

**Managing to Minimize Wildlife Disturbance**

**FAST FACTS**

# Out & About



## Black Brant Returning to Dungeness

*Revisiting beach closure two years later*

BY PAM SANGUINETTI

**M**y first summer at Dungeness National Wildlife Refuge was also my first encounter with public visitation gone wild. On hot, summer weekend days in 1994, the rhythmic sound of the pounding surf and piercing calls of gulls circling the overhead bluffs were replaced by the roar of visitors playing on the beach.

Famous for having one of the largest natural spits in the world, Dungeness NWR is a national destination for travelers. In addition to its wild beauty, the narrow, six-mile spit strewn with driftwood creates a shelter from breaking waves to form a productive bay. However, trouble was brewing in this small marine paradise with more than 110,000 people visiting annually. As visitation and outdoor activities increased in popularity, wildlife numbers began dropping. With only 640 acres to manage for both wildlife and visitor activities, the refuge staff had a challenge.

After undergoing a public involvement process, in 1997 the staff eliminated two public uses (jet-skiing and wind-surfing) that were not compatible with the

refuge purposes and identified an additional nine uses that required modification: hiking, wildlife observation, wildlife photography, non-motorized boating, motorized boating, recreational fishing/shell-fishing, jogging, beach use, and horseback riding.

To achieve these goals, the refuge staff began regulating public use activities by the season and area where they could occur. It divided the refuge into four zones using natural features, such as the driftwood backbone, to separate the areas. The refuge also established seasons based on the arrival and departure of migrating and breeding wildlife.

Public use activities were allowed only in certain areas of the shoreline. The spit's bayside shoreline was entirely closed to public access, except for the first half-mile, which is open during summer for shellfishing. Boat access was restricted to a single designated site. Refuge waters in Dungeness Bay were closed from October 1 to May 14; during the summer they were open, but with a 100-yard buffer zone to protect nesting birds and breeding harbor seals.



DALE HARMER

The public response was mixed at first, as some people were concerned that the spit was going to be closed to all public access. However, as people found that the seasonal closures still allowed for the most popular wildlife-dependent activities, they became more supportive. For example, people could continue to walk year-round to within a half-mile of the tip of the spit to visit a popular lighthouse, as long as they remained on the open water side of the driftwood. Boaters found the waters open just in time to set their traps for the crab season.

A major key to public acceptance was our strong volunteer program. Volunteers have continued to work at the entrance to the refuge, providing a friendly presence as they explained regulations and offered wildlife viewing suggestions.

The changes worked. Monitoring of indicator species before and after the changes in public use found that migrating black brant significantly increased their use of the refuge. Newly-established nursery areas for harbor seal mothers with their pups and black oystercatcher nests were wildly

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**Minimizing Wildlife Disturbance In the Pacific Region:**

- 41 people (30 refuges and 11 fisheries) are working with visitor services in the field.
- 86 refuge field stations, 22 fishery offices (including the RO), and 7 ecological services offices use volunteers
- 21 refuges and 8 hatcheries have visitor centers, contact stations, or contact areas.
- 40 refuges and 5 hatcheries have open-air kiosks.
- 32 refuges and 8 hatcheries have viewing structures, including decks, platforms, and blinds.
- 44 refuges and 4 hatcheries have trails or boardwalks.
- 15 refuges have auto tours spanning 860 miles of refuge roads.
- 49 refuges have hunting.
- 35 refuges and 6 hatcheries have fishing.
- 63 refuges and 13 hatcheries offer environmental education activities.

*\* These figures are taken from RMIS, real property inventories, and other regional records. Structures costing less than \$5,000 were not included in the count.*

**UPCOMING THEMES**

- SUMMER: Cultural Resources
- FALL: Comprehensive Conservation Planning

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## Out&About

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- Case Studies
- Outreach
- Accomplishments
- Trainings & Workshops
- Announcements
- Q & A
- Letters to the Editor
- Outreach Resources

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# Please Don't Disturb the Fish!

*Creating a solution that "wins" for visitors and salmon*

BY KEN MORRIS



JOHN IWIE/JUSEWS

Initial plans called for the boardwalk to veer away from the stream. Its actual location will probably be closer to the pond providing the view in the photograph above, while remaining an acceptable distance from spawning chum salmon.



group, which will offer guided tours during the salmon runs and help reinforce salmon viewing etiquette, as needed.

In addition to wildlife and habitat, the trail designers had other issues to remedy, such as shielding trailside views of the office and equipment buildings and offering things to see during the 11 months the chum were not present. Planning also included development of a streamside art trail, using pieces produced by students from the University of Washington's Public Arts Program (see "Art Meets Salmon," *Out & About*, Spring 2003.)

A separate boardwalk now allows the public to walk directly over tide-flats, and an "Amphitheater" will provide an outdoor setting for summer interpretive talks led by volunteers. Dusky Canada geese, shorebirds, songbirds, and for a lucky few, a rough-skinned newt ball or marbled murrelet can be seen along the trail. (What's a newt ball? Visit the refuge to find out!) ●

*Ken Morris is a visual information specialist in Visitor Services and Communications.*

While many folks don't think fish are sensitive to much of anything, anyone who has worked with them can tell you that the exact opposite is true. And so at Willapa NWR, an understanding of fish behavior influenced the design of their interpretive art trail, which for part of its length meanders along a stream used by chum salmon for spawning.

The idea for the trail originated from the need to provide a wildlife experience for visitors to the refuge office. Refuge manager Charlie Stenvall felt that they were losing a huge opportunity to interact with visitors by having nothing to offer at the office site. The area, he felt, could provide an intimate and stimulating setting for visitors. "There's a lot of sounds—the stream, the sound of fish thrashing, otter, and sometimes even bear feeding." From attending public meetings it was clear that the local community supported the idea.

An ongoing restoration effort near the office had already transformed a small, very degraded stream once sought by chum salmon and cutthroat trout into prime spawning habitat. Five years following restoration, 500 chum returned to this stream, cutthroat could be found in every pool, and juvenile Chinook and coho salmon were using the area as rearing habitat. Even salamander and frog species absent for years had reappeared.

The setting provided a tremendous opportunity to tell a good news story about what could be done to restore a small, degraded watershed—and perhaps inspire landowners with other ailing

streams. Another key message was that "small efforts add up." The refuge contains 30 such watersheds. "Five hundred chum may not seem like a lot," Stenvall says, "but multiply that by 30 and you have a lot of fish."

The challenge was how to get the visitors close to the salmon and other stream wildlife without damaging the habitat or scaring away the fish. "The sight of a person leaning over the stream may cause the fish to leave good spawning habitat," says Stenvall. "Also, when the fish first arrive they are extremely skittish. Later on they get quite a bit more sedate." This illustrates the concept that facilities must be custom-tailored to the wildlife and habitat of each site since chum salmon in larger or deeper streams may behave very differently from chum in small, shallow streams.

Another key issue was habitat degradation—largely trampling that causes sediment to clog the stream. The solution: an elevated boardwalk made of environmentally friendly pressure-treated wood, supported by pin footings. The boardwalk dictates where people can walk and could be placed where the salmon are less likely to be disturbed.

The public can still get close to the salmon. One spot is a staging area where salmon "hold" prior to spawning. Because the water is deep there, the salmon are practically immune to disturbance. Another good viewing area is a hot spawning site near a woody debris structure the refuge has installed. Help in visitor management will come from the refuge Friends



# What is WH16?

National planning team is interested in your ideas

BY JEAN HARRISON



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You have several dedicated partners and an active Friends group who will help you build the observation deck you've been wanting for several years. Visitors will be able to watch wintering waterfowl on a refuge wetland — one that is near a hunt area. How do you plan for this structure and its visitors to minimize disturbance to birds seeking sanctuary from the hunted area? Is there any new help on the horizon? Yes, from "WH16."

## What is WH16?

Within the Wildlife and Habitat section of *Fulfilling the Promise*, recommendation WH16 aims to "Identify thresholds of disturbance for public use programs and develop associated standards and mitigative techniques that can be applied, as appropriate, by individual refuges to reduce conflict and achieve balance between public use and wildlife."

