucker, Colorado pikeminnow, bonytail, and humpback chub. Endangered fish produced in the hatchery have been stocked in the Green, Gunnison, San Juan, Lower Colorado, Salt, and Verde Rivers to aid in reestablishing depleted native fish populations.

The Hatchery stocked 36 imprinted 1992 year class Colorado Pikeminnow into the Green River on the Refuge. All fish were PIT tagged and the average length and weight were 16 inches and 14 ounces, respectively.

## 13. Surplus Animal Disposal

Two golden eagles were shipped to the Eagle Repository. Both were (separate events) found under powerlines, so apparent death was electrocution.

## 15. Animal Control

Beaver occasionally and repeatedly place dams where they are not wanted; that is they place dams around water control structures when we are trying to flood or drawdown impoundments. This year 4 beavers were removed from Leota Bottom units.

## 16. Marking and Banding

This year marked the fourth year for the constant effort mist-netting on the Refuge. Birds were banded during 8 to 10 periods within the time frame of 21 May and 28 August 1999. The following table is a summary of species banded during 1996-1999.



~~Gopher~~ snake caught in live pitfall trap. (BT)

Wandering garter

**Species and number of birds processed (new captures and recaptures) during constant effort mist-netting on the Refuge, 1996-1999.**

Species	1996	1997	1998	1999
American Goldfinch	3	2	1	0
American Robin	6	7	1	17
Black-capped Chickadee	7	12	17	18
Black-headed Grosbeak	10	11	3	14
Blue Grosbeak	1	0	0	0
Brown-headed Cowbird	1	4	3	5
Bullock's Oriole	0	17	0	0
Common Yellowthroat	2	4	2	1
Gray Catbird	2	0	0	1
Green-tailed Towhee	0	0	0	1
Hermit Thrush	0	0	1	3
House Wren	41	48	27	32
Indigo Bunting	1	0	0	0
Lazuli Bunting	9	0	1	0
Lincoln's Sparrow	0	0	1	0
Long-eared Owl	0	0	1	0
MacGillivray's Warbler	2	1	1	2
Northern Waterthrush	0	0	0	1
Orange-crowned Warbler	0	1	0	0
Ovenbird	0	0	1	0
Red-breasted Nuthatch	0	0	1	0
Red-shafted N. Flicker	1	0	0	0
Solitary Vireo (Plumbeous)	0	5	0	3
Spotted Towhee	20	14	15	40
Swainson's Thrush	1	1	1	1
Virginia's Warbler	1	0	0	0
Warbling Vireo	1	0	0	0
Western Tanager	0	1	0	2
Western Wood-pewee	4	7	3	7
Willow Flycatcher	1	1	1	0
Wilson's Warbler	5	7	2	5
Yellow Warbler	32	12	17	42
Yellow-breasted Chat	2	0	1	1
Total	153	155	101	196
# of species banded	22	18	21	19





Aggressive Yellow-breasted Chat. (JD)



## **H. PUBLIC USE**

### **1. General**

The number of public use visits to the Refuge during 1999 was 13,445 which was way up from 1998. Added to our visitation this year are numbers from the Utah Field House of Natural History, 72,899. This brings our total to 86,344 visitors receiving information about the Refuge this year. These numbers have never been included into the refuge visitation, however, visitors stopping by the Field House get exposed to the refuge via a large FWS Refuges display right in the main entrance area. So this year we see a giant boost to our numbers. Included in the count are approximately 2,000 people who received talks and tours of the Refuge. These groups included Teacher's Conservation Fair, Teacher PAWS, Latch-Key Kids, schools, and Headstart Programs. These talks and tours were given by RM Alonso, SROS Schaad, RB De Leon and ORP De Leon.

A registration box was placed at the kiosk for visitors to sign in and report the number of people with them. The Refuge has received many great comments about the box and the ability for visitors to "leave their mark." This has also added to the visitation numbers and has aided in keeping better track of how many people visit Ouray NWR and where our visitors are from.

