ume 23 July, 1964 No. 7

SOLITUDE? TRY A FOREST AREA

Denny Rehder

ave you missed visiting an Iowa forest area in your travels about state? We have so little forest land in the state that many people overlooked the recreational potential of these public lands.

has been said that trees, like water, offer a background for varied eational activities. In Iowa this is true. Our state forests offer de variety of attractions for leisure use. There is fishing in some, oing in many, picnicking in all but one, hiking in all, and hunting l.

obably the big attraction for most of us is the relatively light use ese areas—peace and quiet prevails. This is an excellent backdrop a family outing, especially if you have grown tired of the crowds ur more popular state park areas. Facilities may be fewer, but olitude of these forests more than makes up for the shortcomings.

Where Are the Forests?

ere are four primary state forests of interest to those of us seek- a place to enjoy the outdoors. White Pine Hollow, a 650-acre tract ed three miles northwest of Luxemburg between Dubuque and wberry Point, is not developed. It will probably never be developed, ere is the finest stand of white pine in the state. The area can be ed and hiked, but there are no other facilities planned. Some e old white pines are taller than a ten-story building, and a hike this area to Paint Hollow Creek is a memorable experience.

e other three primary state forests are developed to some extent, a continuing program of development intended to bring to the c the potential recreation such forests can provide.

northeast Iowa, the 5,566-acre Yellow River Forest is well-known any Iowans. The 3,000-acre Paint Creek Unit of the Forest pro- trout fishing, hunting, primitive camping, hiking, picnicking, rail riding. The scenery from the bluffs and overlooks is spectacu- Although campers must get their water from the State Sawmill e unit, they continue to flock to the area. Yellow River has shown eed for large tracts of land, relatively undeveloped, with public facilities on the perimeter of the semi-wilderness.

der development for use such as Yellow River now receives are ek State Forest near Farmington west of Fort Madison, and hens State Forest in the Chariton-Lucas area.

imek is the area adjoining the federal forest lands whose purchase recently authorized by the General Assembly of Iowa. Shimek des hunting, hiking, picnicking, fishing and primitive camping er is available at the custodian's residence). The total land in the counting the federal lands will approach 10,000 acres. For Iowa, is a potentially large recreation area.

ephens State Forest covers 4,778 acres in three major locations— neast of Chariton, immediately southwest of Lucas, then a few further southwest of Lucas. Stephens offers hunting, hiking, ng, picnicking and primitive camping. You must bring your own r; there is none available in the forest area.

hen planning a visit to any of these fine areas, you should always re locally about the best way to get to the spot you want. Signs up on most of them, but they are in the process of being better ked for the visitor.

member, too, as you walk among the trees that these areas have lue above recreation. Their stabilizing influence on the marginal in which they grow helps to control water erosion and provides omic returns in the form timber products from otherwise un- uctive land.

Jack Kirstein Photo.

Forest areas offer family recreation.

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CIRCULATION THIS ISSUE.....52,000

COMMISSION MINUTES

June 2, Des Moines

FISH AND GAME

A construction permit was authorized for the county engineer for road construction adjacent to Meadow Lake in Adair County.

Pumping water to maintain the level in Forney's Lake was authorized.

An option to purchase 4,300 feet of railroad property for $200 adjacent to the Mississippi River at Sabula was authorized for development of a fish management station.

Approval was given to an option for the purchase of fishing access on the Skunk River in Keokuk County near Rubio at a cost of $65 per acre for 79 acres.

Approval was given for the expenditure of $3,500 for the start of construction of a house on the Mt. Ayr Game Area.

The Commission asked that the field staff meet with Dr. Morris of the State Hygienic Laboratory at Iowa City for instruction in reporting pollution which might cause fish kills.

LANDS AND WATERS

A request by Ziegman for an access road at Black Hawk Lake was approved.

A request for permission to dig a canal adjacent to a state park on Black Hawk Lake was tabled for further study.

Permission was given to Harold Bierl and Russell and Bernus Wunschel for removal of stumps and shrubs on the lake shore at Black Hawk Lake.

Approval was given for the placement of a diving raft by Jenson on West Okoboji Lake providing it is not over 150 feet from shore, that it be 8 feet wide, has reflectors for safety and other safety precautions are observed.

A request to construct steps on the shore line by Flinders at Lake Okoboji was approved.

A request to construct a concrete boat ramp by Fuhrman at Minnewashta Lake in Dickinson County was refused.

Approval was given for a pipeline crossing of the Mississippi River at Buffalo by the Natural Gas Pipeline Company.

Approval was given for the construction of a cooling water outfall structure by the Thermice Company of Muscatine on the Mississippi River.

Approval was given to the appointment of three Water Safety Officers for temporary duty.

Approval was given to an option for a land exchange with Lewis at the Lake Anita site in Cass County for the purpose of straightening a fence line.

Approval was given to an option for a land purchase from Zanders at the Lake Anita site in Cass County, consisting of two acres at a cost of $125 per acre.

Approval was given for the sale of two parcels of land of less than one acre each in the Muscatine Slough area at a cost to be figured at $300 per acre.

Approval was given for the low bid on the purchase of copper sulphate at a cost of $11,278.

COUNTY CONSERVATION ACTIVITIES

Audubon County received approval for the acquisition of 60 acres of land at a total cost of $2,500 for use as a timber preserve.

Cerro Gordo County received approval to acquire 20 additional acres of land at a total cost of $4,700 at their Mallard Marsh Area.

Clayton County received approval for the purchase of 12 town lots in the Town of Clayton on the Mississippi River at a total cost of $3,000 for the purpose of creating a river access area.

Jones County received approval for the acquisition of 197 acres of land at a total cost of $31,000 for use as an artificial lake site, which will include a 20 to 30 acre artificial lake and about 40 acres of hardwood timber.

Polk County received approval for the acquisition of 32 acres of land at a total cost of $16,000 for an addition to the Yeader Creek artificial lake site.

Winneshiek County received approval for the acquisition of five acres of land under a sponsoring agreement with the Iowa State Highway Commission for use as a highway safety rest area on Highway No. 9, near Ridgeway.

Des Moines County received approval for a development plan for Chautauqua Park for use primarily as a picnicking, trailer camping, and tent camping area.

Humboldt County received approval for a development plan for the Lotts Creek Park consisting of 40 acres which would provide for camping, picnicking and fishing access to Lotts Creek.

Winneshiek County received approval for a development plan for the Ridgeway Highway Safety Rest Area, a 5-acre tract which will be used primarily for picnicking.

Des Moines County received approval for a management agreement with the Conservation Commission for the Skunk River access area consisting of 63 acres near the town of Augusta to be used primarily for fishing access.

Des Moines County also received approval for a management agreement with the Conservation Commission for the management of two Mississippi River Access Areas called the Tama Beach Area and the Edgewater Beach Area, to be used primarily for fishing access.

Franklin County received approval for a management agreement with the Conservation Commission for the Management of the West Fork Fishing Access located on the West Fork of the Cedar River.

