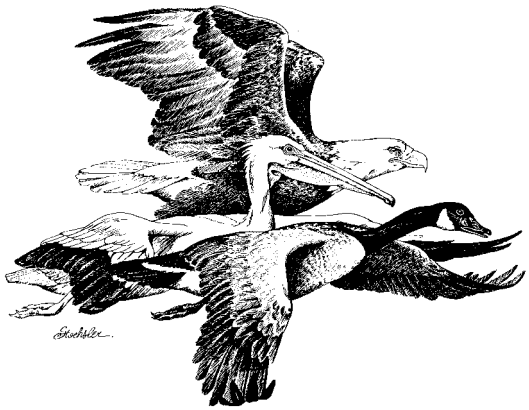
Words from the Wetlands



News from The Klamath Basin NWR's Spring/Summer 2004

Lower Klamath Refuge Water Update - Summer 2004
Fran Maiss
Deputy Project Leader

Water, the lifeblood of our refuges, and its availability is always a point of interest to our many refuge users, so I thought I would do my best at explaining our current water situation and what we foresee for the upcoming summer and fall months.

The amount of water available for both the Bureau of Reclamation's Klamath Project and ultimately the Klamath Basin Refuges is determined by the conditions that occurred the preceding winter. This past winter, which appeared to the casual observer to be relatively normal, resulted in an initial determination by the BOR to be a below average water year in April and later revised to a dry water year in May, when the predicted inflows in to Upper Klamath Lake didn't materialize. What does this mean for the Lower Klamath NWR which is the most vulnerable to water shortages?

Our management preference for providing the most productive mix of habitats on Lower Klamath Refuge would have been to have nine units totaling 10,600 acres in permanent marsh providing habitat for colonial nesting birds, brood water for nesting waterfowl and submergent vegetation for fall migrant diving ducks; 21 units totaling 15,200 acres in seasonal wetlands providing habitat for fall migrant dabbling ducks and nine units totaling 7,000 acres of small grain fields which provide wintering habitat for dabbling ducks.

However, with the water year being analyzed as dry we have made the educated assumption that traditional summertime water deliveries will be non-existent or sporadic at best, so we have altered our preferred management scenario to one of realism which includes the following habitat mix: one unit consisting of 4,500 acres of permanent marsh; 15 units totaling 7,700 acres of seasonal marsh and nine units totaling 7,000 acres of small grain fields. In addition we will be allowing 10 wetland units totaling 11,600 acres scheduled for either permanent or seasonal marsh to evaporate away over the course of the summer. One unit encompassing 2,000 acres will be sacrificed to help maintain the 4,500 acres of permanent marsh.

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This Issue:

Lower Klamath Refuge Water Update - Summer 2004

Fran Maiss

Deputy Project Leader

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So what do all these detailed statistics mean to the wildlife and their habitats? The 4,500 acre permanent marsh is Unit 2, our most productive unit, which is home to fish, turtles, otters, and nesting fish eating birds such as pelicans, cormorants, egrets and herons. We do our best to ensure that this wetland stays wet no matter what the water year type, because if it ever went dry we would lose our fish population base, upon which all of the fish eating species depend. The 2,000 acre sacrifice unit is Unit 3, which historically has been a permanent wetland supporting large numbers of nesting eared grebes and fall migrant diving ducks. The 7,700 acres of seasonal marsh will be drained by the normal target date of June 15 so that the seasonal plants, mainly smartweed and goosefoot will grow to maturity, providing abundant feed for the fall migration. The 11,600 acres of marsh that will be allowed to evaporate over time will provide some brood habitat to nesting waterfowl, habitat for nesting white faced ibis colonies and a shallow wetland for the mid-summer shorebird migration. However, these wetlands, managed in this manner will not produce the proper food plants desired by migrating waterfowl. When dealing with wetland management, timing of water applications is extremely important. Consistent water deliveries which allow for the maintenance of permanent marsh levels, and de-watering and re-flooding of seasonal wetlands in a timely manner will ensure wildlife use of productive wetland habitats. Sporadic water deliveries wreak havoc with productivity, as falling water levels in permanent marshes can kill submergent wetland plants such as sago pondweed, an important food source to migrant diving ducks; untimely dewatering of seasonal marshes do not allow for food plants to mature and set seed, and late flooding of good seasonal marshes can mean the bulk of the fall waterfowl migration has passed before their food source becomes available. An added difficulty with sporadic water deliveries in the summer occurs when putting water back into a partially de-watered wetland, which can cause an outbreak of deadly waterfowl botulism.

This is the fifth year in a row in which the Lower Klamath Refuge will have been operating on substantially reduced water deliveries. This year our strategy is varying significantly from the past. Over the past two years, we have kept all of our water in an internal recirculating pattern, not discharging any, and attempting to keep our permanent marshlands alive with water stored in our seasonal wetlands. However, this ultimately leads to salt accumulation problems, as well as inhibiting proper seasonal plant growth. So we have entered into a written agreement with the BOR to discharge water from our managed seasonal wetlands during May and June in return for a minimal amount of summer deliveries to our permanent marshes, to be augmented by the BOR's purchase of groundwater if necessary. We are also into discussions with Tulelake Irrigation District in an attempt to coordinate more consistent and/or timely discharges from the Tule Lake sumps.

