



September, 1968

Volume 27

Number 9



Interest Breeds Action -

The Story of the Pine Lake Watershed



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Looking southeastward at the grassed blackslope terraces of a section of the Pine Lake Watershed area near Steamboat Rock in Grundy County. Photo: USDA-Soil Conservation Service.

The Pine Lake Watershed near Eldora is a dramatic example of erosion control through community action.

In 1965, Iowans began to realize that Pine Lake was rapidly turning into a shallow swamp. Charles McCarty, work unit conservationist, with the Soil Conservation Service (SCS), estimated at that time that 190,000 tons of soil were being dumped into Upper Pine Lake Watershed each year from the 10,000 acre watershed in Hardin and Grundy counties. This was the equivalent of 4 inches of topsoil from 315 acres.

Landowners were losing valuable topsoil, and taxpayers were faced with a staggering bill for dredging and re-

clamation. Furthermore, Iowans were about to lose a valuable recreation area unless something was done.

At this point, local citizens decided to stop this drain on their soil resources and the threat to Pine Lake. They invited local, state and federal agencies with resource development and management responsibility to a joint meeting of Hardin and Grundy county officials representing both rural and urban interests. The group decided to pool all available assistance to concentrate on the watershed draining into Pine Lake area. Landowners voted to organize a watershed board to guide their efforts.

The board decided to break the 10,000

acre area into smaller watershed units and treat each one separately. To begin, they selected a 200 acre area owned by four farmers.

This initial trial was sponsored by the Hardin Soil Conservation District, the SCS, the Agricultural Stabilization and Conservation Service (ASCS), the State Conservation Commission (SCC), and the four farmers. The project emphasized erosion control practices with emphasis on parallel, grassed backslope terraces, recreation and rural beautification along with wildlife cover plantings.

Erosion is now completely controlled and the area is a prime example of community cooperation in action.

(continued on page 68)

Our Readers Write . . .

Dear Sir:

Enclosed you will find our dollar for another two years subscription. You are getting such a nice little magazine and now with Campfire Cookery its tops.

Why don't you ask for folks to send in their helps. I'm sending in a few of ours.

We started a camping club last year and it has turned out a huge success. We meet every two weeks from Saturday morning to Sunday evening. We have coffee and cookies around a campfire with our meeting and on Sunday noon a potluck dinner.

We have twenty three members. Would like to see an item in your paper on exchange ideas of clubs.

Mr. and Mrs. Byron Edgington
Mapleton, Iowa

(Editors note: Enclosed items for the column will appear according to our editorial schedule.)

Dear Sir:

I save all copies of the IOWA CONSERVATIONIST and the index would help a lot when looking for some special articles I know I've seen but can't remember in which issue.

Enjoy your paper very much. Would like to see more about bird and plant life of our state . . . also animals. It seems like so few people can recognize the different ones and I feel that greater knowledge of nature and the need for conservation in all of nature is very important for the future of not only our state and country but the world.

Thank you.

Sincerely,
Nina Corwin
Grand Junction, Iowa

COMMISSION MINUTES

State Conservation Commission
Meeting Held in Des Moines, Iowa
July 9 and 10, 1968

James R. Hamilton was named chairman of the Commission succeeding Mike Zack. Dr. Keith McNurlen was named vice-chairman.

The following projects were approved for submission to the Bureau of Outdoor Recreation for Federal cost sharing under the Lands and Waters Conservation Fund Program:

City of Belmond—River Park—Acquisition—6.38 acres.

Buchanan County Conservation Board—Jakway Forest—Acquisition—60 acres.

Ida County Conservation Board—Moorehead Pioneer Park—Development to provide additional recreation facilities.

The Commission voted not to seek reimbursement for services rendered to the disaster areas of Oelwein and Charles City from Federal funds available for this assistance.

The Commission adopted a resolution in support of the proposal of the Johnson Co. Board of Health for centralized sewage treatment facilities.

Walter's Creek Watershed (Adams Co.)—Land Rights Agreement (Land Appraisal Project Agreement and Amendment to Land Rights Agreement) was approved.

An option offered by Mr. and Mrs. Paul Strand to sell 187 acres was exercised with cost to be shared by the Lands and Waters and Fish and Game Divisions.

The following land acquisition projects were approved:

Black Hawk Co. Conservation Board—Cedar River Green Belt Addition—75 acres.

Ida Co. Conservation Board—Moorehead Pioneer Park Addition—35.22 acres.

The following development plans were approved:

Dallas Co. Conservation Board—Hastie Forest Park and Museum. Lee Co. Conservation Board—Indian Path Park. Lee Co. Conservation Board—Montrose Boat Harbor. Lee Co. Conservation Board—Wilson Lake Park. Pocahontas Co. Conservation Board—Lizard Lake Access.

