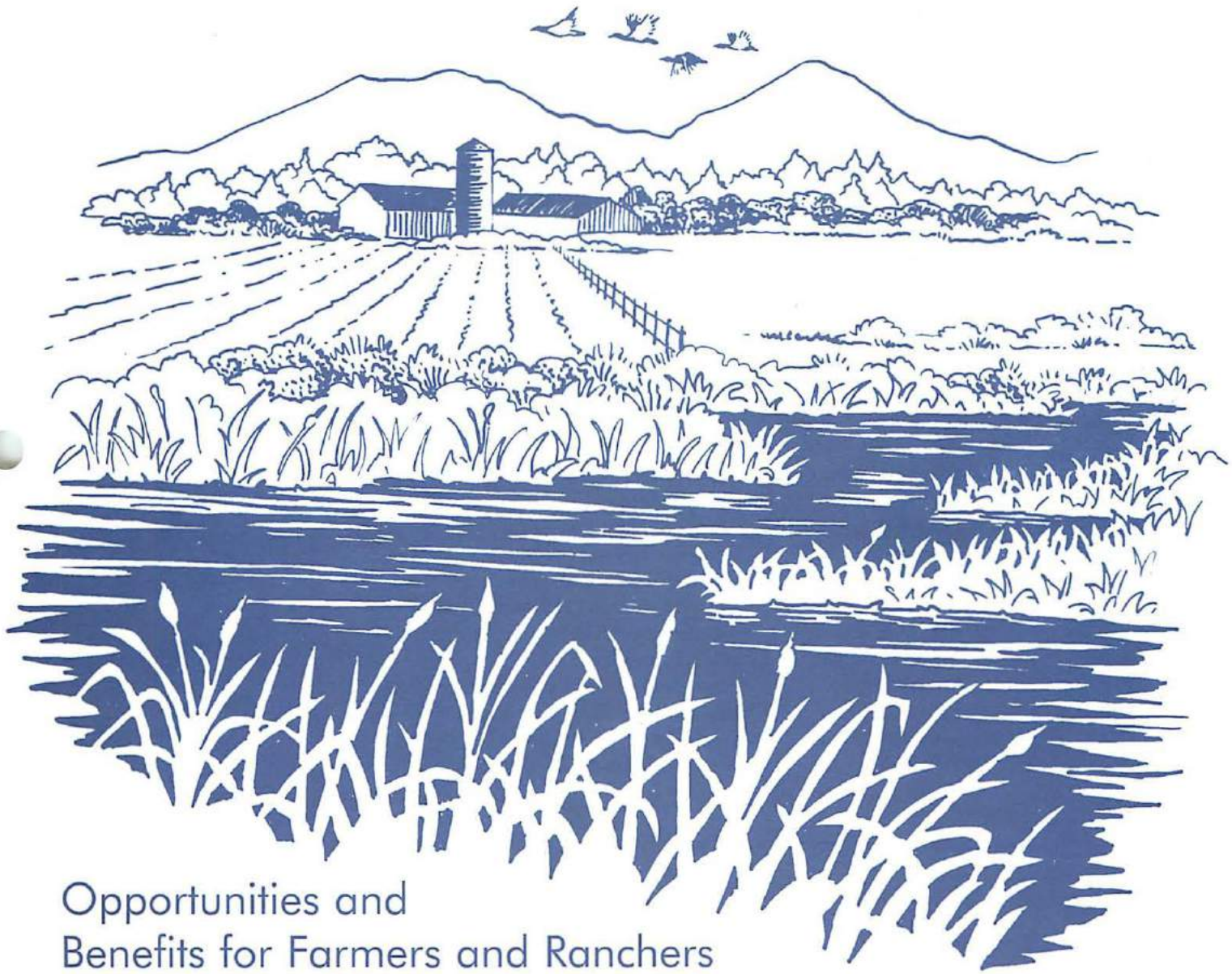
Conserving Wetlands on Colorado's Agricultural Lands



Opportunities and Benefits for Farmers and Ranchers

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For additional copies of this resource guide, please contact the Colorado Association of Soil Conservation Districts at: 3000 Youngfield, Suite 163, Lakewood, Colorado, 80215, (303) 232-6242. The cost is $5.00 per copy plus shipping and handling. Samples of the guide can be found in every Soil Conservation District office in Colorado.

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INTRODUCTION

About this Resource Guide

Agriculture is important to Colorado, both for its place in the economy and for its contribution to the landscape. As on-site land stewards, farmers and ranchers across the state play a critical role in managing sensitive land resources such as wetlands. The fact is that nearly 75% of the nation's remaining wetlands are privately owned. Therefore, when developing wetland management strategies, it is vital to recognize the role of agricultural producers.

As the important functions performed by wetlands have become better understood, conflicts have arisen between individual landowners and the general public, which is often represented by government agencies. Many landowners regard the presence of wetlands on their property as a liability due to governmental restrictions placed on their use. Difficult questions have come up: How can we balance the value of wetlands in their natural state with the desires of property owners to farm, ranch, or build on their land? How can we conserve both publicly and privately owned wetlands and their important functions while respecting individual property rights and allowing traditional land uses and vocations to continue?

Photo © David Cooper

Photo © Paul McIver

A cattail marsh along the Front Range. (Above) A wet meadow east of Castle Rock.

Recent laws and initiatives create new opportunities for landowners to realize benefits—economic and otherwise—from their wetlands. This resource guide presents alternatives for wetland management that meet the needs for a strong rural and farm economy, good quality surface and ground water, and healthy ecosystems with diverse wildlife populations. Case studies tell the stories of 21 farmers and ranchers around Colorado who reap the rewards of conserving wetlands on their land. These people are motivated by a number of

different incentives to manage, restore, or create wetlands and riparian areas.

Photo © ECOS

An alpine wetland near Telluride.

In the section entitled "Opportunities and Benefits for Wetlands Conservation," you'll find descriptions of the wide variety of wetland related programs and services available in Colorado. Many of these include cost-share opportunities for landowners interested in managing wetlands for water quality, wildlife habitat, or erosion control. This guide also provides concise information on the federal and state laws that regulate wetlands in Colorado. Recently, the application of these regulations for agricultural lands has been streamlined.

What is a Wetland?

Photo © ECOS

Many groups and individuals are involved in discussions to answer the question "What is a wetland?"—they include scientists, elected officials, regulatory agencies, and landowners. Existing definitions for "wetland" are as numerous as the form and shape wetlands can take.

Photo © David Cooper

Sites are identified as wetlands using three scientific criteria: 1) how and when the site is inundated or saturated with water (hydrology); 2) the presence of soils containing little or no oxygen (hydric soils); and 3) the presence of plants adapted to hydric soils (hydrophytes). Only areas that meet all three criteria are wetlands. In general, these areas are neither deep permanent surface waters nor dry land.

Bulrushes and smartweed in a San Luis Valley slough. *(Above)* Smartweed's distinctive pink flowers.


Photo © David Cooper

Fens often include small, open ponds.

In Colorado, wetlands include marshes, fens, wet meadows, riparian areas along rivers and streams, temporary potholes, spring seeps, and high altitude saturated montane wetlands. Cottonwoods, cattails, rushes, willows, and sedges are examples of plants typically found in Colorado's wetlands.

For many years, wetlands were generally viewed as a nuisance by farmers, developers, city officials, and the general public. Many wetlands were drained or filled to make the land more "productive" in terms of being croppable or buildable. The federal government even encouraged the conversion of wetlands to dry land by granting subsidies through the Office of Technology Assessment to fill them.

Today, wetlands are viewed as an important natural resource. This change in attitude comes with an increased knowledge about the important functions wetlands provide. Similarly, perspectives on other management practices in this country have changed over time. We once burned wheat stubble until we recognized its importance for controlling the erosion of topsoil by wind and water. We once straightened streams until we realized that natural courses and streambeds control flooding and flood damage.

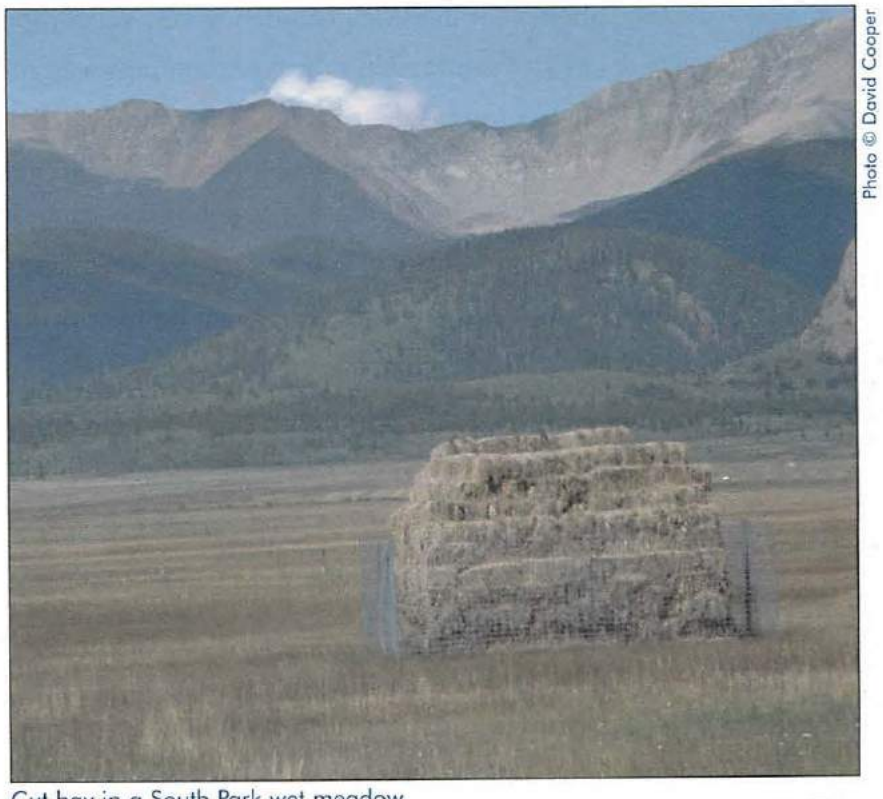


Photo © David Cooper

Cut hay in a South Park wet meadow.

How Wetlands Benefit Your Farm or Ranch

Wetlands are some of Colorado's most valuable lands. Here in the arid west, water brings value—especially in terms of agricultural production. As an agricultural producer, you can personally reap the rewards of healthy

This stream's riparian zone shows healthy vegetation.

wetlands and riparian areas on your land. These are a few of the very concrete benefits that wetlands and riparian areas can provide:

- Shelter for livestock through woody vegetation (shrubs and trees).
- Greater production of forage than non-wetland areas.
- Higher water table and increased subsurface irrigation.
- Filtering of sediment which protects water quality, prolongs irrigation pump life, and reduces siltation of ponds and irrigation ditches.
- Reduced velocity of floodwaters and bank erosion, minimizing your property loss.
- Maintained late summer stream flows critical for irrigation, stockwater, and recharging aquifers.

