

Wildlife Tracks®

A PUBLICATION OF THE HUMANE SOCIETY OF THE UNITED STATES AND THE HSUS WILDLIFE LAND TRUST

Volume 6, Number 1, Spring, 2003



© Barry Kent Mackay

Double-Crested Cormorants:

How dare they eat “our” fish?

Okay, I admit that there are a lot of contenders, but I would like to propose that the most absurd of all U.S. government wildlife management initiatives may well be a ludicrous scheme to systematically reduce the North American continent’s population of double-crested cormorants by ten percent.¹

There is something about cormorants that seems to trigger cerebral meltdown and irrational hatred. In part, it is because these birds—there are 39 species worldwide, plus one species that became extinct around 1850—are obligate fish eaters. As the commercial demand for ever greater amounts of fish puts endlessly increasing pressure on remaining (and mostly diminishing) fish stocks, commercial and sport fishing interests become ever more resentful of other species eating “their” fish.

The double-crested cormorant is the most widely distributed and best known of North America’s six remaining species of cormorant. There is growing public apprehension that double-crested cormorants have dramatically increased in numbers, particularly in eastern parts of their range; however, at least part of this increase can be attributed to population recovery after a crash brought about by the devastating effects of DDT and related compounds. As a breeding species in the Great Lakes and adjoining waterways, the birds are feared to be competitors against commercial and sport fishers. Concerns of varying degrees of validity are voiced that the cormorants deplete fish hatcheries and fish farm stocks, displace less common native birds, and

See Inside

| | |
|---------------------------|----|
| Yellowstone Buffalo | 7 |
| Protecting Urban Wildlife | 11 |
| Green Pages | 14 |

Continued on page 3



Letter from the Editor

Bette Stallman

Wildlife Tracks is returning to print! After a healthy six-year life as a print publication, we considered shifting to online-only publishing. But that didn't work out, for various reasons, and reader responses and other indications have shown us that the printed newsletter is still the preferred format for the in-depth articles that *Wildlife Tracks* (WT) was created to provide for activists. Web publishing does offer other advantages, of course, which we will also employ on www.hsus.org/wildlifetracks, but we are back in print, with recycled paper and soy ink!

When I first began working at The HSUS as a wildlife scientist, I had just completed my dissertation on the behavioral ecology of mar-mots. While a background in science and field research has been helpful in many ways, it really did very little to help prepare me for the tactics used in advocacy work. Luckily, I found a stack of back issues of WT in my office and immediately pored over many of the articles to get up to speed on wildlife protection and conservation advocacy. I liked the straightforward, thorough, and practical nature of the articles, and, because of the excellent authors, I felt confident about the accuracy of the information. For example, I found the in-depth article on the Yellowstone bison controversy to be a helpful introduction to an extremely complicated issue. In addition, I frequently turn back to the articles addressing endangered and threatened species, as well as articles on habitat loss and degradation, such as those addressing factory farm runoff and urban sprawl. Articles like these are timeless primers for activists, as are the "how to" articles for which WT has always been known.

In future issues, you can expect to see coverage of topics across the spectrum of wildlife protection and conservation, including threats

facing imperiled populations, species, or ecosystems; lethal control of species that are unjustifiably pegged as "nuisances;" the consequences of habitat loss or fragmentation; wildlife management on public lands; the welfare ethics surrounding captive wildlife issues; and human-wildlife conflicts that are specific to the urban and suburban landscapes. The articles will provide scientific and policy background on wildlife issues, as well as useful information on tactics that concerned citizens can use in wildlife advocacy, such as educational outreach, legal and legislative strategies, and other basic tools that should save activists from having to reinvent the wheel.

In the present issue, Dan Brister revisits the Yellowstone bison issue and finds that the controversy is stagnating—and the bison slaughter is continuing—for lack of public awareness. Barry Kent MacKay provides an in-depth assessment of a conflict between fish-eating birds and fish-eating humans; a conflict that in some cases is nonexistent and, in others, could be resolved with a little ingenuity. Finally, John Hadidian and Nancy Perry provide the rationale behind our model legislation for the regulation of nuisance wildlife control operators, as well as resources and suggestions for activists interested in addressing this problem.

We would love to hear your suggestions and comments as we chart the course for the next year or so. And if you have a topic that you think would be interesting and useful for WT readers and you are willing to write about it, please contact us by phone, email, or regular mail, using the contact information below.

Bette Stallman

bstallman@hsus.org

The Humane Society of the United States
2100 L Street, NW

Washington, DC 20037

phone: 301-258-3147 fax: 301-258-3080 🐾

Wildlife Tracks Mission and Goals:

Over 5,000 wildlife and habitat protection organizations nationwide are working to stop the rapid disappearance of wildlife and the destruction of their habitat. *Wildlife Tracks* combines the power of information, the power of networking and the power of people to strengthen local, state and national grassroots movements to preserve and restore wildlife and the ecosystems they need for their survival.

Goals:

- To expedite the exchange of experience and information between wildlife and habitat organizations, while increasing the efficiency and effectiveness of their efforts.
- To empower the grassroots by sharing the successful efforts to preserve wildlife and ecosystems and to inspire them to expand their vision and strategy to achieve long-term solutions.
- To assist in building responsible and credible organizations by providing information and guidance.

Staff:

John W. Grandy, *Senior Vice President, Wildlife Programs, HSUS*
Bette Stallman, *Senior Editor*
Debra Firmani, *Managing Editor*
Tanya Mulford, *Associate Editor*
Andrea Cimino, *Editorial Assistant*
Jenni Haas, *Designer*

Board of Advisors:

Danielle Bays, Kevin Bixby,
Henry Brzezinski, David Carle,
Linda Hatfield, Anne Miller,
Ruth Musgrave, Diane Nixon,
Allen Rutberg, Louisa Willcox

Wildlife Tracks Office:

The Humane Society of the
United States
Wildlife and Habitat Protection
2100 L Street, NW
Washington DC 20037
Phone: 301-258-3147
Fax: 301-258-3080
E-mail: tracks@hsus.org

© The Humane Society of the United States and The HSUS Wildlife Land Trust, 2003. To reprint any or all of *Wildlife Tracks*, please contact Bette Stallman at The Humane Society of the U.S. at the above address. Permission will generally be granted if credit is given to The Humane Society of the United States.

The views expressed in these articles represent those of the authors and do not necessarily reflect the views of The Humane Society of the United States or those of The HSUS Wildlife Land Trust. The HSUS and The HSUS Wildlife Land Trust encourage the grassroots use of all actions that educate and encourage the humane and proper treatment of human and non-human animals; however, we do not promote or support the use of any action that violates federal, state, or local laws and regulations in this process.



CORMORANTS, cont. from front page

destroy woody vegetation supportive of other colonial nesting bird species. Many see the birds as physically unappealing; although, as an artist, I must confess that my own bias goes the other way. I think they are uncommonly beautiful creatures whose sinuous contours, glowing dark plumage, and startling green eyes suggest unbroken linkages to ancient times before birds had evolved and reptiles ruled the land.



AS THE COMMERCIAL DEMAND FOR EVER GREATER AMOUNTS OF FISH PUTS ENDLESSLY INCREASING PRESSURE ON REMAINING FISH STOCKS, THE COMMERCIAL AND SPORT FISHERY BECOMES EVER MORE RESENTFUL OF OTHER SPECIES EATING "THEIR" FISH.