The request of the Humboldt County Conservation Board for approval of the partial development plan for the Bradgate Fishing Access Area was approved.

Granted the City of Storm Lake a so-called utility road access.

The following Fish and Game options were approved:

Upper Iowa River Fishing Access, Winneshiek Co.—Option to purchase addition to Trout Run—.79 acre.

Des Moines River (East Fork) Kossuth Co.—Option to purchase fishing access area—34 acres.

Cardinal Marsh, Howard Co.—Two options on marsh land—40 acres.

Otter Creek Marsh, Tama Co.—Land Purchase Option—197 acres.

An option on 267 acres of developed marsh adjacent to Riverton Marsh was approved.

The Commission approved the following:

Miami Lake, Monroe Co.—Flowage Easement—5.46 acres.

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CIRCULATION61,214

Miami Lake, Monroe Co.—Construction permit for new road along the east side of Miami Lake.

The Commission will enter into a cooperative project with the State Highway Commission on demonstration plantings of trees and shrubs suitable for wildlife habitat at the rest stops on the interstate highways.

Certificates of Iowa's partial apportionment of Federal Aid Funds are:

Wildlife Restoration — \$322,904.87;
Fish Restoration—\$78,580.18. The Director was authorized to notify the Secretary of the Interior that Iowa desires to participate in the Pittman-Robertson and Dingell-Johnson Acts for the fiscal year ending June 30, 1969.

Approved a request from the Cerro Gordo County Engineer to construct a new road right-of-way across a corner of state-owned land. As compensation for this fill material, the County Engineer proposes to give the State a quit claim deed to 1,000 ft. of shoreline in this area.

The staff was instructed to obtain 680 acres of land at Pikes Peak near McGregor.

A contract was awarded to Carroll E. Wilson, Donnellson, for the construction of an earthen embankment (dam) and incidentals at Shimek State Forest.

A contract was awarded to Keith E. Kent, Lucas, for the construction of an earthen embankment (dam) at Stephens State Forest.

The option offered by Irene Courtney on 24.15 acres bordering the southeast side of Lake Wapello State Park was exercised.

Authorized a \$1,500 grant to the State University of Iowa for cooperative research on park visitor surveys. This data will be used in future outdoor recreation resources planning.

The option offered by Gager for the purchase of a ten-acre fishing access (Kendallville Access) in Winneshiek County was approved.

EDITORIAL

The American outdoor sportsman is truly an amazing species. Often maligned and misunderstood, the hunters and fishermen have survived in spite of attacks on their sport, and indeed, upon their ideals and love of the outdoors.

It's time we took a closer look at the outdoorsman. Here is a man who will complain about his wife's cooking, yet on a camping trip he will eat half-fried potatoes and burnt fish, drink coffee made with creek water in a rusty bucket and think its wonderful.

He will just barely drag himself out of bed and stagger to the office by 8 a.m., yet when deer hunting he will jump out bright eyed and bushy tailed at 4:30 a.m., ready for the chase.

He will work hard on a farm close to good hunting and fishing so he can move to town to make more money so he can move back to the country where he is close to good hunting and fishing.

He wouldn't think of walking three blocks to the post office, yet will gladly tramp for miles through fields and over mountains when hunting.

He will balk at going to a band concert on a winter night because it's too cold out, yet he will cheerfully freeze to death in a duck blind.

He is the only creature in the world with guts enough to return from a week's fishing trip, stomp into his wife's clean kitchen with muddy boots, dirty and unshaven, drop a mess of catfish on her freshly mopped floor and ask: "Miss me, honey?"

Yes, the American outdoor sportsman is this and much more. For over a half century he has been the driving force behind conservation programs, yet he has received almost no credit from the general public.

It's the sportsman who supports such excellent organizations as the Izaak Walton League of America, The National Wildlife Federation, Ducks Unlimited, Wildlife Management Institute and hundreds of other groups.

When a game species is in short supply he not only yells for action, but puts up money to employ biologists and wardens and makes sure this species is protected and increased.

He supports game and fish departments through license sales.

He pours about 1.5 billion dollars a year into the general economy with much of this going for conservation programs.

He has battled for conservation measures, often with little help or understanding from the general public.

It is the hunter and angler who saw the dangers of pollution and destruction of habitat . . . and tried to do something about it. They gave their support to conservation agencies to provide recreation for all the people of the nation. Their battles for conservation have benefited not only the sportsmen, but every citizen.

So we salute the hunters and fishermen who have made valuable contributions to this great nation.



As the leaves begin to turn color and the weather turns a bit cooler, it's time for us to turn our attention to some tasty fall recipes.

They're easy to turn out and guaranteed to tempt tasters while they're cooking.

You may be surprised who turns up when supper is served.

