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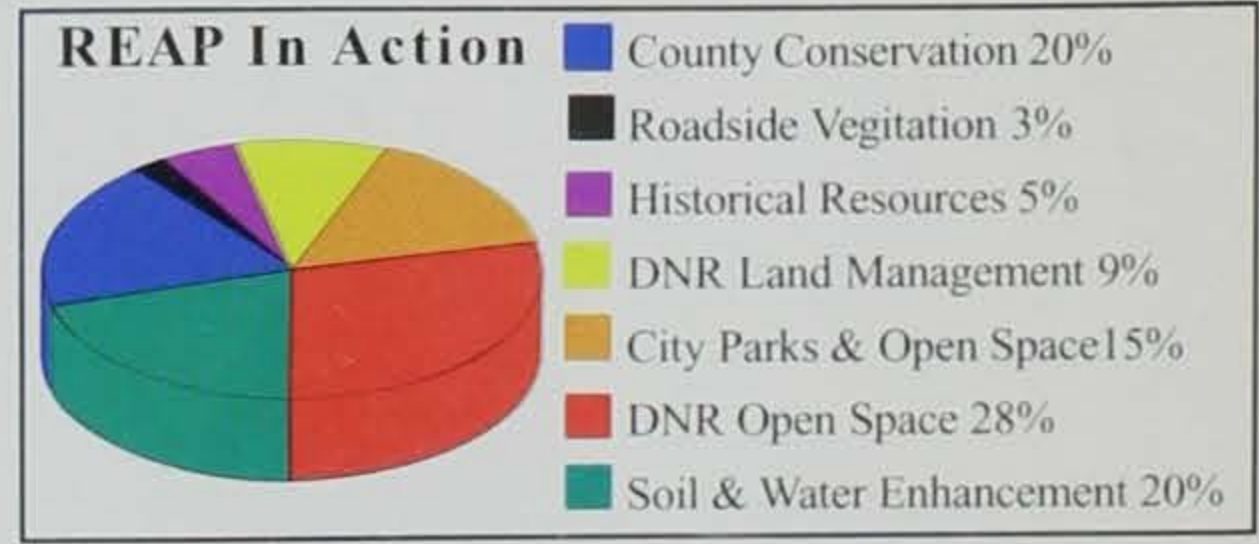
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The Best Laid Plans:

What Happens When Conservation Efforts Work Too Well?

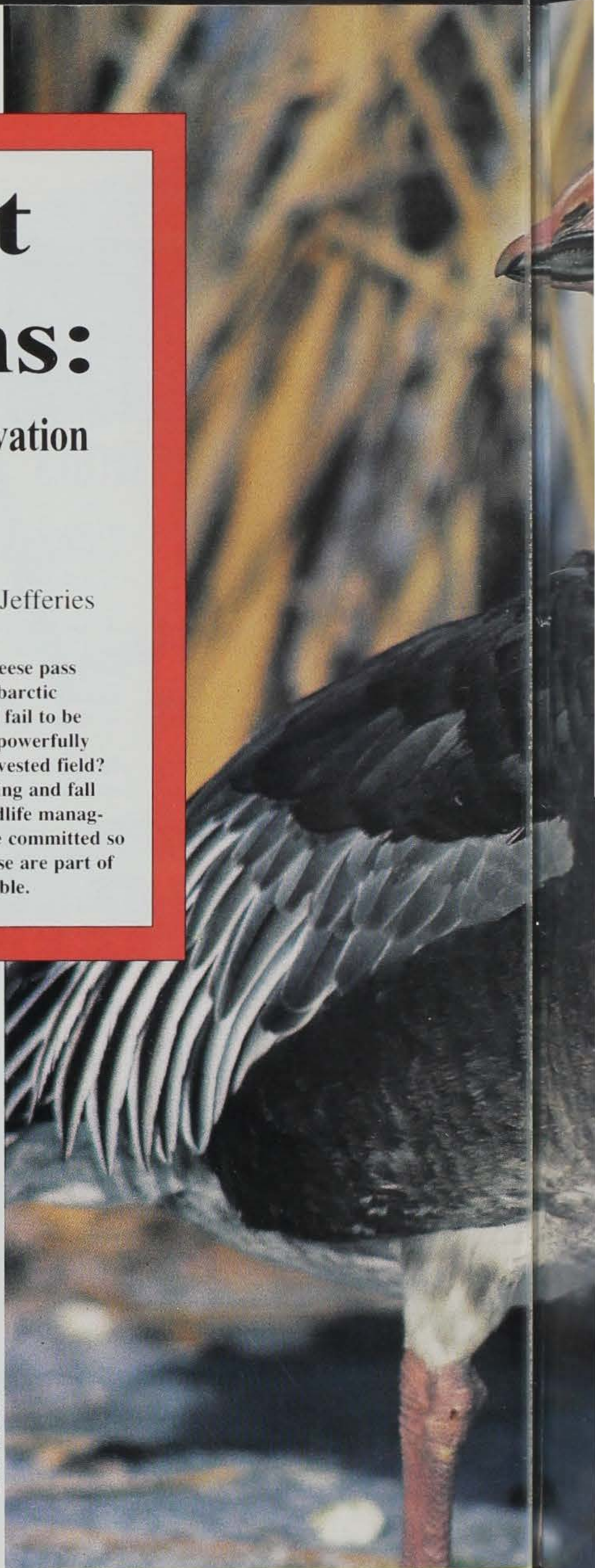
by R. F. Rockwell, K. F. Abraham and R. L. Jefferies

Each spring and fall vast, undulating skeins of snow geese pass overhead, noisily making their way north to arctic and subarctic breeding grounds or south to wintering areas. Who could fail to be awed at seeing thousands of these striking birds speeding powerfully overhead or rising in a massive swarm from a freshly harvested field? For many of us, their migrations herald the arrival of spring and fall each year. It's not surprising that so many biologists, wildlife managers, hunters, naturalists and other concerned citizens have committed so much time and effort to preserving these birds. Snow geese are part of our natural heritage and their absence would be unthinkable.



Ken Formanek

Lowell Washburn





Thanks to the adaptability of these birds and to conservation efforts in the United States and Canada, the snow goose population in the central portion of North America has grown nearly 300 percent since the 1960s. Researchers estimate this population, which breeds primarily along the shores of Hudson Bay and Foxe Basin, and winters from Iowa and Nebraska south to the Gulf Coast, now numbers more than three million birds in midwinter. At a time when many species of birds are declining and others are becoming extinct, you would think the snow goose's burgeoning population would be cause for celebration. Instead, scientists are concerned the increasing numbers of geese may soon lead to an ecological catastrophe as these voracious feeders turn the delicate arctic habitat they inhabit into a barren wasteland.

How did this dire situation come about? And what can be done to alleviate the problem? To understand this dilemma, it is important to trace this species' long-term history and see what a profound impact human actions have had on their numbers. Most snow geese in central North America originally wintered in brackish marshes along the Gulf Coast in Texas and Louisiana. Destructive feeders, they grubbed-out and consumed tubers and roots of marsh vegetation with their large, serrated beaks. But the food resources in these natural marshes were finite and acted as a control on the goose population. As the numbers of geese exceeded their available food supply, the birds' mortality rate would increase, reducing their population to a level their traditional wintering areas could support.

In the two decades following World War II, many coastal marshes were lost or severely degraded through increased commercial development. At the same time, however, farmers increased the production of rice crops on private lands adjacent to the birds' traditional coastal wintering grounds. These agricultural areas provided at least a million acres of wintering habitat with abundant food, not only in the post-harvest rice stubble, but in



At the La Pérouse Bay study area, researchers erected goose-proof barriers in selected areas to document the effects of geese on the habitat -- inside the barrier, lush vegetation; outside, a barren wasteland.

adjacent soybean fields and pastures. The winter populations of snow geese began to increase and the birds extended their range northward, feeding on rice fields up to 150 miles inland from the coast.

Converting inland grasslands to agricultural croplands was an absolute boon for the geese. The crops provided the ever-increasing numbers of geese with a large food subsidy, so the depletion of the winter food supply in their traditional winter habitats no longer acted as a population control on the birds. Their winter mortality decreased significantly, their body condition in spring improved, and their reproduction rate increased markedly.

Federal and state agencies further expanded the winter range and migration staging areas of the snow geese by developing national and state wildlife refuges on the northern prairies. These refuges were intended to restore wetland habitat for breeding and migrating waterfowl. Wildlife managers at the refuges manipulated crops to provide food for the birds -- a practice that augmented the large food subsidy the geese were already reaping from private lands where agricultural activity had also increased.

Although hunting pressure was initially intense in areas adjacent to the refuges, political lobbying in the 1970s brought changes, including the establishment of no hunting zones and restricted goose harvests. The combined effects of less hunting pressure and increased food subsidies contributed to a nearly 50 percent reduction in adult mortality (from 22 percent to 12 percent). This reduction was also influenced by a decline in both the number of hunters and the number of days they hunted.

The size of the winter snow goose population increased dramatically as it readjusted to the extensive increase in the quantity and quality of the foraging habitat, both on their wintering grounds and along their migratory flyways. The

growth of the goose population in central North America was stimulated further during the late 1960s and 1970s by a temporary warming trend in the Hudson Bay and Foxe Basin nesting region, resulting in an earlier spring melt, earlier nesting, and increased reproductive success.

Much of our information on the growing snow goose population in central North America and the birds' effect on their coastal tundra

breeding habitat comes from a long-term study of the goose colony at La Pérouse Bay near Churchill, Manitoba, in Canada. When studies began there in 1968, approximately 2,000 pairs of snow geese were nesting in the willow and lyme grass fringes of the coastal salt-marsh. By 1990, the colony had grown to 22,500 pairs -- an average annual increase of nearly eight percent. Although much of this account is drawn from that study, research at several other nesting sites indicates the results are applicable on a broad scale.

Like most arctic breeding geese, snow geese accumulate the nutrient reserves they will need to produce and incubate their eggs during their spring flight north. They also feed at the breeding colony while they search for a nest site and begin laying eggs. Because the geese arrive before the vegetation has begun growing, they initially feed by grubbing below the surface to get the nutrients stored in the roots and rhizomes of plants. By mid-June, grasses and sedges are growing, and the adult geese and their broods of goslings graze on the above-ground portion of their salt-marsh forage plants.

As the population at La Pérouse Bay grew, the overall demand for food

Robert F. Rockwell



Lauraine Armstrong

Grubbing by geese sometimes causes salts to move to the soil surface, killing many plants: A dead willow forest (below). A pond formed by erosion caused by grubbing geese (below left).



Robert F. Rockwell



Robert F. Rockwell

throughout the season increased. But grubbing had the most serious impact on the ecosystem. When adults grub for roots and rhizomes early in the season, they destabilize the thin arctic soil so melting snow and spring rains can cause erosion. In some instances, ponds form and are then enlarged each year as the birds grub along the edges. As the number and size of these ponds increase, the amount of available forage declines.

The damage caused by the birds' grubbing at La Pérouse Bay was made worse by a series of late spring seasons in the high arctic. Geese from more

northern colonies delayed the last portion of their migration and continued to feed at southern colonies. In 1984, for example, more than 100,000 staging geese destroyed much of the vegetation on one of the main brood-rearing areas on the east side of La Pérouse Bay in less than three days.

Beyond simply removing plants, foraging by snow geese -- especially grubbing -- leads to other changes in the coastal ecosystem. When the vegetation is removed, evaporation from the soil surface increases and inorganic salts from underlying sediments move to the surface, raising

soil salinity. As salinity increases, the growth and survival rates of forage plants in the coastal marsh decline. Willows and other vegetation immediately adjacent to the marsh begin dying as the process intensifies. Ponds and bare soil dry out and the surfaces crack. Ultimately, all that remains is a barren forest of dead willows and a few nearly inedible plants capable of surviving in soil with a salinity level that sometimes reaches three times that of sea water.

Thus the chain of events that began with a single species in a simple food chain, rapidly consuming the limited food resources, ultimately leads to the

deterioration of the entire ecosystem. The unfortunate consequence of this phenomenon (called a trophic cascade) is that staging, foraging, and nesting habitat are lost -- not just to snow geese but to all the other species sharing the marsh and adjacent areas. These include other species of waterfowl, shorebirds, marsh birds, upland birds and numerous [song-birds].

For snow geese, the decline in the quantity and quality of foraging habitat at La Pérouse Bay has led to decreases in the size and survival rate of juvenile geese and a reduction in the reproductive success of the adults that continue to use the traditional nesting and foraging areas. You might suppose this would slow the growth of the goose population and ultimately place a cap on its size, much as the limited winter food resources in the Gulf Coast marshes once did. Unfortunately, this has not been the case. As conditions worsen, increasing numbers of adults are moving to adjacent areas to nest and raise their goslings in coastal marshes not yet as degraded as their traditional breeding sites. The success of these dispersers is sufficiently high that the more widely distributed population continues to grow. And with it, the process of population growth, habitat degradation and dispersal continues to

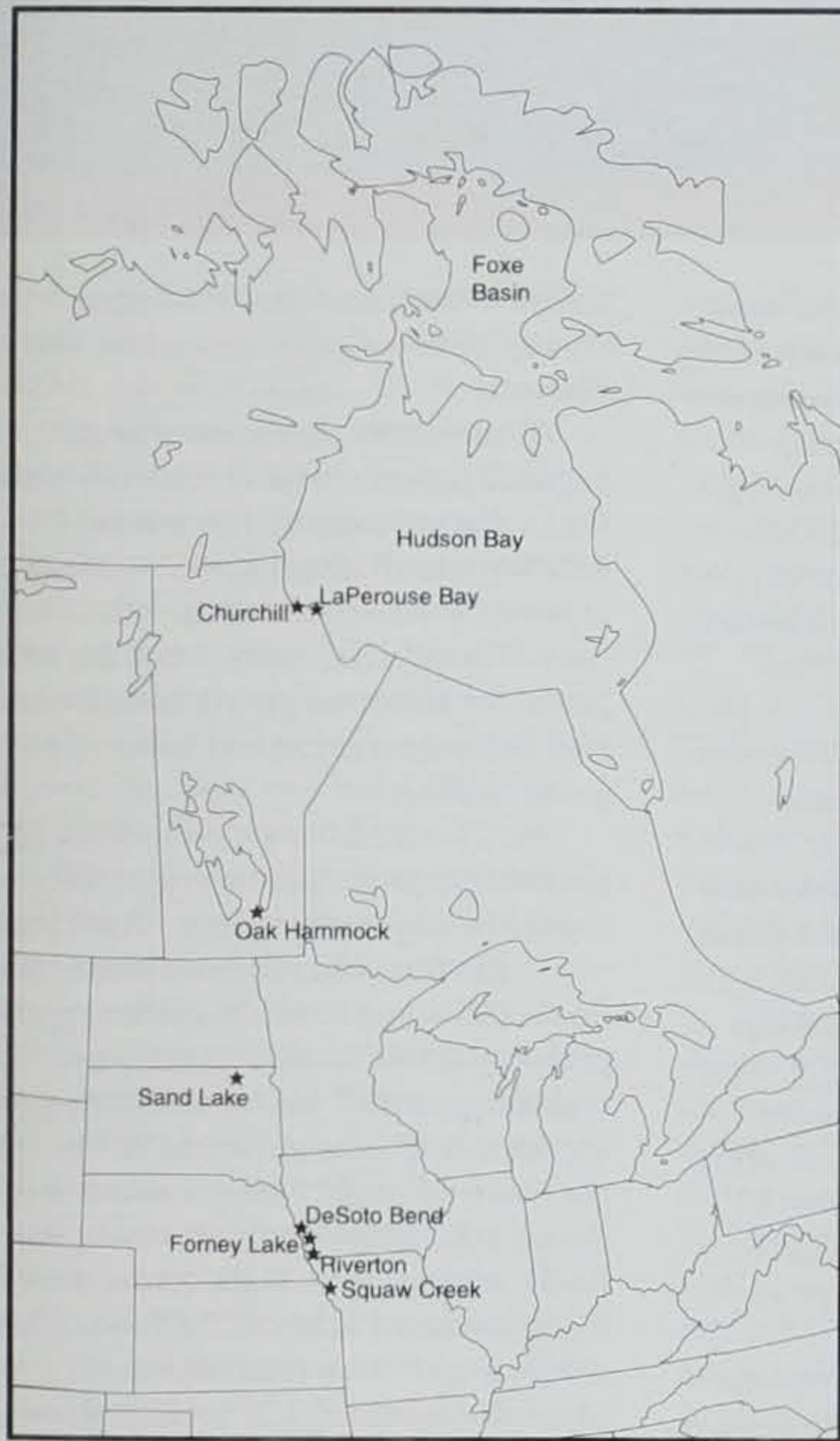
Proposed solutions to the snow goose problem include much more liberal hunting restrictions and allowing native peoples to harvest more goose eggs.



Lowell Washburn



Lauraine Armstrong



Refuges in Manitoba, South Dakota, Iowa and Missouri play a key role in snow goose migration (see "Too Many Snow Geese" page 10).

The decline in the foraging habitat at La Pérouse Bay (below) has led to decreases in the size and survival rate of juvenile geese, but it hasn't slowed their population growth. The birds keep spreading into other less-disturbed areas.



Lauraine Armstrong

spread across an ever-expanding geographic area.

In addition to La Pérouse Bay, there are at least three other sites on Hudson and James bays where habitat deterioration and trophic cascades have also begun. This process will continue until adequate forage no longer exists for the members of the dispersing goose families. By that time, miles of coastline and the habitat of numerous other species of birds will have become seriously degraded. And because of the high salinity, cold temperatures, and short growing seasons in these areas, it will take decades for these habitats to recover.


The most hopeful aspect of this saga is the problem may have been identified in time to take action that can minimize further destruction of the sensitive arctic coastal ecosystems. The United States and Canada have

established a joint habitat study group composed of researchers and land managers to examine the ecological impact of geese and develop a plan to reduce the numbers of this successful species to a level that does not threaten the ecological integrity of its breeding habitat. Proposals on the table include increasing traditional egg collecting by Native Americans, liberalizing hunting regulations for snow geese and establishing special hunting seasons. The success of these actions -- and even whether they can be implemented at all -- depends on the willingness of a large and diverse community of scientists, wildlife managers and naturalists to cooperate in the endeavor. One thing we must all do is to try to alter our traditional focus on the conservation of single species, whether they are rare or abundant. The dilemma of the snow

geese is not simply that there are too many gaggles of geese but that these birds are only one member of a diverse and fragile arctic ecosystem. That ecosystem and all its members require and deserve our attention.

The authors are all members of The Hudson Bay Project, a charitable corporation dedicated to studying coastal arctic tundra ecosystems. Robert F. Rockwell is an ornithologist at the American Museum of Natural History, Kenneth F. Abraham is a biologist at the Ontario Ministry of Natural Resources and Robert L. Jefferies is a botanist at the University of Toronto.

Reprint from *Living Bird*, Winter 1997, Volume 16, No. 1, pages 16-23.



Baiting, live decoys, electronic callers and unplugged shotguns — waterfowling tools so deadly their use has been outlawed for nearly a half century. But many of today's waterfowl professionals are saying the time has come to put these, along with other deadly hunting techniques, back into the hands of contemporary goose hunters. It's all part of an emerging new philosophy that seeks a solution to the growing dilemma of . . .

TOO MANY SNOW GEESE

by Lowell Washburn

The mass migration of lesser snow geese down Iowa's Missouri River valley represents one of the world's most dramatic wildlife spectacles. Flocks returning to nighttime roosting areas number in the tens, even hundreds, of thousands. During the day, flocks of field feeders turn the hillsides white; and foraging geese are often measured by the acre.

Individual concentrations become so immense they almost transcend comprehension. On a good year, the counties on Iowa's western border may harbor more than a million white geese. During the peak of spring and fall migrations, this awesome assemblage represents the largest grouping of snow geese to be found anywhere on the planet. Outdoor enthusiasts from across the nation come to see the event firsthand. And all who witness the show agree it is a sight and sound without parallel.

But while escalating snow goose hordes are indeed impressive to observe, they are at the same time presenting contemporary wildlife managers with an unprecedented dilemma. When distilled to its simplest form, modern-day snow goose management can be best described as a program victimized by its own success. On the tundra, the birds have become numerous to the point of destroying historic, arctic breeding grounds. Not only do the birds threaten their own existence, but jeopardize that of other migratory waterfowl and shorebird species as well. In an effort to stem growing populations, biologists have lengthened hunting seasons and liberalized bag limits -- all to no avail. Contemporary snow geese have become nothing less than a species out of control.

"To really understand the problem we're dealing with, a person needs to look at how snow goose behavior has changed during the past two decades," says DNR Waterfowl Biologist, and


current Chairman of the Mississippi Flyway's Snow Goose Committee, Guy Zenner.

Traditionally, lesser snow geese migrated through Iowa in relatively small flocks that covered the entire state. Relatively few Canada geese were bagged in the state during the 1950s, '60s and early '70s. Consequently, when the snow goose flocks arrived during mid-October they became the bread and butter of Iowa goose hunting.

However, during the mid-1970s, snow geese began to adopt a new and radical change in migration strategy. Agriculture was expanding, and suddenly places like South Dakota and even Manitoba began to produce significant amounts of corn. The high-energy ration has an almost magnetic appeal to migrating geese and before long the entire fall flight of lesser snows was showing a distinct westward trend. As flocks adjusted their flight course, they found increased safety in the form of large refuge areas -- Oak Hammock in Manitoba; Sand Lake in South Dakota; DeSoto Bend, Riverton and Forney Lake in Iowa; and Squaw Creek in northern Missouri (see map page 9).

The birds that found these refuges grew fat, lived longer and returned again each autumn. By the late 1970s, the population of lesser snow geese had grown to at least a million and a half birds. Iowa hunters were harvesting more than 40,000 snows annually (up substantially from the average of 15,000 during the 1960s); and counties bordering the Missouri River were enjoying the best snow goose hunting in history. The dismal flip side was that, in a matter of five short years, the rest of the state had completely lost its migration of white geese.

To many, it appeared as if western Iowa's goose hunting bonanza would last forever. But such was not to be. Unexplainably, as goose numbers continued to soar, harvest began to decline sharply. By the mid-1990s, biologists estimated that the population of lesser



snow geese had risen to an incredible five million birds. Some speculated the number was even higher. But in spite of the fact the continental population had at least tripled and Iowa's Missouri River counties were now hosting record numbers of fall migrants, the harvest had continued drop to an average of around 5,000 geese per year. "By then it had become painfully apparent that we were dealing with a refuge-hopping population of geese that were surviving much too well for their own good," says Zenner.

The extent to which this survival had impacted the population structure of the lesser snow goose was documented, in part, by a study conducted on a major breeding colony located at La Pérouse Bay in the Canadian arctic. Biologists band about 4,000 geese from this flock each summer. During the 1980s, two-year-old adults made up the most frequently observed age class of nesting birds. But by the mid-'90s, the presence of previously banded birds revealed the average age of the colony's nesting adults had reached an amazing 11 years old. By then, the birds were having a very detrimental effect on their breeding grounds, and biologists in the arctic were reporting poor growth and survival among snow goose broods. Lack of natural forage was forcing broods to become more mobile; and becoming more mobile meant increased vulnerability to predators, such as arctic fox and snowy owls.

But in spite of increasingly poor breeding success, snow goose numbers continued to increase while the hunter's bag continued to decrease. Season lengths and bag limits were increased, all to no avail.

It was at this point that waterfowl biologists began to grasp the magnitude of the problem. It soon became apparent that it would take an entire rethinking of the management process as well as some radical changes in policy to bring the mid-continent snow goose population under control.

"I think the time has come for us to

seriously review some of the tools that might effectively allow us to harvest an increased number of snow geese in the Central and Mississippi flyways," says Zenner. For starters, those "tools" could include the use of unplugged shotguns, live decoys, electronic callers, and the spreading of bait (corn).

"Earlier this century we set those tools aside because they worked too well. Today, the time has come to put those techniques back into the hands of hunters. Of course, we'll have to do it carefully because, at this point in time, we don't want to reduce the numbers of any other species other than snow geese."

"For all of our professional lives, [biologists] have been geared toward increasing waterfowl populations," says Zenner. "But with snow geese, there is no question that we've been too successful. For the first time in the history of waterfowl management, our goal is no longer to have a population that is higher, but is rather to actually have one that is smaller," Zenner says.

"One of our immediate tasks," says Zenner, "is to somehow alter the migration pattern of contemporary geese." That won't be easy, and will require a full, 180-degree shift from status quo management. "I think we have a high enough density of hunters to significantly affect snow goose numbers," says Zenner. "But one of our biggest problems is that we aren't putting those hunters in contact with the geese often enough to make a difference."

"To have a substantial impact, I'd like to see the flyway harvest increase to a level three times what it is now. That won't be easy, and we'll never attain that goal until we change the birds' refuge-oriented behavior," he adds.

"One of our biggest challenges will be to create major changes within the refuge system. We need to make the big, heavily used refuges so unattractive to snow geese so that they'll be forced to do something else," he says.

Exactly what that "something else" may be is certainly open to speculation. Some managers are hopeful it would result in a redistribution of geese across the flyway, ultimately leading to increased hunter exposure and harvest. Some biologists, however, fear that "pushing birds out of the refuges" would merely lead to a more rapid migration to the rice fields of Texas and Louisiana. Other experts argue that isn't likely to happen because migrating snow geese are currently in much poorer physical condition than they were during the '60s and '70s. Young geese no longer attain adequate fat reserves while in the arctic. And after leaving the tundra to fly nonstop across Canada's boreal forest region, the undernourished young literally "fall from the sky" upon reaching the Manitoba wheat country. In order to replenish what little reserves they had, juvenile birds must have grain (wheat or corn) and plenty of it. Even if hunting pressure was increased substantially, snow goose flocks would be unwilling or unable to make a "fast migration" -- at least that's how the theory goes.

"The truth of the matter is that no one really knows what the birds will do if we adopt radical new hunting strategies, or if we make the current refuge system totally unattractive to migrating snow geese," says Zenner. "But this much we do know. Fully one third of North America's arctic nesting habitat has already been severely degraded by snow geese. Another third has been negatively impacted to the point where there are obvious physical changes," he adds. "Like it or not, we stand at an important crossroads. As wildlife professionals, we have already decided that 'doing nothing' is not an acceptable option."



FROM RAGS TO RICHES

Article and photo by Lowell Washburn

RIVERTON: By 5:30 a.m. most area goose hunters can be found at Riverton's Waterfowl Cafe. Here, amid stacks of piping hot flapjacks, bacon and eggs, and steaming cups of black coffee, hunters noisily discuss the day's game plan.

But one face you probably won't see at this community focal point is that of Doug Phillips. Chances are he's already hard at work in a nearby cornfield, hurriedly placing decoys by the harsh glare of pickup lights.

It isn't that Phillips is antisocial. He's not. It's just that when your goal is to have more than a thousand goose decoys in place by sunrise, you have to get an early start. Phillips is one of a growing breed of Iowa waterfowl

Doug Phillips laying in Texas rag set near Riverton.

enthusiasts who hunt snow geese over huge and somewhat outrageous spreads of decoys commonly referred to as "Texas rag sets."