Carroll County received approval for the construction of a wildlife exhibit at Swan Lake State Park.

A request by Franklin County for approval of a development at the Hampton Fairgrounds which would include a baseball diamond was tabled for further investigation.

GENERAL

The Commission met with Senator Elvers of Elkader and discussed encroachment which has occurred on state-owned land near Harpers Ferry.

A delegation of scuba divers m with the Commission and w granted authorization to hold underwater rough fish spearin exhibition at West Okoboji June 13 and 14 in a restricted ar which the Director will specify.

A delegation from the Gund Cheese Factory at Elkader m with the Commission and discuss damages caused by the pollut of the Big Springs Fish Hatche in December.

Travel was approved to the A sociation of Midwest Fish a Game Commissioners Meeting Milwaukee, Wisconsin; the R gional Council of State Gover ments at Minneapolis; the Mi souri Basin Inter-Agency Commi tee Meeting at Billings, Montan the South Dakota Conservati Commission Meeting at Cust State Park.

The Director of Planning gave report on the status of planni for future programs of the Conse vation Commission.

A report was given by the S perintendent of Engineering co cerning the boundary survey the Green Bay Bottom Lake.

State Archaeologist, Dr. M Kusick, was given permission investigate the Turkey Riv Mounds with the provision th any artifacts found will be t property of the state and will displayed by the State of Iowa.

Approval was given for the pair of the sidewalk on the st pier at Arnolds Park.

Authorization was given for c necting to the sewer line at G Point State Park.

Approval was given for the newal of an agreement with Hygienic Laboratory at Iowa C at a cost of $10,000 a year.

A report was given on the con tion of the Ventura Marsh cont structure by the Chief of Fish Game.

The Commission accepted a l ter from Attorney Dave Butler Mason City asking for withdra of an application for a ski run Pilot Knob State Park.

End Seen To Wisconsin Bounty System

A plan that would end Wisconsin's wild animal bounty system an channel funds into county conservation projects was endorsed recentl by the Wisconsin State Conservation Congress.

The 30th annual congress voted 34-20 in support of the propos which had been hailed by Governor John W. Reynolds in a keynot address as a good example of creative resource management. Delegat from 18 counties abstained.

Under the plan, the funds allotted to the wild animal bounty syste would be made available to local fish and game habitat projects, wit county boards in control of the financing.

The congress acts as an advisory group to the six-man Wisconsi State Conservation Commission which sets fish and game laws.—*Fro Associated Press.*

Editor's Note: This item from Wisconsin is of particular intere in Iowa since the last General Assembly revamped the bounty law allowing counties to choose whether or not they will pay bountie Since that time many counties have abolished bounties—a trend r cently hailed by officials of the Conservation Commission. Evidenc seems to support the contention that bounties serve little purpose the control of predator populations—alternatives have been propos calling for an increase in game habitat programs that would he maintain a healthy balance between the game and predator population

Aikman Receives Conservation Award

Dr. John M. Aikman, Professor of Botany at Iowa State University, has received the 1964 Iowa Conservation Award of Merit from the Iowa Chapter of the Wildlife Society.

The award was presented by the Society for Dr. Aikman's influence in the training of conservationists from 1927 to 1964 at Iowa State University and for his leadership in the preservation of virgin prairie areas in Iowa.

ature's Sun Dial—The Nighthawk

Carol Buckmann

Most birds sit on the nest to p the eggs warm but her Nighthawk does the osite.

uring the heat of the day, she les the eggs to keep them cool incubates at night. The rea- for this phenomenon is that e predominantly nocturnal s nest on gravel, heat-absorb- roof tops where the tempera- often scorches to 142 de- s F.

ıe gray-colored nighthawks their eggs from literally ing by several cooling meth- ncluding panting, facing away the sun and fluffing their ers while they keep the eggs by shading.

cause heat is dissipated by ing, nighthawks will orient bodies away from the sun to ooling. On clear days, a care- bserver can almost tell time vatching the position of the on the nest as she rotates the sun's rays, much like a dial.

e orientates to face the sun in morning and during the day reducing the shadow to a num and the effectiveness of ird's camouflaging plumage is tained. This aids protection aerial enemies and causes heat distribution reducing the area exposed to the sun.

Milton Weller, Associate ssor of Zoology, Iowa State ersity, found that nighthawks nd to the sun on clear days lo not orient when the sun is n by clouds. When cloudy, loes not orient but, if the sun ars, the bird will face it rather turning away.

rtly after sunset, the female s the nest for a short feeding staying no more than twenty tes. She has been said to t to the moon also, thereby ing conspicuous shadows.

cording to Dr. Weller, when emale was in the open sun acing away from it, panting d when the roof temperature 5 degrees F.

ther way to cool their eggs fluffing the back and head rs creating shaded air s. Depending on the amount eeze, this started in the open when the roof temperature etween 103 and 112 degrees nother cooling mechanism is ver the primary feathers be- their tails forming a shad- anopy.

ing the heat of the day, the presence lowers the nest site rature as much as 28 de- F. This cooling is reversed ht when the temperature is d as much as 11 degrees F.

se cooling devices not only t the eggs from cooking but t the female nighthawk to survive. The dark gravel roof tops absorb the intensive heat sending the thermometer even higher.

These slim-winged birds fly erratically over roofs of cities in active pursuit of insects as soon as the sun goes down. They utter a loud, harsh "peet" at frequent intervals immediately preceded by two or three hurried strokes of the wings. They are sometimes quite active during the day but are predominantly nocturnal.

According to Jack Musgrove, Curator of the State Historical Building, the crops or gullets of these birds are often found to contain balls of insects as large as hen's eggs.

They are common summer residents arriving in May and leaving in September. The majority breed in June and July when they lay two speckled or mottled, dull white eggs marked with pale brown-gray which blend well with the surroundings.

Nighthawks are well built for fast flying and are one of nature's most acrobatic birds. In courtship, the male folds his wings and drops earthward like a dive-bomber, zooming up sharply at the end of the drop with a sudden, deep whir. The peculiar whir or "boom" occurs at the break of the dive and is caused by the wing feathers.

Before the coming of man, nighthawks probably nested on gravel bars as do killdeers. In certain parts of the United States, killdeers also nest on rooftops.

Nighthawks are often confused with their cousins, the whip-poor-wills, who nest almost entirely in woodlands differing from nighthawks who nest almost 100 per cent around civilization.

Both have large eyes and large mouths. At rest, the wings of nighthawks are as long as their notched tails while whip-poor-wills have shorter wings that fall short of their rounded tails. The broad, white patch across the wings is the nighthawk's mark.

The snapping turtle can feed only under water and, unlike most other turtles, cannot draw its head or tail into its shell.