Campers Chili

- 1 small onion (chopped)
- 1 1/2 lbs. ground beef
- 1 can red kidney beans
- 1 (No. 2 1/2) can tomatoes
- Seasonings: salt, pepper, red pepper, chili powder, onion salt, garlic salt

Cook ground beef and onion in pot til brown (do not crisp). Add beans, tomatoes, and seasonings and cook over medium heat for 45 minutes stirring occasionally. Simmer at least 30 minutes; preferably longer.

Chili seems to taste better if cooked slowly for 2 or 3 hours and even better when warmed for lunch the next day.

This is a great recipe to cook ahead and take along in 1/2 gallon milk cartons for the first night out, or for the campers lunch.

Skillet Spaghetti

- 1 lb. ground beef (broken up)
- 1 cup chopped onions
- 2 med. cloves garlic minced
- 1 8 oz. can tomato sauce
- 1 6 oz. can tomato paste
- 1 pt. tomato juice
- 1 1/2 cups water
- 2 tsp. chili powder
- 2 tsp. salt
- dash pepper
- 1 tsp. sugar
- 1 tsp. oregano

Combine above ingredients in a large skillet. Cover and bring to a boil. Reduce to simmer and cook for 30 minutes.

Add 7 to 8 oz. uncooked spaghetti. Stir to separate strands, cover and simmer til tender.



The boys in the duck blind must shake with fright every time you aim at a duck. . ."

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Community Action, Combined Efforts Provide Improved Resource Area

(from page 65)



Initial grading began on some of the terraces in the Pine Lake Watershed in December of 1964. Everett Pierce of the State Conservation Commission surveys the area and inspects the progress being made.

By Charles A. McCarty
U.S. Soil Conservation Service
Eldora, Iowa

Planned conservation was not new to the Hardin Soil Conservation District when the Pine Lake Watershed was developed. Planned conservation had been in existence since 1945 when the district was organized.

Before this the Civilian Conservation Corps that was stationed in Eldora had exposed landowners to principles of conservation. In fact, today, some of the work from the thirties is still doing the job.

In reviewing their twenty year history in 1965, the district commissioners felt that there were too many conservation problems that could not be solved individually. A square tract of land, no matter what the size, was not a conservation unit. The commissioners therefore set a District policy of giving work priority to the application of practices that would benefit more than one landowner. This action opened the way for the development of the Pine Lake Watershed program.

Sediment deposition had filled Upper

Pine Lake to the extent that the dam had to be raised in 1960. Considerable structural work was installed to alleviate this situation, but eroded soil material was still filling Upper Pine Lake at an alarming rate. The commissioners asked the Soil Conservation Service (SCS) to investigate conservation measures that might be used to control erosion.

Search For Solutions

After this step was taken, a meeting of community leaders, representing both urban and rural interests, was called. This group of ten people was given information regarding possible solutions to the watershed problem. In return they asked the commissioners to help them organize an interest meeting.

At this meeting 50 of the 77 landowners in the watershed area voted to organize a watershed board to act in their interest and to investigate possible solutions to the community's problem.

Specialists with the SCS, Extension Service, Agricultural Stabilization and Conservation Service (ASCS), and State Conservation Commission (SCC), were asked to the first board meeting to explain the various programs, economic

conditions, and engineering assistance that might apply to their situation.

It was during the series of meetings that the Soil Conservation District commissioners and the Watershed board worked out with various agencies their present course of action, mainly using grass backslope terraces with conduit outlets as a major conservation practice in controlling erosion in the Pine Lake Watershed.