A LOOK AT THE BASIC FACTS

Put simply, cormorants cannot literally eat "too many" fish. Cormorant plumage is not as strongly water proofed as that of other fish-eating birds, such as loons, grebes, mergansers, gannets, puffins, and the like. Thus, while they are expert swimmers, cormorants cannot stray far from haul-out locations, as they would become waterlogged and drown, and when they do land on deep water, they cannot stay. Cormorants must be able to eat enough fish to balance, through metabolism, the loss of energy required to catch fish. This is particularly true with regard to waters adjoining nesting colonies, where energy demands are maximized by reproduction and parental care efforts, including the sharing of fish (i.e. energy) with dependent young. As fish numbers decline, energy expenditure in pursuit of fish increases, to a point of diminishing returns that will inescapably reduce the cormorant population long before fish declines become significant. Fish replace their numbers at ratios hundreds, thousands, or even tens of thousands of times greater than cormorants. In natural situations, no cormorant species anywhere in the world has ever wiped out any fish population.

So what's the problem? No matter how

much evidence is provided to support the fact that the birds have virtually no significant or lasting impact on stocks of fish, it seems not to matter. In a recent article,² Linda Wires, author of *Status of the Double-crested Cormorant (Phalacrocorax auritus) in North America*, released by the University of Minnesota's Department of Fisheries, Wildlife and Conservation Biology, in January, 2001, is quoted as saying,

I don't know why the bird is so maligned...I almost want to give up on biology...Nobody's listening. You present the biological evidence, and people say, "I don't care. I know what those birds are doing."

The New York State Department of Environmental Conservation (NYSDEC) has blamed cormorants for a decline in age classes of smallmouth bass (i.e. a decline in numbers of fish that are large enough to gratify sport anglers) in the eastern end of Lake Ontario, where there is a major cormorant nesting area. I reviewed an Environmental Impact Statement (EIS) presented by NYSDEC to justify killing off a percentage of cormorants and found it badly flawed for lack of consideration of other factors that would contribute to the age-class reduction of concern. Even NYSDEC admitted that the bass were still the most abundant game fish in the region.

Far more significant than any opinion I might hold, Wires, in her profoundly comprehensive cormorant study, opined that the NYSDEC's work was not rigorous enough, as the method of determining diet (examination of fish ear bones in pellets regurgitated by the birds) can lead to uncertainty and errors. Also, she found that NYSDEC used data on smallmouth bass growth and mortality rates that were from different times and places, thus compromising the validity of conclusions derived from the work. As she noted, a Canadian study indicated that it was changes in water temperature, not cormorants, that was most likely the major factor influencing smallmouth bass population fluctuations.³

Cormorants are scapegoated wherever they occur, no matter how many studies exonerate them as a significant factor in

any decline in fish of any species. Sometimes it has been argued that if cormorants don't *directly* impact on the "desirable" species, they do so *indirectly* by significantly reducing the prey species that the desirable fish eat. But proof of that allegation is also missing, despite exhaustive efforts to find it. In fact, the presence of cormorants clearly indicates a robust and healthy population of *whatever* fish they are eating. So, if cormorants are eating the would-be food of bass, trout, walleyes, whitefish, and other commercial or game species, their presence means that there is a huge amount of such prey available. Long before a substantial decline in their food species would occur, there would be a collapse in the population of cormorants.

INVITING CONFLICT WITH ARTIFICIAL CONDITIONS

Cormorants can cause problems in highly artificial or contrived situations, such as occurs when a river is dammed. Fish, blocked by the dam, may become so concentrated and trapped that they become easy pickings for cormorants and other fish-eating species. Cormorants may hamper the efficacy of releasing fish fry to supplement stocks where the catch of fish by anglers or commercial fishers is not sustainable. Often there is a simple solution to such problems. For example, releasing fry at night allows the tiny fish to disperse enough so that, by the time there is enough light for the cormorants to hunt, consumption by cormorants is no longer an issue.

IN NATURAL SITUATIONS, NO CORMORANT SPECIES ANYWHERE IN THE WORLD HAS EVER WIPED OUT ANY FISH POPULATION.



The most concentrated numbers of fish, of course, generally occur in fish farms. Artificially large numbers of fish confined in shallow water represent a highly contrived environment that can be found increasingly as fish farms multiply to meet an insatiable human demand for a decreasing product: fish.

In the United States, catfish farming has brought new income sources to relatively impoverished regions of the southeast, and with the profits comes political clout that finds official sympathy from legislators. Therefore, any negative ecological impact that the farms may have—such as harbouring disease, parasites, or genetic disorders inimical to native fish—is likely to be overlooked. However unwelcome other fish-eating birds (or mammals) may be, cormorants, because of their size and numbers, are the most abominated of uninvited fish farm visitors.

LETHAL VS. NON-LETHAL CONTROL

All indications are that, at fish farms, non-lethal “winter roost control” achieves resolution of fish farming concerns more effectively than lethal control methods (i.e., shooting roosting birds). Other than killing those birds that die between the moment when shooting commences and the moment fleeing surviving birds are out of range, there is no net gain to be had in shooting over more effective dispersal tech-

The exact details of how effective cormorant management is conducted vary from region to region, but the basics remain constant. Each place where farm ponds are stocked with fish, the birds are harassed if they draw near. Shooters clad in bright yellow jackets and pants initially employ limited lethal culling with shotguns. The birds quickly learn to equate the yellow-clad humans with lethal control. One region has gone further, also equipping all vehicles employed in harassment or patrols with large yellow flags.

All birds that are shot are dissected (with the fish farmers present, to see the results) to determine stomach contents. Lethal control permitting is contingent on stomach analysis being done. Later, realistic scarecrows are similarly clad in bright yellow and variously distributed. The scarecrows are periodically altered, and a real person, who will non-lethally fire a real gun if the birds draw near, is occasionally substituted.

The birds do learn to stay away, and currently, none are killed. Bird chasers are coordinated with radios, so that nowhere in the region of concern are the birds allowed to settle in and feed comfortably. One region carries this to the point of preventing the birds from night roosting in the vicinity of the fish farms, by use of a gas-fired “cannon” timed to disperse the birds.

Key to success is the provision of *alternative* feeding and roosting locations with clearer water and adequate fish. In Israel, great cormorants will fly tens of kilometers to access the alternate feeding grounds. The same technique worked to prevent 75,000 migrant pelicans from feeding on fish farms. Now, none do.

SEEING IS BELIEVING

The reason it is so important to dissect stomach contents in front of the concerned fish farmers (apart from the obvious benefit in learning what the birds eat for better understanding of the issue) is that it tends to graphically demonstrate to the fish farmer that the great cormorants are not necessarily eating what it was

assumed they were eating. “Observation of birds in a specific pond (and knowing what is stocked in the pond) is no proof of food preference,” wrote Nemptsov. This is, of course, true with regard to the appearance of double-crested cormorants where commercial and sport fishers access wild fish stocks. “Mostly,” continued Nemptsov, “they eat small fry that shouldn’t be in the ponds anyway (they prefer Tilapia to carp for some reason). This analysis has shown the farmers (actually they showed themselves) that killing the birds was unnecessary.” Of course, the aquaculturists are still intolerant of the cormorants, but at least they now have less fear that the few birds they see will do any real damage to the fish species they produce and market.

But even the Israeli model would be unnecessary if entrepreneurial ingenuity were applied to the task of providing cost-effective, long-term solutions, such as netting and automated harassment technology and, most important, alternative food and roost sites, as part of the price tag of doing business.