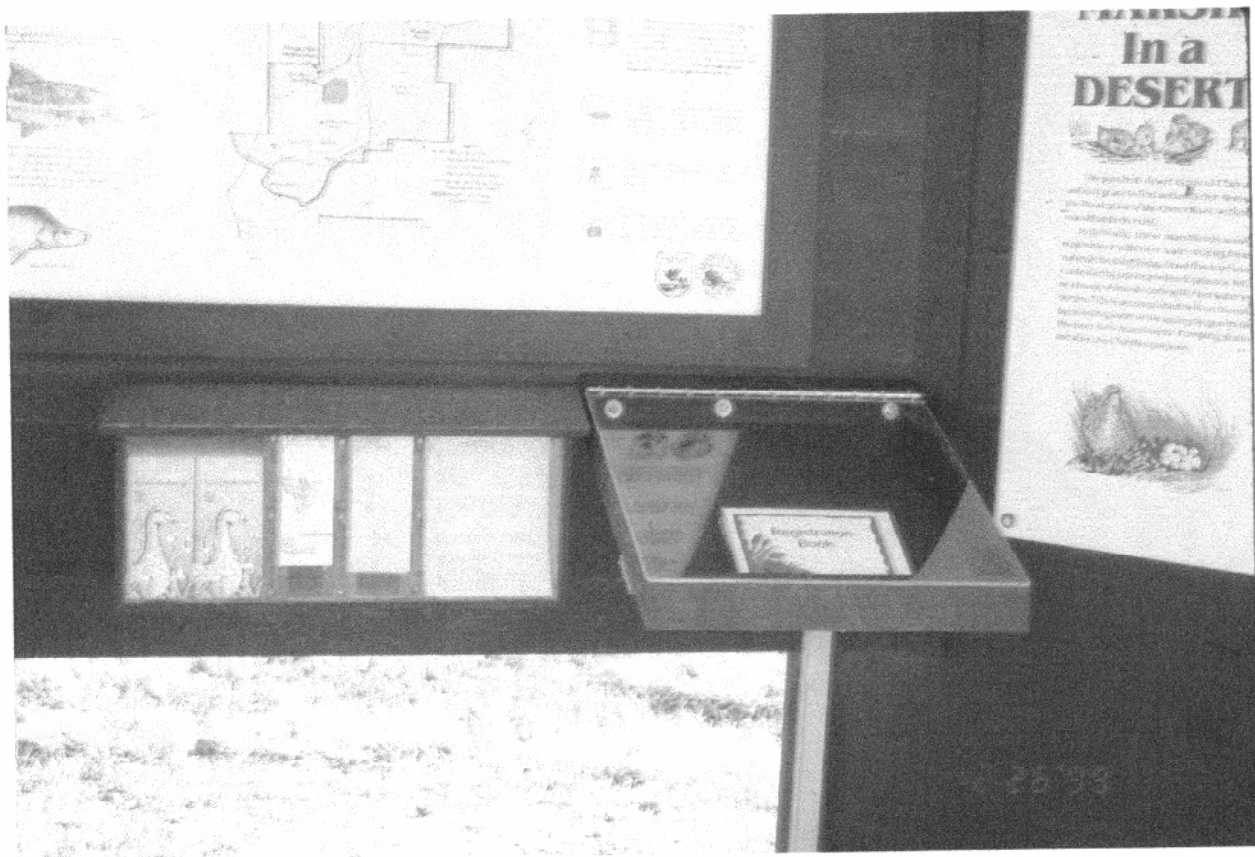
The Service obtained a booth at the Uintah Basin Water Conference held in February. ORP De Leon provided brochures, bookmarks, CRFP newsletters, historical accounts and litter bags for the participants to take home with them. Approximately 400 people participated in the 2 day conference.

RB De Leon provided a guided bird walk for Northeastern Utah Visitor Center Lecture Series on 17 April. Nine adults participated in the walk.

An interagency training session was held on 18 May for local visitor center and travel board employees and anyone else interested in attending who provide information to the public. ORP De Leon provided general Service information as well as information for Jones Hole and Ouray National Fish Hatcheries, Roosevelt Management Assistance Office, Ouray Refuge and Colorado River Fish Project. Front line employees from all over the Uintah basin attended this session.