So how do things look for this fall? Unfortunately, the predictability of adequate fall water deliveries is nearly impossible to make. We know we will get some water, but how much and when is unpredictable. However, this year, we are managing Sump1B on the Tule Lake Refuge as a permanent marsh, so we hope to have the availability of about 1 foot of the surface elevation on this 3,500 acre marsh available for redistribution to start the timely flooding of the Lower Klamath Refuge's seasonal marshes. That, along with improved coordination efforts with TID and the possibility of gifted groundwater from our private neighbors should enable us to flood up in time for the fall waterfowl migration.

I hope this article makes some sense, and provides some rationale for what we are doing in the realm of water management. It is certainly a constant challenge to keep the Lower Klamath Refuge as productive as possible given the greatly reduced water deliveries from times past.

New Refuge Wildlife List Now Available

An extensively revised list of wildlife species known to occur in the Klamath Basin is now available. A printed copy of the list may be obtained at no charge by calling the Refuge headquarters at (530) 667-2231. The list which features birds but also list mammals, reptiles, amphibians and fishes known to occur on the Klamath Basin was last updated in 1995. The new list contains a listing of the wildlife species found throughout the Upper Klamath Basin, not just those thought to occur on the Refuges as was the case with the previous checklist. Bird name changes have also been made on this list to conform to the latest accepted common name changes. The checklist is also available on the Refuge web site as a PDF file. The Refuge web site may be accessed at "http://klamathbasinrefuges.fws.gov."

Fire Management: An introduction to our suppression forces

Scott Swanson
Forestry Technician

One of the primary components of the Klamath Basin National Wildlife Refuge Complex Fire Management program is wildland fire suppression. Since the mid 1980's, KBNWRC and its component refuges have benefited from fire suppression services. Starting in the late 1980's and through the early part of the 1990's, Klamath Basin's fire program began its evolution from a small unit into one of the most vital fire programs in the Service. Today, the fire management team consists of nearly 20 permanent and seasonal employees. Fire management personnel are responsible for overseeing wildland and prescribed fire operations and management activities at Tulelake NWR, Lower Klamath NWR, Clear Lake NWR, Humboldt Bay NWR and Modoc NWR in California and Bear Valley NWR, Upper Klamath NWR and Klamath Marsh NWR in Oregon.

While prescribed burning is a major function of the program during the spring and fall months, our forces are fully staffed and wildfire focused throughout the summer. According to the National Interagency Fire Center (NIFC), the U.S. saw more than 63,000 wildfires consume over 3.9 million acres in 2003. More than 500 of those fires were recorded on National Wildlife Refuges in the west. Here at Klamath Basin NWR Complex, four wildland fires occurred within refuge boundaries. Tulelake NWR experienced two wildfires early in the season, the 0.5 acre Little Snapper Incident and the 7 acres Hospital Fire. Modoc NWR had a single 0.2 acre wildfire mid-season. The largest 2003 Complex wildfire occurred in early October at Lower Klamath NWR and measured over 400 acres. (Continued on Page 9)

Engine 81 at a prescribed burn on Lower Klamath National Wildlife Refuge

NEW GIS CAPABILITIES AND WHAT THIS MEANS FOR REFUGE MANAGEMENT

Carl Millegan
Refuge Operations Specialist

The wait has been long and intense, but we finally got the goods. Up till now we have been pretty limited in the realm of Geographical Information Systems (GIS). However, with the latest information provided by our contractor Geo Engineering we are well on our way to making major progress in the way of wetland management on Tulelake and Lower Klamath National Wildlife Refuges.

In 2002 The U.S. Fish and Wildlife Service contracted Geo Engineers to perform a system assessment and management plan to make recommendations for improving efficiency of the existing water distribution and drainage system on the Lower Klamath National Wildlife Refuge. Secondly, they were going to assist the refuge in doing a cost analysis for implementing sump rotation on Tulelake National wildlife Refuge. To perform these tasks Geo Engineers had to compile specific data, which included high level aerial photography and a topographic survey of both refuges. After discussing the project with Geo Engineers, it became clear that the refuge wanted the information in a GIS format.

At the time the refuges were in their infancy regarding GIS capabilities. We were just starting to collect basic data to assist in functions regarding refuge property inventories, Maintenance Management System, Noxious weed mapping, Cooperative farming and other basic tasks done on refuges annually. This information assisted the refuge in accurate reporting to the regional office. We had no idea how far behind in the GIS realm we really were. Specifically, we were not aware how powerful this tool was going to be for us once we had this information in our hands.

With the assistance of key refuge staff we were able to define exactly what we were looking for from this GIS information. Biologists wanted to know the capacities of wetland units on Lower Klamath in acre feet. Our maintenance professionals wanted to know what elevations their water control structures and pipes were at. Our public use folks wanted to know elevation data so they would know where to put a potential new visitor facility on Lower Klamath. There were a lot of questions that were going to be answered with this data.