According to Phillips, there is a good reason why such a massive spread is needed. As southbound flocks of snow geese migrate down Iowa's Missouri River valley each autumn, they tend to concentrate in huge flocks that can number anywhere from 20,000 to more than 200,000 birds. (At times the combined total of flocks using DeSoto Bend National Wildlife Refuge, Riverton Wildlife Area and Forney Lake may approach one million birds.)

For goose hunters, it often becomes the ultimate stress test as snows feed in huge flocks that completely ignore traditional decoy spreads containing 200 or 300 conventional field decoys. It was nearly ten years ago that Phillips decided to make the switch to Texas rags and he has never regretted the move.

According to Phillips, the formula is simple. On the day before a hunt, he simply follows goose flocks from a concentration point, usually the Riverton Wildlife Refuge, to the area the birds feed. The next step is to gain permission to hunt in the field, or at least in the general vicinity of, where the geese feeding.

Phillip's spread may end up covering an area 40 yards wide by 100 yards long. He always places the set on the field's highest hilltop or ridge, allowing him to pull flocks from up to three miles. On the downwind side of the rig, he places a few dozen full-bodied field shells for a more convincing effect.

Since this kind of setup requires a fair commitment of time, Phillips prefers to hunt with anywhere from three to five companions who share the work -- and the shooting. In

addition to the use of unconventional decoys, hunting over a Texas rag set makes a sharp break with tradition in other ways. In sharp contrast to other types of waterfowl hunting, concealment is not a problem. In this game, there are no sunken pits or cumbersome grass blinds. The hunters simply hide themselves by donning white coveralls and then sitting right out in the open among the decoys. "In essence, the humans merely become extra decoys," says Phillips. Even movement isn't a problem here. So what if you become a bit restless? You'll just look all the more like a foraging snow goose.

From a distance, Phillip's decoy rig looks very convincing, both to passing geese and to the other hunters who, at first glance, think they've located a thousand feeding geese. But up close, the decoys . . . well . . . they don't look very real at all. In fact, they look just plain awful. At first glance, the spread could be said to resemble the aftermath of a wind storm at the landfill or perhaps what it would look like immediately following an explosion at the diaper factory.

"That's why our Missouri River goose hunting is so dependent on having good production years in the arctic and lots of young geese in the fall flight," says Phillips. "During years when there are lots of young birds, we have great shooting. In years when there aren't many young geese, the hunting suffers."

According to Phillips, a perfect Texas rag day is one when there is enough wind to give the rags a realistic waddling effect, and lots of birds trading in small flocks of anywhere from 15 to 200 birds each.

"Usually, the old experienced birds will stay up there anywhere from 80 to 100 yards high and refuse to commit to the decoys," says Phillips.

"But if there are a good number of juveniles in the flocks, hunger and ignorance will prevail and they'll start

bailing out for the decoys."

Geese attract geese, and as birds begin to circle the spread, more flocks will often join in until 2,000 geese may be nosily swirling overhead. When that happens, the sound is deafening, and the show is enough to test the nerve of the most seasoned goose hunter.

"We usually try to sit in a line so we can communicate," says Phillips.

"But sometimes the noise is so great that when someone yells 'take 'em,' the hunters on the ends of the line won't hear."

According to Phillips, there have been times when just one goose will bail out for the decoys and when a hunter shoots that bird, the geese swirling overhead don't flare, and more snows may actually start descending to the spread.

"What happens is that the birds haven't even heard the shotgun. That's how loud it can get," he says.

"Sometimes a few birds will actually get into the decoys. Instead of being scared by the rags, the geese will actually start feeding. We've had flocks of mallards do the same thing. Once they're on the ground, they just seem to accept the rags as being real," he adds.

"That's when you find out how well the (coveralls) really work," says Phillips. "I've had geese standing within 15 feet and never know I was there."

As is the case with all brands of waterfowling, hunting over a Texas rag set does not guarantee a goose dinner. But when the weather conditions are right and young birds are in good supply, a party of five or six hunters can often bag their limit of snow geese during a morning's hunt. One of Phillip's fondest memories is that of a foggy November day when he and seven other hunters bagged their limits in almost less time than it had taken to place the decoys.

As Good As Gold

You might not think about alchemy too often, but maybe you should. Alchemy is a "method of transformation, especially the seemingly miraculous change of a thing into something better" and it's happening more and more often in Iowa. We're not talking about magicians turning lead into gold, or finding the secret of perpetual youth. We're talking about transforming a "negative" into a "positive" -- something with value.

Iowa businesses and manufacturers are learning that it pays to transform waste into something better: a material with market value. By rethinking their attitude about waste as a "negative," a business can undertake a little alchemy to transform a waste material with no apparent market value into a commodity of value. This transformation can reduce business costs and may also generate profits.

Manufacturing companies that use waste for their raw materials are an essential component of the recycling loop. They can bring jobs and revenue to local economies. The recyclables a community or region collects and processes can become the raw materials for local manufacturing industries or can help attract new businesses.

What follows are two brief examples of Iowa businesses busy transforming waste into products with market value.

by Amy Scott

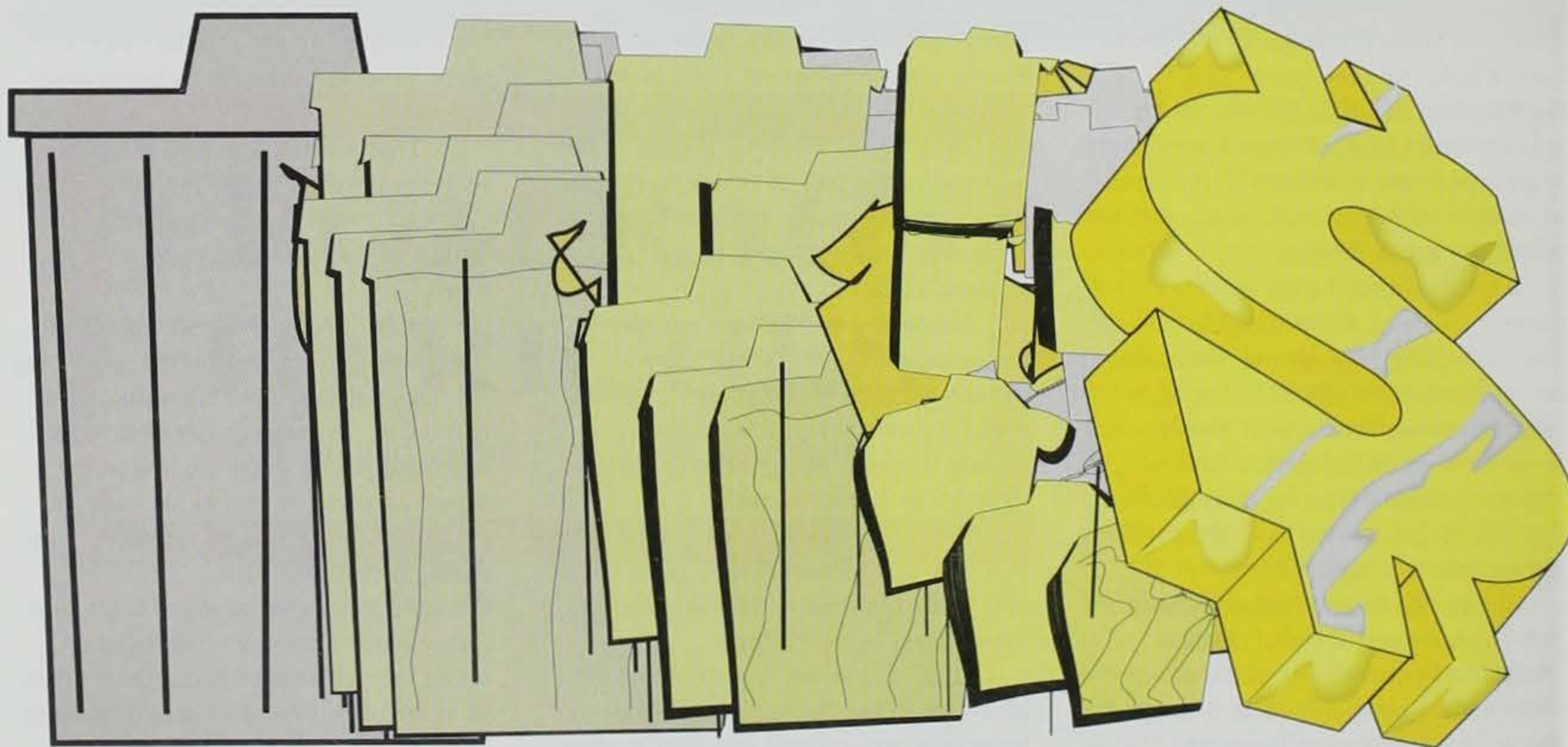


Moulded Fibre Technology, Clinton:

With

financial assistance awarded in December 1995 from the Landfill Alternatives Financial Assistance Program, Moulded Fibre Technology, a company headquartered in Maine, constructed a new facility in Clinton, Iowa, and installed one manufacturing line. The new facility opened in June 1996. The plant produces custom-designed, precision-molded fiber packaging products from recycled newspaper and office paper. Their 100-percent-recycled-content packaging is used by such Midwest companies as Apple Computer, Canon, US Robotics and Motorola. Among the factors Moulded Fibre Technology considered when deciding where to locate their new facility was a reliable supply of the necessary raw materials -- recycled newspaper and office paper. In other words, the company needed to locate in a region with strong curbside and drop-off recycling programs.

The molded fiber manufacturing process line has three stages: the wet end, the former and the dryer. The wet end of the machine mixes the paper and



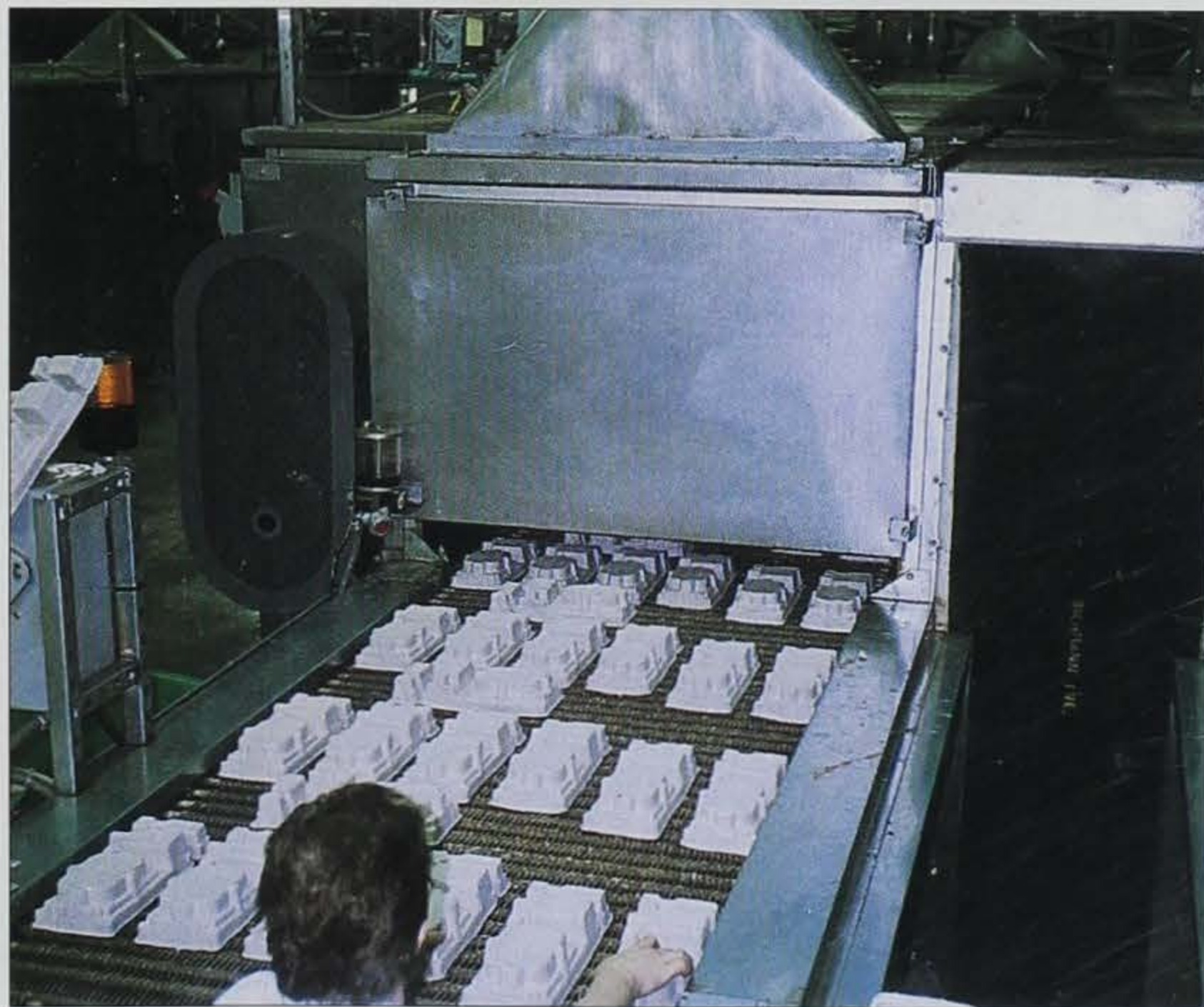
water into a liquid pulp slurry. This slurry is then transferred by pipes to a forming station -- a complex vacuum forming and molding system that produces wet molded product from the liquid pulp slurry. Next, a conveyor belt moves the wet molded product through a 48-foot-long dryer. As the completed molds exit the dryer they are inspected, stacked and then boxed for shipment to customers.

Currently, one manufacturing processes four tons of recycled paper per day using a mix of 80 percent recycled newsprint and 20 percent recycled office paper. On a daily basis, more than three tons of newspaper and nearly one ton of office paper are used. All newsprint and office paper used by the Clinton facility comes from eastern Iowa and all recycled paper originates from curbside and drop-off recycling operations.

In June 1996, seven employees were hired. By January 1997, employment had more than tripled to 25. The Clinton facility runs three shifts a day during the week, and for each shift the line is staffed by seven people.

Moulded Fibre Technology has undertaken additional expansion at their Clinton facility, including construction of a 20,000-square-foot warehouse that was completed this spring. To keep up with demand for their 100-percent-recycled-content packaging product, a second manufacturing line has been installed and is expected to be fully operational this summer. When the second process line is up and running, employment by Moulded Fibre Technology in Clinton will increase by seven people for each shift the new process line runs, with the potential to increase employment by 21 people.

Conveyor of the finished product at Moulded Fibre Technology.



Moulded Fibre Technology

Doing It Right

Product specifications and quality control for waste are important considerations. In order for a waste to achieve its maximum value as a raw commodity, the waste must consistently and reliably meet a client or manufacturer's specifications and be free of contaminants.

Even your curbside and drop-off recycling programs have specifications for the materials collected and recycled. Containers



Ron Johnson

designated solely for newspaper should only have newspaper in them -- no cardboard, no pizza boxes or anything

else. If the only plastics your recycling program accepts are #1 and #2 plastics, take the time to check the bottom of the containers you're recycling, so you aren't contaminating the collection with unwanted plastics. Contamination increases the

cost of processing recyclables.

If you are not sure an item is recyclable or don't know where to recycle it, call your local solid waste hauler, re-

cycling facility or city hall to get the information you need to recycle correctly.



Shine Bros., Spencer:

In western Iowa, a long-established business wanted to perform some "alchemy" to reduce their cost of doing business. In December 1994,

financial assistance in the form of a combination zero-interest loan and grant was awarded to Shine Bros., located in Spencer. Shine Bros., a metal recycling operation, has been processing iron and non-iron metals for 95 years. In 1986, the company expanded their operation to include copper and aluminum electrical cable and wire.

The company now

processes 18,000 tons of iron metals and 20,000 of non-iron metals such as copper, brass and aluminum, annually. The bulk of the non-iron metals materials comes from electrical conductors, cable and wire. Special wire chopping and processing equipment separate insulation material from the metal in the conductors, wire and cable.

After processing and recycling the electrical materials, Shine Bros. soon found they were landfilling 5,500 tons of plastic insulation stripped off these items, and paying more than \$50,000 to do it each year. The metals recycler wanted to find a market for the plastic insulation, but it was not a material other recycling operations were handling. Simply separating the insulation from the conductors, wire and cable did not result in a raw material with any obvious market or recyclable value.

Shine Bros. explored alternative uses for the insulation through meetings with waste exchange organizations. Initially, none of the options bore fruit. But in 1994, Shine Bros. confirmed their waste insulation material could be turned into a raw material for use in an animal bedding system being developed by the Miller



Miller Ag Products



Bag Company in Minnesota. However, the Shine Bros.'s waste insulation material needed to be further processed in order to meet Miller Bag's specifications.

Next, Shine Bros. put together a business plan and ensured there would be a market for the product they wanted to develop. The financial assistance from the Landfill Alternatives Financial Assistance program helped Shine Bros. purchase equipment they needed to process the insulation material to their client's specifications. The new equipment washes the stripped insulation to remove any residual metals and unwanted fibers such as cotton, paper and jute. A bagging system was also purchased to fill the animal bedding mattresses with the washed plastic insulation. The bagging process adds additional value to the washed insulation material and increases the company's profit margin on their new product.

The plastic insulation is not used as loose bedding. Instead the washed plastic insulation is used to fill mattresses, or cells, placed into the bottom of excavated stalls. The mattresses are protected by a heavy-duty woven polypropylene top cover. Miller Bag's bedding system for dairy cows first started using recycled plastic from Shine Bros. two years ago. This recycled-content bedding system is currently in use at 24 farms in Iowa and a number of others outside Iowa.

Not surprisingly, in an agricultural state like Iowa, a handy alternative use for some types of recyclables is animal bedding. Farmers in Iowa have a variety of animal bedding systems to choose from -- straw, shredded paper or sand on concrete; rubber matting made from recycled tires, and now mattresses filled with clean, fluffy, shredded plastic insulation stripped off electric cable and wire.

By transforming their insulation waste into a material with market value, Shine Bros. annually saves \$19,000 in transportation costs to the landfill and \$30,000 in landfill tipping fees. The company employs from

three to five additional people to wash and bag the waste plastic insulation. Seasonal variation in product demand accounts for the variability in employment. Of the 5,500 tons of insulation waste material, 20 percent or 1,100 tons, is not usable for the animal bedding system because of the presence of non-plastic fibers or material. Shine Bros. is researching additional uses for this insulation material to increase the amount of landfill diversion and continue to reduce their costs.

Financial assistance is available through the Landfill Alternatives Financial Assistance program to assist eligible applicants in implementing education programs and solid waste management projects that will reduce and divert solid waste going to the landfill. This program is funded with a portion of the tonnage fees assessed on every ton of solid waste landfilled in Iowa. Since 1988 through December

1996, \$26 million has been awarded in grants and zero-interest loans to public and private entities.

What Does It Mean?

Landfill *tipping* fees. Landfill *tonnage* fees. What's the difference?

Landfill *tipping* fees are per-ton fees charged by landfills to cover their costs of operation.

The landfill *tonnage* fee is a per-ton fee assessed by the state of Iowa for each ton of solid waste landfilled in Iowa and is not related to the landfill's cost of operation. The tonnage fees fund a full range of waste reduction, recycling and compliance assistance programs in the state of Iowa.

Amy Scott is an environmental specialist with the department's Waste Management Assistance Division.





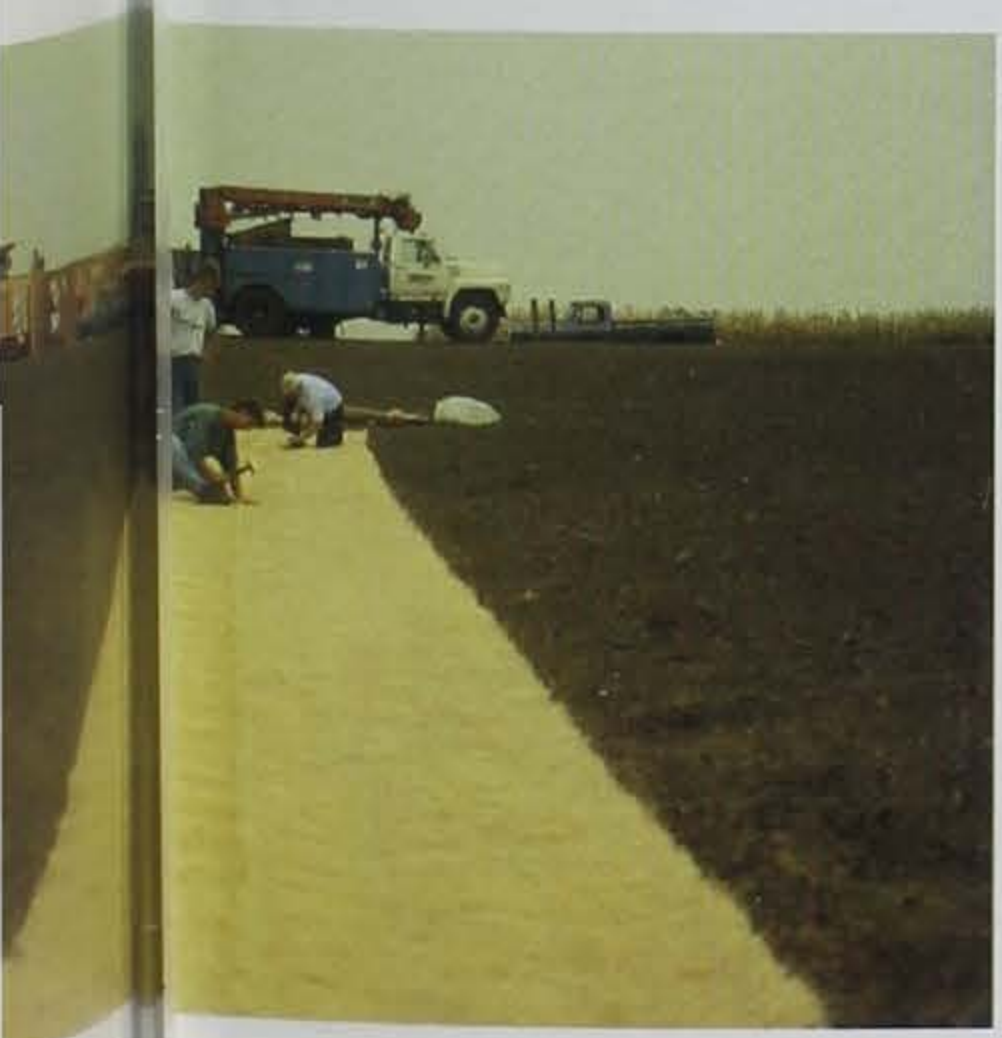
LOSING GROUND

by Karen Meinders





Randy Cooney



Randy Cooney

Randy Cooney

Iowa is losing ground when it comes to construction sites. Literally. Construction sites can lose as much as 40 tons of soil per acre in as little as one year. That's more than six times the soil loss rate of agricultural cropland considered "highly erodible." Excessive rainfall or snowmelt may detach unprotected soil particles and transport them to neighboring land, streams, lakes and storm water sewer systems. The particles may bring chemicals, oil and other pollutants with them. Soil is normally held in place by grass, trees and shrubs.

"While crop or pasture land might lose five to ten tons per acre per year, construction sites have a much higher concentration of soil loss. A 40-acre site open for one to two years might lose 40 to 80 tons," says Jonathan Gallagher, environmental specialist. "Three factors have created a serious problem for construction site erosion --

the high rate of growth and construction in major Iowa cities, construction near lakes, streams and other natural wildlife areas, and construction on land too steep to farm."

Gallagher heads up the Cedar Rapids Area Construction Site Erosion Demonstration Project. This project, along with similar ones in Des Moines and Iowa City and their suburbs, assists local developers, home buyers and city officials to protect construction sites where large amounts of earth are being moved and left open to the elements for long periods of time.

The projects hold workshops, conferences and one-on-one meetings with construction industry professionals to teach soil and money saving techniques. Demonstration sites are equipped with silt fences, wetlands, undisturbed vegetative areas, and sediment basins for developers and buyers to witness their benefits. Some



Construction sites can lose as much as 40 tons of soil per acre in as little as one year. That's more than six times the soil loss rate of agricultural cropland considered "highly erodible." Various methods of holding soil during a construction period are being demonstrated across the state, from excelsior mats (left) to silt fences (above).

Excessive rainfall or snowmelt may detach unprotected soil particles at construction sites, and transport them to neighboring land, streams, lakes and storm water sewer systems. The particles may bring chemicals, oil and other pollutants with them. Soil is normally held in place by grass, trees and shrubs.

projects offer financial assistance to developers that create demonstration sites.

The project coordinators will also help develop pollution prevention plans to meet the National Pollutant Discharge Elimination System (NPDES) permit requirements, required for five-acre or larger sites that conduct land disturbing activities.

"There is no canned approach," says Randy Cooney, project coordina-

tor of the Des Moines Metro Area Water Quality Project. "A good plan will incorporate several of these practices tailored to each individual site."

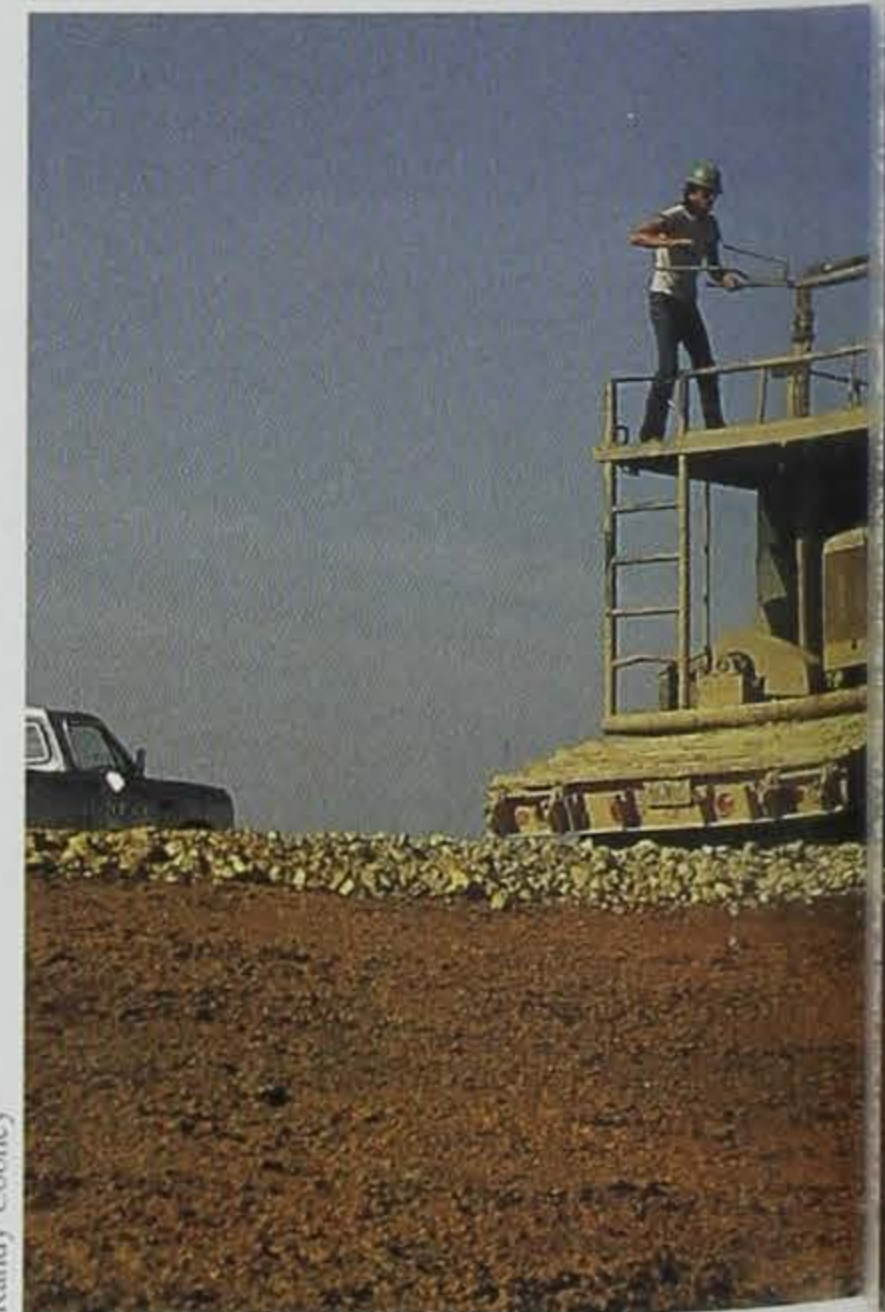
With an average of 2,000 homes built in the Des Moines area each year the Home Builders Association of Greater Des Moines was prompted to partner with the project. "We understand that it is a lot more costly for developers to clean up a eroded site than it is to properly prepare for sediment control as the site is developed," says Chuck Thomas, executive vice-president. "It is up to us to act as ombudsmen of our own industry to lessen the need for additional regulations."