ORP De Leon provided environmental activities for Project Success, a group of latch-key kids from the Uintah Basin. Approximately 80 students from Duchesne, Roosevelt, and Vernal participated in the two days that the group came out to the Refuge.

In an effort to increase public awareness and Refuge community support, the Refuge donated two half-day private tours to two local non-profit organizations. The Vernal Chapter of the Rocky Mountain Elk Foundation held its annual banquet in March and Refuge staff donated a private half-day tour with transportation provided. The family that bid for the tour came out to claim the prize on 18 September. RM Alonso greeted the group and toured the family around the refuge.



New registration box. (DS)

Vernal Area Chamber of Commerce held its annual fund raising auction in which staff donated a private half-day tour of the refuge with transportation provided. The family that bid for the tour came out to claim the prize on 17 October. RM Alonso greeted the group and toured the family around the refuge.

## 2. Outdoor Classrooms - Students

ORP De Leon provided environmental education activities for 14 schools and Headstart programs. An estimated 1000 students came to the refuge to participate in these activities. The Headstart Programs posed a challenge for ORP De Leon in being so young, but appropriate activities were found for them and the trips were a success.

A total of 7 off-refuge program were given by ORP De Leon for schools and Headstart Programs. Topics ranged from migratory birds and endangered fish to wetlands and riparian habitats. Some students even became bears and had to scrounge and fight for food. About 600 students were addressed off-refuge.

## 3. Outdoor Classrooms -Teachers

ORP De Leon presented endangered fish material to the Teacher PAWS workshop on 25 June at Yellowpine Campground on Rock Creek. She used material provided by the Recovery Program on water conservation and river changes, and presented material on wildlife topics such as bird migration. Approximately 100 area teachers and their families participated in the workshop.

The annual Teacher's Conservation Fair was held 12 October. ORP De Leon presented National Wildlife Refuge Week material to 65 teachers. She also presented environmental activities that teachers could use in their classrooms.

## 5. Interpretive Tour Routes

The self-guided auto tour route continues to receive a large portion of the visitation and wildlife observation usage. It remains a popular area to take a leisurely drive and enjoy the scenery and beauty it has to offer. The tour route has received basic maintenance and upkeep throughout the year. The observation tower obtained a make over, getting a new paint job and having a scope mounted on the top. The railing was also rehabbed so that children, and adults would no longer get their fingers stuck between the rail and the wire mesh sides.

A wildlife observation log was installed at the tower as well. Now visitors can record the wildlife they see as they drive the tour route. This also helps Refuge staff monitor wildlife occurrences on the Refuge.

#### 17. Disease Prevention and Control

This year we did not escape the clutches of avian botulism on the Refuge. An outbreak occurred during late September and early October. Leota Bottom units 5 and 7 were hit hardest. Birds were also collected in Wyasket Lake and Woods Bottom. We collected more than 500 carcasses in Leota, about 200 in Wyasket Lake, and 9 in Woods Bottom. Those in Woods were probably "spill overs" from either Leota or Wyasket. The majority of birds collected were American coots and green-winged teal. But we also collected mallard, northern pintail and shoveler, American wigeon, white-faced ibis (1), American avocet (3) and bittern (1), dowitcher species (1), and gull species (1). Refuge staff spent approximately 2 weeks on monitoring and clean up.

## 6. Interpretive Programs

The refuge celebrated its Open House on 8 May. Staff and volunteers assisting with the event provided guided bird and refuge tours and information and hands-on activities at 12 stations. Other agencies assisting include UDWR, BLM, Uintah County Extension Office, UCMAD, and BIA. Drinks and donuts were provided for the public. Approximately 300 people participated in the 6 hour event. Strong winds and caused many to seek cover at the end of the day.

ORP De Leon organized a fishing clinic held on 5 June for National Fishing Day. Ouray NWR and Hatchery staff were assisted by BLM, and UDWR at Red Fleet Reservoir, the host facility. Clinic topics ranged from angler safety and ethics, how to cast, and how to tie knots to different types of lures, rods and reels, and fish anatomy. Unfortunately, we had a very low turnout, but we plan on a similar event for 2000 in which we will invite a specific organized group.