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The Status and Management of Sage Grouse on Clear Lake National Wildlife Refuge

John Beckstrand
Wildlife Biologist

Perhaps one of the most unique wildlife experiences in western North America is to view the spectacular breeding display of the male sage grouse. Each spring male sage grouse gather on a common breeding ground or lek to display and attract females. Leks are located in areas of low shrub and herbaceous cover where visibility is good such as dry lakebeds, grassy openings and low sage. Between March and May they display, strutting back and forth like wind up toys with their tail feathers fanned out while making plopping sounds with their air sacs that can be heard for several miles.

The species was widespread when first described by Lewis and Clark in 1805. Originally found in 16 western states and 3 Canadian Provinces the distribution and population densities of sage grouse have declined over the past century such that they are now found in 11 states and 2 provinces. Habitat alteration, including fragmentation, cultivation and sagebrush reduction have been the primary cause for the decline. Once fairly common in the Upper Klamath Basin, the last remaining known active lek in the area is located on Clear Lake National Wildlife Refuge (NWR) in Modoc County, California. The nearest known lek to Clear Lake is approximately 40 miles to the southeast. As recently as the 1960's active sage grouse leks were located south of Lower Klamath NWR and on the Lava Bed's National Monument. Until the late 1980's as many as 18 sage grouse leks were active on the Modoc National Forest adjacent to Clear Lake Refuge. Since 1992 the number of strutting males counted on Clear Lake Refuge has declined by 80%. The trend since 1992 has been generally downward, however, this spring the number of strutting males was up indicating good production in 2003 and offers some hope for the population.

The sage grouse is a bird of the open sagebrush steppe. Sage grouse avoid trees because they serve as perches for raptors, particularly golden eagles that prey on sage grouse and ravens that rob nests of eggs. In northeast California one of the greatest changes to the landscape in the last 150 years has been the encroachment of western junipers. Livestock grazing is often cited as one of the major reasons for the encroachment of junipers. The large herds of sheep and cattle brought in during the late nineteenth century removed the grass that would carry a wildfire; without grass to carry the flames between trees juniper seedlings survived and grew into the trees seen today. Current thinking among ecologists is that a combination of factors are responsible for juniper encroachment including: perennial bunchgrasses being reduced while shrub cover increased due to past heavy livestock grazing which has resulted in a more fire resistant landscape. Historically, Native Americans were responsible for setting fires either intentionally to manage game animals or unintentionally from escaped campfires. However, the Native American population in the area was greatly reduced from diseases contracted from whites even before the arrival of settlers to the area thus resulting in fewer fire starts. And by 1850 the Little Ice Age ended which is believed to have resulted in a warmer and wetter climate more favorable to the spread of junipers.

From the cockpit of a small airplane Clear Lake Refuge is seen as an island of sagebrush surrounded by a sea of junipers. Which may be part of the reason why sage grouse have managed to persist on the refuge while they have disappeared elsewhere. Sage grouse primarily use the peninsula or "U" where few junipers are found that juts into the center of Clear Lake. Because of the rapid decline in grouse numbers at Clear Lake since 1992, we undertook a small study in April 2000 to determine areas of use by Clear Lake sage grouse. We attached radio transmitters to 1 female and 3 male sage grouse and tracked them primarily from an airplane once per month throughout the year. Locations were recorded with a handheld GPS. Most of the radios kept transmitting for over a year. In the spring of 2001 we radio marked an additional 4 grouse and tracked them until May 2002 in addition to some of the birds radio-marked in 2000. In general the radio-marked grouse spent most of each year on the "U" except for the summer months when they used the Modoc National Forest just south of the refuge. The 2 winters over which the birds were tracked were relatively mild and the birds stayed in the area. We had hoped to determine the migration patterns of the population, wintering areas and perhaps locate other populations as well. However, the grouse at Clear Lake appear non-migratory and isolated from other populations.

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Species Spotlight

Tricolored Blackbird
David Champine
Park Ranger/ Interpretive Specialist

Even though it is one of the most gregarious birds in North America, the Tricolored Blackbird (*Agelaius tricolor*) is the lesser known and has the smallest range in the family. The Tricolored Blackbird is probably more often confused with its better-known cousin, the Red-winged Blackbird (*Agelaius phoeniceus*). The Tricolored Blackbird is very similar in appearance to the Red-winged Blackbird. They both have the red "epaulet" or shoulder patch. However, the Tricolored's is a darker red, edged in white instead of yellow like the Red-winged. The remainder of their body is black, just like the Red-winged. While the females of both blackbirds are similar, the Tricolored is a darker brown, especially on the belly.

The Tricolored Blackbird is a "west coast" bird, living almost exclusively from northern Baja, California through the interior valleys of California into southern Oregon, on the east side of the Cascades. There is a small population in a local area of western Nevada. Within this range, it mainly inhabits wet meadows and fields along stream banks, agriculture fields of rice, alfalfa and the tules and cattails of freshwater marshes.