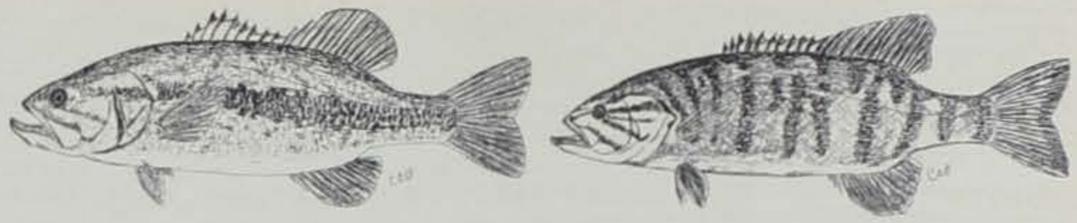
A firefly is not a fly but a beetle.

The porcupine's quill is actually a hollow hair, three inches in length or longer.

Porcupines, squirrels, rabbits and mice gnaw at deer antlers, after they are discarded, to satisfy their craving for calcium and other minerals.

A buffalo is a good swimmer and is sufficiently buoyant so that its head and the upper 10 or 12 inches of hump stay above water.

LARGEMOUTH — SMALLMOUTH



Carol Buckmann

The largemouth bass (*Micropterus salmoides*) and the smallmouth bass (*Micropterus dolomieui*) are commonly confused but their names hold the key to their difference. The largemouth simply has a larger mouth.

The upper jaw of the largemouth extends well beyond the rear of the eye socket when the mouth is closed. In smallmouth bass, the jaw is considerably smaller with the upper jaw extending about to the center of the eye never farther than the rear of the eye socket. This is true of the catchable, average adult smallmouth or largemouth but may not be evident in small specimens.

Although the second word of their names suggest both are members of the bass family, actually both are in the sunfish family (*Centrarchidae*) along with the warmouth bass, green sunfish, pumpkinseed, bluegill, orange-spotted sunfish, northern longear sunfish, northern rock bass, black and white crappies.

There are a number of differences between these two gamey fish other than the mouth. For one thing, the color of the largemouth is usually dark green on the back becoming lighter on the sides mottled with darker blotches.

There are usually irregular patches less distinct in older fish along the side of the body resembling a dark band or streak. This characteristic gives the largemouth another common name "linesides." The dorsal fin of largemouth bass is practically divided with the front part dipping nearly to the backbone.

Smallmouth and largemouth bass are very similar in appearance but the smallmouth is golden-green on the sides and back with faint wavy olive blotches. This is especially pronounced in fish taken over light sandy bottoms subjected to sudden temperature or oxygen changes. This fades to gray or bluish-white on the stomach.

There are five olive-green bars extending from the eye backward in the smallmouth bass. One bar extends forward from the eye to the end of the snout.

The smallmouth is present in a few natural and artificial lakes, usually confined to the less turbid, flowing waters. They prefer the cool, clear waters of streams and deep lakes whereas largemouth bass are primarily fish of lakes and ponds where they vary in abundance from occasional to common.

A Cooler Should Stay Cool

Jack Kirstein

Perhaps the most important pieces of equipment in a camper's collection of camp gear during these hot summer months are his camp cooler and water jug.

Nothing can be more exasperating to the camper than to be forced to make a trip to the local ice house every day of his outing to replenish the ice supply. Actually this is not necessary with most of the present day coolers, but if you are the owner of one of the older models, say five or six years of age, then you might stop some of this harrassment by considering a change to one of the newer and better models available now.

Jack Kirstein Photo.

The new insulated water jugs are an essential piece of equipment for most families.

The main reason that the newer coolers and jugs provide more efficient cooling and hold ice for a longer period of time is the inner construction materials used. Originally, coolers and jugs were made of metals and employed the principle of double-walled construction to provide a blank or "dead" air space for the insulation properties. After the discovery and common usage of fibre glass for insulation, many companies began to use this material for the inner insulating material in their jugs and coolers. This was a far more efficient way of retaining the coldness of the ice and did indeed stall-off those trips for ice. In the past few years, however, more changes have come about in the manufacture of these two important items.

New Insulating Materials

First, plastic foam, and later, compressed granular plastic were used with increasing success. Now, many coolers are made entirely of the compressed granular plastic which, when used in sufficient thickness, provides not only the

(Continued on page 54)

Anchor Throwers of the River Bottoms

Carol Buckmann

The humble little mussels remain firmly attached enduring even high gales when water is whipped into a raging turmoil and waves beat unmercifully against the shores.

The little anchor throwers, found in rivers, streams and lakes, fasten themselves so securely that when attached to a large rock, the whole thing can be lifted by grasping the mussel's shell. (Mussels and other clams belong to the Mollusk family also containing slugs, snails, oysters and others with soft, unsegmented bodies protected by a shell.)

Look closely at one, you'll find they are tied down and fastened firmly to rocks by numerous cords resembling a ravelled rope. These threads fasten like anchors deep in the sand, among pebbles or rocks.

Instead of being stout and muscular, designed for digging and moving about like other clams and bivalve shells, the mussel "foot" is soft, narrow and weak. The mussel spins threads with it for anchoring the shell.

In order to adhere to rocks, a liquid glue is produced from a narrow groove along the middle of its foot which hardens when exposed to air. When a mussel finds it necessary to throw out an anchor, it places the foot against an object and forces the sticky material along its groove. The glue immediately hardens and by slowly drawing in its foot, the mussel spins a cable called *byssus*.

Scores of these cables are formed until the shell is firmly anchored and, come what may, cannot be torn loose.

If a mussel decides to shift his anchorage, he slips his cables and moves on. He does this by reaching out his foot as far as possible in the direction he wishes to go and spins a new set of cables. Then, cutting his old anchor lines, draws in the new ones and hauls himself forward.

It may take a mussel a year to move an inch but to a mussel time is no problem.

These little anchor throwers can endure nature's worst, but man's impulses almost led it to extinction. Mussels thrived mightily until the 1890's when they nearly met disaster. That disaster sprung from the discovery that their pearly shells made excellent buttons.

The idea of real pearly buttons produced so cheaply anyone could use them came from a young German, J. F. Boepple, who saw amazing possibilities in mussels. This possibility led to the opening of a button factory in Muscatine in 1891.

The idea was so successful that soon the Mississippi River and its tributaries were dotted with "clammers" who furnished shells by the ton to button factories.

To place one button opposite each of the world's button holes took a prodigious number of mussels. Within a few years, the feverish efforts of clammers began to show on the mussel population. The once seemingly unexhaustible supply was rapidly depleted — something had to be done to help nature produce more clams.

As a result, in 1908, the United States Bureau of Fisheries set up a laboratory on the Mississippi River at Fairport and set out to learn the secrets of the clam family.

Since larvae mussels attach to the gills of certain fish and here mature, clammers collected fish with gills swollen by mussel larvae ready to go out on their own and delivered them to the laboratory. Seining parties set out to collect thousands of fish left in shallow, land-locked backwaters resulting from the spring floods of the tempermental Mississippi River.

This served a dual purpose; millions of fish were saved and each became a potential distributor of young clams. Before releasing the fish, they were placed in tanks containing larval clam each begging for a ride.