According to the *Promises* document, "Visitation to and use of refuges has grown tremendously in recent decades and the Refuge System has been directed to facilitate priority public uses. However, refuge managers often lack the analytical and planning tools to balance resource protection and assure compatibility while offering

quality visitor programs." Lacking these tools, many observation decks, trails, and other needed visitor facilities may be "backburnered" for want of better assurances that wildlife won't be disturbed.

## A New Promises Team

Thanks to a recently established team, work on this important topic is beginning soon. Region 4 NWRS Chief Jon Andrew is overseeing the team; Kevin Kilcullen, branch chief for Visitor Services, NWRS, is the Washington Office liaison. When selected, the team members will include biology, refuge management, and visitor use professionals.

There is already interest in the work the team will undertake. "There are concerns about increasing visitation," notes Kilcullen. "We are offering more recreational opportunities, more programs, and more refuges open to the public; how much can we handle? How will these increases impact the resources?" Kilcullen is also concerned about the quality of our recreational programs, about one visitor use impacting another, such as the proximity of an observation deck to a hunting area.

"This type of information is some of the most valuable that refuge managers need on a day to day basis," according to Andrew, "and it is also one of the hardest to obtain. We're interested in what the team can do in one year that will help the field and stimulate thinking about this topic. We're also interested in the long term; what can we provide that will help the system for the next 10-15 years?"

## Excerpts from the January 2004 Charter

The following products and services will be provided by the team:

- Develop standards and/or guidelines addressing balanced resource management and visitor capacity issues.
- Examine existing regulations, policies and guidance affecting visitor and resource management programs on refuges. Identify potential policy revisions/updates that are needed to implement an effective visitor capacity initiative.
- Document existing examples of "best practices" and develop a list of recommended products, such as a "how-to" handbook, for refuges to use.
- Identify and develop training or other support services to assist refuges in managing their programs.
- Recommend locations and specific projects to initiate pilot projects on visitor capacity programs. Work with the identified refuges and others to develop and evaluate these programs, as appropriate.
- Evaluate the effectiveness of the team's work, products, and pilot projects annually. Develop a full evaluation of the initiative with recommendations for future work by September 2007.

## Interested? You Can Participate

Both Andrew and Kilcullen were emphatic in wanting input. The team's products will be sent out for nationwide review, and people can also contact Ken Morris, the Pacific Region representative, with ideas and questions. ●

Jean Harrison is chief of Visitor Services and Communications in the Regional Office.



J & K HOLLINGSWORTH

A new *Promises* team will look at visitor capacity, quality viewing, and other disturbance-related topics.

# Tools of the Trade

*A collection of ways to help minimize wildlife disturbance*



USFWS

KETTI SPOMER/USFWS

**W**e seek to provide a quality experience for our visitors to national wildlife refuges and national fish hatcheries. Our challenge is to find ways to offer fish and wildlife-oriented recreation while minimizing disturbance to wildlife.

Disturbance can be direct, such as causing animals to leave, even abandon their young. Or it can be more subtle, such as causing animals to spend less time feeding or relocate to less suitable habitat. Often, disturbance can be minimized or eliminated through thoughtful planning and good facility design. Here is a short list of tried and true methods to minimize wildlife disturbance. Feel free to contact the refuges or hatcheries mentioned as examples. Let the editor (Jeanne\_Clark@fws.gov) know if you can add to our list of resources.

**Create buffer zones or inviolate sanctuaries.** A buffer zone is a no-use area located between people and wildlife. The intent is to reduce human-related stress to wildlife, while still providing a quality wildlife viewing experience. Buffer zones are considered any time new trails and structures are developed, but they are sometimes added to existing settings. In some cases, existing cliffs, water, or other barriers can serve as buffers. The size of the buffer varies from species to species, or even within a species, depending on the season and the species' life cycle. For example, colonial nesting seabirds may require buffer zones of 500 yards or more. By contrast, elk at San Luis NWR that are protected by fences may tolerate much

closer human proximity. Buffer zones created by beach closures have been established at Willapa and Guadalupe-Nipomo Dunes NWRs to protect western snowy plovers. They are also used at Three Arch Rocks, Oregon Islands, San Juan Islands, Protection Island, Baskett Slough, and Tijuana Slough NWRs. Auto tours, fencing, and seasonal area closures all function as buffers that minimize disturbance.

**Use screening or natural barriers.**

Visitor use can sometimes be facilitated, or even improved, by planting vegetative screens or taking advantage of screening provided by existing vegetation or topography. Screens often include “windows” at selected sites where visitors are less likely to disturb wildlife. A cliff or bend of a river that serves as a barrier may also provide outstanding viewing. The art trail at Willapa NWR includes several vegetative screens that limit sight access to the stream, providing privacy for the spawning fish. Screening is being used at a new trail planned at Tualatin River NWR. Overlooks at Columbia and Malheur NWRs provide a barrier—and good viewing. Mudflats at Grays Harbor NWR help keep visitors on the boardwalk; the structure provides visitors with a satisfying viewing experience, so there is no need for them to cut across the mudflats for a better view.

**Create and restore habitat.** When it isn't possible to risk disturbance in one area, it may be possible to develop or restore comparable habitat in another area *specifically* to accommodate visitor use. Visitor access at Stone Lakes NWR

currently occurs in a narrow band of wetlands hemmed in on one side by Interstate 5. Views of the wetland are distant. To allow closer views and prevent disturbance, the refuge has developed a new wetland specifically for its environmental education and wildlife viewing programs. Sacramento NWR also developed a wetland next to the refuge headquarters specifically for wildlife viewing.

**Viewing /photography blinds.** Some birders and photographers are willing to invest waiting time to see their quarry. Carefully camouflaged blinds and screened approaches can offer stunning close-up views of species that would normally flush or are too secretive to appear. Blind construction and location is everything, with attention given to comfort, the angle of the sun, and other environmental factors. Both Sacramento and Klamath NWRs have reservation-only blind programs that are highly popular with amateur and professional shutterbugs alike. Leavenworth NFH has two camouflaged viewing blinds along a popular trail. At Cape Meares, two new decks to view wildlife on its cliffs and on Three Arch Rocks and Oregon Islands were specifically built to reduce deck vibration while viewing through scopes and using cameras with long lenses.

**Spotting scopes.** Wildlife near a trail or facility may move farther away when people are present. You can bring these views



USFWS



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Viewing decks buffered by space and alternative forms of transporting visitors, such as the horse-drawn sleigh at the National Elk Refuge, can help reduce disturbance to wildlife and habitat.

into focus by providing a permanently mounted spotting scope. Modern scopes are durable and weather-resistant. They are not vandal-proof, so they should be located in a secure setting. Numerous refuges use spotting scopes, including Kilauea Point, Stone Lakes, Sacramento, Nisqually, Sweetwater Marsh, and Oregon Islands.

**Remote cameras and viewing chambers.** You can bring easily-disturbed species into view with technology and creative design. Cape Meares NWR has installed a live video camera to observe nesting peregrine falcons. An underwater viewing chamber at Little White Salmon NFH allows close-up views of salmon. A “refugium” for endangered pupfish at Desert NWR includes viewing windows.

**Auto tours.** Some refuges have become so popular they have had to limit access on foot, but the same species are often not bothered by people viewing from moving vehicles. Sacramento and Ridgefield NWRs both developed auto tours to cope with disturbance to wetland species. Each produced humorous signage and support materials to keep people in their vehicles, but make it a quality experience. In laying out the route, they also included stretch and view areas where visitors could leave their vehicles without disturbing the wildlife. Camas NWR has an auto tour route and San Luis NWR has four, some for more than 25 years. Malheur NWR has had an auto tour route since the Center Patrol Route was built in the 1930s.

**Alternative forms of transportation.** As refuges become more congested or access is limited, alternative forms of transportation are gaining in popularity. They have been in use for some time at Santa Ana (Texas), Ding Darling (Florida), National Elk Refuge (Wyoming), and Kenai (Alaska) NWRs. Kilauea Point may be the first

Region 1 refuge to use a shuttle service; they are now conducting a feasibility study funded with Federal Highway Administration money to see if this is a viable way to get people into the small, but highly-visited, refuge. For more information, contact Nathan Caldwell at 503/231-2025.