ASSESSING COMPETITION WITH OTHER BIRDS

Other concerns about cormorants seem more contrived and are reflective of a general ignorance of ecology. Double-crested cormorants have been blamed for destroying nesting trees used by other more “desirable” species, such as egrets and night herons. Cormorants will preferentially nest on isolated cliff ledges. If they have to, they can nest on the ground. But if a protected cliff ledge is not available, a tree may be the next best thing. They make their nests from branches that they strip from living trees. That practice, plus the accumulations of high nitrogen loads from accretion of excrement, can kill off the trees. Ironically this can be a limiting factor in cormorant population size, as ground nesting is much more vulnerable to egg and nestling loss; but the problem is that those trees may also be nest sites of more highly valued birds, such as herons.



ALL INDICATIONS ARE THAT, AT FISH FARMS, NON-LETHAL “WINTER ROOST CONTROL” ACHIEVES RESOLUTION OF FISH FARMING CONCERNS MORE EFFECTIVELY THAN LETHAL CONTROL METHODS.

niques, such as lasers, cracker shells, real or mechanical falconry, conditioning, and so forth. There is, however, a far greater potential to cruelly wound cormorants and to strike other birds, including protected species, while also depositing toxic lead waste. The benefits of such lethal control are more psychological than real.

Dr. Simon C. Nemptsov, Wildlife Ecologist and Scientific Authority for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) for the Israel Nature and Parks Authority, in Jerusalem, kindly provided me with information on that country’s ability to co-exist with an important fish-farming industry and wintering flocks of great cormorants.

In the scheme of things, such losses are temporary, and vegetation will return more robustly in the somewhat enriched soil left behind. But that may not meet politically driven local management goals. Cormorants have shared nesting space with egrets, herons, ibises, and other species since long before the last series of ice ages commenced. There is scant evidence, even with such habitat greatly reduced, of a problem.

But near my home, there is a place where loss of trees could cause the loss of a major black-crowned night-heron nesting colony. While the night herons are certainly not an endangered species, their presence in large numbers gives the site politically important status; thus, the management goal is to maintain them. To do that, no cormorants are being killed, but there is a fine-tuned effort being made to control their breeding success by oiling eggs and disrupting early nesting attempts. This is a compromise between the desire of the cormorant-haters to kill as many cormorants as they can and that of many of us who would prefer to simply allow nature to take its course while reducing our own negative impact



**CORMORANTS . . . SHOULD NOT BE
SCAPEGOATED FOR THE HORRENDOUS
IMPACT WE HUMANS HAVE HAD ON FISH.**

on the environment and its ability to sustain all life, including cormorants, herons, egrets, fish, and humans.

The compromise is not good enough for the U.S. government; it wants to kill off ten percent of all double-crested cormorant.

The double-crested cormorant is a highly mobile species that nests in British Columbia, Alberta, Saskatchewan, Ontario, Quebec, Newfoundland and Labrador, New Brunswick, and Nova Scotia—all outside U.S. jurisdiction, as well as many U.S. states from coast to coast, including Alaska. The species winters in a broad swath across the U.S. and parts of Mexico and the West Indies. It is

naïve, at best, to think that, even if ten percent of that population could be killed off, it would placate the cormorant haters. Does anyone think a fisher vexed by a flock of a hundred cormorants would be happy if there were only ninety? It is a little like trying to prevent blue jays from visiting feeders in Alabama by reducing their numbers in Pennsylvania and Ohio, but not New York or Illinois – when it is actually the feeders that are the attraction.



SEEKING A BALANCED VIEW

In North America, there are between two hundred and three hundred people for every double-crested cormorant. Most of those people eat fish from North American waters. While very few individuals consume the number of fish per day that a cormorant does, humans live more than ten times longer than do cormorants, and some North American wild and farmed fish also feed people elsewhere in the world. Like cormorants, humans are undergoing an exponential growth curve, but unlike cormorants, human energy is fuelled from non-biotic sources, thus the energy consumption curve (including food, which is animal- and plant-based) exceeds the human growth curve.

The majority of fish consumed by cormorants are species not favored by commercial and sport fisheries. Some of the species consumed by cormorants may be a food base beneficial to commercial and sport fish stocks, but others may consume such fish, displace them, compete with them, or otherwise limit them. Add to that the accidental and intentional introduc-

tions of numerous non-native fish species, plus alterations in the very nature of the environment, as a result of changes in climate, sediment loads, changes in water levels, and pollutants, and there are complexities far beyond anything that the U.S. government has addressed in seeking to determine population sizes of any given fish or other wildlife species.

Without denying that there are valid local concerns about cormorants as a result of highly contrived conditions, to attempt a continent-wide reduction in cormorants in the belief that it will resolve sport and commercial fishers' desire for more fish in any given location is absurd. It does not address the very real and specifically identified causes of various fishery reductions, which (not to over-simplify) can be attributed to environmental degradation and over-fishing. It certainly would not appease catfish farmers if one out of every ten cormorants were suddenly to vanish.

If, based on the U.S. government's own data, we estimate interior and Atlantic populations of cormorants, combined, to be approximately 340,000 birds, even a 50 percent decrease would still leave over

170,000 birds with the potential to visit fish farms. It may be argued that not all Atlantic and interior population birds would find the fish farms, but neither has the government indicated what number of cormorants eating farmed catfish would be acceptable to the fish farm owners. In personal communications with catfish farmers, I have found that the tolerance for cormorants is extremely low. Killing cormorants will satisfy a political demand, but unless the slaughter is extensive enough to essentially remove most cormorants from the continent, it won't resolve concerns about fish depletion. And, again, the point must be made that a fish farmer distressed by five hundred cormorants nearby is unlikely to be placated if, by some miracle, the number becomes four hundred and fifty.



MAINTAINING PERSPECTIVE

Cormorants are obligate fish eaters and are, thus, dependent on the existence of robust stocks of suitable fish—they have no other options. They are also vulnerable. The double-crested cormorant colony of San Martin Island, Baja California, Mexico, once hosted 1,800,000 birds. Thus, one colony within 150 miles of the U.S. had close to what the government now claims is the approximate population for all of North America, and yet it was subsequently reduced to nearly no birds.⁴ On a much smaller scale, and far to the north, the Rose Islets, British Columbia colony went from 111 pairs in 1977, to only two pairs ten years later⁵. Disturbance from boaters and domestic animals is the probable main factor in the decline of those birds, underscoring my own concern that colony control be considered only where there is specific need, and then, carried out only with great care.

Unlike the cormorant, a bird with physiological limitations imposed on its ability to capture fish, the human fishery is fuelled by economic and technological subsidy, to devastating effect, particularly when coupled with overall environmental degradation. This is a distinction the federal government shows little indication of understanding. I do not suggest that there can be *no* problems involving cormorants, but rather that cormorants are never the cause for destruction of any co-existing native fish stock under natural conditions. They should not be scapegoated for the horrendous impact we humans have had on fish.

The United States has failed its commitment to sustainable use to the degree that it has had to rely on the National Fish Hatchery System to attempt to meet insatiable demands for a finite “renewable” re-

source. Most governments pay lip service to sustainable use, but they do not practice it, and the U.S. is no exception.

I believe that the combination of non-lethal dispersal technology⁶ on breeding grounds, when possible, and winter roosting sites, exclusion technology at hatcheries and fish-farms, and egg control would, in fact, reduce the overall ability of the environment to sustain cormorants on a site-specific basis (the only effective basis there is, short of massive killing), just as an effective dispersal program—minimally, if at all, lethal—connected to conditioning the birds and providing alternative feeding and roosting sites would resolve virtually all fish farming concerns.

Let's not punish cormorants for being cormorants. It is their planet also, and, unlike us, they have not harmed it or its ability to sustain life. If we must impose upon them, let us do so gently and effectively. Otherwise, leave them be.

