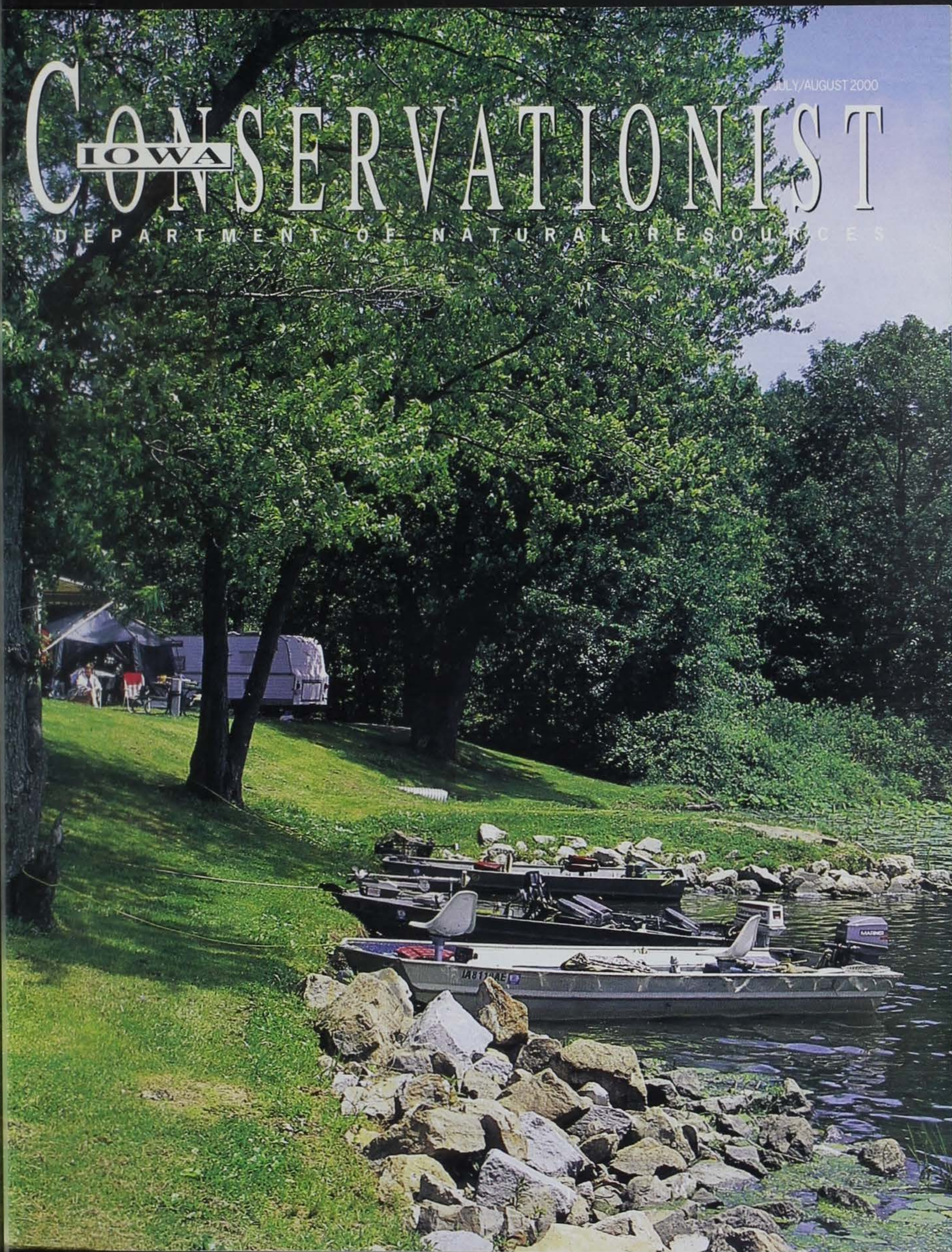


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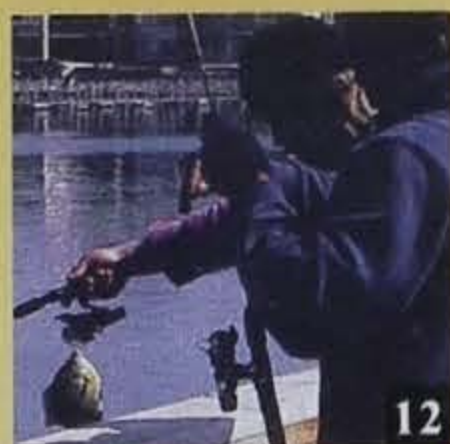
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Third in a series

A COUNTRY SO FULL OF GAME

A Brief History Of
Wildlife Conservation
In Iowa

by Terry W. Little



As dark descended on the prairie, the pale gleam of a small cooking fire glinted sporadically through tall grasses as they waved gently in the evening breeze. It was the only sign that intruders were on the land. A small party of surveyors was camped in a buffalo wallow, one of the few places where grasses seared dry by late summer winds were sparse enough to avoid a conflagration if a spark escaped. Dinner was over; beans and elk steak again, flavored by the pungent aroma of a buffalo chip fire.

The first sentries were posted. A pack of prairie wolves had been sighted just before making camp, and the horses and mules were skittish. The men were not anxious to make the long trek home to "Prairie" on foot.

While the remainder of the party settled into their blankets, one member, not yet ready for sleep, crowded up to the fire. In the fading light he penned an illuminating entry in his journal:

"I had never rode through a country so full of game. The hunter who accompanied me, though living most of his time in the woods, expressed his astonishment at the abundance of all kinds of game except buffalo..." Indian agent Joseph Street, 1833.

Agent Street was describing the Neutral Ground, a 40-mile wide strip of land running from the mouth of the Upper Iowa River (near present-day New Albin) to the upper fork of the Des Moines River (near Webster City). The Neutral Ground was purchased by the federal government in 1825 to separate tribes of Sauk and Fox Indians to the south and east from their ancient enemy the Sioux, who ruled the plains to the north and west. Street's party of surveyors had left from Prairie Du Chien, Wis., crossed the Turkey and Wapsipinicon rivers, camped at the Cedar River and were now on their way home. Their land survey was the first in what was to eventually become the state of Iowa.

Street's comments were not unique. The journals of military expeditions, early explorers and settlers are testaments to the amazing abundance and diversity of wildlife they encountered after crossing the Mississippi River.

Diversity Yields Abundance

The Iowa the first European visitors found was an incredibly diverse place. Roughly two-thirds of the state (an estimated 28 million acres) was dominated by lush, tallgrass prairies. Nearly 7 million acres of forest land or forest-prairie savanna covered much of the eastern third of Iowa and followed the river valleys into the prairies to the north and west. Around 3 million acres of prairie pothole marshes dotted recently-glaciated and poorly-drained north-central Iowa. Another million acres of backwaters, sloughs and flooded oxbows were found in the floodplains of the Mississippi, Missouri and larger inland rivers. Periodic drought and fire, both natural and human-induced, created an ever-changing patchwork of plant communities that varied across the landscape and through time.

Iowa lay at a biological crossroads. The cooler and more humid lands east of the Mississippi River were dominated by hardwood forests. The warmer, drier shortgrass prairies of the Great Plains lay to the west. To the north, great maple-basswood and pine forests covered the Great Lakes region. To the south oak savannas gradually gave way to the vast oak-hickory forests of the Missouri Ozarks. These different ecological regions blended together in Iowa to produce a unique landscape of great biological diversity. This fortuitous combination of diversity and location produced not only a great abundance of species residing permanently in Iowa, but also provided major migration corridors for a variety of forest and wetland birds resulting in spectacular seasonal flights.

Game Was Plentiful

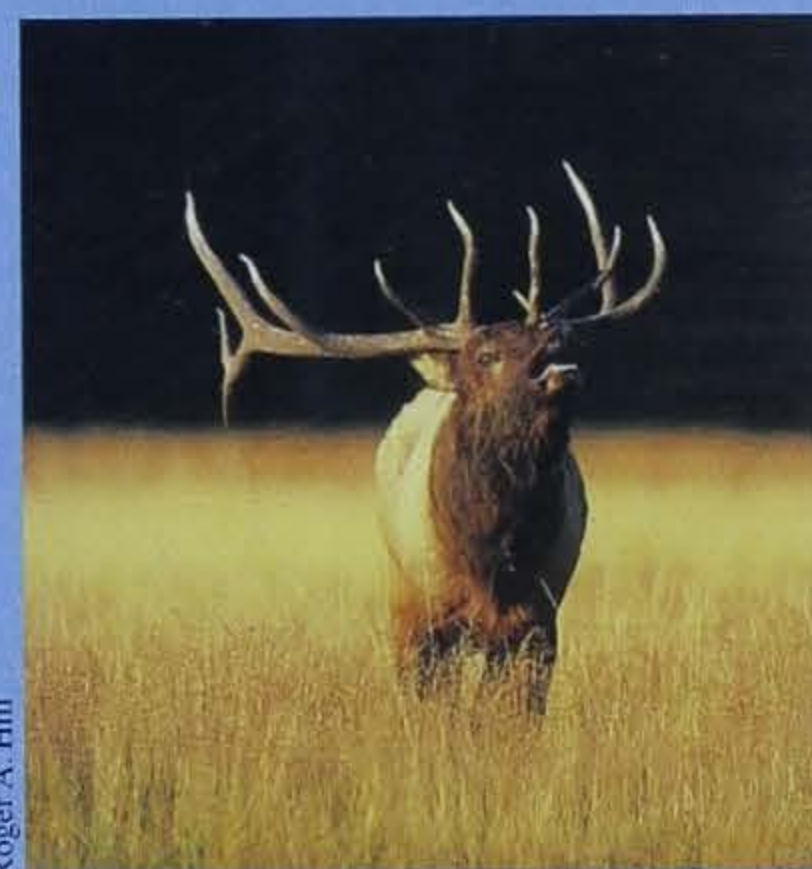
The earliest European travelers through Iowa depended on game that they could hunt or trap for their survival. Notable historical figures like Marquette and Joliet (1673), Julien Dubuque (1788), Lewis and Clark (1804), Zebulon Pike (1805), Stephen Long (1819), and Stephen Kearney (1820) led expeditions to and through Iowa prior to the arrival of the first permanent settlers. Their journals and the observations of trappers and Indian traders form our best knowledge of what Iowa was like before settlement.

Bison, elk and white-tailed deer were the primary big game animals and a major source of food for early travelers. Bison and elk were found everywhere, but were perhaps most numerous on the prairies in the western two-thirds of the state. Bison apparently never reached the mind-boggling numbers here that were seen on the Great Plains.

Two reasons have been suggested. Bison robes were a valued trade commodity sought by Indian traders for more than a century prior to settlement and they may have been hunted more heavily than the Indians needed for their personal use. Thus bison may have been somewhat reduced from their former numbers by the time records were first kept. (The same argument has been suggested for beaver). And the taller switch, Indian, and bluestem grasses found here did not "cure" into high quality winter forage like the shorter gramma and buffalo grasses found on the Great Plains, so the



Roger A. Hill



Roger A. Hill

Prairie chicken (left), white-tailed deer (top) and elk (above).

Clockwise from right:
pintail, trumpeter swans,
Canada geese and
shoveler.



Ty Smedes



Ty Smedes



Ty Smedes

Ty Smedes



wintering conditions may have been less favorable. Whatever the reason, the largest herd of buffalo reported was 5,000 animals, seen near Ruthven in 1820. Scattered smaller herds could be found in nearly every county.

Elk, commonly thought of today as animals of the Rocky Mountain west, were originally found across much of the eastern United States. In Iowa, they were more abundant than bison and probably white-tailed deer. For much of the year they were scattered across the grasslands in small family groups, but in winter they would concentrate along the rivers for shelter, with wintering herds numbering into the hundreds. Large herds were seen near Fonda in Sac County, Exira in Cass County, and in Humboldt, Palo Alto, Franklin and Kossuth counties in the 1850s and 1860s.

White-tailed deer were associated mostly with forests and were thus somewhat less widespread than bison or elk. The greatest numbers were in eastern and southern Iowa, where herds of a few hundred were occasionally reported. But deer followed the river drainages into northern and western Iowa and some could be found wherever forests or shrublands occurred. Large herds of deer were noted in Scott, Delaware, Washington, Cass and Harrison counties in the 1850s.

Waterfowl were incredibly abundant. The prairie pothole and riverine wetlands provided excellent nesting habitat and attractive resting and feeding stops for untold millions of migrating ducks and geese en route between their nesting and wintering grounds. Giant Canada geese, trumpeter

swans and a dozen species of ducks nested in Iowa, mainly blue-winged teal, mallards, redheads, northern shovelers, northern pintails and ruddy ducks. In excess of 4 million ducks may have been raised annually; one early hunter thought there were 10,000 Canada goose nests in Kossuth County alone.

Other waterbirds were also plentiful. Sandhill cranes were abundant during

migration and nested here occasionally. Whooping cranes were less numerous, but nested frequently in the marshes of north-central and northwest Iowa. Both were hunted and valued as table fare.

Shorebirds, most not commonly thought of as game species today, were abundant and highly prized for their delicate meat and flavor. More than 30 species of shorebirds migrated through Iowa. Of these, the woodcock, long-billed curlew, marbled godwit and upland sandpiper nested here, and the golden plover, Eskimo curlew and common snipe were abundant during migration.

Upland prairies and forests also produced an abundance of game birds. The most numerous was undoubtedly the passenger pigeon, once considered the most abundant land bird in North

America. Looking like a larger version of the still-abundant mourning dove, passenger pigeons traveled and nested in huge flocks nearly incomprehensible today. Migrating flights of a million or more birds were reported in the eastern U.S. and one nesting colony in Wisconsin covered approximately 150 square miles. As denizens of the hardwood forest, they were found mainly in eastern Iowa, especially along the Mississippi River. A single flock of 600,000 was reported near Dubuque. A hundred migrating flocks a day passed through Algona on the Des Moines River in the 1870s, however, and there are nesting records from as far west as Sac County.

Prairie chickens and their close cousin, the sharp-tailed grouse, were found wherever suitable grasslands existed. Prairie chickens could be heard booming from their spring mating grounds in nearly every county. Sharp-tails, more commonly found on the drier, shorter and brushier grasslands of the Great Plains, danced their mating rituals only in northwest Iowa and in the northern Loess Hills.

Wild turkeys were abundant throughout the forest and forest-prairie savanna. Because they were dependent mainly on oak mast for their winter food, turkeys were most abundant in northeast, southeast and south-central Iowa. Turkeys were found far into northwest Iowa, however, associated with timbered stream valleys. Flocks were reportedly large, occasionally numbering into the hundreds, but only 19 percent of Iowa was forested and



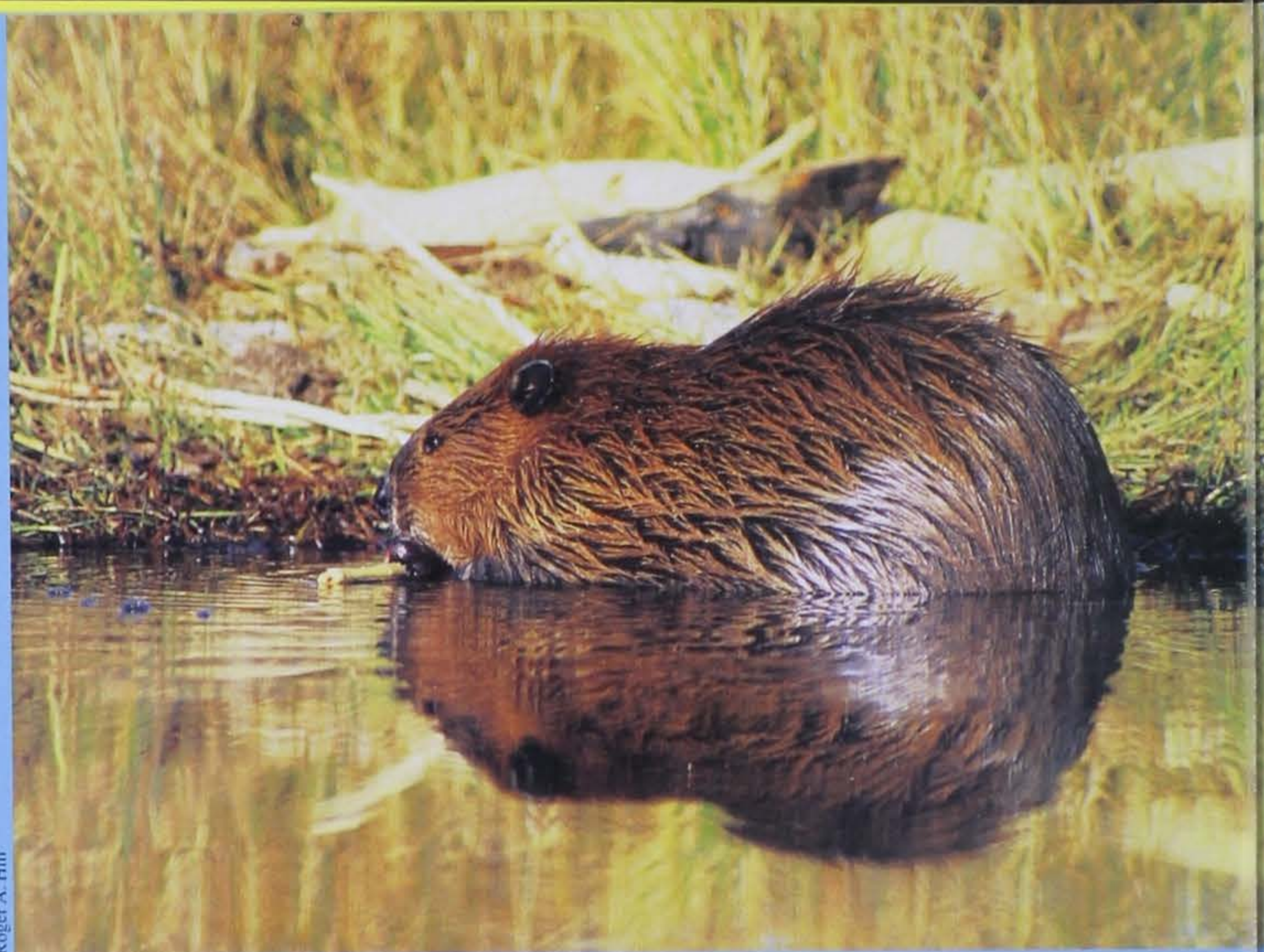
Roger A. Hill



Roger A. Hill

Turkey (above) and quail (left).

Beaver (right)
and ruffed
grouse (below).



Roger A. Hill



Roger A. Hill

turkeys were thought to be only half as abundant as they were in their primary range in the more heavily forested regions to the south and east.

Bobwhite quail were found wherever brushy timber and prairie met. Iowa was on the western and northern edge of quail range in the early 1800s, and quail numbers probably fluctuated widely depending on winter weather and food production. They would have prospered in the years following mild winters and where fires killed off the forest overstory,

permitting the regrowth of shrubby cover and annual seed producing plants.

Ruffed grouse, a less common forest game bird, were found nearly statewide. They were also dependent on young stands of brushy timber and would have prospered only in the shrubby cover along the prairie-forest border.

Furbearers Represent Economic Opportunity

From the mid-1700s into the early 1800s, trappers and itinerant Indian traders entered Iowa in search of furs to trap or barter. Beaver, prized for making stylish gentlemen's hats, was their primary objective, but muskrat and river otters were highly prized also. All three were found throughout Iowa, associated entirely with marshes, streams and rivers. Muskrat were most abundant in the prairie marshes of north-central Iowa and maintained very high numbers. Beaver and river otters were associated more with riparian habitats. Mink and raccoon were not highly sought after, but both must have been abundant.

Predators

Wolves and coyotes were the most visible predators in pre-settlement Iowa and received the most attention from early travelers. The gray wolf occurred in two forms. The lighter, smaller Great Plains wolf followed the bison and elk herds and was most common in the western two-thirds of the state. The timber wolf, a somewhat larger and darker version of the same species, inhabited the forested eastern third, mostly in the northeast corner, and would have fed mainly on deer.

Coyotes, often mistakenly referred to as the "prairie" or "brush" wolf, were found statewide. Interestingly, coyotes were unknown east of the Mississippi River and the species was first described by Thomas Say, a naturalist traveling in Iowa with military expeditions in the 1820s. Wolves and coyotes feed on a variety of birds and mammals and would have found pristine Iowa a virtual paradise.

Two other wild canids inhabited pre-settlement Iowa. Red foxes were found in the prairies and at the prairie-forest border in northern Iowa. Their smaller, woodland-dwelling relative, the gray fox, was

found primarily in the eastern third of the state. Neither was apparently abundant prior to settlement. Wolves and coyotes competed directly with foxes for food and would devour a fox given the opportunity. Red foxes probably did not expand their range much beyond northern Iowa until settlers effectively eliminated those larger predators. Once freed from the competition, however, red foxes quickly colonized the rest of the state. Because of their greater diversity in acceptable habitats, red foxes have always outnumbered their gray cousins.

Three species of wild cats were found by early settlers, but because of their extremely secretive nature it is difficult to determine their abundance. Bobcats were by far the most numerous, occurring statewide in a variety of forested and shrubby habitats. Though their pelts had little value, bobcats were taken by trappers in several counties and were considered common.

Mountain lions, or cougars, were occasionally seen, but reports are few and far between. Dead cougars were verified in Clayton County in 1838, Delaware County in 1845, Montgomery County in 1851 and Appanoose County in 1867. The lynx, a larger version of the bobcat, normally inhabiting the coniferous forests of the Great Lakes states and Canada, was at least occasionally found here. Reports include lynx taken in Crawford, Muscatine, Warren, Sac and Calhoun counties in the 1850s to 1870s.

The largest predator in pre-settlement Iowa was clearly the black bear. Although their preferred habitat was woodlands, they occasionally wandered into the prairies. Reports of black bears originate from 48 counties, most in eastern Iowa. The grizzly bear, arguably



Roger A. Hill



Roger A. Hill

Red fox (top left), black bear (top right) and coyote (above).

Loggerhead shrike (below) and mourning dove (bottom).

North America's most fierce predator, was found occasionally on the Great Plains, but there are no known records from Iowa.

Nongame Thrives As Well

Records of the unhunted fauna that inhabited Iowa are largely nonexistent. The early explorers and settlers were concerned mostly with wildlife as a source of food or pelts, or as a threat to livestock and crops. But of 440 species of birds and mammals that resided here or migrated through Iowa, less than 15 percent were ever hunted or trapped. Visits from naturalists interested in cataloging and describing all wildlife, like Say (1820) and Audubon (1843), were few and far between. Serious scientific efforts did not begin until nearly 40 years after settlement, and by then significant changes had already occurred.

Certainly the wetlands must have been home for yellow-headed blackbirds, marsh wrens, American bitterns, black terns and Sora rails, as well as Canada geese, mallards and muskrats. Wetland-prairie margins must have been nesting sites for song sparrows, sedge wrens and northern harriers.

Where shrubby, early successional stages of forest pushed into the prairies there must have been an abundance of cardinals, yellowthroats, rufous-sided towhees and rose-breasted grosbeaks as well as ruffed grouse and white-tailed deer. Larger stands of mature forest must have provided nesting sites for ovenbirds, scarlet tanagers, wood thrushes and pileated woodpeckers as well as wild turkeys. Riparian woodlands would have been home for black-billed cuckoos, red-headed woodpeckers, belted kingfishers and northern flickers as well as wood ducks.

Grasshopper and vesper sparrows



Ty Smedes



Roger A. Hill

Yellow-headed blackbird (right).