TARPON BAY EXPLORERS



Ding Darling's tram, in operation five years, reduces traffic and stress on wildlife, and provides a great interpretive opportunity.

**Trails, boardwalks, viewing structures, and other facilities.** One of the most successful ways to minimize disturbance is through careful design and placement of facilities. Wildlife can more easily acclimate to human presence when people stay within well-defined areas. Designers have moved away from huge, imposing structures to those that meld quietly into the environment and provide a window to the setting, not separation from it. Once wildlife needs have been understood, there are numerous considerations, from site selection and development, to facility design and parallel interpretive development. For inspiration regarding visitor centers, contact Nisqually, Kilauea Point, and Tijuana Slough NWRs. For environmental education centers, consider San Francisco Bay NWR. For smaller visitor contact stations, see Oregon Coastal Refuges headquarters. For ideas for viewing structures, see Stone Lakes, Sacramento, Sonny Bono Salton Sea, San Joaquin River, Toppenish, Merced, and Malheur NWRs. For trails and boardwalks, consider Willapa, Nisqually, Grays Harbor, and Kealia Pond (to be completed summer 2004) NWRs.

**Create a “tradition of use.”** Wildlife can learn and adjust to the daily activity patterns of people. If people visit at definite, predictable times and places, wildlife behavior can also become more predictable; they will tend to use the same area from day to day or year to year. For example, if hunts occur on a predictable schedule, wildlife use of hunt areas may increase on non-hunt days.

**Modify visitor access.** The flight distance of many animals varies according to how humans move in the landscape, the season, the amount of sanctuary available, or even the time of day. Sometimes the most effective way to minimize disturbance is to modify human access; for example, allow viewing from a vehicle but not on foot, allow only non-motorized boats, or set limits on the number of people who can visit. The ultimate control is to seasonally or permanently close areas where disturbance can't be remedied in other ways and the status of the species population cannot tolerate the potential of loss through disturbance.



USFWS

Some refuges with hunting and fishing programs use time and space zoning to minimize conflicts (and safety risks) between hunters and anglers or other visitors. Dungeness NWR went through a lengthy public process to make major changes in refuge access, resulting in closed areas, no-wake zones, and areas accessible by reservation-only. Pahrnagat NWR allows only non-motorized boats or those with electric motors. Modoc NWR limits the boating season and

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YVETTE DONOVAN/USFWS

Wildlife that are disturbed by people walking often habituate to people viewing from vehicles.





# Clean Up at Farallon NWR

*It takes determined partners and a lot of logistics*

BY JESSE IRWIN



PHOTOS BY JESSE IRWIN/USEWS



The debris of centuries of human presence is hauled off of Farallon NWR to help nesting seabirds.

In the aftermath of a century and a half of sealing, egg wars, and Navy and Coast Guard occupation, Southeast Farallon Island continues to return to the birds. Farallon National Wildlife Refuge consists of four groups of rocky islands 28 miles off the coast of San Francisco. Over 300,000 seabirds of 12 species nest on the 211 acres.

For such a small piece of land, the task of managing it is daunting. Every project requires extensive planning and many partners. The refuge has a cooperative agreement with Point Reyes Bird Observatory (PRBO), a non-profit research organization, to conduct seabird and pinniped monitoring and research. PRBO has enlisted the Farallon Patrol, a group of volunteer sailboat owners, to provide transportation to and from

*For such a small piece of land, the task of managing it is daunting.*

the island for personnel and supplies. This rare partnership has provided more than 30 years of data.

The Coast Guard still maintains the lighthouse, and a recent cooperative clean-up project should improve habitat and safety for nesting seabirds, arboreal salamanders—and wandering biologists. The October 2003 project consisted of removing debris left over from 150 years of human inhabitation. The highest priorities for removal were items that posed a contaminant threat or were the most detrimental to habitat—such as a pair of 5,000-gallon diesel tanks, toppled radio antennae, an old wooden

derrick, and a maze of rusting pipes. It was an exercise in logistical planning requiring brute strength, patience, and some luck.

Coast Guard project manager Roy Clark and a work party of five Coast Guard volunteers collected and prepared the debris for removal. They spent two exhausting days cutting, grinding, and moving abandoned pipes and a huge support system for the toppled antennae. In less than a day, the volunteers collected over 1,000 feet of pipe.

The Coast Guard hired a contractor for hazardous materials clean-up and removal of the debris, which was required to complete the work in nine days in order to minimize resource impacts. As luck sometimes goes, the private helicopter company originally contracted for the job was called away on wildfires. So the National Guard was called in to move the tanks and debris from the island to the vessel White Holly. Dense fog rolled in during the removal phase, delaying project completion for several days. Both the National Guard and the White Holly had to return to port, forcing us to develop a “Plan B” (or was it “Z” by now?). Luckily, another helicopter company agreed to sling-load the remaining debris to the mainland.

While many refuges must focus on visitor-related disturbance, our concern at Farallon was preventing undue disturbance as our partners tried to improve island habitat and safety. For example, Cassin’s and rhinoceros auklets return throughout the year for roosting and “maintenance” of their nesting burrows. With so many birds

nesting on such a small area, demand for burrow sites is high. Removal of the diesel tanks and containment structure would make a 400-square foot area available for potential burrow sites for nesting. So as soon as the construction crew arrived, we showed them how to avoid collapsing existing burrows (all unoccupied at that time of year) and what to do if this occurred.

Removing the old, corroded diesel storage system reduced the chances of a spill occurring on the island. A proposal is moving forward that will use cement blocks from the containment structure to build a ledge for nesting murrelets. This will allow the colony to continue expansion and reduce disturbance caused by biologists as they monitor. A Section 7 assessment was also completed to determine the best way to avoid disturbing the listed Steller’s sea lion and brown pelican.

Although the profile of these rocky islands still resembles the “Pacific Ocean’s rotten teeth,” the habitat now looks more like it did when Sir Francis Drake restocked his food supplies with Farallon seal meat. The refuge and its partners are continuing with plans and logistics to remove unnecessary infrastructure and improve habitat. The birds and pinnipeds keep returning. The biologists keep watching. And the pipes keep rusting. It is the Farallon way. ●

*Jesse Irwin is the Farallon Refuge Operations Specialist.*

# Irrigation Ponds, Selenium, and Waterbirds

*Partnerships test new management and lead to legislation*

BY TOM MAURER AND JOE SKORUPA

Irrigation in California's San Joaquin Valley has brought cotton, grapes, and asparagus to an arid land, but this prosperity does not come without problems. Most west side valley soils do not adequately drain irrigation water. Over time, the shallow groundwater reaches the root zones of plants, building up salts and killing the crop. In the most troubled areas, pumps move salty water down miles of buried drainage pipe to 100 to 1,000-acre ponds to evaporate. This salty water contains selenium, an essential nutrient in small quantities, but toxic at slightly higher levels.



JOE SKORUPA/USFWS

In this arid climate, any surface water quickly attracts shorebirds and waterfowl. It was not long before Fish and Wildlife Service biologists documented death and deformities in many bird species caused by the selenium in the ponds.

In an effort to reduce the impacts of these large evaporation ponds, a few farmers began to manage the drain water on a small scale. Good intentions aside, these early integrated on-farm drainage management (IFDM) systems allowed too much water to collect on fields and ponds, attracting birds to selenium-contaminated food in the water. The California Department of Food and Agriculture recognized the potential of IFDM systems and came to the Service

and the California Department of Water Resources for technical assistance. The three agencies then recruited farmers and other agencies willing to work on a demonstration project.

Service biologists from the Environmental Contaminants Division in Sacramento designed a study to determine if birds living on or near IFDM systems were exposed to harmful levels of selenium. The U.S. Bureau of Reclamation, California Department of Fish and Game, California Regional Water Quality Control Board, and the Westside Resource Conservation District funded parallel studies to collect data on selenium in water, soil, vegetation, invertebrates, reptiles, and mammals. Unrestricted data sharing between these partners is a prominent feature of this project.