In the spring and summer, they mainly eat animal life, such as beetles, caterpillars and spiders. In the fall and winter, they will eat weed seeds and grain. When available, about 80% of their diet is animal life, especially in the summer.

Since they are highly gregarious, their nesting habits are very social and colonial in nature. They nest in large colonies, in marshes, with as many as 200,000 nests being in a 60 acre area. The males are polygamous and may have several females within their small territories. Their nests are made into baskets, using grasses, sedges and some dried leaves held together with mud. They can be found lashed to upright cattails, in willow and blackberry thickets, or perhaps on the ground in clumps of nettle. The female lays 3-4 pale blue-green eggs with fine dark lines or spots. This is done in April to June, with an eleven day incubation period. Once born, both parents will feed the young until they leave the nest in approximately thirteen days. Tricolored Blackbirds have two broods a year and are so social, that they will lay their eggs in unison.

Tricolored Blackbirds are common in spring and summer on Lower Klamath and Tule Lake National Wildlife Refuges. During this time, they can also be seen at other locations in the Klamath basin. One good example is in early spring (Feb-Mar) and late summer (Aug-Sept) look for them in the fields and pastures off Del Fatti Lane in the Miller Island area, of Oregon, just south of Klamath Falls on Highway 97.

The next time you get a quick glimpse of a blackbird with a red shoulder patch, do a little more investigation. Look for that white wing edge below the red, instead of yellow. It very well could be the lesser known Tricolored Blackbird.

The Status and Management of Sage Grouse on Clear Lake National Wildlife Refuge

John Beckstrand
Wildlife Biologist

(Continued from Page 4)

The refuge and the surrounding area appear to provide the needs of the remaining small population. Clear Lake functions as a reservoir for agricultural irrigation in the Langell Valley of Oregon. As the lake is drawn down during the summer new forbs or broadleaf plants sprout in the exposed soil. In their first month of life sage grouse chicks need a high protein diet consisting of forbs and insects. Common forbs used by sage grouse on Clear Lake Refuge include clover, milkvetch, hawksbeard, Great Basin Lomatium, and Low Everlasting. Insects consumed include June and darkling beetles and ants. In the spring most of the breeding is done by the oldest male located in the center of the lek. Once bred the hens leave the lek to nest. Generally nests are located within a few miles of the lek, but may be as far as 12 miles away depending on the habitat. Nests are typically located in sagebrush with enough grass cover to hide the nest and provide protection from the wind and sun. In late summer once the upland vegetation has dried sage grouse hens move their broods to areas with succulent vegetation such as native or irrigated meadows with sagebrush nearby for hiding cover. As broods break up in the fall flocks are formed and birds begin moving from several to over 50 miles to winter habitat. The consumption of sagebrush leaves also increases. During winter their diet consists almost exclusively of sagebrush. Low sagebrush is often the preferred food plant, but birds will switch to tall sage as snow depth increases and for shelter from wind and snow.

Despite good habitat conditions for grouse on the refuge the small population is susceptible to being lost to any number of events including wildfire consuming the last sagebrush on the refuge, a severe winter, and inbreeding if no gene mixing with other populations occurs. In July 2001 a lightening caused wildfire burned all but 1,000 acres on the "U". Since that time the grouse quit using a burned over historic lek site located near the lakeshore and have switched to a new lek in the unburned part of the "U". While the grasses and forbs quickly rebounded after the fire low sage grows rather slowly and will take a number of years to come back. Relatively few juniper trees are found on the "U" but are dense on the north shore of the lake. We are hoping that the population can hang on until some aggressive habitat management can occur and have a positive effect on the population. Although prescribed fire can be beneficial in rehabilitating some sage grouse habitat the amount of sagebrush on the "U" is limited and no burning is contemplated for many years. Likewise, wildfire suppression on and adjacent to the refuge needs to be timely to protect the remaining sagebrush habitat.

One option we are considering in helping sage grouse is juniper removal. Any trees within 1.25 miles of current or historic leks would be cut down. This would account for most or all of the "U" and affect several hundred trees. In addition the rest of the refuge particularly the north shore would be cleared of trees to connect current and historic use areas. Ultimately, juniper removal on a large scale needs to occur on the Modoc National Forest adjacent to the refuge to have any degree of certainty for the continued existence of the population as well as help return sage grouse to the Modoc Plateau. While fire will kill junipers it also kills desirable sagebrush and leaves a juniper skeleton that still functions as a raptor perch. Juniper removal is best accomplished by cutting them down which is fairly expensive. Doing nothing will likewise be costly. Juniper encroachment has resulted in lost habitat for mule deer and pronghorn as well as other birds such as sage thrashers, sage sparrows and Brewer's sparrow among others. Many thousands of acres of sagebrush steppe have also declined in value for livestock grazing on the Modoc Plateau because of juniper encroachment. Along with juniper removal, enhancement of the local population from releases of sage grouse caught elsewhere may buy some time. Translocations of sage grouse between areas has had a poor record in the past, but new techniques have shown promise and Clear Lake fits the criteria for a successful transplant of birds with "new blood" into the population. With the re-creation of suitable habitat perhaps the Clear Lake population could serve as a source for birds expanding into adjacent historic use areas and the "plop" "plop" of strutting sage grouse heard on the wind will continue to announce the arrival of spring to Northeast California.