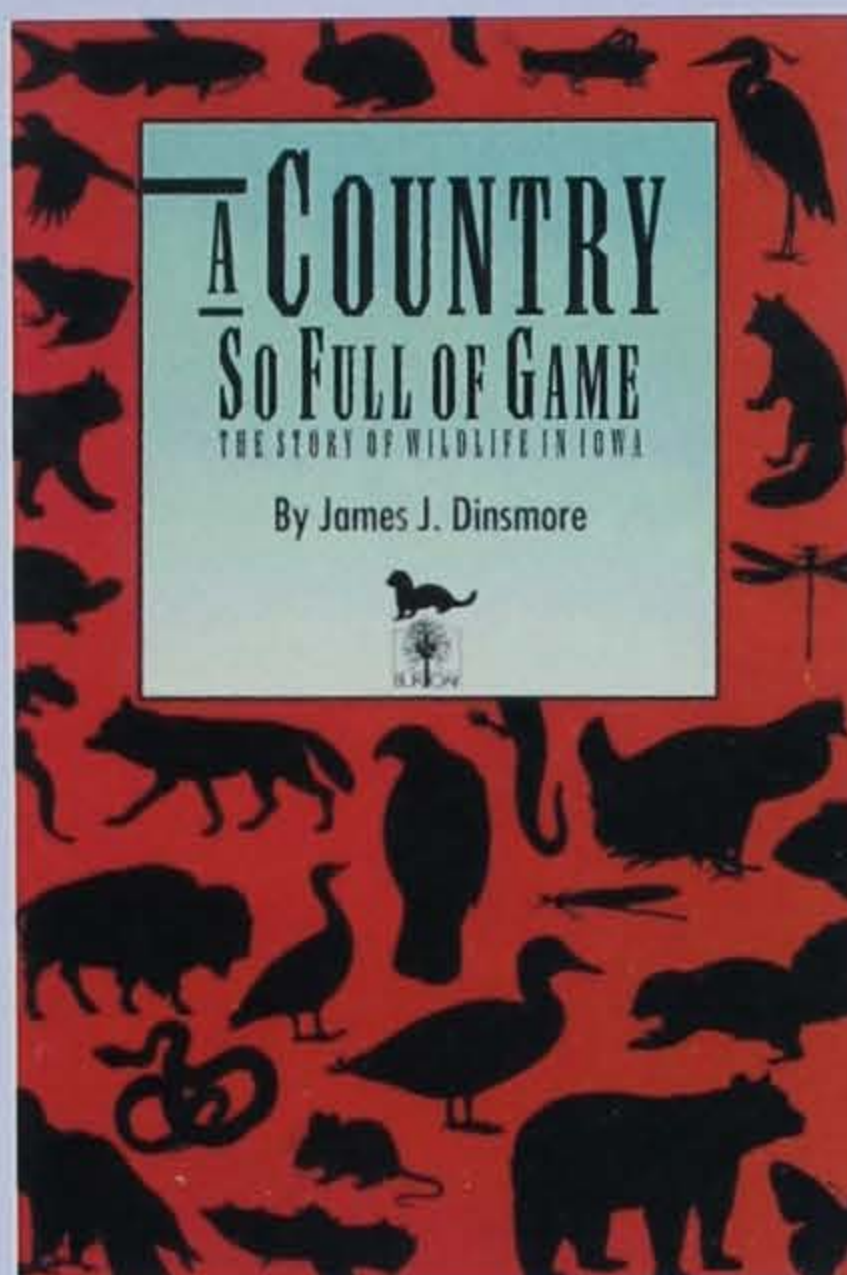
Ty Smedes

would have nested in recently-burned prairies. Prairies a year or two after burning would have provided nesting cover for bobolinks and dickcissels as well as prairie chickens. Henslow's sparrows, savanna sparrows and upland sandpipers would have nested in older prairies with dense ground litter. Loggerhead shrikes and mourning doves would have sought out grasslands with a shrub component. In all, more than 180 species of birds nested in Iowa.

Even less is known of the reptiles, amphibians and invertebrates. Pristine prairie potholes, riverine wetlands, prairies and woodlands provided homes for a diversity of lizards like the Great Plains skink and six-lined racerunner, common turtles like the ornate, snapping and painted turtles, snakes such as the timber and Massasaqua rattlesnakes and frogs like the leopard, green and gray tree frog. More than 60 species of reptiles and amphibians were eventually found in Iowa.

Thus was Iowa in the early 19th century. Molded by ice and water into a gently rolling but highly dissected landscape, inhabited by diverse biotic communities and with underlying soils more fertile than could be imagined, it

was a virtual wildlife paradise. Then in 1833, Congress made the Blackhawk Purchase, opening the first lands west of the Mississippi River to settlers. In one human lifetime, all this would change.



The title of this article and most of the information contained within were taken from the book A Country So Full of Game by Dr. James Dinsmore, Department of Animal Ecology, Iowa State University and published by Bur Oak Press. Permission to use the title was graciously given by Dr. Dinsmore.

Terry W. Little is the department's wildlife research supervisor in Des Moines.



Tree frog (left) and snapping turtle (above).

Congregating at the trestle area between East and West Okoboji lakes.



Jim Christianson

Iowa's Great Lakes:

An Angler Gathering Place

by Jim Christianson



Ron Johnson

bluegills and perch



Jerry Leonard

bullheads



crappies



Whatever draws people together when pursuing recreational angling, the Iowa Great Lakes provide some prime opportunities for the gregarious angler.

Do people need other people? An age-old question, and one that encompasses the recreational angling world.

Fishing outings may be solitary, but if one surrounds him or herself with people for the majority of their fishing outings, this may be just another occasion when the gregarious nature of the human personality manifests itself. This human characteristic has held true since prehistoric times when togetherness meant either life or death. People just need other people around them at least part of the time!

People fish in bunches for many different reasons. It may be for a feeling of security, or just a need to talk to someone with similar interests. Fishing success may precipitate a crowd or a crowd may form simply because of easy access to a particular fishing spot. Whatever draws people together when pursuing recreational angling, the "Iowa Great Lakes" provide some prime opportunities for gregarious anglers.

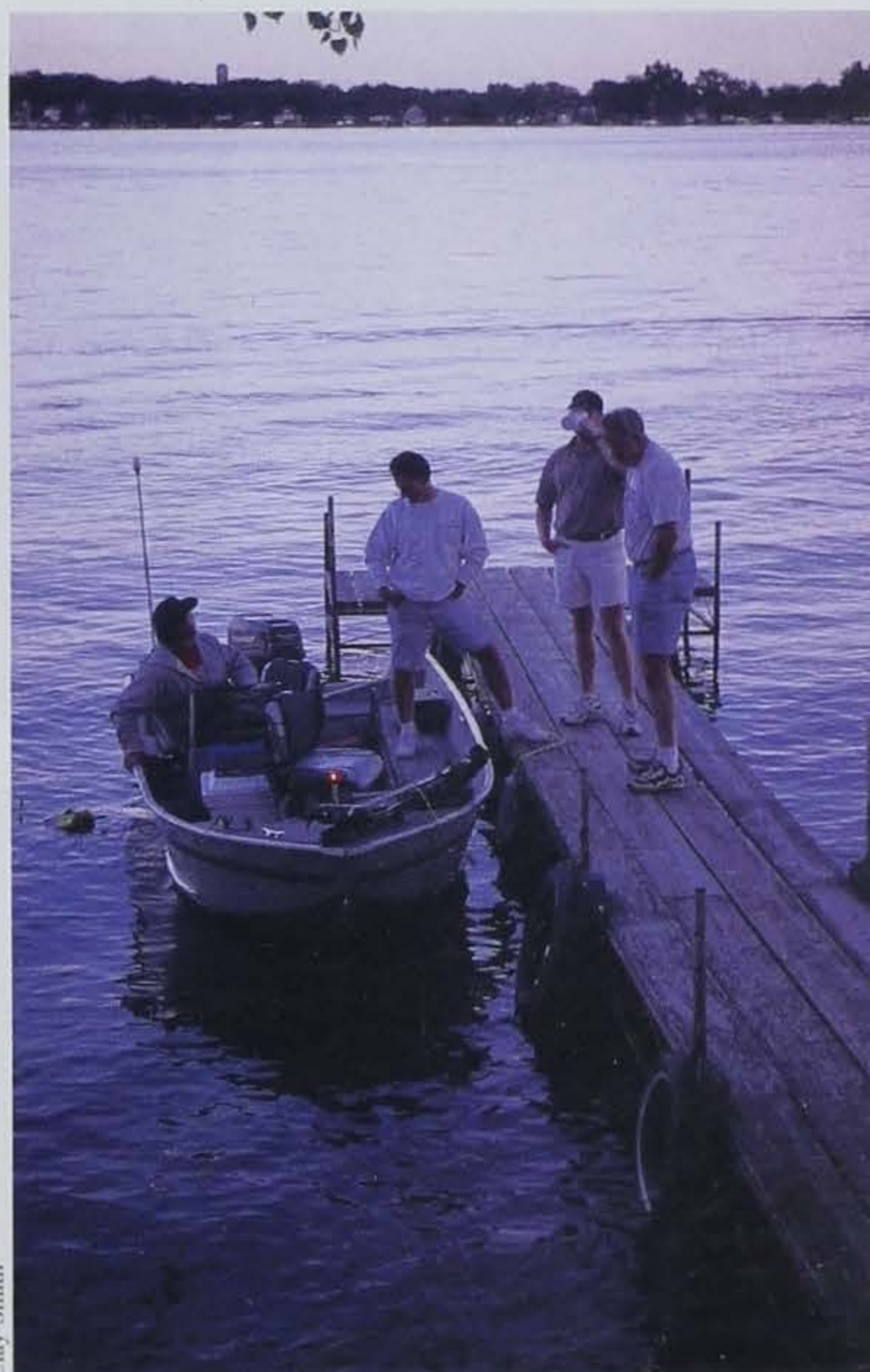
When we refer to an angler as "gregarious" we do not necessarily mean the person who goes fishing with a couple of buddies but rather the individual that fishes in a crowd. A number of areas in the lakes region offer this kind of fishing environment.

The North Grade on Spirit Lake is a prime example of togetherness. This area consists of a hard-surfaced road way approximately one-half mile long. After the 1993 record-high water destroyed the integrity of the road bed, this particular stretch of road was reconstructed and improved with adequate shoulders to

accommodate the angler. Prior to this road improvement, a U-shaped fishing pier (500 feet) was constructed in 1987 to offer increased and better access to more productive fishing water. This piece of fishing real estate, locally known as the "Grade," has parking for about 60 vehicles with anglers fishing right beside their vehicles, on the fishing pier and at the inlet area. The access is convenient and fishing success is usually very good, making a winning combination for anglers use. The angling types and equipment used are about as varied as the species one may encounter in this locale.

The action starts rather early in the open-water season at the "Grade" with the hardy anglers showing up after ice-out, when the air temperatures still have a bite and the blustery winds are out of the north. These individuals are after the slab crappies, preparing for the upcoming spawning season,

moving into this area to feed. Then, around mid-April the bullheaders move in and start to deal on the "slicks" that have moved to shallow water for their pre-spawn feeding activities. From this time until about mid-June, this fishing



Clay Smith

action can provide many hours of recreation. With the addition of the fishing pier, the panfish (bluegills, perch and crappie) can be very cooperative and fill many a stringer with some fine table fare. Along with all these species, larger predator fish like the walleye and northern pike are usually caught in close proximity to the inlet. This action is somewhat dictated by the amount of water flowing into Spirit Lake.

Another action spot is the spillway area between the south end of Spirit Lake to the north end of East Okoboji. The area is locally known as the Isthmus. For this area to produce, there has to be a fairly good flow of water in

the system. Many different species of fish are attracted to current and this area is no exception. Because it is highly accessible and has adequate room for vehicles and anglers, the Isthmus lends itself well to gregarious activity.

When there is good flow in the spillway, the current produced in East Okoboji attracts a variety of fish. In the spring, one of the first species to provide fishing action is the white bass. This voracious feeder has entertained many wader anglers by being very aggressive, scrappy and willing to hit a simple leadhead jig.

Shortly after the initial white bass activity, it is time to focus one's attention on the walleye — generally

taken in the spillway by wader-clad anglers using a variety of terminal tackle. The tried and tested leadhead is still the old standby, but live minnows rigged below a bobber, and minnow-imitating lures are also very productive.

As the water warms, species like the yellow perch and bullhead move up into the spillway. These fish move, feed and loaf in this running water, tantalizing the bank angler because the water is usually quite clear making these fish highly visible. As the season progresses with warmer water and diminishing flows, this area loses some of its luster and activity slacks off.

The trestle area, an old abandoned railroad bridge between East and West

The spillway between Spirit Lake and East Okoboji is a hotspot locally known as the Isthmus.

Spirit Lake's North Grade is probably the best example of fishing "togetherness." Mid-April is prime time for catching "slicks."

Jim Christianson



Okoboji, is another spot for anglers to congregate. The bridge has been decked to accommodate foot and bicycle traffic, with approximately 400 feet of dock structure constructed close to the water. Because it provides easy access and plenty of vehicle parking, this area is very convenient for shoreline anglers. The fishing action is a spring and fall bite, primarily for yellow perch, bluegills, crappies and bullheads. When the bluegill populations are strong in the Okobojis, this area can be dynamite. Most of the species in the trestle area are caught with light terminal tackle. Use small mini-jigs, tear drops or just plain hooks baited with wigglers, waxworms or a small piece of crawler. Most of the fishing takes place off of the lower dock sections, but conditions have become crowded enough that some anglers take up positions on the bridge to get more room. There they can strategically place the bait among the superstructure of the bridge where the fish are located.

The last and maybe best example of people "togetherness" is winter fishing in the lakes region. There are anglers who congregate with friends on the ice no matter what the fishing success. People from a particular locale seem to move around the lake in clusters or they may just move around a rather isolated section of the lake. For example, I have observed the same group of ice shacks year after year move just inside the Millers Bay area of West Okoboji or on the North End Bay of West Lake. On relatively warm, pleasant days, you can see groups of anglers bunched together



Ron Johnson

catching fish. And if you get close to this scene, you can hear chatter one would think was reserved for a community social.

I do not know if people really need other people when they fish, but people do need fish and with both of these components in the formula, the chain of natural lakes in Northwest Iowa collectively known as the "Iowa Great Lakes" provides many opportunities for people to get together along with fish.



Ron Johnson

Another prime example of gregarious fishing is ice fishing in the Great Lakes area.

Jim Christianson is a fisheries biologist for the department in Spirit Lake.

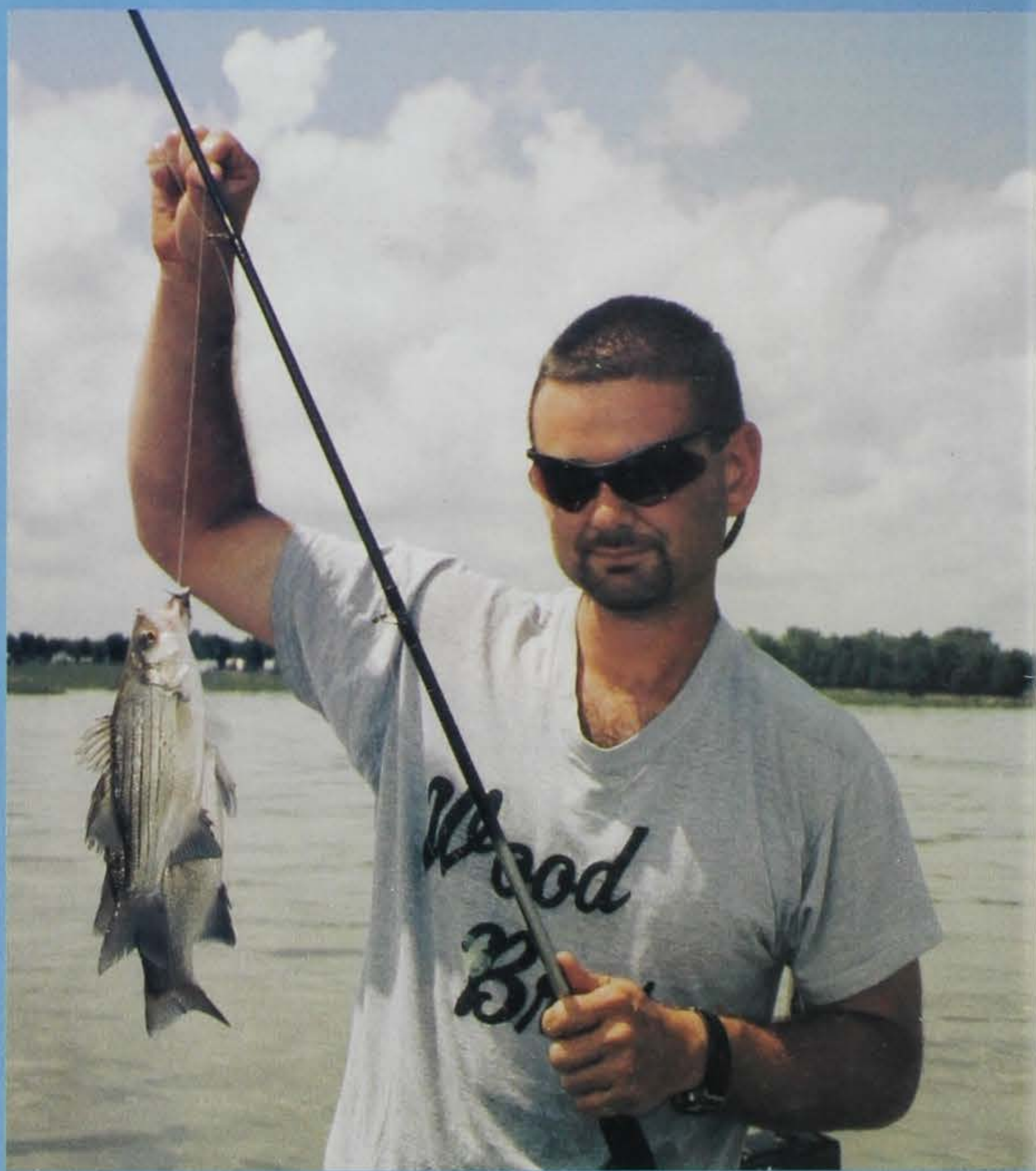
The action starts rather early in the open-water season at the "Grade" with the hardy anglers showing up shortly after ice-out, when the air temperatures still have a bite and the blustery winds are out of the north.

WHITE BASS ANGLING in Iowa's

FLOOD CONTROL RESERVOIRS

Article and photos by
Bryan Hayes

When the mid-summer fishing lull hits, the fast and fun white bass is an angler's sigh of relief. Furious feeders, they are easily caught in schools and are a near-perfect panfish for all anglers.





White bass average about 12 inches and about 3/4-pound, and ounce for ounce are one ferocious fighter.

In the boat with me are a niece and nephew, whose combined fishing experience equals fishing for trout in a swimming pool at a sport show. I offered to take them fishing back in May when crappie fishing was prime on Rathbun Lake. The problem is it's now early July. The spring crappie fishing is a distant memory and the walleyes tend to be too elusive for such inexperienced anglers. Holding the young anglers' attention will require action, and lots of it. The perfect fish for this day will be white bass, known locally as "whites," "striped bass" or "stripers." Fast action, fun to catch and plentiful in Iowa's flood control reservoirs make the white bass a near perfect panfish for young and old alike.

White bass are highly mobile fish, moving in large schools. They voraciously feed on other schooling fish, most often gizzard shad. They feed

most actively in early morning and late evening, often near the surface where forage fish tend to concentrate. Casting into large schools of feeding white bass often results in a fish on nearly every cast.

Historically, white bass populations inhabited the Mississippi, Missouri and Des Moines rivers and the lower reaches of their main tributaries, as well as many

natural lakes in Iowa. Large expanses of open water and abundant forage fish are ideal conditions for white bass. Hence, construction of flood control reservoirs in Iowa during the past several decades has led to dramatic increases in white bass populations. Coralville, Rathbun, Red Rock and Saylorville reservoirs, with a combined surface area of more than 40,000 acres, contributed greatly



Iowa's Flood Control Reservoirs

White bass gear and lures, include crankbaits, spoons, spinners and jigs.



to the population growth in the Hawkeye state.

The first good white bass fishing of the season begins in late April to early June, when water temperatures hit 60, triggering the beginning of the spawning run. The males often move to the spawning grounds a month before the females. Depending on the seasonal temperatures and other environmental conditions, the spring run can last from just a few days to several weeks.

White bass spawn on sandy or rocky points in the main reservoir, or in some cases, in tributary streams above the reservoir. Spawning locations vary among the four large reservoirs in Iowa. Saylorville, Red Rock and Coralville are associated with large river systems, where white bass spawning runs are spring rituals.

The Scott Street Dam in Des Moines, for example, is a known collection point for white bass during their spawning migration. Spring

spawning runs up the Iowa River originate in Coralville Reservoir and go as far as the low head dam in Marshalltown.

White bass in Rathbun Reservoir spawn within the main reservoir body itself. The Chariton River feeding Rathbun is a smaller river system and not suitable for white bass reproduction. Sandy points near the Rathbun dam hold large numbers of white bass during the spring spawning run.

For many anglers, particularly those without boats, the spring run is the best time to catch these fish. Small jigs fished on light tackle are the best bet, casting the jig upstream and working it down with the current. Tandem jigs on a line or lures with multiple hooks will sometimes allow you to catch "whites" two at a time.

The early summer period moves the white bass back into the main reservoirs, where they can be found in large schools, feeding off the ends of long

points, flooded road beds or submerged humps. Vertical jigging with spoons — lifting the spoon off the bottom and dropping it back down — keeping the line tight as it falls can be very productive. The fluttering action of the falling spoon resembles a wounded fish and often entices a strike. This is an easy technique for kids to learn. The spoons are heavy (1/2 to 3/4 oz.) making it easy for them to feel the bottom and lifting the spoon will set the hook on any fish that hits.

If white bass are difficult to locate during the early summer period, trolling crank baits will aide in the search for schools of feeding fish. Deep diving crank baits trolled over and around points and humps will eventually produce fish. Once a school of white bass is located, trolling or jigging will be effective.

In July and August, when most of the fish readily caught during the spring and early summer have moved to deeper

water and are more difficult to catch, white bass often save the day. Schools of white bass chase schools of shad to the surface and viciously attack them. Hungry gulls follow the action to feed on injured shad that come to the surface, pinpointing the locations of schooling fish. This is the most exciting time to fish for white bass. Casting into the melee with crank baits, spoons, or spinners is very effective.

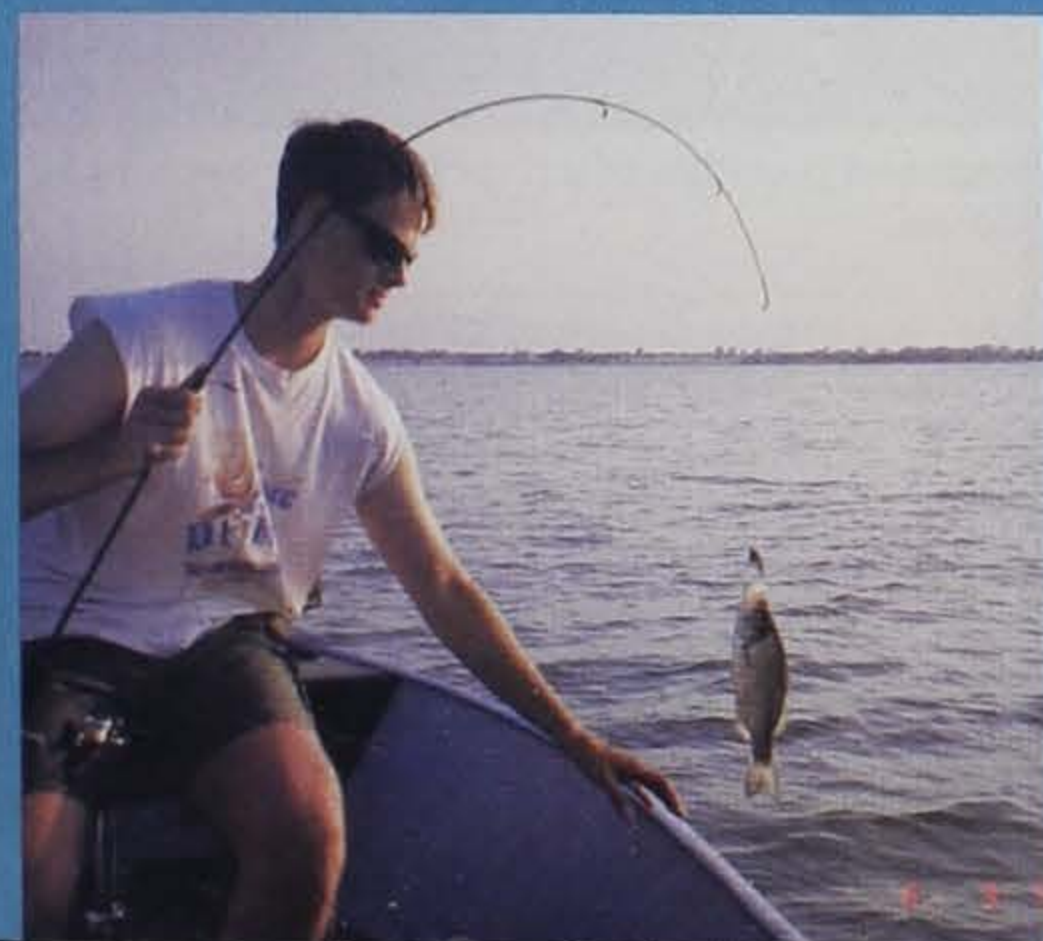
During this late summer period, a cooler of ice is a must for preserving your catch for the dinner table. Water temperatures exceeding 80 degrees are the norm this time of year. White bass will not hold well in a livewell with such warm temperatures. Throwing the fish on ice is essential to preserving your catch.