Barry Kent MacKay
Senior Program Coordinator
Animal Protection Institute

¹ This management plan is described in a Draft Environmental Impact Statement, *Double-crested cormorant management*, prepared jointly by the U.S. Department of the Interior, Fish and Wildlife Service and by the U.S. Department of Agriculture, APHIS Wildlife Services in 2001. To date, the Final EIS has not been released.

² Hunter, Douglas. *Devil Bird? Seasons*, Vol. 42, No. 4, Winter, 2002. Federation of Ontario Naturalists.

³ *Ibid.*

⁴ del Hoyo, J., Elliott, A. & Sargatal, J. eds (1992). *Handbook of the Birds of the World*. Vol. 1. Lynx Edicions. p. 343.

⁵ *Ibid.*

⁶ According to J. F. Glann (2000, Comparison of pyrotechnics versus shooting for dispersing double-crested cormorants from their night roosts, pp. 44-48. In *Proceedings of the 19th Vertebrate Pest Conference*, Salmon, T.P. & Crabb, A.C., eds, University of California Press, Davis), the use of non-lethal pyrotechnics in dispersing cormorants from night roosts in Mississippi was just as effective as shooting.





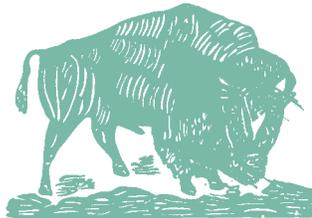
When snow and ice encrust the grass in Yellowstone, the bison have no choice but to move to lower elevations across the Montana border, unwittingly stepping into a conflict zone.

The Yellowstone Buffalo Slaughter

Yellowstone, the world's first National Park, is home to the last wild bison in America. When millions of bison—popularly referred to as buffalo—were wiped out in the waning days of the 19th century, a remnant herd of just two dozen held on in the Park's remote Pelican Valley. The only buffalo in North America with continuously wild ancestry, the Yellowstone herd is a thin thread, tenuously linking the present-day with our continent's rich and wild past. Tragically, hundreds of these buffalo are killed each winter and spring when they migrate across the Yellowstone boundary in search of the vegetation they need to survive.

Like their 19th century ancestors, today's buffalo are being slaughtered at an alarming rate. Nearly 1,100 buffalo were shot in the field or sent to the slaughterhouse during the winter of 1996-1997, making it the single bloodiest year for buffalo since the 19th century.

Unsettled by such a heavy slaughter, concerned citizens organized the Buffalo Field Campaign (BFC) the following winter to protect the buffalo and advocate on their behalf. The



America's last wild bison are hazed from snowmobiles, helicopters, and ATVs; trapped and confined in cattle pens; and shot dead on their native range.

BFC community is comprised of volunteers who have come together to protect the buffalo and to share their plight with the world. Volunteers brave some of the continent's coldest temperatures to stand with the buffalo when they leave the park, monitor herd movements, and document every move made against them. Since 1997, more than 1,500 volunteers have joined BFC on the frontlines.

(See sidebar page 10)

**Invisible boundaries,
unfounded fears**

During severe winters, snow and ice encrust the grass in the park, and hunger pushes the buffalo to lower elevations across the Montana border. When they cross this invisible line in their search for food, buffalo unwittingly step into a conflict zone. America's last wild bison are hazed from snowmobiles, helicopters, and ATVs; trapped and confined in cattle pens; and shot dead on their native range. The Montana Department of Livestock (MDOL), an agency charged with protecting the interests of the livestock industry, dictates the bison's fate.



A bull buffalo is silhouetted against the sunrise on Fir Ridge. The Yellowstone herd is the only one in North America with continuously wild ancestry.

since 1997, there are no cattle present during winter and spring months, when bison are out of the Park. This temporal and spatial separation between wild bison

ATVs, snowmobiles, and helicopters. They are pressed on for miles through deep snow, until they are herded into capture facilities. Once captured, bison are subjected to a test for brucellosis antibodies. Presence of these antibodies does not indicate that an animal is infected, only that, at some point in its life, it was exposed to the bacterium, *Brucella abortus*. The presence of antibodies does not indicate whether the animal is currently infected; however, this is the test that determines

which bison will be released and which will be sent to slaughter. Based on post-mortem tissue culture tests done on slaughtered buffalo, we know that the field test the MDOL uses gives a false positive about eighty percent of the time.

Buffalo who are released, the "lucky" ones, frequently suffer severe, potentially lethal injuries sustained during capture operations and while held at capture facilities. As with any wild animal, buffalo do not respond well to being herded and housed as if they were domesticated livestock. Injuries are sometimes incurred as the bison attempt to escape. If several bison are crowded into a small pen, some animals are gored. It is also common for yearling bison, not yet weaned, to be released as orphans while their mothers are shipped to slaughter.



BFC patrol witnesses the MDOL hazing bison on horse Butte. Standing with the buffalo when they leave the park, monitoring herd movements, and documenting moves made against the buffalo, volunteers have been on the frontlines every year since 1997.

Blaming the slaughter on their fears that buffalo will infect cattle with the bovine reproductive disease brucellosis, the MDOL kills bison that exit Yellowstone. This practice makes little sense for a number of reasons. First, there has never been a documented case of transmission of brucellosis from wild bison to livestock. Second, elk and other wildlife are also known to carry brucellosis, but currently only bison are targeted for hazing, shooting, and slaughter. Finally, on the west side of the Park, where all killing has taken place

and domestic cattle greatly minimizes the already remote possibility that cattle would be exposed to disease. Nevertheless, the agencies continue to harass and kill bison, and they do so at a tremendous expense to taxpayers.

Under current management policies, buffalo in Montana are hazed by



Bison are seen trying to escape hazing by snowmobiles (upper right corner).

KEN COLE

A lack of accountability

The current bison management plan, signed into effect in December of 2000, and set to be in place until 2015, is costing American taxpayers more than 2.5 million dollars a year to “protect” fewer than 2,000 cattle. The plan mandates that a host of government agencies participate in buffalo hazing, capture, and slaughter. The U.S. Forest Service, National Park Service, and the Animal and Plant Health Inspection Service are federal agencies mandated to assist Montana in buffalo management under the plan.

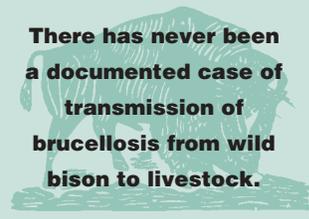
Nearly every week, a posse of snowmobiles, helicopters, and law enforcement vehicles descend on the Madison River to chase, shoot, or capture bison. This sensitive river corridor provides vital habitat for elk, moose, bald eagles, grizzly bears, wolves, trumpeter swans, and myriad other species. By disturbing this habitat in the heart of winter, these invasive bison management operations threaten all native wildlife.

The winter of 2001–2002 was BFC’s fifth in the field. A cold and snowy winter gave way to a brutal spring, and more than a hundred Yellowstone buffalo were slaughtered by the MDOL during the last week of April. The agency killed thirty-two bison on April 25 and seventy-two on April 30. None of these animals were tested for brucellosis, the ostensible reason for the slaughter.

Documenting the cruelty

BFC volunteers videotaped the capture operations and recorded many incidents of abuse. Whole herds were chased through barbed-wire fences, slammed into the steel gates of the trap, and abused in confinement. Many pregnant buffalo were tirelessly hazed and captured, and one gave birth inside a bison capture facility at Duck Creek. After sending its mother to slaughter, MDOL agents released the calf, which repeatedly returned to the trap in search of its mother. Being orphaned at such a young age, its chances of survival would be slim, unless, by chance, another female were to adopt it.