Refuge Waterfowl Hunting: A Look Back at 2003 and Looking Forward to 2004

Dave Menke
Outdoor Recreation Planner

Fall water deliveries now seem to have become a permanent concern impacting waterfowl hunting on the Klamath Basin Refuges. For the past four seasons, water shortages have affected early season waterfowl hunting on Lower Klamath National Wildlife Refuge. Early forecasts indicate that the 2004 season will also be impacted by a below normal to dry water year in the Klamath Basin. Last year water deliveries to Lower Klamath wetlands were cutoff for much of the summer. In August 2003 partial water deliveries were restored which left the Refuge trying to catch up for fall flood up until about mid November. Hunters found only limited options for marsh hunting. on Lower Klamath early in the season while marsh hunting conditions on Tule Lake Refuge were normal and the new Sump 1B hunting area provided some excellent hunts. Below you will find a summary of the 2003 waterfowl hunting season on both Refuges and a list of changes anticipated for the 2004-05 Refuge hunting programs.

First weekend waterfowl hunting applications for the Refuges will be sent out shortly and should be sent back postmarked between August 1 and August 15th. This year, applicants for first weekend hunts on Lower Klamath Refuge will need to specify whether they want to hunt field units or marsh units the opening weekend. As in the past two years, those hunting parties applying for Tule Lake Marsh hunt may also indicate if they would also like to be in a second drawing to hunt the Sump 1(B) hunting unit. Hunters who have not received a first weekend application may print a copy off the refuge web page at Ahttp://klamathbasinrefuges.fws.gov@

Tule Lake spaced-blinds and field units

Last season fewer white fronted geese used Tule Lake Refuge and numbers in the Klamath Basin were down overall compared to the recent past. Early in the season, white-fronts used Lower Klamath in greater numbers than the Tule side. The opening weekend spaced-blind goose harvest was very low last season year compared to the previous several years. Free roam hunting in the League-of-Nations was up in 2003 compared to the previous year Overall, field goose hunting use and success was down compared to the past 10 year average (0.59 geese per hunter last year compared to the 10-year average of 0.61 geese per hunter).

During the 2004-05 hunting season, the spaced-blinds are anticipated to have normal crop conditions. The Cal-Ore Wetlands and Waterfowl Council has received funding have standing grain left in some of the spaced-blind areas. The upper AC@ spaced-blinds (C 1-14) are scheduled to be flooded this year. This area will be closed to hunting and fourteen spaced-blinds will be placed into “B” blind area. The lower “C” blinds will remain in their current location. A block of four additional “A” blinds will be available this year and the number of lower “C” and “E” blinds will be decreased by two each to provide for better spacing. The three pit blind in the AD@blinds will be flooded in the coming hunting season (subject to water availability). As an experiment, hunters will be allowed to drive into the “B” blinds during the coming season in an effort to determine if this should be a program option in future years.

Tule Lake Marsh

Last season Tule Lake Marsh hunting featured the highest hunter use and an average number of ducks harvested (per hunter) compared to the past ten years. This increase in hunter numbers was largely due to the popularity of the Sump 1B hunting area. Although the Sump 1B was difficult to access early in the season, those hunters who were able to operate in the shallow water conditions or walk in did well.

During the 2004-05 hunting season, the traditional hunting marsh unit (Sump 1A) on Tule Lake Refuge is anticipated to have normal water levels which are maintained to provide habitat to protect endangered sucker fish. The hunting areas in Sump 1 (B) and Frey=s Island will once again be accessible to hunters participating in a morning drawing at the Tule Lake check station. Sump 1 (B) is operated as a permanent marsh but fall water levels will depend on the availability of return agricultural flows to maintain water levels. The three southern areas in the Frey=s Island hunting area (units D, E and F) have pit blinds. All six of the Frey=s Island hunting areas will be part of the morning drawing at the Tule Lake check station.

(Continued on page 8)

Refuge Waterfowl Hunting: A Look Back at 2003 and Looking Forward to 2004

Dave Menke
Outdoor Recreation Planner

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Lower Klamath Marsh

Last season floodup of marsh hunting units was considerably behind the normal due to the shutoff of water through most of the summer followed by reduced water deliveries in September and October. The number of opening weekend permits for Lower Klamath marsh units was reduced to 200 with only unit 8 fully flooded by the October 11th opening. Full floodup of hunting units was not completed until late November. As a result, both hunter numbers and the duck harvest average were considerably below the 10 year averages.

Unfortunately, it appears that the **2004-05 hunting season** may be characterized by below normal water deliveries and delayed floodup as well. Having Sump 1B as a permanent marsh and increased ground water availability this year may alleviate this problem to some extent. Hunters may wish to attend one or more of the Refuge tours in July, August and September to see how the Refuge water situation unfolds this fall.