The Longfellow Neighborhood Association of Iowa City approached the problem with another solution. Rather than fight with the developer over a nearby seven-acre construction site, the association negotiated with the builder and the city to deed an area along Ralston Creek for an open greenbelt and trail system.

"The streambank had been clear-cut -- roots and all. It was eroding away. It just looked bad," says Pam Ehrhardt of the Longfellow Neighborhood Association. "Flooding had often



Randy Cooney



Randy Cooney

been a problem along the creek. We were concerned that the sediment would fill the bank and cause more flooding."

The association received a \$5,000 grant to stabilize the streambank with trees and shrubs, and seed the greenbelt with natural vegetation.

Kenneth Vogel, a developer in Linn County, used rock riprap, a sediment control basin, grass mats in ditches and silt fences to protect the soil from washing away from the 100-acre Whispering Hill development during its construction. "Once you peel the top layer of soil or grass off a site, the least little bit of rain will start washing the soil away," says Vogel. "These practices keep the soil where it should be. It also makes the site look so much better to potential buyers and nearby residents."

"The ultimate goal is improving the water quality of our lakes, streams and rivers," says Gallagher. "The practices that our projects demonstrate to developers, home buyers and realtors the value of saving our soil from washing into nearby water resources."

Karen Meinders is the nonpoint source information specialist for the department in Des Moines.



Randy Cooney

Whispering Hills demonstration site, Linn County

Benefits of implementing soil erosion control practices on construction sites:

1. Reduces potential of costs due to soil damage
2. Adds to aesthetics of the site
3. Preserves the natural resources of the site
4. Improves neighbor relations
5. Meets requirements of NPDES permit

For more information on construction site erosion control practices, contact:

Iowa City, Johnson County Soil and Water Conservation District

(319) 337-2322

Cedar Rapids, Linn County Soil and Water Conservation District

(319) 377-5960

Des Moines, Polk County Soil and Water Conservation District

(515) 964-1883

Soil-guard is applied to bare ground (left) to help hold the soil in place at this construction site.



Iowa's Farm Pond Stocking Program Makes "Cents"

You won't find walleye, musky or the mighty steelhead! You're not in a wilderness area or among rugged mountains. But, in other respects, Iowa farm ponds are special. These small bodies of water are among the most productive waters in the world and, consequently, produce some of this country's best fishing for bluegill, largemouth bass and channel catfish.

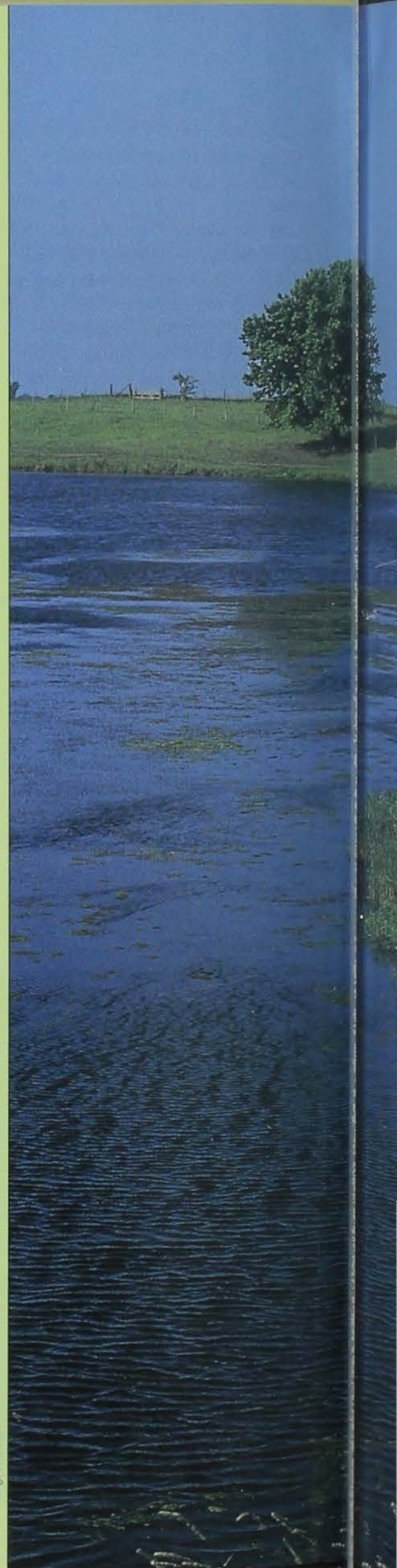
Iowa ponds are popular with anglers because they produce quality fish and lots of them. This popularity with anglers is best shown by the fact that 15 percent, or more than 1.3 million, of all licensed anglers fishing trips are taken to ponds each year. This reason alone explains why those of us responsible for management of the states fish and wildlife resources

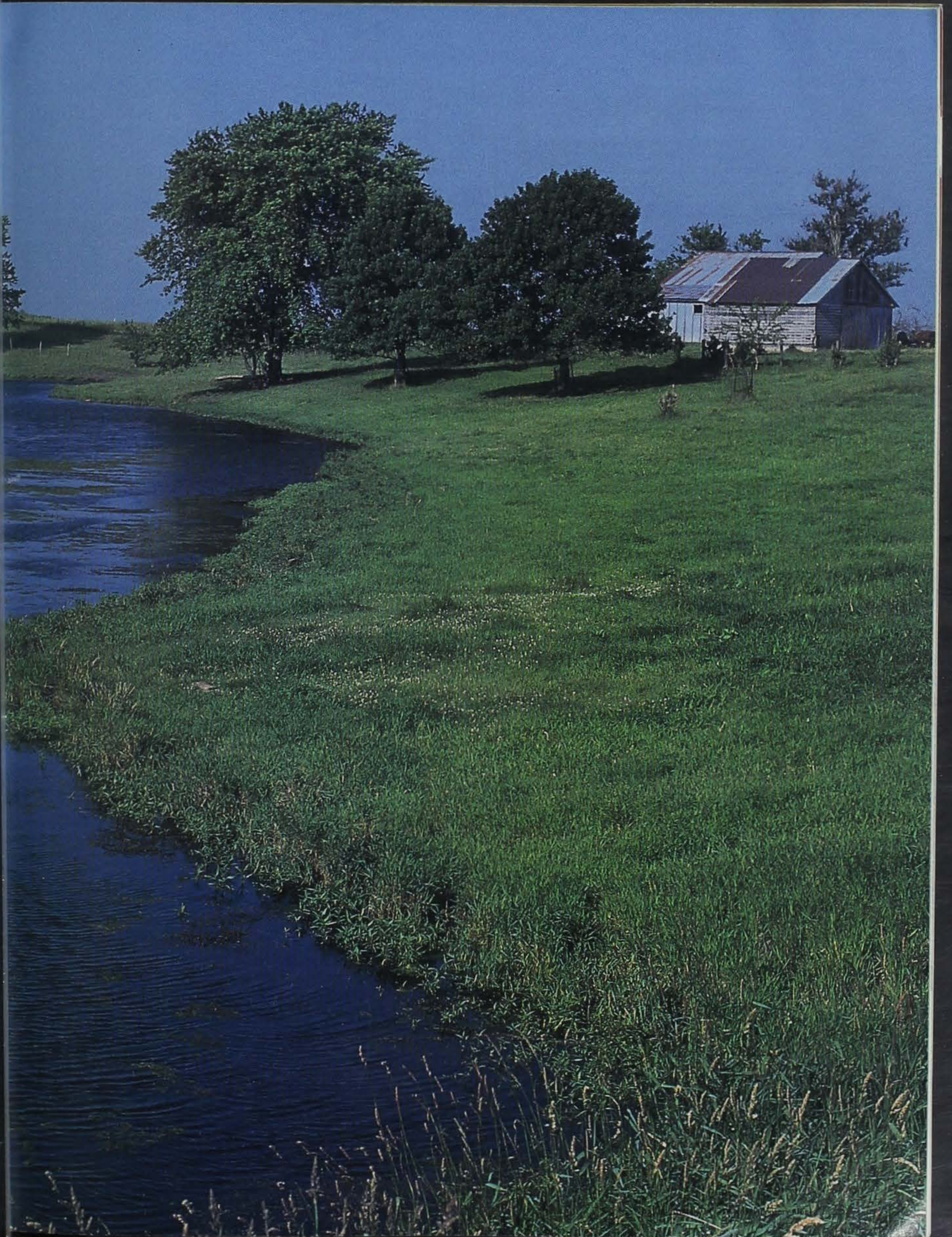
are interested in the quality of farm pond fishing. We're also interested in ponds because of the excellent opportunity ponds offer the young and inexperienced angler. Small farm ponds provided many of us our first fishing experience and the opportunity to learn firsthand the value of our state's aquatic resources.

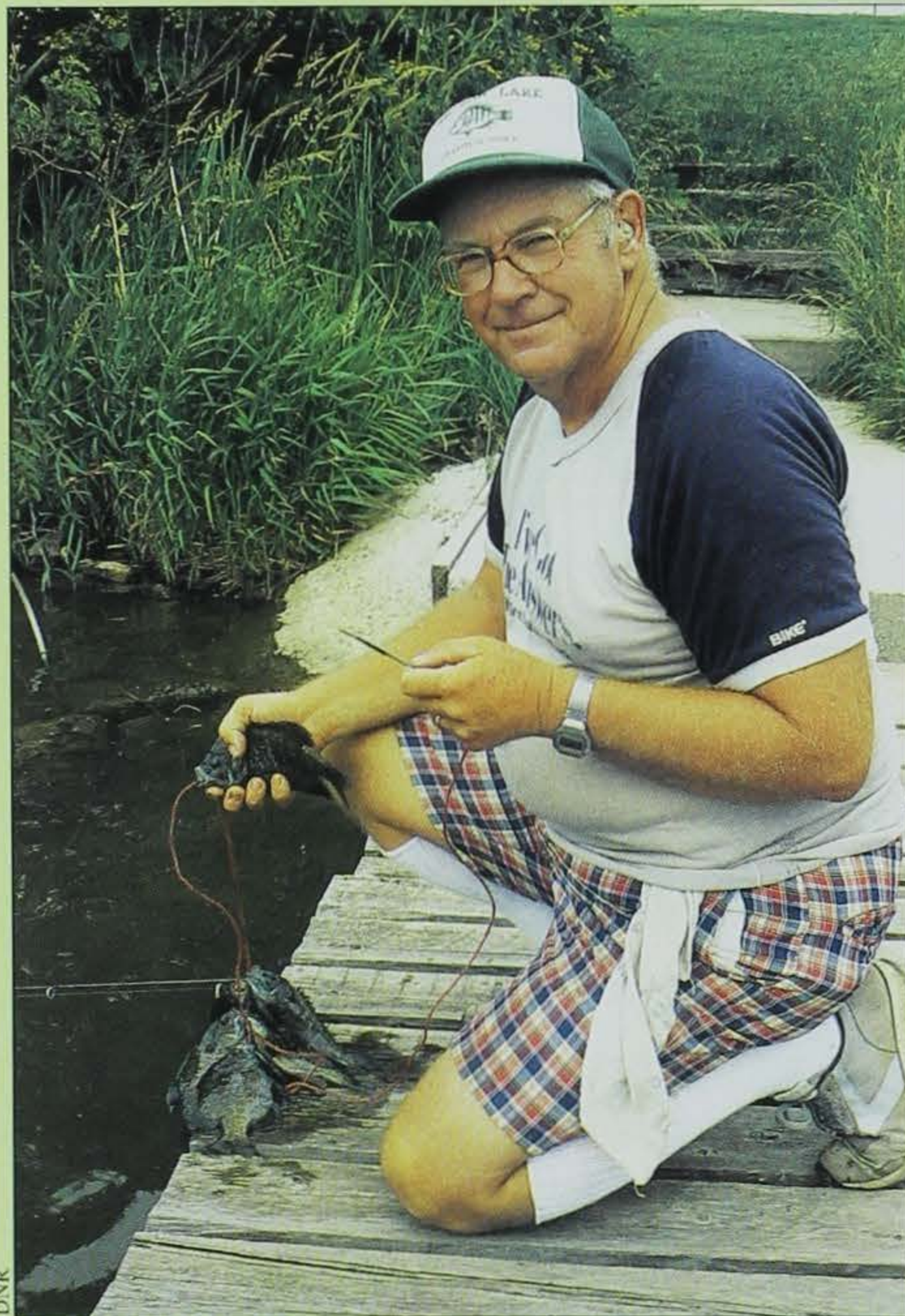
Although individually small, only about one-half to one acre, farm ponds contribute significantly to our state's fishing opportunities. Located mostly in the southern half of Iowa, farm ponds can be seen from almost any road as we drive through the country side. Ponds, like our artificial lakes, are built by placing a dam in a waterway and for this reason, the depth and size vary a great deal from

by Don Bonneau

Roger A. Hill







DNR

Small farm ponds provided many of us our first fishing experience and the opportunity to learn firsthand the value of our state's aquatic resources.

pond to pond. Equally variable is the quality of fishing individual ponds provide. Ponds built in locations that drain unprotected, cultivated land often have muddy water, are shallow due to siltation and, thus, produce poor fishing. On the other hand, ponds built with good grass buffers to filter mud from inflowing water, generally provide good fishing. The watershed of a pond is as important as the pond itself. Take a good look at the land above the pond and try to determine which fields drains to the pond. This, along with a good look at the clarity of the water in the pond, will shorten the time between bites and increase your catch. In other words, good quality water produces good fish and excellent fishing.

Most of Iowa's 80,000 ponds are on private property, because of this, you must get permission to fish them. Bluegill, largemouth bass and channel catfish from our Fairport Hatchery are stocked in approximately 600 ponds each year. The stocking is done one time and the fish are small fingerlings. State law allows the DNR to provide the first stocking of fish for a new pond. After this initial stocking, the pond owner is responsible for care of the fish and pond. Iowa anglers pay for the production and stocking of these fish and, thus, help landowners get new ponds started with the right numbers and species of fish. In addition, state fisheries biologists advise pond owners when they have questions about management of their pond. A booklet is also available to further assist the pond owner.

It is a surprise to some, but Iowa farm pond fishing is one of the real bargains fishing license buyers enjoy each year. It is true, about \$30,000 of your fishing license money is used to stock new ponds and get fishing started on the right tract each year.

This investment, however, amounts to a cost of less than three cents a fishing trip -- a bargain in anyone's book. In addition, the cost to construct Iowa's ponds was done at no expense to the angler and this cost is estimated to be approximately \$400 million. It is for these reasons anglers support our use of their license dollars to assist pond owners' efforts to keep pond fishing the best it can be. Just remember, pond fishing is a privilege. Get the owners permission, care for the property as if it were yours and take the opportunity to introduce a youngster to the fun of farm pond fishing.

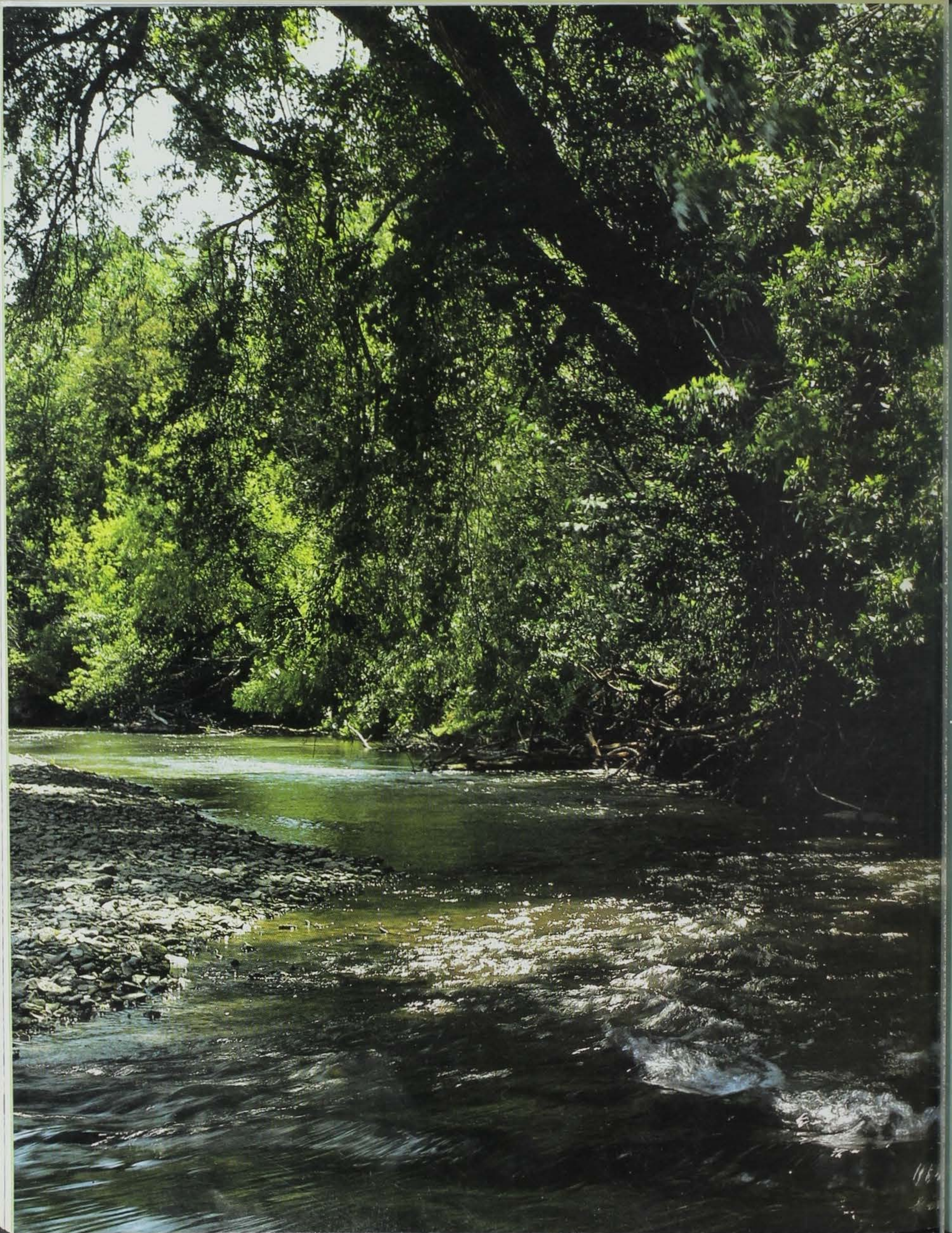
Don Bonneau is the fisheries research supervisor for the department in Des Moines.



Ken Formanek

Bluegill, largemouth bass and channel catfish from our Fairport Hatchery are stocked in approximately 600 ponds each year.





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Have you ever looked at a river or stream, admiring its beauty and wondered how the area has been kept so clean? Especially if it's a heavily used area? Well, the answer may lie with the numerous groups and individuals that annually "adopt" a stream and keep it clear of litter and debris. Each year, these people put in more than 300 hours cleaning up litter and debris, planting trees and grass, working on trails, and taking water samples.

Iowa's Adopt-A-Stream program was started in 1993 to stimulate awareness of our water resources, and to encourage individuals and groups to take action to protect and enhance these resources. The program was designed after the National Clean Rivers Program. It registers and gives recognition to individuals and groups interested in adopting a river or stream segment.

The program has slowly expanded from only a couple of groups adopting stream and river segments to eight groups. Many new groups will be joining the program this year. Many

ADOPT -A- STREAM

by Janet Ott

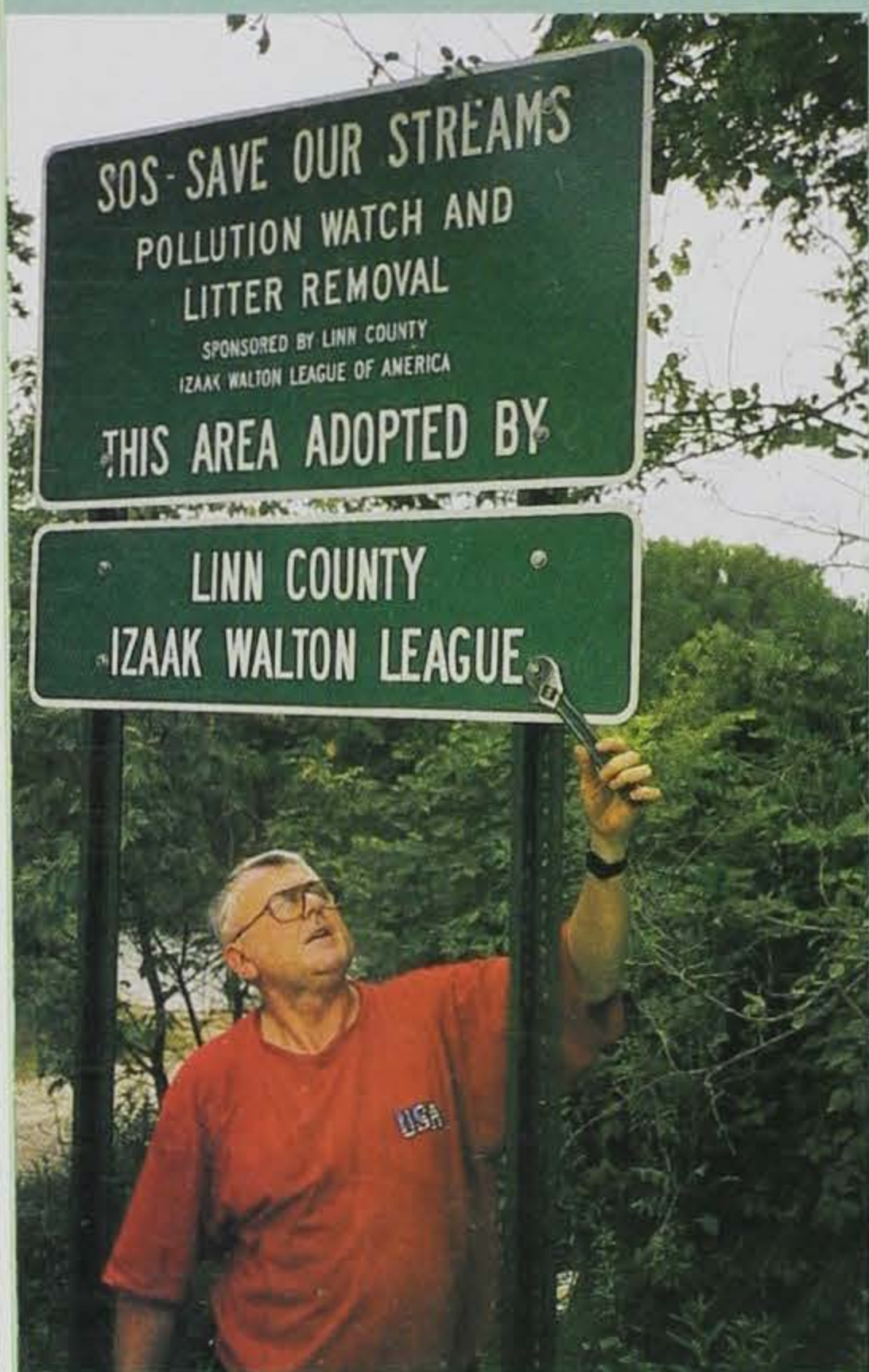


Each year, people put in more than 300 hours cleaning up litter and debris, planting trees and grass, working on trails and taking water samples on Iowa's rivers and streams. This mound of trash was pulled from a stretch of the Cedar River near Waterloo.

DNR

Ron Fairchild and his son, David Slifka, have adopted a portion of Trout Run near Decorah.

DNR



The Linn County Izaak Walton League in Cedar Rapids has used the Adopt-A-Stream program in tandem with their own Save-Our-Stream (SOS) program.

DNR

are families interested in keeping a special area clean. Many are school groups using this program as a chance to teach about water quality. And, others are environmental groups promoting the program. The type of work varies from group to group, but all work involves caring for a resource and having fun doing it.

For the past four years, the De Sloover family has "adopted" the Lansing Power Plant access on the Mississippi -- cleaning up litter left at the site. Each month, during the summer, they look forward to the family outing.

The Fairchild family of Decorah has adopted a portion of Trout Run. They pick up litter, plant trees and have worked with the local fisheries biologist to help control soil erosion, develop a trail and build a handicap-accessible fishing area. They host school groups participating in outdoor classrooms on water quality and testing. Their son, David, helps by filling out the completion reports and doing a lot of work -- all because it's fun. All three family members have become more aware of what affects water quality and how much work is needed to maintain that quality.

The Farrell family has adopted Crane Creek that runs through the family farm. Each year, they pick up litter, install erosion-control structures and test the water quality.

The Linn County Izaak Walton League in Cedar Rapids has used the Adopt-A-Stream program in tandem with their own Save-Our-Stream (SOS) program. The Linn County Ikes have removed more than 30 cars, a school bus, and several dump truck loads of tires and other trash from their adopted stream, the Cedar River. The group also tests the water quality of the river. The signs they have erected help advertise their program to everyone who uses the waterway.

Janet Ott coordinates the Adopt-A-Stream program for the department in Des Moines.



Jerry Leonard

How You Can Get Involved

Other groups and their adopted streams:

- ◆ Cedar Boat Club -- Cedar River (SOS program)
- ◆ Eastern Iowa Environmental Education -- Mohawk Park along the Cedar River (SOS program)
- ◆ Hawkeye Area Waterfowlers -- Cedar River (SOS Program)
- ◆ Hawkeye Fly Fishing Association -- Spring Branch
- ◆ First Unitarian Church -- Religious Education -- Pammel Creek, Stone State Park

The Adopt-A-Stream program helps promote environmental awareness and recognize people who are taking action to keep our rivers and streams clean for both human and wildlife. To help

promote the program a poster was designed to provide information on the Adopt-A-Stream program and the Protected Water Areas program. This poster was mailed to all the school libraries and is available to participants and other interested groups.