Every year, white bass are an important part of the fishing in Iowa's flood control reservoirs, where they rank among the top two or three species of fish caught annually. In Rathbun, the number of white bass harvested ranks second only to crappie. Recognizing the importance of this species, fisheries personnel from Rathbun are now sampling the white bass population using fall gill nets. Prior to that, the only way the DNR tracked the white bass population was through angler interviews. Vital information on year class strength and population size structure is now being collected annually.

At Rathbun that July day, landmarks on the horizon helped position the boat. The grain silo on the south shore lined up with the log cabin to the north. The depth finder pinpointed the exact location of the hump. Jiggging the spoons off the bottom, my nephew was the first to hook into a white bass, and for the next hour we caught fish, one after another. The problem is, these kids will expect the same kind of action every time we go fishing.

Fast action, fun to catch and plentiful in Iowa's flood control reservoirs make the white bass a near perfect panfish for all anglers.

Bryan Hayes is a fisheries management biologist stationed in Manchester.



White bass move in large schools, voraciously feeding on other schooling fish. They feed most actively in early morning and late evening. And casting into large schools of these feeding fish often results in a fish on nearly every cast.

LOVING THE LIFE of THE RIVER

by Eugene Thoma

She can woo and lull you into insensibility. She can make you love or hate her. She will feed and shelter you. She will show you beauty, peace and tranquillity. Yet, if you ignore her, she can turn on you with a raging, vengeful spirit.

I fell in love with the Des Moines River at the age of 12 when my family moved to Fort Dodge.

The night before fishing from her banks, I would catch night crawlers and sneak them into my mom's refrigerator. In the morning, I would grab my rod and reel, a small assortment of hooks and sinkers and the refrigerated crawlers. I would hop on my bicycle and head for the river.

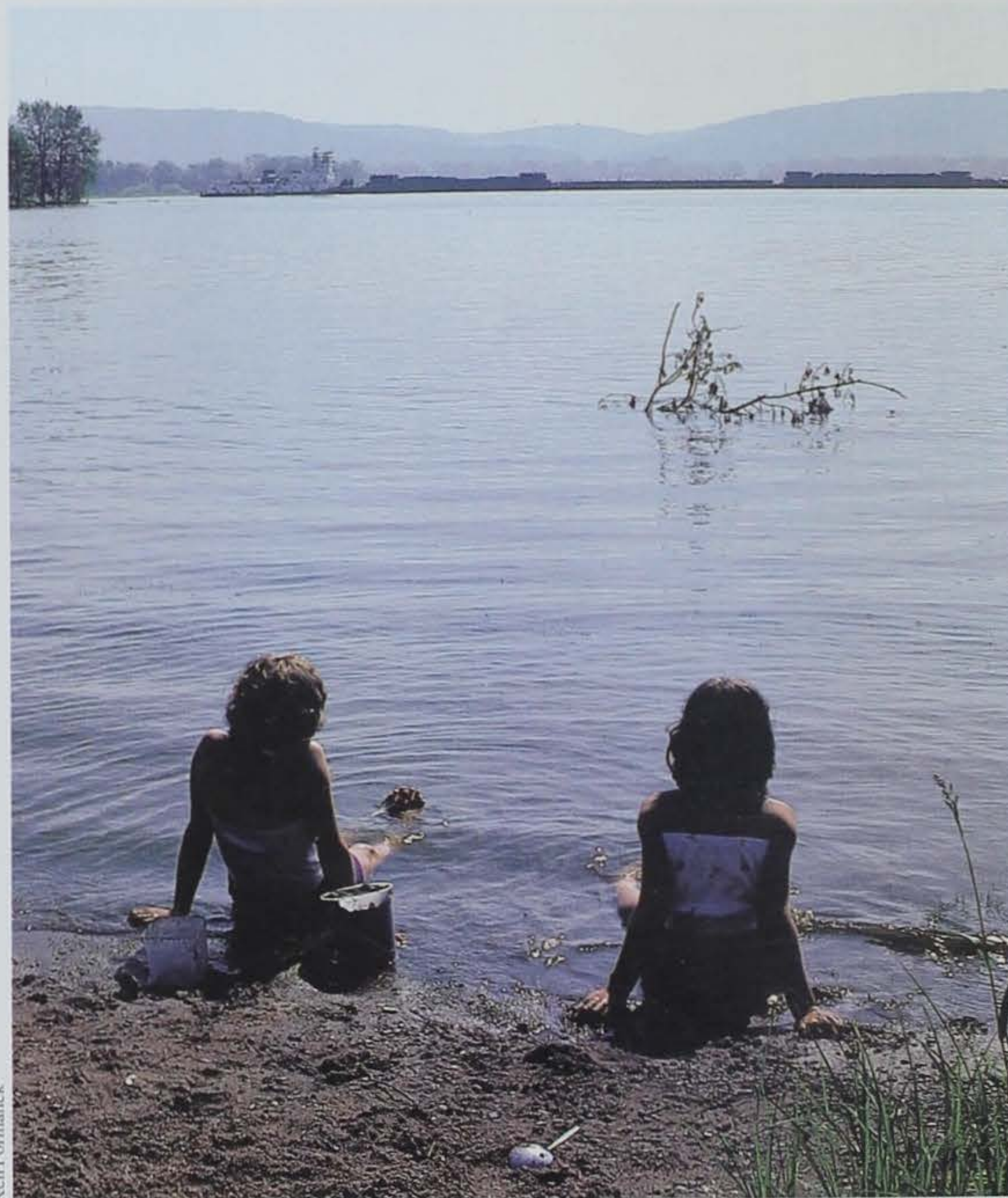
Standing on her banks, I would watch people fishing close to the dam. The swift rushing water would frighten me, so I would go farther down stream to quieter water.

Through the years, I would spend hundreds of pleasurable hours learning about her changing ways, her secrets and her hiding places. She even showed me the location of the wily channel cat.

As a result, when I am depressed, I go to her for healing. She treats me with tenderness as long as I do not abuse her.

At times, I start at the Reasnor Dam in Humboldt, travel north and drift downstream, investigating everything along the way. I see a stream emptying into the river so I proceed up the stream until I run aground. I kill the motor, lean back in comfort and observe.

I inhale the odor of stagnant water and musty stale mud. It is so strong I can almost taste it. In the mud, I see



Ken Formanek

Exploring the diverse aquatic animal and plant life of a river can be a seemingly endless journey, especially to children.

raccoon footprints, the tail-dragging marks of a snapping turtle and the traces of crawling earthworms. Ahead of me, a doe drinks warily. I can hear the musical trilling of wild birds. In the distance, squirrels flitting from branch to branch nervously, shrilly, chatter at me.

Over in the oak tree a great horned

owl sits majestically looking over his domain as if he is a crown prince watching over his people. In the distance, the beautiful and rugged symbol of our nation, the bald eagle, sits like a king waiting for his subjects to pay him homage. He keenly waits for a mouse, a snake or fish to eat. This is

the way of nature — life feeds on life, and life begins and ends.

I continue to watch the river as the current sends little eddies around me, swirling into miniature vortexes and drifting off down stream. I see a small twig floating by. I wonder where it is going, how long it will take to get there, and what happens when it arrives. I hear carp feeding nosily in the shallows as they jump out of the water, breaking the comforting silence with a slap.

I lay back and imagine a Native American hunting along the river banks. If I am still, I can see him stalking a deer, building a fish trap or setting a game snare. I see him digging in the mud banks looking for turtle eggs or waiting for unwary fish with his spear.

Throughout the year, I see the colors — lush greens in the spring, dusty tans and browns in the summer, brilliant red and oranges in the fall and stark ethereal white in the winter.

The river is my lover. But I cannot trust her because I have witnessed her wild nature in full stride as a raging torrent of death and destruction. I have witnessed her taking huge cottonwoods down with ease, sweeping them downstream as if they were a pieces of floating cork.

She follows no set course but makes her own. When she is in high-flood stage, she respects nothing and will destroy with equal ease and no remorse. After venting her wild rage, she will calm to her peaceful ways.

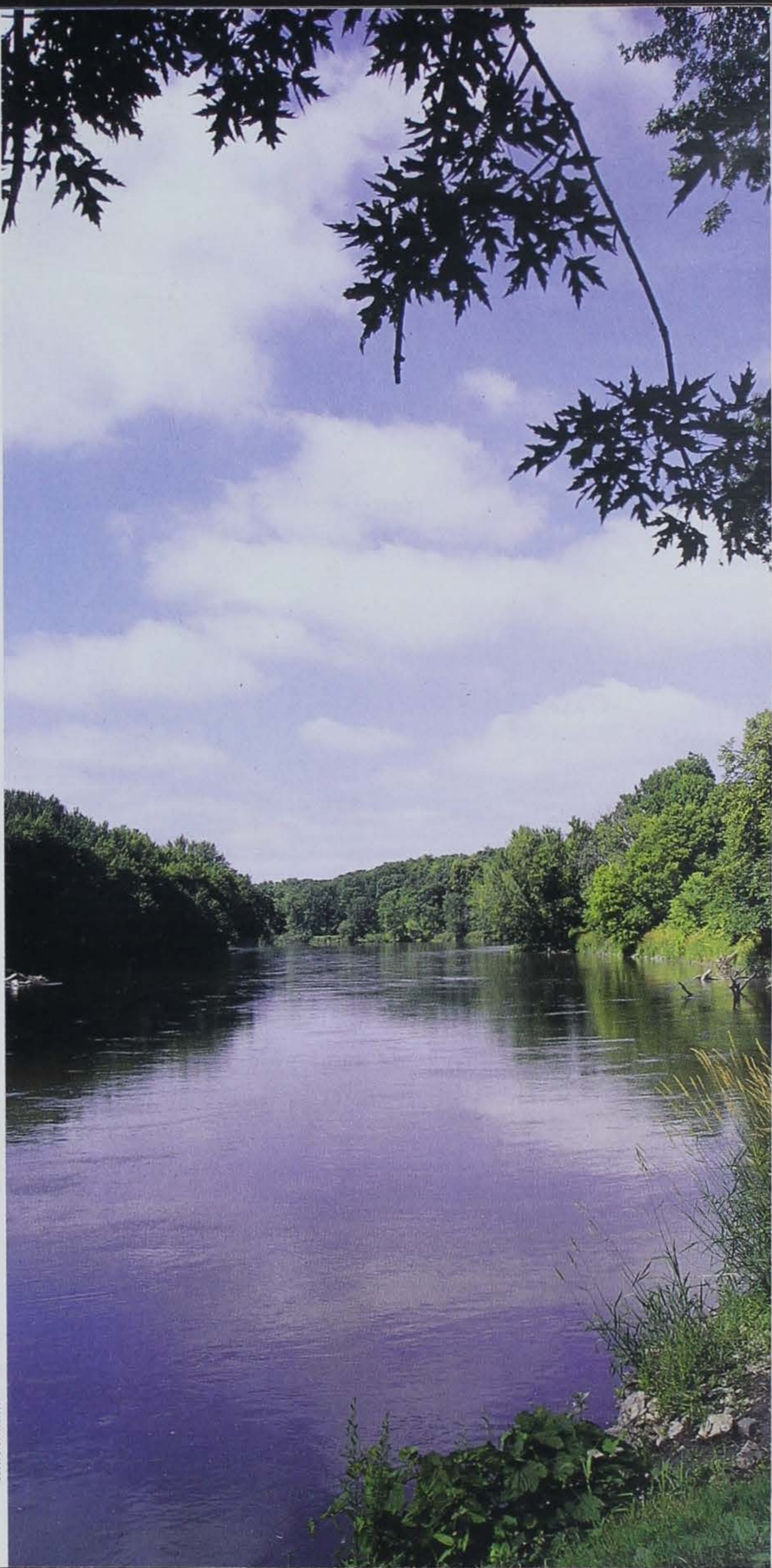
The river can build and destroy dreams and lives. She can provide or take away food and shelter. Her high water roaring will keep you awake while her low water will lull you to sleep. She is the epitome of peace and terror.

She is the river. And I love her.

Eugene Thoma, an outdoorsman and freelance writer in Des Moines.

A river obeys no course, keeps no pace, follows no rules. It can be peaceful and tranquil in low water, or erupt in a wild rage during high times.

Ken Formanek



Preserving our



Greg Houseal

Establishing prairie vegetation is recognized as an effective way to stabilize and build the soil, control noxious weeds, reduce highway and roadside maintenance costs through reduced mowing and herbicide use, enhance wildlife habitats, and beautify the landscape.

Daryl Smith



Top: Native Iowa prairie in mid-summer.
Right: Harvesting Canada wild rye from a foundation-increase field at Elsberry Plant Materials Center in Missouri.



urnative prairies

Consider the Source

by Greg Houseal

Iowa's landscape was carved by ice, tempered by fire and nurtured by climate. These forces forged the tallgrass prairie, a seemingly endless, rich and dynamic community of plants and animals. The incredibly deep and fertile soils of Iowa, the most productive in the world, are truly the legacy of the tallgrass prairie. And while the soil remains at present, the living prairie all but vanished. Iowa's remnant prairies are scattered fragments — microscopic compared to the once vast ecosystem.

Small and tattered as they are, these remnants remain a vital resource for Iowa's future. The virgin soil of these prairie remnants are the gold standard against which the health and vitality of our cropland soils are measured. As such, they are mementos of the rich natural heritage of our past. But these remnant prairies also hold a promise for the future.

Encoded in their relict plant populations are the genes which allowed them to adapt to changing environmental conditions and survive over the last several thousand years . . . nature's 10,000 years of research and development. This very same locally developed and adapted genetic diversity, in the form of seeds, will provide material to reconstruct and restore prairie in Iowa that will continue to

adapt and succeed far into the future.

Within the past few decades, native prairie has caught the attention of government agencies. The United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), the Iowa Department of Transportation and the Iowa Department of Natural Resources, as well as private groups such as Pheasants Forever and Ducks Unlimited, are all putting prairie to good use. Establishing prairie vegetation is recognized as an effective way to stabilize and build the soil, control noxious weeds, enhance wildlife habitats, beautify the landscape, and reduce highway and roadside maintenance costs through reduced mowing and herbicide use.

While the concept and practice of planting native *species* seems to be well accepted in Iowa, less consideration is given to the *source* or origin of the seed used for the plantings. Often, seed of native species developed for forage production or seed originating from hundreds of miles away are used to restore "Iowa" prairie.

Concerns Regarding Narrow Genetics of Cultivars

Until very recently, the most available sources of native species, especially switchgrass, big bluestem, Indiangrass, sideoats grama and little bluestem, were cultivated varieties, or

cultivars, of these native grasses. In most cases, original parent material for these cultivars came from distant sources, such as Texas, Oklahoma, Kansas and the Dakotas. These native grass cultivars were developed for the purpose of "range improvement" to provide better and increased forage for livestock grazing.

One cultivar of native grass, "Rountree" big bluestem, was developed from an Iowa population collected near Moorhead. Interestingly, Danny Gustafson, a researcher from Southern Illinois University, found Rountree big bluestem was more like a cultivar originating in Kansas than it was like the wild populations of big bluestem. Even though the original plant material came from Iowa, it's genetic makeup had been altered from that of wild populations by breeding methods designed to produce traits such as vigor and forage production.

It has long been known that, over time, breeding efforts used to develop cultivars and the mechanical process of harvesting and cleaning tend to narrow and reduce the original genetic makeup of a population. This narrowing of the genetic makeup results in plants more predictable in their germination, growth and development, but with less capacity to adapt to changing conditions, and less resilience when exposed to extremes, such as disease, drought and flood.

Genetic differences in plants are not

Figure 1: Regional seed collection zones of the Iowa Ecotype Project relative to county boundaries and landform regions of Iowa. The Loess Hills and Missouri and Mississippi Alluvial Plains are currently excluded from the project.



always readily obvious, and may go unnoticed until extreme environmental conditions reveal their importance. A case in point: 120 native collections of switchgrass, representing a broad base of genetic diversity from Illinois, Iowa and Missouri, were being grown by the USDA-NRCS Plant Materials Center in Elsberry, Mo. The test field was in the Mississippi River floodplain, and was unpredictably inundated for eight weeks during the summer of 1993. All of the switchgrass collections were killed except three possessing a natural tolerance for flooding. This is an extreme example, but the point is

genetic diversity within a species increases the odds some individuals will be better adapted to environmental stressors, and thus survive to reproduce.

Concerns Regarding Seed from Distant Sources

Timing of growth in the spring is determined primarily by temperature and moisture, but timing of flowering, seed development and seed ripening are typically cued by day length — a function of latitude. Because these adaptations are genetically encoded, plants grown from seed originating from distant sources, particularly north or

south of the planting site, will flower and set seed based on cues from their *place of origin*, and will be *out of sync with conditions at the planting site*. This means plant material originating from Kansas will flower much later in the season when moved north to Iowa. Likewise, plant materials originating from North Dakota will flower much earlier when moved

south into Iowa.

It is especially critical for habitat reconstruction and restoration projects that plant materials be well-adapted to the planting site. Not only will this enable the original planting to thrive, but will increase the likelihood of new plants being able to establish from succeeding generations of seed and fill in to perpetuate the plant community. The reproductive processes of ill-adapted plants will be out of sync with local conditions and therefore less able to re-colonize disturbed areas and thus less able to compete against weedy invasion.

Russ Bennett, at the time manager of the Integrated Roadside Vegetation Management program for Johnson County, shows a roadside planting of prairie species along Hoover Highway near Iowa City.

Kirk Henderson



Many efforts are underway, both public and private, to increase the availability of Iowa-origin native prairie seeds.

Hand-harvesting from existing prairie remnants.

Hand harvesting seed is an efficient way to get small quantities of seed from native stands. Early in the prairie renaissance, most native seed was harvested by hand. Seed quality and purity were variable, depending on weather conditions, insect predation, and the skill and knowledge of the person harvesting. Although some species still require hand harvesting for specific reasons, hand harvesting seed for the commercial market is not cost effective when other methods are available and/or large volumes of seed are required.

Mixed-species seed production

Another effort at providing Iowa-origin seed for prairie reconstructions involves mechanical harvesting from prairie remnants in the fall. This produces a chaffy mixture of several species of less than 10 percent seed per

bulk pound of chaff. This seed mixture can then be broadcast seeded and culti-packed into a prepared seedbed, and can develop into a very successful reconstructed prairie, especially with aggressive mowing the first season or two to reduce competition from annual weeds. Two to three years after establishment, this reconstructed prairie, with good management, thorough weed control and annual burning, can be harvested in the same manner as subsequent years,

usually resulting in greater seed production (10-20 percent seed per bulk pound) and higher seed quality than the original remnant.

Generally, this type of mixed-species, chaffy seed provides a diverse mix of grasses and wildflowers at minimal cost. However, the species composition of the seed in the bulk

material is dependent on the quality and diversity of the remnant or reconstructed prairie from which it was harvested. Other species may need to be added to compensate for missing species or earlier maturing species that drop the seed before harvest time.

Mixed-species harvest is especially valuable when seed is needed for planting areas adjacent or very near a high-quality remnant prairie. Seed can be harvested from the remnant and planted at the new site. This perpetuates the local gene pool and "buffers" the remnant from potential disturbances around its perimeter. Commercial sources of chaffy, mixed-species seed are available, though methods are still being developed to accurately determine the species composition and seed quality of this type of seed source.

Single-species production fields

This method often begins with hand harvesting seed of individual species from several different remnants. The seed is then planted in small production plots. Successively harvesting seed from these plots provides seed for planting larger production fields, which



Daryl Smith

University of Northern Iowa students Meggan Daniels (foreground) and Abby Gulick weed seedlings growing from seed planted in "conetainers" in the greenhouse.

are then harvested with combines or flail-vacs. These production fields are usually planted in rows, with cultivation and careful use of herbicides to control weeds. Although seed production is limited to a single species per field, seed yield per acre greatly exceeds that of mixed-stand seed production. Many native seed growers have increased local sources of native seed using this method. Seed from these individually produced species can then be custom-mixed with other species in the proportions deemed appropriate for the planting site. Because the seed can be cleaned effectively, seed purity and seed quality are easier to determine, and are typically much higher than mixed-species.

The Iowa Ecotype Project

To provide quality seed of Iowa-origin as an alternative to cultivars and non-Iowa seed, the Roadside Management Program at the University of Northern Iowa (UNI) initiated the Iowa Ecotype Project in 1990, and began collecting seed from selected plant species from tallgrass prairie remnants across the state. This ambitious effort is



funded by the Living Roadway Trust Fund, administered by Iowa Department of Transportation (DOT).

The Iowa Ecotype Project employs a regional approach to collecting and propagating native seeds. Iowa is divided into three regions, or zones, from north to south (see p.24, Fig.1), the assumption being that growing season, day-length and temperature regimes, as influenced by latitude, have a general effect on plant populations within a region. A regional approach strikes a balance between the widespread interstate use of cultivars on the one hand, and the extremely localized on-site or near-site donor seed source on the other.

Seed is collected from several populations in each region, and from many different individual plants *within* each population in order to preserve and perpetuate the genetic diversity of remnant plant populations. This diversity is especially critical for new

reconstructions. Planting seed with diverse genetics of regional-origin increase the odds of the right combinations of genes being present to best occupy the site, and more importantly, the genetic diversity will lend resilience to the resulting plant community, allowing it to adapt to changing conditions well into the future. To date, more than 1300 collections of seed from 30 species have been made, ensuring a diverse and broad genetic base.

The single-species production method is being employed by the Iowa Ecotype Project. Hand-collected seed from prairie remnants is sown into "conetainers" (see p. 25) in the greenhouse in February, and in May the resulting seedlings are transplanted into seed nurseries on the UNI campus. Seed harvested from the nurseries, as well as any surplus remnant-collected seed, is then used to plant foundation seed-increase plots. When sufficient foundation seed is available, it is released to

private native seed producers for commercial production. Seed nurseries, foundation seed-increase plots and production fields are isolated from other fields to minimize cross-pollination between zones.

The Iowa Ecotype Project at UNI collaborates with the Iowa DOT; the USDA-NRCS Plant Materials Center in Elsberry, Mo; the NRCS Iowa Office; the Iowa Crop Improvement Association (ICIA) and several native seed growers. The seed is produced and marketed as certified seed. Source-Identified class. Source-Identified, or "yellow tag" seed, is certified as to source, and no intentional selection or breeding of traits occurs (see p.27, Fig. 2).

Supply and Demand of Iowa-origin Seed vs. Cultivars

One of the main objectives of the Iowa Ecotype Project is to make Iowa-origin seed available at competitive

prices. Seed of Iowa-origin generally costs more because of its limited availability. Since cultivars have been in production for several decades and have been used over a wide geographic area, the seed of these cultivars is much more abundant and thus less costly. This scenario is rapidly changing. The production of Iowa-origin big bluestem, Indian grass and Canada wild rye has increased considerably. Prices for Iowa-origin seed of these species are becoming competitive with the price of cultivars. As this

Outplantings of conetainer-grown stock in one of three seed nurseries on the UNI campus in spring. Visible here are rattlesnake master (*Eryngium yuccifolium*), big bluestem (*Andropogon gerardii*) and stiff goldenrod (*Solidag rigida*) from Zone 2 (central Iowa).



Kirk Henderson

trend continues, informed land managers are choosing Iowa-origin seed, in turn providing native seed growers with incentive to further increase production of Iowa-origin seed.

A positive offshoot of the Iowa Ecotype Project and the certification process is more producers are choosing the source-identified process for their seed. There has been a steady increase in the number of available species from various Iowa sources (Table 1). The 1999 Iowa Seed Directory, published by the Iowa Crop Improvement Association, lists 71 native species from 119 Iowa sources currently in production as certified source-identified seed. Some of these listings are the northern, central and southern Iowa zones of the Iowa Ecotype Project, but many of the species have been collected more locally and increased by private growers. For a free copy of the Iowa Seed Directory, write to: Iowa Crop Improvement Association, 2023 Agronomy Hall, Ames, Ia., 50011-1010.

Consider the Source

Regardless of the methods used to harvest native seed, it is important to consider the source. Plan to use a seed source appropriate for the prairie reconstruction site. Reconstructions within 1/4 mile of a high quality prairie remnant should ideally use seed from the remnant, if possible, or the nearest appropriate site. It is also preferable to match the seed donor site to the planting site, for example, lowland to lowland, upland to upland. A regional Iowa seed source like that of the Iowa Ecotype Project, because of its broad genetic base and regional adaptations, may be the most appropriate for other prairie restorations and reconstructions.