It was soon discovered certain species of larvae would only hitch a ride with certain species of fish. The warty-backs preferred catfish, the yellow backs liked garpike, muckets liked only game fish and niggerheads preferred river herring.

One out of every 1,000 larvae gets a ride on the fish of its choice. The larvae lie in the stream or river bed and wait to be touched by a fish. At the first touch, it attaches itself to the fish's gills or goes through the mouth to the gills where it attaches itself. The fish's flesh grows over it making a cyst which in turn goes through the process of becoming a clam. It takes two to five years to be ready for the reproductive cycle so propagation is a slow process.

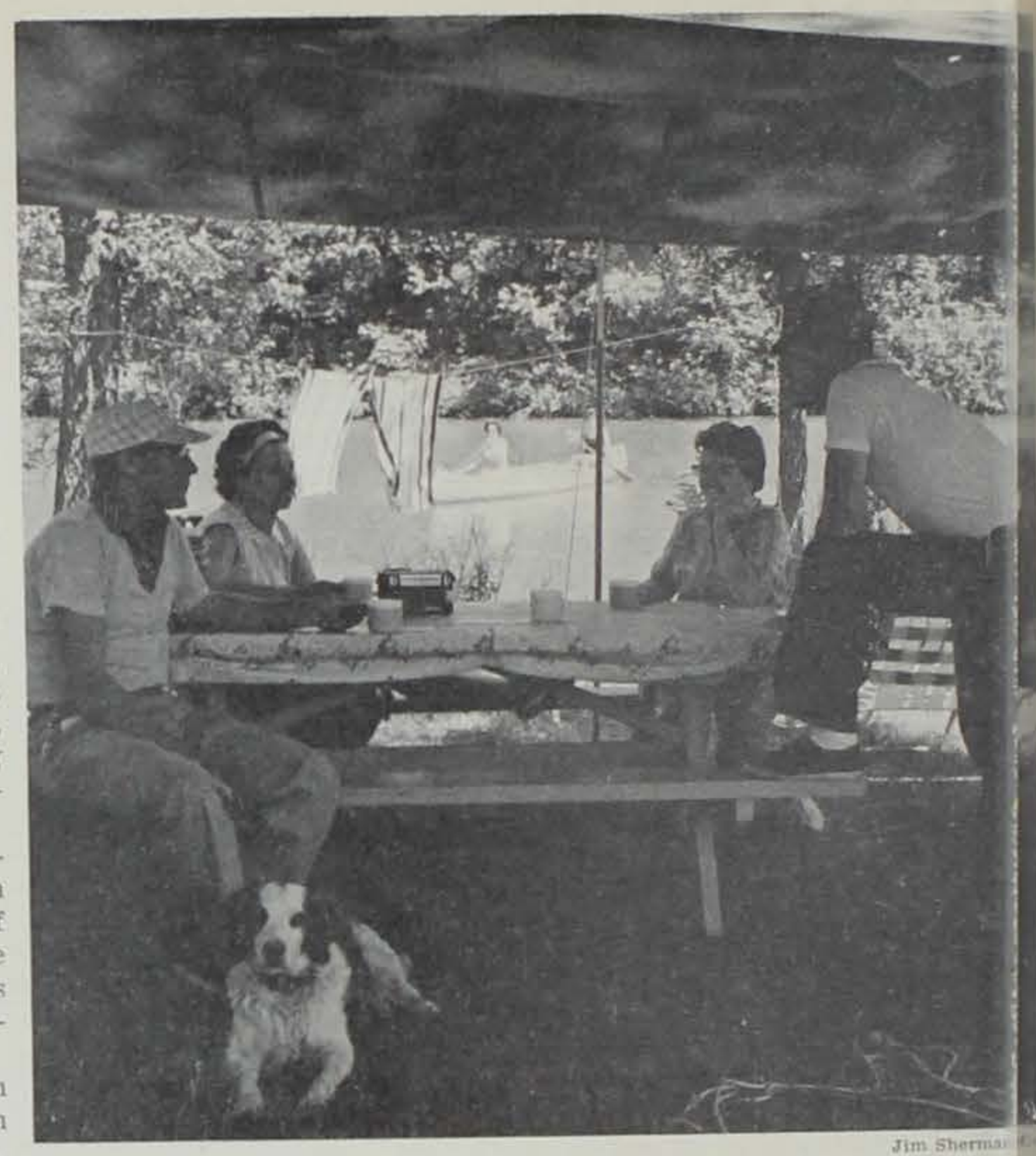
Although man was the ultimate culprit, mussels have many natural enemies. Catfish and sheepshead make clam larvae a regular diet. "Kitchen middens" or piles of empty mussel shells left by hungry muskrats are often seen along streams and rivers.

Man's ravages and feverish lust for wealth at the expense of the future almost led to the extinction of mussels. In turn, his thoughtful realization and careful planning has aided a comeback for nature's little anchor throwers of the riverbottoms.

A tiny bat will eat a quarter of its weight at one meal and more than half its weight every night.

The polar bear's sight is much better than any of the other bears and it has an extraordinary sense of smell.

Nearly 100 arctic foxes have been counted at one time feeding on the mountainous hulk of a grounded whale.



Jim Sherman

Big Camping Year Developing

Campers have been out in force over Iowa so far this year, acco to reports from park officers. Typical of Iowa's camping facilit the relatively new campground shown here at Viking Lake State near Stanton. At Viking, the camper can pitch his tent right o shores of Viking Lake and be fishing after a few steps.

The camp area has the modern shower and toilet building, elec hook-ups, and a sewage dump for trailers. Other facilities at the include picnicking, swimming, boating, hiking and fishing. The a boat-and-bait concession available to park vsitors.

ASCS Supports Wildlife Programs on Diverted Acres

The ASCS, through its local offices, is encouraging landowners to consider the wildlife benefits to be gained from the 1964 Feed Grain Program.

This program, administered by the ASCS has the potential for providing substantial benefits to game birds and animals—particularly pheasants. One of the approved conservation uses for diverted cropland is clearly stated in the ASCS Handbook as: "for wildlife food plots or habitat."

The Conservation Commission recommends the following practices to gain the most benefit from the diverted acres program:

1) Cover on diverted acres need not be mowed or clipped if noxious weeds are not a problem. In addition to providing safe nesting cover, this could have time and expense for farmers.

2) If noxious weed control is necessary, spot spray or clip only that part of the field needing attention.

3) If much clipping is necessary, clip at least 6-8 inches high to insure safety of nesting hens and newly hatched chicks.

4) Delay clipping of entire if such is necessary, until nc time for oat harvest, or whenever possible, so few hen chicks will be killed.

Many larger animals be uneasy at the sight of a w Cottontails in cages some have died of fright.

The water rat lives only o Florida peninsula and the finokee Swamp which extend southern Georgia.

Whalebone whales feed a entirely on small animal life upper levels of the sea.

Usually cottontail rabbit not care for the deep forest. are typically inhabitants of b areas and woodland borders

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Although black-tailed jac bits seldom jump more tha feet high, they have been kno clear a five and one-half fence.