Though some of the work is hard and dirty, David Slifka of Decorah may have said it best -- "The most fun is doing it! . . . We do this so people can enjoy [the area] and to get out and have fun!" So if you are interested in having some fun while helping a stream or river near you, contact Janet Ott for more information at 515/281-3449 or write Iowa DNR, Parks, Recreation and Preserves Division, Wallace State Office Building, Des Moines, IA 50319-0034.



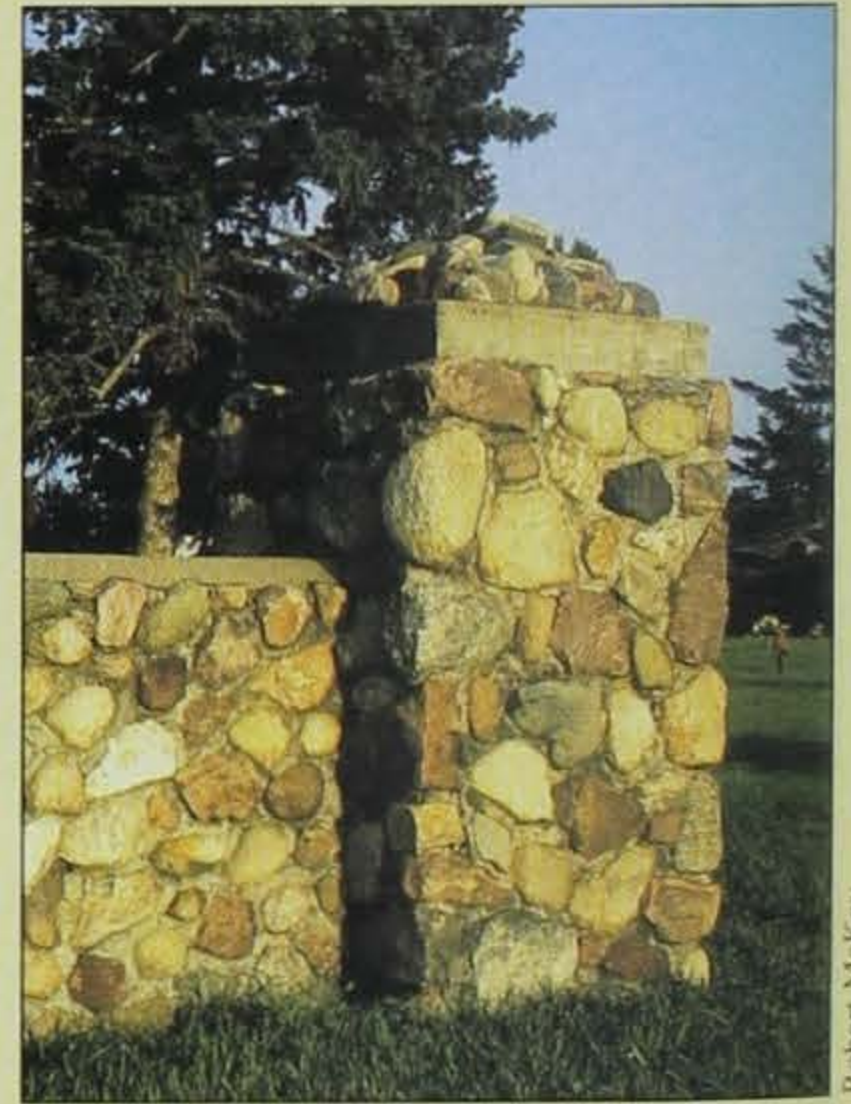
Paul VanDorpe

Geologic Sources of Historic Stone Architecture in Iowa

by Brian J. Witzke

Iowa is richly endowed with a variety of rock resources suitable for building construction, and their utility is particularly well-displayed in the early architectural heritage of our state. Although building stone is still actively quarried at a few places in Iowa, notably the quarries at Stone City, quarrying of building stone was more

widespread during the 1800s and early 1900s, before the advent of cement block and poured concrete construction. Wherever rock resources were conveniently located near growing communities and farms, quarry workers labored to extract blocks of rock for building purposes, especially for foundation construction. Blocks were often "dimensioned" into desired sizes by the use of hammer and



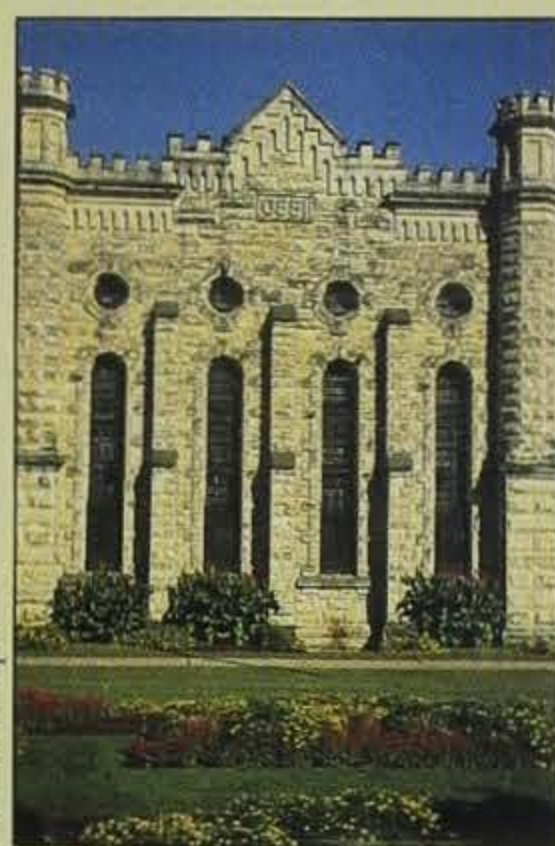
Robert McKay

chisel, leaving marks that often are still visible on historic stone buildings across Iowa. Some quarry operations used rock saws and other mechanical devices to make precision block cuts or create stone lintels, trusses or decorative pieces. Masons used these stone materials to construct houses, churches, stores, public buildings, and other structures, which are lasting monuments to their skills.

A diversity of rock types have been used in Iowa for stone construction. Limestone and dolomite have been extensively quarried for building stone. Although most sandstones are not very durable, some that are cemented by iron minerals provide a lasting and attractive building stone, as seen in the Amana colonies. Additional materials are locally important, including field stones derived from glacial drift (photo above). Even quartzite, coal, and geodes (see left) have been used. The Geological Survey Bureau has played an important historic role in locating and describing the varieties of stone available for building and other uses in Iowa.



IOWA MEN'S REFORMATORY, ANAMOSA. The Men's Reformatory, constructed in several stages between 1872 and 1936, is one of the most imposing stone buildings in Iowa. It is composed of carefully dimensioned blocks of "Anamosa stone" quarried by convict labor at the neighboring "penitentiary quarries." This stone, with its distinctive finely laminated appearance, is an attractive and durable Silurian-age dolomite still actively quarried for building stone at nearby Stone City.



Paul VanDorpe

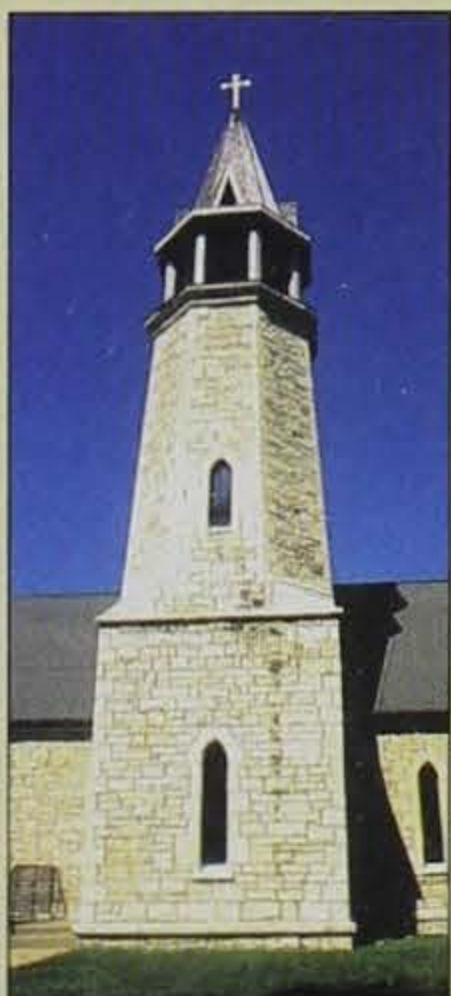
Paul VanDorpe



Photo courtesy of Sioux City Public Museum

SIOUX CITY PUBLIC MUSEUM. The Sioux City museum is housed in the Romanesque-style Peirce mansion built in the early 1890s. It is constructed of distinctive and durable pink-to purple-colored Sioux quartzite of Precambrian age, the oldest rock unit exposed at the land surface in Iowa. Quartzite quarries are located near Sioux Falls and nearby areas of Minnesota and northwestern-most Iowa. Many outstanding buildings are constructed from this enduring stone in the tri-state region and elsewhere.

NEW MELLERAY ABBEY, DUBUQUE CO. Many beautiful stone churches can be seen across Iowa, and the New Melleray Abbey near Dubuque is illustrated as an example of the rich heritage of religious construction found in our state. This Trappist monastery was constructed by monks in several construction phases beginning in 1868 and continuing into the 1950s. It is composed principally of Silurian-age dolomite blocks from the monastery's quarry, with edge-blocks and windows of Anamosa stone. Some intermediate construction is of Indiana limestone, a common building stone used throughout the Midwest.

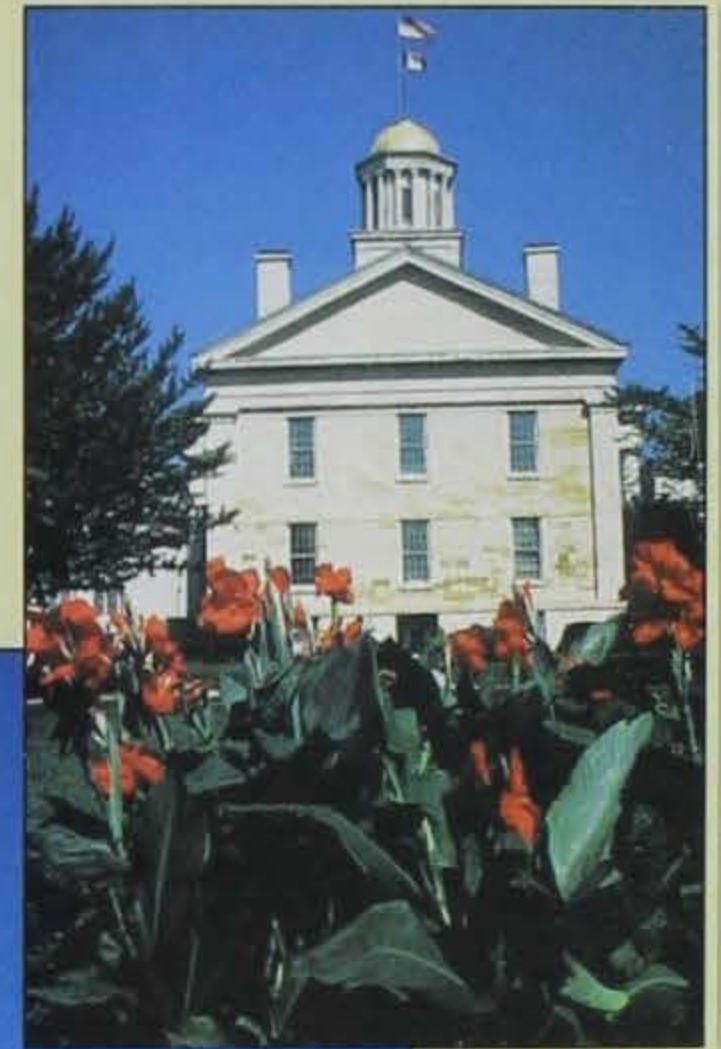


Steve Hall



Steve Hall

OLD CAPITOL, IOWA CITY. *Stately limestone block construction characterizes Iowa's former territorial capitol and first state capitol, whose cornerstone dates to 1840. The imposing blocks of Devonian-age limestone were hand-quarried at Iowa City and along present-day Coralville Lake in Johnson County. Occurrences of natural building stone in the area were important in deciding the site of Iowa's capital city.*



Photographic Services, The University of Iowa

FORT ATKINSON STATE PRESERVE. *Fort Atkinson was constructed between 1840 and 1842 as a frontier military post in northeast Iowa to enforce a treaty to protect the area's Winnebagos from other Indians. Limestone slabs derived from the fort's quarry were used to construct foundations for the barracks and other buildings. The main buildings were limestone-walled constructions. Restored buildings as well as stone ruins, are included today within this state preserve.*



Ken Formanek



Ken Formanek

HISTORIC MONTAUK, CLERMONT. This beautiful Italianate mansion of brick and native limestone was built in 1874 for William Larrabee, Iowa's 12th governor. Montauk serves as an example of the use of building stone for the foundation, lintels, and cornices in an otherwise brick construction. Many buildings from the 1800s and early 1900s possess building stone foundations, but later constructions are primarily characterized by foundations of cement block or concrete.



Ken Formanek



Lynette Seigley



Paul VanDorpe



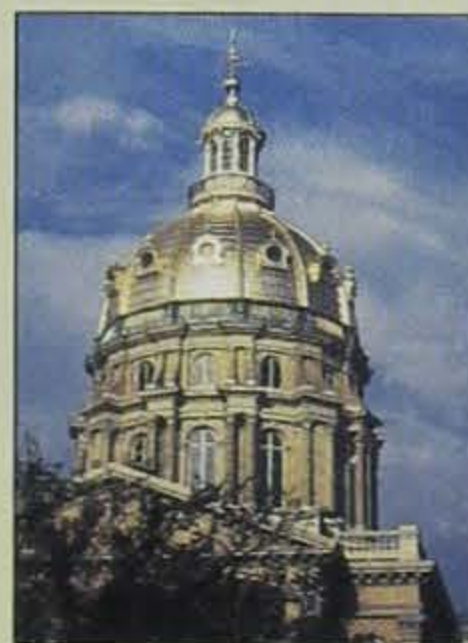
Paul VanDorpe

SANDSTONE HOUSE, AMANA. This sandstone house (Olde World Lace Shoppe), built in 1857, is characteristic of the simple and pleasing architectural style found throughout the Amana Colonies. Residential and community buildings in several of the Amana villages are built from this distinctive locally quarried reddish-brown sandstone of Pennsylvanian age. Amana's sandstone buildings largely date from the 1850s through 1870s.



Photo courtesy of State Historical Society of Iowa—Iowa City

STATE CAPITOL, DES MOINES. The state capitol building in Des Moines, constructed from 1872-1884 from a variety of building stones, is a spectacular example of late 19th-century stone construction. The granite base was secured from Buchanan County boulders and quarries in Minnesota. Limestone blocks, comprising the foundation and lower levels, were



Ken Formanek

quarried in Iowa at locations in Johnson and Madison counties. The bulk of the exterior was constructed from sandstone blocks derived from quarries in Missouri. Additional stone, both local and imported, was used in the interior construction, including a number of decorative marbles.

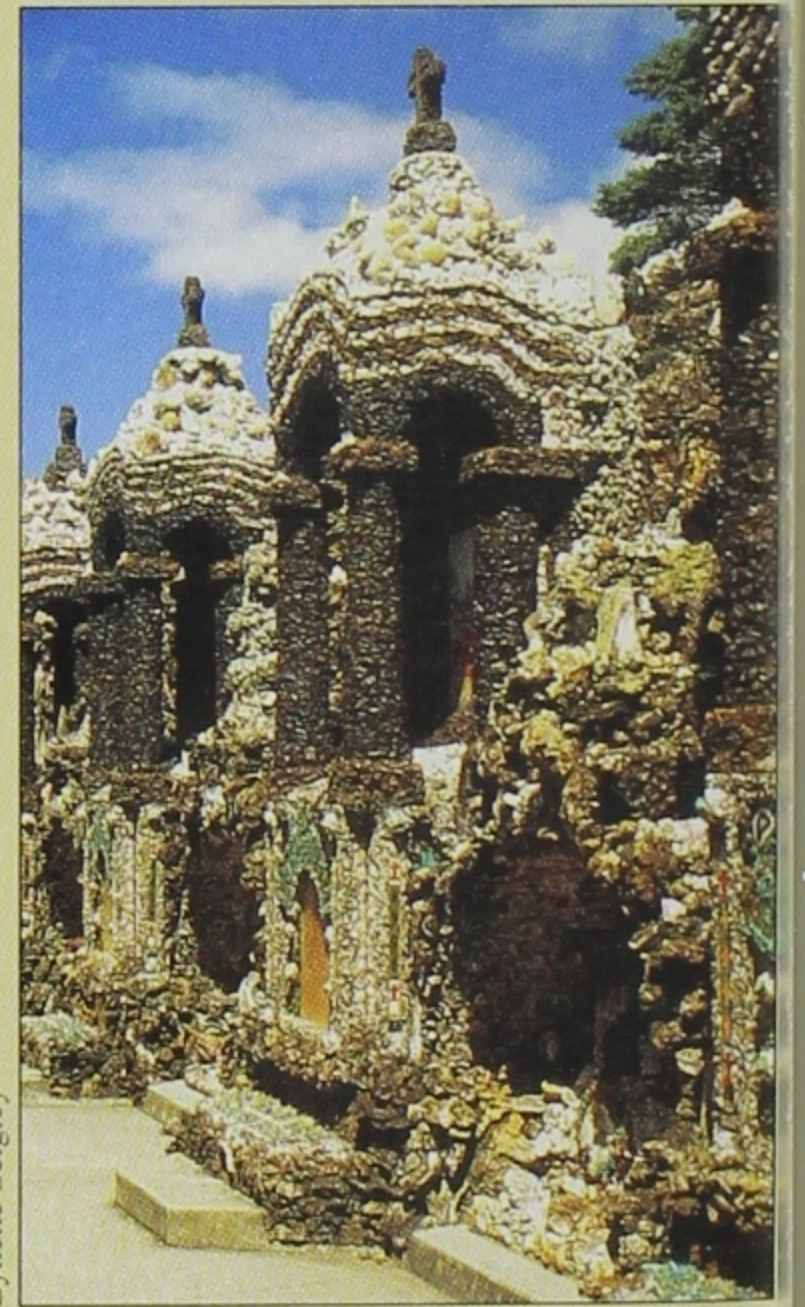
IOWA LAKESIDE LABORATORY, W. OKOBOJI LAKE. Glacial deposits across Iowa contain an abundance of boulders and cobbles of igneous and metamorphic rocks transported via glaciers from Minnesota. In areas where the bedrock is deeply buried, these easily accessible field stones have been utilized for building, principally house and barn foundations. The fine example of boulder construction shown here (Shimek Lab) is found at Iowa Lakeside Laboratory, a state university field station for natural history classes and research.

Robert McKay



Robert McKay

GROTTO OF THE REDEMPTION, WEST BEND. The famous West Bend grotto provides an example of the varied styles of stone construction found in Iowa. It incorporates an incredible diversity of rock types extravagantly encrusted over a concrete framework. Striking rocks, minerals, crystals, ores, semiprecious stones, shells, and fossils came from many localities around the United States and elsewhere. Construction was initiated in 1912 under the direction of Father Paul Dobberstein, whose vision and lifelong dedication resulted in this remarkable labyrinth of grotto structures.



Lynette Scigley



Jean Prior



Paul VanDorpe

Mourning Dove Biological Facts

Scientific Name: *Zenaida macroura*
Weight: 4.2 ounces; range 3.4-5.4 ounces.
Length including tail: 12 inches.
Flight speed: 45-55 mph (max).
Habitat: forests, residential, agricultural.
Foods: weed seeds and waste grains.
Life expectancy: most less than one year.
Nesting period: April-September; peak nesting May-August (94 percent).
Clutch size: 2 eggs.
Eggs: pure white; ovate.
Incubation: 14 days.
Young: altricial; leave nest at 2 weeks.
Number broods per year: 3-5.
Nest success: 0 to 71 percent; average 47 percent.
Recruitment: 1.8-1.9 young/successful nest.
Migration: Adults return in March with spring migration complete by May; young begin migrating south in July; fall migration peaks in August and is complete by October 31; about two percent of Iowa's doves are nonmigratory.

Kansas Department of Wildlife and Parks



the Mourning Dove in Iowa



Jerry Leonard



Roger A. Hill

The mourning dove is the third most abundant bird in North America, with an estimated population of 475 million.

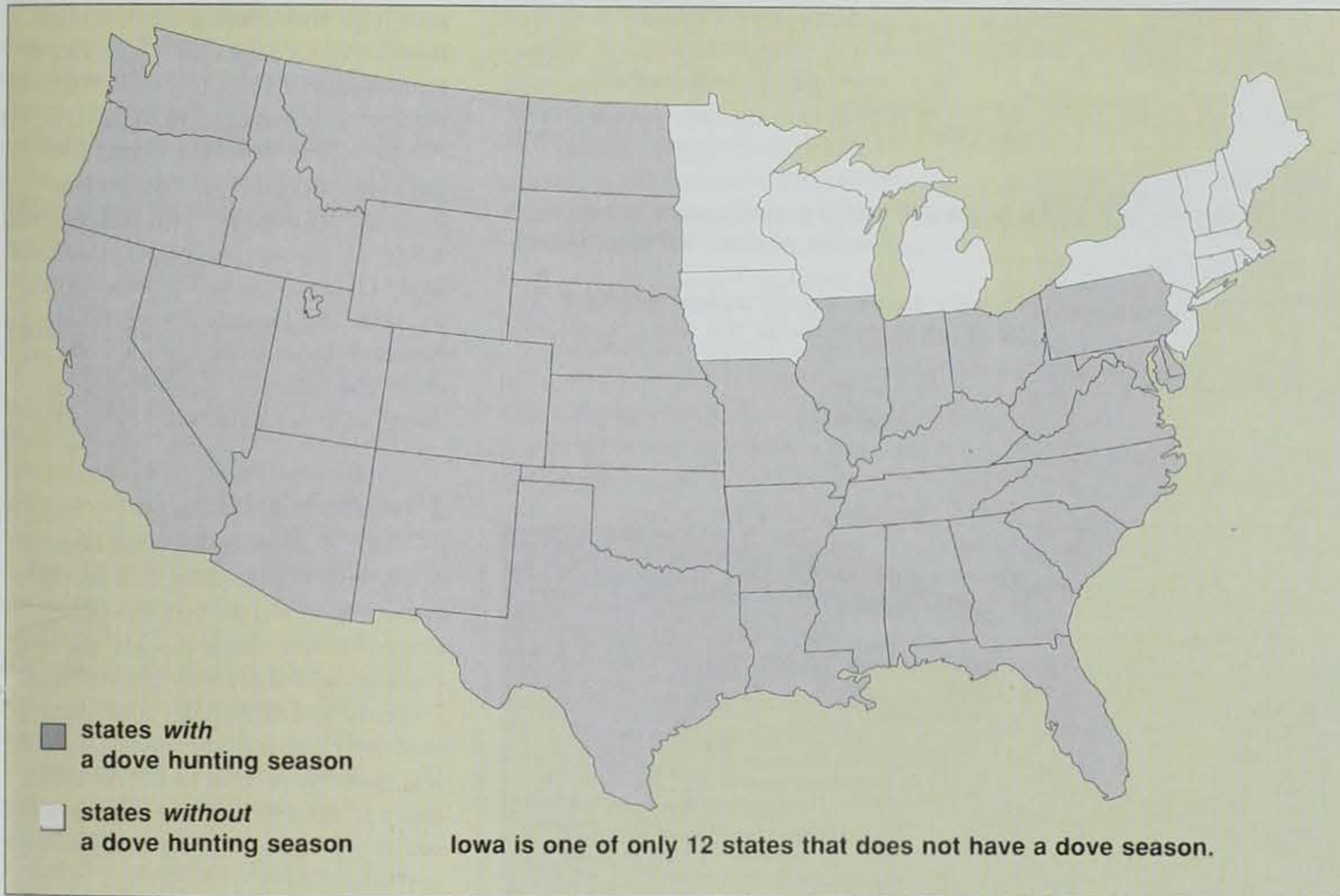
History

Mourning doves were found statewide by pioneers and no doubt played an important role in the diet of early settlers. Hunting of doves and other migratory birds was first regulated by the Migratory Bird Treaty with Canada and Mexico in 1918. Since then 38 states have allowed carefully regulated dove hunting, but Iowa has not. Trends in mourning dove populations are monitored across the U.S. by the Fish and Wildlife Service Call-Count Survey and the Breeding Bird Survey. Both surveys are run in early spring and measure the prebreeding population. The call-count survey is

conducted by state and federal wildlife agencies and only counts doves, while the breeding bird survey is conducted by volunteers and records information on all birds heard or seen. For management purposes the U.S. is broken down into three major dove regions, eastern, central and western management units; Iowa is located in the central management unit. Data from the call-count and breeding bird survey routes indicate Iowa dove populations have remained stable since the mid-1960s. The mourning dove is the third most abundant bird in North America, with an estimated population of 475 million. It is the most abundant game bird. There are five times more mourning doves harvested than ducks and geese combined. The central management unit, which includes Iowa, contains approximately 57 percent of the U.S. dove population and annually contributes approximately 271 million doves to the fall flight. Their greatest densities in Iowa occur in the Loess Hills of western Iowa and the southern three tiers of counties along Iowa's border with Missouri.

Identification

Contrary to popular belief the dove is *not* a songbird, nor is it the "bird of peace." It is a member of the family of birds called Columbidae or pigeons. The mourning dove is a close relative of the common barn pigeon, but is somewhat smaller in size. Both the eastern and western subspecies breed within Iowa. Sexes are very similar having grayish-brown backs, buff colored undersides, black spots on the wings and behind the eye, and white feathers in the tail which show in flight. In the hand, males have a bluish-gray crown and faint purplish-pink on the breast, whereas females lack these colors. Juveniles can be distinguished from adults by light buffing on the tips of the primary coverts which persists until the first molt. Young are indistinguishable from adults by three months after hatching. Doves begin returning to



Iowa in early March with spring migration complete by mid-May. Their familiar "coo-oo-oo, coo" call can be heard throughout the state during the summer breeding season. Fall migration begins in late July with early hatched young moving south. Young doves begin the migration followed by adult females and then adult males. Iowa's doves winter in the Gulf Coast states and Central Mexico. A small percentage (two percent) of Iowa's doves, mostly males, overwinter in the southern part of the state.

Reproduction

Courtship and mating begin almost as soon as doves return to the state in early March. Unmated males perform their characteristic "perch-coo" call and flap-glide-flight in an attempt to attract a female. Doves that survive to breed in more than one nesting season often return to nest in the same tree the following year. First-year females show no homing instinct. Doves build flimsy nests of twigs and grass usually

placed in trees or shrubs 10 to 30 feet above the ground. In wooded areas, elms and maples are preferred, but in more open agricultural areas coniferous shelterbelts and windbreaks are preferred nesting sites. Nesting in Iowa begins in April and lasts through September, but peak nesting activity (94 percent) occurs from May-August. Research from Iowa has shown less than two percent of nests are built after September 1. Normally two white oval eggs are laid on alternate days. Both parents take part in incubation and brood-rearing activities. Males usually incubate during the day, females at night. Squabs, as the young are called, hatch featherless (altricial) and grow rapidly, increasing in weight 14 times by 15 days of age. Young are initially fed crop milk, a fatty substance produced in the crop of adults, rich in protein and fats, which is gradually replaced with seeds as the young grow. Young leave the nest (fledge) 14 to 15 days after hatching, at which time their diet is nearly identical to that of adults. Young can survive on their own five to



Ken Formanek

Mourning dove nest

Dove hunting is traditionally a still hunting sport, pass shooting in areas of dove activity (below).