The project required constant feedback between Service biologists, other agency staff, and the farmers to coordinate data collection and real-time adaptive management of the systems. Close coordination with the farmers allowed monitoring personnel to be present when significant agricultural actions occurred, such as flood irrigating or crop harvesting. When the monitoring revealed something new, we immediately contacted the farmers to relay the results and make management recommendations. Each year, with positive attitudes and a strong desire to be good wildlife stewards, the farmers worked hard to modify their IFDM systems and, as a result, we have now documented significant reductions in selenium exposure to birds and other wildlife.

Other farmers and drainage professionals have learned of the projects'

financial and environmental success through word of mouth, facility tours, project reports, presentations at annual University of California salinity drainage program conferences, and an article in *Currents*, a newsletter of the U.C. Center for Water Resources. John Diener, one of our original volunteer growers, received recognition for his successful demonstration project by winning the "Irrigator of the Year" award from the *California Grower Magazine*.

In response to the encouraging results of this project, the California State Legislature passed a bill in 2003 to streamline the permitting process for the small evaporation ponds associated with IFDM systems. The new law requires the California State Water Resources Control Board to implement wildlife protection standards in direct consultation with the Service. The law and regulations also provide incentives for farmers to develop more IFDM systems. The Department of Water Resources, with our assistance, has also developed a Best Management Practices guidance document for avoiding wildlife impacts at IFDM systems.

None of this would have been possible without strong partnerships and outreach. With the Service's help, farmers can now grow highly-valued crops on once salty farmland — and protect San Joaquin Valley's wildlife. ●

*Tom Maurer is chief of the Investigations and Prevention Branch of the Environmental Contaminants Division within the Sacramento Fish and Wildlife Office and Dr. Joseph Skorupa is a Clean Water Act biologist in the Division of Environmental Quality, USFWS/Washington Office.*

A cooperative demonstration project with farmers helped reduce the exposure of birds to selenium found in drainage water and yield new legal protections for wildlife.



GARY ZAHM/USFWS

Partners watched black-necked stilts throughout the project. As adjustments were made, the rate of embryo deformity in stilt eggs declined from more than 50% to zero.



JOE SKORUPA/USFWS



## Meet Field Notable Art Shine

*Combining business savvy, ease with people, and passion for the outdoors*

BY JEANNE CLARK

JIM MOCK/FRIENDS OF MCRP



Most people with professional resource agency jobs received a college degree, took a civil service exam, and signed on with the government. Some, like Art Shine, took a detour, then came in the back door. As a young graduate of the University of Vermont with a background in finance, and natural resources management, Shine snagged a job at Merrill Lynch. After an MBA and seven years, he was tired of loving nature only on weekends and traded his suit and tie for some rubber boots and a job with the Corps of Engineers in Region 1. He easily parlayed his skill as a bean counter to his new position as a salmon counter and ranger with the Corps.

Salmon gave way to work on the Corps' Bonneville and McNary dam projects. While attending a small town public meeting, the friendly "Corps guy" impressed Project Leader Gary Hagedorn, who encouraged him to apply for a biological technician job at Umatilla NWR. Jobs as an outdoor recreation planner and law enforcement officer have followed.

"It's really not that different from the business world, where I was developing new businesses and cultivating new clients," says Shine. "The setting is sure different, but people are people. I really like refuges. They're not too bureaucratic and if you've got a vision, you can get a lot done."

Figuring to tap in on Shine's Corps contacts and experience, Mid-Columbia Complex Deputy Refuge Project Leader Dave Linehan asked Shine if he would talk to people in the community about the impending transfer of Corps

land to McNary NWR. "I did a series of public meetings with hunting groups, horse clubs, and others to assess how people felt about the transfer. That's how I broke into outreach," says Shine.

The five refuges of the Mid-Columbia Complex where Shine works are in the midst of some of Oregon's and Washington's strongest hunting and fishing communities. The McNary and Umatilla hunting and fishing programs are among the largest in the Pacific Region. "Much of my job is just communication, but it can't be one way," says Shine. "I have to be a good listener and tailor my message to the audience. Sometimes I'm dealing with poachers or other criminals who aren't happy to see me," he confides. "People don't learn much from getting handed a citation, so I try to find a way to get a buy in, to educate them." Shine's approach really works, according to Hagedorn. "He's developed a good relationship with our user and interest groups, even over controversial issues. Art's focus on good communication is a tremendous asset."

His strong community contacts also helped Shine convert good will into a Friends group and education center at McNary. This big, friendly guy can talk with everyone, from hunters to scientists. "They are an eclectic group of people," observes Shine. "Many are retirees from the Hanford Nuclear Facility. Imagine a guy with a Ph.D offering to put wood chips on the trail. I think my background in finance has made me comfortable dealing with highly educated people." Hagedorn says that "Art's communication style is relaxed and personable, yet

he always clearly represents the Service. He knows when to be flexible—more time-honored evidence of his good business sense."

Whether it's with the community or his peers, Shine seems to, well, shine, and cultivate respect. Refuge Manager Charlie Stenvall was sad to see him leave Willapa. "Art did some tremendous work here," says Stenvall. "None more important than revamping our camping/archery elk hunt program. It was a chaotic mess with dilapidated campsites, no signing, overcrowding, and safety problems. Art devised a plan to revamp and clearly identify all the campgrounds, instituted a reservation system to eliminate overcrowding, and oversaw the changes to be sure they worked."

He has helped develop information panels, worked with oystermen to teach third and fourth graders about the importance of clean bay water, institute



changes at a public boat launch, and handle logistics for a Director's visit and many other gatherings and events. "Art is a detail person who is really devoted to outreach," continues Stenvall. "I knew I never had to worry about anything falling through the cracks with Art involved." ●

*Jeanne Clark is editor of Out & About.*

DAVE LINEHAN/USFWS



Friends of Mid-Columbia River Refuges worked with McNary NWR to celebrate the Refuge System Centennial Stamp and 100<sup>th</sup> birthday. Above, Art Shine guides the Blue Goose mascot during the refuge event.



# “No” to Access, But “Yes” to Refuge Support

*Outreach is vital when access is changed*

BY ARTHUR SHINE



JIM MOCK/FRIENDS OF MCRR

**E**astern Washington is an area of little rain and wide open spaces. Its signature shrub-steppe habitat is a product of this dry environment. Here, disturbed areas may take decades to recover. And once the land is disturbed, non-native plant and animal species are quick to invade.

Most visitors to the five Mid-Columbia River refuges (McNary, Umatilla, Toppenish, Cold Springs, and McKay) often see only the vast, open space, and not a fragile landscape. Many find it difficult to understand why they can't go everywhere on the refuge, expecting access to the refuge to be the same as their local park.

The recent addition of 12,000 acres of “habitat management unit” (HMU) lands from the Corps of Engineers to McNary NWR highlights the difference in management philosophies between the two agencies. Many of the new areas have easily disturbed soils or provide critical nesting and brooding areas for waterfowl. With the Corps, public use of its HMU lands was as important as the wildlife itself. With the Service, wildlife is first. To minimize disturbance to wildlife and accomplish the Service's mission, some of the newly added HMU lands would need to be seasonally closed to the public.

We knew that the sudden appearance of “unauthorized entry prohibited” signs would incite bad feelings. From birders and hunters to school children, people have a strong, proprietary feeling about the refuge. With the Corps land access change and other refuge issues, we have relied upon ongoing and targeted outreach within the community to

prevent small issues from snowballing into big ones. We accomplish this in a number of ways:

- **Community groups:** Rotary clubs, hunting groups, schools, and other community groups are always looking for speakers. We try to use these opportunities to stand face to face with our neighbors and explain why areas must be closed or other timely issues, or simply talk about the refuge. A simple, 15-minute presentation can often yield quick understanding and willing compliance.