There are two main grou porcupines—the Canada porc and the yellow-haired porcup

LITTLE SIOUX FISHERIES STUDY UNDERWAY

Photo Feature by Jim Sherman

Denny Rehder

Netting operations on the Little ux River near Washta recently rned up channel catfish and lots them. Approximately 700 chan- l cat were taken in a demon- ation operation held for the nefit of the press and other in- ested parties. The netting was rt of a major study of the Little ux River now being conducted Conservation Commission Bi- gists.

According to Harry Harrison, perintendent of Biology for the mmission, the purpose for study the Little Sioux is two-fold. rst, there is a need for concrete formation on the effect of stream aightening on a fish population. st studies have shown that hing suffers when a stream is aightened, but the extent of is damage and the reason for ch damage needs intensive in- stigation.

Also, the construction of a low ad dam in the Little Sioux about miles from its mouth called for study of the impact such a bar- r would have on fish movements.

"The Little Sioux River in its tural state is probably the finest tfish stream in the world," says rrison. "This river has a long tory of wonderful catfishing."

The low head dam offers another ld of study for the biologists. n fish move over this barrier to water above, or do they re- in below the barrier?

"The dam is a barrier to fish vements and will have a detri- ntal effect on fish populations m the dam to Smithland, and the Maple River, from its con- ence with the Little Sioux at st to Mapleton," Harrison tes.

These studies will run concur- itly over a period of years to ld a supply of information ling with fish populations and vements in these waters.

The field work will involve lecting fish from a variety of dy areas distributed along the er. These fish will be tagged l returned to the water. So far, ut 3,000 fish have been marked. er a period of years, these ged fish will tell biologists a at deal about fish movement in river. Such questions about ere fish go, do they move up or vnstream, where are the heavi- populations, and what causes ir movement can offer concrete rmation on the problems en- ntered by fish where the river been straightened.

Both natural and straightened tches of the Little Sioux are g studied, offering an oppor- ity to evaluate the differences ween the two types of water.

The answers to these and other stions will help biologists make mmendations concerning the ure role of the Commission in tters of stream straightening fish barriers.

This is the Little Sioux in the area being studied. It is probably one the finest catfish streams in the world.

Large hoop nets are used to take fish for tagging and study.

The fish are put into washtubs and taken to shore where . . .

. . . the biologist in charge of the study, Bill Welker, measures the fish, sexes them, and inserts a tag into the body cavity.

The fish are released to be taken at a later date and provide valuable information about their movements.

COOLERS—

(Continued from page 51)

insulation, but also the shape and form of the items themselves. This fine new insulating material has another benefit—it is extremely light in weight. For this reason, many cooler and jug manufacturers can honestly boast of products more than 50 per cent lighter than earlier models. It isn't necessary to spell out what this means to the already loaded camper!

It is not uncommon to find that with the new coolers and jugs ice can be held for two, three, or possibly more days; depending upon the local temperatures encountered each day. Planned use of the cooler also helps to prolong the use of ice. By this method of limiting the number of times the cooler is opened each day, and placing only items that have already been cooled into the cooler or jug, additional time is gained.

Another advance in the use of coolers is a practice originated by the campers themselves and now aided by several alert manufacturers. This is the use of frozen refrigerants in their own containers. At first, some ingenious camper found that he could eliminate the bother and mess of the melted water in his cooler by freezing water in a container such as a milk carton and sealing it with a plastic tape. He derived the same cooling effect as chunk or cracked ice, but did away with the troublesome chore of emptying the cooler each day. As a side benefit, the water in his frozen container also provided cold water for drinking after it melted.

When this practice became more common among campers, some manufacturers began to study it and found other materials that could be contained and frozen to provide longer periods of cooling than that afforded by water. Now these items are available through stores in both cans of refrigerant for you to freeze in your own refrigerator at home in sealed plastic bags for the same purpose.

If you've been having troubles with your jug or cooler, perhaps you should plan to go on a shopping spree and discover for yourself the changes that have been made. Maybe you will want to make the switch to a new cooler or jug.

Don't forget, if you keep the old cooler and jug they can be handy for an extra water jug to hold a supply for dish-washing and killing campfires, while that old ice-chest makes a perfect container to hold all those fish you plan to catch on your next camping trip.

America was invaded by the brown rat in 1775. It first came to this country aboard ships from other nations.

The whale probably is unable to smell and some scientists think it doesn't sleep since it will follow a ship for days at a time.

THE VANISHING WOODLAND

Bruce Plum
District Forester

If one were to ask, "What is the most destructive force attacking our Iowa woodlands?" he might expect an answer such as: "insects," "disease," "fire," or "man, through indiscriminate cutting." He probably would be somewhat surprised to hear the answer is "livestock."

Generally woodlands occupy the rougher land in Iowa. Timberland suitable for cultivation has mostly been cleared by now. Many owners of woodland feel this is a wasteland and they must make some immediate income from it to at least pay the taxes. Taking the short range view they turn livestock into their timber in the hopes some forage can be utilized. Grazing timber has been taken as a matter of fact, and down through the years our timber land has deteriorated from productive woodland to wasteland in many cases.