Specify Iowa-origin when ordering your seed — don't just assume it's local or Iowa seed. Many Iowa seed producers still produce and market

| Year | # Species | # Sources | # Growers | # Acres in production |
|------|-----------|-----------|-----------|-----------------------|
| 1994 | 0 | 0 | 0 | 0 |
| 1995 | 18 | 18 | 1 | - |
| 1996 | 22 | 22 | 4 | - |
| 1997 | 50 | 57 | 5 | 137 |
| 1998 | 57 | 74 | 6 | 224 |
| 1999 | 71 | 119 | 7 | 375 |

Source: Iowa Seed Directory, Iowa Crop Improvement Association

Table 1. Trends in Iowa source-identified seed certification.

cultivars of native grasses, as well as wildflowers of both Iowa and non-Iowa origin. Also, many warm-season grass plantings have been established in Iowa from cultivars of native grasses. Just because these plants are now growing in Iowa does not make them of Iowa-origin. If in doubt, ask the grower about the source of the seed. If it's source-identified seed, the origin will be indicated on the "yellow tag."

Though no prairie planting can replace an original remnant of the tallgrass prairie, landscape efforts to make local seed more available are an important step toward establishing more functional and resilient prairie reconstructions and restorations. Iowa's surviving native prairie remnants may be relicts of a past landscape, but they are also a unique natural resource. The offspring of their seeds may one day

greet our children and grandchildren on the prairies of tomorrow.

For more information, contact the UNI Roadside Program, University of Northern Iowa, 113 CEEE, Cedar Falls, Ia., 50614-0293, or call (319) 273-2813.

Greg Houseal is the Iowa Ecotype Project Manager for the UNI Roadside Program at the University of Northern Iowa in Cedar Falls.

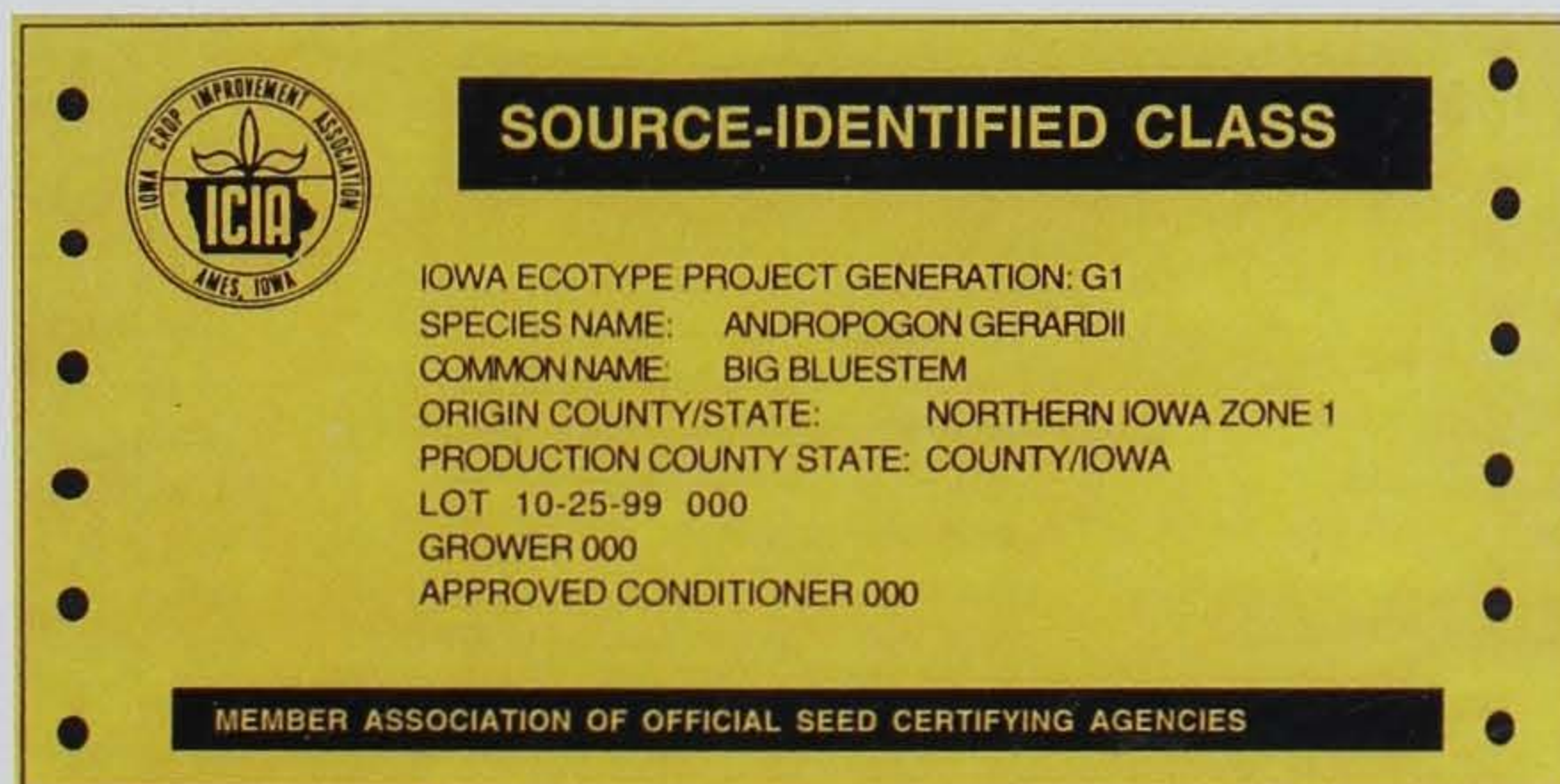


Figure 2: Source-identified class "yellow tag" certification label, which is attached to each bag of certified source-identified seed.

Can Iowans Breathe Easier?

Article by Brian Button
Photos by Clay Smith

The columns of Greece's ancient Acropolis are crumbling. What's destroying the marble monoliths isn't the 3,000 years of existence or the numerous wars and strife, it's the acid rain caused in this century.

More than 200 miles away, pollution haze clouds the region's beautiful azure seas and snow-kissed mountains. On one of Greece's idyllic beaches, acrid smoke from 72 burning trash piles wisps up to steal the blue sky. Even in the cradle of western civilization, you can't escape air pollution.

Fortunately, daily adventures and wonderful experiences still outweighed Athens' notorious air quality. The distasteful mouthfuls of thick air served as a reminder that around the globe, in Iowa, we've progressed, but much work remains. Because we lack such blunt signs of pollution, many Iowans are

lulled into thinking everything is OK. Unfortunately, what we've learned recently hints at a twist in the tale of our winds.

"In everything natural there is something marvelous," said Aristotle. But because of minute airborne particles — about the thickness of a human red blood cell — it is getting harder to see nature. Today we can only see a third as far as yesteryear's pioneers, due to suspended sulfates and soots. In our jargon we call it "atmospheric haze." These soots are also unhealthy. Last year for 15 days, these fine soots made the air unhealthy for certain groups of people.

Last year, four of five pollutants checked in Iowa were found at unhealthy levels. New federal studies point to excess airborne toxins. Concerns grow about animal confinement emissions. And evidence mounts that Iowa's air can impact asthmatics and others with breathing difficulties. "There is a common misperception that Iowa's air is pristine," says Pete Hamlin, the DNR's top air quality official. "But we are learning otherwise."

And, there is a lot to learn. Because of inadequate monitoring in past years, much is *unknown* about Iowa's air, especially compared to other states. But like a riddle, the pieces are slowly coming together with insight added each year. "In some areas where new monitors were placed, we have found unhealthy air," says Hamlin. New data and studies are yielding chards of evidence.

Federal studies predict 23 toxic chemicals are found in Iowa at levels that can cause health risks over a lifetime of breathing. Seven of those chemicals are found statewide — from Abington to Zwingle and all points between. The rest are found in smaller geographic areas such as our cities or near large industrial emitters. Fortunately, EPA's study shows no immediate or short-term effects. But these

findings are red flags. Low-level exposure breathed over decades may cause excess risks for cancers, birth defects, neurological damage and other concerns.

Vehicle usage accounts for 40 percent of those toxins, everything from formaldehyde and butadiene in tail-pipe emissions to benzene fumes from refueling. Besides toxins, tail-pipe exhaust also helps form what Greeks call "nefos," or what we call smog. Another 20 percent of Iowa's air toxics come from evaporation of solvents, cleaners and chemicals and 'non-stack' sources. The remaining 40 percent are emitted from industrial processes, but unlike most states, Iowa has yet to fully limit these toxic emissions in permits, something that concerns Hamlin.

"There has long been a need to control dozens of toxics," he says, but noted his staff is mustered to control only 'the big five' common pollutants such as sulfur dioxide, smog, carbon monoxide and particles of soot and dusts. These, regulated for 30 years, still managed to cause nearly three weeks of unhealthy air last year alone and keep Hamlin's staff spread thin.

And, like the smoke-laden beach in Greece, garbage burning in Iowa, plays a role in elevated toxins. According to smoke tests, a single backyard burn barrel — a commonly used practice — releases as much dioxin and other hazardous pollutants as an incinerator that rids wastes from *tens of thousands* of homes. Low temperatures, oxygen-starved fires and no pollution controls, like scrubbers, mean potent emissions from the smoky barrels.

The effect of barrels and the innumerable thousands of ways contaminants enter our skies can add up to impact the health of Iowans — especially children and 341,900 Iowans with bronchitis, emphysema and asthma. What the ancients called "heavy heaven," thick and smoky air

causes Iowans to suffer. Just ask one eastern Iowa teen who, according to his physician, spent a week in intensive care due to leaf smoke.

Because asthma is increasing and is a major cause of missed school and work, many towns are addressing leaf and garbage burning locally to reduce asthma attacks. And, other widespread cleaning of air can reduce the number of days that cause chests to tighten and lungs to inflame across Iowa.

Emissions of mercury, cadmium and many other toxins that can persist in the environment for decades and longer are targeted for clean up. Because airborne substances settle out or return to the land as rain or snow, they can accumulate in waters, soils, plants, and aquatic and terrestrial life. These persistent chemicals break down slowly, if at all, and can enter and concentrate in the food chain. While these chemicals may not pose a direct health threat at levels found in the air, their slow buildup is cause for concern.

Even ancient Athens and Rome left a footprint globally. Airborne lead from smelting was recently discovered in Greenland ice core samples. Lead was smelted to extract silver and helped finance a Greek



Smoke tests show a single backyard burn barrel releases as much hazardous pollutants as an incinerator that rids wastes from *tens of thousands* of homes.

Toxic Air . . . What You Can Do

Don't burn plastics, synthetic materials, bleached paper, chemical containers, rubber or asphalt materials such as shingles and tar papers. They release heavy emissions. Choose solid waste disposal or recycling over backyard burn barrels or "open burning."

Use water-based paints when possible. Some home and office products are made with toxic or smog-forming chemicals that evaporate into the air. Follow manufacturers' recommendations for use or find safer alternatives. Properly seal cleaners, paints, and other chemicals to prevent evaporation.

Express support for adequate state environmental programs and resources.

Use electricity wisely and efficiently to reduce utility bills and emissions. Use fans and shades to keep homes

and offices cool and reduce air conditioning costs. Add additional insulation for comfort and savings.

Plant trees to provide summer shade and reduce cooling costs and related utility emissions. (Just don't burn the leaves!)

Drive smart. In 1978, Iowans drove almost 20 billion miles. We drove 30 billion miles last year — a 50 percent increase despite a slight population loss. Vehicles account for 40 percent of Iowa's toxins and exhaust can cook in sunshine to form photochemical smog. Annually tune car, boat and lawn mower engines for peak performance and fuel economy. Keep car and truck tires properly inflated to reduce wear and drag. Use autos less and combine errands to save drive time and emit less while pollution-control equipment is warmed up and working well.



Recycling is a better alternative over backyard burn barrels.

naval victory over the Persians. The Romans took smelting to new heights and produced emissions at levels not seen again for 1,700 years until the beginning of the Industrial Age. However, less than 15 percent of the lead found in the Greenland ice core was from this ancient pollution. The remaining 85 percent was deposited within the last 60 years from American and European use of leaded gasoline.

Because modern society is leaving its mark in unprecedented ways, we all have practical and ethical responsibilities to protect our shared resources. Native Iowan and conservation leader, Aldo Leopold, once wrote about fishing and hunting within limits, saying, "Voluntary adherence to an ethical code elevates the self-respect of the sportsman, but it should not be forgotten that voluntary disregard of the code degenerates and depraves him." We need to extend this sentiment in protecting our air in addition to our fish and fowl.

And here is how. Many simple, money-saving steps also conveniently reduce air emissions. This year celebrates the 30th Anniversary of the Clean Air Act and the first Earth Day. It also marks yearlong opportunities for citizens to make environmental progress as part of the Iowa EarthYear 2000 program. For more information on the program visit the website at www.earthyear2000.com, or e-mail the EarthYear 2000 coordinator at ey2000@dnr.state.ia.us

Brian Button is an air quality information specialist for the department in Des Moines.

Check the Smog Map

Like a weather map format, you can now log-on to check hourly smog levels. Good air quality is shown as green, yellow for moderate, orange as unhealthy for sensitive groups and red and maroon for higher pollution levels.

Extremely sensitive persons may wish to limit outdoor exertion on moderate or yellow days. Active children and adults, outdoor workers and persons with respiratory diseases such as asthma should limit prolonged outdoor exertion on orange days. Fortunately, Iowans have avoided lengthy exposure to smoggy air in the red category, but orange-level days do occur.

While the map only shows ground level ozone (commonly called smog) the DNR issues press releases when other pollutants such as particles of soots and dust or sulfur dioxide gases reach unhealthy levels. Last year, portions of Iowa experienced nearly three weeks of unhealthy air for 4 of the 5 pollutants monitored. In the future, the smog map will expand to include additional pollutants to help people make outdoor activity decisions to protect their health.

The maps can be found at www.epa.gov/airnow

9 am Sept 4 1999



10 am Sept 4 1999



12 pm Sept 4 1999



3 pm Sept 4 1999



6 pm Sept 4 1999



9 pm Sept 4 1999





BOAT SAFE BOAT

Operating a motorboat or sailboat while under the influence of alcohol (.10 alcohol level or higher), a controlled substance or other illegal chemical is unlawful.

Operators who are impaired may be required to take tests by an enforcement officer to determine their sobriety.

Anyone refusing to test could face jail time and/or fines.

All navigable waters in the state of Iowa are subject to the new law effective July 1, 2000.

KNOW

FIRST OFFENSE:

A serious misdemeanor can result in the following punishments:

- Imprisonment in the county jail for at least 48 hours.
- Assessment of a fine up to \$1,000.
- Loss of boat operating privileges for one year.
- Substance abuse evaluation and treatment, and a drinking drivers course.

BOAT SOBER

W T H E F A C T S

SECOND OFFENSE:

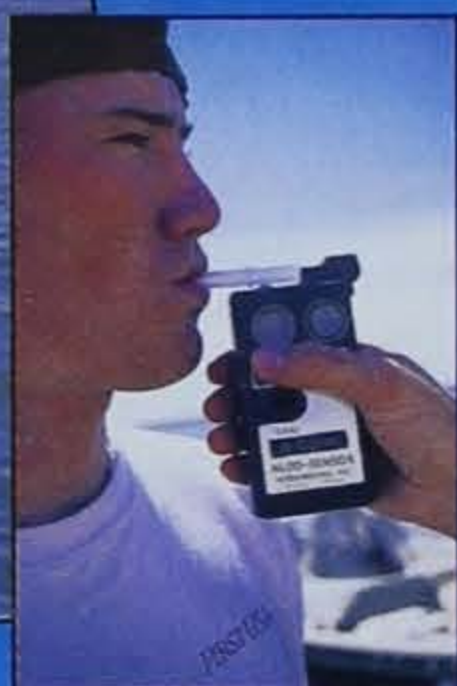
An aggravated misdemeanor can result in the following punishments:

- Imprisonment in the county jail or community-based correctional facility for at least seven days.
- Assessment of a \$1,500 to \$5,500 fine.
- Loss of boat operating privileges for two years.
- Substance abuse evaluation and treatment, and a drinking drivers course.

THIRD OFFENSE:

A class 'D' felony can result in the following punishments:

- Imprisonment in the county jail for 30 days to one year.
- Assessment of a \$2,500 to \$7,500 fine.
- Loss of boat operating privileges for six years.
- Substance abuse evaluation and treatment, and a drinking drivers course.



photos by Clay Smith

Can I drink alcohol on the boat?

Yes, consuming alcohol is permissible on the boat, but remember the operator is not to be under the influence.

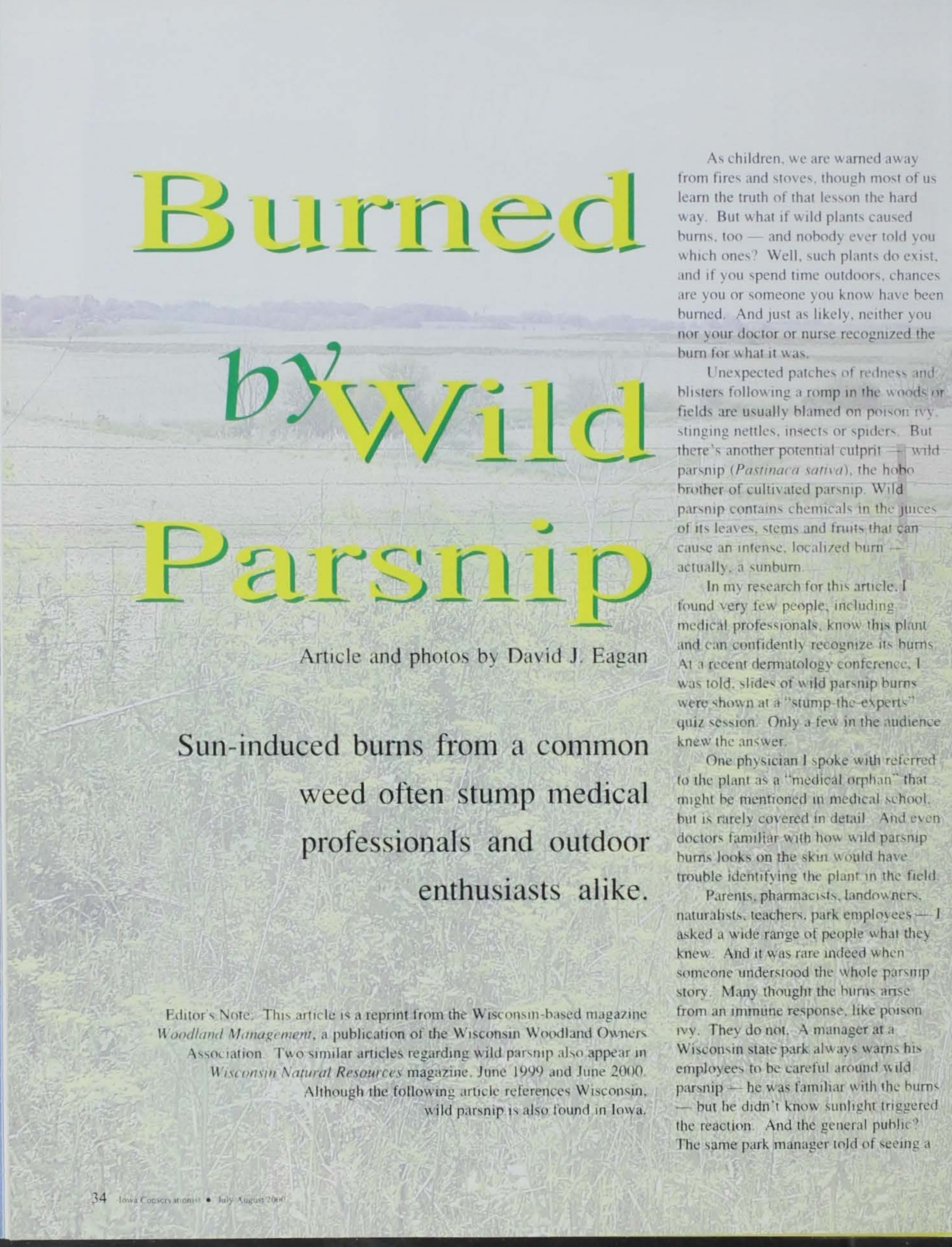
Will a boating offense affect my driver's license?

No, a boating offense will not be transferred to your automobile driving records.

How much alcohol can I consume to be considered legally drunk?

That all depends on the individual. Use extra precaution while drinking on the boat because sun, wind and movement can quickly amplify the effects of alcohol and disorient the operator or passengers.





Burned by Wild Parsnip

Article and photos by David J. Eagan

Sun-induced burns from a common
weed often stump medical
professionals and outdoor
enthusiasts alike.

Editor's Note: This article is a reprint from the Wisconsin-based magazine *Woodland Management*, a publication of the Wisconsin Woodland Owners Association. Two similar articles regarding wild parsnip also appear in *Wisconsin Natural Resources* magazine, June 1999 and June 2000.

Although the following article references Wisconsin, wild parsnip is also found in Iowa.

As children, we are warned away from fires and stoves, though most of us learn the truth of that lesson the hard way. But what if wild plants caused burns, too — and nobody ever told you which ones? Well, such plants do exist, and if you spend time outdoors, chances are you or someone you know have been burned. And just as likely, neither you nor your doctor or nurse recognized the burn for what it was.

Unexpected patches of redness and blisters following a romp in the woods or fields are usually blamed on poison ivy, stinging nettles, insects or spiders. But there's another potential culprit — wild parsnip (*Pastinaca sativa*), the hobo brother of cultivated parsnip. Wild parsnip contains chemicals in the juices of its leaves, stems and fruits that can cause an intense, localized burn — actually, a sunburn.

In my research for this article, I found very few people, including medical professionals, know this plant and can confidently recognize its burns. At a recent dermatology conference, I was told, slides of wild parsnip burns were shown at a "stump-the-experts" quiz session. Only a few in the audience knew the answer.

One physician I spoke with referred to the plant as a "medical orphan" that might be mentioned in medical school, but is rarely covered in detail. And even doctors familiar with how wild parsnip burns looks on the skin would have trouble identifying the plant in the field.

Parents, pharmacists, landowners, naturalists, teachers, park employees — I asked a wide range of people what they knew. And it was rare indeed when someone understood the whole parsnip story. Many thought the burns arise from an immune response, like poison ivy. They do not. A manager at a Wisconsin state park always warns his employees to be careful around wild parsnip — he was familiar with the burns — but he didn't know sunlight triggered the reaction. And the general public? The same park manager told of seeing a

little girl one sunny summer day with a wreath of fresh parsnip flowers in her hair, which is a little like playing with fire.

In a manner similar to people, animals can get parsnip burns if they have lightly pigmented skin and little hair so both plant juices and sunlight reach the skin.

How an old flame sings new admirers

The chemicals in wild parsnip, called psoralens (precisely, furocoumarins) cause what dermatologists label "phyto-photo-dermatitis." That means an inflammation (itis) of the skin (derm) induced by a plant (phyto) with the help of sunlight (photo). When absorbed by the skin, furocoumarins are energized by ultraviolet light (present during sunny and cloudy days) causing them to bind with nuclear DNA and cell membranes. This process destroys cells and skin tissue, though the reaction takes time to produce visible damage.

The chemical in wild parsnip is thought to be a defense mechanism against animals and organisms that might eat it. Celery — a cousin to wild parsnip — will produce higher levels of furocoumarins when it is under attack from pink-rot fungus.

In mild cases, affected skin reddens and feels sunburned. In more severe cases, the skin reddens first, then blisters — some are impressively large — and for a while the area feels like it has been scalded. Places where skin is most sensitive (arms, legs, torso, face, neck) are most vulnerable. Moisture from perspiration speeds the absorption of the psoralens.

Blisters appear a day or two after sun exposure. Soon after, blisters rupture and the skin begins to heal. One of wild parsnip's "signature" effects is a dark red or brownish discoloration of the skin in the area where the burn occurred. This hyper-pigmentation can persist in the skin for as long as two years.



Wild parsnip

Clay Smith

Wild parsnip is an eye-catching, non-native weed that hails originally from Europe and Asia. There are varieties grown for their edible roots, but whether the wild type came to America as a garden vegetable or in the cuffs of some immigrant's pants, no one knows.

Although not a native plant, wild parsnip has likely become "naturalized" in many, if not all, Wisconsin (and Iowa) counties and is here to stay. Wild parsnip grows in large patches or as scattered plants along roadsides, in abandoned fields, on pastures, on restored prairies and in disturbed open areas. And, according to observers, its range has been expanding rapidly in recent decades.