Natural and constructed wetlands can also help farmers and ranchers manage waste from their operations. Strategically placed wetlands provide cost-effective measures for dealing with:

- Nutrients from field runoff. Wetlands help filter out nitrogen, phosphorus, and pesticides, keeping these nutrients from entering nearby lakes, streams, or ground water.
- Feedlot runoff treatment. This helps avoid polluting nearby waters with nutrients, organic waste, and sediment.
- Irrigation runoff control. "Recharge pits" to collect irrigation runoff and replenish ground water are now fairly common in Colorado. (Doing this without creating other problems can be tricky. Contact your local Soil Conservation Service (SCS) field office or Conservation District office for assistance. See the Directory on page 37 for help in locating the office.)
- Ground water recharge. Wetlands help replenish aquifers that, in turn, help keep nearby dugouts and ponds full.

The Broader Functions, Values, and Benefits of Wetlands

The benefits of healthy wetlands and riparian areas extend far beyond your own land. We are all downstream from someone else: the actions of one landowner affect neighboring landowners—private or public. In terms of their importance for wildlife habitat, water quality, tourism, and outdoor recreation, wetlands are an extremely precious resource. While many farmers have created wetlands, more than half of Colorado's natural wetlands have been lost. Those remaining represent only about 1% of the state's total land area. Below are a few additional reasons why conserving and/or protecting these lands is so important.

Photo © Paul McIver

Wildlife Habitat

An estimated 90% of Colorado's approximately 800 species of fish and wildlife depend on wetlands and riparian areas for survival. Wetland plants provide important cover, nesting areas, and food. Along the South Platte River, for example, 147 of the 151 species found there make at least seasonal use of wetlands.

Photo © Paul McIver

Photo © David Cooper

Moose feeding in a marsh.
(*Above*) The yellow-headed blackbird, a migratory songbird, in wetland grasses.
(*Left*) A grebe nest.

Habitat for fish and wildlife in Colorado is closely linked to the state's economic well-being. Many tourists come to Colorado to fish, hunt, or recreate in natural areas. Healthy populations of waterfowl, upland birds, big game, and fish are critical for continued revenues from hunting and fishing licenses. Many non-hunters come to Colorado for the chance to watch wildlife.

Photo © ECOS

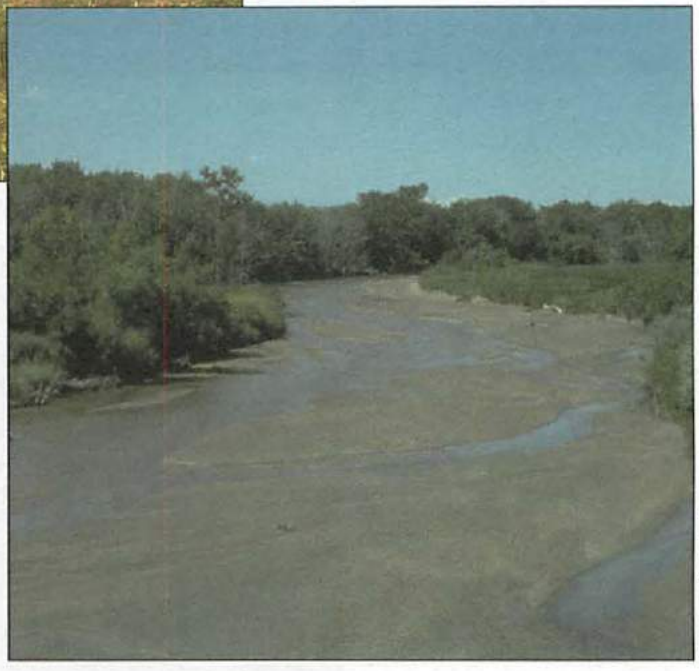


Photo © Paul McIver

One of Colorado's montane wetlands. (*Below*) Cottonwoods and willows help secure the banks of Fountain Creek.

Water Quality

Wetlands help maintain and improve water quality. They break down and hold nutrients, chemicals, sediment, and organic wastes carried in runoff. Acting as a filter, wetlands keep these pollutants from entering nearby streams and lakes. Sources of these pollutants include city streets and lawns, construction sites, mining operations, and agricultural fields. In some parts of the state, agriculture can be a contributor to such "nonpoint source" water pollution. Wetlands on agricultural lands can keep pesticides, sediment, and salts from degrading local waters including irrigation waters.

Streambank Stabilization

Many wetlands are adjacent to stream channels and within floodplains. The roots of wetland plants hold soils in place and reduce erosion along streambanks, preventing the loss of valuable agricultural land. This also safeguards streams' natural beds, ensuring the availability of water later into the summer and fall. Healthy streambanks also provide important fish habitat.

Reduction and Retention of Peak Runoff

Wetlands help absorb peak flows of water during floods by acting as natural sponges. With a substantial short-term water storage capacity, many wetlands can hold water that overflows riverbanks, releasing it slowly over a long period of lower water flow. This reduces potential flood damage downstream, and provides drinking water for livestock and wildlife during the summer and fall when stream flow is low or nonexistent in many parts of Colorado.

Ground Water Recharge

While wetlands such as springs and seeps are associated with ground water discharge, wetlands located within an aquifer's recharge area can replenish the aquifer. This keeps water in nearby streams and ponds longer into the summer and fall.

Photo © David Cooper

Avocets in the San Luis Lakes area.

The Impacts of Wetlands Destruction

When wetlands are destroyed, the impacts can be far-reaching. They include:

- decline of wildlife populations
- increases in floods and flood damage
- increased sediment and nutrient loading in lakes and streams
- increased costs for treating drinking water
- limited productivity of fisheries due to low water quality and habitat loss
- reduced recreational opportunities and tourist dollars
- lowered water tables
- contamination of wells for drinking or irrigation water.

Photo © Paul McIver

A prairie wetland of central Colorado.

Your Challenge as a Private Landowner

Less than half of our nation's original wetlands remain today, and an additional 200,000 acres disappear each year.* As a landowner, you play a critical role in the fate of these valuable lands. Most farmers and ranchers are good land stewards—your connection to the land makes you natural protectors of it. Perhaps you are already engaged in wetlands conservation work on your land. If so, you probably know first-hand the benefits this can bring. If not, this resource guide may provide some information to get you started. There's a lot riding on your actions.

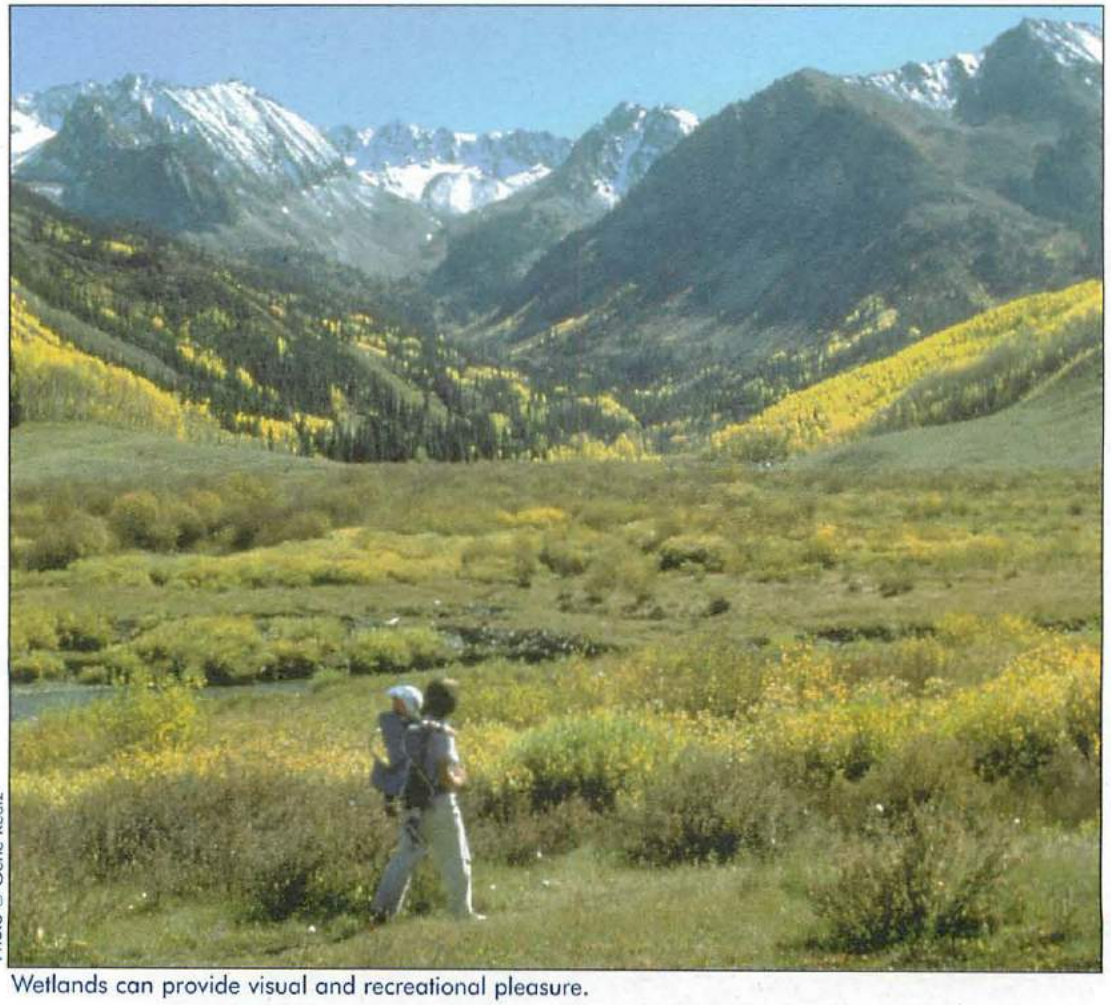


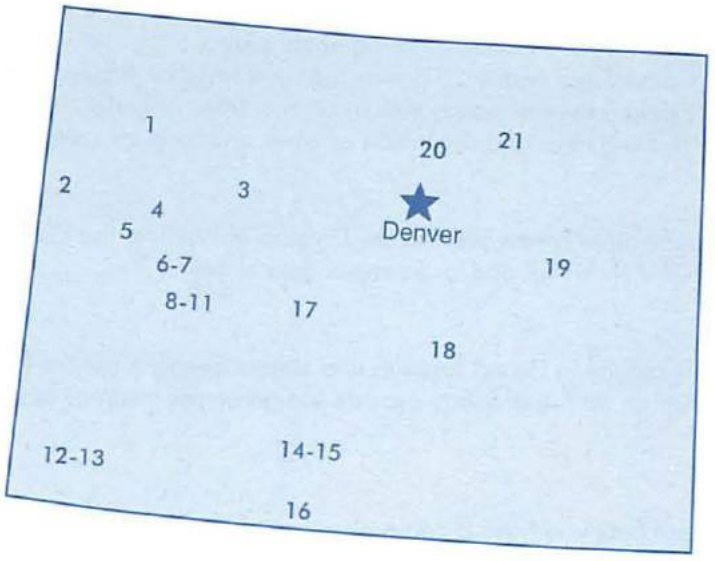
Photo © Gene Reetz

Wetlands can provide visual and recreational pleasure.