Lower Klamath Fields

Last season field hunting on Lower Klamath rebounded compared to recent years with increased hunter numbers and the highest goose per hunter average recorded in the past ten years. Nearly all of the good field goose hunting on the Refuge was concentrated in unit 11B.

During the 2004-05 hunting season grain stubble field units open to waterfowl hunting will change significantly in the coming season compared to last year. Primary among these changes will be the opening of unit 7B to hunting this year and the addition of nearly 800 acres of grain stubble field hunting in unit 4A and Sterns fields 1 through 4. Unit 11B will be closed to hunting this year in it's normal rotation with unit 7B.

Lower Klamath Oregon Strait B The portion of Lower Klamath Refuge in Oregon will be open to hunting as in past years with most of the area in grain stubble or pasture. Subject to water availability, at two areas in the Oregon Straits are anticipated to be flooded in the early fall.

Disabled User Hunting Opportunities B Four specially designated blinds will be available for disabled spaced-blind users participating in the morning Tule Lake check station drawings. Three disabled user marsh hunting opportunities are also available on Lower Klamath Refuge, These may be impacted by water shortages this coming season. To find out if you qualify to use one of the disabled blinds contact the refuge at (530) 667-2231. A flier and map showing locations of disabled hunting blinds is available by calling the same number.

Hunter Hotline B Throughout the hunting season, a summary of current hunting information is posted on the Refuge=s hunter hotline (530-667-4868 extension 500) the message will be updated weekly (usually Tuesday or Wednesday) throughout the hunting season.

Klamath Basin Birding Trail Becomes a Reality

Dave Menke
Outdoor Recreation Planner

A new major tourism effort in the Klamath Basin has focused much attention on the newly organized Klamath Basin Birding Trail. The trail identifies 300 miles of roads and 47 identified locations in the Klamath Basin providing residents and visitors to enjoy the opportunity of visiting well-known birding sites in the Basin. The trail is linked to the Oregon Cascades Birding Trail which extends the entire length of the Oregon Cascades. Both the Cascades and Klamath Basin Birding Trails are described in an attractive new brochure describing nearly 250 birding sites along the two trails.

The Klamath Basin Birding Trail identifies and describes 47 specific sites along the 300 mile loop through the Klamath and Tule Lake Basins including birding hotspots from Crater Lake in the north to the Butte Valley area south of the California-Oregon state line. An extremely detailed web site provides a wealth of information about each of the sites including how to reach them and the birds likely to be seen there at any given season. Information and maps for the Klamath Basin Birding Trail are available at the web site, Aklamathbirdingtrails.org.@ The Refuge also has printed maps of the Klamath Basin Birding Trail which may be obtained by calling (530) 667-2231.

Fire Management: An introduction to our suppression forces

Scott Swanson
Forestry Technician

(Continued from page 3)

In addition to refuge wildfires, Klamath Basin fire personnel responded to fire assignments in nine states (CA, OR, WA, ID, NV, MT, AZ, MN and FL) throughout the 2003 season. Locally, refuge fire personnel perform initial attack fire duties through two interagency dispatch centers located in Alturas, CA and Klamath Falls, OR. Through these centers, our firefighters assist local fire resources from the U.S. Forest Service (USFS), National Park Service (NPS), Bureau of Land Management (BLM), Oregon Department of Forestry (ODF) and the California Department of Forestry and Fire Protection (CDF). Generally, refuge firefighters respond to fire incidents as fire engine modules, handcrews or as single resources.

Engine Crew Supervisor Troy Portnoff oversees the engine suppression forces. Captain Ross Wise and Engine Operator Nathan Thompson will direct Engine 81during the 2004 wildfire season. Engine 81, a type 3 wildland fire engine, responded to numerous wildfires in the Modoc National Forest dispatch area last season and spent two weeks on a large fire in Idaho. Engine 81 is stationed year round at Tulelake NWR in Tulelake, CA. Captain Ben Iverson and Engine Operator Dave Knight will run the refuge's additional type 3 wildland fire engine during the 2004 season. Engine 82 spends its summer months stationed at Klamath Marsh NWR in Chiloquin, OR, and responds to numerous wildfires within the Klamath Falls dispatch area. Engine 82 is stationed at Tulelake NWR Headquarters for the remainder of the year.

Crew 5, Klamath Basin's Regional Prescribed Fire Module, redirects its efforts from prescribed fire activities to wildfire suppression. John Wood, assisted by John Donahue, leads crewmembers Brent Davis, Camden Bumpus and Eric Siemer. The crew supplements refuge engine forces and often staffs an additional type 6 wildland fire engine. Crewmembers also participate in the Department of the Interior (DOI) and Interagency Handcrew. Composed of resources from local DOI agencies and Forest Service personnel , the Interagency Handcrew responds to wildfire incidents throughout the nation.