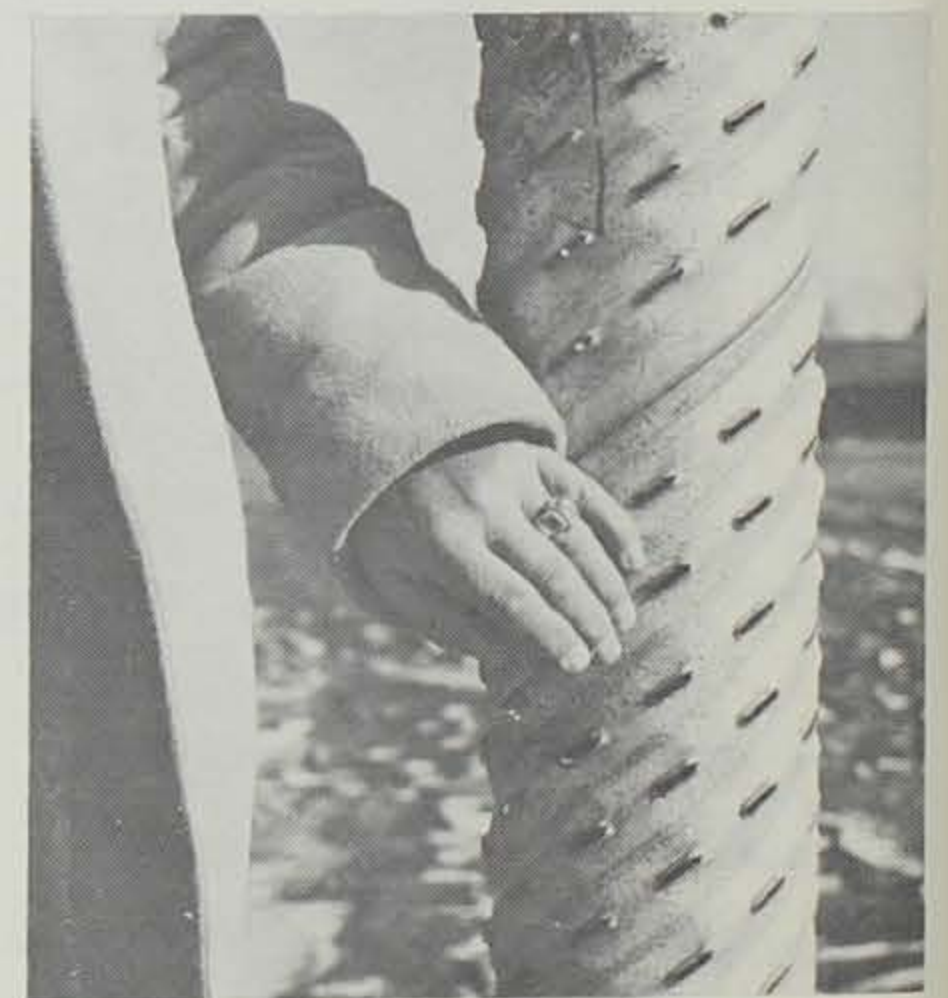
Landowner Participation

In analyzing the goals of the landowners, a variety of ideas was found. Cropland production, capital investment, equipment operation, changes in farm operation from grain-livestock to a cash-grain operation, development of high quality water for family recreation, self improvement of land, community improvement, protection of lowlands, and protection of natural impoundments were given as reasons for individual participation.

The goals that the landowners indicated for participating in the Pine Lake Watershed program are varied. In every case but one, the economic condition was an important basis for the goal. This, of course, leads to an interesting point—in where the benefits lie.

How much of this cost belongs to society and how much should the landowner bear? Comparing the progress made in the Pine Lake Watershed with the land treatment outside indicates a direct relationship between the rate of application and incentive payments.

Within the 367,360 acres of Hardin Soil Conservation District there were forty-one miles of grass backslope terraces constructed in 1965 and 1966; twenty-seven miles of the terraces were in the 5,000 acre Pine Lake Watershed.



These anti-siltation standpipes are placed within the terraces to filter out silt and other unwanted materials from the water areas.



Commission personnel in cooperation with SCS and other agencies working on the project examine the installation of the pipes in the graded terraces.

Urban Interest

The urban community in Pine Lake Watershed also has a strong interest in the watershed's progress. Intensive cropping creates a larger dollar inflow. The wildlife aspects of the grass back-slopes have become popular, providing nesting areas and travel lanes. Beautification of the countryside in the watershed area is noticeable, particularly in the spring. Also, if proper erosion control is obtained in the uplands, urban communities will benefit from the downstream improvements.

The Pine Lake Watershed terrace idea would not have been as appealing to the general public or to the landowner ten years ago. Today, both economic conditions and the direction of the community is different. Chemical advancements have made intensive cropping more economical. Ten years ago herbicides, insecticides, and even fertilizers were not in sufficient use to match today's production.

Ten years ago good land was selling in Hardin County for less than three hundred dollars per acre, today it is more than six hundred dollars. The hundred dollars per acre required for the installation of terraces is a small percentage of the total value. Ten years ago the need for recreational facilities was not as great. The value of Pine Lakes to the community and society has increased.

Conference Table Development

How did this program develop? Starting in January 1965, at a regular meeting of the Hardin County Soil Conservation District commissioners, the possibility of organizing a watershed program for the drainage area above Upper Pine Lake was discussed.

The work unit staff investigated the area, recommending to the commissioners at their February 8th meeting that any control in the watershed area must start with upland treatment.

February 24, 1965 the District commissioners called a meeting of interested parties to discuss the possibility of a

program development. In addition to local leaders, both in and out of the watershed area, the commissioners invited representatives of other Federal and local agencies.

At this meeting the local group showed significant interest in the project and on March 24 a meeting was held for an additional fifteen landowners in the Pine Lake drainage area.

Again, interest in the project was sufficient that the commissioners invited the State engineer and SCC representatives to attend a meeting of the entire watershed April 5, 1965. The landowners voted to elect a Watershed Board to represent them in requesting assistance from the various agencies and organizations contributing to the development of the proposed program.