About two percent of Iowa's doves, mostly males, remain in the southern part of the state through the winter (bottom).



NEBRASKA Land Magazine, Nebraska Game and Fish Commission

nine days after leaving the nest and most leave the nest area within two to three weeks of fledging. The entire nesting cycle requires 30 to 32 days. Adults begin a new nest two to five days after fledging. Doves average three to five nests per year in Iowa with 1.8 to 1.9 young fledged per successful nest. On average, half to two-thirds of the nests initiated are successful. Research in southern Iowa has shown doves can increase their population threefold in a single breeding season.

Food Habits

Doves are primarily seed eaters. More than 99 percent of their diet is composed of weed seeds and grains. Preferred weed seeds include, pigweed, foxtails, wild sunflower and ragweed. Preferred grains include, corn, sorghum sunflower and millets. Insects make up less than one percent of the dove diet. Daily feeding movements of young and adults average two to eight miles, water is required daily.

Limiting Factors

Annual mortality rates for mourning doves are very high with only 4 out



of 10 doves surviving from one year to the next. Research shows mourning doves experience unusually high annual losses from a variety of natural factors. Predators, disease, accidents and weather extremes all take their toll on adult and young doves.

Habitat Needs

Mourning doves are called habitat generalists because of their ability to adapt to a wide variety of habitats, including coniferous forests, residential areas and agricultural areas. Mourning dove habitat needs include trees in proper relation to open areas for nesting and roosting, a combination of wild and cultivated foods for feeding, and a source of water. Iowans can improve dove habitat on their lands by planting shelterbelts and providing a food source nearby. Coniferous trees (pines, spruces, junipers) are the preferred nesting and roosting habitat in Iowa. Weed patches and grains (corn, sorghum, wheat, sunflowers) in proximity to nesting and roosting cover provide excellent food.

Hunting

Unlike the passenger pigeon, which met its demise during the days of unregulated market hunting, the mourning dove has been governed by federal law since 1918 and has thrived. It has been recognized as a game species under Iowa law since 1937, but the Iowa DNR does not have the authority to open a dove season. That authority rests with the Iowa Legislature. Iowa is one of only 12 states that does not have a dove season. Iowa and Minnesota are the only states west of the Mississippi River that do not allow dove hunting.

Like most migratory game birds, mourning doves have a rich dark meat. Most hunters prepare doves as they would other small game birds.

From a biological standpoint, hunting has no measurable impact on mourning dove populations. More

doves are harvested annually by hunters in the continental U.S. than all other game bird species combined. Annual hunting harvest is estimated at 41.3 million doves which is just 8.6 percent of the estimated fall population. As a comparison, 165 to 207 million doves are lost to natural causes each year, or four to five times the number attributed to hunting.

Because doves have a very short life span (most live less than one year) and a high reproductive rate, annual population levels are determined almost entirely by the whims of nature. If there is fair weather during the nesting season, populations increase; if poor weather persists, populations fall. These ups and downs in dove numbers occur in states with and without dove hunting. In any given year 50 to 60 percent of the dove population dies, but hunting harvest comprises only 8 to 10 percent of these losses. 99.8 percent of dove eggs in Iowa are laid by September 1. Daily survival rates of nestlings do not differ between states with hunting and those without, 95.0 vs. 95.8 percent respectively. Recent research in Ohio has shown that less than one percent of doves raised in urban areas were harvested by hunters. The inescapable conclusion is: Hunting has virtually no impact on dove populations or the opportunity to view or hear doves in our fields and backyards.

How is dove hunting regulated? Hunting season frameworks are established annually by the U. S. Fish and Wildlife Service. Current frameworks would allow Iowans two possible season combinations: 70 days with a daily bag limit of 12 birds and a maximum possession limit of 24 birds; or 60 days with a daily bag limit of 15 birds and a possession limit of 30 birds. The earliest start day allowed by federal law is September 1, and the latest end date is January 15. Allowed shooting hours are one-half hour before sunrise to one-half hour after sunset. States can be more restrictive with seasons and limits, but not more liberal.

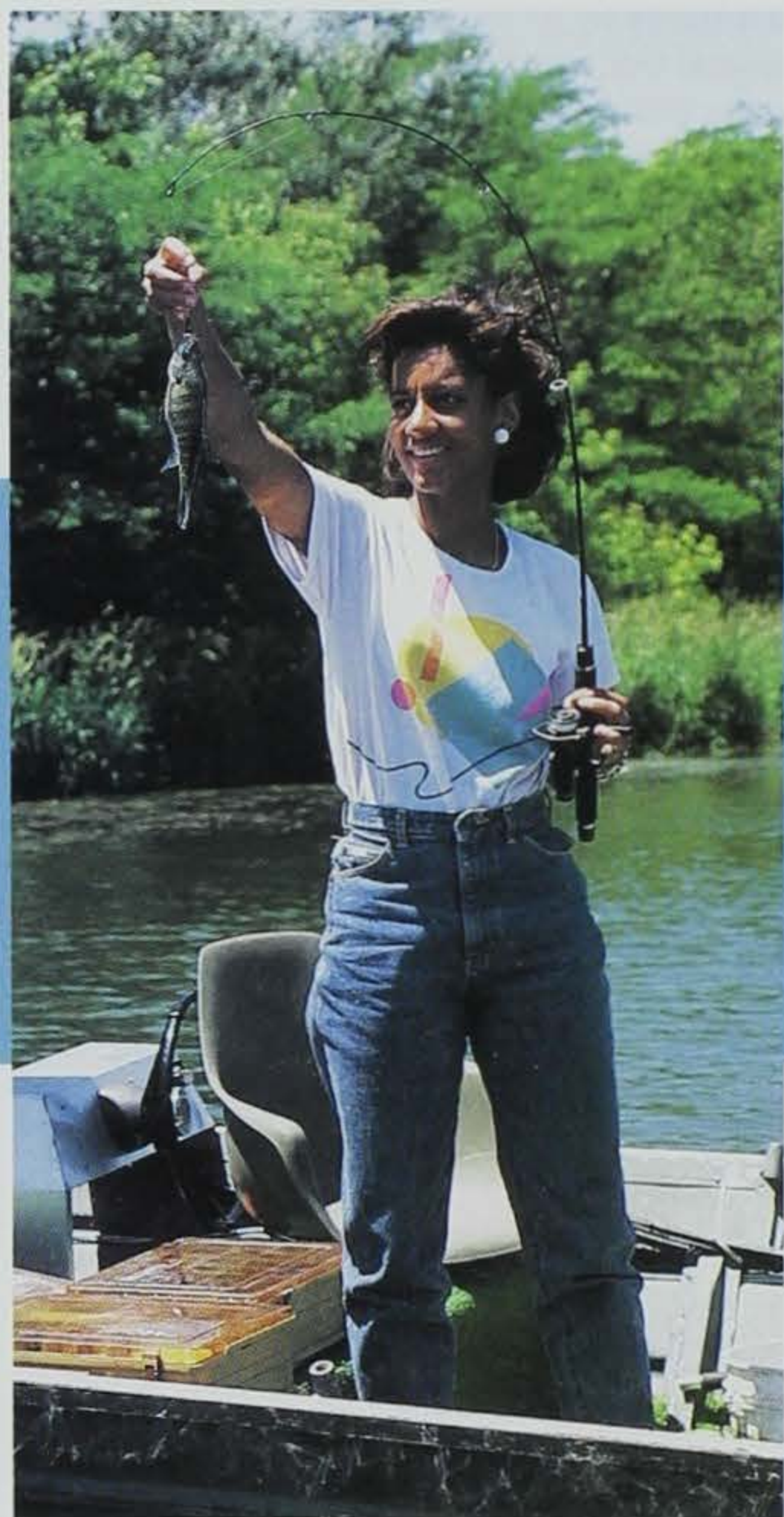
A Dove Season In Iowa?



Kansas Department of Wildlife and Parks

Iowa's outdoor enthusiasts have been requesting an opportunity to hunt mourning doves for the past 15 years. Recently sportsmen and women requested the Wildlife Legislative Fund of America (WLFA) help organize support for mourning dove hunting in Iowa. This organization's main function is to support sound wildlife management and the right to hunt.

Sports people across the state are working with the WLFA to pass legislation to allow this outdoor opportunity. This interest is supported by people from all walks of life including many farmers. It is a hunting issue that is biologically sound and will not negatively impact other Iowans. The Department of Natural Resources supports a dove season and the efforts of the Wildlife Legislative Fund. The Department will provide scientific information to those interested in the subject. Mourning dove hunting can provide great outdoor excitement for many people. Because of its still hunting methods and moderate temperatures during the season, dove hunting is appealing to hunters young and old.



Try These Tips for Catching...

Jumbo Bluegills On Tiny Jigs

Article by Gary Nelson
Photos by Ron Johnson

Seven fat bluegills swim leisurely by a weathered wooden dock. You hide behind a boat, then quietly flip a 1/32-ounce brown jig at a 'gill you see just three feet down in the clear water. When the lure nears, the hefty panfish pounces on it. Swimming in strong circles, it heads for a dock post, but you're able to muscle it to your waiting hand.

While the common, popular bluegill can be a delight to nab on a small worm, cricket or other live bait, it can be extra fun to fool big bluegills on artificial lures too.

'Gills, of course, feed heavily on insects and other tiny invertebrates. (A study on one lake showed that the larger bluegills of 6 to 10 inches in length ate varying amounts of not only midge and dragonfly larvae, but also beetles, spiders, flies, true bugs and water fleas.) The panfish will readily nab an imitation of its natural food.

Bug-like jigs rate as outstanding imitations, and tiny is better than big when it comes to picking the most effective jigs. Mini lures can be more easily fished at the sluggish pace sunfish prefer. Also, certain enticing retrieves are possible with tiny offerings that can't be duplicated with larger ones. And, featherweight lures snag less, and may tempt fish that may not be hungry enough to bite a big bait.

The aquatic creatures swallowed by bluegills can vary widely from one lake to another, and with the season. The main diet may change year to year too. But bluegills are opportunistic feeders and a variety of tiny jigs merit a cast at any time.

Choosing Bluegill Jigs

Thirty-second- to 1/100-ounce jigs best represent the size range of 'gill forage. When panfish feed in a frenzy, any jig seems to catch fish even though the fishes' bellies may

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contain a different-looking food item. At other times, panfish get picky. Matching their diet, at least as to general size, (which may be the most important factor) and color, can definitely bring more action.

It can pay for an angler to use a 1/32-ouncer, (which can measure up to two inches long) to represent a larger insect in any water clarity, or for general murky-water fishing, as these lures show up better than a 1/100-ounce. The 1/32 also handles breezes better. The plastic or marabou can always be trimmed down to match insect size. However, bitty jigs like the 1/100-ounce can bring exceptional results whenever they are fishable. They may be harder to cast, but are easier to work slowly.

Whatever lure size you use, bluegills may smell the jig before deciding to eat, so you might apply a panfish-attractor scent, or tip a maggot or worm piece on the jig.

Presentation Methods

Insects move about in more ways than forage fish — at least a dozen basic movements. Knowing the main insect's movement isn't always necessary but can lead to extra fish. An angler who wants to duplicate natural movements might dissect a bluegill and learn the forage insect's identity and then research its movements in an aquatic-insect book. One helpful text is *Aquatic Entomology* by W. Patrick McCafferty (Science Books International, 20 Providence St., Boston, MA 02116).

You need to work the jig on the bottom to imitate some movements. Don't worry if the panfish are swimming a bit above bottom. In clear water, this writer has watched time and again when the fish spy the jig a foot or two below them and then turn their bodies downwards and go

after the bait. Bottom-crawling is a natural movement, and a jig retrieved this way also creates attention—getting noise and soil stir-up.

An insect-swimming retrieve can prompt strikes from inactive fish. During non-feeding times the panfish might not hit a traditionally retrieved or jigged lure. Yet, if you tie on a 1/100- or 1/64-ounce bug imitator and make an insect's swimming motion, it often prompts hits. To retrieve, very slowly reel in line while you quickly vibrate the rod tip. Unlike a minnow's swim, the bug-like jig makes quick twitches. Sometimes bluegills can't stand to leave this alone.

Don't know the movement of the insect panfish are eating? Try a combination of retrieves on the same cast. First cast a jig just past the



Iowa's state-record bluegill was taken in 1986 by Phil Algreen of Earlam, Iowa. It weighed 3 pounds, 2 ounces and was 12-7/8 inches long.

cover. It very slowly sinks — often a bluegill hits then. If no strike, slowly swim it horizontally, close to the cover, possibly making the jig crawl over branches and weeds. Instead of constantly reeling, though, slowly raise the rod tip high, and let the weight of the jig carry itself toward you. The jig moves so slowly you can barely see the line move. It is just floating, neutral-buoyant through the water — a deadly panfish retrieve. If no hits, reel the jig slowly vertically

— like an insect hatching — which can be another hot retrieve.

Light line and a super sensitive rod are musts when tiny-jig angling. Bites can be so delicate you barely sense them. For normal spinning, some limp 1- to 6-pound monofilament, depending on the amount of snags, is fitting. An ultralight graphite rod is hard to beat.

Other gear possibly needed is a selection of small bobbers. Dainty-jig angling isn't as practical in windy weather, however you can keep your rod tip in the water to cut down on line bow, or you can tie a bobber above the jig to successfully cast. When bobber fishing, retrieves are limited mainly to horizontal

retrieves, drifting, "still-fishing" the jig, and possibly crawling a jig along bottom.

No matter how you fish, remember bluegills don't possess long-range eyesight. Even on clear water, the panfish don't appear to react to a jig until it's within about three feet, even less in dingier water. Tiny jigs are less

visible than big jigs so angling close to the fish or cover is crucial. One longtime bluegill fan likes to jig in dense tangles of flooded brush. "The cover I fish is often passed by other anglers because it is so difficult to fish," he says, "but that's where the bigger fish are usually found. I pull my boat as far up in the brush as I can, then I reel the jig up tight on the end of my jigging pole, weave it through the tangles to a hole in dense cover, then let out line and lower the jig into the water."

He often holds the jig almost motionless, but the rubber-skirted jig provides enticing action.

"I lose some fish, but with a little practice you can learn to get the fish out of the thickets without losing too many. Fishing the heaviest cover you can find is very important I think, especially on waters with heavy fishing pressure."

For this vertical dabbling, a long pole, up to 15 feet, is more efficient than a spinning rod. He favors an 11-foot graphite jig pole with a separate line-holding reel. When he uses insect imitators, he favors a 1/32-ounce jig. "I think panfish hit the dark colors — black, blue, green — because they resemble insect forage."

Yes, bluegills love bugs. And, jigs that mimic the teeny aquatic creatures let you pull in piles of panfish.

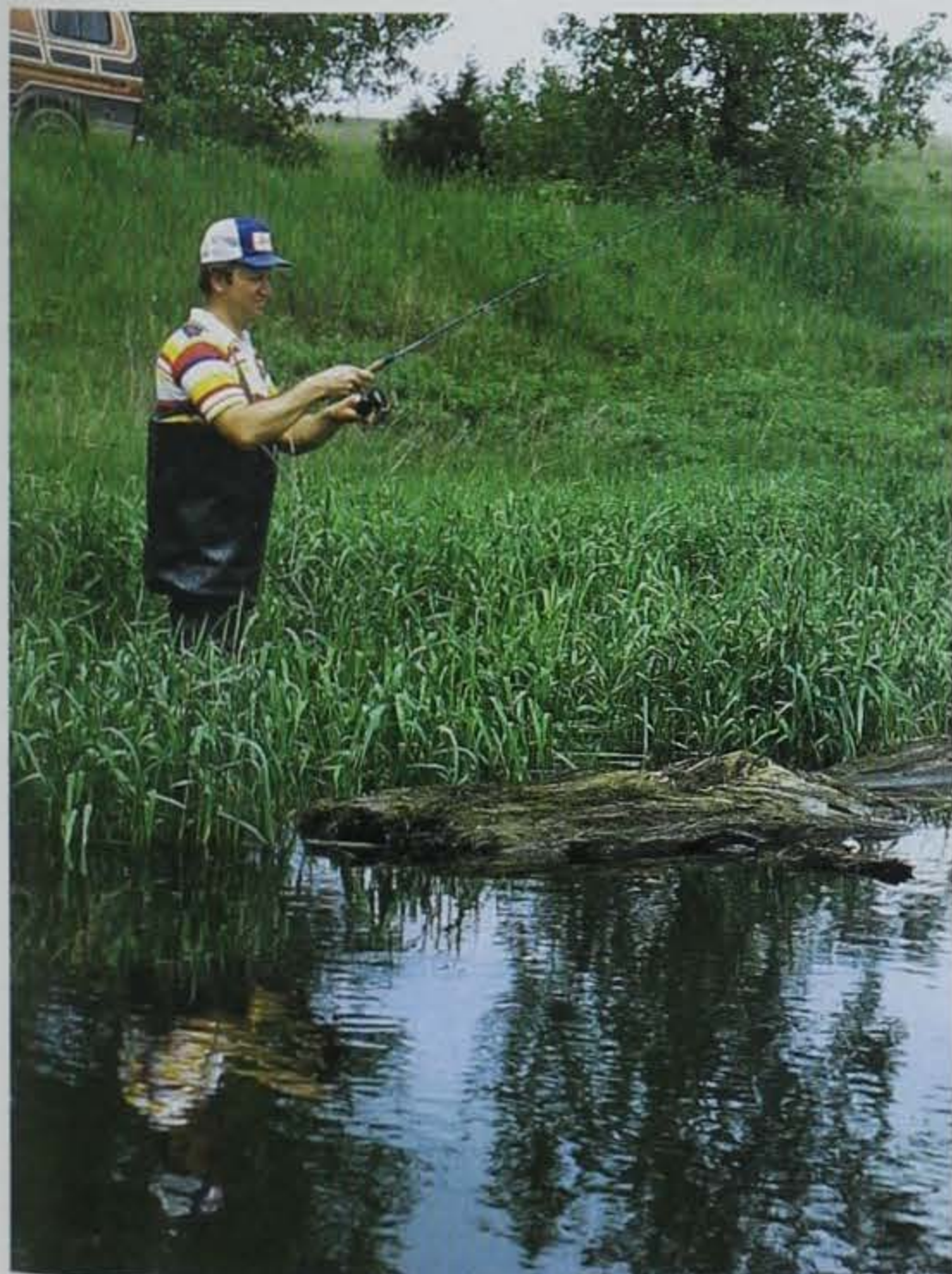
Gary Nelson is a full-time outdoor writer from Oakland, Arkansas. He publishes The Crappie Fisherman, a quarterly publication. Subscriptions are \$6.96 per year. For more information, write Gary Nelson, Route 1, Box 244, Oakland, AR 72661.



Ken Formanek

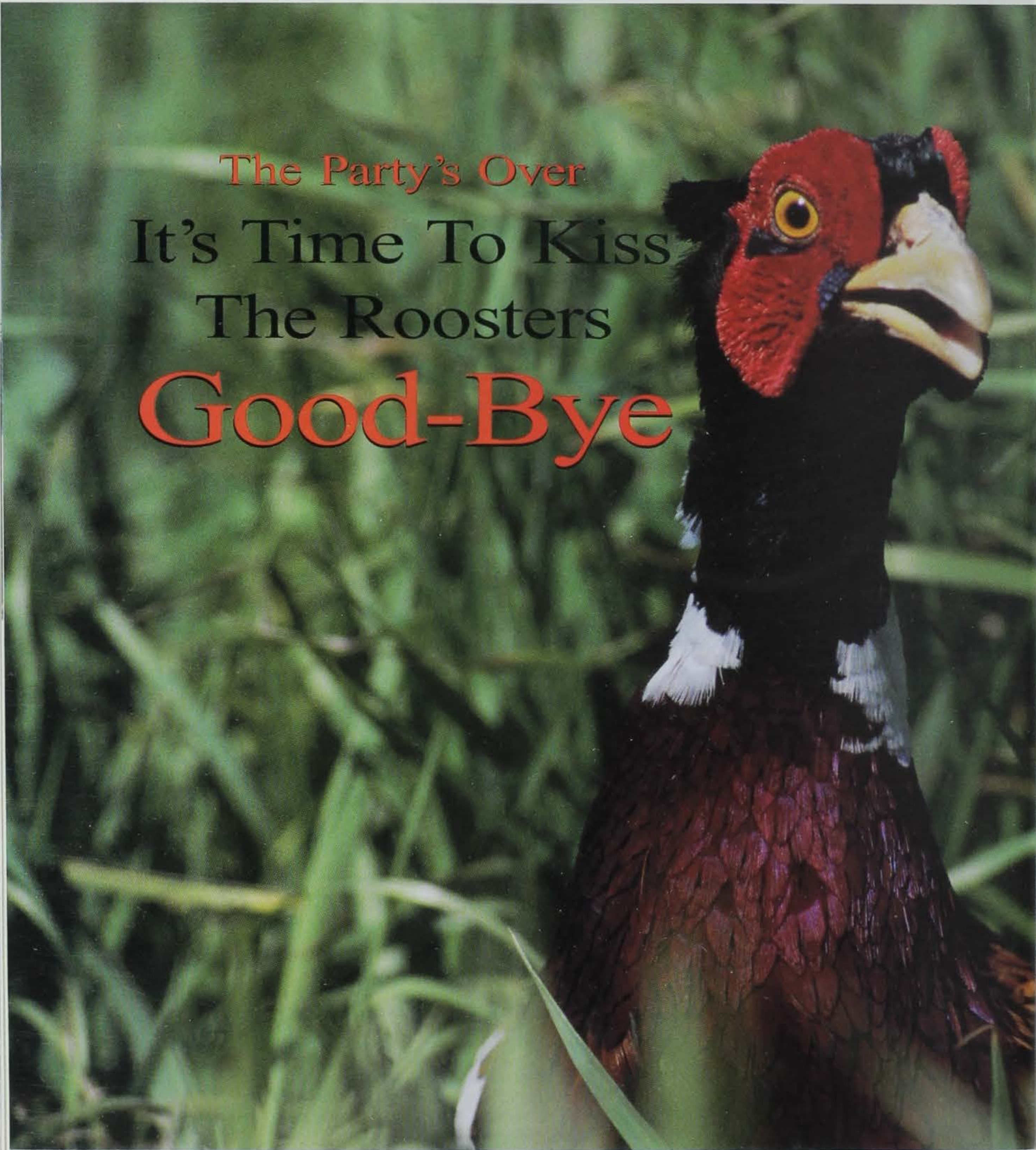


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Tiny jigs are less visible than big ones so angling close to the fish or cover is crucial. And, fishing the heaviest cover can be very important, especially on waters with heavy fishing pressure.

The Party's Over
It's Time To Kiss
The Roosters
Good-Bye





If pheasant hunting, clean water, or the warble of a meadowlark are the sorts of things you hold dear, be forewarned this article could wreck your day.

The results of the latest sign-up for the Conservation Reserve Program have been released, and the news is anything but good. For those Iowans living in the northern half of the state, the message is clear. The party is over.

As current CRP contracts continue to expire, enrollment of Iowa acreage could fall from a peak of 2.2 million acres to about one million acres by next spring. During the latest go 'round, (CRP Sign-up 15), just under 523,000 acres were accepted in Iowa. The

majority is located south of Interstate 80.

No matter where you look, the story is pretty much the same across the central, north-central, and northwestern portions of the state. And as existing contracts mature, here's what pheasants, farmers and wildlife enthusiasts can expect.

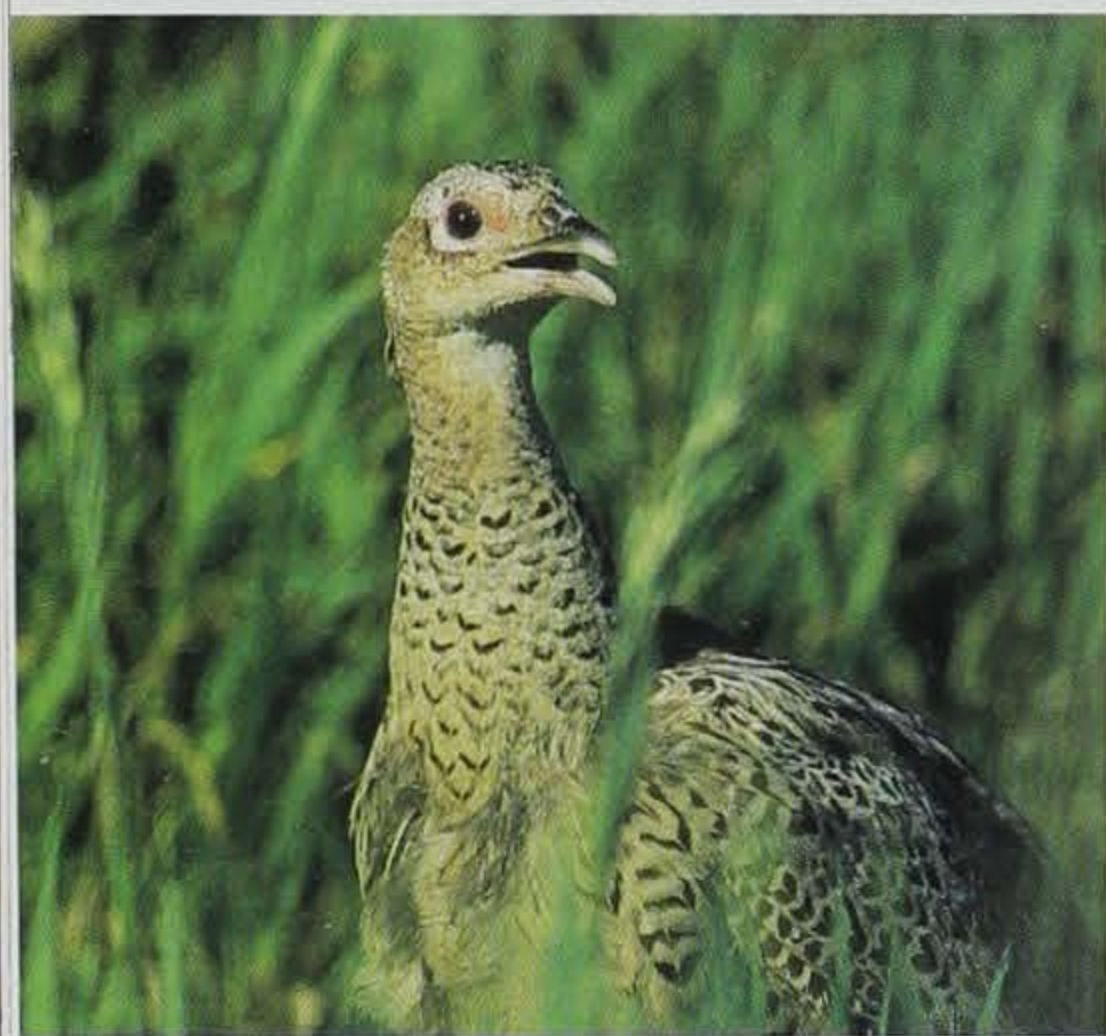
In Cerro Gordo County, CRP grasslands will be reduced from a current level of 17,729 acres to a mere 403 acres. In Worth County the acreage will be reduced from 12,636 acres to 182. CRP acreage in Crawford County will decline from 22,888 to 500. Palo Alto County will go from 21,386 to 203. Clay County will



Enrollment of Iowa CRP acreage could fall from a peak of 2.2 million acres to about one million acres by next spring, and most of the acres would be located south of I-80.