Refuge staff and Utah Conservation Officer Jason Teeguarden teamed up to present a youth waterfowl orientation on 18 September. Information presented included waterfowl identification, wings mounts and hunting regulations.

## 8. Hunting

The Refuge continues to support the hunting of mule deer, pheasants, ducks and geese. The areas which are open to hunting are: Leota Bottom for ducks, geese, deer and pheasants, and Johnson and Wyasket are open for deer and pheasant hunting only. The Refuge is considering allowing hunting of ducks and geese at Johnson Bottom to afford waterfowl hunting when Leota is drained. Hunter Survey boxes with questionnaires were put up in Leota and Wyasket. The cards contained areas for hunters to fill in the species of game, equipment used, numbers harvested, numbers in party and hours hunted. Hunters responded positively to the boxes in place.

### 8a. Deer Hunting

Hunting for deer on the Refuge is allowed during the prescribed state archery, extended archery, rifle and muzzleloader seasons. The general archery season was open from 21 August - 10 September and the extended archery season continued on through 5 November. The muzzleloader season was open from 29 September - 7 October. The general deer rifle season was open from 23-31 October. The deer rifle season attracts the greatest number of deer hunters, and this year saw an increase in the number of hunters using the Refuge to hunt. A total of 75 deer hunters were estimated to have hunted on the refuge in 1999.

### 8b. Pheasant Hunting

An estimated total of 225 hunters participated in the 1999 pheasant season which ran from 6 November thru 5 December. The pheasant know when to come out. They are seen more before



"Gigantic Bugs" Station at Open House. (DS)

and after the season than during.

#### 8c. Waterfowl Hunting

The Refuge was open for the youth waterfowl hunt held on 25 September. Five children along with their adult companions were known to have hunted on this day.

Waterfowl hunting was open from 2 October - 15 January. However, water on the refuge was frozen by 5 December. No waterfowl hunting on the refuge occurred after this date. During the nine weeks of open water 300 hunters were estimated to have used the refuge to hunt.

#### 9. Fishing

Channel catfish remain the popular angling species on the Refuge. Anglers spend many hours on the Green River hoping to hook a few. Angler visits were down this year with an estimated 50 visits.

#### 11. Wildlife Observations

Wildlife observation continues to be a favorite activity among visitors. High numbers of trophy mule deer bucks and bugling elk attracted people from all over. The wildlife viewing area such as the farm fields and moist soil units on the refuge provides ample opportunity to view wildlife.

The refuge is quickly gaining a reputation for being a great bird watching area. Bird watchers are becoming a common occurrence on the auto tour route. Thousands of ducks and geese and hundreds of eagles in the winter time attract people from the local area to the Refuge.

#### 16. Other Non-Wildlife Oriented Recreation

Bicycling, hiking, and horseback riding are allowed on the refuge tour route and levee roads. Canoeing and rafting are allowed on the river. Use for these activities is estimated to be 100 trips for 1999.

#### 17. Law Enforcement

The installation of an automated entrance gate in early 1998 has greatly curtailed much of the illegal night time activities which had been encountered in the past. A total of seven law enforcement incidents occurred in 1999:

<u>Type of Incident</u>	<u>Date</u>	<u>Officer</u>	<u>Disposition</u>
Hunting in a closed area	12/06/99	Schaad	Closed (fine paid)
Lack of HIP Validation	11/06/99	Alonso	Closed (verbal warning)
Camping on Refuge	10/07/99	De Leon	Closed (verbal warning)
Use of alcohol while hunting	10/16/99	De Leon	Closed (fine paid)
Un-plugged Shotgun	10/16/99	UDWR	Closed (fine paid)
Illegal take of Wildlife (deer)	07/01/99	Alonso	Closed (insufficient evidence)
DWI (tribal members)	03/19/99	BIA/Schaad	Closed (arrested and fined)

#### 18. Cooperating Associations

A Participating Agreement has been signed by the USFWS in Vernal with the Northeast Utah Visitor Center (NUVC). NUVC provides a centralized source of information to the public about federal, state and local lands, resources, community programs, recreation and service oriented business, and other amenities in the Uintah Basin. All information is presented with equal recognition of any and all of the participating agencies. Refuge information is distributed and the possibility of selling refuge specific items is being pursued. Visitation to the center was estimated at 65,500 people from all over the world.