May 20, 1965 the Watershed Board

met and developed guidelines for an information program they believed necessary to promote and develop the upland treatment program.

June 3, 1965 the Watershed Board met with representatives from ASCS, SCC, SCS, and the Hardin Soil District Commissioners.

Plans were made for the use of regular cost-sharing and incentive funds that are available under the Agricultural Conservation Program (ACP) and the SCC for erosion control work.

In July of 1965 twenty-three letters from organizations and prominent businessmen were received by the Hardin Soil Conservation District commissioners, showing support of the development of the watershed program.

Discussions Breed Action

On July 22, 1965 the commissioners met with the Pine Lake Watershed Board. It was decided that all terrace application involving more than one individual should be treated as an erosion group, requiring District approval. The first four requests for assistance were presented and approved by the Pine Lake Watershed Board and the first application of the grass backslope terraces was started in the watershed.

Through the joint efforts of the urban and rural communities, progress has been made. Landowners in small sub-watershed areas have joined together in erosion control groups, installing terraces for their mutual protection, sharing a common outlet, and paying costs in accordance with the benefits received.

From January of 1965 to January of 1966 the people in the Pine Lake Watershed area developed an organization, their conservation plan, an education program, and went to work.



Game cover, crops, and completed grassed terraces are proof of the success of the Pine Lake Watershed project. The buildings in the left corner are part of a Boy Scout camp east of Upper Pine Lake.

*The Bobwhite Quail —**Prince of Game Birds**Governed by Seasons,**Ruled by his Domain*

By M. E. Stemple
Game Biologist

If the ringneck pheasant is the King of upland game birds in Iowa, the fast flying bobwhite quail certainly must be the Prince. It's exploding flush and speedy flight make it a real challenge to hunters.

Many people seek to learn more about this sporty game bird that provides so much recreation.

Quail habits are governed by seasonal and weather changes. Too much cold, wet or drouth are detrimental to production of young and these adverse conditions also affect the activity of adults. For example, adults may not pair off as early in cold weather as during a warm spring. Pairing is accompanied by the "bobwhite" calling. Calling also accompanies nesting and production. Once the coveys are brought off, quail remain in coveys or groups until the following spring. Let's take a look at the calendar of events in the life of the bobwhite quail.

Spring

This is the time coveys break up, "bobwhite" calling begins and the birds are seen in pairs or singles. And the nesting starts. A few young seem to be brought off in May. Food consists of insects, greens and old grain. Cover is sought in brushy areas, but new green weeds and grass as well as hayfields are utilized.

Summer

This is the peak production time. New coveys appear with most of these being sighted after mid-July. The young make up 80 per cent or more of the population. "Bobwhite" calling persists. Food consists of greens, insects and early maturing seed. Cover is plentiful in the

form of corn and bean fields as well as in weeds, grass, brush and ditches.

Fall

A majority of quail now appear to be mature, or nearly so. Coveys are seen, although usually one sees pairs or singles at any time. Flocks consist of single families in some instances, but they may also be made up of individuals from several broods and may include adults not related to the young.

There is a variety of sizes. Birds that are matured have fully developed plumage and usually males can be distinguished by black and white head markings. Often we see "intermediates" or those with markings that are not definitely male or female.

The "bobwhite" call has ceased. Other calls are used to gather members of a flock. Cover is thinning and coveys move into areas where brush predominates. This is near food.

Winter

Coveys range within short flights of good cover which may include ditches. Often quail react more like pheasants. Often this is due to rapid changes in weather which seems to make them "spooky."

A quail will usually weigh five to seven ounces in winter. Coveys average about 12 birds. Most of the unfit have died. Food consists of grain, an occasional insect, and weed seed. The birds never move far from permanent cover and each covey needs a mile or more of continuous brushy edge. This must be near cornfields or bean fields. When these essentials are near, about 20 per cent of the birds can survive through the four seasons.

Iowa Quail Ages and Sizes

Iowa quail production begins in May

and ends in October. Thus wild quail of several ages and sizes may be seen during late spring and in summer and autumn.

The table below shows approximate quail weights at various stages of growth. Some identifying characteristics for various stages of growth are included. The weights and descriptions are derived from Conservation Commission files as well as from information from other states.

A General Guide to Quail Ages and Sizes

Approximate Ages and Weights		
Ages in Days	Wt. in Ozs.	Identifying Characteristics
10	0.5	Tiny: Has down or pinfeathers.
30	1.5	Tail 1/2" long: Has down on head.
60	3.0	Half grown: Some mature feathers: Some males can be identified by black and white head markings. Some females may have tan or brown head markings.
90	4.5	Nearly grown: Some still have ragged appearing feathers.
110 days and older	6 to 7	Plump: Mature plumage.