Article and photos by Lowell Washburn

From a conservationist's viewpoint, the CRP has been a dream come true. No previous farm program has enjoyed more popularity with a total cross section of both landowners and urbanites . . .



Wildlife populations -- both game and nongame -- have increased dramatically because of The Conservation Reserve Program. Iowa has once again become the pheasant capital of the world.

A good share of the state's recently restored prairie wetlands (right) exist in CRP basins. As grasslands are plowed under, many of those marshes will be drained -- for the second time.

decline from 15,183 to 168. Hancock County will go from 11,963 to 659. In Winnebago County CRP will drop from 19,381 acres to 1,821. Grassland acreage in Wright County will decline from 9,447 acres to a total of 51.

All told, Iowa has the potential to lose more than 1.2 million acres of Conservation Reserve by year's end. In the north-central and northwestern portions of Iowa, only 30,000 acres of CRP will survive north of I-80.

From a conservationist's viewpoint, the CRP has been a dream come true. No previous farm program has enjoyed more popularity with a total cross section of both landowners and urbanites, or has provided all Iowans with a more tangible array of environmental benefits.

This was especially evident during the past two years as farmers, professional biologists and private sector conservationists associated with groups like Pheasants Forever, Ducks Unlimited and the Iowa Wildlife Federation, worked long and diligently to extend the life of the state's Conservation Reserve Program. Many of those same individuals are currently in shock at the resounding failure to retain grassland acreage.

This much is certain. The demise of the CRP cannot be blamed on a lack of interest among the state's landowners. (Iowa farmers actually led the nation in the number of CRP applications.) Nor can it be said that Iowa farmland was simply too "flat" to compete with those acres accepted elsewhere. For example, the Environmental Benefits Index (EBI) for land accepted into the program in Kansas received an average score of 160. The average EBI score for the acreage accepted in Iowa was 197. Here's one even more incredible. In North Dakota, the two-million-plus acres that were accepted under the CRP proved three times less erodible than land *not* accepted in Iowa.

In essence, the new CRP shifts program acreages westward toward more arid, sandy and certainly less

valuable land. The greater emphasis is now placed on protecting some of the nation's least productive, least erodible farmland, while virtually eliminating protection across much of the nation's most valuable, most productive Corn Belt region.

It's a classic example of "Economics 101." In Iowa, CRP will pay farmers an average of \$80 per acre. By comparison, the average payment in Kansas will be \$37 an acre, and in North Dakota the payment will be \$32. That's the reason northern Iowa will lose its grasslands -- plain and simple.

Like most of you, I'm quick to support programs that provide the biggest bang for the buck. But when it comes to the current sign-up, this is hardly the case.

Recently, the American public has been told that the "new CRP" would become an even better program by targeting "environmentally sensitive" lands. A comparison of Erodibility Indexes, as well as EBI scores, clearly shows otherwise.

As its name implies, the Conservation Reserve is intended to do just that -- conserve vital natural resources. But no one can hope to effectively address resource concerns unless they are willing to pay for them.

During the past decade the Conservation Reserve Program has accomplished its mission. The program has successfully aided in reducing grain surpluses, conserving soil, and improving the quality of our water. As a direct spin-off, wildlife populations -- both game and nongame -- have increased dramatically; and Iowa has once again become the pheasant capital of the world.

But as one song writer penned it, "The times, they are 'a changing." In the future, Iowans can look forward to reduced wildlife populations and increased soil erosion. A good share of the state's recently restored prairie wetlands exist in CRP basins. As grasslands are plowed under, many of those marshes will be drained -- for the second time. Because of this and other

erosion factors, water quality will deteriorate. Mallards, egrets, bobolinks and other bird species will decline.

As was the case during the 1970s, it appears that the time has come to "kiss the roosters good-bye." During the next few years Iowans can expect greatly reduced recreational opportunities, as well as a significant decrease in their attendant revenues. Considering the amount of land returning to production, speculators are already predicting the return of "buck-ninety" corn.

What makes the demise of Iowa's CRP lands especially frustrating is, based strictly on environmental criteria, our acreages scored well. It all boils down to a matter of cost. Iowa farmers were severely penalized merely for having some of the most productive farmland in the country. But to policy decision makers, the nation's richest soil isn't necessarily worth saving.

Look at it this way. Should some sort of widespread food shortage occur somewhere down the road, which would you rather have saved? An acre of rich, black north-Iowa hillside or two acres of thin, arid wheatland?

Even though it's just a flicker, there is a light at the end of this saga's dismal tunnel. If so moved, ag officials could still institute significant rule changes within the CRP before the next sign-up begins this fall.

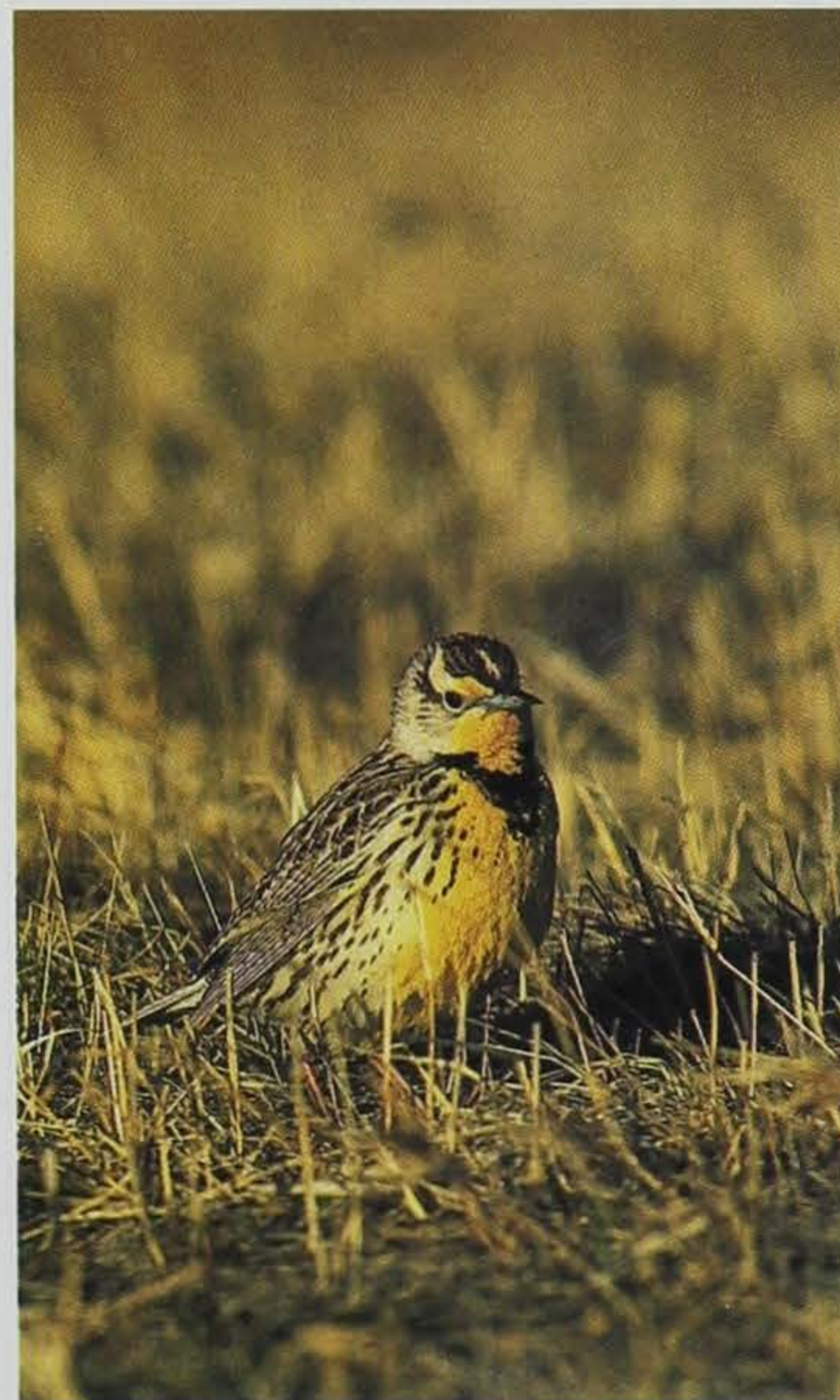
But for Iowa to become competitive under any future CRP sign-ups, environmental considerations such as water quality, soil erosion and wildlife benefits must carry equal weight with costs. It is always flawed logic to base "conservation decisions" solely on price. Against that yardstick, even the most highly erodible \$2,000-an-acre corn ground can never fairly compete against \$300-an-acre dry wheatland.

Although some hope remains, conservationists should make no mistake. This has become an 11th-hour call-to-arms, and any attempts to regain lost ground will require nothing less than a full-court press.

For the time being, it remains a dark hour for Iowa's natural resources.



Roger A. Hill



Roger A. Hill

Considering the amount of land returning to production, speculators are already predicting the return of "buck-ninety" corn.

PROPOSED IOWA 1997-98 HUNTING SEASONS AND BAG LIMITS

SPECIES	SEASON (DATES INCLUSIVE)	SHOOTING HOURS	BAG LIMITS	
			DAILY	POSSESSION
Youth Rooster Pheasant (age 15 or younger)*+	Oct. 18 -19	8:00 a.m. to 4:30 p.m.	1	2
Rooster Pheasant	Oct. 25 - Jan. 10, 1998		3	12
Bobwhite Quail	Oct. 25 - Jan. 31, 1998		8	16
Gray Partridge	Oct. 11 - Jan. 31, 1998		8	16
Rail (Sora & Virginia)	Sept. 6 - Nov. 14	1/2 Hour Before Sunrise to Sunset	12	24
Snipe	Sept. 6 - Nov. 30		8	16
Turkey (Gun)*	Oct. 13 - Nov. 30		One turkey per license	One turkey per license
Turkey (Bow Only)*	Oct. 1 - Dec. 5 and Dec. 22 -Jan 10, 1998	1/2 Hour Before Sunrise to 1/2 Hour After Sunset	One deer per license	One deer per license
Deer (Bow)	Oct. 1 - Dec. 5 and Dec. 22 - Jan. 10, 1998			
Deer (Muzzleloader)	Oct. 11- Oct. 19* (Early) or Dec. 22 - Jan. 10, 1998 (Late)			
Youth Deer (Age 12-15)+	Sept. 20 - Oct. 5			
Deer (Bonus Late Season)	Jan 11 - 18, 1998			
Deer (Shotgun)	Dec. 6 - Dec. 10 or Dec. 13 - Dec. 21			
Ruffed Grouse	Oct. 4- Jan. 31, 1998	Sunrise to Sunset	3	6
Woodcock	Oct. 4 - Nov. 17		3	6
Rabbit (Cottontail)	Sept. 1 - Feb. 28, 1998		10	20
Rabbit (Jack)	Oct. 25 - Dec. 1		2	4
Squirrel (Fox & Gray)	Sept. 1 - Jan. 31, 1998	None	6	12
Groundhog	June 15 - Oct. 31			
Crow	Oct. 15 - Nov. 30 and Jan. 14 - March 31, 1998			
Pigeon **	Oct. 1 - March 31, 1998			
Raccoon and Opossum	Nov. 1 - Jan. 31, 1998		None Open 8:00 a.m. First Day Only	None
Fox (Red & Gray)	Nov. 1 - Jan. 31, 1998			
Coyote	Continuous Open Season			

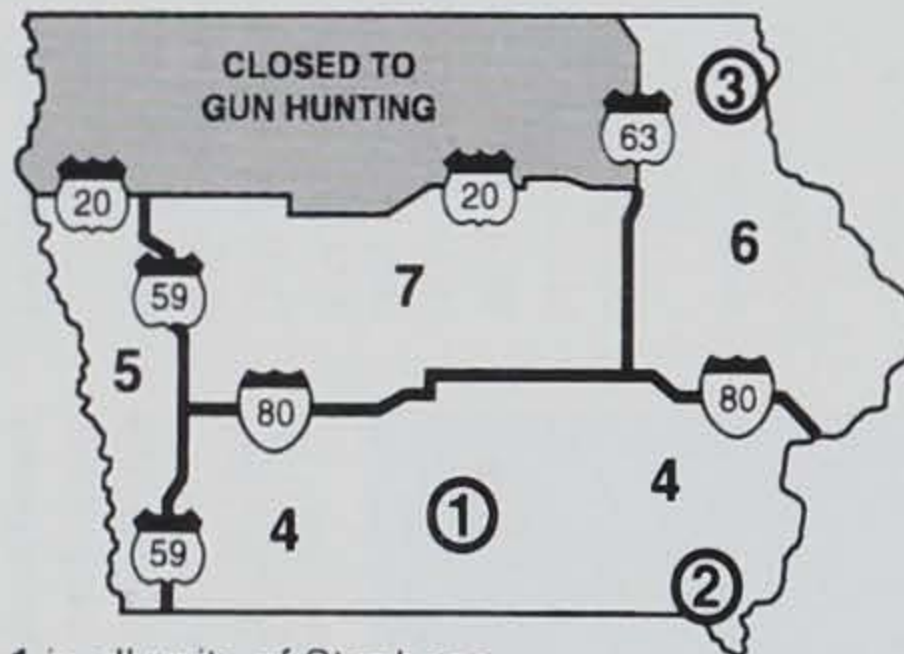
*Residents only **However, within 100 yards of buildings and bridges pigeons may be taken year round. + See regulations for all requirements.

1997-98 TRAPPING SEASONS

SPECIES	OPENING	CLOSING
Mink, Muskrat,* Raccoon, Weasel, Striped Skunk, Badger, Opossum, Fox (red & gray), Coyote	Nov. 1 **	Jan. 31, 1998 **
Beaver	Nov. 1	April 15, 1998
Civet Cat (spotted skunk), Bobcat and Otter	Continuous Closed Season	
Groundhog	June 15	Oct. 31

*Selected areas may be established in February, for muskrat trapping only.
**All furbearer seasons open at 8 a.m. on the opening date. There are no daily bag or possession limits.

Fall Turkey Zones



Zone 1 is all units of Stephens State Forest west of U. S. 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 Forest in Allamakee County
Bow-only fall turkey licenses are valid statewide.
 Fall turkey season is **closed** to nonresidents in 1997.

Fall Turkey License Quotas

Zone 1	50
Zone 2	50
Zone 3	50
Zone 4	1,000
Zone 5	300
Zone 6	3,000
Zone 7	100

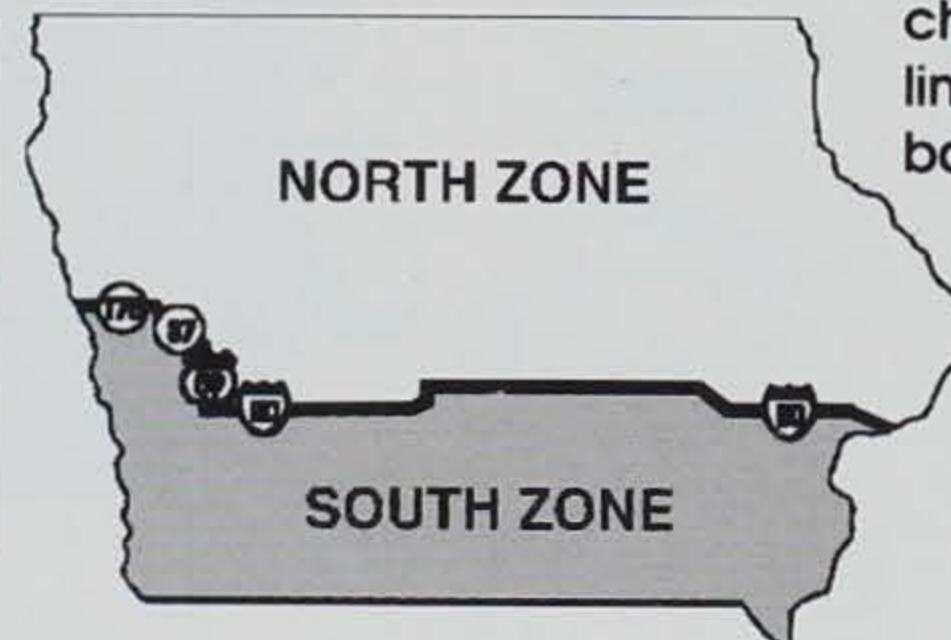
PROPOSED 1997 WATERFOWL HUNTING SEASONS AND BAG LIMITS

Final waterfowl seasons and bag limits are published in September.
 Nontoxic shot is required statewide for waterfowl hunting.

SPECIES	SEASON (dates inclusive)	AREA	SHOOTING HOURS	BAG LIMITS	
				DAILY	POSSESSION
Ducks Early season	Sept. 20-24	N. Zone	1/2 Hour Before Sunrise to Sunset	6 (see below)	12 (see below)
	Sept. 20-24	S. Zone		6 (see below)	6 (see below)
Youth Duck Day	Sept 27	Statewide		6 (see below)	6 (see below)
Ducks Late season	Oct. 11 - Dec. 4	N. Zone		6 (see below)	12 (see below)
	Oct. 18 - Dec. 11	S. Zone		2	4
Canada Geese Only	Sept 13 - 14	N. Zone Only		2 Canadas, 2 White-fronts, 2 Brant	4 Canadas, 4 White-fronts, 4 Brant
Geese Canada/ White-fronted/ Brant	Oct. 4 - Dec. 12	N. Zone		10 snow geese	30 snow geese
	Oct. 4 - Oct. 12	S. Zone		10 snow geese	30 snow geese
	Oct. 18- Dec. 17				
Geese - Snow Early season	Oct. 11 -Jan 7, 1998	Statewide			
Geese - Snow Late season	Feb, 21-March 10, 1998	Statewide			
Coots	Same as Ducks			15	30

Ducks: The daily bag limit is six (6) ducks and may include no more than four (4) mallards (no more than two (2) of which may be female), one (1) black duck, two (2) wood ducks, two (2) redheads, one (1) canvasback and one (1) pintail.
 The possession limit for ducks is twelve (12) ducks and shall not include more than eight (8) mallards (no more than four (4) of which may be female), two (2) black ducks, four (4) wood ducks, four (4) redheads, two (2) canvasbacks, and two (2) pintails.
Mergansers: Daily bag limit is five (5) (no more than one (1) of which may be a hooded merganser); possession limit is ten (10) (no more than two (2) of which may be hooded mergansers).

Season dates and bag limits are all subject to change and will be determined after Federal guidelines are released in August. Final season dates and bag limits will be published in September.



Call 515/281-HNTR(4687)
 for season information 24-hrs a day
 internet address -- www.state.ia.us/dnr

Iowa's Hidden Gem Dolliver Memorial State Park

Article and photos by Steve Bell

It was 1995 and the third day of the Register's Annual Great Bike Ride Across Iowa (RAGBRAI). Riders pedaled up the incline, out of the Webster County farm fields, then dropped over the hill into a cool, green valley and the treasures Dolliver Memorial State Park.

"Hey, just where *are* we? Are we still in Iowa?" were comments from many RAGBRAIers. Even as they rode through the park some bicyclists were very surprised to find they were in an Iowa state park. Many riders stopped at the top of the hill amazed at the scenic beauty the park had to offer. RAGBRAI riders are from across the U.S. and many never guessed

Iowa had a park of such beauty hidden along the Des Moines River.

Bluffs, canyons, Indian mounds, Boneyard Hollow, Copperas beds, the Memorial Plaque and Prairie Creek are all part of the natural and cultural history making Dolliver an easy place to fall in love with. Many RAGBRAI riders have returned to Dolliver to take a closer look at the park or for a weekend camp-out with their families or friends.

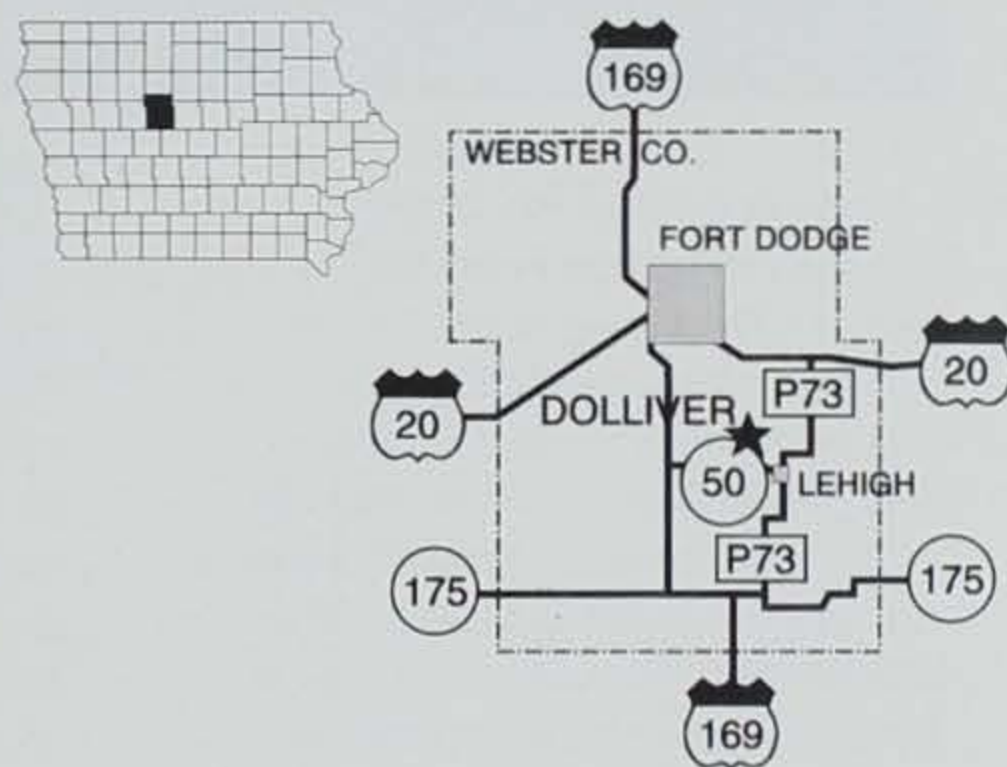
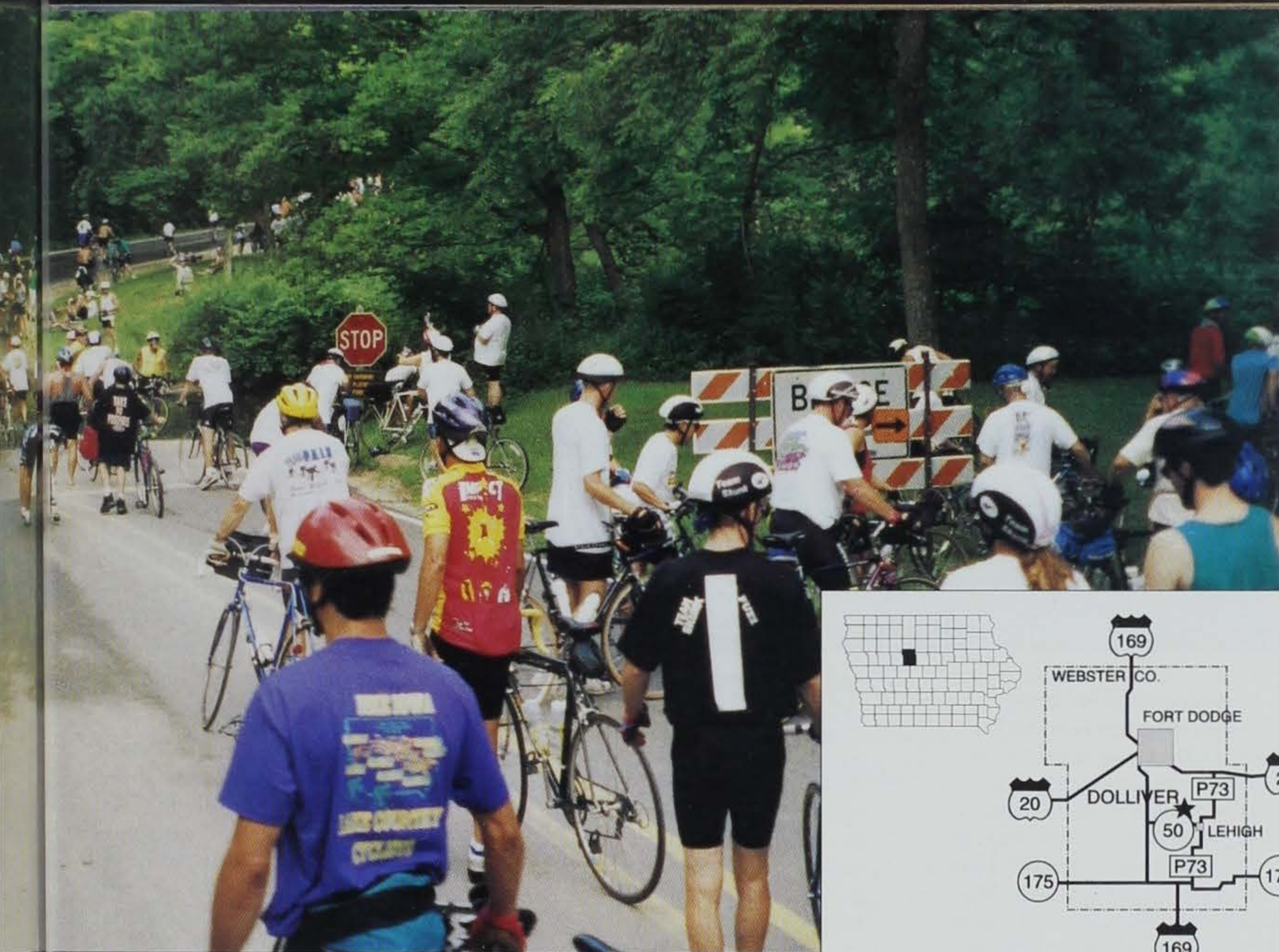
Dolliver is Iowa's third oldest state park and a variety of features are scattered throughout this hidden gem.



Boneyard Hollow is a deeply cut ravine where legend suggests Native Americans stampeded buffalo over the 100-foot high sandstone cliffs. The hollow is a 1/4-mile-long cul-de-sac where it is said the area's early settlers found many buffalo bones. Today, there are not any bones left, but if visitors walk up through the hollow they surely can see how it got its name. The plants, mosses and trees growing here are also something to check out. The area is rich with plant life including cinnamon fern and Jack-in-the-pulpit. It just takes a few minutes for visitors to sit back and imagine themselves here 100 years ago or more and picture what it would have looked like then.