Poor Grazing Land

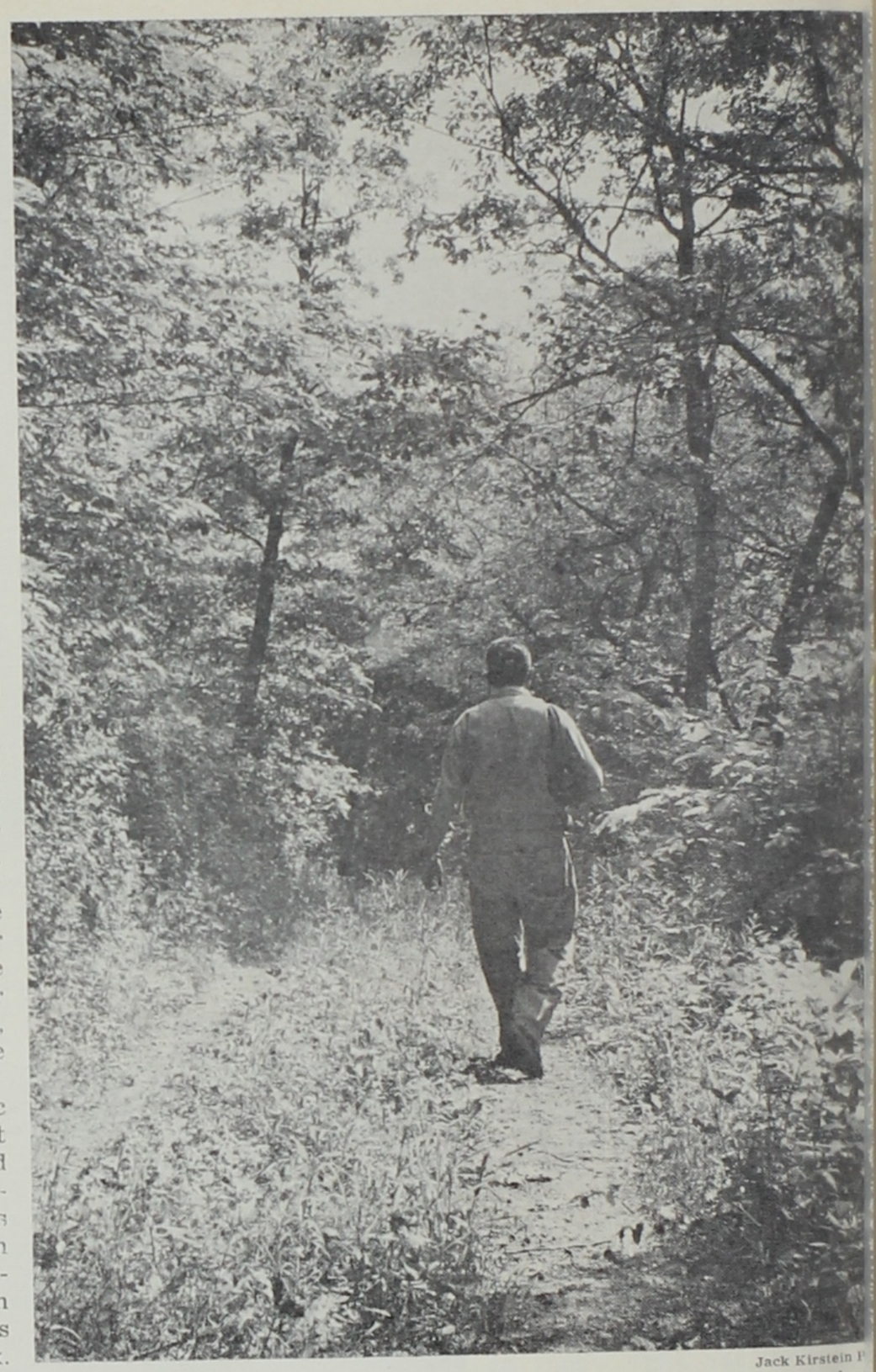
Our native timbers are incapable of providing adequate forage for livestock. In search of sparse forage, livestock destroy the water holding capacity of the forest soil, eat young seedlings and damage large trees.

Over countless years organic matter has built up on the forest floor in the form of decomposed leaves, twigs and branches. Beneath this a highly porous soil has developed which soaks up rain water as it filters through the organic layer. This huge sponge can be destroyed in a few short years through trampling by livestock. This results in greatly increased runoff after heavy rains. The water can no longer entirely soak into the soil to be used by trees and replenish underground water supplies. Instead it is turned into a destructive force. This force carries topsoil which has taken centuries to develop. This precious soil is deposited into our silt clogged streams. The water and soil nutrients which could be used by trees to make rapid growth are lost, resulting in less vigorous trees. Trees which lose their vigor are targets for the onslaught of tree disease and insect pests.

Livestock feed upon young tree seedlings, thereby destroying tomorrow's timber. As a timber is grazed over the years and the older trees pass out of the picture a beautiful forest will turn into an economic desert of brush, thorn bushes, snags and weeds.

Large trees are damaged by livestock. When the hoof of an animal knocks a piece of bark off a tree root an entry is made for infection. This infection is in the form of wood rotting fungi which destroys the tree from within.

Livestock compete intensely with wildlife. They destroy the watershed qualities, ruin the aesthetic value and lay waste to the productive capacity of the forest. By destroying the productivity of the forest the timber products are destroyed along with the many jobs they would create.



Jack Kirstein P

Woodland such as this is obviously ungrazed. In future years, it will look much a does today through wise management.

There Is a Tax Break

As an incentive to prevent this form of destruction Iowa's Timber Reserve Law provides a tax reduction for those owners who exclude livestock from their woodland. Entirely too few take advantage of this method to improve their timber.

Next time you are driving through the country, take notice of the timber pastures with large trees dotted about. Under these large trees will be gooseberry, crab, prickly ash and buckbrush. You will be viewing the remains of a native forest. Livestock grazed off the tree seedlings over the years. Only seedlings undesirable to the livestock were left. The large trees have been disappearing through attrition. Ask yourself, "What will be left when the few large remaining trees die or are cut?" There are no young trees to take their place—only brush.

Did You Know?

The snail makes its own r way. A glandular secretion fl out in front of its body and lows it to go uphill or down ease. Because of this mucus snail can crawl over the sh edge of a razor without being

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Fishes do not see very partly because of their eye st ture and partly because, as goes deeper in water, the grows dimmer.

To the casual observer, a sn seems to travel at a terrific sp but in reality seldom goes m than five miles an hour.

Because of its poorly devel nervous system, a fish prob experiences discomfort rather actual pain when hooked.

Bats are the only truly fl mammals.

The turkey vulture attain wingspread of up to six feet.

WA MARSHES—

ST SWAN LAKE

Carol Buckmann

long the Jack Creek Drainage, Gruver in Emmet County, is ries of shallow potholes and ghs comprising some of the n's most productive land. t Swan Lake, one of the finest water marshes in Iowa, is of this drainage and an ex- nt example of these unique tats.

gham and High lakes, Cun- ham Slough, East Swan, West n and a number of privately d areas comprise the Jack k Drainage System. West n lies to the east of a drained bed known as East Swan , three miles south and one east of Gruver.

fore East Swan was drained 915, the area was considered body of water known as Swan . At the time of drainage, a was constructed at the county crossing the east end of West , preserving it as a lake.

the fall of 1953, West Swan drained, the fish removed, then trol structure built at the site e original dam. The area has managed as a marsh ever .

Early History

now abandoned town named , one-half mile from the north , was once the Emmet County As Estherville grew to the its population far exceeded of Swan and citizens felt rville should duly become the y seat.

ction grew; Estherville raided and, in the shuffle, the rec- including property rights dis- red from the court house. out the records, Estherville, rgest town in Emmet County, eclared the new county seat.

that remains of the little called Swan is an old ceme- on the north shore of West .

st Swan Lake has been a te hunting ground since the settlers came to the Ingham, and West Swan Lake area. e man and his gun, the Indian his bow and arrow used this wildlife community as a s of subsistence.

ore the disappearance of the locks of redheads and canvas- , West Swan Lake was nationally as one of the hunting areas for these prized waterfowl.

ting is still the major recre- l activity on this 1,050-acre . The majority of this acre- water. The remaining con- of three miles of shoreline upland game thrive. Water- and aquatic furbearers are ain inhabitants but rabbits squirrels provide good fall ng.

West Swan, blue-winged teal, ds, redheads and ruddy

West Swan—a fine Iowa marsh. Jack Kirstein Photo.

ducks nest in abundance along with some pintails and shovellers. Coots, grebes and other marsh-loving birds are always abundant during the nesting season, both in the marsh and along the island in the middle. Wood ducks nest in the timber surrounding most of the area.