* *This figure of wetlands remaining does not include Alaska.*

The farmers and ranchers featured in this section live and work in many parts of Colorado. Their case studies are arranged by geographic area, beginning in the northwest section of the state and running roughly counter-clockwise to northeastern Colorado. Each number on this map represents one farmer or rancher. Use these numbers to find specific case studies.

State of Colorado



1-Dave and Patti McGraw

11272 County Road 7
Meeker, CO 81641
(303) 878-3207

"The way we ranch is conservative. Sure, I could run more cattle and make more money, but I figure we're better off keeping a little for next year. And we've been able to make improvements without ever taking the cattle off. The ranch isn't picture perfect—we still have a long way to go. Yet I've already had offers of three times what we paid for the place seven years ago."

Actions Taken

- Kept numbers of cattle down initially to let the grass head out.
- Developed springs and ponds away from creek bottoms to keep cattle out of riparian areas and to hold water during the summer. Planted willow in the bottoms.
- Use riparian pastures for breeding only—about three weeks of the year. Rotate cattle through other pastures.

Who Helped Out

SCS gave technical advice and ASCS provided cost-sharing for water development, cross fencing, and turning 550 acres of wheat fields into grass.

Benefits and Rewards

- Water table is up; there is now running water on the land through the summer.
- No more cutting along the banks of Strawberry Creek. Tall grass holds the banks even during flooding.
- Increased numbers of wildlife on the property, including deer and elk.

Advice Offered

Remember that no one has all the answers. But check with the experts and apply what they know to your situation. Don't discard new ideas just because they're different. Put things together your way, little by little.

2-Dale Bittle

1224 13.5 Road
Loma, CO 81524
(303) 858-3295

"I've been raising upland gamebirds for many years, and now I'm making a major change on my land. I'm turning it into a kind of park—converting it to wildlife habitat. Someday, this piece of property will be an island of conservation in a sea of development."

Actions Taken

- Established an overall management plan.
- Constructed nearly 20 ponds fed by springs on the property.
- Stocked several ponds with trout, two types of catfish, and bass.
- Planting trees and vegetation as cover and food for upland birds and waterfowl.

Who Helped Out

"You name it!" SCS, ASCS, the State Forest Service, the Division of Wildlife, the Fish & Wildlife Service, and Ducks Unlimited all contributed technical and/or financial assistance.

Benefits and Rewards

- Self-satisfaction is first. The college in Grand Junction and several agencies use the land as an example for others.
- Leases for hunting and fishing on the property provide supplemental income, as does selling birds and fish commercially.

Advice Offered

Don't turn a shovel-full of dirt until you have a comprehensive plan in place. Then, proceed at a pace that's comfortable for you, given the technical and cost-share assistance available.

3-Bill Johnson

Crystal Springs Lake Ranch
1698 County Road 103
Carbondale, CO 81623
(303) 963-1356

"My family has ranched in Colorado since the turn of the century. I went on to study natural resource management. In addition to cutting hay and raising and boarding horses, I raise fish and wetland plants. Half my work in wetlands and riparian creation and restoration is in fixing problems—make sure you get the right expertise and the appropriate permits."

Actions Taken

- Manages an 18-acre lake for fish and waterfowl habitat.
- Manages riparian areas and wetlands for wildlife and waterfowl.

Who Helped Out

ASCS provided financial assistance for work on irrigation systems. The Fish & Wildlife Service cost-shared the building of a pond for waterfowl habitat.

Benefits and Rewards

- Wetlands and lakes are the fields that grow crops of fish, shrimp, and wetland plants for commercial sale.
- A lease to a commercial fishing outfitter brings in extra income.
- Wildlife on the property includes elk, deer, and a host of water birds—cranes, swans, canvasbacks, redheads, pintails, wood ducks, and the rarely-seen Barrows goldeneye and white-winged scoter.

Advice Offered

Safeguard your riparian areas—they will provide financial returns and protect your property.

4-Louis Ferganchick

P.O. Box 23
Austin, CO 81410
(303) 835-3962

"We wanted to create a sort of hunting preserve. Developing the ponds brought all kinds of game-birds to our property—chukars, quails, pheasants, and lots of waterfowl."

Type of Farming
An orchard farm in the Gunnison River canyon—grows peaches, apples, and nectarines.

Actions Taken
- Built several fairly deep ponds on land alongside the river.
- Planting grain in one-acre blocks near the draws as feed and cover for birds.

Who Helped Out
Received cost-share assistance from ASCS for irrigation projects. Built the ponds on his own.

Benefits and Rewards
- Can raise fish in the ponds—currently has bass and catfish.
- Brings in extra income by charging the public to fish. Plans to construct fish raceways and sell fish commercially.
- Will operate a hunting preserve in the future to supplement income from the orchard.

5-John Welfelt

1770 Gunnison
Delta, CO 81416
(303) 874-5737

"We run a river bottom cattle operation on 171 acres along the Uncompahgre River. We have many naturally wet areas—cattail marshes, backwater sloughs, beaver ponds, wetlands adjacent to riparian areas, and lots of springs. We've always appreciated wetlands and the wildlife they support, and wanted to provide more on our land."

Actions Taken
- Constructed 24 large and small ponds around naturally-occurring springs under the Corps of Engineers' nationwide general permit #29 (wetlands reconstruction).
- Created fish habitat by using an overflow spillway to provide oxygen to the water, and by putting in gravelly areas for spawning.
- Stocked several of the ponds with fish for research and experimentation.

Who Helped Out
Received technical advice from SCS and the Corps of Engineers. Also used a private consulting firm.

Benefits and Rewards
- Huge increase in wildlife on the property, including thousands of waterfowl in the winter.
- Increased value of the land.
- Immense personal satisfaction.

Advice Offered
Do it right the first time. Get lots of opinions, but don't take anything as gospel truth. Talk to many people, and then decide for yourself.

6-Jesse B. Grett

60264 Carnation Road
Olathe, CO 81425
(303) 323-5258

"Without irrigation seepage and tailwater, all wetlands in this area would disappear. Farmers should be recognized for this contribution to wetlands conservation. No matter who you are, you should all leave the land in better condition than you found it."

Actions Taken
- Built several ponds—the first one in 1950, and five more in the 1970s.
- Developed a small cell wetland system to treat wastewater from the dairy.
- Directs irrigation tailwater into natural drainages: this provides moisture for grasses, cattails, and willows to grow.

Who Helped Out
SCS designed and built the first pond in 1950. Both SCS and ASCS have been helpful. Received cost-share dollars through the Colorado River Salinity Control Program.

Benefits and Rewards
- No productive land was taken out of production—built the ponds on "waste" land.
- Cattails and bulrushes along the ponds absorb polluting nutrients from irrigation waters.
- When he was a kid, never saw a duck on this land. Now, hundreds of birds use the wetlands: ducks, geese, hawks, eagles, herons, grebes, avocets, and small birds.

Advice Offered
Don't wait until next year—try to do a little each year. Remember: it takes a long time to see the results of your work, and requires considerable time on your part.

Attracting Wildlife on Your Farm or Ranch

Many landowners are interested in attracting wildlife to their property—especially waterfowl and gamebirds. Improving habitat through careful creation, restoration, and enhancement of wetlands and ponds will usually result in increased numbers of animals. The list below provides general concepts and ideas for consideration. The unique characteristics of your farming operation and wildlife goals will shape your decision-making.

- Develop springs or ponds with automatic shut-off valves to provide year-round water for wildlife. (Such water developments can also be useful for irrigation and livestock watering.)
- Provide elevated nesting structures at ponds and wetlands.
- Build islands in stock watering and irrigation ponds for use by nesting waterfowl. (Distance from shore is important for predator control.)
- Establish strips of grass around ponds to filter out sedimentation and increase wildlife cover.
- For every 40 acres of grain crops, leave one-quarter acre unharvested in patches or strips near available cover.
- Delay mowing in draws and waterways until after the nesting season.

Note: Several of these practices may have regulatory implications. Remember to consult the appropriate federal, state, and local officials before beginning work. (See the section entitled "Laws Regulating Colorado's Wetlands" for more information on regulations.)

7-Gene Markley

6192 5825 Road
Olathe, CO 81425
(303) 323-5707

"About half my property is natural wetland, including large ponds, potholes, marshes and a small stream. It's not good farm land, and the cost to develop pastures was simply prohibitive—so I decided to create wildlife habitat."

Actions Taken
- Planted lots of trees.
- Developed open water areas and constructed a pond for wildlife.
- Created a large wildlife corridor with adjoining neighbor Bruce Morgan's property.

Who Helped Out
ASCS and SCS provided advice and cost-share assistance.

Benefits and Rewards
- More diverse plant and animal life on the property.
- Income from rental of a duck blind to a hunting group from Grand Junction helps pay for improvements.

Advice Offered
Be sure to contact your local SCS and Division of Wildlife offices for suggestions.

8-Bruce Morgan

10021 6200 Road
Montrose, CO 81401
(303) 240-4135

"We put the ponds in to reduce salt loading into the Colorado River. We not only accomplished this, but created something for wildlife, too. I get so much satisfaction out of seeing all the animals around here."

Actions Taken
- Created two small ponds and four potholes in accordance with the Colorado River Salinity Program contract.
- Planted cover and food plots for wildlife above the ponds, including oats, wheat grass, and alfalfa.

Who Helped Out
SCS gave technical assistance and ASCS provided cost-share funding of 70%. The Colorado Division of Wildlife helped create the potholes.

Benefits and Rewards
- Fulfilled necessary mitigation requirements.
- Greatly increased the numbers of fish and wildlife on the property, providing many opportunities to fish, hunt, and view wildlife.

Advice Offered
Get technical assistance from engineers and wildlife experts to plan and design your project. Plan something that will fit into the overall management of your farm or ranch.

9-Rick Sherman and Bob Clark

"We're all just stewards of the land. We may own it during our lifetime, but it will outlast us. It's possible to farm and graze and make an income, and still take care of the land. There's never been a more critical time for good land stewardship."