The Indian mounds are located on the highest bluff the park has to offer and are centrally located above the Des Moines River and Prairie Creek. The Woodland Indians built the mounds sometime around 1100 A.D. The three

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mounds are conical and linear in shape, and it is surmised they were used for ceremonies. This area holds many memories, if only the mounds could tell the stories. Unfortunately, the mounds were vandalized in the past by people looking for gold and silver. While the vandals did not find any gold they destroyed the rich story the mounds could have revealed. Many of the mounds found along the Des Moines River are similar to the mounds found at Effigy Mounds National Monument in northeast Iowa.

Copperas beds, deposited 250 million years ago, are found in a sandstone bluff towering up to 100 feet above the valley floor. The unique stone outcropping gives a good cross-section view of the accumulated sediment from the old river bottom. Visitors can see and touch petrified wood, and smell the sulfur and iron deposits leaching through the porous sandstone. The sulfur and calcite dry out leaving behind minerals.

These mineral forms have a strong fragrance and are sometimes called "sulfur flowers." The calcite left behind helps preserve the sandstone. Rock climbing and rappelling are not allowed in the park because the sandstone is easily eroded.

The Memorial Plaque is a bronze plate, sculpted by Laredo Taft, embedded in a sandstone wall. The plaque was dedicated on June 28, 1925 in remembrance of Jonathan P. Dolliver (1858-1910). His family and the state legislature provided funding for the park. Dolliver was a lawyer who dreamt of making his fortune in Iowa and was well known in the Fort Dodge area. He was an excellent speaker and was nominated to Congress where he served as a United States Representative and then Senator for many years. The plaque is centrally located in the park, near a freshwater spring. The inscription quotes Dolliver's tribute to the early homestead settlers.



RAGBRAI visited Dolliver in 1995 (top). Many riders returned later with family and friends to further enjoy the park.

The memorial plaque (above) honoring Dolliver quotes his tribute to early homestead settlers.



An amazing array of spring flowers can be seen beginning in mid-March. Spring beauty, wood anemone and marsh marigolds are just some of the natural beauties. And, while visitors are out looking at the flowers they may be lucky enough to find a patch of morel mushrooms or raspberries. Wild animals abound in Dolliver. Turkeys, eagles, otters and deer are just a few of the fauna found in the park.

Park facilities include a modern campground with electric sites available for recreational vehicles. A playground is close by, and six miles of trails guide visitors through the forested valleys. The trails are well marked and will take visitors to any of the park's unique features. There is a boat ramp on the Des Moines River for fishing or canoeing adventures. A large, group camp can accommodate weekend family reunions or youth groups.

What's new at Dolliver for 1997? Dolliver has many structures on the National Register of Historic Places. Recently the state legislature passed a bill providing funding for repair of the state's historic Civilian Conservation Corps (CCC) and Works Progress Administration (WPA) buildings built in the 1930s. Most of the park's buildings were built during this era. Contractors are already scheduled to remove rotten timbers, replace electrical wiring, and install quarry-tile floors along with completing other face-lift construction and enhancements on the lodges and family cabins. Construction will be completed by the spring of 1998. The enclosed lodges will then be available for company picnics, church groups, family reunions and other day-use social outings and the two family cabins will be available for overnight stays.

Consider a visit with family or friends to enjoy the scenic beauty and historical features the park has to offer. Dolliver is located 10 miles south of Fort Dodge on Highway 50. Just drop over the hill and enjoy this hidden gem in it's valley setting.

Steve Bell is the park ranger at Dolliver.

Dolliver lodges (above) have attracted many visitors for events from family reunions to gatherings such as this artist in the park program at Center Lodge. The renovated lodges will reopen in 1998.

Boneyard Hollow (left) is rich with legend and lore as well as plant life including cinnamon fern and Jack-in-the-pulpit.



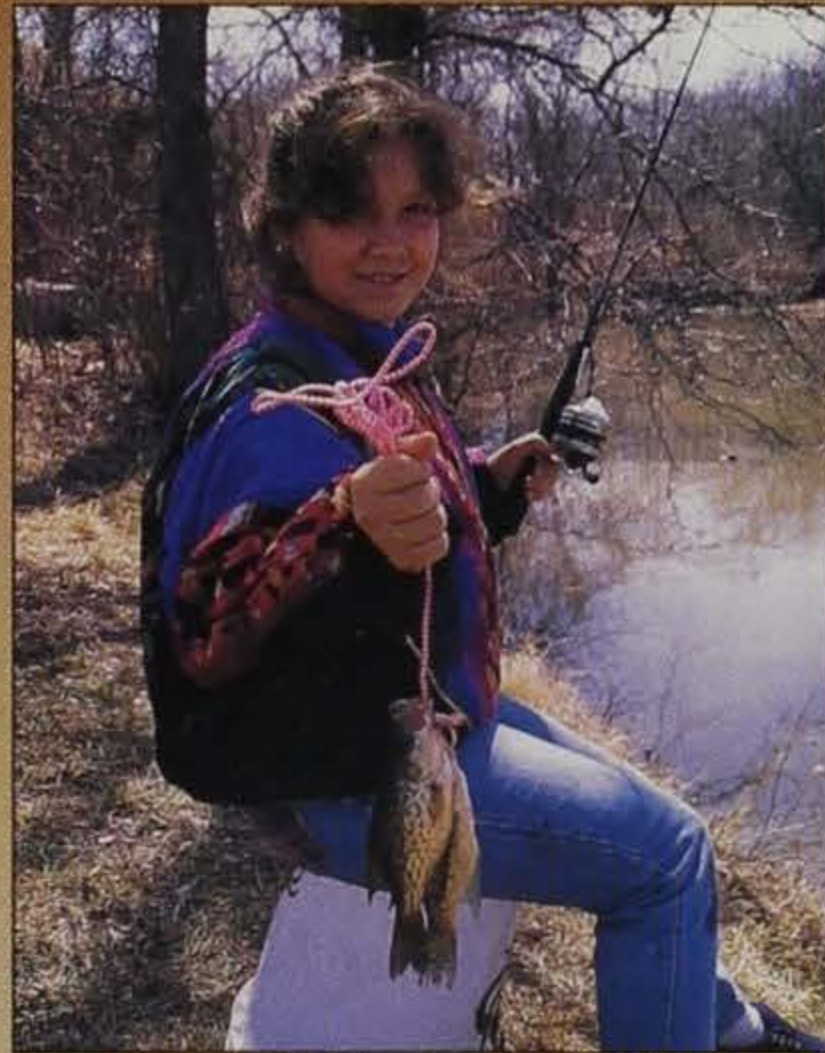
Creating New "Huck Finns"

by Barb Gigar

Summertime — school is out, the sun is bright and the long hours stretch ahead for full day of *what???* Many parents, grandparents, daycare providers and youth group leaders face filling up the hours they spend with kids with upbeat, inexpensive and interesting activities. Many have also heard, "I have nothing to do. It's so... boring!" far more times than they have wished.

For some of these adults, summertime conjures up visions of kids in old jeans, carrying a can of worms, a fishing pole resting on their shoulder and a bandanna filled with lunch tramping off to the old fishing hole. They may have memories themselves of long, sultry days spent on a favorite riverbank, lake or farm pond seeking "old granddad" — the legendary fish who seems to always get away. Times have changed and many kids now spend all year, summer included, in an urban setting. Sports and sporting equipment seem to have all gone high tech and "high expense."

Kids don't have to live "on the river" like Huck Finn, however, to get hours of



Ken Formanek

enjoyment from fishing, and fishing equipment doesn't have to bankrupt the purchaser. Fishing is a wonderful activity for families and a great way to expose kids to what can be a lifelong recreational activity.

Inexpensive fishing rigs can be found for about \$20, but if you wish to introduce children to the fun of fishing with very little expense, homemade items can be just the ticket. The following are some "do-it-yourself," low-cost items that are also fun to make. Constructing the items themselves can be an entertaining activity for families or youth groups.

Pop Can Casting Rig

Construct your own fishing rig using a pop can and some inexpensive items from any tackle shop or sporting goods store.

Materials Needed

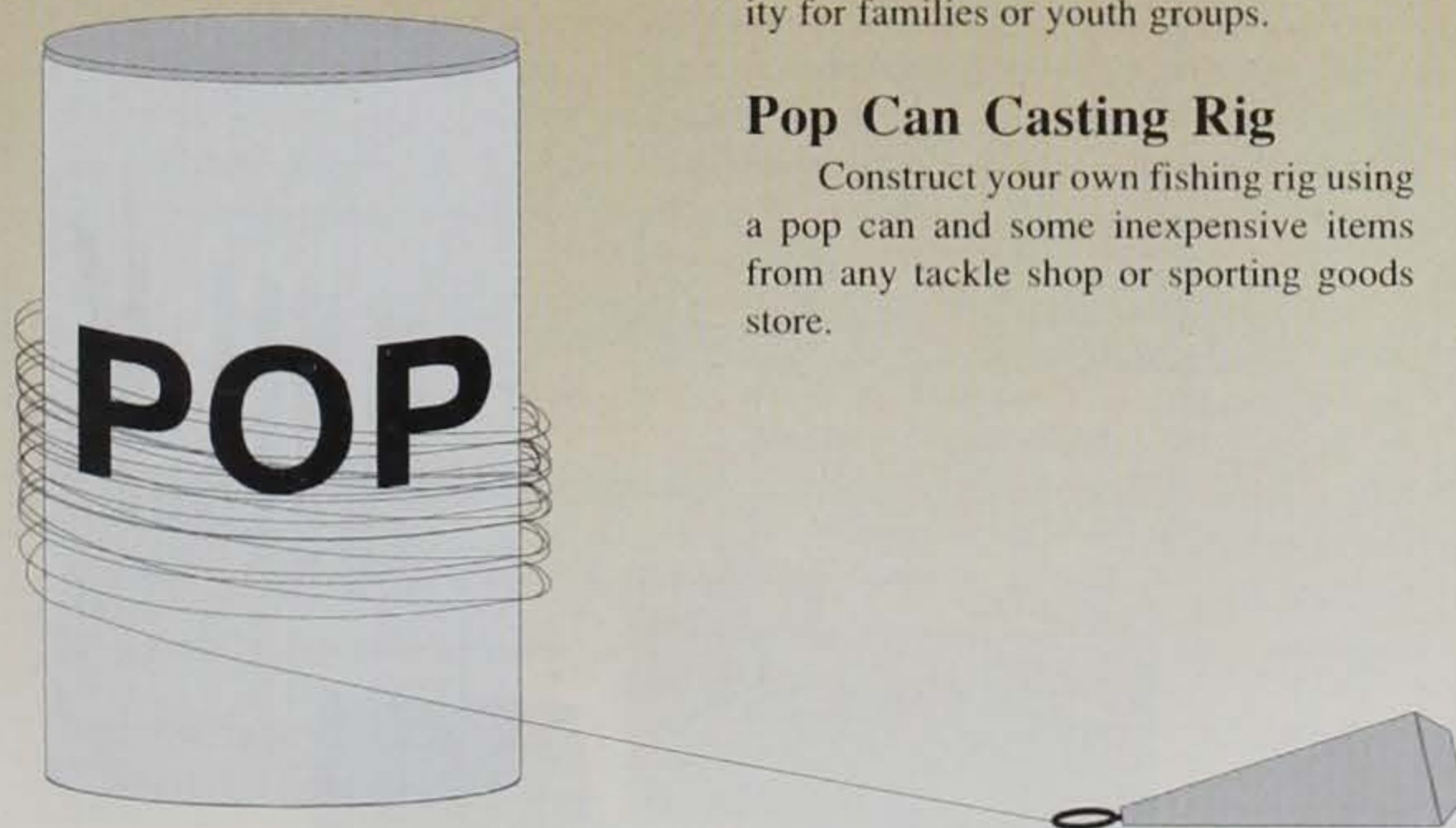
- one pop can
- fishing line (8- or 10- pound test)
- electrical tape (to hold the end of the line/knot secure)
- fingernail clippers or scissors
- terminal tackle [one hook (#8); one bobber (one-inch); one split shot (BB size)] or casting plug

Construction

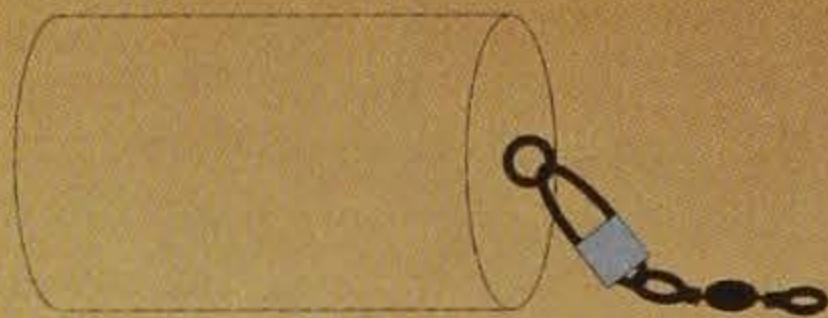
1. Tie fishing line around top end of pop can, placing the line around the can just under rim at the top "lip" and knot the line to secure.
2. Wrap a strip of electrical tape around lip end of the can to hold the knot and line in place.
3. Wrap the fishing line around the can about 75 times. Wrap the line from the lip end of the can toward the bottom of the can and clip the line.
4. Attach a casting plug to practice, or tie on the hook and place the bobber and shot on the line for fishing.

Use

1. Hold the can in one hand with the top toward your target holding the can below the line.
2. With your free hand, grab hold of the line just above the casting plug (or bobber) with about two feet of line between your hand and the can.
3. Swing the line forward and release the line at the end of the forward swing.
4. To "reel in" just hold the can with one hand and wrap the line around it with the other.
5. An additional activity to hone your casting skills is playing a modified version of "H-0-R-S-E" using your pop can rig (or a regular rod and reel). The new version is called "F-I-S-H" and participants cast at a target, rather than shoot baskets. You can cast at the target from different distances or poses (just like the basketball version) and challenge your opponents to do the same. Each time you hit the target and your opponents are unable to replicate your cast they get a letter and vice versa. The last person to get all four letters is the winner.



Practical Conservationist



Dowel rod casting plugs

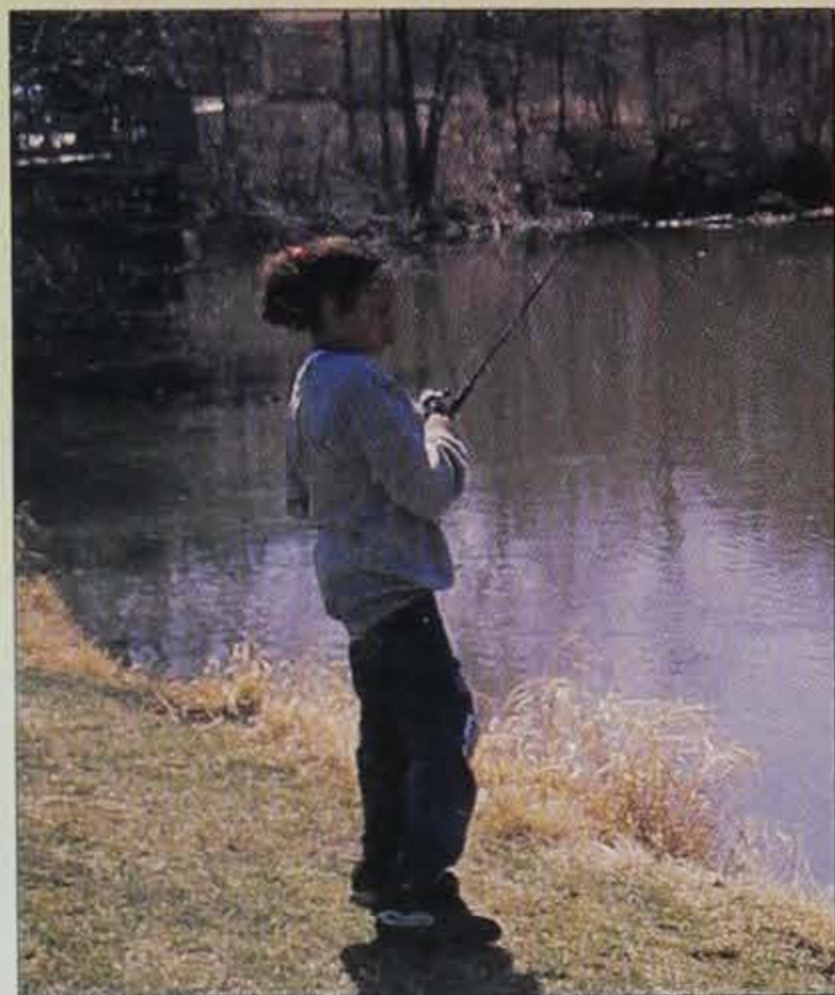
Casting plugs can be purchased from tackle shops, but they also can be constructed using dowel rods and eye screws.

Materials Needed

- 1/2-inch diameter dowel rod
- 1/2-inch long eye screws (size can vary)
- snap swivels
- hand saw
- bar soap

Construction

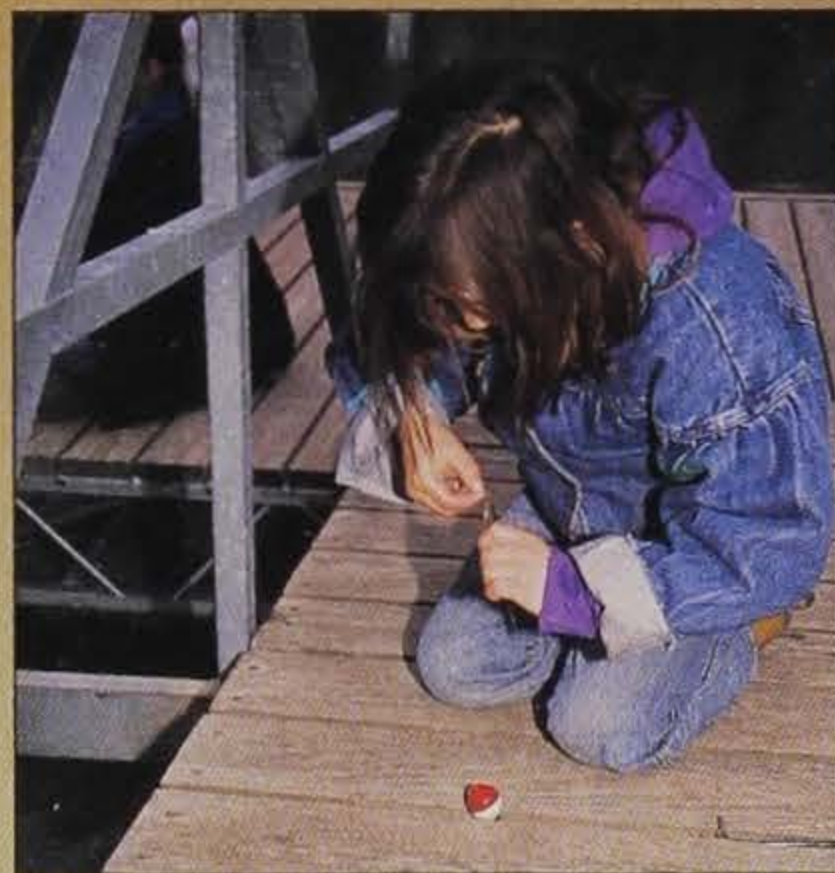
1. Cut the dowel rod into 1'-inch lengths.
2. Scrape the eye screw across the soap to lubricate. Screw it into one of the length of dowel rod.
3. Attach a snap swivel to the eye to complete the plug. (See the diagram above.)



Ken Formanek

Use

Casting plugs can be attached to your pop can rig in place of a hook or fishing lure. Set up a target and practice casting to improve your accuracy so you can cast around snags and other structures when you go fishing.



Ken Formanek

Use

This is an inexpensive way to provide individual tackle containers for several anglers. The children can mark the tackle boxes with their names and personalize them using permanent markers.

With just a little time, scrap plastic and aluminum and a few basic gear items can be turned into equipment providing hours of outdoor recreation. Those long, hot days which threatened to be "soooo boring" can become days filled with chasing (and maybe even catching) a lunker. Turning kids into anglers by providing them with their own equipment -- that's the ultimate in recycling!

Barb Gigar is the coordinator for the Aquatic Education, Project Wild and Project Learning Tree programs and is located at the department's Springbrook Conservation Education Center in Guthrie Center.

Milk Jug Tackle Box

Materials Needed

- one-gallon plastic milk jug (or other large plastic jug)
- film canisters (or other small plastic containers with lids)
- labels or masking tape
- pencil or permanent marker
- tackle

Construction

1. Cut the front from a plastic milk jug to produce a container for carrying terminal tackle. (See the diagram.)
2. Label the film canisters or other containers with the name of the items they will hold.
3. Place the hooks, bobbers, weights, swivels, etc. in the individually labeled film canisters.



Water Canaries by Barb Gigar

This activity was adapted from the *Aquatic Project WILD* Activity Guide, copyright 1992, Western Regional Environmental Council, Inc.

Background:

In the early days of coal mining, canaries were taken into mines. Since canaries were more sensitive than humans to the presence of dangerous gases in the air, their discomfort or death indicated whether or not the air was safe to breathe.

In streams and ponds, the presence or absence of certain organisms, called indicator species reveals much about the quality of the water. These creatures comprise a *biotic index*. That is, their absence or presence tells us something about water quality.

Water with a rich and varied range of aquatic creatures is usually a healthy environment. Pollution generally reduces the quality of the environment causing a decrease in the diversity of life forms.

In Iowa, turbidity (a measure of the clarity of the water) is a very important physical characteristic impacting water quality. The major pollutant in Iowa's aquatic resources is the soil from the surrounding watersheds. Nutrients from these watersheds, in the form of agricultural fertilizers and wastes, also are a contributing factor to decline in water quality. But silt (fine soil particles) has the greatest impact on our aquatic resources. Pollutants create a harsher environment in which certain animals cannot live, thus decreasing the diversity of the ecosystem.

Studies have shown that silt kills aquatic insects such as caddisflies, stoneflies, mayflies, dragonflies and damselflies by clogging the gills of their immature stages. Populations of fish that feed on these insects (darters, some minnows, logperch and smallmouth bass) also decline because their food supply is removed.

Fish that scatter their eggs on the bottom substrate, such as trout or walleye, have poor reproduction in some waters because the eggs often are suffocated by silt. Predators that feed by sight, such as bass, are unable to do so in very turbid waters, so their growth is slowed. These fish may be replaced by ones better able to survive in turbid water such as the common carp.

Excess nutrients degrade water quality by causing "blooms." Algae and aquatic plants grow and reproduce very rapidly when the nutrients are added, but they then die and rot. Decomposing bacteria deplete oxygen supplies in the water and produce gases such as methane and hydrogen sulfide. More sensitive animals cannot live under these conditions.

If you are doing this activity at a water site, have the students note the clarity/color and odor of the water. Do the clarity/color or odor indicate siltation or the presence of excess nutrients?

The major purpose of this activity is for students to be able to recognize indicators of environmental quality in streams, ponds and other aquatic habitats.

Temperature Ranges (Approximate) Required for Certain Organisms

Temperature

High range: greater than 68° F (20° C) -- warm water	Much plant life, many fish diseases Most bass, crappie, bluegill, carp, catfish, caddisfly
Middle range: 55-68° F (12.8 - 20° C)	Some plant life, some fish diseases Trout, stonefly, mayfly, caddisfly, water beetles
Low range: Less than 55° F (12.8° C) -- cold water	Trout, caddisfly, stonefly, mayfly

Dissolved Oxygen Requirements for Fish and other Aquatic Life (D.O.) in Parts per Million

(below 68° F)	(above 68° F)
Cold-water organisms, including trout	Warm-water organisms including fish such as bass, crappie, catfish and carp
6ppm	5ppm

Age:

Grades 4-12

Objectives:

Students will:

1. Identify several aquatic organisms; and
2. Assess the relative environmental quality of a stream or pond based on:
 - a. the presence of a diversity of organisms; and
 - b. other indicators such as water temperature, dissolved oxygen and turbidity.

Materials:

Writing materials, clipboard

Diversity of organisms: identification books (taxonomic keys, *The Golden Guide to Pond Life*; sampling equipment, such as seine nets, sieves, trays, assorted containers; white trays (styrofoam, plastic, porcelain all are satisfactory); magnifying lenses; eye droppers; forceps; meter sticks or tape measure

Other indicators: dissolved oxygen test; thermometer; secchi disk

Other Resources:

Golden Guide to Pond Life -- Reid, G. K. 1987. Golden Press: New York, available from popular book stores or scientific supply companies.

Hach kits to test for dissolved oxygen -- these kits include easy-to-follow instructions and are available from scientific supply companies.

Homemade Sampling Equipment, -- an illustrated guide to construction of basic instruments to sample aquatic organisms and water quality parameters -- produced by the Tennessee Valley Authority and available from the DNR Aquatic Education Program, 2473 160th Road, Guthrie Center, IA 50115, (515)747-2200.

Save Our Streams -- citizen action program, available from the Izaak Walton League of America (Midwest Office), 5701 Normandale Road, Minneapolis, MN 55424; (612)922-1608

Classroom Corner

Extensions

1. Look at the relationships between the values for water temperature and dissolved oxygen.
2. Contact local wildlife, environmental and conservation groups to find out what their concerns are regarding water quality. Determine what can be done as an individual and as a community to improve or maintain local water quality.
3. Research other examples of biological indicators.
4. Contact your local county conservation board or DNR office to see if there is a water quality monitoring project in your area. Get involved!

Evaluation

1. Draw a simple illustration of one or more of the following organisms: asellus (water sowbug), bass, caddisfly larva, carp, cyclops, daphnia, leech, mayfly nymph, midge larva or stonefly nymph. Write the correct name beside the picture.
2. You found a trout in a stream along with a large variety of other organisms. Predict the ranges you would expect to find for dissolved oxygen and water temperature.



Roger A. Hill

Barb Gigar is the Aquatic Education, Project Wild and Project Learning Tree program coordinator located at the department's Springbrook Conservation Education Center in Guthrie Center.

Procedure:

1. Select a sampling site where student impact will be minimal. Be sensitive to the impact students may have on streambanks and beds, spawning and nesting sites, and vegetation. Have the students establish ethical guidelines for sampling activities. Try to find a small, fairly shallow, slow-moving stream or pond. Be alert to the safety of the students. If the site is not public, be sure to gain permission to visit. Advise the students in advance to dress for the setting. Old shoes and shorts or jeans are best. If a site visit is not possible, modify the activity to be conducted in the classroom.

Diversity of Organisms

2. Brief the students on habitat courtesies. Alert them to ways to minimize the potential for damaging the habitat. Emphasize that all the wildlife is to be returned to its habitat unharmed. Take pictures or identify animals on site if possible.
3. Look for organisms on the water surface and in the depths. Using sampling equipment (nets, trays, assorted containers, etc.), collect as many different forms of animal life as possible. Be alert to differing micro-habitats (near rocks or in riffles in streams; on plants or structures in ponds). Place the animals to be observed in the white trays for viewing and drawing.
4. Keep adequate water in the trays and place them in a cool, shady spot. Change the water as needed to keep the animals cool. Have the students identify as many of the animals observed as possible and take pictures or write detailed descriptions (size, color, number of appendages, etc.) of others.

5. Students should also record the number of each kind of animal and describe the actual location where each was found. If you choose to take animals to the classroom, be sure there is adequate water that can be kept as cool as the natural setting.

6. Encourage the students to discuss their observations. Were a lot of different aquatic organisms found? Introduce the concept of *diversity* of life — a variety of different kinds of plants and animals is usually an indication of a healthy ecosystem.