West Swan is accessible by county roads on the south and east sides. The state has developed access roads on the north side, the south side and by the control structure in the northeast corner.

Marsh Management

This and other marshes are most productive between two extremes of dense and sparse vegetation when marshes provide the best waterfowl hunting and muskrat trapping. The Unit Game Manager who cares for the marsh speeds the natural "drain and fill" process by manipulating the water level to prevent vegetative extremes.

In wet years, under natural conditions, the water often becomes too high for sunlight and air to reach plant seeds and they do not germinate, resulting in sparse vegetation so important to waterfowl. Whereas in dry years, mudflats develop for cattail and other marsh plant growth resulting in an over-abundance of vegetation. They may last for years even after the water level returns to normal. Although ideal for vegetation, this condition is not conducive to encourage animal life.

The water level is usually lowered in the spring and summer to permit plant life to thrive, then in the fall, stop-logs are put in to raise the level, attracting migratory ducks for good hunting.

Not only does the control structure aid vegetative growth but also aids in muskrat control. Muskrats play an important role in marsh management but an over-abundance may result in an "eat out" with muskrats using every particle of vegetation, stripping the marsh of its plant community.

This is one of the few Iowa marshes acquired by sovereign rights. The only land bought by the state was the 50 acres along the shoreline. West Swan has never been drained for agriculture and remains as a natural marsh improved only by a control structure.

At one time the entire region was a series of lakes and marshes such as West Swan Lake. Now, less than 30,000 acres of small, "pothole" marshes and shallow lakes remain of the million acres of marshland once covering Iowa.

Regeneration

For ages, mankind has been fascinated with the idea that lost parts of animals can be regrown. According to Greek legend, one of the twelve "labors" of Hercules was the destruction of the Hydra, a gigantic monster with nine serpents' heads. Finding that as soon as one head was cut off two new ones grew in its place, at last he burned out their roots with firebrands.

All animals have the power of regeneration to a greater or lesser degree. In man and higher animals it is quite limited. We see it most often in the healing of wounds and the mending of bones. A lost fingernail can be replaced but not a lost finger. Lower animals have a much greater ability to replace parts. For instance, the little half-inch flatform, Planaria, that lives under rocks in clean creeks can be cut into as many as 32 pieces and each fragment is able to rebuild a miniature flatworm complete with head, tail, eyes, mouth and internal organs.

One of the most striking examples of regeneration is found among the common crayfishes of our streams and lakes. An individual with unequal claws or pincers, or with one of the eight walking legs smaller than its mate, means that one has been lost and is being replaced.

The entire process of regeneration can be watched in the schoolroom or laboratory. Select a very small crayfish because young ones grow rapidly and molt their shells often. Remove a leg or a pincer. Keep in a gallon jar with a half-inch of clean water and feed small bits of raw meat. With each molt the lost part grows larger and soon reaches normal size.

The crayfish has an unusual "breaking joint" near the base of each claw and leg which is a safety device. When grabbed by a fish, snapping turtle, bird or other enemy, it merely twitches a special muscle, the joint breaks and the crayfish escapes. Some lizards (including the famous "glass snake" which is really a legless lizard) also have a breaking joint which allows the tail to drop off when it is seized. A new tail is regenerated but it lacks the backbone of the original tail.

A fish has a sort of autobiography recorded in its scales. Each lies in a pocket in the skin and grows as the fish brows. From the markings on the scale's surface fish biologists are able to read its age, seasons of good growth or of famine, and other items of its life history. However, it is often necessary to examine several scales in order to find one with a complete record. This is because scales are frequently lost and regenerated leaving a blank page in its history.

Theories explaining regeneration have been a battleground among zoologists and physiologists for more than a century.—*Cook County Forest Preserve.*

Dredge Bank Plantings

Jack Kirstein

The Conservation Commission Game Section has planted a half mile of honeysuckle and ninebark on a dredge bank in Hancock County on an experimental basis.

The plantings, consisting of three rows, are ten feet apart and follow the course of the dredge ditch on top of its east bank. The planting is on the Jay Johnson farm, two miles south and a mile west of Kanawha, and is planted as a part of the continuing Farm-Game Habitat program for the Conservation Commission.

Cooperating with the Hancock County Conservation Board, the planting was approved by the Coordinator of County Conservation Activities of the State Conservation Commission. Permission was received from the Hancock County Board of Supervisors to plant on the ditch. The plants were purchased from a private nursery by the County Conservation Board, and planted by the District No. 1 Crew of the Conservation Commission's Game Section. A total of five thousand two-year-old honeysuckle and ninebark were planted in April of this year.

The choice of this dredge bank as the initial planting was determined by locating a ditch where the banks were previously flattened and were wide enough to support the three rows planted ten feet apart.

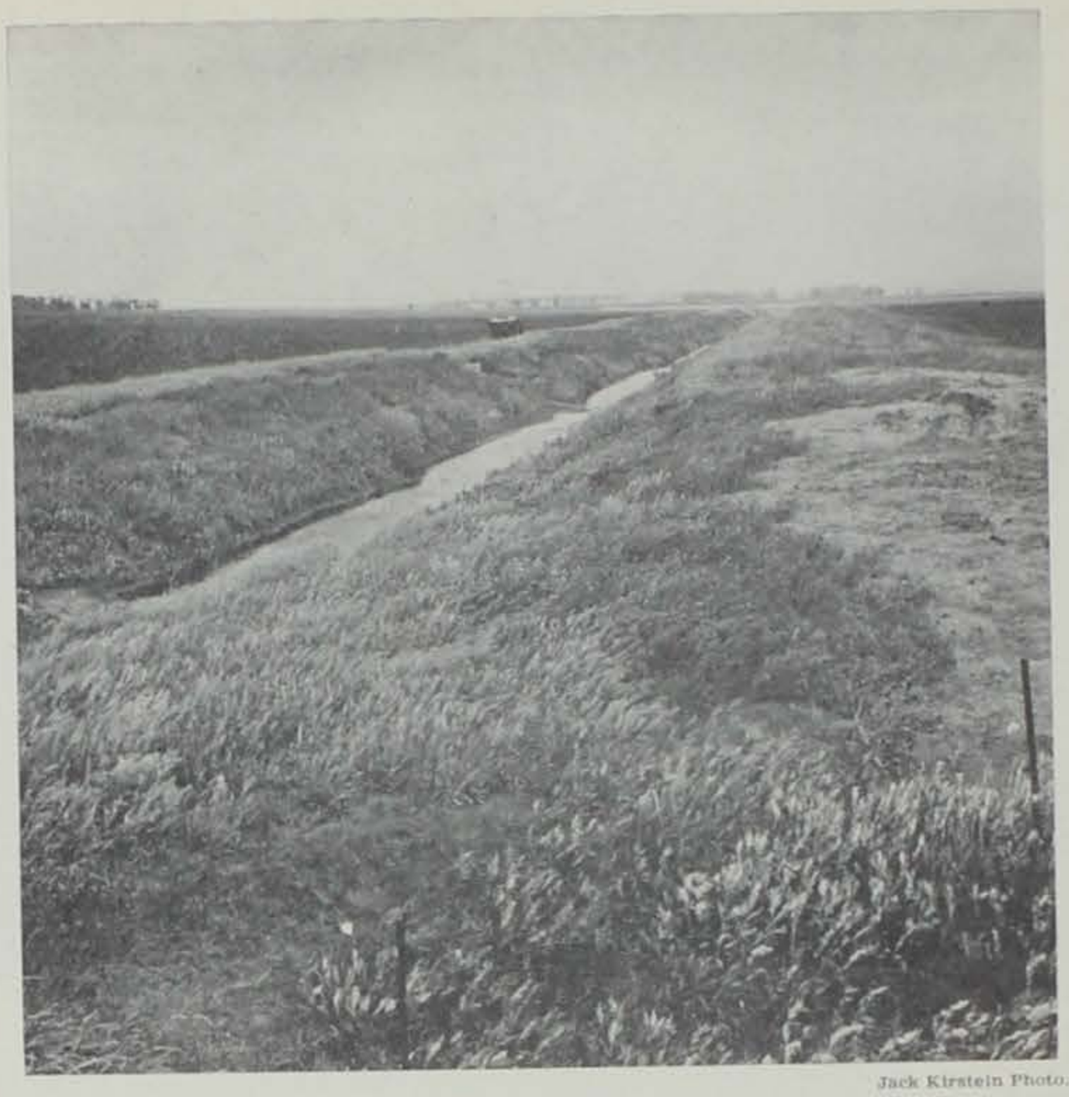
The plantings will help control wind erosion on the farm while providing additional winter game cover and spring nesting cover for pheasants in an area that has a need for more suitable habitat.