The fact that wild parsnip is

spreading is one reason more people are coming in contact with it. Another reason is it is one of the chief targets of weed removal in prairie restorations. Unlike more benign weeds, wild parsnip can take over an area, out-competing native plants. The ecological impact of this invader puts it high on the hit list of land managers.

Botanical Basics

Life history Wild parsnip typically lives for two years. The first year, as a spindly rosette or cluster of leaves, it keeps fairly low to the ground while the plant's carrot-like taproot develops. It may live two or more years this way until conditions are right for flowering. The second year, a hollow, grooved flower stalk rises 2-5 feet high, first holding clusters of yellow flowers and later dozens of flat, oval seeds.

Leaves Compound, with a main stem and 5 to 15 leaflets. Resembles celery.

Flowers Yellow, in flat-topped umbrella-like clusters at the top of the plant.

Season Wild parsnip is among the first plants to sprout green leaves in spring, and its flowers turn a prominent yellow in early summer. After flowering and going to seed, plants die and turn brown in late summer and fall, but first-year rosettes remain green until frost.

Habitat Roadsides, unmowed or abandoned fields, pastures, edges of woods, prairie remnants and restorations.

Second- (left) and first-year wild parsnip plants



Parsnip burns often appear as streaks and long spots. This reveals where a juicy leaf or stem dragged across the skin before exposure to the sun. Because on the surface it resembles the effects of poison ivy, and because wild parsnip is so rarely accurately identified, it nearly always is diagnosed and treated as poison ivy. If you note the six clinical differences (see sidebar), however, you can readily tell them apart.

Treating a parsnip burn

If you get a parsnip burn, relieving the symptoms comes first. The affected area can be covered with a cool, wet cloth. If blisters are present, try to keep them from rupturing for as long as possible. The skin of a blister is "nature's bandage," as one doctor put it, and it keeps the skin below protected and moist while it heals. When blisters pop, try to leave the skin "bandage" in place. To avoid infection, keep the area clean and apply an antibiotic cream.

Adding Domeboro powder to moist cloth compresses can help dry weeping blisters. Some doctors recommend a topical or systemic cortisone-steroid for extreme discomfort and to reduce swelling. For serious cases with extensive blistering, consult a physician.

Avoiding exposure, of course, is the wisest tactic. By learning to recognize the plant in different seasons and in different stages of growth, you can steer clear of it, or protect yourself by wearing gloves, long pants and long-sleeved shirts. Some people pull up the wild parsnips in the evening, when exposure to sunlight is minimal. If you do get the plant juice on your skin, the sooner you thoroughly wash the area, the less you will be affected.

Tales from the field

In case you're wondering, I've learned about wild parsnip burns firsthand. Over a decade ago, I didn't believe my naturalist-friend who told

me wild parsnip could cause blisters. Regarding myself as more of a botanist than she, and having never heard of such a danger, I scoffed. While she looked on dubiously, I picked a leaf, crushed it in my fingers and rubbed it on the underside of my forearm.

As I'd expected, nothing happened all that day and I remember feeling a bit smug. By afternoon the next day, however, I was not feeling so confident. The area on my arm turned red and quite sore. A few hours later, a 3-inch blister bubbled and swelled like a miniature balloon.

I learned my lesson, but that didn't stop me from experimenting further. Borrowing a term from prairie managers, I now conduct "controlled burns" on my arms most summers, using the resulting small blisters and spots for show-and-tell to educate others about wild parsnip.

Many friends and acquaintances have shared their experiences with parsnip burns. One person told of a small burn that appeared unexpectedly on his leg. He had been pulling wild parsnip from a prairie on a sunny day while wearing protective clothing. It wasn't until the burn appeared that he noticed a small hole in his jeans, just large enough to allow plant juice and a bit of sunlight to enter. One friend received a frighteningly bad case of parsnip burns. He had been clearing parsnip from a field with a scythe while wearing sandals and shorts. The resulting burns were so bad his legs looked like they had been sprayed with acid (see photo page 38).

In the literature about wild parsnip and other phototoxic plants, there is mention of a contemporary contributor to the problem: weed whackers or string trimmers. These machines can spray bits of pulverized leaf and stem over the exposed skin of their operators, resulting in bizarre speckled patterns of small blisters and redness. One dermatologist in Madison, Wisconsin saw such a case last summer. And another family

A Controlled Burn



Occasionally, the author demonstrates the effects of wild parsnip with what he calls a controlled burn — to his own arm. The top left photo is the initial inoculation with a first-year plant leaf stem.

The following photos (from top to bottom, left to right) are at 48 hours after the contact, 55 hours after, 75 hours after and 11 days after.

An extreme parsnip burn. This individual had been clearing parsnip from a field with a scythe while wearing sandals and shorts.



practitioner regularly treats parsnip burns on high school students who are hired to cut weeds along roadsides, typically while shirtless.

Have you been burned?

Keep these three points in mind when you encounter wild parsnip:

1. Everyone can get it. Unlike poison ivy, you don't need to be sensitized by a prior exposure. Wild parsnip causes a non-allergic dermatitis that can occur with the right combination of plant juice and sunlight.

2. You can touch and brush against the plant — carefully — without harm. Parsnip is only dangerous when the juice gets on skin from broken leaves or stems. Fair-skinned people, however, may be extra-sensitive to tiny amounts of juice.

3. Wild parsnip's "burn" is usually less irritating than poison ivy's "itch." Generally, wild parsnip causes a modest burning pain for a day or two, and then the worst is over. The itch and discomfort from poison ivy, in contrast, can drive people crazy for a long time.

Wild parsnip is not the only phototoxic plant. Two larger native wild relatives, cow parsnip (*Heracleum maximum*) and purple-stem angelica (*Angelica atropurpurea*) produced strong burns when tested on skin. The juice from limes is also known to cause burns after exposure to sunlight. A few garden plants — such as rue, gas-plant, celery and possibly others in the parsley family — also can burn.

In other tests — again, on my willing arms — wild parsnip juice was applied at sunset and exposed to sunlight the next day, resulting in faint redness or none at all. The sensitizing effects on the skin appear to diminish over a relatively short period. In another test on a sunny day, identical spots of juice were applied but one was covered with a Band-Aid. The next day the Band-Aid was removed and both arms exposed to more sun. Only the uncovered spot turned red and blistered up.

Readers — Tell Your Tales

Interested readers are invited to share what they know about these plants by responding to the two questions listed below.

Question 1: Is wild parsnip found in your area, how abundant is it, and

where is it commonly located? *Please note your state and county.

Question 2: Do you have personal experience with parsnip burns (or burns from other plants)? Tell the tale.

Send your stories by e-mail or U.S. mail to David Eagan at DJEAGAN@FACSTAFF.WISC.EDU or write to P.O. Box 3020, Madison, WI 53704. Thanks.

By avocation, David Eagan is a botanist, naturalist and native plants gardener. He works for the Institute for Environmental Studies at the University of Wisconsin-Madison.

For more information

1. Burned by Wild Parsnip — Original article in *Wisconsin Natural Resources* magazine, June 1999.

<http://www.wnrmag.com/stories/1999/jun99/parsnip.htm#basics>

2. Wild Parsnip — Ecology and Control (Wisconsin DNR)

(<http://www.dnr.state.wi.us/org/land/er/invasive/factsheets/parsnip.htm>)

3. Wild Parsnip — Element Abstract for The Nature Conservancy (<http://tncweeds.ucdavis.edu/esadoes/documents/pastsat.html>)

4. Wild Parsnip — Noxious Weeds of Ohio (with photos)

(http://www.ag.ohio-state.edu/~ohioline/b866/b866_9.html)

5. Alien Profile — Wild Parsnip. EEK website (Environmental Education for Kids)

<http://www.dnr.state.wi.us/org/caer/ce/EEK/earth/parsnip.htm>

Comparing the Culprits

Wild Parsnip

History of contact

No previous exposure required. Everyone can be affected if sufficiently exposed.

Time of Onset

First exposure — redness within 24 hours, blisters for several days. Subsequent exposures — same reaction as first exposure.

Location on Body

Limited to areas exposed to sun.

Symptoms

Burning pain and local tenderness, which is short-lived.

Course

No new redness or blisters over time. Condition confined to initial sites.

Residual "signature" visible on the skin

Reddish or brownish pigmentation, noticeable for months or years

Poison Ivy

Prior exposure and sensitization to poison ivy required. Only 50-85 percent of the population will ever develop an immune response to poison ivy (and to chemically related poison oak and poison sumac). It may take repeated exposures to develop sensitivity — though for many, one touch is enough.

First sensitizing exposure readies the immune system to respond. Subsequent exposures — symptoms occur in several hours to 2 days. And because poison ivy's reactive oil can last for months on clothing, pet fur and other surfaces, exposure can occur repeatedly.

Can occur anywhere poison ivy's reactive oil contacts the skin. It is often transferred by hands or clothing to areas "where the sun don't shine."

Itching, which can last for weeks if untreated.

New blisters and lesions can appear over a week or more. Different skin areas react at different rates. Plus new exposures from reactive oil on clothing may occur.

None. Skin returns to normal.

Adapted from Sommer, Robert G. and Otis F. Jillson, 1967.

"Phytophotodermatitis." *New England Journal of Medicine* 276(26): 1484-6.

Wild parsnip (left) and poison ivy



Clay Smith



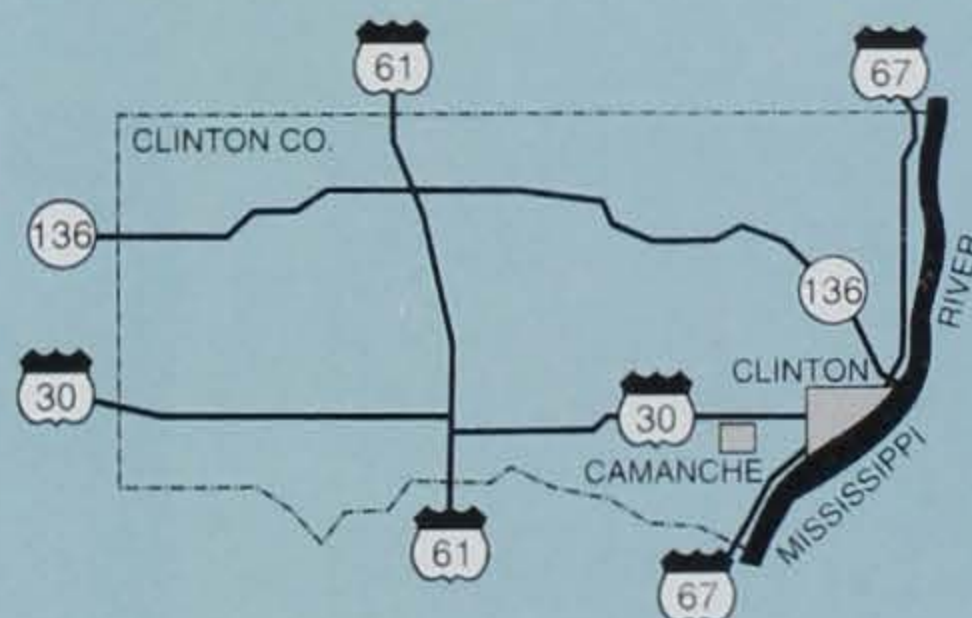
Clay Smith

Coming together for a unique SOLUTION

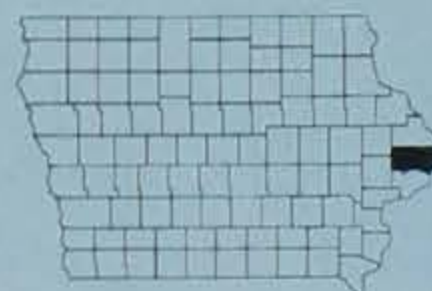
Article and photos
by Bob Sheets



ABOVE: Red outline shows the approximate basin of the Lower Rock Creek cooperative wetland project



Rock Creek Marsh is located near U.S. Highway 67 and 9th Street near Camanche.



Lower Rock Creek near Camanche in Iowa winds its way to the backwaters of the Mississippi River after draining 22 square miles of eastern Iowa landscape. Historically, rainfall in this watershed has had a tough time gathering and diluting farm chemicals and industrial by-products as it found its way to the Mississippi River. Such a tough time in fact that in 1998 the U.S. EPA declared Rock Creek one of the most polluted watersheds in Iowa. All the indicators were there. In the backwaters of the Mississippi River below the mouth of Rock Creek there were heavy algal blooms and lowered plant and animal diversity. It was obvious high levels of nutrients were taking their toll.

With these observations in mind, the DNR Wildlife Bureau went to a landowner in the watershed in late 1995 to suggest an improvement. If a large wetland was created on the lower end of Rock Creek, cattail beds and other emergent plant communities would have a chance to clean the water before it entered the Mississippi River. The owner, a chemical plant, was not interested in the adventure and thus, the project was abandoned.

In 1997, the DNR Fisheries Bureau began more intensive water quality sampling in cooperation with the DNR Water Quality Bureau. Analysis of data collected over two years revealed the stream was carrying extremely elevated levels of nitrogen and ammonia. Lower Rock Creek sampling indicated the stream was carrying 2 milligrams of ammonia per liter of water, well above the 0.1 mg/liter or less common for most Iowa streams. Combined nitrogen was found to average 16 mg/liter when normal streams were showing less than 4 mg/liter.

Repeated fish kills were occurring often in Schriekers Slough, a well-known Mississippi River backwater just below the mouth of Rock Creek. Large algal blooms were occurring several times each year due to the high nutrient levels

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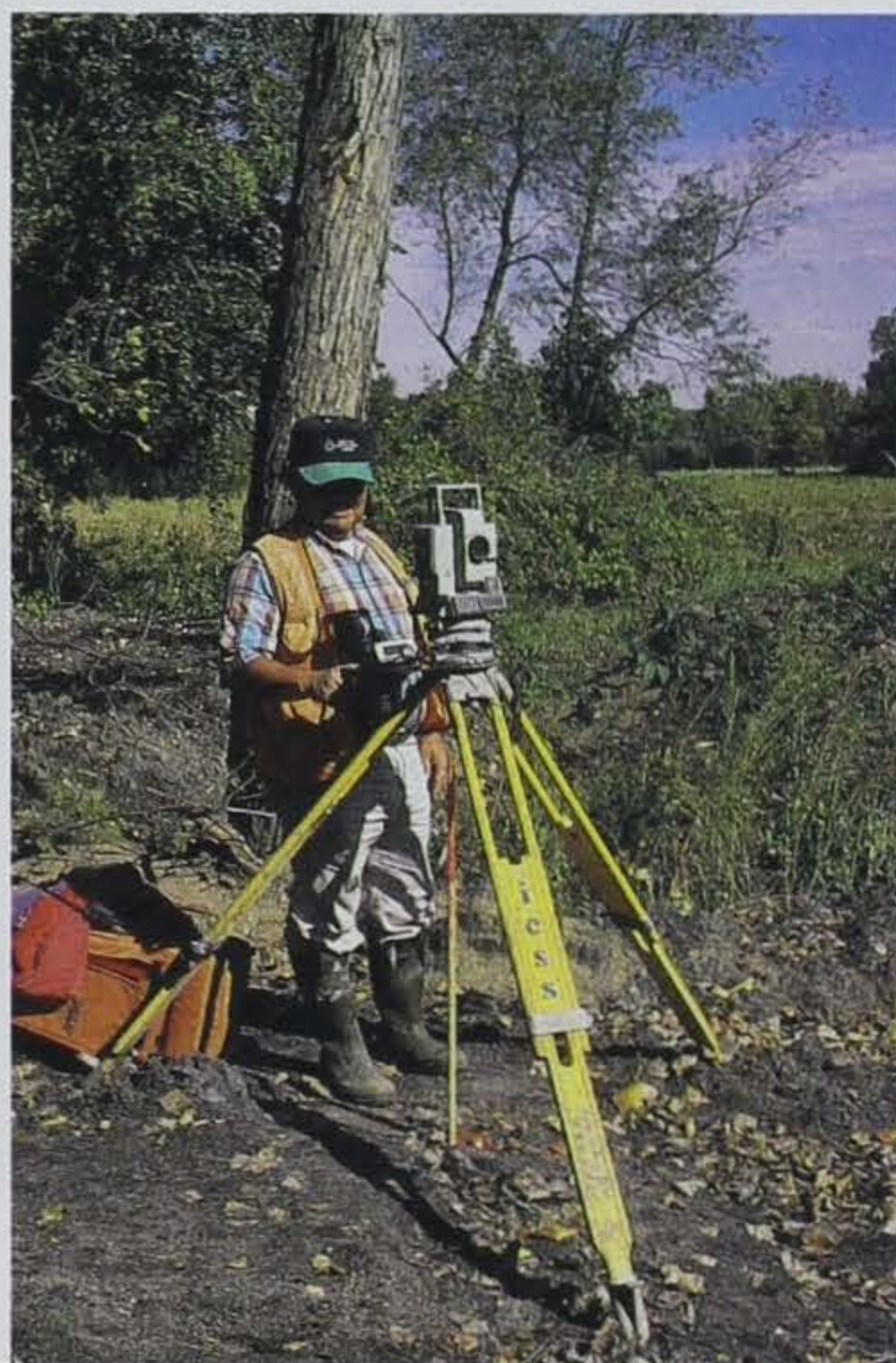
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UPPER: Aerial photo of Cross Marsh

ABOVE: Construction of the marsh began in January and was completed by March.

RIGHT: Surveying the marsh area



entering the system from Rock Creek. When the algae became thick and matted, it would die and consume oxygen in the lake, resulting in major fish kills.

Armed with this troubling information, the DNR contacted the new owners of the upstream chemical plant, PCS Nitrogen, and presented a plan to collect groundwater from the plant and treat it before it entered the Mississippi River. After modeling the effects of wetland development on nitrogen loading in Rock Creek, PCS Nitrogen joined the effort to allow and help finance the development of a large wetland complex near U.S. Highway 67 and 9th Street west of Camanche.

The Clinton County Natural Resource Conservation Service also assisted by applying for and receiving an Iowa Department of Agriculture and Land Stewardship grant to work with landowners in the Rock Creek watershed. Emphasis was being placed on working with individual landowners to develop manure management plans, install filter strips and slow runoff along waterways leading to Rock Creek.

While agency coordination was

coming together, local landowner Mark Cross contacted DNR Wildlife Biologist Bob Sheets in early 1998 asking if he could help construct the marsh. Cross dreamed of creating and living near a wetland. He knew marshlands hosted a great variety of wildlife, and he wanted to be near one for his own enjoyment.

Surveys of the Rock Creek basin showed approximately 85 acres of lowland cow pasture could be converted to wetland with the construction of a small stop log structure placed on Cross' property.

Plans continued, pipeline companies were advised, Iowa Department of Transportation engineers were consulted, adjacent landowners were brought into the process, water level agreements were negotiated and agency permits were obtained. General Constructors of Bettendorf was selected to design and install the 40-foot water control structure. Work began after January 1, 2000 and was completed March 1, 2000. After nearly one year of coordination and planning with supporting outdoor organizations, the lower Rock Creek marsh had been completed.

Without the cooperation of Cross and organizations such as Ducks Unlimited, Waterfowl USA, the U.S. Fish and Wildlife Service, the Clinton Izaak Walton League, Clinton County Pheasants Forever, PCS Nitrogen, the DNR and the Clinton County NRCS, the project would not have become reality. In addition to the wetland development, PCS Nitrogen joined forces with the DNR Wildlife Bureau, Clinton County Pheasants Forever and the Clinton County Conservation Board to seed 50 acres of adjacent farmland to native grass. The deep-rooted grasses provide quality nesting and roosting cover for songbirds, waterfowl and other upland nesting species, while at the same time reducing the transport of nitrogen into Rock Creek and the Mississippi River. Future plans include creating nesting islands in the wetland and installing nesting structures for wood ducks, hooded mergansers and mallards.

Because of the project, it is expected the Mississippi River will be a little cleaner and Camanche citizens will see a greater number and variety of wildlife. This cooperative effort between the Iowa DNR, industry, local conservation groups and private citizens is an example of how innovative partnerships can improve the quality of life for all Iowans.

For more information regarding how wetlands benefit wildlife and water quality, or for additional information regarding the Lower Rock Creek project contact Bob Sheets, Iowa DNR, Courthouse, Maquoketa, Iowa 52060. Ph: (319) 652-3132.

Bob Sheets is a wildlife management biologist in Maquoketa.

Mark and Lori Cross at the stop log structure placed on their property



► The money from natural resources license plates goes to the Resource Enhancement and Protection Fund—REAP. Created in 1989, REAP has received the highest national award for conservation programs. So far, it has generated \$70 million and rising. To buy a set of the \$35 plates, take your current plates and registration to your county treasurer and request the natural resource plates.

IT'S FOR THE BIRDS



Governor's Iowa Environmental Excellence Awards

Iowa's environment is in the hands of every community, business, organization, farmer and citizen. Many innovative Iowans are leading the way in the protection and enhancement of our natural resources. Their actions deserve the highest recognition.

Gov. Thomas Vilsack invites Iowans to apply for the Iowa Environmental Excellence Awards, designed to recognize leadership and innovation in managing our state's natural resources. Innovative, result-oriented strategies by organizations can take many forms, including:

- ◆ Creating new technologies or processes that improve the environment or reduce reliance on natural resources
- ◆ Reducing waste generation
- ◆ Developing energy efficiency or renewable energy technology or programs
- ◆ Creating natural resource protection and enhancement projects, such as watershed protection
- ◆ Establishing educational or prevention programs that result in environmental improvements
- ◆ Creating programs or processes that balance economics with the environment

Who Can Apply:

Categories will be divided according to the following organization types:

- ◆ Community/Local Government
- ◆ Business and Industry
- ◆ Institution/Public Sector Facility (hospital, school, college, etc.)
- ◆ Agriculture (operation, farm or other ag-related business or organization)
- ◆ Service/Civic/Nonprofit/Environmental Organization (Kiwanis, Lions Club, Pheasants Forever, etc.)
- ◆ Youth Organization (4-H chapter, Boy/Girl Scouts chapter, FFA chapter, etc.)

Deadlines:

Applications must be postmarked by Sept. 29, 2000. Awards will be announced and presented in December 2000.

To Obtain an Application:

Go to www.state.ia.us/dnr/energy/awards/awards.htm or write or call Julie Tack (515) 281-8665 e-mail: Julie.Tack@dnr.state.ia.us Iowa Department of Natural Resources Wallace State Office Building Des Moines, Ia. 50319-0034

Iowa 2000-2001 Hunting Seasons and Bag Limits

| SPECIES | SEASON | SHOOTING HOURS | BAG LIMITS | |
|--|---|--|---------------------------|---------------------------|
| | | | DAILY | POSSESSION |
| Youth Rooster Pheasant (age 15 or younger)*+ | Oct. 21-22 | 8:00 a.m. to 4:30 p.m. | 1 | 2 |
| Rooster Pheasant | Oct. 28 - Jan. 10, 2001 | | 3 | 12 |
| Bobwhite Quail | Oct. 28 - Jan. 31, 2001 | | 8 | 16 |
| Gray Partridge | Oct. 14 - Jan. 31, 2001 | | 8 | 16 |
| Turkey (Gun)* | Oct. 16 - Nov. 30 | One-half Hour Before Sunrise to Sunset | One Turkey Per License | One Turkey Per License |
| Turkey (Bow Only)* | Oct. 1 - Dec. 1 and Dec. 18 - Jan. 10, 2001 | One-half Hour Before Sunrise to One-half Hour After Sunset | | |
| Deer (Bow) | Oct. 1 - Dec. 1 and Dec. 18 - Jan. 10, 2001 | | | |
| Deer (Muzzleloader) | Oct. 14 - Oct. 22* (early) or Dec. 18 - Jan. 10, 2001 (late) | | | |
| Deer -- Youth (age 12-15) and Severely Disabled | Sept. 16 - Oct. 1 | | | |
| Deer (Shotgun) | Dec. 2 - Dec. 6 (first) or Dec. 9 - Dec. 17 (second) | Sunrise to Sunset | One Deer Per License | One Deer Per License |
| Ruffed Grouse | Oct. 7 - Jan. 31, 2001 | | | |
| Rabbit (Cottontail) | Sept. 1 - Feb. 28, 2001 | | | |
| Rabbit (Jack) | Oct. 28 - Dec. 1 | | | |
| Squirrel (Fox and Gray) | Sept. 1 - Jan. 31, 2001 | None | 3 | 6 |
| Groundhog | June. 15 - Oct. 31 | | 10 | 20 |
| Crow | Oct. 15 - Nov. 30 and Jan. 14 - March 31, 2001 | | 2 | 4 |
| Pigeon** | Oct. 1 - March 31, 2001 | | 6 | 12 |
| Raccoon and Opossum | Nov. 4 - Jan. 31, 2001 | None (Open 8 a.m. First Day Only) | None | |
| Fox (Red and Gray) | Nov. 4 - Jan. 31, 2001 | | | |
| Coyote | Continuous Open Season | | | |

* Residents Only.