There has never been a documented case of transmission of brucellosis from wild bison to livestock.



FRANK CONSENTINO

A History of the Yellowstone Buffalo

| | |
|-----------|--|
| Pre-1800 | An estimated 30 to 60 million wild buffalo in the United States |
| 1850–1880 | Millions of buffalo shot; their remains left to rot on the prairies |
| 1872 | Yellowstone National Park established |
| 1895 | 800 buffalo remain in the United States, most in captivity |
| 1896 | 23 buffalo left in Yellowstone National Park; wild buffalo on the brink of extinction |
| 1902 | 21 buffalo reintroduced to Yellowstone from herds in Montana and Texas |
| 1907 | Bison Ranch established in Yellowstone’s Lamar Valley |
| 1917 | Brucellosis discovered in Yellowstone buffalo, (introduced by cattle) |
| 1952 | Bison Ranch ceases operations |
| 1954 | 1,500 buffalo in the park; park officials, deciding Yellowstone can only support 400 bison, start shooting bison inside the park |
| 1966 | 397 Buffalo left in Yellowstone; park implements policy of natural population regulation; shooting stops |
| 1985 | Montana Legislature enacts buffalo hunt |
| 1988 | 2,750 buffalo in Yellowstone |
| 1989 | Buffalo hunt stopped due to public opposition |
| 1991–1995 | Montana Department of Fish, Wildlife and Parks shoot buffalo leaving park in winter |
| 1995 | 4,500 buffalo in Yellowstone; Montana legislature gives control (shooting and capture duties) to the Montana Department of Livestock (MDOL) |
| 1996–1997 | During a severely harsh winter, MDOL and Park Service kill 1,084 buffalo; an estimated 1,800 die from the severe winter; herd reduced by two-thirds |
| 1997–1998 | Buffalo Field Campaign (BFC) formed—volunteers protect bison leaving the park; Montana MDOL kills 11 bison |
| 1998–1999 | MDOL slaughters 94 buffalo; 22 BFC volunteers arrested while protesting capture and slaughter operations |
| 1999–2000 | For the first winter since 1983–1984, no Yellowstone buffalo slaughtered by Montana; state and federal agencies sign “Interagency Bison Management Plan” |
| 2001–2002 | 202 buffalo slaughtered by MDOL, Forest Service, and Park Service personnel; for the first time since the signing of the Interagency Bison Management Plan, 135 buffalo killed without first being tested for brucellosis. |
| 2002–2003 | (As of press time) 244 buffalo killed, including 231 buffalo slaughtered after being captured inside Yellowstone National Park by Park rangers and MDOL agents; none of these buffalo were tested for brucellosis before being shipped to slaughter. Six buffalo attempted to escape from a slaughterhouse in Columbus, Montana, and were shot by state officials. |

This wild Yellowstone buffalo and her calf show the close family bond typical of these animals. Buffalo Field Campaign volunteers have videotaped the capture operations and recorded many incidents of abuse, including the separation of calves from their mothers.



The spring slaughter brought last year's death toll above 200, the most buffalo killed in a single year since 1997; 135 of these animals were killed without being tested. Twenty BFC activists were arrested, some for performing nonviolent civil disobedience, others as part of an increasing campaign of persecution and intimidation at the hands of law enforcement officers.

BFC remains committed to gaining permanent protection for the Yellowstone buffalo and their critical habitat. The Yellowstone National Park herd should be managed by trained wildlife biologists, not livestock inspectors. Buffalo should be given the respect afforded other Yellowstone wildlife. Using tactics ranging from public process, outreach and education, videography, scientific documentation, litigation, and non-violent civil disobedience, BFC volunteers remain committed to gaining lasting protection and respect for Yellowstone's native buffalo.

While BFC's actions have made a huge difference, they have yet to stop the senseless bloodshed. Hundreds of buffalo will likely leave the park in the coming months. The Buffalo Field Campaign is a true grassroots effort whose survival depends on volunteer efforts and contributions from all who support the protection of wild bison. For more information on the Yellowstone population and the work of the BFC, contact:

Buffalo Field Campaign
PO Box 957
West Yellowstone, MT 59758
406-646-0070
www.wildrockies.org/buffalo
buffalo@wildrockies.org

Dan Brister
Project and Communications Director
Buffalo Field Campaign

TACTICS BEING EMPLOYED TO HELP SAVE THE LAST WILD BUFFALO

In communities across the country and around the world, people are rallying behind the buffalo. Citizens are organizing marches, public presentations, letter writing campaigns, drum circles, concerts, and various other forms of non-violent action to raise awareness of the buffalo's plight.

- On April 4th 2002, in Washington, DC supporters (including concerned citizens, individual activists, and representatives from several conservation and animal protection organizations) dressed in buffalo costumes and led a stampede from the U.S. Department of Agriculture to the U.S. Department of the Interior, drawing national media coverage.
- In Boulder, CO, last spring, buffalo supporters gathered at a downtown city park to draw attention to the plight of these sacred animals.
- A Memorial Day concert last year in Northport, NY, raised money to support BFC's front-lines presence.
- Others are urging public officials to stop killing the last wild buffalo through letters, calls, and emails. The most effective way to let public officials know how you feel is to send letters, faxes, phone calls, then emails, in that order.)
- Supporters in a congressional district can organize a visit to either a district office of a member of Congress or to their Washington, DC, office. Call the Member's office to schedule a meeting.

Quick References

Contact information for representatives:

<http://www.house.gov/writerep/>

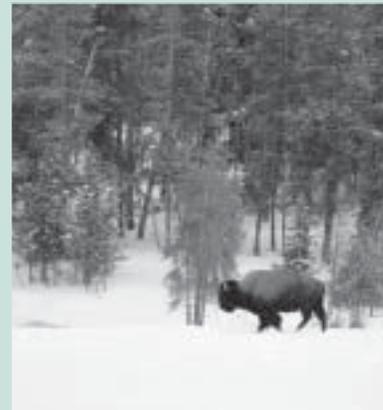
Contact information for senators: <http://www.senate.gov/senators/index.cfm>

Tips and samples for writing to members of Congress: <http://congress.org/>

[http://legislators.com/c-span/](http://legislators.com/c-span/contact.html)

[http://www.cfsi.org/](http://www.cfsi.org/writingcongress.html)

[writingcongress.html](http://www.cfsi.org/writingcongress.html)



BISON CONTACT LIST

Letters or calls to the following key decision-makers would be helpful:

DALE BOSWORTH: Chief
United States Forest Service
4NW Yates Federal Building
201 14th Street, SW at
Independence Ave, SW
Washington, DC 20250
Tel: (202) 205-1661
fax: (202) 205-1765
email: dbosworth@fs.fed.us

GALE A. NORTON
Secretary, United States
Dept. of the Interior
1849 C Street, NW
Washington, DC 20240-0001
Tel: (202) 208-7351
fax: (202) 208-6956
email: gale_norton@ios.doi.gov

ANN M. VENEMAN
Secretary, United States
Dept. of Agriculture
14th & Independence Ave, SW
Washington, DC 20250
Tel: (202) 720-3631
fax: (202) 720-2166
email: agsec@usda.gov

FRAN MAINELLA
Director, National Park Service
1849 C Street, NW
Washington, DC 20240
Tel: (202) 208-6843
fax: (202) 208-7779
email: fran_mainella@nps.gov



JOHN HAMMAN



WE TOOK THE VERY BEST PRACTICES THAT WERE REVEALED BY OUR NATIONWIDE SURVEY AND BROUGHT THEM TOGETHER INTO A “MODEL” FOR REGULATORY OR STATUTORY LANGUAGE. THE DRAFT LEGISLATION CAN BE USED AS A SOUND STARTING POINT BY THOSE WHO SEEK TO IMPROVE THE PROFESSIONALISM, EFFECTIVENESS, AND HUMANENESS OF THE WILDLIFE CONTROL INDUSTRY IN THEIR OWN STATE. THE TEXT IS ONLINE AT WWW.HSUS.ORG/ACE/14354, OR CONTACT BETH ROSEN AT 202-955-3672.