This is one of two plantings tried this year. The other is on the Robert Brown farm east of Britt. It, too, is approximately a half mile in length, however the planting there consists of four rows of honeysuckle and dogwood instead of three.

These plantings are preliminary to next year's expanded use of dredge ditches for game cover and erosion control. In 1965 it is planned to plant ten miles of three-row cover for a total of thirty miles of plantings.

Besides providing pheasant cover, other small game and wild birds will benefit from the plantings; and the full-grown hedges will improve the appearance of and beautify the countryside.

Such plantings as these could be beneficial in all Iowa counties. Iowa has many miles of such dredge banks which makes them a logical choice for additional cover plantings. If your county is interested in help with such a project, you may contact any Conservation Officer, Game Unit Manager, or write or call the Conservation Commission offices in Des Moines. These plantings are made on a 10 year agreement.



Jack Kirstein Photo.

Dredge banks such as these offer new opportunities for habitat plantings.

Waterdogs, Hellbenders, Sirens and Congo Eels

David H. Thompson

Occasionally a perch fisherman on Chicago's lake front lets out a startled gasp as he pulls in an ugly, sqirming creature that looks like something out of a bad dream. It is a foot-long, chunky animal with a flat head, small eyes, a collar of red, bushy gills, four weak legs, and a broad tail. The skin—sickly gray with dark blotches—is disgustingly slimy.

The Waterdog or Mud Puppy is the most numerous of four species of large salamanders that live in the streams and lakes of the Middle West. Unlike our smaller salamanders which change into an adult form that lives on land, these four remain in a juvenile stage and spend their entire lives in water. As a rule they are active only at night and so secretive in their habits that they are seldom seen except when one swallows a baited hook. Contrary to popular superstitions they are entirely harmless to man. Skinned and fried they are said to have the flavor of frog legs.

In late spring pairs of waterdogs perform a courtship dance and the female sticks about 100 quarter-inch, yellow eggs on the underside of a rock or sunken log. The female guards the nest until the inch-long young hatch some two months later. They grow slowly, finally becoming sexually mature at 7 or 8 years. They have been known to live 23 years in captivity. The diet is mainly crayfish, aquatic insects, worms and fish.

In school and college laboratories generaions of zoology students have dissected preserved waterdogs in their anatomy classes. They are paricularly well suited for the study of the circulatory system after the arteries have been injected with red and the veins with blue latex.

The Hellbender, so natives along the Ohio and Wabash rivers say, is "a creature from hell—bent on returning." Reaching two feet or more in length, it has a stout flattened body, a husky tail, four short thick legs and tiny eyes. It is as wrinkled as a dried prune with loose folds of skin along the sides. Although it may rise to the surface to gulp air into its lungs, it absorbs most of its oxygen through the skin. In September the female lays strings of eggs in a nest scooped in the gravel behind a rock in a fairly fast stream. Here they are guarded and fanned by the male until they hatch in November.

The Giant Salamander of the mountain streams in Japan and China is a near relative of our hellbender. The world's largest living amphibian, it reaches a lengh of five feet and a weight of 100 pounds. It is known to have survived 55 years in captivity. Now it is raised commercially in Japan as a table delicacy.

The Congo Eel that lives in pools and quiet waters of our southern states is a freak among the salamanders. With a cylindrical, serpentine, muscular body up to thirty inches in length it resembles an eel or a snake but is neither. The oddity about this animal is the ridiculous size of its legs. They are so tiny and weak that they are of no possible use either in walking or swimming. One has to look sharp to see them.

The Siren is another large, eel-like salamander. However, it has useful front legs but no hind at all. Like the waterdog it h its external gills throughout Its favorite habitat is a pon slough in a river floodplain as those of downstate Illinois early spring the female lays in hollows in the mud bot When the ponds dry up, they themselves in the muck or re into crayfish holes and wai rain.—*Cook County Forest serve.*

Litter Bags Now Being Distributed

Many Iowa campers and boat will be receiving a plastic lit bag as they visit parks, fore and other recreation areas arou the state.

The purpose of this new p gram is to provide campers boaters with a large bag that hold an accumulation of tr during their stay in a recreat area. At present the program experimental with just 50,000 b available for distribution. If p lic reaction to these bags is fav able, it is planned to use them quantity.

The bags will be distributed Commission personnel only state park and forest areas, by lake patrolmen when check boaters. They will not be dist uted by mail or other means.

The large size—12 x 18 inche is combined with a drawing on bag of Smokey the Bear reminc visitors to help keep our "pa clean, waters clear, and for green." To avoid any possible d ger through use of the litter b around children, holes have b punched in the bags. Plastic chosen because of its durabi over the paper bags used by m

44 Pound Flathead Top 1964 List

A lunker flathead catfish we ing 44 pounds has topped the Big Fish Records Listing m tained by the State Conserva Commission.

William Marsh of Farming took the big flathead in the Moines River at Bonaparte J 12. It measured 44 inches length. This fish is the larges any species taken this year ranks second in the all-time ords for flathead catfish.

The moose is the largest antl mammal that has ever lived earth and might weigh as muc 1,800 pounds.

The female caribou is the female of all the American that wears antlers.

Both the carp and the gol belong to the minnow family.

The alligator snapping turt the world's largest fresh w turtle.