### **I. EQUIPMENT AND FACILITIES**

#### 1. New Construction

The BOR modified and constructed new drain structures/fish kettles in Leota and Johnson Bottoms. The old structures had not been functional for at least 15-20 years and the new ones are a big step in the right direction for improving our water management facilities. We still need to replace several impoundment drain structures in Leota and remove dilapidated dikes in Johnson to make these wetlands totally functional. These projects were funded by the CRRP, as the kettles will aid in the recapture and processing of endangered fish species.

Construction of the new refuge office building got underway in July 1999. The contract calls for construction of a 40' x 60' metal/brick building and was awarded to Butler Building and sub-contracted to M-13 Construction. There have been many delays and some quality-control problems and at year's end, the project was 85% complete. The project was funded via Land and Water Conservation Funds.

MMS funds in 1999 were obligated to purchase and install a much needed new bunkhouse. We put up the old modular building for sale and it was removed in August. However at the end of the year, bid packages had not been sent out by the RO for the construction of the new building. Stay tuned!





Saying "Good-bye" to the old Refuge field office building. (DS)

Three metal gates were installed in Sheppard Bottom by refuge staff to reduce/eliminate motor vehicle traffic on service roads.

## 2. Rehabilitation

The Woods Bottom outlet structure was rebuilt by refuge staff and funded by the CRRP \*at a cost of \$15,000. The old structure leaked like a sieve and was difficult to operate but is now fully functional.

The old vehicle lift was cut-out/removed from the shop floor, the void filled in with washed rock and capped with concrete. Along with this, the old oil sump was inspected (found to be clean) and filled in with washed rock and covered with top soil. The old lift was replaced with a self-supporting, 4-post, 18,000 pound capacity Rotary lift in June. This project was funded via MMS funds.

The observation tower was rebuilt by refuge staff which included replacement of sagging expanded metal steps, installation of new hand rails of the proper height (42"), reinforcement of platforms and rails, and a new paint job. In addition, a spotting scope was permanently mounted on the top platform. This project was funded via MMS funds.

Tri-County Concrete delivered 1,200 cubic yards of roadbase material in July. Refuge staff used this material to cap the newly re-worked section of auto-tour route from the old hatchery up to the fish-screening facility. Total cost of the roadbase was \$8400.

Tri-County Concrete delivered 1,200 cubic yards of rip-rap in August which was spread by refuge staff along dikes in the Parker Moist Soil Management Units to prevent further erosion. Total cost of the rip-rap was \$14,460.

Work was initiated on raising the L-9/10 dike 2-3 feet in preparation for using L-10 as a grow-out pond for hatchery-raised razorback suckers. Refuge staff are doing the dirt work, borrowing material from the north side of L-9. Other work that is planned is to have Flo Engineering conduct a more detailed survey of L-10 and then refuge staff will attempt to level the bottom of the impoundment to facilitate drainage and passage of fish back to the river. Funding for this project is provided by the CRRP.

## 3. Major Maintenance

Remnants of several old galvanized metal "whistle-tube" style water control structures were removed from Leota Bottom.

The excavator was used to clean the Wyasket Pond inlet canal in May.

Micro-burst winds hit the Refuge on 2 July with velocities up to 80 miles/hour. The storm



RB De Leon and EEO Mecham rehabilitate  
the Woods Bottom drain structure. (BW)



MW Breakfield and MW Kerins replacing handrails. (DS)



An obstacle in the tower rehabilitation.  
The eggs actually hatched and survived! (DS)



Newly refurbished Sheppard observation tower. (DS)





EEO Mecham making improvements along the auto tour route. (DS)



Leeta Construction. (PK)

BOR DREDGING WOODS BOTTOM DRAIN CANAL



destroyed part of our wheel-line irrigation system and blew out the west window in the shop. Repairs to the wheel-lines were made by the cooperator and refuge staff, material costs were covered by the refuge.