** Within 100 yards of buildings and bridges, pigeons may be taken year round.

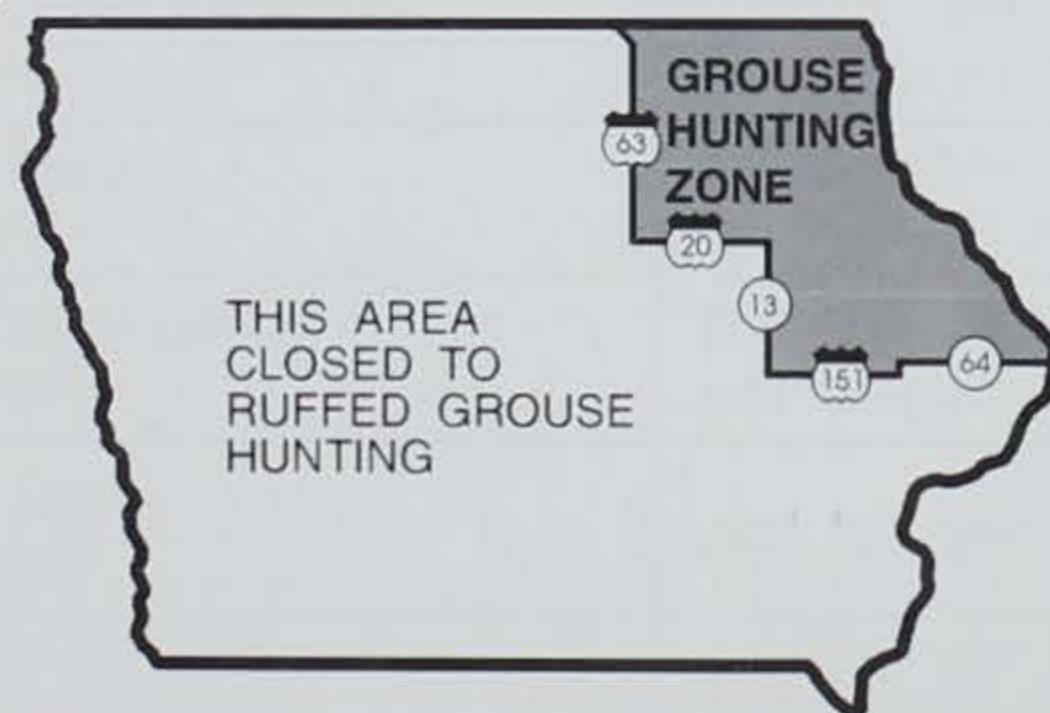
+ See regulations for complete requirements

2000-2001 TRAPPING SEASON

| SPECIES | OPENING | CLOSING |
|--|--------------------------|----------------|
| Mink, Muskrat*, Raccoon, Weasel, Striped Skunk, Badger, Opos- sum, Fox (Red and Gray), Coyote | Nov. 4, 2000 | Jan. 31, 2001 |
| Beaver | Nov. 4, 2000 | April 15, 2001 |
| Civet Cat (Spotted Skunk), Bobcat and Oter | Continuous Closed Season | |
| Groundhog | June 15, 2000 | Oct. 31, 2000 |

ALL FURBEARER SEASONS OPEN AT 8 A.M. ON THE OPENING DATE. THERE ARE NO DAILY BAG OR POSSESSION LIMITS

*SELECTED AREAS MAY BE ESTABLISHED IN FEBRUARY FOR MUSKRAT TRAPPING ONLY.



THE RUFFED GROUSE HUNTING ZONE IS THAT PORTION OF NORTHEAST IOWA BORDERED BY U.S. HIGHWAYS 65, 20 AND 151, AND IOWA HIGHWAYS 13 AND 64.

2000-2001 Hunting Licenses and Fees**RESIDENT**

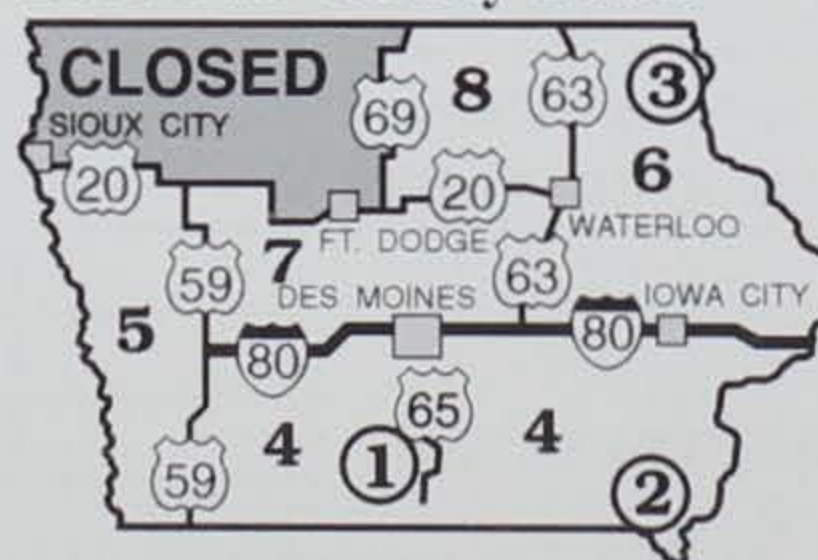
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| Resident Hunting | \$12.50 |
| Lifetime Combination (disabled military veteran or P.O.W.) | \$30.00 |
| Lifetime Hunting License (65 years of age or older) | \$50.50 |
| Deer License | \$25.50 |
| Turkey License | \$22.50 |
| Fur Harvester License | |
| Resident age 16 and older | \$20.50 |
| Resident under age 16 | \$5.50 |

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| Wildlife Habitat Fee | \$5.50 |
| Migratory Game Bird Fee | \$5.50 |

Annual free Fishing or Combined Hunting and Fishing licenses are available for low income 65 or older and low income permanently disabled. Call 515/281-8688 for information/qualifications.

NONRESIDENT

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| Nonresident Hunting Preserve | \$5.00 |
| Nonresident Hunting (18-years-old or older)) | \$60.50 |
| Nonresident Hunting (under 18) | \$25.50 |
| Nonresident Fur Harvester | \$180.50 |
| Wildlife Habitat Fee | \$5.50 |
| Migratory Game Bird Fee | \$5.50 |
| Nonresident Deer License | \$150.50 |
| Nonresident Turkey License | \$75.50 |

2000 Fall Turkey Zones

Fall turkey season is closed to nonresidents in 2000.

ZONE 1 is all units of Stephens State Forest west of U.S. Highway 65 in Lucas and Clarke counties.

ZONE 2 is all units of Shimek State Forest in Lee and van Buren counties.

ZONE 3 is units of Yellow River in Allamakee County.

BOW-ONLY fall turkey licenses are valid statewide.

2000-2001 **PROPOSED** MIGRATORY GAME BIRD SEASONS AND BAG LIMITS

| STATEWIDE | | |
|---------------------------------------|--|--|
| Ducks, Mergansers and Coots | Sept. 23-27 Oct. 14 - Dec. 7 | |
| Youth Waterfowl Hunting Day | Oct. 7 | |
| Snow Geese | Sept. 30 - Jan. 14, 2001 Feb. 15 - April 15, 2001 | |
| Woodcock | Oct. 7 - Nov. 20 | |
| Snipe | Sept. 2 - Nov. 30 | |
| Rail (Sora and Virginia) | Sept. 2 - Nov. 10 | |
| | NORTH ZONE | SOUTH ZONE |
| Canada, White-fronted and Brant geese | Sept. 30 - Dec. 8 | Sept. 30 - Oct. 15 Nov. 4 - Dec. 27 |

Shooting Hours: One-half hour before sunrise to sunset for all species except woodcock, which is sunrise to sunset.

Daily Bag and Possession Limits:

Ducks: Daily limit is 6, including no more than 4 mallards (of which no more than 2 may be female), 2 wood ducks, 2 redheads, 1 black duck, 1 pintail, 3 scaup, and 1 canvasback. Possession limit is twice the daily bag limit.

Mergansers: Daily limit is 5, including no more than 1 hooded merganser. Possession limit is twice the daily bag limit.

Coots: Daily limit is 15; possession limit is 30.

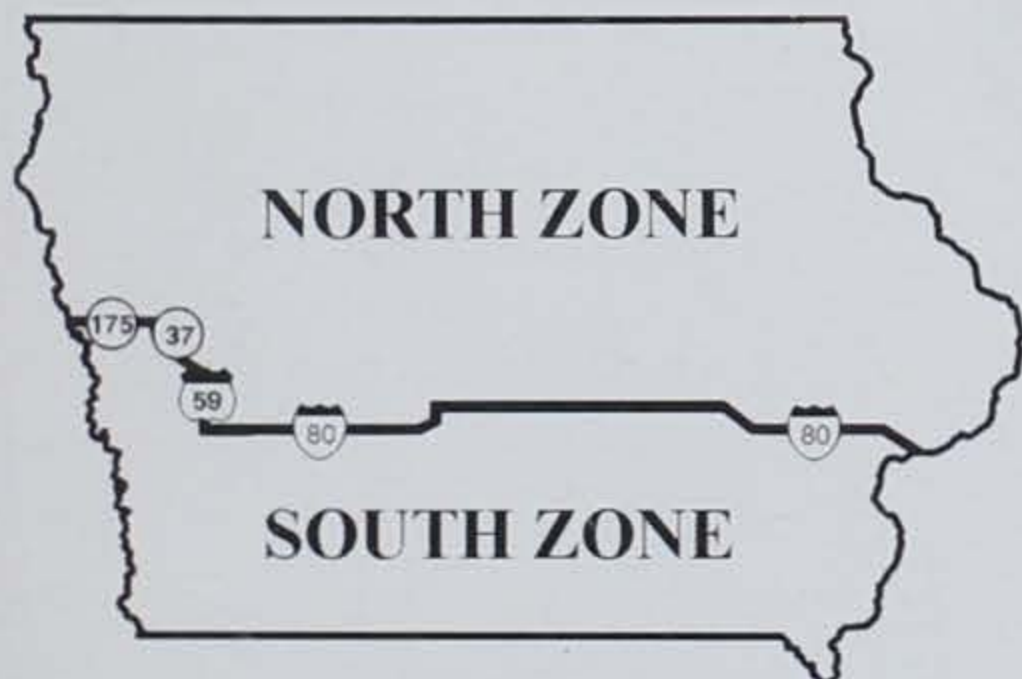
Geese: Daily limit for Canada geese is 2. For other geese, the daily limit is 2 white-fronted, 2 brant, and 20 snow geese. Possession limit is twice the daily bag limit, except for snow geese for which there is no possession limit.

Woodcock: Daily limit is 3; possession limit is 6.

Snipe: Daily limit is 8; possession limit is 16.

Rail (Sora and Virginia): Daily limit is 12; possession limit is 24.

Youth Waterfowl Hunting Day: Shooting hours and daily bag limits will conform to those set for the regular waterfowl seasons.



Waterfowl zone description. The state will be divided by a line beginning on the Nebraska-Iowa border at State Highway 175, east to State Highway 37, south-east to U.S. Highway 59, south to I-80 and along I-80 east to the Iowa-Illinois border.

Nontoxic shot only. You can only use nontoxic shot approved by the United States Fish and Wildlife Service (USFWS) (including steel shot, copper-coated or nickel-coated steel shot, tin shot, bismuth-tin shot, or tungsten, polymer and matrix-iron shot) to hunt any migratory game birds except woodcock. You cannot have in your possession any shotshell loaded with other than nontoxic shot approved by the USFWS when hunting any migratory game birds, except woodcock, on any land or waters of the state of Iowa. Approved nontoxic shot must be used to hunt any game animal or furbearer, except deer and wild turkey, on selected public hunting areas in northcentral and northwest Iowa. See the "2000 Hunting and Trapping Regulations" published in August for details.

Migratory game bird stamps and fees required. If you are 16 years of age or older, you need to pay the **state migratory game bird fee** (\$5.50) and possess a **federal** (\$15) **migratory waterfowl stamp** (duck stamp) to hunt or take any migratory waterfowl within Iowa. The state migratory game bird fee box on your license must be marked and the federal stamp must be in your possession while hunting. Your signature must be written in ink across the face of the federal stamp. Federal stamps can be purchased at post offices.

Youth Waterfowl Day. Youth Waterfowl Day will be Oct. 7, 2000. Hunters 15 years of age or younger may hunt certain waterfowl in the state and are not required to have a hunting license, federal duck stamp or pay the habitat fee. The youth hunter must be accompanied by an adult 18 years of age or older. The adult must have a hunting license and habitat stamp if normally required to have these to hunt waterfowl, and have paid the state migratory game bird fee. The adult may not hunt ducks but may hunt other gamebirds if there is an open season. The bag limit is six ducks for the youth hunter only, with the same species restrictions as other duck seasons, two Canada geese and 15 coots.

NOTE: All migratory game bird information is subject to change. Season dates and bag limits will be determined after federal guidelines are released in May and August. Final season dates and bag limits will be published in June and September.

Did you shoot a
banded duck or goose?

Call

1-800-327-BAND (2263).

Reporting the harvest of banded
waterfowl provides valuable
information which helps sustain popu-
lations and hunting for the future.



POACHING is a CRIME!
Turn In Poachers
1-800-532-2020

HIP

(Harvest Information Program)

All migratory game bird hunters must register with the U.S. Fish and Wildlife Service's Harvest Information Program (HIP) each year and carry proof of registration while hunting. Information about the HIP program is contained in the 2000 Iowa Hunting and Trapping Regulations brochure. To register with HIP, call 1-800-WETLAND (938-5263).

purchase a part of IOWA

IOWA-Portrait of the Land



Iowa — Portrait of the Land

In celebration of Earth Day's 30th anniversary, *Iowa Conservationist* subscribers received a free, first-edition copy of *Iowa — Portrait of the Land* in lieu of the standard May/June issue. Now, for a limited time, additional books can be purchased for only \$5. They make great gifts for family or friends providing a look at Iowa's natural resource history, and the status and trends of those resources.

Portrait of the Land also offers a beautiful array of color illustrations, in a format designed to make it a beautiful keepsake and a valuable reference tool for years to come. Order now while supplies last. Send a check or money order for \$5 per book to the Iowa DNR, Wallace State Office Building, Des Moines, Iowa 50319-0034.

Due to the tremendous effort from thousands of people from the past, the lodge can still be enjoyed today.

Gull Point State Park Lodge

Article by Dave Stoevers
Photos by Clay Smith



To fully appreciate the majestic beauty of the stone-walled and timber-beamed lodge at Gull Point State Park, one must understand its history.

Following the stock market crash of October 1929 and the ensuing Great Depression of the 1930s, a large group of young men were unemployed. The Civilian Conservation Corps proposed a plan during the Franklin Roosevelt administration to put 500,000 unemployed men to work. The plan also helped to develop new state parks and to restore eroded lands, rivers and lakes.

When President Roosevelt signed legislation establishing the Civilian Conservation Corps on March 31, 1933, the Army was then placed in charge of providing housing, clothing and meals for its newest members. The National Park Service provided work sites and tasks for the young workers. Workers received \$30 per month, \$25 of which was sent home to their families.

On October 23, 1933, 165 members

the majestic
and timber-
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market crash of
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a large group
mployed. The
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Roosevelt
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plan also
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March 31, 1933,
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The National
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ers. Workers
\$25 of which
milies.
165 members

of Civilian Conservation Corps Com-
pany 778 were transferred to Milford,
where construction began the next year
on stone shelter houses at Mini-Wakan,
Pikes Point and Trapper's Bay state
parks. In addition, trails and other stone
structures were constructed at Mini-
Wakan and
Pillsbury Point
state parks.

Also that
year, the 65 acres
known as Camp
Holiday, were
purchased using
\$6,000 in state
funds and \$5,000
donated by a
local citizen.
Construction of
several buildings
began on this
site, later known
as Gull Point
State Park.

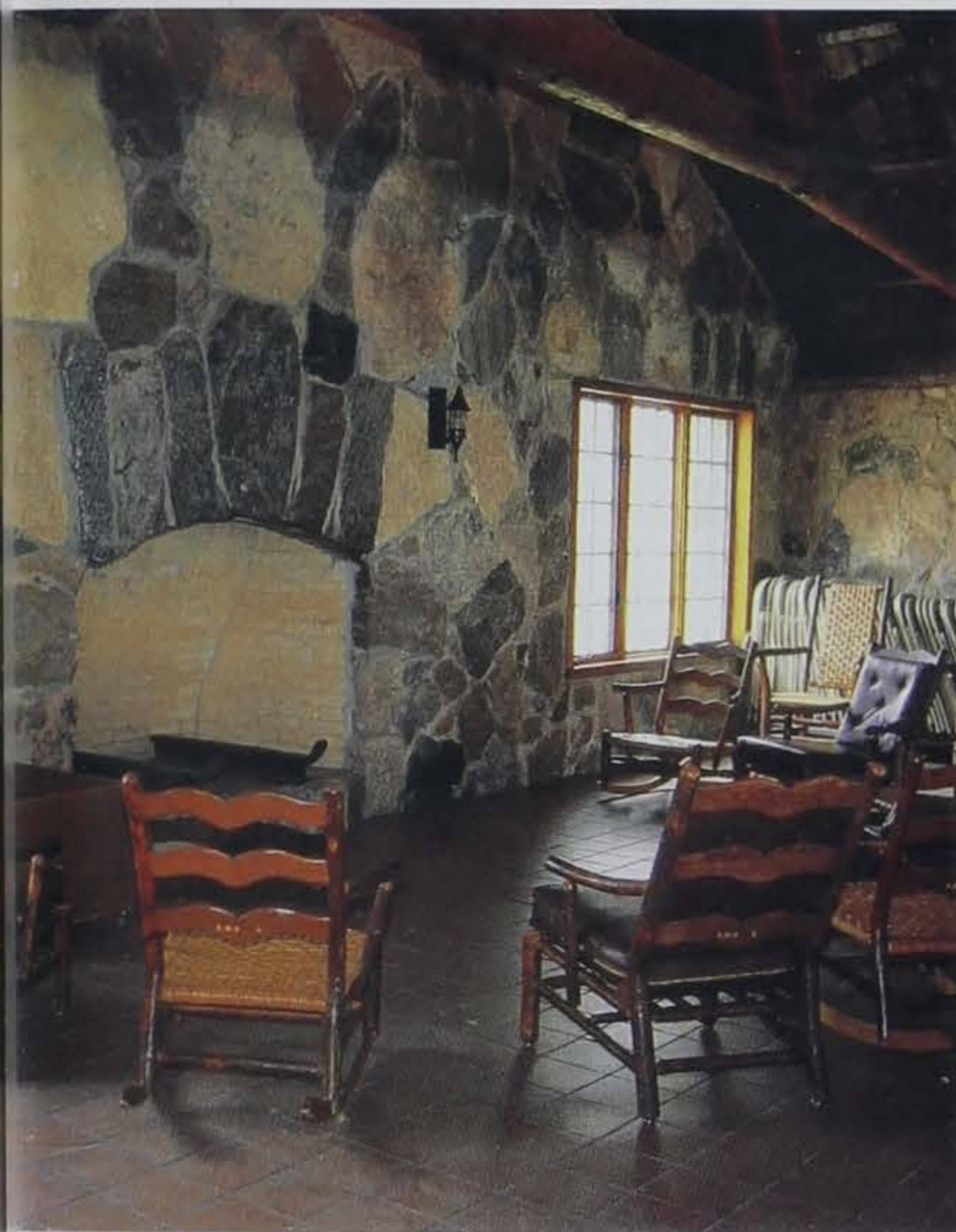
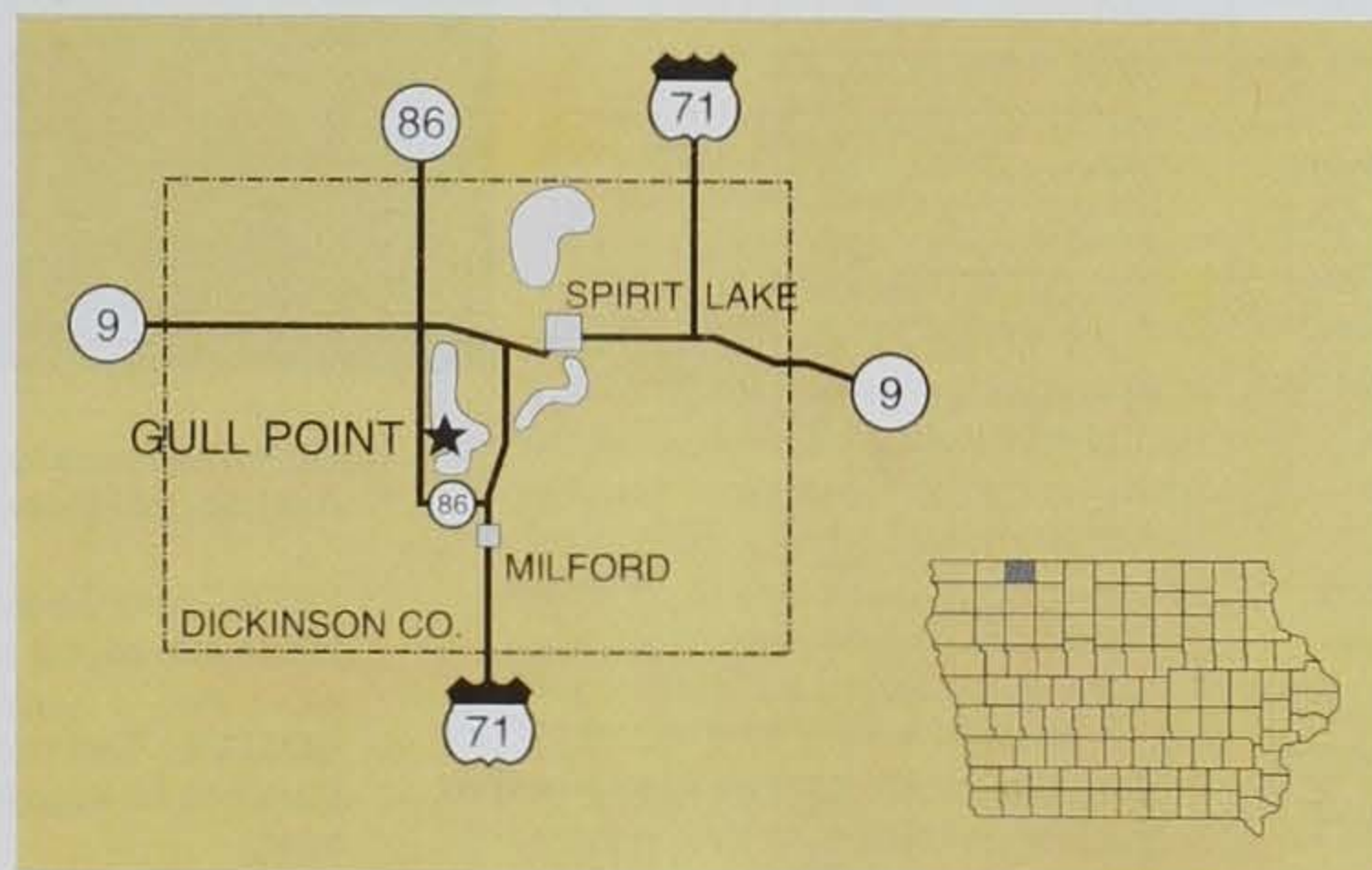
By the spring of 1935, there were
235 workers completing the previously
started projects. A lodge, a boat house,
two latrines, a service office building and
a park residence were constructed from
stone.

Material costs of \$10,476 were

approved for the construction of the
lodge. Logs from Oregon were used
for the main beams of the building,
and to help lower the cost of con-
struction, stones for the walls were
gathered from local farms.

On March 8, 1935, the newly
formed Iowa Conservation
Commission voted to name
the park Gull Point and on
July 3, 1935, a commission
meeting was held at the
newly completed lodge.
Most of the meeting was
spent touring the recently
developed parks in the Iowa
Great Lakes region. Shortly
after, reservations were
accepted for use of the
lodge, but park rules at that
time precluded the reserva-
tion of lodges on Sundays
and holidays.

On June 4, 1936, Mrs.
Wilsey leased the Gull Point



LEFT: The interior
reflects the past but
services the present
with its spacious
rooms.

TOP RIGHT: The lodge
offers a wonderful
facility for weddings,
family reunions, and
picnics.