Protecting Urban Wildlife: The Next Frontier

Every year, the fates of tens of thousands of wild animals are decided by an almost whimsical process, simply because they are considered “nuisance” wildlife. The lack of public awareness and understanding of humane options to dealing with wildlife conflicts, coupled frequently with a lack of interest from state and federal agencies in the needs of the urban populace, often results in suffering and unnecessary deaths for many wild animals. Many wildlife species, including raccoons, squirrels, pigeons, starlings, and others, are harmed or killed merely because an animal found an uncapped chimney or an opening into an attic and was drawn to a “safe” and warm place to den and raise young. The plight of urban wildlife is similar to the situation that existed over a century ago with respect to our companion animals, whose care today ranks highly among people’s concerns for a humane world.

CHANGING ATTITUDES AND LIFESTYLES

Just a little over a hundred years ago, the first organized effort to deal compassionately with domestic animals in the United States had risen from Henry Bergh’s initiative in founding the American Society for the Prevention of Cruelty to Animals (ASPCA). Where they once were afforded little or no protection, the efforts of Bergh and other pioneers led to today’s more compassionate and pro-

fessional approach to dealing with domestic animals. Through the work of researchers such as Yale University’s Steven Kellert, we know that American attitudes toward animals are changing toward ever-greater understanding and compassion. And through the efforts of a growing field of animal protection organizations, we can see glimmers of that compassionate interest broadening, as issues involving the right and wrong treatment of animals are increasingly recognized and addressed. Today, when cruelty to domestic or wild animals is exposed, there is generally strong public outcry. While we do live in a better world, by some measures, there is still much to be done.

When Henry Bergh was stalking the streets of New York for those who would practice outrageous acts of cruelty against animals, particularly the ubiquitous draft animals upon whom commerce once depended, the majority of Americans still lived outside metropolitan areas and were dependent upon agrarian pursuits. Wild animals were pursued and persecuted for the commercial value they would yield. Market hunting brought many populations to all-time lows. Combined with those impacts, the destruction of habitat resulted in a landscape in which animals such as deer, beaver, and geese were simply not to be found. Laws were enacted against the wanton destruction, and slowly, the animals that had been nearly driven into ex-

inction returned. Meanwhile, American lifestyles underwent dramatic change as we moved from farm to city.

Today eight of every ten of us live in suburban or urban areas. As we have been engaged in this dramatic shift, so have a host of wild animal species. Less noticed until recently, as we adapted to urban life, raccoons, deer, geese, opossums, skunks, and many other forms of wildlife were figuring out the angles and adapting, as well. Having found city and suburb agreeable—and in some cases preferable—habitats in which to live and raise young, many of the wildlife species we only recently fought to restore to our lives have come to be deemed “nuisance” animals by some. Where they come into conflict with homeowners, businesses, and municipalities, these animals are often “controlled,” using techniques and approaches that harken back to the days before Henry Bergh and the start of the ASPCA. For urban wildlife, the compassion and respect we show for other animals in our lives is all too often lacking, and the world seems to be arrested in a Victorian twilight, where ignorance and cruelty rule over understanding and compassion. It is past time that twilight ended.

EXPLOITING A REGULATORY VOID

In many ways, urban wildlife is affected by what could be called the benign neglect of historic coincidence. State and federal

wildlife agencies have traditionally been focused on the restoration, and then recreational pursuit, of the wildlife commonly termed “game” species. Wildlife damage management has often fallen to state and federal agricultural agencies, whose primary interest lies in protecting crops and livestock. This has led to a void in which those who live in cities or towns appear to be left, without anywhere to turn when a raccoon or squirrel moves into the attic, or when deer come into the yard to help themselves to the smorgasbord planted there.

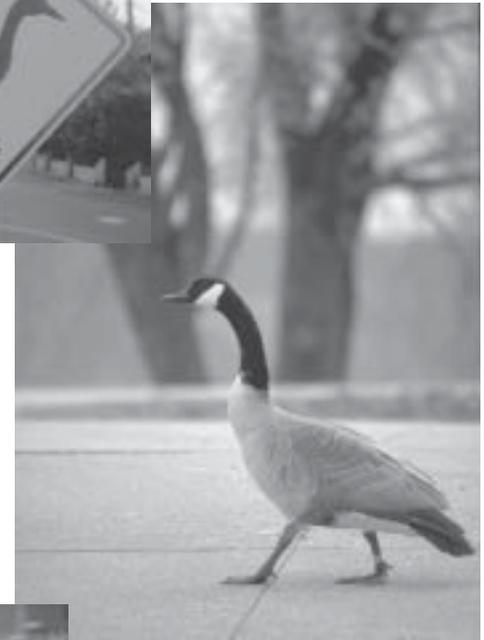
Or, so it might seem. The entrepreneurial spirit of the United States would hardly allow such a vacuum to exist for long. In fact, the last two decades have seen the rise of a private industry that has focused on providing services for those who need help and don’t know where to turn. A “nuisance” wildlife control industry has risen in the United States, as a business enterprise, and has grown significantly in the past few years. Its practitioners, often called NWCs, as shorthand for Nuisance Wildlife Control Operators, may have no background in wildlife beyond that gained through recreational trapping or hunting experiences. State wildlife agencies often have no licensing or testing requirements, demand no training, and allow anyone who wants to practice this trade to engage in it freely. Worst of all, very few states have any regulations or laws on how these NWCs can dispose of wildlife, allowing inhumane, inappropriate, and ineffective practices to occur.

ASSESSING THE EXTENT OF THE PROBLEM

In 1998, The Humane Society of the United States (HSUS) began to collect and analyze data on exactly what the states were and were not doing to oversee wildlife control activities, and from that effort, we have developed a disturbing picture of their activities. To begin, we must mention the sheer volume and extent of the issue. Very few statistics are kept concerning the numbers of animals that are deemed “nuisance” wildlife and trapped and killed every year by business interests. A report from the Illinois Department of Natural Resources, issued in 1999, indicated that

76% of the animals that permittees handled were killed. More than 67,000 animals were reported as having been handled. Michigan also has summarized information concerning wildlife control activities.

From 1995 through 1999, as one example, an average of about 10,000 raccoons were trapped in steel leg-hold or cage traps, with about half killed and half relocated and released, a practice that is coming under increasing scrutiny as a questionable “solution” to human-wildlife conflicts. Likewise, the summary statistics for Michigan



JOHN HUMMANS



Programs such as GeesePeace® (www.geesepeace.com) are addressing larger and more complex issues with urban wildlife by creating positive solutions and fostering community involvement. These programs often work because volunteers are willing to do what financially motivated NWCs won't do – take the time to use effective, non-lethal methods in resolving problems.

in 1997 indicate that 993 bats were caught in steel traps, while another 360 were caught in cage traps. Notwithstanding the fact that bats should not be cage trapped, except under extraordinary circumstances, the report does little to explain what sorts of devices are being used. A year later, the report lists no bats as being trapped in steel traps and 441 in cage traps, while 922 were taken using “other” methods.