13730 6000 Road
Montrose, CO 81401
(303) 249-3431

Actions Taken

- Put in 10 large and small ponds, with islands and nesting structures for wildlife.
- Planted several wildlife food plots.
- Excavated old oxbows to restore and create wetlands.
- Stabilized and revegetated eroded streambanks.
- Established shelterbelts of dense trees and shrubs, including willow, cedar, native plum, and berries.

Who Helped Out

Assistance came from: SCS, the State Forest Service, the Fish & Wildlife Service, Ducks Unlimited, and Pheasants Forever.

Benefits and Rewards

- Improved water quality as wetlands help to hold silt from neighbors' irrigation runoff.
- Increased numbers of shorebirds, waterfowl, mule deer, amphibians, raptors, migratory songbirds, quail, and other upland birds on the land.
- Extra income could come from leases for hunting and fishing, as well as from commercial fish production.
- Tax deductions from the donation of a conservation easement.

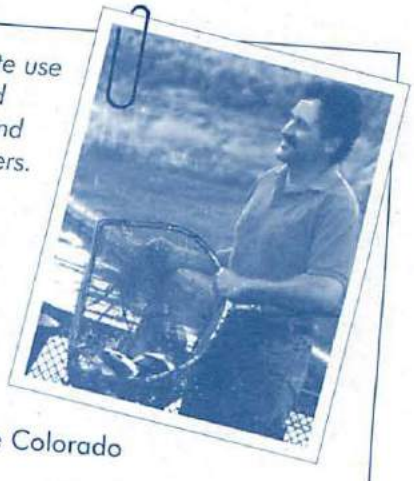
Advice Offered

Be aggressive, persistent, and serious with what you want to do. And be realistic—these projects take a lot of time and energy.

10-David Gann

Silver Springs Trout Farm
13221 Marine Road
Montrose, Colorado 81401
(303) 249-5888

"Running a fish hatchery is a legitimate use of wetlands. We developed gravity-fed ponds from an underground spring, and we also lease water to other fish farmers. It's just like leasing pasture."



Actions Taken

- Installed tile line to collect water.
- Harnessed the water and energy from an underground spring to create a fish hatchery.

Who Helped Out

The National Aquaculture Association, the U.S. Trout Farmers Association, and the Colorado Division of Wildlife all gave technical advice.

Benefits and Rewards

- Water can be used and then sent back into the river.
- Scenic enhancement of the property.
- Leasing of ponds to other fish farmers provides additional income.

Advice Offered

Upgrading riparian areas and putting in fisheries resources can increase property values—the fish business is a strong one. But you'll need a minimum water flow of 300 gallons per minute to make your project successful.

11-Don Yeager

17249 62.50 Road
Montrose, CO 81401
(303) 249-1775

"As a hunter and fisherman, I enjoy being able to give a hand to wildlife. That's why I've created upland and wetland habitat on my land. In the Montrose area, everybody needs to irrigate. If you're going to build a pond for stock or crop water, think about creating something that works for wildlife, too."

Actions Taken

- Created fish habitat using rocks for eddies.
- Constructed two one-acre shallow ponds in an area prone to seep during irrigation.
- Will plant nest cover and food plots for wildlife near the ponds.

Who Helped Out

SCS helped out every step of the way, from the planning survey to securing cost-share assistance (70%). Also received funds from the Colorado Division of Wildlife for wildlife enhancement.

Benefits and Rewards

- Personal satisfaction of giving something back to wildlife.
- Lots more wildlife on the property, including deer, waterfowl, quail, pheasants, and leopard frogs.

Advice Offered

Look at the economics and then make your own decision. What are the trade-offs of putting in a pond versus lost revenue from croppable land? Maybe the land is too wet to grow anything anyway.

12-Fred and Nancy Thomas

11881 County Road 29
Cortez, CO 81321
(303) 565-9881

"We knew we'd need to do wetlands mitigation when we put in the irrigation desalinization pipeline several years ago. We have a sizable water right from the Dolores River, so volunteered to put the wetlands on our land. Ever since buying the place 20 years ago, we'd envisioned doing this kind of wildlife enhancement."

Actions Taken

- Built one large pond and 10 smaller potholes by channeling water through control mechanisms.
- Planted more than 700 trees and shrubs, and 10 acres in grasses for shelter and habitat for birds.

Who Helped Out

SCS, ASCS, the Division of Wildlife, and the Colorado Waterfowl Stamp Program all provided technical and financial assistance. Ducks Unlimited contributed funds to build a reservoir for spillover from the ponds.

Benefits and Rewards

- Much personal satisfaction in making wildlife habitat out of marginal land, especially given increasing development in the area.
- Great aesthetic benefits—bird watchers and school groups use the walking trail.

Advice Offered

Be a major player in planning the development of your project: no one knows your land like you do. And make sure you oversee any construction work done.

13-Doug Muscanell and Karen Harbaugh

20545 Road U
Cortez, CO 81321
(303) 882-4273

"We found the agencies' guidelines rather restrictive, but we really couldn't have gone through with the project without financial assistance. The bird life on our place has definitely increased. Every morning, we look through a spotting scope on our deck down to the pond to see what's new. It gives us a lot of relaxation and enjoyment."

Actions Taken

- Constructed a large pond in a boggy area that drains into a draw.
- Created a "duck run"—a ditch deep enough to keep out cattails, but surrounded by vegetated shallow areas where ducks can feed and find cover.

Who Helped Out

SCS gave both financial and technical assistance. The Colorado State Forest Service also provided money through its Stewardship Incentives Program for planting trees on land adjacent to the pond.

Benefits and Rewards

- No use restrictions. Could use the pond to water livestock, to irrigate, or for other agricultural uses.
- The pond adds value and beauty to the land. Have considered running a bed and breakfast business on the land—pond would be an added attraction.
- Now have many different species of birds, as well as deer, raccoons, skunks, muskrats, and other wildlife on the property.

Advice Offered

If building a pond in a wet area, you may be subject to wetlands mitigation regulations. Also, restrictions increase once you pass the one-acre mark in surface water.

14-Tom and Jim Gilmore

3731 South 105 Road
Alamosa, CO 81101
(719) 589-3456

"If other farmers and ranchers who have suitable wetlands on their property could consider setting aside a small portion for re-establishing wetlands, it would make a difference in the whole wetlands availability picture. With so many wetlands disappearing, we feel it's up to the individuals who own land and water to use a portion of it for wildlife habitat."

Actions Taken

- Divided pastures into four plots—each gets pastured every four years.
- Planted 300 trees as a windbreak.
- Created several shallow wetland ponds and planted grass. Established islands specifically for black crowned night herons, snowy egrets, great blue herons, and geese.

Who Helped Out

The Fish & Wildlife Service "did all the work." They came to the ranch and proposed several options, did the surveys and put in dikes, and paid for seed and labor.

Benefits and Rewards

- "We turned 40 acres of unproductive land into useful wetlands!"
- Now see 50-60 species of birds on the property, including songbirds, cranes, and raptors.

Advice Offered

Work with experts whom you trust to develop an overall, long-term plan.

15-Erwin Young

P.O. Box 1052
Alamosa, CO 81101
(719) 589-3032

"Creating wetlands on our property brought so many benefits. We can now properly discharge of surplus water from the fish farm, use that water to raise another crop (alligators), and watch the wildlife flock to our ponds. Of course, downstream neighbors don't complain about cleaner water, either."

Actions Taken

- Created seven acres of fish ponds and 23 acres of wetlands that tap into the naturally-shallow water table.
- Designed a system to treat water from the fish farm by sending it through a series of constructed wetlands.

Who Helped Out

1) SCS gave technical assistance and designed the ponds. 2) ASCS provided cost-share dollars. 3) The Colorado State Forest Service designed the tree planting and furnished trees at a low cost. 4) The Fish & Wildlife Service chipped in through their Partners for Wildlife program. 5) Two-thirds of the acreage is enrolled in the Conservation Reserve Program. 6) San Luis Valley Resources Group and Production Credit Association provided financial assistance.

Benefits and Rewards

- Created a wildlife reserve of wetland grasses and trees.
- Birds of all kinds, including ducks and geese, use the ponds.
- Receives some income from fee fishing and boating, as well as from tours of the alligator operation.

Advice Offered

Take time to plan your project, even if that means missing out on some funding. Get involved—and stay involved—with the planning and design.

16-Dean Swift

P.O. Box B
Jaroso, CO 81138
(719) 672-3739

"Don't bother getting into a wetlands creation project if your heart's not in it—it takes dedication and resources. My biggest frustration is not having enough time and money to do everything I'd like to do."

Actions Taken

- Created wetlands by building contour dikes and water structures.
- Built nesting structures and islands for wildlife.
- Drastically reduced grazing. Seeded grasses and forbs.

Who Helped Out

Received technical assistance and cost-share dollars from the Fish & Wildlife Service's (FWS) Partners for Wildlife program.

Benefits and Rewards

- Lots of personal satisfaction.
- The property has become a staging area for thousands of ducks and geese. It produces hundreds of ducklings each year, as well as the young of many other species.
- Raptors are especially abundant.
- Rental payments from FWS help make the project financially feasible.

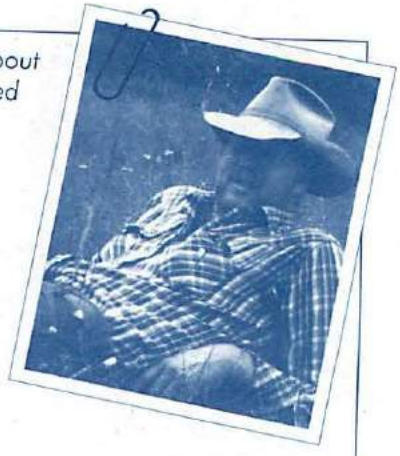
Advice Offered

Graze cattle intensively every few years to rejuvenate the vegetation, but only for a short period to prevent overgrazing of the most palatable species. Controlled burning is another technique for rejuvenation of plants.

17-Brad Phelps

Box 87
Parlin, CO 81239
(303) 641-1803

"It used to be that all cowboys thought about was the grass and the cows. Now, we need to think about things like ecosystem management and livestock dispersion."



Actions Taken

- Created wetlands by building up dikes to hold water.
- Developed fish habitat by creating pools using boulders, and by planting vegetation for shade. Leaves high stubble in riparian areas after grazing.
- Water tanks and salt are placed in the uplands, and dogs chase the cattle out of the riparian area. This way, cud-chewing and calf-suckling take place in the uplands.

Who Helped Out

Colorado Division of Wildlife and Ducks Unlimited provided technical assistance and funds. The Rocky Mountain Biological Laboratory in Crested Butte is a constant resource.