Sometimes an entire crew or engine is not the primary need for an incident, and instead, a single resource (firefighter with specialized qualifications) is requested. Klamath Basin fire personnel commonly respond to large incidents in this capacity, serving for example as helicopter crewmembers, safety officers, incident management team members and beyond.

With fire season well underway, firefighters from the Klamath Basin are already making their way throughout the country, responding to incidents nationwide, and protecting our local resources. Keep informed about wildfire incidents locally and across the country by visiting our website at *http://klamathbasinrefuges.fws.gov/fire*.

Engine 81 on scene of Beaver Lakes Complex, Idaho, 2003

NEW GIS CAPABILITIES AND WHAT THIS MEANS FOR REFUGE MANAGEMENT

Carl Millegan
Refuge Operations Specialist

(Continued from Page 3)

Finally, in April, 2004, nearly 2 years after the start of the project the information made it to the refuge. We got a computer system to store all the data the right software to run the data and hopefully, the right person to answer the questions.

So, what does all this mean? From a maintenance and Biological stand point, it means we can solve several problems we have had moving water from place to place over the years. We can look at the topography and tell where the water wants to go. We can determine to what elevation we need to set water control structures, for the best efficiency in water movement. From an engineering point of view, we will be able to talk to our regional and Washington offices and ask for money we need to improve the water distribution system. From a biological standpoint we can decide on the best way to flood the refuge to get the best response from our seasonal wetland units. From the refuge view we will be able to answer just about any question we need to when it comes to on the ground projects.

GIS is the way of the future in land management and we need to get on board as fast as we possibly can. It will benefit us, the habitat and the wildlife we so cherish.

What's Happening at Klamath Marsh NWR?

Walt Ford
Refuge Manager

Grasshoppers Galore

Those of you that read last summer's newsletter will recall that Klamath Marsh NWR had an abundance of grasshoppers during the summer of 2003. The Clearwinged grasshoppers (*Camnula pellucida*), native to Klamath Marsh, have been compared to cows due to their ability to strip a field of grass bare in a couple of weeks. The surveys that have been done this year revealed grasshopper densities of up to 1,000 per square yard! Those areas have already been stripped bare and the grasshoppers are rapidly marching into new areas.

The grasshoppers are no larger than a small grain of rice when they hatch. The grasshoppers then undergo four additional development stages, known as instars, before reaching the adult stage. Once a grasshopper hatches it takes approximately five weeks to reach the adult stage. Only the adult Clearwinged grasshopper is capable of flight. As this is being written, the number of grasshoppers taking wing is on a rapid upswing. It is expected that the majority of the grasshoppers will be flying by the middle of July. The number of grasshoppers will likely remain high until mid-August when they will begin to diminish due to their life cycle coming to an end.

The large number of grasshoppers is obviously of great concern to the adjoining private ranch land. Most of the ranchers that adjoin the Refuge undertook a grasshopper control program by way of an aerial application of Dimilin® during mid-June. Dimilin® interferes with the development of chitin (exoskeleton), which is essential for the grasshopper as it matures from one instar to the next. Dimilin® is ineffective against adult grasshoppers, their exoskeleton is already formed. The Refuge has requested assistance from the USDA's Animal Plant and Health Inspection Service (APHIS) for a very limited grasshopper control program. APHIS is the Federal Government agency tasked with the job of controlling grasshoppers on Federal Lands. The request to APHIS was submitted after complying with the required elements of NEPA, which included a public notification and comment period. The area in which grasshopper control has been requested is only about 600 acres and has a high density of grasshoppers that threaten to re-infest the ranch land that was previously treated. Treatment would consist of an application Carbaryl® bran bait. The bait (wheat bran flakes smaller than oatmeal flakes) will then need to be consumed by the grasshoppers to be effective. As this article is being written there has yet been no final decision to enact the requested control program.

Total Refuge acres currently containing a significant population (greater than 24/sq. yd.) of grasshoppers is estimated at 20,000 acres. Treating only 600 acres would hopefully provide an economic benefit to neighboring ranchers and still leave more than enough grasshoppers for the various wildlife species that now include hoppers in their daily diet. The grasshoppers are providing quite a feast to many species of birds, including Sandhill Crane, Western Meadowlark, Yellow-headed Blackbird, Common Raven, and undoubtedly many other species too. Non-bird species observed eating grasshoppers include ground squirrels, coyotes, and even humans, a daring father and son duo from Idaho! While I didn't personally witness this rare feat, I did learn of it from several reliable witnesses. They apparently claimed that the grasshoppers are naturally sweet, one of nature's candy. My advise to anyone wanting to try this natural delicacy? Remove those long back legs. This will prevent the grasshopper from jumping out of your mouth before you can swallow and it will also ensure that it doesn't get hung up on your tonsils! Bon appetit!

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Volunteers Needed !!!

Contact us on how you can become part of the team.

We especially, need volunteers to help with our Visitor Center operations .
So, if you would like to become part of a great team of Volunteers and Employees, meet new and interesting people and have an all around good time.

Then Don't Wait !!!!

Contact: Park Rangers David Champine or Jerry Ann King at (530) 667– 2231

What's Happening at Klamath Marsh NWR?