- **Friends groups:** We are fortunate to have an active Friends group (Friends of the Mid-Columbia River Refuges). Our Friends support our refuges and have strong ties within the community. We make it a point to help them understand changes that will affect the public. We include them in planning processes, such as the CCP, to provide a bigger picture of refuge management. And we see big dividends from this investment because often the members meet and talk with more people in a single week than the refuge staff. A well-informed volunteer may also have a larger impact than a uniformed staff member because he or she is seen as a concerned citizen, not a government bureaucrat.

- **Law enforcement:** Having refuge officers in the field, meeting the public and, when necessary, citing offenders drives home the importance of refuge use restrictions. Contrary to popular belief, most contacts between the public and refuge officers are positive

encounters. As a dual function (collateral duty) refuge officer, I enjoy being able to talk with thousands of hunters, anglers, and other visitors each year. I try to be a good listener. I learn a lot about their interests in the refuge and I am often able to use their interests as a catalyst for them to better understand refuge management challenges.

Day-to-day outreach is a vital investment when it comes to minimizing

This very popular fire demonstration helped the public understand the skills and tools required for fighting fires in the arid Mid-Columbia region.

*To minimize disturbance to wildlife and accomplish the Service's mission, some of the newly added HMU lands would need to be seasonally closed to the public.*

wildlife disturbance—or making other changes in your programs. A recent closure of a popular hunting area and former Corps HMU called Casey Pond was expected to generate a great amount of local controversy. But because of the trust developed between the community and the complex, due in part to its philosophy of inclusion and continual outreach, the hunting closure proceeded with very few problems. We found a way to stop disturbance without harming the overall goodwill we receive from the community. ●

*Arthur Shine is an outdoor recreation planner/refuge officer at Mid-Columbia River National Wildlife Refuge Complex.*

©CHUCK & GRACE BARTLETT

# Preserving Marine Resources

*The latest in Marine Wildlife Viewing Guidelines*

BY BOB GARRISON AND KAREN KILLEBREW

The general guidelines are just a starting point. Elephant seals, coral, and other sensitive marine species may require additional local restrictions.



PHOTOS BY BOB GARRISON

The popularity of snorkeling, whale watching, and other marine wildlife viewing has soared and with it comes inevitable conflicts between viewers and wildlife. To address these issues, the Fish and Wildlife Service joined forces with Watchable Wildlife, Inc., NOAA, NPS, The International

view the full-length version of the guidelines in English and Spanish at <http://www.naturetourismplanning.com>.

### Marine Wildlife Viewing Guidelines

**Learn before you go.** Read about the wildlife, viewing sites and local regulations to get the most from your wildlife viewing experience. Many species live only in specific habitats such as estuaries, coral reefs, sand dunes or the open ocean. Seasonal and daily cycles also influence when and where an animal may be located. Research on the Internet, buy regional viewing guidebooks, talk with local residents, and hire local guides to increase your chances of seeing marine wildlife.

**Keep your distance.** Use binoculars, spotting scopes, and cameras with zoom lenses to get a closer look. Marine wildlife may be very sensitive to human disturbance, and if cornered, they can harm the viewer or leave the area. If wildlife approaches you, stay calm and slowly back away or place boat engines in neutral. When closer encounters occur, do not make sudden moves or obstruct the travel path of the animals — let them have the unhindered “right of way.”

**Hands off.** Never touch, handle, or ride marine wildlife. Touching wildlife, or attempting to do so, can injure the

animal, put you at risk, and may also be illegal for certain species. The slimy coating on fish and many marine invertebrates protects the animal from infection and is easily rubbed off with a hand, glove or foot. Avoid using gloves when diving or snorkeling to minimize the temptation to touch. Remember, wild animals may bite, body slam or even pull you underwater if startled or threatened.

**Do not feed or attract marine wildlife.** Feeding or attempting to attract wildlife with food, decoys, sound, or light disrupts normal feeding cycles, may cause sickness or death from unnatural or contaminated food items, and habituates animals to people. Habituated animals are vulnerable to vessel strikes or vandalism, and can be dangerous to people.

**Never chase or harass wildlife.** Following a wild animal that is trying to escape is dangerous. Never completely surround the animal, trap an animal between a vessel and shore, block its escape route, or come between mother and young. When viewing from a boat, operate at slow speed, move parallel to the swimming animals, and avoid approaching head-on or from behind, and separating individuals from a group. If you are operating a non-motorized vessel, emit periodic noise to make wildlife aware of your presence and avoid surprise.

**Stay away from wildlife that appears abandoned or sick.** Some marine animals, such as seals, leave the water or are exposed at low tide as part of their natural life cycle — there may be nothing

CONTINUED ON PAGE 13

## *Our first project was to develop a set of universal marine wildlife viewing guidelines.*

Ecotourism Society, Whale and Dolphin Conservation Society, and Wildlife Conservation Society to form a Marine Wildlife Viewing Working Group to promote sustainable marine wildlife viewing. Diane Bowen, a fisheries program biologist in the Washington Office, represents the Service on the Working Group.

Our first project was to develop a set of universal marine wildlife viewing guidelines for use in outreach materials and programs. These were crafted at two workshops conducted by international marine wildlife authorities, with participants from around the world.

The Working Group’s next steps are to begin developing species- and recreation-specific guidelines that can further promote sustainable viewing activities. The Service is currently working to formally adopt the guidelines. You can



# Wildlife Watching at San Luis

25 years of auto tour routes

BY BOB PARRIS

Where can you see a white landscape of snow and Ross's geese, hundreds of thousands of waterfowl, tens of thousands of sand-hill cranes, thousands of shorebirds, long-billed curlews by the hundreds, tens of thousands of tricolored black-birds in breeding colonies, bugling tule elk, or aerial courtship flights of night-hawks? These spectacular gatherings are common at San Luis National Wildlife Refuge Complex, where the San Luis, Merced, and San Joaquin refuges together protect over 40,000 acres in California's San Joaquin Valley.

In the past century, changing land use has led to a large decline in valley habitats. Not surprisingly, the public is drawn to the spectacular and unique concentrations of wildlife that occur at these valley refuges. Our refuge staffs are challenged to offer opportunities to observe these magnificent wildlife gatherings while preventing or minimizing disturbance to them.

The solution has been to develop auto tour routes that provide access to sizable portions of the three refuges. While it may seem counter-intuitive to encourage vehicle use while trying to control wildlife disturbance, numerous studies have demonstrated that slow-moving vehicles cause less flight and movement by wildlife than visitors on foot. This is borne out at our complex, where wetlands along tour routes have similar wildlife use to those in closed areas; vehicles essentially serve as moving blinds for our visitors.

The complex has successfully used auto tour routes for over 25 years. The principal habitats — grasslands

interspersed with marshes — are open and provide a wide and long field of view, making for easy observation from a vehicle. We offer four auto tour routes, ranging from two to 10 miles long. All are open daily, from a half-hour before sunrise to a half-hour after sunset.

Tour routes are laid out as one-way loops. They were initially placed on existing refuge roads, which usually required widening, and were designed to highlight the habitats and reduce the sight of other vehicles. Grasslands or vegetative screens between the road and water's edge buffer the wetlands to reduce waterbird disturbance.



SHAWN MURPHY/USFWS

The routes begin with a kiosk with information about wildlife and habitats, wildlife sightings, and regulations. Posted 25 m.p.h. speed limits promote visitor safety and limit wildlife disturbance. Unobtrusive directional signage helps keep visitors oriented. Problems with vehicles have been minimal and the presence of patrolling refuge staff has prevented problems from developing.

Each route has a different theme, supported by interpretive panels along the route. The strategically-placed panels provide background on a variety of topics. On the elk viewing route, the interpretive panels focus on the elk and their California history. Another tour route describes the wetlands and waterbirds of the San Joaquin Valley,



JERRY BALDWIN

Waterbirds, such as the egret, are a major attraction on the auto tour routes.

while a third highlights wildlife and habitat management at the complex.

Most of the routes have observation platforms where visitors can stretch and observe from an elevated perch; free, permanently-mounted spotting scopes allow close-up views of wildlife.