BOTTOM RIGHT: The
pathways in the park
provide a beautiful
setting for walks.

Lodge to serve meals and snacks, thereby becoming the first concessionaire to serve Gull Point. Mrs. Wilsey had previously operated a popular tearoom called the Rodome which was destroyed by an April 30, 1936 tornado. The lodge at Gull Point was operated as a restaurant by various concessionaires until the early 1970s. At that time, a concessionaire could no longer be located who would be willing to operate a restaurant in the building. The lodge was then opened for rental by private groups.

Since 1975, the lodge at Gull Point has proved to be a popular site for family reunions, company picnics and weddings. By the late 1990s the lodge building was beginning to show its age. Windows and beams were rotted out, some of the mortar was loose or missing, fireplaces were in poor condition, the flooring was worn, floors in the kitchen areas were water damaged, the plumbing facilities and wiring were outdated, the front porches were leaking and the building was not handicapped-accessible.

Funds were needed to help renovate the structure. In 1997, the Iowa Legislature passed "Restore the Outdoors," a \$12 million appropriation to help renovate historic state park buildings. With Restore the Outdoors (RTA) funding, renovation of the Gull Point lodge began. Architects, engineers, office and park staff assessed the condition of the building and produced a plan to restore, and maybe even surpass, its original condition.

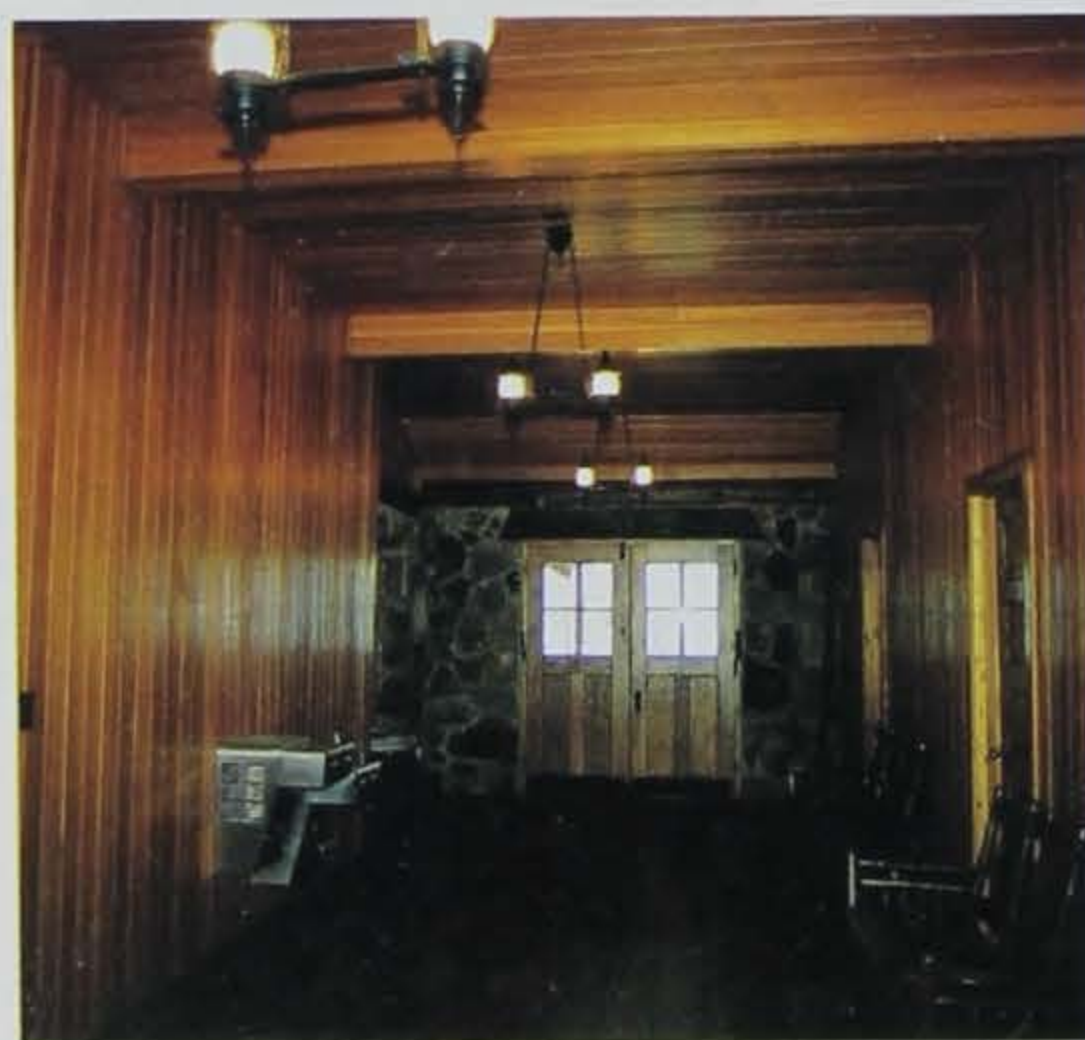
Because the lodge is on the National Register of Historic Places, special consideration was given to maintaining its historic integrity. Blue prints and plans were drawn, critiqued and redrawn again. Finally the plans

were satisfactory to everyone involved in the process.

Rejuvenation of the building began in April 1999 and was completed by Oct. 1. An open house/rededication ceremony was held on April 30, 2000 to showcase the restored facility.

At present, thousands enjoy this beautiful facility due to the tremendous efforts of people throughout the years.

Dave Stoeve is the park ranger at Gull Point State Park.



TOP: The lodge is on the National Register of Historic Places.

LEFT: The unique handiwork of the lodge makes it a showcase.

BOTTOM: The view at Gull Point State Park can be enjoyed throughout the year.

Bluebirds

find Iowa a comfortable nest

The eastern bluebird, a favorite bird of many, belongs to the thrush family, the same as the American robin. They primarily eat insects, though they will also eat some fruit such as wild grapes, Virginia creeper berries or blackberries.

Only 7 inches long, the bluebird is much smaller than its noisy blue and white woodland neighbor, the blue jay (12 inches). It is larger than all the blue, shrubland indigo buntings (5 inches), and eats, behaves and nests differently from our western Iowa blue grosbeak (7 inches).

Historically, these birds nested in cavities of old oaks and elms and wooden fenceposts, which dotted the countryside. As agriculture changed and the competition with starlings and house

sparrows increased, the bluebird population plummeted the last few decades.

Since habitat is most important to bluebirds, as to all wildlife, a statewide effort began in recent years to protect and to assist these blue beauties.

Specifically, it is important to provide them open grassy areas to hunt beetles, grasshoppers and butterflies. Leave dead trees standing for woodpeckers, and later for the bluebirds to use for nesting. Plant fruiting shrubs to beautify your landscape and to feed these birds during tight times.

Also, nest boxes provide bluebirds homes where feeding habitat is plentiful but nesting habitat is lacking.

A bluebird box plan, as well as more information, is

available by sending a self-addressed stamp envelope to Jaclyn Hill, 2946 Ubben Ave, Ellsworth, Iowa, 50075.

For those with established boxes, sending in the bluebird report, (next page) is helpful to the preservation of these birds. The data collected from these reports help provide a more accurate picture of the bluebirds welfare and recovery in Iowa. Please take the opportunity to record your findings this summer and return the form to Jaclyn Hill, 2946 Ubben Ave., Ellsworth, Iowa 50075.



Ty Smedes



Ty Smedes

Bluebird Recovery Program Has New Home

The DNR's Wildlife Diversity Program helped start Iowa's bluebird recovery initiative in 1986, but has been looking for an organization that can provide a permanent home and help the program grow.

Iowa Audubon, the state program of the National Audubon Society, has agreed to coordinate the program and work to involve many more volunteers in nest box

monitoring and reporting.

Iowa Audubon's emphasis is on non-game wildlife, with a mission to "promote the enjoyment, protection and restoration of Iowa's natural ecosystems with a focus on birds, other wildlife and their habitats." Audubon will be adding a special cavity-nester "track" of presentations to their annual Iowa Audubon conference for anyone interested in getting together with others to learn about and celebrate bluebirds and other cavity-nesting birds.

For more information contact:

Iowa Audubon
PO Box 71174
Des Moines, Iowa 50325
515-727-4271



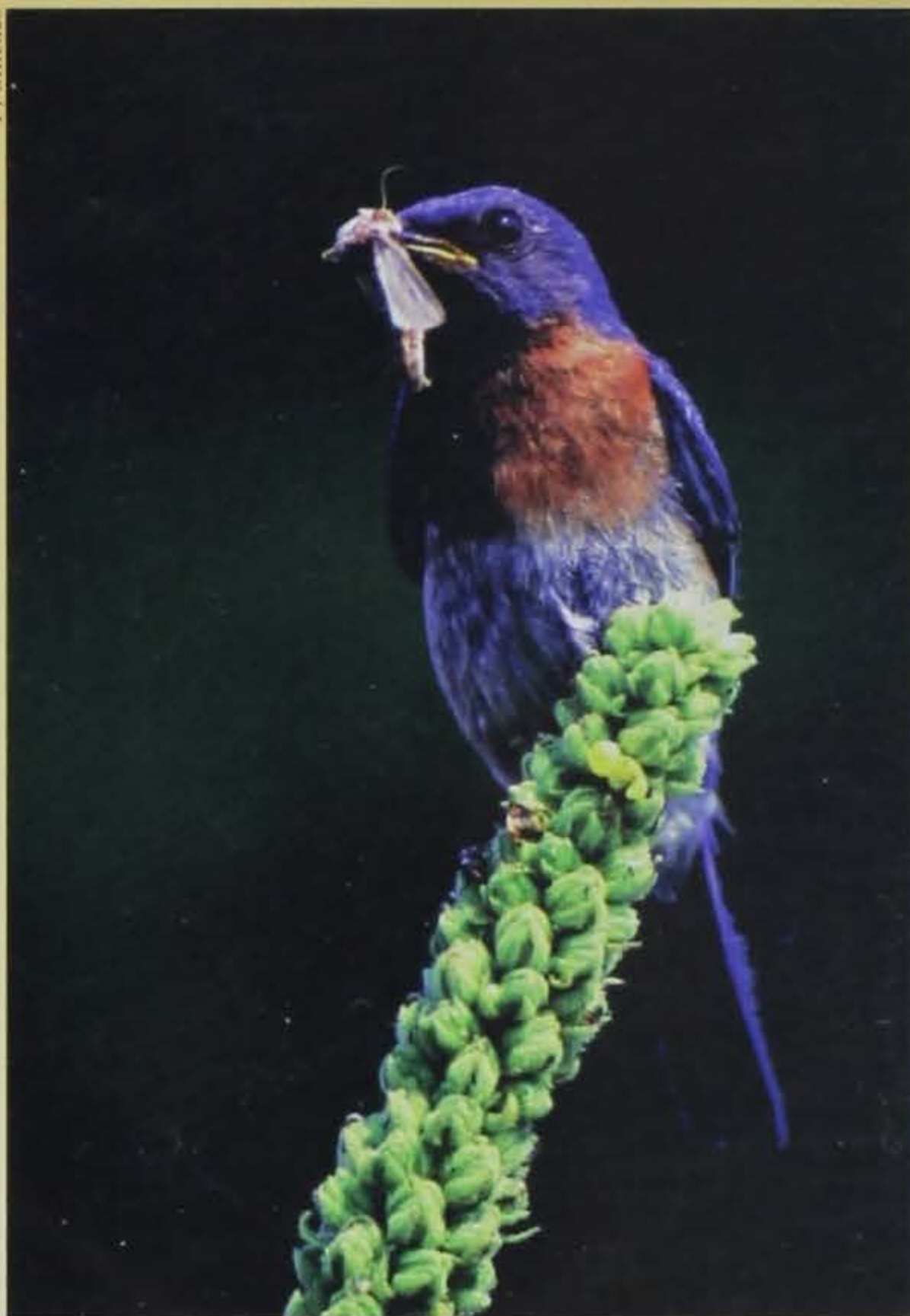
Pat Schlarbaum

Bluebird eggs

Bluebird Report Form 2000

- _____ How many blue bird boxes did you monitor?
- _____ How many successful broods?
(a single nesting with one or more bluebirds fledged)
- _____ How many *blue* bluebird eggs?
- _____ How many *white* bluebird eggs?
- _____ How many bluebirds hatched?
(This number cannot be greater than the number of eggs.)
- _____ How many bluebirds fledged?
(This number cannot be greater than the number of eggs.)
- _____ How many tree swallows hatched?
- _____ How many tree swallows fledged?
- _____ How many chickadees hatched?
- _____ How many chickadees fledged?
- _____ How many kestrel boxes did you monitor?
- _____ How many kestrel fledged?
- _____ How many purple martin compartments did you monitor?
- _____ How many purple martins fledged?

Ty Smiles



LAST NAME

FIRST NAME

BOX LOCATION, COUNTY

ADDRESS

(AREA CODE) TELEPHONE

CITY

STATE

ZIP CODE

Send to: Jaclyn Hill, 2946 Ubben Ave., Ellsworth, IA 50075

Note: If you have boxes in more than one county, please submit a separate report for each count.
No group names, individual reports only.

Classroom Corner

Indirect Impacts

This activity was adapted from "What Did Your Lunch Cost Wildlife?," *Project WILD*, copyright 1983, Council for Environmental Education.

BACKGROUND

Most people make life-style choices each day that impact wildlife and the environment in some way. Many of those impacts are indirect, and therefore are not as evident as others. The choice of foods people eat, for example, can have several indirect impacts on the environment.

Growing food impacts the environment. For example, the loss of habitat is one of the most critical problems facing wildlife. Within a 100-year period, 95 percent of Iowa's wetlands were drained or filled in, 75 percent of the forests were cleared and more than 99 percent of the state's prairies were plowed. Native habitats were converted to cropland, towns, railroads, roads and cities.

Given that food is a necessity, the ways in which food is grown (and the ways we care for the land in the process) are very important. Soil erosion from fields and stream banks degrades stream and lake habitats. Silt (very fine soil particles) is the number one pollutant in Iowa waters. It may come from fields or construction sites or from unprotected stream banks. Fertilizers commonly used to grow crops may run off or leach into water supplies. This runoff may contribute to a large increase in lake plants such as algae, which decompose and rob the lake of oxygen, killing aquatic animal life such as fish, amphibians, anthropoids and insects. Use of insecticides and herbicides also affects the environment, including wildlife. If pesticides kill and eliminate the food source for wildlife, the animals either leave or die.

Farmers play a very important role in maintaining and improving wildlife habitat through their growing and harvesting practices. Conservation measures designed to reduce soil erosion and ensure more fertilizer is used by the crop, rather than lost to nearby water bodies, help protect aquatic habitats. Riparian buffers and other land planted to permanent cover crops, especially native grasses and trees, serve as a natural water filter and provide habitat for wildlife.

The transportation, processing, packaging and marketing of food also impacts the environment. Iowa has more than 112,500 miles of highway and 113 publicly owned airports. We transport more than 83 million tons of freight by truck and use approximately 1.5 billion gallons of motor fuel each year. The Mississippi and Missouri rivers have been

Several avenues can be used to transport products — including food — from the producer to the consumer, all of which affect the environment.

Clay Smith



Ron Johnson

The way in which foods are produced and marketed is just one process that affects the environment we live in.

AGE:

Grades 4-12

SUBJECTS INVOLVED:

social studies, language arts, science, home economics, vocational agriculture

SKILLS USED:

analysis, application, classification, comparing similarities and differences, discussion, drawing, evaluation, media construction, problem-solving, synthesis, visualization, writing

OBJECTIVES:

Students will be able to: 1) trace some foods from their source to the consumer; 2) identify the impact those foods and their processing have on wildlife and the environment in general; and 3) recommend, with explanations, some food habits that could benefit wildlife and the rest of the environment.

Classroom Corner

METHOD:

Students trace food sources, diagram environmental impacts, and apply the knowledge they gain by making changes in some of their consumer choices.

MATERIALS:

writing and drawing materials

DURATION:

one to three 45-minute periods

GROUP SIZE:

any

EVALUATION:

1. Trace the possible course of a container of milk served in your school back to its probable source. What impact does this journey have on wildlife?

2. Name three food habits that could reduce negative impacts to wildlife and the environment. Explain the reasoning behind your suggestions.

altered to support barge traffic for hauling products.

Understanding how natural resources are affected in the process of getting food from its source of origin to the consumer is important. One example is increased exploration for and development of fossil fuels used to transport the food from growing site to consumer, and to fuel the processing. Petroleum products are also frequently used in the packaging, as in the case of plastics.

The purposes of this activity are to show how daily life-styles decisions can impact the environment and to help students consider habits more healthful, with less impact on the environment.

PROCEDURE:

1. Select a processed food item. Identify the item's ingredients. In a discussion with students, trace the item's ingredients back to their origins. Include where and how they grew or were formed and how they were harvested, processed, transported, packaged and made available to the consumer.

2. Ask the students to generate a list of foods they either brought or bought for lunch. Be sure to include any packaging materials the foods came in.

3. Ask each student to pick one food to trace all the way back to its origins, including where and how it grew; how it was harvested, processed (if it was), transported, packaged, and made available to the consumer (the student). Ask the students to make simple flow diagrams of the path the food takes. (The students may want to do some research at this point to get some additional information.)

4. Ask the students to add drawings of possible and likely impacts to the environment along the path their food took to get to them.

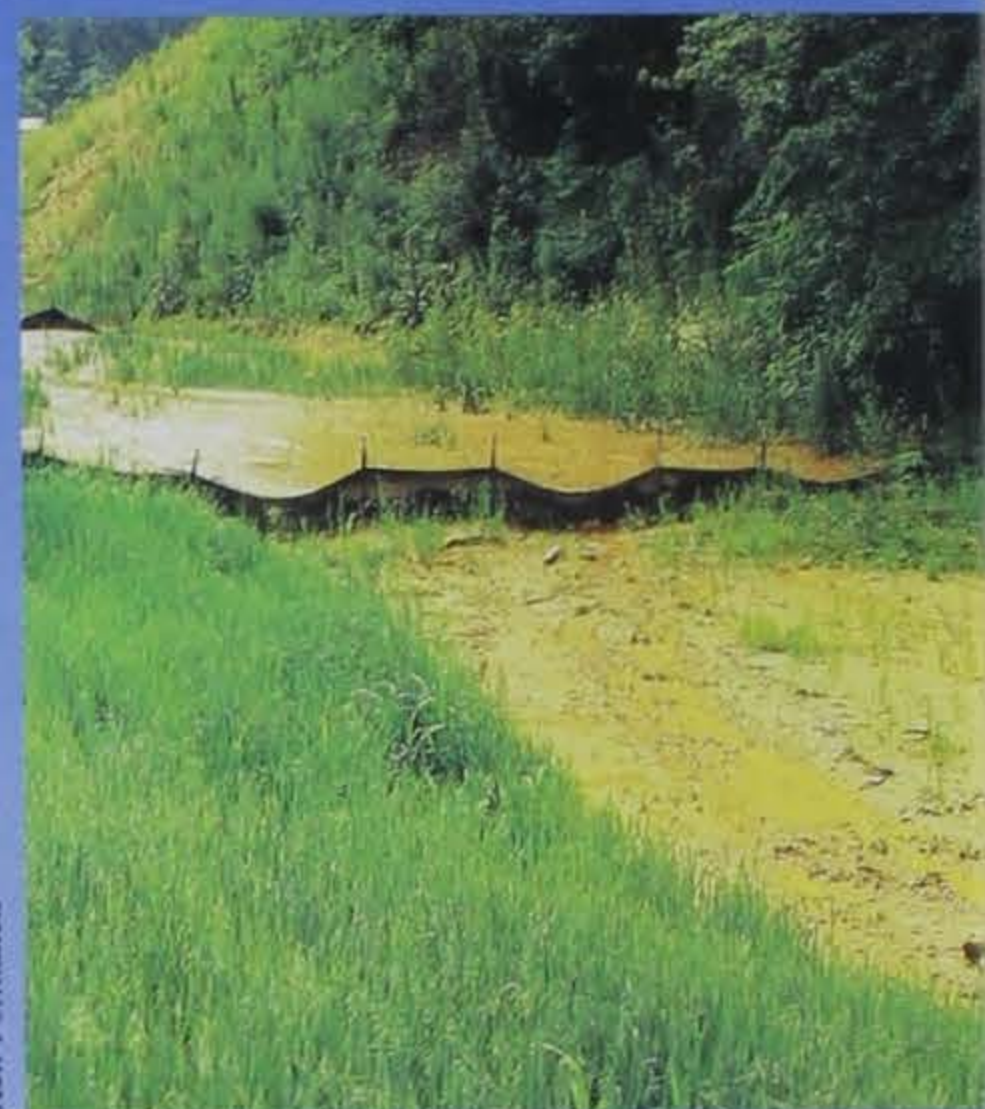
5. Ask the students to report to their classmates using their diagrams as a visual aid, describing the path taken by their food and its impact to wildlife and the environment along the way.

6. Ask the students to discuss and summarize their findings.

7. Ask each student to think of one change he or she could make in his or her own eating habits that would likely have a beneficial, or at least less harmful effect on the environment. Describe the reasoning for this change and evaluate its consequences. If, after examination, each change seems beneficial, suggest the students make the changes for a week. At the end of the week, ask the students to report back. Were they able to stick with the change? What happened? If they didn't make the change, why not? If they did make the change, did they find themselves making or thinking about any other possible changes? If yes, what were they?

EXTENSIONS

1. Map the energy used to grow and get the food to you.
2. Distinguish between renewable and nonrenewable resources.



Soil erosion is a key factor in the degradation of aquatic habitats.



Measures can be taken to ensure plants get the most benefit, meaning less is available for runoff.

Conservation Update



DNR photo

Wetland Partners [left to right] Rock Bridges, DU regional director; W.C. Byerly, North Iowa DU; Linda Kemmer, North Iowa Ladies DU; Richard Bishop, DNR Wildlife Chief; and Roger Lunning, Winnebago DU; discuss plans for future wetland construction at Hancock county's Eagle Lake II Project. Ducks Unlimited presented the Iowa DNR with a \$40,000 grant for the acquisition and enhancement of local wetland areas.

Ducks Unlimited Grant To Benefit Eagle Lake II Project

Plans to create additional wetland areas in north-central Iowa have come closer to reality.

Earlier this year, area members of Ducks Unlimited presented the Iowa DNR with a \$40,000 grant to aid in the acquisition and restoration of prairie wetland habitat. According to Ducks Unlimited regional director, Rock Bridges, the grant is a portion of \$1.6 million raised by Iowa DU during 1999. All of the money will be used within the Eagle Lake II Project.

Eagle Lake II is a 200-square-mile portion of Hancock and Winnebago counties. The project is part of the national Prairie Pothole Joint Venture — an initiative targeting critical wetland [marsh] habitat across the continent's prairie region. The Eagle Lake II Project was selected from a priority list established by the North American Wetlands Conservation Act.

"Water quality is currently a very big topic in this state," said North Iowa Ducks

Unlimited and Prairie Pothole Joint Venture member, W.C. Byerly.

"But for people working within Ducks Unlimited this isn't a new idea. We've been buying habitat and restoring marshes for several years now. Every time we build a new wetland we're not just benefiting wildlife, but we're also improving the water quality for everyone in the state of Iowa," Byerly added.

"I think that all north Iowans should feel pride over the aggressive conservation programs that are coming from this part of the state," said DNR Wildlife Bureau Chief Richard Bishop. "Projects like Eagle Lake II are very compatible with the water quality initiatives currently being discussed in the Iowa legislature. Through the efforts of groups like Ducks Unlimited and Pheasants Forever, Iowa sportsmen have already contributed more than \$20 million to water quality through ongoing wildlife and wetlands programs. That's something that not everyone in the state of Iowa is aware of," said Bishop.

Mines of Spain Seminar Sept. 16

The Mines of Spain Fall Seminar will be held September 16 at the Mines of Spain Recreation Area in Dubuque.

The seminar will explore the natural and historical heritage of the park and the Mississippi River through experts in the fields of wildlife, fisheries, forestry, prairies, archeology, biology, botany, environmental science and arts and crafts. Sessions on birding, hawks, fossils, outdoor photography, Indian culture, forest ecology, prairies, plants, wildflowers and fungi will be held.

Registration can be made prior to the seminar by contacting the Mines of Spain State Recreation Area, or on the day of the seminar beginning at 7:30 a.m. at the E. B. Lyons Interpretive Center located at the park. Sessions will be held at 8:15 and 10:15 a.m. and 1:15 p.m. Lunch will be provided by the Friends of the Mines of Spain group.