Walt Ford
Refuge Manager

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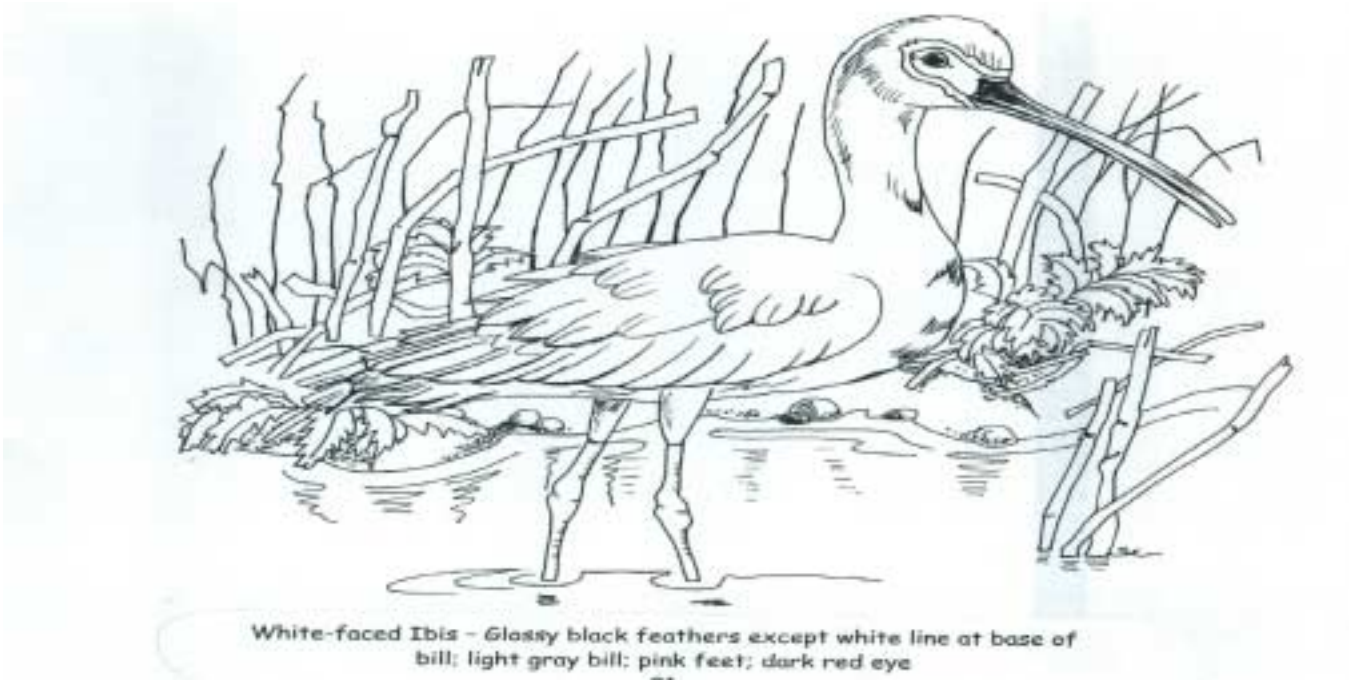
Wocus Bay Canoe Area Open

The Wocus Bay Canoe Area at Klamath Marsh NWR opens every year on July 1 and remains open through September 30. This late opening minimizes unintentional disturbance to waterfowl nesting and brood rearing activities. The Wocus Bay Canoe Launch is located on the east side of Wocus Bay. The easiest way to access it is via Silver Lake Highway. Turn south off the highway at Mile Post 9 (there is also a sign pointing the way) and travel south on an unimproved dirt road approximately 3.5 miles. Look for a sign with a canoe. This road takes you to the water's edge.

While the canoe area is technically open until September 30, don't count on it! During the summers of 2002 and 2003 the area was closed in early August due to drought conditions leaving only scattered puddles and an abundance of mud. The water level in the marsh at the present time is similar to what it was in 2002 and 2003. In other words, if you would like to explore this corner of Klamath Marsh you better not delay.

Headquarters Forest Unit Thinned

A contract to thin 25 acres of overstocked forest was recently completed. The unit was divided into two subunits. The contractor then cut most trees that were less than 10" dbh (diameter at breast height) in the east subunit and less than 8" dbh in the west subunit. Some trees that were less than the dbh limits were not cut due to other spacial requirements of the contract. All the contract work was done by hand, cutting and piling. The slash piles will be burned when they are sufficiently dry and after there is snow on the ground to prevent a fire escape. After the slash piles are burned, fire will be re-introduced into the thinned forest by way of a prescribed understory burn to remove accumulated pine duff and brush. This burn will be conducted either in the spring or in the fall, the exact timing is dependent on fuel moisture content and climatological conditions that provide a "burn window". The thinning of this unit was considered important to minimize fire danger to headquarters in the event of a wildfire. It was also important to improve the forest's long term health by reducing competition for available moisture. A healthy tree is also more resistant to insect damage.



Kid's Coloring Corner