Other Indicators

7. Test the water at the field site for other indicators of quality. Note the color and odor of the water. Use a secchi disk to measure the turbidity. Lower the disk until it cannot be seen, record the depth of the disk from the water surface; lower it further and then pull the disk up until it is again visible and take a second reading. Average the two.

8. Using the water quality kit, determine the temperature of the water and air, then perform the dissolved oxygen test.

9. Help the students understand how the values for dissolved oxygen, turbidity and water and air temperature affect the diversity of life forms found in aquatic environments. Ask whether they would expect the same variety of life in other locations. Help them realize that predictions of animal diversity can be made from measurements of dissolved oxygen and water temperature. Likewise, certain indicator species can tell you about oxygen and water temperature.

10. Summarize the study reemphasizing the diversity of specific animals is a useful indicator of habitat quality as well as an overall indicator of environmental quality.

NOTE: A simple water quality kit can be obtained from scientific supply houses. Often a kit can be borrowed from a high school biology teacher. They are called hydron kits or Hach kits. A local wastewater treatment facility may also have kits you can borrow. Local universities or wildlife agencies may have aquatic insect kits that you can borrow. Secchi disks may be constructed using directions in the *Homemade Sampling Equipment* publication.

New Mortgage Program Awards Home Buyers for Energy Efficiency

Buy an energy efficient home -- receive affordable financing. That's the message behind new mortgage programs promoting energy efficient home loans.

Fannie Mae and Freddie Mac, national mortgage loan programs, have chosen Iowa as a pilot state for providing energy efficient mortgages. Through incentives such as higher loan amounts, lower interest rates and decreased loan fees, lenders are able to offer affordable financing because of the energy savings a homeowner will realize through efficiency.

A strong proponent of the program is Norwest Mortgage, offering several additional financial incentives for participants. Norwest Mortgage's package includes a rate reduction of 0.125 percent and a \$350 rebate on mortgage closing costs for energy efficient homes.

Another mortgage finance company, GMAC, will pay the appraisal fee and half of the loan origination fee for energy efficient homes.

Energy Rated Homes of Iowa and the DNR established the Home Energy Rating System, which serves as the efficiency criteria for the mortgage loan program. Homes rated four stars or more qualify for energy efficient mortgages, and also meet the State of Iowa Residential Building Energy Code.

What are the bottom line savings for Iowans? Based on national research, 19 percent of residential energy consumption could be saved if all Iowa homes met the Iowa Residential Building Area Code. That would save Iowans almost \$200 million in energy costs per year.

To learn more about energy efficient mortgages and the Home Energy Rating System, contact Claude Papesh, Director of Energy Rated Homes of Iowa, at (515) 752-7162, extension 125.



Joe Wilkinson

Kelly Mudge, regional sales rep for the Outdoor Technologies Group, Barb Gigar, DNR, Kathy Nelson of Central Lee Schools, student Brian Klemme and NRC chair Tom Monroe gather as Nelson is presented the first "Brass Bluegill" award co-sponsored by the Outdoor Technologies Group and the DNR Aquatic Education Program.

Central Lee Educator Honored

Kathy Nelson of Central Lee Schools in Donnellson, Iowa, was presented the first "Brass Bluegill" award on May 8, 1997, at the Natural Resources Commission meeting in Muscatine. The award was in recognition of her commitment and leadership in developing and maintaining an exemplary angling education unit for the past six years. Co-sponsored by the Outdoor Technologies Group and the DNR Aquatic Education Program, the award included a plaque for Nelson and fishing equipment, which was presented to Central Lee Schools for use with their fishing program.

Nelson and eighth-grader Brian Klemme impressed the commissioners with an overview of Central Lee's comprehensive fishing program. After going through a *Fish Iowa!* workshop, Nelson recruited other teachers to develop a two-week interdisciplinary unit in physical education, math, science, geography and language arts. She even involved a local fishing club, the Lake Cooper Angling Asso-

ciation. Central Lee has been using the *Fish Iowa!* basic spincasting module since the spring of 1991 and some 650 students have participated. All seventh graders go through the unit, even special education students — about 100 students will participate this spring.

Not only has Nelson been a leader at her school, she has assisted with *Fish Iowa!* workshops for educators and has been an outstanding resource for others setting up interdisciplinary units using the *Fish Iowa!* materials. She has answered a number of calls and even shared Central Lee's lesson plans with interested teachers.

Nelson has been a strong voice for the *Fish Iowa!* materials over the years. Thanks to educators like Nelson, whose enthusiasm for the *Fish Iowa!* module is contagious, more and more educators have gotten "hooked." More than 1,100 teachers, naturalists and youth leaders have been trained, representing more than half of Iowa's public school districts as well as numerous private schools, camps and residential centers. *Fish Iowa!* is used with some 100,000 Iowa students each year.

Conservation Update

Boating Accident Report Rule Amended

A change was made to the rules covering the reporting of boating accidents. Effectively immediately, whenever any watercraft is involved in a collision, accident or casualty, except one involving property damage less than \$500, a report must be filed with the DNR by the operator of the watercraft. The report must be filed immediately in cases of death or disappearance, and within five days in all other cases.

For more information on these changes, contact your local conservation officer or call DNR recreational safety coordinator Sonny Satre at (515) 281-8652.

"Cones For Kids" Boating Safety Program

Beginning in late June or early July, many Iowa youngsters wearing personal flotation devices (PFDs) and displaying safe boating practices this summer will be rewarded with a coupon for a free, small dessert from Hardee's, according to DNR Recreational Safety Coordinator Sonny Satre. The program is a cooperative effort between the DNR and Hardee's Restaurants to encourage children to wear PFD's and practice boating safety.

"The coupons will be distributed to persons under 16 who are displaying safe boating practices, such as wearing a PFD, showing courtesy to others, prudent operation, knowledge of basic boating laws or displaying a Boating Safety Certificate," Satre says. "This program originated in Wisconsin and has been tremendously successful there. According to a Wisconsin DNR boating safety specialist, there has been a significant decrease in drownings and child fatalities since the program began three years ago, and it is now rare to find a child not wearing a life jacket."

Coupons will be given out by the officers during normal patrol activities and expire Oct. 31 of this year. For more information on the "Cones for Kids" safe boating program, contact Satre at (515) 281-8652.

Boating Deaths Drop To Record Low

Boating fatalities dropped to a nationwide, all-time record low in 1996, according to the National Association of State Boating Law Administrators (NASBLA). The reduction from 1995 is also the greatest percentage one-year drop in a decade. Contrary to popular belief, the typical fatal boating accident is a simple capsizing or fall overboard from a small boat, not a fiery, high-speed collision. The accident usually happens in broad daylight with good weather and clear visibility.

A preliminary survey of NASBLA member states indicated there were 714 boating deaths in 1996 compared to 818 in 1995, a 13 percent decline. The greatest number of boating deaths were recorded in 1973 when there were 1,754 fatalities. Non-fatal accidents are also down, with 4,589 nonfatal boating accidents reported in 1996, compared to 4,954 in 1995.

Some of the reasons given for the relatively safe 1996 boating season were increased education and law enforcement, a stepped-up public relations campaign encouraging the use of life jackets, and legislation and educational efforts to decrease personal watercraft accidents.

Personal watercraft have been a cause of concern for several years

due to increasing accidents involving them. Many states have mandated that personal watercraft riders wear life jackets. In 1995, 79 personal watercraft fatalities were recorded, but in 1996 that figure fell to 54 deaths. Of the boating injuries reported on the NASBLA survey, 44 percent involved personal watercrafts.

DNR recreational safety coordinator Sonny Satre said that boating courses are readily available, offered by the U.S. Coast Guard Auxiliary, U.S. Power Squadron, American Red Cross and the DNR. Topics covered include boat handling, piloting, rules of the road, survival techniques, understanding and coping with the weather and Iowa boating regulations. Most boating courses are taught in the evening and offered free of charge except for a fee to cover the textbook and other expenses.

For more information on boating courses, contact your local conservation officer or any of the groups previously mentioned. A free home study course is available from the DNR by calling (515) 281-5918.



Ron Johnson

Iowa Pheasant Harvest Tops Nation

For the second straight year, Iowa's pheasant harvest was tops in the country, according to DNR Wildlife Biologist Todd Bogenschutz. An estimated 206,000 hunters bagged 1.37 million roosters last year, slightly less than 1995's 1.44 million birds. South Dakota ranked second with a 1.2-million-bird harvest. Hunter numbers increased slightly from last year, primarily due to more nonresident hunters.

Resident pheasant hunters averaged seven days in the field and one bird per trip, while nonresidents averaged four days afield and 1.5 birds. Those hunting in mid-November had the best success, and while field reports indicated hunters in northern Iowa had the best hunting in years, southern Iowa had some of the worst.

"The success differences were due almost entirely to weather conditions during 1996 pheasant reproduction," Bogenschutz explains. "Northern Iowa was slightly drier than normal and had a very good pheasant hatch. On the other hand, southern Iowa had very wet conditions -- some areas received as much as 15 inches more than normal rainfall for May and June -- and almost no pheasant hatch. With a wetter-than-normal spring, drought-like conditions in the late summer, and statewide haying of CRP, I would say Iowa's small game populations did as well as could be expected."

Small game hunters made about 2 million trips afield last fall, and hunter success on rabbits and squirrels was about the same as in 1995. Hunters reported an increased harvest of Hungarian partridge and ruffed grouse, however the quail harvest was less than in 1995.

"The increased Hungarian partridge harvest was associated with both an increased partridge population and more hunters," Bogenschutz says. "Anytime northern Iowa has a dry spring our partridge tend to reproduce well. With an abundance of CRP grasslands, the stage was set for partridge numbers to rebound."

"Approximately 22,000 partridge hunt-



Lowell Washburn

ers harvested slightly more than 36,000 birds, an increase of more than 400 percent," says Bogenschutz. "Hunters averaged 8.5 trips and 1.5 birds for the season, and those hunting in December had the best success."

Quail hunters averaged 4.5 days afield and less than two birds for the season, the lowest harvest recorded since survey procedures were standardized in 1963. Bogenschutz attributes the decrease to severe winter weather over much of southern Iowa last January.

"The prolonged, deep snows and bone-chilling cold over most of Iowa's quail range decimated our quail population," he says. "A very wet spring, followed by a very dry summer that led to the release of CRP for haying and grazing proved particularly tough on Iowa's quail population. But quail can make a remarkable rebound with good weather during nesting. If that happens, look for a rapid increase in quail populations."

The numbers of ruffed grouse hunters decreased to about 2,500 last year, but the harvest of 3,000 birds was an increase of about 17 percent. Grouse hunters averaged 11.7 trips afield and 1.2 birds for the season.

"Hunters harvested 331,000 cottontails and more than 56,300 squirrels last

season, but rabbits and squirrels are an underused resource in Iowa," Bogenschutz says. "They can be found anywhere in the state and there is little or no competition for hunting spots. Rabbits and squirrels lack the flair of pheasant and quail, but they offer a great way to introduce kids to hunting."

Kestrel Nest Box Trails Big Success

The idea of one experimental nest box trail in 1983 has grown to approximately 1,000 nest boxes in at least 40 Iowa counties across the state, according to DNR Wildlife Technician Bruce Ehresman. The nest boxes have been so successful that more than 1,200 kestrel youngsters are fledged from them each year.

"The nest box trail was initiated along I-35 in Cerro Gordo County by DNR Wildlife Biologist Ron Andrews nearly 15 years ago," Ehresman says. "The people who have participated in this effort have been paid off with many nesting falcons. A survey of trails in 11 counties showed kestrels nested in more than two-thirds of the boxes and averaged more than three fledglings per nest. In the past, a 52 percent use rate was considered good."

"We commend the county conservation boards, DNR personnel and the many private citizens who maintain their nest boxes each year," says Ehresman. "Until proven otherwise, Iowa kestrel nest box caretakers can boast that no other state produces more American kestrels from their nest boxes."

For more information, or to request the free booklet *Establishing a Nest Box Program for American Kestrels Along an Interstate Highway*, contact: Bruce Ehresman, DNR Wildlife Diversity Program, Wildlife Research Station, 2039 205th St., Boone, IA 50036 (515)432-2823.

Conservation Update



Dinah Kerksieck of Ames is one of the many lowans who make wildlife-related recreation an important part of their lives.

Wildlife-Related Recreation Important to Economy

Outdoor enthusiasts spent \$96.9 billion hunting, fishing, bird watching and pursuing other wildlife-related recreation in 1996, according to a news release from the U.S. Fish and Wildlife Service (USFWS). In addition, the pastimes create hundreds of thousands of jobs and account for more than one percent of the nation's gross domestic product. The \$96.9 billion is more than a 59 percent increase from 1991, when the USFWS last conducted its National Survey of Fishing, Hunting and Wildlife-Related Recreation.

"The survey confirms again that it is impossible to separate the well-being of our nation's wildlife and its habitat from the health of our economy," said John Rogers, acting USFWS director. "Our fish and wildlife are not just a priceless treasure we hand down from one generation to another, they are the source of jobs and growth for both the national and local economy from coast to coast."

Total expenditures by anglers and hunters rose 69 percent during the five-year period. Angler spending (\$36.2 billion) rose 47 percent, while hunter spend-

ing (\$17.7 billion) was up 75 percent. While the number of bird watchers, wildlife photographers and other nonconsumptive participants 16 years and older dropped 17 percent during the same period, their expenditures (\$29 billion) rose 39 percent. The study showed 18 percent of the population 16 and older fished during 1996, seven percent hunted and 31 percent participated in nonconsumptive wildlife-related recreation.

"Millions of Americans have made hunting, fishing, birdwatching and other wildlife-related recreation an important part of their lives," Rogers said. "This year's survey confirms that Americans have a national love affair with wild places and wild creatures."

Deer and Turkey Applications Available

Applications for resident deer, youth deer, bonus deer season and fall turkey (paid and landowner/tenant) licenses are now available.

Applications for the *Youth Deer Season* will be accepted through July 18, and will be issued only to Iowa residents who are at least 12 years old, but no more than 15 years old, by Sept. 1 of this year. The cost

of the license is \$25. The youth deer season is Sept. 20 through Oct. 5.

The application deadline for the *Early Muzzleloader Deer* season is August 8. The final deadline for all other regular paid firearms licenses is August 29. Each paid deer license costs \$25.

See the *1997 Iowa Deer Hunting Application* for information on all resident deer licenses including the *Special Antlerless License*. Counties designated as the Special Antlerless Zone will have a limited quota of licenses available for taking only antlerless deer during the regular bow season, second shotgun season, or late muzzleloader season. The booklet also contains information on *Youth Licenses; Bow Licenses; Special Management Area Seasons* where antlerless deer may be taken in one or more special hunts being held in selected state recreation areas, county parks or urban areas; *Landowner/tenant Licenses* and the *Bonus Late Season*. Designated counties will have a quota of antlerless deer licenses available for taking antlerless deer with a bow, shotgun or muzzleloader from January 11 - 18, 1998 during the bonus late season. Season dates and application deadlines for the deer seasons are listed in the booklet.

Applications for *Fall Turkey Hunting Licenses* (available only to Iowa residents) must be postmarked by July 25 for paid gun/bow licenses, by Aug. 22 for all free, landowner/tenant licenses, and by Jan. 10 for paid archery-only licenses. If paid gun/bow quotas are not filled during the first application period, a second application period will be opened from Aug. 18-22. The cost of the fall turkey license is \$22. Landowner/tenants may get a second, paid license only during the second paid gun application period, if one is held.

Applications are available at county recorder and DNR offices, or can be requested by writing: DNR, 900 E. Grand, Wallace State Office Bldg., Des Moines, IA 50319-0034, or by calling (515) 281-HNTR (4687).

Buffer Strips -- Common Sense Conservation

Landowners whose CRP bids were turned down by the USDA may have another funding option for implementing conservation practices. If a field was not accepted in the recent general sign-up, landowners may consider establishing buffers, an area of land maintained in permanent vegetation to help control pollutants and manage other environmental problems. Buffer areas can be enrolled in CRP through the continuous sign-up offered by the Natural Resources Conservation Service (NRCS).

Buffers slow water and chemical runoff and hold soil in place, and are an excellent way to ensure improved water quality, fish and wildlife habitat, air quality and other environmental aspects. In addition, buffers can improve an area's productivity and appearance. Private groups and government agencies have combined efforts to promote buffers as part of the National Conservation Buffer Initiative.

"Iowa DNR resource managers are excited about the opportunities landowners have to improve water quality conditions for fish and wildlife habitat through this program," says DNR Fisheries Bureau Chief Marion Conover. "This initiative has the potential to revegetate and restore crucial riparian areas along streambanks throughout the state."

Lands next to riparian areas and drainage ditches meeting eligibility criteria, including cropland and marginal pasture land, are automatically accepted into the program. Payments are based on soil type and productivity, erosion rate and the average rental rates for land in the area. Landowners receive rental payment, plus a possible bonus for continuous CRP buffers, and 50 percent cost-share assistance for costs incurred while putting the buffer in place.

To find out more information about this program, contact your local NRCS or Farm Services Agency office.



Lowell Washburn

Record Goose Production Expected in '97

Lots of water. Lots of breeding pairs. Plenty of young goslings. That's how DNR wildlife biologists are describing the current nesting success for Iowa's resident populations of giant Canada geese.

Iowa's goose production outlook is so good, in fact, that in spite of this year's extremely cool, late spring, the 1997 hatch of giant Canadas is expected to equal, and will perhaps exceed, last year's record.

Gosling production is being termed as "excellent" in the north-central and northwestern portions of the state, and is considered "very good" for central and southern Iowa. Goose production from the Mississippi River will be down due to spring flooding. By contrast, a good hatch of Canada geese was seen along the Missouri River where favorable habitat conditions existed across floodplain marshes.

"Statewide, we're looking at some very good production of Canada geese during 1997," says DNR Waterfowl Biologist Guy Zenner.

"We're seeing a good distribution of birds across the state, and are observing an average brood size of about five goslings -- which is pretty normal for a good year," says Zenner. "At this point, I'm guessing that we'll raise in excess of 35,000 goslings in Iowa this summer."

Upcoming NRC, EPC and Preserves Board Meetings

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

Agendas for these meetings are set approximately 10 days prior to the scheduled date of the meeting.

For additional information, contact the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, IA 50319-0034.

Natural Resource Commission:

- July, no meeting
- August 14, Storm Lake
- September 11, Sigourney
- October 9, Webster City

Environmental Protection Commission:

- July 21, Des Moines
- August 18, Des Moines
- September 15, Des Moines
- October 20, Des Moines

State Preserves Advisory Board:

- September 24, Ames

Warden's Diary

"A Summer Awaited"

This is the summer I've been waiting for. Not because it followed a long, cold winter. Not because it really is *too* different from the ones before it. There will be anglers to check and boats to watch. There will be some of the same, ordinary routine things. But this one is different for me. For you to understand, I've got to go back to spring last year.

Now, this job can be challenging at times. It's the nature of law enforcement. Usually, you have a pretty good idea from where the challenge is coming. It may be from the car you pull over in the dark of night in the middle of nowhere. It may be behind the darkness, hidden by the trees through which you're slowly walking and listening. Like one of my mentors once told me, "The best part of this job is you never know what's over the next hill, or around the next bend of the river."

Sometimes the magnitude of these challenges changes your life forever. For me, it came from out of nowhere in a way I least expected. It started in a simple room, about ten-by-eight feet in size.

The doctor in the white coat sat down, opened the file and looked me straight in the eye. "I'm afraid the tests show something more serious than we thought," he began. They show a tumor in your left kidney. It appears to be contained, but if it's spread, there's really not much we can do for it . . ."

He was still talking, but I was not hearing. There had to be a mistake! I had come in for something simple. This couldn't be.

"It's almost never benign in this location," he continued. "Radiation and chemotherapy are ineffective in this type of cancer. The treatment is removal. At this point, it looks like you caught it early. We'll need to do a CAT scan. Hey, are you okay?" he asked looking at me.

"No, I'm not," I answered. I felt as if I had been hit by a truck. My mind was racing a million directions at once ranging between fear, anger and disbelief.

About a week later, the CAT scan confirmed it — renal cell carcinoma to be exact. It accounts for about two percent of all cancers. They really don't even know what causes it. If you've been there, you know what the word, "cancer," conjures up in your mind as your thoughts race ahead of the doctors. Your life is suddenly changed. All your hopes and plans are suddenly put on hold if not gone. My wife and I went on a bicycle trip to get away and think. Next to the river under the canopy of the trees, in the quiet of the outdoors I usually can see more clearly, but still my mind was a jumble of worst case scenarios. "This can't be, . . . I want to see my kids graduate, . . . I was planning to do this or go there, . . . I want to see Iowa in the Rose Bowl again — maybe even four or five times."

Funny how even in private life, your training as a police officer takes over. There are always alternatives. It was obvious there were only two options. Lie down and quit, or fight and not give up. I could control the mental aspect of this fight, but the physical part was beyond my control, so I would need to seek help. We headed for the Mayo Clinic.

Now, Mayo Clinic is a huge place where you need a good pair of

running shoes, as you're going to be running from end to end, albeit in an orderly fashion, as they put you through test after test. To say they are thorough is an understatement. The doctor was direct and no nonsense — just the type of guy I wanted on my side.

"Well, it's in there," he said. "You don't want it in there. We're going to make just a *little* hole in your side and get it out of there. Let's see, today is Friday, we can do that for you on Monday."

Monday came quicker than expected as I was wheeled into surgery. I had never had any major surgery in my life. I was used to facing challenges in the outdoors not in a sterile and cold (and I do mean *WELL* chilled) operating room. I felt like there were still loose ends even though I had said good-bye to my family, prayed with my pastor and had apologized to the Mayo staff for *every* Minnesota joke I had ever told. One staffer responded with, "Say, did ya hear about the Iowan who . . ."

I laughed and even said, "Hey, how about them Gophers?" It was out of my hands now. These caring men and women in the blue outfits would have to do my fighting for me for the next few hours.

Soon I would find out the doctor's and my definitions of, "just a little hole in your side," were quite different! If they had put in a zipper I'd have looked like a giant-sized duffel bag. To this day I wonder what he considers really, really big! His fish stories must be something else.

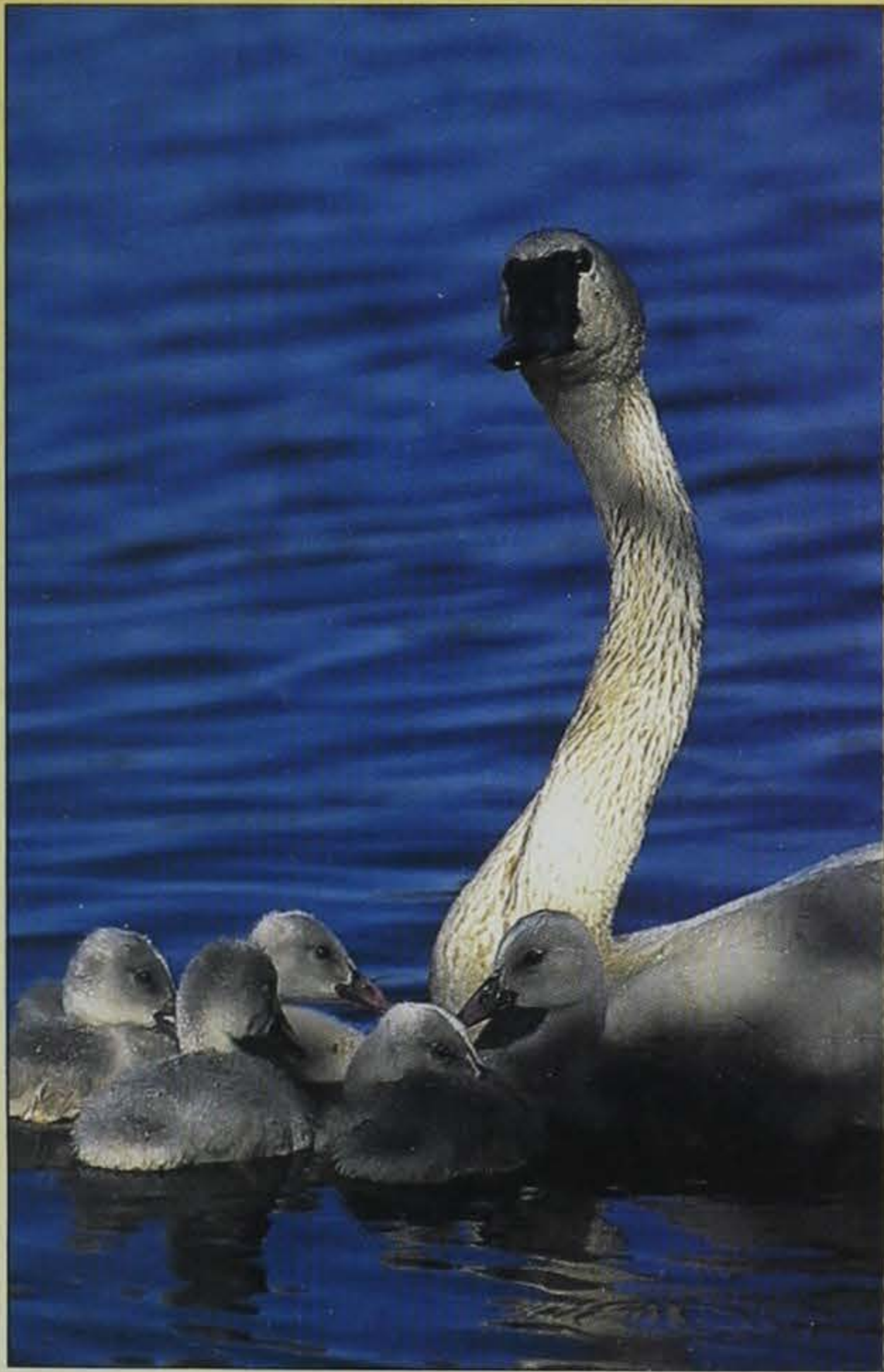
The first thing I remember is my wife looking down at me and the pain. I was flopping around like a walleye landed on the bottom of the boat. I felt like I had been gutted like one too. Pretty soon the painkillers kicked in. Through the fog, I could see the doctor smiling. They had gotten it all with no sign of spreading in nodes or organs. "We give your chance of reoccurrence at two percent," he beamed, "back on par with the general public." Sometimes it is wonderful to be "average."

I have the greatest family, and the greatest friends in the world. I don't think a week went by without someone stopping by who, "just happened to be going through Iowa Falls." I wouldn't have recovered so quickly without them. Even when I was in the hospital, people called so many times, they told me the poor guy who got the room after me simply began answering the phone, "Chuck's not here." For two months, I hobbled, walked, then ran my way back into the uniform and into the patrol car.

I've recovered more than my health and a second chance. I've recovered a fresh perspective. Some of the things which seemed important aren't so important anymore. We shouldn't wait for something out of the ordinary to cause us to take notice. Professionally, I feel even more blessed to be, "one of the select," — the group of officers who get to protect this beautiful state. Personally, every day now is a day at a time. And, each of these summer days is a good day to add to my "warden's diary." Yes, this is the summer I've been waiting for.

by Chuck Humeston

Parting Glance



Roger A. Hill

**“Who said
‘ugly ducklings’?”**