Benefits and Rewards

- Lots more wildlife, especially waterfowl.
- Can cut hay in the flooded fields during August—by then the ducks are gone.
- Extra vegetation in the riparian areas slows down water during high flows, provides forage for wildlife, and improves water quality by trapping sediment.
- Fishing has really improved—Rocky Mountain Angling Society now leases a section of Tomichi Creek on the ranch.

18-Kirk Hanna

15680 Hanover Road
Pueblo, CO 81008
(719) 382-7830

"Holistic management is more of an art than a science. You need to be out on the land looking at your vegetation and making decisions based on what you see and experience. After 14 years, I have as many questions as answers."

Actions Taken

- Practices rotational grazing using 32 small pastures called "paddocks."
- Keeps the cattle in one herd—they graze a pasture heavily for several days and then move on. This simulates the natural pattern of herding animals in the wild.
- In riparian areas, leaves stubble high enough to slow water and trap sediment. Concentrates on areas that are highly erodible and vulnerable.
- Will occasionally rest an area for as long as two years if needed for the woody vegetation to really take hold.

Who Helped Out

Colorado State University Cooperative Extension, SCS, Colorado Cattlemen's Association, Colorado Riparian Association, Center for Holistic Resource Management—all provided technical guidance.

Benefits and Rewards

- Much less active erosion than before.
- Better water quality in the streams.
- Intermittent stream now holds water through the summer.
- More nutritional value for livestock because plants are continually in a vegetative state.
- Growing season for grasses extended from five to seven months.

Advice Offered

The focus needs to be on watershed management rather than riparian management: think holistic. Attend workshops and seminars, and find out what other people are doing.

Livestock Grazing for Healthy Wetlands and Riparian Areas

Often, simple changes in grazing practices can make a big difference for wetlands and riparian areas. The following practices have proven beneficial for many landowners. Specific site characteristics such as soils, rainfall, and timing of spring runoff—as well as livestock management goals—will affect actual practices and their effectiveness.

- ➢ Rotate livestock through pastures that include riparian areas to protect wildlife and plants, and to maintain soil stability.
- ➢ Alternate season of grazing in riparian areas (with the possible exception of calving and lambing).
- ➢ Graze only when streambanks are dry and time for regrowth of vegetation has been allowed.
- ➢ Graze for short periods only.
- ➢ Rest riparian areas.
- ➢ Move livestock away from riparian areas and into uplands by using riding, salting, drift fences, water development, or other range improvement practices.
- ➢ Continually monitor riparian areas for forage utilization, trampling impacts, and condition of woody browse.

19-Lynn and Iris Fisher

59061 County Road 109
Genoa, CO 80818
(719) 763-2424

"We run a dry land cattle operation—there are no streams to speak of on our land, and no irrigation. Thanks to water development and grass planting projects, we now have forage through the spring and summer. Come take a look at what we've done."

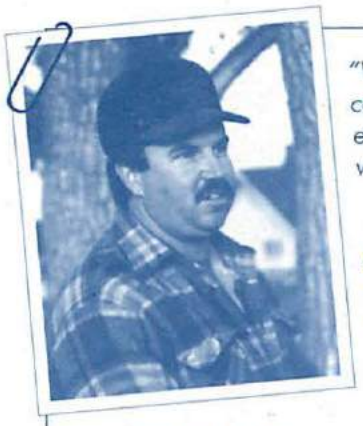
Actions Taken
- Completed several water development projects, including construction of springs and dams.
- Leveled 22 acres of land to create a large wet area near a creek.
- Planted hundreds of acres of grass.
- Rotates livestock through several grazing pastures without much fencing.

Who Helped Out
ASCS provided cost-share assistance to build water tanks and several wells.

Benefits and Rewards
- The large wet area slows runoff and reduces erosion.
- More grass means the cattle spread out, making less impact on sensitive riparian areas.
- Lots more wildlife on the land, including ducks, pheasants, and deer.

Advice Offered
Realizing a profit from land improvements can be slow. Don't expect a return on your investment overnight.

20-Brad Rock



"Who says farmers aren't environmentalists? We're concerned about nitrates in the water just like everybody else. Our filtration project is completely voluntary—I want to show that we're doing our part for clean water."

23805 Weld County Road #2
Hudson, CO 80642
(303) 536-4688

Actions Taken

- Developed a management plan to treat wastewater from the dairy barn.
- Will construct a wetland filtration system consisting of a small holding pond and a series of wetland "cells." Wetland plants like bulrushes and sedges will help absorb nitrates, keeping these pollutants out of the ground water.

Who Helped Out

Received technical assistance from a wildlife biologist and an engineer at SCS. ASCS will provide cost-share assistance.

Benefits and Rewards

- Will no longer have to haul away waste water—a considerable cost savings.
- Manure recovered from the wetland "cells" will be more usable as fertilizer for the pastures.
- Wetlands in the filtration system will provide habitat for fish, frogs, birds, ducks, geese, and other wildlife.

Advice Offered

Consider the terrain and soil types on your land during the planning phase. If you're working with an agency, question their plans—make sure the project works for you.

21-Lucianus and Luciana Graulus

19014 County Road 20.5
Fort Morgan, CO 80701
(303) 867-2336

"Most of the ponds on our land were put in by a previous owner to irrigate the bottom grasslands. But we wanted something more—we wanted to create a park-like setting. This year, the Morgan Soil Conservation District named us Outstanding Wildlife Landowners, and the Colorado Division of Wildlife gave us an honorable mention for Wildlife Owner of the Year."

Actions Taken

- Lined a leaking pond with bentonite.
- Planted more than 500 trees over 15 years—many by local 4-H kids as wildlife shelterbelts of plum and other native trees.

Who Helped Out

The Division of Wildlife gave technical and financial assistance for putting in ponds.

Benefits and Rewards

- All kinds of wildlife on the place: pheasants, quail, ducks, rabbits, songbirds, possums, bullfrogs, pelicans, deer, and fish.
- Fish biology students from Colorado State University use the ponds to conduct research.
- For extra income, could charge the public to watch the wildlife, hunt, or fish.

Advice Offered

Start your project today, before you're too old to enjoy it!

22-John Daughenbaugh

41505 Routt County Road 44
Steamboat Springs, CO 80487
(303) 879-1820

"This ranch along the Elk River has been in my wife Marsha's family for three generations. Like many people, we've become more aware of the value of riparian areas during the past decade. By taking good care of ours, we now have a really great fishing river running through a cow pasture."

Actions Taken
- Constructed rock drop structures in the river.
- Developed short-term and long-term management plans that include wetlands and riparian areas.
- Keep cattle away from riverbanks using some permanent fencing and some temporary electric fencing.

Who Helped Out
The Colorado Division of Wildlife provided information on river mechanics. SCS engineers and technicians offered technical advice during development of the management plans.

Benefits and Rewards
- Improvements have enhanced the value of the ranch.
- There's a blue heron rookery in the cottonwood trees along the river, and sandhill cranes now nest on the ranch.
- Quality of the fishing is greatly improved—the fish are bigger, and there are more of them.

Advice Offered
Remember that while some historic practices are still valuable today, others have been shown to be harmful. It never hurts to take a look at new ways of operating. Be open—try something different.

23-Jim Rogers

32259 County Road 13
Lamar, CO 81052
(719) 336-2124

"Cropland farming is still our main source of income, but the hunting preserve is a definite subsidy. The amount of money it brings in varies from year to year depending on the weather and how many hunters come out. But we're happy to provide good wildlife habitat and see all the ducks and birds on our land."

Actions Taken
- Constructed several fish ponds near natural wetlands.
- Improved wildlife habitat around wetlands and along 4.5 miles of Arkansas River streambank.
- Planted trees and shrubs to create cover for upland gamebirds and to increase duck populations.

Who Helped Out
ASCS provided cost-share assistance to put in the fish ponds and construct fences to keep livestock out of wooded areas used by gamebirds. The Colorado Division of Wildlife provided the trees and planting machinery used to enhance bird habitat.

Benefits and Rewards
- Big increase in wildlife numbers on the farm due to improved habitat at the wetlands and the fish ponds.
- Economic gain—the hunting preserve provides additional income to the farm.

Advice Offered
Make sure of your water source—do you have the appropriate water right? This is especially important when you're exposing water for wildlife to use. For fish projects, you'll need to use spring water in order to keep bacteria and chemicals out and keep your fish healthy.

24-George Cresswell

5 Gentry Lane
Colorado Springs, CO 80906
(719) 633-4990

"We've got a naturally high water table on our land. By restoring deeper water and improving shallow water wetlands, we created excellent wildlife habitat. There are so few unaltered wetlands left—we need increased efforts to restore those that have been lost or changed. The way I see it, if you take care of the land, it'll take care of you."

Actions Taken

- Deepened existing wetlands, improving wildlife habitat.
- Planted food-bearing shrubs for wildlife. Installed nesting structures for wood ducks, geese, bluebirds, and other birds.
- Keep livestock out of wetlands and sensitive riparian areas.

Who Helped Out

SCS provided technical assistance for the overall plan. The Colorado Division of Wildlife contributed explosives necessary for the blasting. The Colorado State Forest Service developed the safety plan and conducted the blasting. The Army Corps of Engineers assisted with obtaining all necessary permits and on-going supervision of work.

Benefits and Rewards

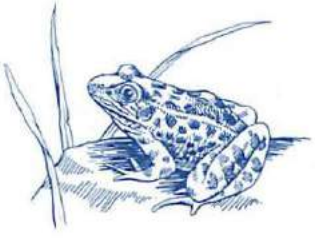
- Dramatic increase in wildlife, including waterfowl, fish, muskrats, and an incredible number of bullfrogs.
- Occasionally spot rare and unusual species on the property: pelicans, swans, and cattle egrets.
- Income from a hunting club—this helps fund further habitat improvements.

Advice Offered

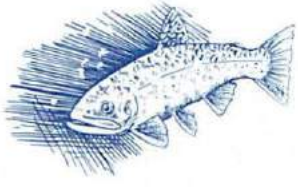
The agencies will be very helpful if you work pro-actively with them, and if your intentions are sincere. Remember to plan for getting all appropriate permits from the Corps and the State Engineer's Office.

The illustrations in this handbook represent the diversity of plant and animal life dependent upon healthy wetlands and riparian areas for survival.

Wood Duck
Hunted for their feathers, meat, and eggs, wood ducks were nearly extinct in the early 1900s.



Leopard Frog
Named for the spots on its back, this frog lives in areas of permanent water and aquatic plants.



Cutthroat Trout
Cutthroats are the only trout native to Colorado. The greenback cutthroat is Colorado's state fish.

Red-winged Blackbird
This bird builds its nest near or over water, using wetland plants like sedges and rushes.