The seminar is sponsored by the Mines of Spain State Recreation Area, the Iowa DNR and the State Preserves Advisory Board. For a registration form or for more information, contact the Mines of Spain State Recreation Area at (319) 556-0620.

Deer And Turkey Applications, Hunting Regulations Available

Resident deer and fall turkey hunting applications, as well as the 2000 *Hunting and Trapping Regulations*, are now available at most county recorder's and DNR offices and at selected license vendors.

Deer applications for youth and disabled deer hunters, and landowner/tenant fall turkey applications were mailed to license vendor locations in mid-June. Regular and antlerless deer license applications were mailed in early July.

Hunters are encouraged to take a close look at the applications since deadlines may vary. Turkey hunters should take note of an omission in the paid application. The quota for zone eight — which is 75 — was omitted from the application. Hunters should also be aware of changes to the deer hunting regulations for 2000, which are included in the 2000 deer application booklet.

Conservation Update

Linn County Naturalist Named 2000 Brass Bluegill Award Winner

Chuck Unga, a naturalist with the Linn County Conservation Board, has been named the DNR's 2000 Brass Bluegill Award winner.

The Brass Bluegill Award recognizes individuals who help Iowans become better anglers and advocates of fish and fishing. Unga was nominated for incorporating the DNR's Fish Iowa! program into water quality studies, after-school programs, fishing clinics, programs for people with handicaps and summer camps. The naturalist has also assisted local schools with the Fish Iowa! program, helped during field trips and has even taught the unit in schools when the instructor isn't comfortable leading it.

Unga frequently incorporates the Fish Iowa! curriculum into aquatic studies to illustrate the connection between aquatic life and people. He believes teaching students how to enjoy the outdoors is key to helping make them responsible stewards of the environment. His dedication to the

environment stems from the time he spent in the outdoors as a kid, especially fishing.

"Students take what they learn from fishing and apply it to the environment," he said. "In many cases, the proponents of the environment are those who had the opportunity to become familiar with it while growing up."

Unga has also provided assistance to the Fish Iowa! program at the state level. As a mentor, he has trained 55 naturalists and teachers to use the program. He assisted in the implementation of the 4-H Fish Iowa!, a program targeted at 4-H groups across the state through a partnership with the DNR and Iowa State University Extension.

His work, and the similar efforts of others, has been crucial to the success and quality of the Fish Iowa! program.



Clay Smith

Chuck Unga (left), a naturalist with the Linn County Conservation Board, has been named the 2000 Brass Bluegill Award Winner. Presenting Unga with the award is Barb Gigar, DNR aquatic education coordinator.

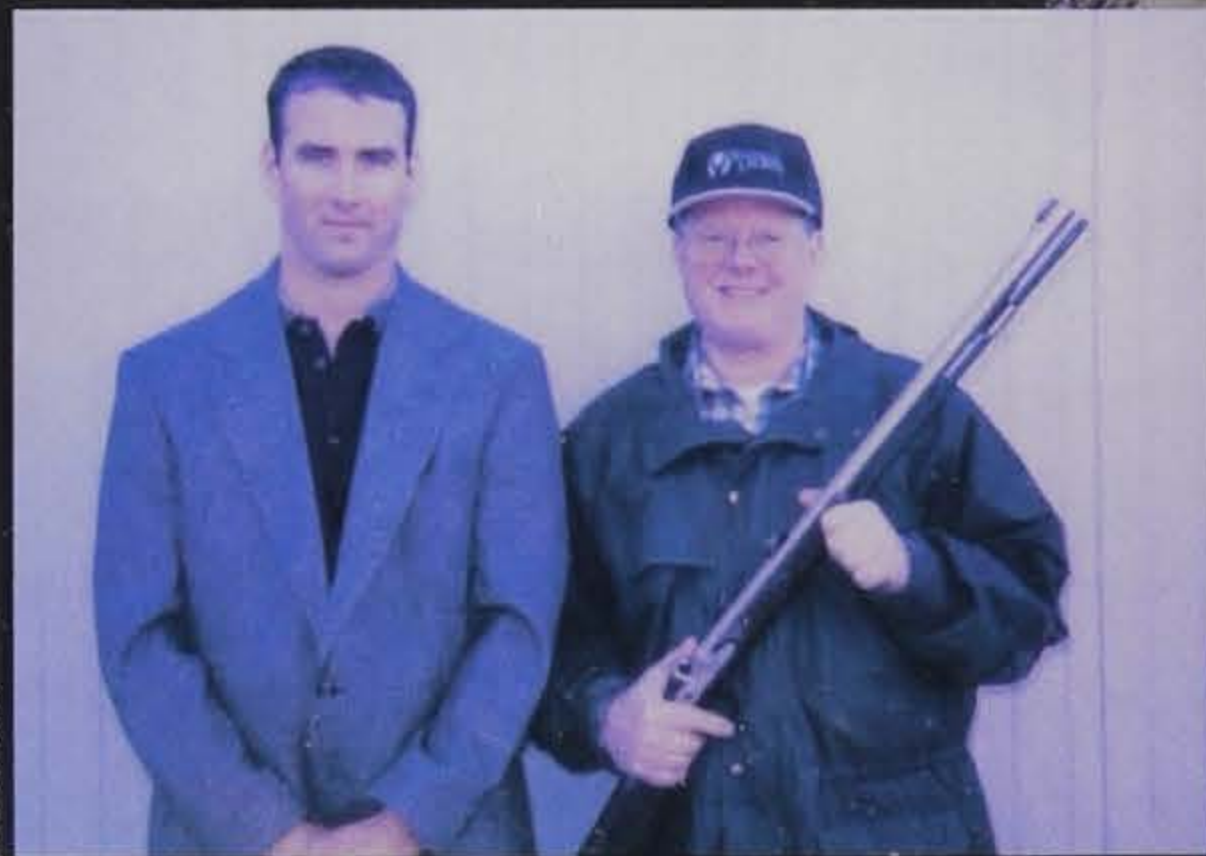
Winners Named In Deer Survey Early Responders Drawing

Cooperating with the DNR's deer harvest survey paid off for two Iowa hunters.

Maurice Colby of Vinton and Robert Green of Weldon were drawn from a pool of hunters who responded early to the annual survey. Colby was awarded a CVA .50 caliber muzzleloader while Green received a 410-gauge collector's shotgun. Both firearms were donated by Whitetails Unlimited.

The annual drawing is held to encourage higher survey return rates, which provide more precise harvest data and better deer herd management.

RIGHT: Maurice Colby with Whitetails Unlimited Field Director Tim Powers.



DNR Photo



DNR Photo

ABOVE: Robert Green with DNR Conservation Officer Craig Roberg.

Conservation Update

Iowa Student Wins National Earth Day 2000 Poster Contest

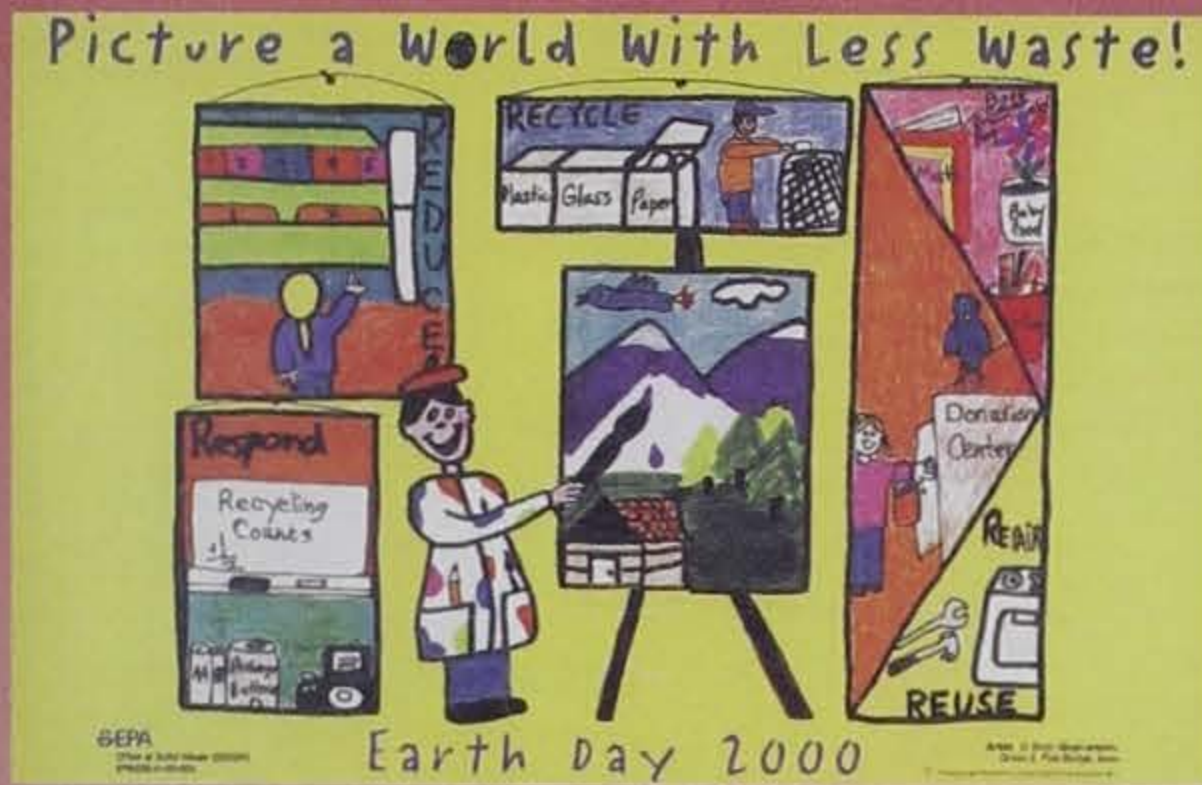
An Iowa student has been named winner of a national poster contest celebrating Earth Day 2000.

Scott Skophammer, a second-grade

received nationwide in the kindergarten through sixth grade category. A separate poster contest was held for students in grades seven through 12.

Skophammer was presented with a plaque and printed reproduction of his poster during an awards ceremony at the school in April.

The theme for the younger students' poster contest — "Picture a World With Less Waste" — was designed to increase youngsters' awareness in reducing, reus-



student at St. Paul Lutheran School in Ft. Dodge, won the Earth Day 2000 Poster Contest sponsored by the Environmental Protection Agency (EPA) Office of Solid Waste. Skophammer's poster was chosen from more than 7,000 entries

ing and recycling waste.

Skophammer's poster will serve as the official Office of Solid Waste Earth Day 2000 Poster and will be distributed nationwide as part of the EPA's Office of Solid Waste educational material.

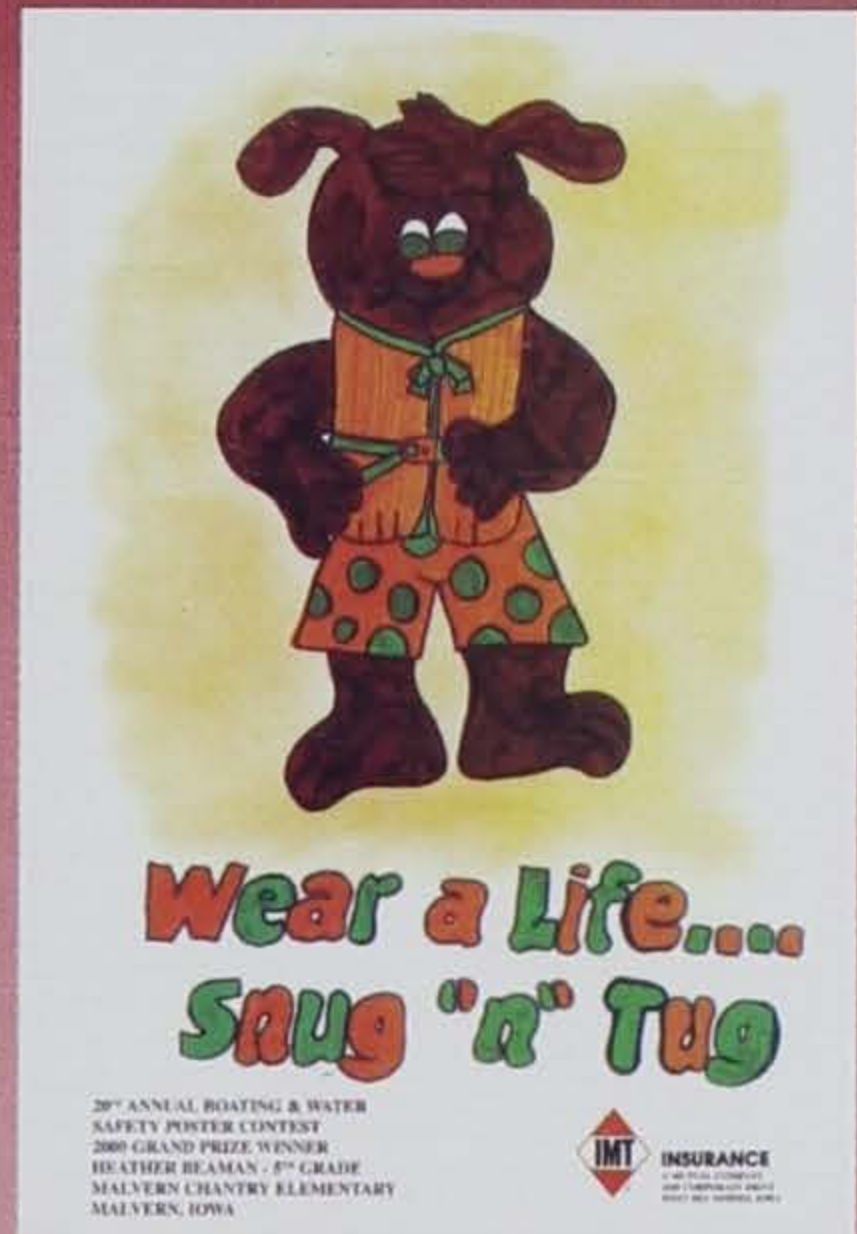
Have You Seen This Bird?

Department of Natural Resources staff are looking for helping in determining if one of Iowa's rarest nesting bird — the peregrine falcon — has returned to the cliffs of the Mississippi River.

Department officials are asking the public to report any sightings of peregrines along the Mississippi River, which will aid in efforts to restore the bird to its natural habitat. Posters are being distributed to help identify the bird.

Peregrines are easily recognized by a dark head and a dark stripe through their eyes, giving them an appearance of wearing a helmet or having a thick moustache. Their wings are slate gray and their underside is buff to dark brown colored, with distinctive black barring.

Anyone observing a peregrine is asked to call toll-free 1-877-575-2860.



Malvern Student Wins DNR Water Safety Poster Contest

Heather Beaman, a fifth-grade student at Malvern Chantry Elementary School in Malvern, was the first-place winner in the 2000 Water Safety Poster Contest.

The theme of this year's contest was "Boat Smart from the Start, Wear Your Life Jacket." Beaman was awarded \$100 for her winning entry.

Katelynn Melby and Carissa Bentz, sixth graders at East Monona School in Moorehead, took second and third place honors respectively. Melby received \$50 and Bentz \$25.

"The objective of this contest is to develop water safety awareness among young Iowans, who in-turn influence their family and friends," said DNR Recreational Safety Coordinator Sonny Satre.

Each year the DNR, in cooperation with the U.S. Coast Guard Auxiliary, Des Moines Power Squadron and Midwest Regional Water Safety Council, conducts the Boating and Water Safety Contest in conjunction with Iowa Safe Boating Week. Prizes for the contest were provided by IMT Insurance, cosponsor of the event.

Conservation Update

Gov. Vilsack Signs Iowa's Intoxicated Boater Law

A new law that went into effect this year makes it illegal to operate a motorboat or sailboat on Iowa waters while intoxicated.

Iowa's new intoxicated boater law is modeled after the state's intoxicated motor vehicle law. The law establishes a 10 percent blood-alcohol concentration limit for boat operators and gives officers implied consent to conduct breath or urine tests on boat operators.

First offense operating a motorboat or sailboat while intoxicated is a serious misdemeanor and punishable by at least 48 hours in jail and a \$1,000 fine, loss of boat operating privileges for one year and substance abuse evaluation and treatment.

Second offense is an aggravated misdemeanor punishable by at least seven days in jail and fines of \$1,500 to \$5,000, loss of boat operating privileges for two years, substance abuse evaluation and treatment, and completion of a drinking drivers course.

Third offense is a class D felony punishable by 30 days to one year in jail and a fine of \$2,500 to \$7,500, loss of boat operating privileges for six years, substance abuse evaluation and treatment and completion of a drinking drivers course.

Refusing to submit to a breath or chemical test upon first offense could result in a \$500 fine and a one year suspension from boat operating privileges. Second offenders who refuse to submit to a test face a \$1,000 fine and suspension of boat operating privileges. Third time offenders are subject to a \$2,000 fine and suspension of boat operating privileges. Those found to be operating a motorboat or sailboat while under suspension could face additional jail time and a \$1,000 fine.

The law does not ban alcohol consumption on a vessel, so long as the operator is not legally intoxicated. It went into effect July 1.



Governor Thomas Vilsack shakes the hand of William Sanders after signing House File 2331 — Iowa's intoxicated boater law. Sanders' wife, Dona, was killed in an alcohol-related boating accident on Saylorville Reservoir July 30, 1999, which provided the impetus for passage of the bill. Pictured behind Sanders and the governor are, left to right: Rex LeCocq, of the U.S. Power Squadron; Sonny Satre, DNR recreational safety coordinator; Kevin Szcodronski, DNR executive officer; Rep. Charles Larson Jr.; Rep. Dennis Parmenter; Don Paulin, retired DNR deputy director; Rep. Teresa Garman; Larry Wilson, DNR deputy director; and Rep. Scott Raecker.



Wind turbines tower over a farmstead north of Alta. The communities of Alta and Storm Lake are sponsoring Windfest 2000, scheduled for Sept. 23 in Alta, in recognition of the 259 wind turbines located in those communities.

WindFest 2000 Celebration Set For Sept. 23 in Alta

Iowans have a chance to learn more about and celebrate renewable energy in Iowa at the WindFest 2000 set for Saturday, Sept. 23, in Alta.

The communities of Alta and Storm Lake are co-hosting the celebration to honor the 259 wind turbines surrounding the two communities. The family festival will include energy and environmental displays, children's activities, a town barbecue, arts and crafts, a bike ride through the wind farm, wind farm tours and a street dance. Activities have been planned throughout the day.

Last year's event drew between 3,000 and 5,000 people who were interested in learning more about renewable energy through fun family activities.

For more information contact Jeff James, Alta Chamber of Commerce, at (712) 284-1234, or Michelle Munoz, Storm Lake Chamber of Commerce, at (712) 732-3780.

Volunteering Today For A Better Iowa Tomorrow

Friends of Lacey-Keosauqua State Park — Five Years Of Making A Difference

What a difference five years can make when a group like the Friends of Lacey-Keosauqua State Park gets involved.

Formed in 1995, the group numbers around 60 local community members. In its brief history, the group has helped maintain signs, identify trails in need of repair or upgrading, and gather public input regarding major projects at the park, such as restoring buildings built by the Civilian Conservation Corps in the 1930s and 1940s. The friends group has also been a strong advocate of enhancing the lake trail, restoring the historic bath, lodge and shelter houses and ensuring the bath house and concession stand are open.

The group has also been successful in raising funds for specific projects to benefit all visitors to the park. In 1999, the group raised money for playground equipment, assisted in the site location for the playground and helped construct it with help from the DNR's AmeriCorps trails crew. It also donated a stove for the kitchen of the restored lodge.

Lacey-Keosauqua State Park, located in south-eastern Iowa near Keosauqua, is named after Iowa's U.S. Rep. John F. Lacey. Often referred to as the "Father of American Conservation," Lacey served as Representative for Iowa's Sixth

District from 1889 to 1891 and again from 1893 to 1907. He authored the first national legislation for wildlife protection—the Lacey Act—which created stiff fines and penalties for anyone convicted of interstate shipment of illegally taken game or their body parts.

The Friends

of Lacey-Keosauqua State Park are continuing Lacey's proud tradition of conservation by volunteering as caring stewards of Iowa's natural resources.

Volunteering Today For A Better Iowa Tomorrow is a feature recognizing those individuals and organizations making a difference in Iowa through volunteer efforts.



Todd Fritz

Upcoming NRC and EPC Meetings

The dates and locations have been set for the following meetings of the Natural Resource Commission and Environmental Protection Commission of the Iowa Department of Natural Resources.

Agendas for these meetings are set approximately 10 days prior to the scheduled meeting date. For additional information, contact the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034.

Natural Resource Commission:

- July
No meeting
- August 10
Storm Lake
- September 7
Ft. Dodge
- October 12
Sidney
- November 9
Des Moines
- December 7
Des Moines

Environmental Protection Commission:

- July 17
Des Moines
- August 21
Des Moines
- September 18
Des Moines
- October 16
Des Moines
- November 20
Des Moines
- December 18
Des Moines

Personal Watercraft Safety

Picture yourself at the lake on a nice, warm, beautiful, Iowa summer day. Now, relax, close your eyes, breathe deeply, and I'm going to give you two little words and test your reaction. Ok, ready? "Personal watercraft."

If you go to the lake a lot, you've probably had one of two reactions. You either smiled and pictured yourself sailing across the water on a jet-propelled watercraft or your blood pressure shot up into the red zone.

When it comes to Jet Skis or Waverunners, people either love them or hate them. Very rarely are people ambivalent toward them. I found that out at the Iowa State Fair last year.

I'm one of several officers assigned to the Personal Watercraft (PWC) Enforcement and Education Team. We've received training operating personal watercraft and use them on loan from the manufacturers for enforcement and education activities (manufacturers loan them to us in the interest of seeing their products being used safely and legally). We had an exhibit at the State Fair. The PWC on display prompted one person to comment lakes should be divided in half for PWCs and anglers. When I asked who would get which half, he said PWCs would get the bottom half. Other people said PWCs should be outlawed. My response then and now is PWCs are here to stay. Although sales have leveled and actually dropped off lately, up until now, PWCs have been the fastest growing form of recreation on water.

Consider the statistics. PWCs account for about 10 percent of Iowa boat registrations, but last year they accounted for 40 percent of Iowa's boating accidents and 35 percent of boat accident injuries.

Why? I'll let you in on a little secret. PWCs are fun to ride. Personally, I prefer a 17-foot canoe gliding through a riffle on a secluded river, but PWCs are fun. Things that are fun get high use and are on the water a lot. So what happens?

A lot of the accidents are from collisions, especially when two PWC operators attempt to "spray" each other. This is illegal, given Iowa's boating speed and distance laws. Another cause of accidents is "wake jumping," where a PWC jumps a boat's wake and collides with another boat. These first two types of accidents often result in an unplanned abandoning of the ship where the operator is thrown and injured.

Another big factor in PWC accidents is loss of control. Many people buy these watercraft with absolutely no experience operating them. What they often don't realize is a jet-propelled boat must be under power to steer. If you are flying down the lake, and all of a sudden another boat, dock or other

fixed object appears in front of you, what is your reaction? Slam on the brakes? Don't have any. Typically, the secondary reaction is to back off the throttle. The Result? You lose all ability to steer and smack!

This happened on the Iowa River once when a PWC met an oncoming boat. Both performed evasive turning action, unfortunately both turned in the same direction. The PWC operator backed off the throttle, realized he couldn't steer, panicked and promptly abandoned ship. The riderless PWC struck the oncoming boat in the bow. Thankfully no one was hurt.

During our PWC operators training, we've practiced on marked courses. We know how the machines work. We know they can be fun, but like any other boat, they and the water itself demand total concentration and respect. The time you take in learning the same can help you enjoy the water safely.

One last story. I was working from my Polaris PWC on North Twin Lake when I noticed a guy on a PWC, larger than mine, roar past me. What I didn't see was a life jacket. So, I throttled up and pursued. It became quickly clear he was focused on his need for speed. I don't know how fast we were going, but let's just say I was hanging on and white-knuckling the handgrips.

He finally slowed down and I caught up and pulled him over. I looked and saw he was SITTING on his life jacket. At 60 miles an hour, being thrown onto the water is comparable to being thrown onto the street. You can easily be knocked unconscious. I saw this demonstrated on the Iowa River where a PWC hit a standing wave at about 30 miles an hour. The ensuing bounce caused the steering yoke to strike the operator in the face, knocking him silly and ejecting him from his vessel. He was wearing a life jacket. If he had not been wearing a life jacket, like the guy on the larger PWC, he would have been seriously hurt. Wearing a life jacket is the best idea for ANY boat. Have fun. Be safe.

by Chuck Humeston

Parting Glance



Ty Smedes

Whew! Can it be they are ALL sleeping . . . at the same time?