Sometimes quail over 10 weeks of age have noticeable crests; which are erected when the bird is excited.

**We Goofed!**

In the "Bullfroggin" article in last month's issue of the IOWA CONSERVATIONIST, a legal remark was in error.

In Iowa it is *not* legal to gig fish, but it *is* legal to gig for frogs.

On any legal question that may arise which is not mentioned in the CONSERVATIONIST, consult the Iowa Code Book, The Fishing and Hunting Law Synopsis, or write to the Conservation Commission, 300 4th Street, Des Moines, Iowa 50319.

Varied Literature Available From PR

The Commission literature listed here concerns fish, game, parks, forests, and the many facets of general conservation. Legal aspects are specified in some of the material.

These lists, pamphlets, folders, and brochures are written for the general public for use in outdoor recreational activities.

Some are directed especially to children for their use in school projects.

These materials are published by the Public Relations Department of the Conservation Commission or are distributed

(continued on page 72)

1968 HUNTING SEASONS AND LIMITS

GAME	SEASON	SHOOTING HOURS	DAILY LIMIT	POSSESSION LIMIT
Pheasant	Nov. 9-Dec. 31	8:00 a.m.-4:30 p.m.	3	6
Quail	Oct. 26-Jan. 31	8:00 a.m.-4:30 p.m.	8	16
Duck	Oct. 26-Nov. 24	½ hr. Before Sunrise To Sunset	3	6
Geese	Sept. 28-Dec. 6	½ hr. Before Sunrise To Sunset	5	5
Deer (Gun)	Dec. 7-8-9	8:00 a.m.-4:30 p.m.	Check Species Laws	
Deer (Bow)	Sept. 28-Nov. 28	½ hr. Before Sunrise To ½ hr. After Sunset	Possession and Bag Limit—One Per Year	
Squirrel	Sept. 14-Dec. 31	None	6	12
Rabbit	Sept. 14-Feb. 16	6:00 a.m.-6:00 p.m.	10	None
Raccoon (hunting)	Oct. 19-Feb. 28	12 Noon Oct. 19 to 12 Midnight Feb. 28	None	None
Hungarian Partridge	Nov. 9-Dec. 31	8:00 a.m.-4:30 p.m.	2	4
Coot	Oct. 26-Nov. 24	½ hr. Before Sunrise To Sunset	10	20
Wilson Snipe	Oct. 5-Nov. 23	½ hr. Before Sunrise To Sunset	8	16
Grouse	Nov. 2-Nov. 17	8:00 a.m.-4:30 p.m.	2	4