Marsh Marigold
Found in snowmelt basins of the Rocky Mountains, marsh marigolds require very wet soil.

OPPORTUNITIES AND BENEFITS FOR WETLANDS CONSERVATION

As the previous case studies show, more and more landowners are recognizing the benefits of natural wetlands and riparian areas on their land, and are increasing their stewardship of these valuable resources. Many farmers and ranchers have moved away from managing wetlands exclusively for crops or livestock watering—they are creating wildlife habitat or using wetlands as filters for sediment and nutrients in runoff waters.

While some individuals undertake restoration and protection projects on their own, others participate in voluntary programs administered by public agencies and private organizations. These groups can help answer your questions: How can I manage my wetlands for conservation? What are the considerations to undertaking a water retention or wildlife habitat project? And what about the financial burden of providing these benefits?

Help is Close at Hand

You are only a phone call away from the technical advice and financial assistance you need to manage, restore, or create wetlands on your property. Experts at federal, state, and local agencies, as well as at private organizations, can lend a hand. Several agencies offer cost-share opportunities that present a win-win situation. In many cases, farmers and ranchers can receive financial benefits equal to or greater than those they might reap from traditional agricultural use of the land. In some cases, non-financial rewards may be sufficient to offset lost income.

The list of resource groups provided below is intended for use in this guide only, so is specific to Colorado. (At the time of publication, this list represented a complete picture of all generally applicable programs known to the authors. Refer to the case studies for other, more specific resources.) Many other innovative programs to protect wetlands and riparian areas exist in other parts of the country.

Programs Administered through the U. S. Department of Agriculture (USDA)

Agricultural Conservation Program

Cost-sharing (up to 75% of total project cost) to encourage farmers and ranchers to carry out conservation and environmental protection practices on agricultural lands for long-term public benefits. Goals of the program include: helping prevent soil erosion and water pollution, conserving water used for agriculture, and preserving and developing wildlife habitat. Establishment of permanent vegetative cover and rehabilitation of shallow water areas for wildlife food and habitat are examples of eligible practices. Annual and long-term contracting arrangements are possible. Contact your local USDA field office for information.

Colorado River Salinity Program

A cooperative effort to reduce the amount of salts in the Colorado River. Up to 70% of expenses for salinity reduction measures installed in designated project areas can be paid for through public funds. Currently available in Delta, Mesa, Montezuma, and Montrose Counties. Contact your local USDA field office or Soil Conservation District office for details.

notes:

Great Plains Conservation Program

A cost-share program for producers who want to integrate wetlands into their entire system. Participants must develop an overall management plan that includes wetlands on their land. Lands are enrolled for 3-10 years. Available east of the Continental Divide, including the San Luis Valley. Contact your local USDA field office for further details.

Water Quality Incentives Program

A recent program for water quality management currently offered in counties of the San Luis Valley, as well as Weld and Otero Counties. (These "special designation areas" may change each year.) Incentive payments available for voluntarily implementing management systems that will enhance water quality on private lands. Contact your local USDA field office for more information.

Wetlands Reserve Program

This program is not yet active in Colorado, but may be available in the near future. Landowners can receive payments from the federal government for restoring and protecting wetlands on their property. Eligible land is enrolled through long-term conservation easements (permanent or 30-year agreements) while the landowner retains control of the property. Participants can receive 75% cost-share assistance for wetland restoration if approved by the U.S. Fish & Wildlife Service. Certain uses of the land, such as hunting or grazing, may be authorized in the agreement. When this program becomes available in Colorado, your local USDA field office will distribute further information.

Programs Administered through the U.S. Fish & Wildlife Service (FWS)

North American Wetlands Conservation Act

Matching federal dollars for acquiring, restoring, or enhancing wetland habitat to further the goals of the North American Waterfowl Management Plan. This includes creation, restoration, and enhancement of wetlands. Requests for funding usually come from agencies or organizations rather than individuals, but funds may be used on private lands. For more information, contact Bill Noonan at (303) 231-5280.

Partners for Wildlife

Technical assistance and cost-sharing dollars available (up to 100% of total cost) for wildlife habitat restoration, creation, and management on private lands. Funds come from many sources, including FWS, the Colorado Division of Wildlife, Ducks Unlimited, Pheasants Forever, the Fish and Wildlife Foundation, and private individuals. This program provides an alternative to acquiring and managing public lands. For opportunities in the San Luis Valley, contact Rick Schnaderbeck at (719) 589-4021; for other areas in Colorado, contact Bill Noonan at (303) 231-5280.

Other Federal Opportunities

Farmers Home Administration (FmHA)

Provides debt reduction assistance to FmHA borrowers in exchange for conservation easements for a minimum period of 50 years. Contact the USDA FmHA at: 655 Parfet, Room E100, Lakewood, Colorado, 80215, (303) 236-2839.

Environmental Protection Agency (EPA), 319 Funds

Funding for activities to control nonpoint source pollution available through the Colorado Department of Health's Water Quality Control Division. Contact the Division at (303) 692-3500 for more information.

Programs Administered through the Colorado Division of Wildlife (DOW)

For more information about these programs, contact your regional Colorado Division of Wildlife office. Addresses and phone numbers are listed in the Directory on page 37.

CHIP (Colorado Habitat Improvement Program)

Cost-sharing for the development or improvement of wildlife habitat on private lands. Eligible projects are for upland game, waterfowl, and fish. Plantings must be maintained for at least 10 years.

Colorado Waterfowl Stamp Program

Approximately $250,000 per year is generated for the protection and enhancement of waterfowl habitat through the sale of these stamps. Although the funds are spent primarily on public lands, some is used on private lands managed by public agencies.

MARSH (Matching Aid to Restore States' Habitat)

A certain percentage of the money raised through Ducks Unlimited's activities in Colorado (about $50,000 per year) is used for waterfowl habitat projects in the state. Grants are made on the basis of applications; maximum

notes:

cost-share is 50%. Funds can be used on private lands only if applied for by a partner agency.

PHIP (Pheasant Habitat Improvement Program)

Cost-sharing for the development or improvement of pheasant habitat on private lands. Plantings must be maintained for at least 10 years.

The Division of Wildlife participates in many other programs in Colorado by contributing funds and/or expertise on managing and creating wetlands for wildlife habitat. In addition, DOW conducts research on wetlands ecology and presents an award to one outstanding landowner each year for their contribution to the health of Colorado's wildlife.

Programs Administered through the Colorado State Forest Service

Contact your local Colorado State Forest Service District Office (or the state office at (303) 491-6303) for further information about these programs.

Forest Stewardship Program

Education and technical assistance for long-range land use planning to enhance forest products, fish and wildlife habitat, soil and water quality, wetlands, recreation, aesthetics, or environmental quality.

Stewardship Incentive Program

A cost-share program to encourage landowners to manage properties for economic, environmental, recreational, and social benefits. Applicants must own 1,000 acres or less of forested property or land suitable for growing trees, and must have participated in the Forest Stewardship Program. Several

eligible categories include: management plan development, riparian and wetlands protection and improvement, wildlife habitat enhancement, and windbreak establishment.

Other Opportunities through the State

Colorado State University Cooperative Extension Service

A statewide service supported by federal, state, and county funds. Cooperative Extension provides practical information for agricultural producers based on the latest research. Offices exist in most Colorado counties. For more information, contact the office nearest you, or contact Cooperative Extension at Colorado State University, Fort Collins, Colorado, 80523, (303) 491-6281.

Great Outdoors Colorado Trust Fund (GoCo)

By statewide vote, a portion of all Colorado lottery revenues is earmarked for programs to acquire and manage open lands and natural areas. Grants of GoCo funds can be made to state agencies, cities and towns, counties, and non-profit groups. Individuals may receive these funds through programs administered by agencies such as the Division of Wildlife and the Division of Parks and Outdoor Recreation, as well as other entities. For information, call (303) 863-7522.

Opportunities through Private, Non-Profit Organizations

American Farmland Trust (AFT)

Holds conservation easements on agricultural lands and environmentally sensitive lands, including wetlands. Landowners retain ownership and use of the property and are eligible for income and estate tax benefits. AFT also accepts donations of property in exchange for more sizable tax benefits. Contact AFT in Washington, DC, at (202) 659-5170 for more information.

Boy Scouts of America

Scout troops may be able to provide voluntary labor for wetland and riparian restoration work as part of their education and conservation programs. Examples include planting trees, building and installing nesting boxes, and creating fish habitat in streams. Contact your local Boy Scout chapter for details.

Cattlemen's Land Trust

The Colorado Cattlemen's Association (CCA) has established a land trust to receive voluntary conservation easements from landowners. Such easements can assist landowners in transferring an estate to the next generation, and can provide an immediate tax credit. Contact the CCA office in Arvada at (303) 431-6422 for more information.

Colorado Coalition of Land Trusts

An umbrella organization for Colorado's approximately 30 land trusts that provides education and referral services. In general, land trusts hold easements and title to lands for conservation purposes. Contact the Coalition for more information: P.O. Box 1651, Durango, Colorado, 81302, (303) 259-3415.

Colorado Open Lands (COL)

Experts in structuring financial methods of conserving land as open space. Tax incentives possible in exchange for donations of conservation easements, charitable remainder trusts,

notes:

and other vehicles. For more information, contact COL at: 1700 Lincoln Street, Suite 4012, Denver, Colorado, 80203, (303) 894-9870.

Colorado Riparian Association (CRA)

CRA provides a forum for information exchange on best management practices and research related to riparian areas through a newsletter and hands-on workshops. Each year, CRA presents its "Outstanding Landowner of the Year" award to a Colorado landowner for exceptional stewardship of riparian areas. Write to CRA at 2060 Broadway, Suite 255, Boulder, Colorado, 80302 for more information.

Colorado Trout Unlimited (CTU)

Provides volunteer labor for stream habitat and riparian improvement projects. For more information, contact CTU at: 7200 E. Dry Creek, Suite G201, Englewood, Colorado, 80112, (303) 220-7766.

Ducks Unlimited (DU)

Provides funds for waterfowl habitat projects administered through the Colorado Division of Wildlife (DOW). For more information, contact DOW or DU's Great Plains Regional Office at: 3502 Franklin Avenue, Bismarck, North Dakota, 58501, (701) 258-5599.

The Nature Conservancy

Protects outstanding resource properties by holding permanent conservation easements. Also has expertise in native plant management. Sponsors a landowner recognition program to honor individuals for conserving unique landscapes, declining species, and native plants. Contact the Colorado Program at: 1244 Pine Street, Boulder, Colorado, 80302, (303) 444-2950.