**Numerous studies have demonstrated that slow-moving vehicles cause less flight and movement by wildlife than visitors on foot.**

Each route includes short walking trails located in shielded, riparian forests where visitors can see different wildlife, particularly songbirds, without disturbing species using the more open habitats.

Auto tours offer additional benefits: Photography is common due to the effectiveness of the vehicles as blinds and the routes provide easy refuge access for those with disabilities.

At San Luis, auto tour routes have offered many their first glimpse of San Joaquin Valley species, provided memories for a lifetime, and have allowed the complex to provide for visitor needs and meet the refuge mission of placing wildlife first. ●

Bob Parris is deputy refuge manager at San Luis NWR Complex.

**Fireworks and Nesting Don't Mix**

*CONTINUED FROM PAGE 16*

were also disturbed, including tufted puffins, pigeon guillemots, western gulls, and pelagic cormorants. Onlookers reported massive swirls of birds above the rocks throughout the night. Disturbance, by itself, is stressful for the adults. But when the distressed seabirds flee, they can inadvertently knock eggs and chicks into the water, or larger predators may take advantage of the unattended nest. The losses can be devastating.

In 2001, a new plan was hatched between HRAP, the City of Cannon Beach, and the staff from the Oregon Coast NWR Complex. Approximately 500 yards to the north and the same distance to the south of Haystack Rock, Jockey Cap Rock and Bird Rocks, areas of the beach were closed to all fireworks, even those that are legal. The compromise was that any fireworks dispatched



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This solution was pretty simple, inexpensive, and easy to execute. People have enjoyed lighting many varieties of showy fireworks for the past three years and the seabirds have clearly benefited from this respite from disturbance. Our nesting black oystercatchers returned to their favorite site below Haystack Rock and have raised young the past two years. We've also made some new friends in the process, who now better understand the seabird legacy we are trying to protect. ●

*Dawn Grafe is a refuge operations specialist at the Oregon Coast NWR Complex.*

**Black Brant Returning**

*CONTINUED FROM PAGE 1*

popular with visitors, who could easily observe without disturbing them. So was the surprise arrival of Caspian terns, which produced chicks for the first time in refuge history.

Just as important, the refuge is sharing these results through presentations to both the scientific and local communities. By sharing the outcome of the public use changes, we hope to invest in outreach to build community trust that will carry over into the upcoming development of a comprehensive conservation plan.

*Editor's Note: Soroptimist International of Port Angeles recently honored Pam with a "citizen of distinction award" for "exemplary character and integrity" and "significant contribution to the area of environment." Congratulations Pam!*

*Pam Sanguinetti is a biological science technician at Dungeness NWR.*

*Photo ©William E. Grenfell.*



ROY LOWE / USFWS

Friendly volunteers help enforce July 4th beach closure, helping to reduce disturbance of black oystercatchers and other nesting birds.

outside of these boundaries would be allowed until 11:00 p.m.

To promote the new program, HRAP volunteers distributed fliers around town. The refuge worked with partners to place articles in newspapers throughout the region, alerting visitors of the new restrictions. Beginning at 7:00 p.m. on July 4th, HRAP volunteers, FWS employees, and City Police set up cones at the closed zones to delineate the no fireworks boundary. Then a volunteer visited each family within the closed boundary to make sure they were aware of the rules. The partners came up with the messages to convey and HRAP and refuge employees trained the volunteers on how to approach the visitors.

UPCOMING EVENTS

APRIL  
24-25

**Heron Days**

WHERE: Lower Lake, CA  
CONTACT: [www.redbudaudubon.org](http://www.redbudaudubon.org)

23-25

**Kern Valley Bioregions Festival**

WHERE: Weldon, CA  
CONTACT: Festival coordinator  
800/350-7393  
[krpfriends@lightspeed.net](mailto:krpfriends@lightspeed.net)

30  
THROUGH  
MAY 2

**Grays Harbor Shorebird Festival**

WHERE: Hoquiam, WA  
CONTACT: Sheila McCartan  
360/753-9467

MAY  
1-31

**American Wetlands Month**

WHERE: Nationwide  
CONTACT: 800/284-4952  
<http://www.iwla.org>

7-9

**Spring Wings Festival**

WHERE: Fallon, NV  
CONTACT: 775/428-6452  
[www.springwings.org](http://www.springwings.org)

8

**International Migratory Bird Day**

WHERE: Nationwide  
CONTACT: [birds.fws.gov/imbd.html](http://birds.fws.gov/imbd.html)  
<http://www.americanbirding.org/imbd/imbdgen.htm>  
<http://www.birdday.org/imbd.htm>

8

**International Migratory Bird Day**

WHERE: Alviso, CA  
CONTACT: Don Edwards SF Bay NWR  
408/262-5513

8

**International Migratory Bird Day**

WHERE: Klamath Falls, OR  
CONTACT: Steve Hayner  
541/883-6916

8-9

**International Migratory Bird Day**

WHERE: Bonners Ferry, ID & British Columbia, Canada  
CONTACT: 208/267-3888

15

**Walk on the Wildside**

WHERE: Elk Grove, CA  
CONTACT: Amy Hopperstad  
916/775-4416  
[www.stonelakes.org](http://www.stonelakes.org)

JUNE  
5-13

**National Fishing and Boating Week**

WHERE: Nationwide  
CONTACT: [www.nationalfishingandboatingweek.org](http://www.nationalfishingandboatingweek.org)

27

**Carson NFH 6th Annual Open House**

WHERE: Carson, WA  
CONTACT: 509/427-5905



# Announcements

## Gardening for Wildlife

Minimizing disturbance to wildlife can sometimes mean making an effort to share space with wildlife where we live. Even a potted plant can feed a hummingbird or butterfly — if it is the right plant.

A variety of partners in the San Francisco Bay are cooperating on outreach urging people in urban landscapes to garden for wildlife. Native insects, amphibians, reptiles and small mammals can all benefit from the carefully chosen plantings. Native plants feed native wildlife, use minimal water, and do not require the pesticides and fertilizers required by exotics. Native plants make sense for wildlife, watersheds, and people. Or so was the message in “Gardening for Wildlife with Native Plants,” a 16-page insert that appeared in the January-March 2003 issue of *Bay Nature* magazine. Stories and 24 color photographs of several sample gardens explain the “how to,” inspiring budding green thumbs into action.

The initial magazine run of 10,850 was supplemented with 12,000 extra inserts that the partners provided to home gardeners, opinion leaders, water districts, and others. They went like hot cakes! These creative partners are now looking for funds for another press run of the popular publication, and have initiated native garden tours to keep this community involvement idea moving forward. Also, visit <http://www.dfw.state.or.us/NS/> to learn about the Oregon Department of Fish and Wildlife’s naturoscaping program and resources.

## Turn Roadside Trash into Good PR

Whenever he traveled along State Highway 55 north of Boise, Idaho, **Chris Starr** was annoyed by the litter-strewn road side. Instead of just fuming, for several years Starr, operations and

evaluations coordinator for the Lower Snake River Compensation Office, has led, cajoled, and begged people in both the Compensation and Ecological Services offices to participate in a twice-yearly highway cleanup.

It has yielded some great P.R. for the Service. Their efforts are recognized by a sign advertising that Fish and Wildlife Service employees help pick up litter on a specific stretch of the roadway. And twice each year, as people travel this popular highway, they see Service employees volunteering their time to help out in the community.

Kudos to Chris Starr for his initiative and to his office mates for backing a good idea. For more information about “Adopt a Highway” programs, contact your state Department of Transportation.

## Grants for Tribes

In January, 13 federally-recognized Indian Tribes in the Pacific Region received over \$3 million in Fish and Wildlife Service grants from the Tribal Landowner Incentive Program (TLIP) and Tribal Wildlife Grant Program (TWG). The funds supported 16 projects involving wildlife and imperiled species on tribal lands. Samples of projects include \$250,000 for the Nevada Duckwater Tribe for restoration of critical habitat for the Railroad Valley springfish, \$50,000 for the Oregon Klamath Tribe for a mule deer distribution, habitat use and population project, and \$199,841 for the Washington Yakama Nation for a shrub-steppe rehabilitation and management plan.