Such inconsistencies raise serious questions about how trapping activities are regulated, but Michigan at least tries to collect information. Few other states do. Whatever the extent of business involvement in the trapping of “nuisance” wildlife, it may just be the tip of the iceberg if we consider what undoubtedly are the much more common and frequent efforts of homeowners to solve problems by them-

selves. Nothing at all is known of how often individual homeowners freelance their own humane, or inhumane, “solutions” to conflicts with wild animals, but it is likely to dwarf the activity of the businesses when it does become known.

Using the data we collected from the states, two studies have been prepared^{1,2}. In the first¹, we identified ten areas of concern and gave states a score of “1” if they had passed regulations or statutes to address these. For some activities, such as translocation, we did not expect to find regulatory or statutory oversight, so we gave partial scores where we knew policies existed. It is often very difficult to determine what state policies are on given issues, and, of course, policy recommendations do not carry the force of regulation or statute. Under the scoring system that we adopted, a state that scored perfectly for each of our

ten categories would receive a “10.” When we actually tallied our findings, we found a mean state score of slightly more than “2,” while the modal number (that is, the most frequently occurring score) was “0.” No state scored as high as “7,” but several scored “5” or better.

DEVELOPING MODEL REGULATORY LANGUAGE

We then looked at the very best practices that we could find in any of the states and brought these together into a “model” for regulatory or statutory language that we felt represented the best current ideal if the states were to change the way they regulated the growing industry. We presented that model before the attendees at the 20th Vertebrate Pest Conference in 2002², the largest gathering of all of the various interests involved in wildlife damage management, including private practitioners, state and federal agencies, and university professionals and researchers, as well. From that, a flurry of activity emanated, with calls for “clarification” from Critter Control, the largest franchising business for wildlife control work in the U.S., as well as from the National Wildlife Control Operator’s Association (NWCOPA). These interests felt, among other things, that The HSUS was attempting to “micromanage” their activities and that we would seek to impose severe restrictions on what was and was not allowable, in essence, putting humane concerns ahead of business interests.

In part, such concerns have to be traced to the historical antipathy between traditional trapping interests and the animal protection community. Strong feelings about what are often called the “antis” come from many of those who are NWCOPA, who see efforts to stop recreational and commercial fur trapping as a threat to “nuisance” wildlife work. The political reality of this situation may often demand a certain level of compromise for both sides, but one thing is certain. The humane treatment of animals, as well as the protection of the public from unscrupulous practices, will be jeopardized until lines of communication improve.

THE CHALLENGE AHEAD

The very tip of the iceberg has been exposed. The growing private industry is only one aspect of human-wildlife conflicts in urban areas. State agencies themselves have become heavily vested in programs to “control” deer herds; federal agencies are increasingly involved in the “control” of Canada geese, and individual homeowners, in all likelihood, outweigh all other interests by participating in their own form of “controls” when wildlife conflicts occur. The obvious first step for anyone who is concerned about the treatment of urban wildlife is to become better educated about the issues. The HSUS has resource information that can help in this regard. A next step would be to get involved. This can be done in any number of ways, and it is likely that grassroots and community involvement will be the most important element in any efforts to recognize and deal with the many facets of urban and suburban wildlife conflict resolution.

TO START, CONSIDER THE FOLLOWING:

- Track relevant issues. Monitor the HSUS website and www.wildneighbors.org for background information.
- Familiarize yourself with our model legislation and other written materials (see reference list below).
- Contact your state wildlife agency and ask them to put the humane treatment of wildlife on the front burner.
- Attend your state wildlife agency’s public meetings. To find out when they are occurring, check the website for the agency or call them.
- Request to be placed on the list of those who receive notice for state agency actions affecting wildlife. This will enable you to receive studies and other documents that will outline projects that are likely to harm wildlife. In many cases, these notices will solicit public comments on proposed actions.
- Familiarize yourself with wildlife



JOHN HADIDIAN

Successfully captured in a humane live trap, this raccoon will be released unharmed, and the entry point in the structure it occupied will be securely sealed. Such non-lethal methods need to become standard.

rehabilitators in your area, as they are likely to hear first about any questionable practices.

- Consider creating a community-based program in your area to bring in volunteers to help wildlife. You can truly see results with these programs.
- Get in touch with your legislators and urge them to pass legislation to promote humane methods for resolving conflicts with wildlife. Contact The HSUS government affairs department for pertinent information (Beth Rosen: 202-955-3672).

Nancy Perry

Director of Government Affairs, The HSUS

John Hadidian

Director, Urban Wildlife Programs, The HSUS

SOURCES OF INFORMATION

HSUS website: www.hsus.org

Model regulatory or statutory language:

www.hsus.org/ace/14354

Contact wildlife@hsus.org if interested in the following documents:

- ¹ Hadidian, John, Childs, Michele R., Schmidt, Robert H., Simon, Laura J., & Church, Ann (2002). Nuisance wildlife control practices, policies and procedures in the United States. *In Wildlife, Land and People: Priorities for the 21st Century*, eds Field, Rebecca, Warren, Robert J., Okarma, Henryk, & Sievert, Paul R., pp. 165-68. Proceedings of the Second International Wildlife Management Congress, Valko, Hungary: The Wildlife Society.
- ² Hadidian, John, Simon, L.J., & Childs, M.R. (2002). The “nuisance” wildlife control industry: animal welfare concerns. *Proceedings, 20th Vertebrate Pest Conference*, eds Timm, R.M. & Schmidt, R.H., pp. 378-382. University of California, Davis.
- ³ Hadidian, John & Childs, Michele (2001). Oversight of the wildlife control industry: regulatory and statutory standards as recommendations to the states. *The Probe*, 219: 1-4.





Reports



Paving the Way to Water Shortages: How Sprawl Aggravates Drought, a report released by American Rivers, the Natural Resources Defense Council, and Smart Growth America, assesses the effect of paving over land upon groundwater supplies and makes the case for adopting “smart growth” policies to reign in sprawl. Online at www.americanrivers.org; additional smart growth/sprawl information available on www.nrdc.org and www.smartgrowthamerica.com.

Return the Great Forest: A Conservation Vision for the Southern Appalachian Region, a plan developed by the Southern Appalachian Forest Coalition, sets forth guidelines for connecting key segments of national forests in the Southern Appalachians and to shield them from logging, road-building, and other development. Included in the plan are 2.8 million acres of sensitive natural areas, old-growth forests, biological hotspots, and special watersheds. Online at www.safc.org.



The Impacts of Off-Road-Vehicles and Roads on Wildlife Habitat in Florida's National Forests, a report by Defenders of Wildlife, addresses the impacts of ORVs on both wildlife and habitat, as well as the Forest Service's ineffective response to the problem thus far. Recommendations for moderating ORV and road impacts are included, along with an assessment of the vulnerability of Listed species in Florida

National Forests to roads and ORVs. Online at www.defenders.org/habitat/loros/

Fragmenting Our Lands: The Ecological Footprint from Oil and Gas Development, by Chris Weller, Janice Thomson, Ph.D., Pete Morton, Ph.D., and Greg Aplet, Ph.D., assesses the wide-ranging disturbances that oil and gas extraction and transmittal typically cause in the landscape. Methodical spatial analyses of Big Piney-LaBarge oil and gas field in the Upper Green River Basin of Wyoming, a region where more than 3,000 oil and gas wells have been drilled, demonstrate significant fragmentation of habitat and make the case for better planning. Online at The Wilderness Society site: www.tws.org/newsroom/report_fragmenting101402.htm



Endangered Species: Research Strategy and Long-Term Monitoring Needed for the Mohave Desert Tortoise Recovery Program, published by the General Accounting Office, reports that the effectiveness of government actions to protect desert tortoise habitat remains “unknown” and that the status of desert tortoise populations remains unclear, because of insufficient data to demonstrate population trends. The December 2002 report is online at www.gao.gov/cgi-bin/getrpt?GAO-03-23; highlights are at www.gao.gov/highlights/d0323high.pdf.