Northwest Colorado Riparian Task Force

A partnership with federal, state, and private entities to provide public education about land management practices to conserve or restore riparian and wetland areas. For more information, call Dave Turcotte at (303) 824-4441 in Craig, or Kip Gates at (303) 878-4422 in Meeker.

Pheasants Forever

Provides free milo seed to be used in plantings for pheasant habitat. Available through SCS, DOW, or the Colorado State Forest Service. Conducts other programs and activities that focus on upland gamebird habitat restoration and creation, including planting trees, shelterbelts, and food plots. Cost-sharing is sometimes available. Contact your local chapter, or Barth Crouch in Cheyenne, Wyoming, at (307) 638-7866.

Quail Unlimited

Conducts habitat development work for upland gamebirds by raising money through 10 local chapters in Colorado. Expertise in wildlife biology and wildlife management planning. For more information, contact the regional office at: 13 Archway Lane, Pueblo, Colorado, 81005, (719) 561-3825.

Society of Wetland Scientists

National professional association comprised of scientists from universities, state and federal agencies, and private consulting firms. Issues certification for wetlands professionals and distributes educational and scientific information on wetlands through periodic journals. Can provide referrals. For more information, contact the national office at: P.O. Box 1897, Lawrence, Kansas, 66044, (913) 843-1221.

The Trust for Public Land

Works with landowners who wish to permanently protect scenic, environmental, agricultural, or recreational resources on their land. Buys land for subsequent transfer to community conservation groups or public agencies. Contact the Southwest Field Office at: 418 Montezuma Avenue, Santa Fe, New Mexico, 87501, (505) 988-5922.

Opportunities for Income

In Colorado, agricultural production and its related goods and services are of prime importance to the state's economy. Since agriculture is a business, farmers and ranchers make decisions about their operations based in part on economic return. For many years, this has meant converting "useless" wetlands into crop-producing or forage-producing land.

Yet there are activities that can generate income from wetlands without reversing these areas' positive functions and values. In terms of the amount of plant and animal tissue and energy produced, wetlands are the most productive ecosystems in the world. Listed below are some alternatives to draining or filling wetlands that allow economic gain while protecting these areas.

Aquaculture (fisheries production): Fish such as trout and tilapia can be raised for sale to retail or restaurant markets. In addition, some hatcheries contract with private individuals to raise fish.

Bait fish production: A wetland can be worth up to several hundred dollars per acre in minnows, salamanders, and leeches for bait.

Forage (hay, silage) production: Some wetlands may be hayed or grazed, and wetlands grasses and sedges can be mowed, cured, and baled in the same manner as upland forages.

Fur harvesting: Muskrat, raccoon, beaver, and mink pelts are all traded commercially. These animals rely heavily on wetlands for food and habitat.

Livestock watering: Ponds can be developed that provide benefits to both livestock and wildlife.

Leasing for hunting, trapping, or fishing: Lands open to the public for these activities are limited. Several avenues exist for you to advertise your land.

Planting in temporary wetlands: Many flooded basins have rich soils that can give good yield even when planted only during part of the year when they are dry.

Selective timber harvesting: In some cases, trees can be grown for harvest in wetland and riparian areas. Such trees include cottonwoods and willows, which are adapted to saturated soils.

Tourism: Wildlife watching, nature study, photography, boating, relaxation—these are a few of the activities becoming more popular in Colorado, for locals and tourists alike.

Waterfowl production: Wetlands can be used to raise domestic ducks and geese for commercial sale.

Wetlands seeds, plants, or roots production: Aquatic gardening is increasing in popularity. There is considerable demand for wetland plant seeds such as rushes, water cress, and arrowhead.

Note: Some of the activities listed here are regulated by one or more agencies within Colorado. For more information, contact the applicable agency: U.S. Soil Conservation Service, Colorado Division of Wildlife, or Colorado State Forest Service.

Opportunities for Tax Reductions

Many farmers and ranchers are concerned about the long-term fate of their land. Rural lands are increasingly threatened by growing suburbanization, second home development, and rising property taxes. Some Colorado landowners feel pressured by developers' offers, yet prefer their land to remain undeveloped.

Several legal and financial mechanisms exist for landowners wishing to protect their families and their lands—the most common is the conservation easement. Easements can provide sizable income tax deductions, lowered property taxes, and reduced estate taxes. Easements are legal restrictions that landowners voluntarily place on all or a portion of their property. For instance, an easement might preclude subdivision of the land, or restrict all mining. Rights relinquished through a conservation easement are transferred to a non-profit or government agency, yet the landowner retains all other rights in the property.

For further details, ask your accountant or attorney about estate planning, or request information from one of the groups listed above that holds conservation easements. (Most of these groups are in the "Private, Non-Profit Organizations" category.)

LAWS THAT REGULATE COLORADO'S WETLANDS

A Seeming Kaleidoscope of Regulations

Over the past 20 years, the important functions performed by wetlands have become better understood. Because of this new understanding and the rapid rate at which wetlands were being lost, federal legislators pushed hard to conserve the nation's remaining wetlands. This was done primarily through regulatory measures that were established across several agencies working in the areas of water quality, agricultural development, and wildlife protection.

As these wetlands regulations were established and implemented, conflicts arose among the various government agencies involved. This happened in part because there was no national wetlands policy, and Congress charged agencies with different missions and priorities. As a result, there has often been inadequate coordination among regulating agencies and a lack of understanding of how wetland conservation efforts should mesh with other policy goals on the federal, state, and local levels.

These realities created concern among the people affected by wetlands regulations—developers, municipalities, agricultural producers, and the general public. During the late 1980s and early 1990s, the message from all of these constituencies was the same: Wetlands regulations need to be overhauled.

In the face of changing, confusing laws regulating wetlands, the individual farmer has often felt intimidated and frustrated. Indeed, there are stories of regulations being applied in a seemingly unfair and inconsistent manner: Certain individuals have paid a high price for failure to comply with the law, while others conducting similar activities have not been penalized. In spite of greater regulatory consistency during the past several years, an atmosphere of mistrust and defensiveness prevails. This resource guide is intended to ease some of the fears and problems encountered by many people in the area of wetlands regulations.

This section of the guide attempts to clarify existing federal and state regulations, and provides contact information for those farmers and ranchers needing further details. (A more complete list of important names and phone numbers can be found in the Directory on page 37.)

Federal Wetlands Regulations Made Simple

Wetlands on agricultural lands are regulated primarily by two federal laws.
1. Section 404 of the Clean Water Act requires a permit for anyone who is discharging dredged or fill material into, or excavating within, waters of the United States. According to the law, these waters include lakes, rivers, streams, ponds, wetlands, sloughs, prairie potholes, and wet meadows.

2. The Wetland Conservation (Swampbuster) provisions of the Food Security Act of 1985 deny USDA benefits to anyone who produces an agricultural product on a wetland converted after December 23, 1985; or to anyone who converts a wetland for production of an agricultural commodity or forage crop after November 28, 1990.

Most normal farming activities that are part of ongoing operations are exempted from these two broad laws. See "Agricultural Exemptions to Section 404" on page 32 for specific examples of such activities.

Four federal agencies are charged with enforcing these two laws: the Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) are responsible for Section 404 permits, and the Soil Conservation Service (SCS) and Agricultural Stabilization and Conservation Service (ASCS) are responsible for the Food Security Act. (The Fish & Wildlife Service is consulted by these regulatory agencies for its view on impacts to wildlife.) Both laws contain penalties for failure to comply.

Until recently, both the Corps and SCS delineated wetlands on agricultural lands for their respective enforcement of Section 404 and Swampbuster. Under this old system, an individual landowner needed separate approval of wetland locations and boundaries from each of these agencies. A cooperative agreement signed in January 1994 among the agencies involved serves to simplify federal wetlands compliance for farmers and ranchers, giving them one wetland determination from the federal government. This new "Memorandum of Agreement" identifies SCS as the single federal agency, in most cases, that determines where wetlands exist on agricultural lands. (Agricultural lands, according to this agreement, include croplands, haylands, pastures, vineyards, orchards, and areas that support wetland crops. These lands may no longer exhibit naturally occurring vegetation. When specifically requested, SCS will also make wetlands determinations on non-agricultural lands owned by participants in USDA benefits programs.) If carried out properly, this agreement should reduce confusion and duplication of effort.

Remember: The Corps will continue to be responsible for approving permits to drain, fill, or excavate within a wetland (Section 404) even though a recently-signed agreement makes SCS the single federal agency to make wetlands determinations on agricultural lands.

In addition to these laws, federal laws regulating the use of certain pesticides apply when using these pesticides in and near wetlands. Contact your County Extension Agent for information on regulations applicable to your area.

Wetlands Determinations on Agricultural Lands

Under the streamlined system, SCS identifies wetlands on agricultural lands where crops are grown, and then classifies these lands according to Swampbuster requirements. This classification is called a "determination." As a farmer or rancher in Colorado, you need a wetlands determination to know:

- whether you can alter a wetland on your land
- whether you can maintain existing drainage systems
- how to farm your wetlands without losing your USDA benefits.

SCS often uses large-scale, aerial photographs to map wetlands. Because of this, disagreements occasionally arise over the results of their mapping efforts. Review your wetlands determination carefully. If you disagree with a determination made by SCS, you may request a reconsideration through the appeals process established by the Food Security Act of 1985. Ask your local SCS office for details.

According to Swampbuster provisions, wetlands on agricultural lands are classified into one of 14 major categories. The table on pages 34-35 outlines what activities are allowed for each wetlands determination without risk to your USDA benefits.

Farming, Ranching, and Section 404 of the Clean Water Act

Section 404 of the Clean Water Act may require a permit for placing dredged or fill material, or excavating within, waters of the United States including wetlands. ***This permitting process is separate from the Swampbuster guidelines.*** Permit requests are reviewed by the Army Corps of Engineers (Corps) in consultation with the Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (FWS), and the Colorado Division of Wildlife (DOW). Before altering any SCS-identified wetland on your land, check with the Corps.

The presence of wetlands on your land does not mean that you cannot undertake any activity on the property. In fact, wetlands regulations under Section 404 do not necessarily even result in a restriction on use of the site. ***Many activities are not regulated at all, are explicitly exempted from regulation, or are authorized under nationwide or regional general permits.*** Moreover, in situations where you need an individual permit, federal agencies can work with you to design your project so that it meets the requirements of the law by protecting the environment and public safety, while accomplishing your legitimate objectives. Overall, more than 95% of all Section 404 permit requests are authorized in some form.