The maximum award for the TLIP program is \$200,000, with a required minimum 25 percent match from non-federal funds. The maximum award for the TWG program is \$250,000. For more information, contact Scott Aikin at 503/231-6123.

## Preserving Marine Resources

CONTINUED FROM PAGE 10

wrong with them. Young animals that appear to be orphaned may actually be under the watchful eye of a nearby parent. An animal that is sick or injured is already vulnerable and may be more likely to bite. If you think an animal is in trouble, contact the local authorities for advice.

**Wildlife and pets don’t mix.** Wild animals can injure and spread diseases to pets, and in turn, pets can harm and disturb wildlife. For example, wild animals recognize dogs as predators and quickly flee when they see or smell dogs. If you are traveling with a pet, always keep them on a leash and away from areas frequented by marine wildlife.

**Lend a hand with trash removal.** Human garbage is one of the greatest threats to marine wildlife. Carry a trash bag with you and pick up litter found along the shore and in the water. Plastic bags, floating debris, and monofilament line pose the greatest risk to wildlife.

**Help others to become responsible wildlife watchers and tour operators.** Speak up if you notice other viewers or tour operators behaving in a way that disturbs the wildlife or other viewers, or impacts sensitive habitats. Be friendly, respectful, and discreet when approaching others. When operating a boat, lead by example and reduce your speed in areas frequented by marine wildlife, anchor properly and encourage others to do the same. Violations of the law should be reported to local authorities. ●

*Bob Garrison is a board member of Watchable Wildlife, Inc. and the owner of Nature Tourism Planning in Sacramento, CA at <http://www.naturetourismplanning.com>.*

*Karen Killebrew is the Outreach Coordinator for California Watchable Wildlife at [www.CAWatchableWildlife.org](http://www.CAWatchableWildlife.org).*

BOB GARRISON



Signs, volunteers, and printed materials can help reinforce viewing guidelines.

**Tools of the Trade**

CONTINUED FROM PAGE 4

designates no-wake zones with buoys to protect goose broods and other wildlife. Ruby Lake NWR seasonally restricts boat access, motor speed, or type of motor that can be used to protect overwater nesters from wakes. Similar seasonal and motor restrictions are in place at Deer Flat NWR. Here, shoreline fishing is also seasonally restricted during nesting season. Don Edwards San Francisco Bay NWR recommends non-motorized boats only in some areas and seasonally offers a free weekend shuttle service to carry anglers to a fishing pier.

Sacramento NWRC has improved hunting opportunity by managing time of use and creating hunting zones. Many refuges that allow pets require them to be on leash (unless in use as retrievers while hunting). Be sure to check the Resources Box on this page for more ideas.

**Create interpretive materials.** Whether you're trying to seasonally close an area or are restricting boat access, people respond best when they are informed. Interpretive signage, panels, and written materials are a vital part of changing visitor use patterns because they can help visitors understand why the change is occurring. Panels at Turnbull NWR explain natural history—and restrictions—on the Columbia Plateau Trail. Posters at several Oregon ports help Oregon Coastal refuges prevent seabird and pinniped harassment. Interpretive signs at marinas in San Juan Islands and near Protection Island NWRs raise public awareness and advise boaters of buffer zones around refuge islands.

**Use volunteers.** Volunteers perform about 20 percent of the needed work on national wildlife refuges, and a large share of the effort at many refuges is public contact. Trained volunteers, armed with support literature and other messages, can gain both understanding of closures or other restrictions and win support for the refuge. Guadalupe-

Nipomo Dunes NWR and its partners reinforce their seasonal beach closures for nesting snowy plovers with roving volunteers, armed with information about the imperiled birds. The staff at Kilauea Point could not open its doors to the public without its volunteers, who not only interpret but also assure that nesting seabirds (and the endangered nene) are not disturbed. At Oregon Islands NWR, volunteers provide spotting scopes and informational literature about wildlife to educate visitors about nesting birds. Volunteers also interact with the public at Leavenworth NFH, and Dungeness, Seal Beach, Stone Lakes, and many other NWRs.

**Viewing tips and ethics.** People often inadvertently disturb wildlife because they just don't know better! They leave a trail to get closer to the edge of a pond. They wade into the water to get a close-up photograph of a bird. They laugh and walk in a noisy group, unaware that wildlife is fleeing as they approach. The best defense for wildlife is a good offense. Use interpretive materials, staff, and volunteers to provide viewing tips and discuss ethics. Make sure these materials are available relatively soon after they enter the refuge. And reinforce the message often, in a friendly way. You can find some boilerplate viewing tips and ethics that you can modify for your site at [www.naturetourismplanning.org](http://www.naturetourismplanning.org) and <http://www.americanbirding.org/abaethics.htm>. Consider sponsoring wildlife viewing workshops to teach viewing etiquette.

**Other resources.** Be sure to look at the Resources Column on this page for great publications and websites. Consider classes in interpretation design offered by NCTC. For in-house expertise, don't hesitate to call Visitor Services and Communication (503/231-6176), External Affairs (503/231-6120), and Engineering (503/231-6145). ●

**RESOURCES****Managing Visitor Use and Disturbance of Waterbirds: A Literature Review of Impacts and Mitigation Measures**

By Anita Delong

This literature review was prepared for Stillwater NWR as part of its Comprehensive Conservation Plan. The review includes a wealth of information and research, ranging from the general response of wildlife to disturbance to impacts and mitigation measures for activities associated with wildlife-dependent recreation. Go to <http://stillwater.fws.gov/litreview.pdf>.

**A Practical Handbook: Providing Positive Wildlife Viewing Experiences**

By Debra Richie Oberbillig

This outstanding publication by the Colorado Division of Wildlife and Watchable Wildlife, Inc. provides practical planning tips on matching viewers and experiences, handling large and small groups of wildlife watchers, and designing viewing blinds, boardwalks, stream profile chambers and discovery trails. A special section focuses on the ethical challenges of viewing and several case studies offer success stories. The cost is \$10 plus handling. Go to <http://www.watchablewildlife.org/publications/propub.htm>.

**Everyone's Nature: Accessible Outdoor Facilities and Programs Using Universal Design**

By Carol Hunter

*Everyone's Nature* is an excellent, straightforward guide for maximizing visitor accessibility and enjoyment through universal design at all outdoor recreation facilities and programs. It includes reproducible checklists. The cost is \$19.95 plus handling. Go to <http://www.watchablewildlife.org/publications/propub.htm>.

**Public Access and Wildlife Compatibility Plan**

This plan developed by the San Francisco Bay Conservation and Development Commission includes information about minimizing wildlife disturbance. Go to [http://www.bcdc.ca.gov/inside/planning/reports/plan\\_reports.htm#3](http://www.bcdc.ca.gov/inside/planning/reports/plan_reports.htm#3).

**The Observer: Minimizing Impacts on Human Disturbance**

*The Observer*, a quarterly newsletter from Point Reyes Bird Observatory, devotes an entire issue to this topic, exploring recreational and research-related disturbance. Go to <http://www.prbo.org/cms/index.php> and select Observer 131.

**Wildlife Stewardship Guide: How to Safely View and Photograph Our Wildlife and Wildlands**

This brochure with excellent wildlife viewing etiquette tips is available from the Center for Wildlife Information, PO Box 8289, Missoula, MT 59807, 406/523-7750.



USFWS



Kiosks and other interpretive materials help can help shape and enrich the visitor experience.



# Help for Imperiled Snowy Plovers

*Partnerships and volunteers provide a solution*

BY CHRIS BARR AND CRISTINE SANDOVAL

## Guadalupe-Nipomo Dunes NWR

How do you help a small, threatened shorebird when your refuge is just one of many managed along an 18-mile stretch of vital beach nesting habitat? This was the challenge at Guadalupe-Nipomo Dunes National Wildlife Refuge on California's central coast. Western snowy plovers nest from March to September, just when beach use by people is greatest. Our solution was an obvious one, temporary fencing, carefully placed to guide visitors away from sensitive areas.