Weird Science: the Interior Department's Manipulation of Science for Political Purposes, prepared by the House Resources Committee Democratic staff, explores how sound science has been sublimated in regard to the Arctic National Wildlife Refuge, Powder River Basin, Klamath river Basin, snowmobiles in Yellowstone, the Endangered Species Act, the Everglades restoration, marine mammals and environ-

mental protections, national forest policy, Department of Defense environmental exemptions, and so forth. Online at www.stopextinction.org; PDF at <http://resourcescommittee.house.gov/resources/democrats/hot2002/weirdscience.pdf>

Biodiversity in the National Parks: Looming Threats to America's Most Valued Plants and Animals, published by the National Parks Conservation Association, outlines threats to the plants and animals making up the biological diversity of the national parks and offers recommendations for protecting park biodiversity. Online at www.eparks.org/biodiversity

Winged Messengers: The Decline of Birds, Worldwatch Paper 165, a new report by Howard Youth, explores bird declines around the world and the various threats facing birds and other wildlife sharing their habitats. 72 pp. \$5 + S/H. www.worldwatch.org/pubs/paper/165/

Books



Science Under Siege: The Politician's War on Nature and Truth, by Todd Wilkinson, profiles governmental whistleblowers whose struggles to protect natural resources offer support and hope for others. \$18; \$16 to PEER members; includes S/H. www.peer.org/publications/books.html

Wildlife Wars: The Life and Times of a Fish and Game Warden, by Terry Grosz, recounts illicit wildlife trade battles from his 32-year career as a special agent veteran of the U.S. Fish and Wildlife Service and a California state fish and game warden. \$17; \$15 to PEER members; includes S/H. www.peer.org/publications/books.html

Blue Frontier: Saving America's Living Seas, by David Helvar, explores the impact of history, commerce, and policy on marine life and profiles the growing number of coastal citizen-activists, local governments, and waterfront communities. \$24.95; \$22 for PEER members; includes S/H. www.peer.org/publications.books.html



destruction caused by public lands ranching. PB, over 400 pp. \$37.00 + \$3.00 S/H. Free to professors, educators, legislators, serious activists, journalists, agencies, and scientists. Go to www.biologicaldiversity.org, and click on "store" to order a copy with a credit card. If you qualify for a free copy, please call 520-623-5252 X314.

The Empty Ocean, by Richard Ellis, discusses the many forms of sea life that humans have fished, hunted, and collected, providing natural history, the threats these creatures face, and the losses they have suffered. Species that have been helped and are making comebacks are also discussed, as well as recommendations for helping species that are in peril. Illustrations are by the author. PB, 375 pp. \$26.00. www.islandpress.com

From Conquest to Conservation, Our Public Lands Legacy, by Michael P. Dombeck (former chief of the Forest Service and former director of the BLM), Christopher A. Wood, and Jack E. Williams (these latter two also both spent their careers working to steward public resources), examines the history of public lands in the U.S. and discusses environmental and social problems facing public lands. Specific near-term and long-term suggestions are given. PB, 232 pp. \$22.50. www.islandpress.com

The Land We Share, Private Property and the Common Good, Eric T. Freyfogle, discusses provocative questions at the heart of ownership of nature, using history, law, philosophy, and ecology to examine both the foundations of and the changing ideas about private ownership of land in America. Accounts of actual disputes over land-use issues are used to develop a vision of what a fair private ownership system might look like. HC, 256 pp. \$25.00. www.islandpress.com

Turning the Tide: Saving the Chesapeake Bay, Revised Edition, by Tom Horton, updates the 1991 examination of the

Chesapeake Bay ecosystem with an assessment of developments over the last decade. New case studies, updated maps, charts, and graphs build upon the analysis, and science-based recommendations. PB, 352 pp. \$40.00. www.islandpress.com

The State of the Nation's Ecosystems, Measuring the Lands, Waters, and Living Resources of the United States, published by the H. John Heinz III Center for Science, Economics and the Environment, presents a collective vision for periodic reporting on the condition and use of the nation's waters, lands, and living resources. It identifies specific indicators for health of ecosystems, provides data on current conditions and past trends, and highlights gaps in our ability to assess these systems. Link to flexible hypertext format, download all or parts of the report, or view or download a summary of the report at www.heinzctr.org/ecosystems/index.htm. Also in HB, 288 pp., \$25.00, Cambridge University Press. <http://us.cambridge.org/titles/catalogue.asp?isbn=0521525721>

State of the World 2003, Worldwatch Institute's 20th annual report, documents successes that prove humanity is capable of making needed changes and identifies serious global threats still undermining societies and ecosystems around the world. PB, 241 pp. \$16.95 + S/H. www.worldwatch.org/pubs/sow/2003/press.html or phone 202-296-7365.

Welfare Ranching: The Subsidized Destruction of the American West, published by Center for Biological Diversity, documents the

Other References



Ethics for a Small Planet: A Communications Handbook on the Ethical and Theological Reasons for Protecting Biodiversity, published by the Biodiversity Project, details the ethical and religious frameworks in which biodiversity issues are discussed to help those who communicate with the media and the general public strengthen their presentations. Topics include: Why should we talk about ethics, values, and biodiversity; Origins and Roots: Theological and Ethical Perspectives on Biodiversity; Applying Ethical and Religious Perspectives to the Biodiversity Crisis; Thinking Locally, Acting Globally: Steps Toward an Ethic for the Biosphere; and Communications Tips and Tools: Talking about Biodiversity, Ethics, and Faith. Details online at www.biodiversityproject.org/EthicsForASmallPlanet.htm.

Conservation Directory 2003: The Guide to Worldwide Environmental Organizations, produced and distributed by the National Wildlife Federation and Island Press, is the most comprehensive annual listing available of government agencies, nongovernmental organizations, and colleges and universities, as well as more than 18,000 officials concerned with environmental conservation, education, and natural resource use and management. Add your group to the Directory or search the 2002 edition online at www.nwf.org.

If you have a publication or website announcement, please phone (301) 258-3147 or e-mail bstallman@hsus.org.



In Memoriam

The wildlife conservation community suffered a great loss on January 26, 2003, when a plane carrying three researchers and their pilot crashed into the waters off Fernandina Beach, Florida. Emily Argo, Jackie Ciano, Michael Newcomer, and their pilot, Tom Hinds, lost their lives during an aerial survey in the calving grounds of North Atlantic right whales—the most endangered large whale species. Dr. Mary Pearl, Director of the Wildlife Trust, for which the researchers worked, stated, “Lives can be measured in days but they can also be measured in significance. The work that they accomplished on behalf of whale survival and their devotion to the cause of marine conservation will always stand as an inspiration.” The HSUS shares this sense of loss, and we offer our deepest condolences to their families and friends.



EMILY ARGO

Researcher

JACKIE CIANO

Researcher

MICHAEL NEWCOMER

Researcher

TOM HINDS

Pilot

Wildlife Tracks

THE HUMANE SOCIETY OF THE
UNITED STATES
Wildlife Department and
The HSUS Wildlife Land Trust

2100 L Street, NW
Washington, DC 20037

NON-PROFIT ORG.
US POSTAGE
PAID
THE HUMANE
SOCIETY OF THE
UNITED STATES