DUCK AND GOOSE HUNTING HOURS STATE CONSERVATION COMMISSION STATE OF IOWA—1968 SUNRISE AND SUNSET SCHEDULE

	SIOUX CITY		OMAHA		MASON CITY		DES MOINES		WATERLOO		CEDAR RAPIDS		DUBUQUE		BURLINGTON	
	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS
SEPT. 28	7:19	7:13	7:17	7:11	7:06	7:00	7:08	7:02	7:03	6:57	7:00	6:54	6:56	6:50	6:58	6:52
29	7:20	7:11	7:18	7:09	7:07	6:58	7:09	7:00	7:04	6:55	7:01	6:52	6:57	6:48	6:59	6:50
30	7:21	7:09	7:19	7:08	7:09	6:57	7:10	6:59	7:05	6:53	7:02	6:51	6:58	6:47	7:00	6:49
OCT. 1	7:22	7:08	7:20	7:06	7:10	6:55	7:11	6:57	7:06	6:52	7:03	6:49	6:59	6:45	7:01	6:47
2	7:23	7:06	7:21	7:04	7:11	6:53	7:12	6:55	7:07	6:50	7:04	6:47	7:01	6:43	7:02	6:45
3	7:24	7:04	7:22	7:03	7:13	6:52	7:13	6:53	7:09	6:48	7:05	6:45	7:02	6:41	7:03	6:44
4	7:25	7:02	7:23	7:01	7:14	6:50	7:14	6:52	7:10	6:46	7:06	6:44	7:03	6:40	7:04	6:42
5	7:27	7:01	7:24	6:59	7:15	6:48	7:15	6:50	7:11	6:45	7:08	6:42	7:04	6:38	7:05	6:40
6	7:28	6:59	7:25	6:58	7:16	6:46	7:16	6:48	7:12	6:43	7:09	6:40	7:05	6:36	7:06	6:39
7	7:29	6:57	7:26	6:56	7:17	6:45	7:17	6:47	7:13	6:41	7:10	6:39	7:06	6:35	7:07	6:37
8	7:30	6:56	7:27	6:54	7:18	6:43	7:18	6:45	7:14	6:40	7:11	6:37	7:07	6:33	7:08	6:36
9	7:31	6:54	7:28	6:53	7:19	6:41	7:19	6:43	7:15	6:38	7:12	6:35	7:08	6:31	7:09	6:34
10	7:32	6:52	7:29	6:51	7:21	6:39	7:21	6:42	7:16	6:36	7:13	6:34	7:10	6:30	7:10	6:32
11	7:33	6:51	7:31	6:50	7:22	6:38	7:22	6:40	7:18	6:35	7:14	6:32	7:11	6:28	7:11	6:31
12	7:35	6:49	7:32	6:48	7:23	6:36	7:23	6:39	7:19	6:33	7:15	6:30	7:12	6:26	7:12	6:29
13	7:36	6:47	7:33	6:46	7:24	6:34	7:24	6:37	7:20	6:31	7:16	6:29	7:13	6:25	7:13	6:28
14	7:37	6:46	7:34	6:45	7:25	6:33	7:25	6:35	7:21	6:30	7:18	6:27	7:14	6:23	7:14	6:26
15	7:38	6:44	7:35	6:43	7:27	6:31	7:26	6:34	7:22	6:28	7:19	6:26	7:15	6:21	7:15	6:25
16	7:39	6:42	7:36	6:42	7:28	6:29	7:27	6:32	7:23	6:26	7:20	6:24	7:16	6:20	7:16	6:23
17	7:40	6:41	7:37	6:40	7:29	6:28	7:28	6:31	7:25	6:25	7:21	6:22	7:18	6:18	7:18	6:22
18	7:42	6:39	7:38	6:39	7:30	6:26	7:30	6:29	7:26	6:23	7:22	6:21	7:19	6:17	7:19	6:20
19	7:43	6:38	7:39	6:37	7:31	6:25	7:31	6:28	7:27	6:22	7:23	6:19	7:20	6:15	7:20	6:19
20	7:44	6:36	7:41	6:36	7:33	6:23	7:32	6:26	7:28	6:20	7:25	6:18	7:21	6:13	7:21	6:17
21	7:45	6:35	7:42	6:34	7:34	6:21	7:33	6:25	7:29	6:19	7:26	6:16	7:22	6:12	7:22	6:16
22	7:46	6:33	7:43	6:33	7:35	6:20	7:34	6:23	7:31	6:17	7:27	6:15	7:24	6:10	7:23	6:14
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24	7:49	6:30	7:45	6:30	7:38	6:17	7:36	6:20	7:33	6:14	7:29	6:12	7:26	6:08	7:25	6:12
25	7:50	6:29	7:46	6:29	7:39	6:15	7:38	6:19	7:34	6:13	7:30	6:11	7:27	6:06	7:26	6:10
26	7:51	6:27	7:48	6:27	7:40	6:14	7:39	6:18	7:35	6:11	7:32	6:09	7:28	6:05	7:28	6:09
27	6:52	5:26	6:49	5:26	6:41	5:12	6:40	5:16	6:37	5:10	6:33	5:08	6:30	5:03	6:29	5:07
CST 28	6:54	5:25	6:50	5:24	6:43	5:11	6:41	5:15	6:38	5:08	6:34	5:06	6:31	5:02	6:30	5:06
29	6:55	5:23	6:51	5:23	6:44	5:10	6:42	5:14	6:39	5:07	6:35	5:05	6:32	5:00	6:31	5:05
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NOV. 31	6:57	5:21	6:53	5:21	6:47	5:07	6:45	5:11	6:42	5:04	6:38	5:02	6:35	4:58	6:33	5:02
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OVERKILL !!

By John Madson

Conservation Department

Olin Mathieson Chemical Corporation

During the last Ice Age, a lot of wildlife went down the drain. Extinction—the most final of all deaths—struck hundreds of North American big game species.

It is possible that man, not glaciers, was responsible.

In an article "Pleistocene Overkill" in the December issue of *Natural History*, Dr. Paul Martin of the University of Arizona airs evidence that the first Americans wiped out over a hundred species of big game about 10,000 years ago. The casualty list includes mammoths, mastodons, camels, shrub oxen, horses, and others.

Extinction is normal in the biological long run, but extinct species are usually replaced by new species better adapted to a changing world. This was not the case after the last Ice Age, and Dr. Martin points out that the sweeping extinction of big game occurred only after man the hunter came on the scene.

This doesn't mean that man wiped out mammoths with a stone axe. But he did use fire to drive some game herds. Those herds, reduced by climatic change or crowded into drought-shrunken habitat, may have been pushed over the brink by ancient hunters who were remarkable big game specialists.

The Great Overkill did not stop with the Pleistocene. It continued into the 20th century and we came close to wiping out the big game that remained. If Dr. Martin's theory is true, man has been overkilling North American wildlife for over 10,000 years. Most of North America's big game was long gone before Columbus arrived!

Are we still overkilling? What wildlife is threatened, and how?