Anyone who has tried to restrict an area's usage without explanation can expect an outcry from the public. To avoid this, the refuge and its partners developed well-placed interpretive panels and materials to provide to the visitors.



We also relied on trained docents, who were armed with friendly information, spotting scopes, and a book of inspiring plover and beach photographs.

By partnering with neighboring state and county land managers, and local non-profit organizations, we found we could combine and leverage our funds. We formed the Dunes Collaborative to help identify common resource needs. The plover docent and education program was one of the group's first efforts to obtain grant funding.

Help came from oil spill settlement funds, enough to hire a contractor to develop the materials, recruit and train volunteers, and work closely with the collaborative members on their specific site needs.

Volunteers were recruited from local communities through news releases and PSAs and provided with information

to help build visitor awareness and appreciation of the area. All of us received the materials on CD so we could reproduce them, as needed.

We also developed hotel rack cards with information about plovers and placed them in more than 800 hotels throughout the county to reach visitors prior to their beach visit. Several indoor displays were tailored for and installed at a local visitor center to reach other beach users.

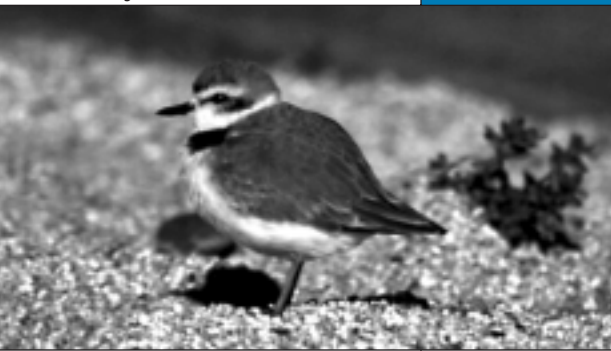
The best measure of success since the program began two years ago has been a noticeable increase in visitor compliance. Working across multiple properties with similar messages, the docents have made many friends for the plovers by making personal contact with our visitors.

## Coal Oil Point Reserve

Threatened snowy plovers are making a recovery on a Santa Barbara beach, thanks to an award-winning program that protects parts of the beach and guides beach users to play on less sensitive areas.

In 1999 the Ventura Field Office of the Fish and Wildlife Service visited the Coal Oil Point Reserve, noting the former breeding area was intensely-disturbed by unmanaged beach recreation. They encouraged the Coal Oil Point Reserve at the University of California, Santa Barbara to improve conditions for plovers.

Expanding the partnership, a USGS biologist conducted research to determine which areas of the beach were most important to plovers and who was disturbing them. Not surprisingly, people and unleashed dogs corresponded to 75 percent of the disturbance.



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The Fish and Wildlife Service helped the reserve create a comprehensive management plan to recover the plovers. The reserve roped off a 400-yard "nursery" area that enabled the threatened birds to roost and nest undisturbed by human activity, all with minimal inconvenience to beach users (who can still walk along the shore and bring leashed pets). A local Audubon Society chapter organized a volunteer and educational effort to increase public awareness, compliance, and interest in the species. Disturbance declined and wintering birds quadrupled

*The best measure of success since the program began two years ago has been a noticeable increase in visitor compliance.*

to over 400, making this small beach the largest wintering site of western snowy plovers in the nation.

By 2003, 39 young western snowy plovers fledged at the site, showing for the first time that a reduction in human disturbance can lead to the recovery of a formerly abandoned historic breeding site. This once controversial project has gone on to win national and local awards and public support. The Natural Areas Association granted the program their 2003 Stewardship award. The local press named the organizers local heroes this winter and this spring the reserve director will receive an environmental award from the Santa Barbara Wildlife Care Network. ●

*Chris Barr is refuge manager of Guadalupe-Nipomo Dunes NWR. Cristina Sandoval is a reserve director at the Coal Oil Point Reserve Snowy Plover Recovery Program, University of California/Santa Barbara.*

CHRIS BARR/USFWS



Two Central California projects use volunteers, partners, beach closures, and outreach materials to reduce disturbance of threatened snowy plovers.

# Fireworks and Nesting Birds

*Beach closure and education effort reduce seabird stress*

BY DAWN GRAFE

# Don't Mix



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Black oystercatchers and other birds responded well to a one-evening beach closure around Haystack Rock on the 4th of July.

Watching fireworks from an Oregon coast beach on the 4th of July is about as good as it gets. Add Haystack Rock at Cannon Beach as a backdrop and you have a recipe for a perfect holiday. Every year in July, thousands of tourists flock to the town of Cannon Beach to walk through its art galleries, explore tidepools, and light off fireworks to celebrate our nation's Independence Day. The only drawback is the impact of fireworks on seabird colonies.

Oregon Islands National Wildlife Refuge protects over 1,850 rocks and islands as habitat for 1.2 million nesting

seabirds. Some nesting areas, like Haystack Rock, are closer to land and towns than others. During the day, visitors spend time looking at tidepool invertebrates at the base of this magnificent rock. Since 1985, volunteers have educated and inspired tens of thousands of adults and children by interpreting the site's natural resources through the Haystack Rock Awareness Program (HRAP), a stewardship and environmental educational effort. The volunteer program is funded through the City of Cannon Beach and private donations.

In 2000, HRAP volunteers were delighted that a pair of black oyster-

catchers, a local shorebird, had taken up residence on a flat spot on the south side of the rock. The nest site was visible with the naked eye and the raucous, yet attentive, pair of were extremely popular with residents and tourists.

Unfortunately, on the evening of July 4th people crowded at Haystack Rock, lighting off hundreds of illegal fireworks before police were able to stop them. The next morning, one of the oystercatcher chicks was found injured on the beach and the others were missing. Everyone attributed the loss to the fireworks. Other nesting birds

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**The Tale of the Tiger and the Man**

Once there was a man who shared a house with a tiger.

Because the man believed the tiger was likely to eat him, he devised a strategy:

He simply would never be in the same room as the tiger.

The first morning the man came down to breakfast to find the fierce beast at the table.

He ran back upstairs to his room. The man did not eat at all that day.

Hungry, the man snuck down to the kitchen early the next morning only to find the tiger napping in front of the pantry door.

He grabbed a piece of fruit off the counter and ran back to his room to hastily eat it.

Weeks passed. The tiger was always where the man wanted to be. The man grew thin and weary.

Now, the tiger never intended to eat the man. Sympathetic to the man's dire condition, she decided on an experiment:

She simply would leave any room the man entered.

The next morning, the desperate man came to the breakfast table to put his fate in the tiger's paws.

To his great relief, the tiger left the dining room and went upstairs. The man ate and ate that entire day.

The man thrived. The tiger was pleased at her cleverness. And, the house was enough for the two of them.

JOHN IVIE/JUSFWS

# Fable Carries the Message

*Panel promotes understanding when refuge access must be limited*

BY JOHN IVIE

Most of the refuge is closed to the public," said refuge manager Joel David, "and I'd like the visitor to know why." This need is not unique to Julia Butler Hansen Refuge for the Columbian White-Tailed Deer.

"Stress" was David's explanation for why the public wasn't allowed on the majority of the refuge. Endangered Columbian white-tailed deer rightfully view humans as predators and the stress of people in their habitat is detrimental. Stressed deer are forced to use their energy reserves to flee from people—often away from an ideal food source. Undernourished deer don't fight off disease well. Prolonged human-caused stress can lead to population fragmentation and decline. The species being protected may differ at other refuges, but the reasons for providing undisturbed sanctuaries are often the same.

With so many refuges facing this dilemma, I thought a fable might offer a fresh approach to the challenge of balancing visitor access and the need for sanctuary. Many characters in fables are charismatic beasts: lions, tigers, and bears. Fable text is simple and accessible, even to children. The symbolism is open to a variety of interpretations, yet the "take home" message in this parable is clear: "There is a place for both the refuge visitor and wildlife."

Please read the "Tale of the Tiger and the Man." Would you use this approach in a refuge interpretive panel or environmental education program? I'd love to hear from you. Email or call me at 503/872-2703. ●

Article and art by John Ivie, visual information specialist in Visitor Services and Communications.