The drain canal from the old hatchery down to the Sheppard inlet structure was cleaned out by refuge staff with the excavator. Silt on the river side of the inlet structure was excavated at the same time. This project was done in cooperation with the Ouray NFH.

Small purchase maintenance items included: replacement of offset disc plates, new air boat supplies (new PFDs, lights, nets, etc.), brake-jobs on the Ford fire engine and 1-ton GMC, new paint job on the S-10 pickup, new tires for the S-10 and 3/4 ton Dodge, new cutting edges for the grader, several sets of replacement mower blades, and replacement of motor vehicle/heavy equipment lubes and filters

#### 4. Equipment Utilization and Replacement

We received a new ASV HD 4520 Posi-Track crawler/tractor vehicle along with the following attachments: brush cutter, tree shear, loader bucket and forks. This versatile piece of equipment will be used on a number of different projects, but the tree shear should greatly improve our efficiency with cut-stump treatment of Russian olive trees.

A John Deere 6x4 Trail Gator with an 80 gallon tank equipped with boom and hand sprayers was received, which will improve our capabilities for treating perennial pepperweed.

#### 5. Communications Systems

Refuge staff worked with Uintah Basin Telephone and Lucent Technologies (Devere Ostler) to set up telephone service in Quarters 2 which is temporarily being used as the field office until the new office building is completed.

#### 6. Computer Systems

The Regional Office replaced an out-dated Zeos 486 desk-top PC with a new Gateway PC.

A new Dell lap-top was purchased to replace the old Zenith 286 lap-top. This computer was ordered to run the Trimble Pathfinder Office program for manipulating and correcting GPS data.

A Geo-Explorer was purchased from Monsen Engineering out of Salt Lake City, UT, to improve our GIS capabilities. RB De Leon and Interns Conover and Tonihka attended a half-day training session on the operation and maintenance of the new equipment.

A new Micron PC was purchased for the post office in the Vernal office. This computer also serves as a multi-media/graphics computer. It has been equipped with a photo/slide/negative



EEO Mecham putting new ASV/tree shearer to the test by removing  
dead green ash at Quarters 1. (DS)

scanner, and a port for a digital camera. All Vernal stations share this computer.

## **J. OTHER USES**

### **3. Other Items of Interest**

RM Alonso attended an Effective Budgeting for Managers from 16-20 February and Impact Training from 22-26 March at NCTC, and a National Contaminants Meeting in Missouri from 12-14 April.

SROS Schaad attended Supervisor Training at NCTC from 26-30 April at NCTC.

RB De Leon attended a half-day training in Salt Lake City put on by Monson Engineering for general use and maintenance of the new geo-explorer, and a Weed Symposium in Montana from 19-23 April.

ASA Manning traveled to Denver from 8-10 November to be trained in the budget reporting, payroll, etc., and attended Management Concepts Training from 15-19 November to obtain her warrant

During the months of April, May, and June, ORP De Leon provided First Aid and CPR instruction for 70 firefighters, Service staff, Forest Service, and BLM employees. There are not many American Red Cross instructors in the Uintah Basin and when one comes along the demand is great.

ORP De Leon attended Signs, Trail Panels and Wayside Exhibits Course in Denver from 23-27 August Basic Computer Support for Field Stations at NCTC from 18-29 October.

EEO Mecham attended Heavy Equipment Instructor Training in Oregon from 1-14 May, and a Maintenance Workshop in Kansas from 16-20 August.

MW Breakfield attended a Maintenance Workshop in Kansas from 16-20 August.

### **4. Credits**

This document was prepared as a cooperative effort by all refuge staff. Photo credits are as follows:

Dan Alonso	DA
Dan Schaad	DS
Jennifer De Leon	JD

Manuel De Leon  
BIA  
Ross Conover  
Brian Tonihka  
Bud Woods  
Patrick Kerins

MD  
Bureau of Indian Affairs  
RC  
BT  
BW  
PK

#### **K. FEEDBACK**

This is truly a great time to be a part of the Ouray NWR. The Refuge is undergoing numerous changes through the exceptional efforts of the Refuge staff and excellent advocacy provided by the Regional Office.

#### **L. INFORMATION PACKET**

(Inside back cover.)