Agricultural Exemptions to Section 404

Because of the unique nature of agricultural production, the law specifies several important exemptions for farmers and ranchers. For example, you do not need a permit for:

- Activities that are a continuation of ongoing farming operations such as: plowing, harvesting, cropping pastured/hayed wetlands, seeding, minor drainage, cultivating, maintenance of existing drainage ditches, construction and maintenance of irrigation ditches, construction and maintenance of farm or stock ponds, and construction and maintenance of farm roads in accordance with Best Management Practices (BMPs)—provided that these activities do not change the return, flow, circulation, or reach of the water body in which the work in question is being done. [Note: Depending on the site and nature of your activity, you may be subject to regulation. Remember that Section 404 and Swampbuster are separate laws to be consulted independently of one another.]
- Activities on lands determined by SCS to be prior-converted cropland, as long as the site no longer exhibits wetland characteristics.

In order to simplify the permitting process, the Corps has established numerous standing permits for frequently requested projects that result in insignificant environmental impact. Applying for project approval through one of these nationwide or regional general permits is a straightforward process that requires minimal or no paperwork, and no public notices.

Activities that may be allowable under certain nationwide or regional general permits include:

- minor bank stabilization
- discharges of less than 10 cubic yards of fill material
- fills for small road crossings to gain access to fields
- maintenance of previously authorized structures
- temporary fill associated with fish habitat improvement structures.

Before proceeding with an activity that you believe qualifies under an existing permit, you may wish to contact your local Corps office to ensure that your activities are legally authorized. The Corps office can also provide you with a list of the specific conditions you must follow when undertaking activities under nationwide permits.

Chances are good that your proposed project will qualify for approval under a nationwide or regional general permit. If, however, your proposed activity does not fall under an existing permit, you will need to apply for an individual permit. Decisions on individual permit applications are made based on:

- the relevant extent of public and private needs that would be served under the project
- the possibility of using reasonable alternative locations and methods to accomplish the project's purpose
- the extent and permanence of beneficial and/or detrimental effects on public and private needs
- your efforts to avoid or minimize impacts to wetlands and other waters of the United States.

The general public has the opportunity to play a role in the decision-making process on individual permits through the public notice and public hearing processes. Notices inform the general public of a proposed project and solicit comments from any interested party. A hearing on a proposed project may be held if public notice comments raise substantial issues.

Remember: Before proceeding with any activity believed to be allowable under an existing permit, you should receive confirmation from the Corps. Penalties for failing to comply with Section 404 regulations could include stiff fines and even possible imprisonment. Contact your local Corps or EPA office to find out whether your proposed activity is exempt or qualifies under an established permit. (Note: EPA does not issue permits.)

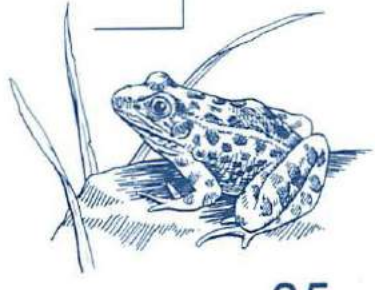
WETLANDS CLASSIFICATIONS AS DEFINED BY SWAMPBUSTER

Wetland Determination	Definition	Examples of Agricultural Activities Allowed *	
Wetlands	Naturally-occurring wetlands whose water and vegetation have not been altered. Includes wetlands farmed under natural conditions and abandoned areas that have reverted to wetlands.	Farming under naturally dry conditions.	Some Agricultural Use Allowed, But No Additional Agricultural Improvement Allowed
Farmed Wetlands	Wetlands manipulated before 12/23/85 to produce an agricultural commodity that still meet wetlands criteria and are not abandoned.	Farming and drainage as they existed before 12/23/85.	
Farmed Wetland Pasture	A farmed wetland whose commodity was/is pasture or hay.	Hay and pasture production as they existed before 12/23/85.	
Prior-Converted Croplands	Wetlands under natural conditions that were altered to produce an agricultural commodity and did produce a crop before 12/23/85. These areas are not abandoned and no longer meet all three wetland criteria. (Farmed Wetlands are not part of this category.)	No restrictions.	Varying Degrees of Agricultural Improvements Allowed
Artificial and Irrigation Induced Wetlands	Former non-wetland areas that exhibit wetland characteristics because of certain human activities such as created ponds or irrigation systems.	No restrictions.	
Minimal Effects	An exemption granted by SCS and FWS for activities determined to have minimal effects on the biological and hydrological functions of a wetland.	Only those stipulated in the agreement.	
Converted Wetland Technical Error	Wetlands converted based on incorrect information by SCS.	Dependent upon investment made.	

Wetland Determination	Definition	Examples of Activities Allowed *
Converted Wetland	A wetland under natural conditions that was altered after 12/23/85 to produce an agricultural commodity and no longer meets wetland criteria.	Any production of an agricultural commodity will cause ineligibility for USDA benefits. Wetlands converted after 11/28/90 must be restored.
Converted Wetlands Non-Agricultural Purposes	Wetlands converted after 11/28/90 for purposes other than commodity crop production.	Any production of an agricultural commodity will cause ineligibility for USDA benefits.
Wetlands Manipulated but Production Not Possible	Wetlands altered after 12/23/85, but production of an agricultural commodity still not possible.	Any production of an agricultural commodity will cause ineligibility for USDA benefits.
Third Party Conversion	Wetland converted by an independent, outside person or entity without the owner's collusion.	No restrictions.
Good Faith Determination	Wetland that is inadvertently, unknowingly converted for agricultural production. If the person is actively restoring the wetland, a reduction in USDA benefits rather than complete ineligibility is allowed.	Farming as it existed before 12/23/85.
Replacement Wetland	Wetland altered without violation and with agreement to restore another area.	No restrictions.
Mitigation Wetland	Wetland altered between 12/23/85 and 11/28/90 and restored to natural conditions.	Farming as it was prior to conversion.

No Agricultural Activity Allowed

Less Common Classifications



* Note: Allowable activities pertain only to Swampbuster. Section 404 regulations are separate, and may still apply.

The State of Colorado's Role in Wetlands Regulation

Water Quality Control Commission, Colorado Department of Health

The federal Clean Water Act gives each state the authority to establish water quality standards for their waters, including wetlands. In Colorado, the Water Quality Control Commission within the state Department of Health sets water quality standards and monitors for their compliance. Each time the Army Corps of Engineers (Corps) receives an application for an individual Section 404 permit in Colorado, the Commission is notified. Before a permit can be issued, the Commission must issue certification to the Corps that the proposed project will not cause water quality to fall below established state standards.

In addition, the Water Quality Control Commission requires a permit for point source (end-of-pipe) discharges into wetlands. This regulation is applicable only in cases of large, semi-industrial operations with a direct discharge (such as with certain feedlots, dairies, or slaughterhouses), and will not affect most farmers and ranchers in Colorado. For more information, call the Commission at (303) 692-3500.

State Engineer's Office/Division of Water Resources, Colorado Department of Natural Resources

The State Engineer's Office regulates water rights and water distribution in Colorado. Changing the path or placement of water on your land could, in certain cases, affect your water right. (This is possible when constructing or restoring a wetland, for example.) Contact the State Engineer's office at (303) 866-3581 before you begin work.

Division of Wildlife, Colorado Department of Natural Resources

The Colorado Division of Wildlife (DOW) plays an advisory role in the granting of Section 404 permits by providing information to the Corps on fish, wildlife, and habitat resource values for all applications for individual permits in the state.

The Role of Local Government in Wetlands Regulation

Several counties and municipalities in Colorado have adopted additional regulations regarding wetlands. These include laws regulating mitigation requirements, application of pesticides and herbicides, and water quality standards.

Remember: Contact your Board of County Commissioners or County Planning Board before starting any activity in wetlands to make sure you comply with local law. Make sure you receive approval for your project in writing.

RESOURCES

Directory

Federal Agencies

Army Corps of Engineers

Contact your appropriate district office.

1. Arkansas River and Rio Grande drainages (southeastern Colorado)
   Albuquerque District Office
   P.O. Box 294
   Pueblo, CO 81002
   (719) 543-9459
2. Platte River drainage (northcentral and northeastern Colorado)
   Omaha District Office
   9307 State Highway 121
   Littleton, CO 80123
   (303) 979-4120
3. Colorado River drainage (Western Slope)
   Sacramento District Office
   402 Rood Avenue, Room 142
   Grand Junction, CO 81501
   (303) 243-1199

Environmental Protection Agency

Region 8 Office
999 18th Street, Suite 500
Denver, CO 80202
(303) 293-1570 / (800) 227-8917
National Wetlands Hotline:
(800) 832-7828

Fish and Wildlife Service

For Section 404 planning information:
Regional Office
P.O. Box 25486, Denver Federal Center
Denver, CO 80225
(303) 236-8186

For Wildlife Program information in Western Colorado:
Ecological Services Office
764 Horizon Drive, South Annex A
Grand Junction, CO 81506
(303) 243-2778

For Wildlife Program information in Eastern Colorado:
Ecological Services
730 Simms Street, Suite 290
Golden, CO 80401
(303) 231-5280

USDA Soil Conservation Service
655 Parfet Street, Room E200C
Lakewood, CO 80215
(303) 236-2886

USDA Agricultural Stabilization and Conservation Service
655 Parfet Street
Lakewood, CO 80215
(303) 236-2866

State Agencies

Colorado Department of Agriculture
700 Kipling Street, Suite 4000
Denver, CO 80215
(303) 239-4100

Colorado Department of Health
Water Quality Control Commission and Division
4300 Cherry Creek Drive South
Denver, CO 80222
(303) 692-3500

Colorado Department of Natural Resources (DNR)
1313 Sherman, Room 718
Denver, CO 80203
(303) 866-3311

Colorado Division of Wildlife (DNR)
6060 Broadway
Denver, CO 80216
(303) 297-1192

Southwest Regional Office
2300 S. Townsend Avenue
Montrose, CO 81401
(303) 249-3431

Northwest Regional Office
711 Independent Avenue
Grand Junction, CO 81505
(303) 248-7175

Southeast Regional Office
2126 N. Weber
Colorado Springs, CO 80907
(719) 473-2945

Northeast Regional Office
Research Center
317 W. Prospect
Fort Collins, CO 80526
(303) 484-2836

Central Regional Office
6060 Broadway
Denver, CO 80216
(303) 291-7227

State Engineer's Office/Division of Water Resources (DNR)
Centennial Building, Room 818
1313 Sherman Street
Denver, CO 80203
(303) 866-3581

Colorado State Forest Service
Colorado State University
Fort Collins, CO 80523
(303) 491-6303

Colorado State University Cooperative Extension
Administration Building
Colorado State University
Fort Collins, CO 80523
(303) 491-6281

For information about your local Conservation District office, call the State Soil Conservation Board at: (303) 866-3351.

Private Organizations

Colorado Cattlemen's Association
8833 Ralston Road
Arvada, CO 80002
(303) 431-6422

Colorado Farm Bureau
2211 West 27th Avenue
Denver, CO 80211
(303) 455-4553

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