Today there are 42 rare and endangered mammals in the U.S. and neighboring countries, and about 110 species of rare and endangered birds.

Of the mammals, about 30 are hunted for some reason. About 19 are hunted commercially (whales and seals) or because they conflict with man's interests (wolves and grizzlies). Only about ten are "meat-and-trophy" species of interest to sports-hunters. These are rare types of bighorn sheep, dwarf elk, and certain deer. They are seldom, if ever, hunted today.

Of the 110 species of rare and endangered birds, only about 20 can be classed as game birds, and these are carefully protected. Change is the greatest threat to most of our endangered birds. The California condor is a casualty of range "improvement" and predator control, the prairie chicken has lost

its prairie, the ivory-billed woodpecker has run out of virgin swampland, and the bald eagle is being emasculated by pesticides. Wildlife overkill caused by change continues, while hunting overkill diminishes.

Overkills by modern hunting are rare, and usually unimportant.

Several years ago, duckhunters overkilled in the Mississippi Flyway—the result of a statistical flub in planning the season. This was swiftly compensated for, with little harm. There may be times and places when such species as deer may be overkilled locally, usually from intense hunting pressure triggered by an overpopulation of deer. This is better than underkill, for it is easier to restore deer than deer range.

Today, hunting underkill frequently occurs in our most important game species—including deer, black bear, moose, turkey, pheasant, grouse, quail, squirrels, and other small game.

Man is learning to regulate himself as a hunter, but not as a changer and spoiler of environment. As a modern overkiller, man the wolf isn't nearly as deadly as man the hog.

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through the department for other agencies.

They are available free upon request from the State Conservation Commission, Public Relations Department, State Office Building, 300 4th Street, Des Moines, Iowa 50319.

Trees, Birds, Flowers: Simple Key to Iowa Trees; Ducks at a Distance; Tailor-Made Bird Houses; Operation Tid-Bits; The Oaks; Bird Study for Schools; Checklist of Iowa Birds; Checklist of Common Iowa Woodland Flowers; Iowa Prairie Flowers (included in the park folder—Iowa Prairies).

Camping: Iowa Camping; Iowa Teachers' Conservation Camp; Camping in Iowa.

Fishing and Fish: 1968 Iowa Fishing Seasons and Limits; Iowa Commercial Fishing Laws; Official Big Fish Record Forms; Iowa's Public Fishing and Fishing Access Areas; Fish Factories; Walleye and Northern Pike; Iowa Trout Fishing; Fish Smoker; Removing Rough Fish for Better Fishing; Your Guide to Iowa Trout Waters; How to Catch Fish.

Forestry: Iowa Forestry Bulletin; What Is An Iowa Forest?

Miscellaneous: Snakes—Source of Many Fables; Effigy Mounds; Quickie Facts and Figures; Be a Pollution Detective; Who's Who in Iowa's Zoo; Iowa Conservation; Indian Village Site; Film Catalogue; Letter Answer to: "What Are the Duties of a Fish and Game Conservation Officer?"

Hunting and Wildlife: Hunting: Shooting Sportsmanship; 1967 Iowa Hunting and Trapping Seasons and Limits (1968 material will be released soon); Iowa Hunting—Trapping—Fishing; DeSoto National Wildlife Refuge; 1968 Hunting Season Openings; Iowa's Public Hunting and Hunting Access Areas; New A.S.C.S. Program Provides Winter Cover For Pheasants; Iowa Game Bulletin—Missouri River Spring Goose Migration; Iowa Game Bulletin—Fox Trapping; Iowa's Hunter Safety Program.

Iowa Hungarian Partridge; Iowa Quail Hunting; Iowa Pheasant Hunting; Iowa Deer Hunting; More Cover Means More Game; A Peek at Iowa Wildlife; Welcome to the Wildlife Research and Exhibit Station; The A B C's of Fox Trapping; Deer Hunter—Iridescent Orange Safety Apparel; Common Iowa Wildlife Tracks; Tanning Your Trophy.

Parks: Park Regulations; State Owned—Recreation Areas—Iowa 1968; Individual Park Folders (These are currently being revised and reprinted and many of the parks do not have a folder at present but will in the future.)

Rivers, Waterways, Boating, and Water Recreation: Rathbun Dam and Reservoir; Saylorville Dam and Reservoir; Red Rock Dam and Lake Red Rock; The Mighty Mississippi Recreational Guide; The Upper Mississippi River; Iowa Boating Regulations; Iowa Great Lakes Region; Iowa Boat Launching Ramps; Uniform Waterway Marking System; Meandered Rivers; Natural Lakes; Iowa Canoe Trips; Marshes—Iowa's Richest Acres.

Soon to be released: Mississippi River Boating Facilities Guide.

Can't keep it under my shell much longer!

