# ON SER ATIONS

lume 15

September, 1956

Number 9

# HATIONAL HUNTING AND FISHING SURVEY

# THE COUNTY ONSERVATION LAW

n every Iowa county there's at you list one small, scenic area that la la local favorite of picnickers, r a uralists, kids and old folks.

his area is usually in private and is open to the public it's open-only through the tresy of the owner. And while present owner may appreciate recreational values, the little a faces the constant threat of ting, cultivation, or closure to public.

Most of these small areas are of municipal jurisdiction, and 1 not be acquired as city parks. ey are too small and numerous be administered by the state, may be of such local interest i use to preclude acquisition by fall state. Also, the Conservation mmission has its hands full th its present state parks, and is able to take on hundreds of new terio es.

Up To County

1 10

CO

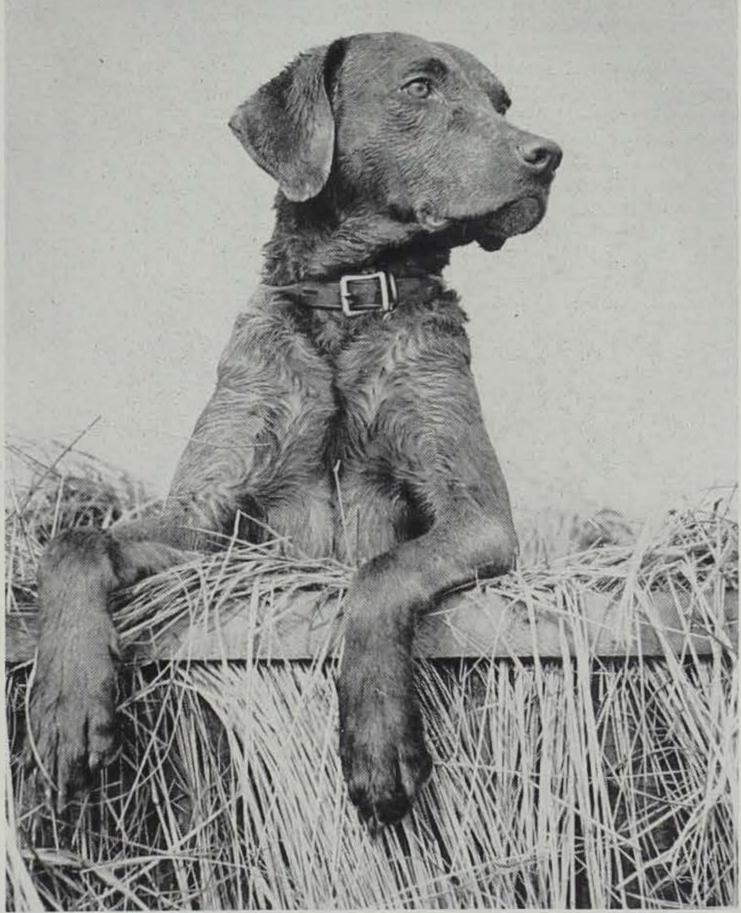
Logically, the acquisition and intenance of such areas should at the county level, but until reatly the counties have not been time powered by state law to raise d spend money for recreation

Under a new law, counties may t only levy taxes for park funds, t may also create special adminrative bodies to handle county rk programs. This law, on House le 591, provides that on petition 200 voters in any county to that unty's board of supervisors, unty residents may vote on nether or not to establish a unty conservation board.

If the voters approve of the cre-10n of such a board, the board of pervisors shall appoint a county nservation board of 5 county sidents. The members of this first ard shall hold office for periods nging from one to five years. nereafter, succeeding members all be appointed for five years.

#### Powers and Duties

The county conservation board all acquire, control and manage (Continued on page 66)



This magnificent Chesapeake Retriever has a right to look proud—he represents a solid investment of money, care and affection. Last year American hunters spent a total of \$124,388,000 on gun dogs alone, eclipsing the revenues of many other sports.

# REPORT FROM THE CANADIAN DUCK FACTORY

Bob Barratt Area Game Manager

Each summer the Canadian Wildlife Service and the U.S. Fish Wildlife Service with cooperating agencies that include the Conservation Departments of various states and provinces, band a sample of young waterfowl on the breeding grounds in Canada.

Carried on prior to the opening of the waterfowl seasons, the purpose of this banding is to obtain information on hunting pressure, mortality rates, and distribution of

waterfowl. By banding the young birds on the areas where they were hatched, conservation agencies charged with setting waterfowl regulations are able to determine the areas which furnish the birds for the various flyways. Aerial censuses of these areas will then show the number of birds which can be expected to furnish shooting in the respective flyways prior to the time when the seasons must be set.

(Continued on page 70)

By John Madson

Sporting goods makers, conservation departments, and millions of wives have long known that hunting and fishing is a big thing. Enthusiasm for these field sports has soared since World War II, and their part of the nation's recreation budget was believed-but not known-to be immense.

Hunting and fishing is big business; trouble is, no one has been sure how big. Large industries and broad fish and game programs depend on a misty, unmeasured customer: the sportsman. In no other business has so little been known of the consumer and the gross receipts.

In Seattle in 1954, the International Association of Game, Fish and Conservation Commissioners urged the U.S. Fish and Wildlife Service to sponsor a broad national survey of hunting and fishing activity. It was believed that the time had come to take inven-

The Fish and Wildlife Service agreed, and the job was given to Crossley, S-D Surveys, Inc., of New York, an independent survey and polling organization.

Early in 1956, hundreds of interviewers queried random samples of the national public, asking specially prepared questions with no advance notice. No effort was made to single out sportsmen or their families. Data were taken from persons 12 years of age or older and interviews were made in 20,000 American homes that represented a cross-section of households and individuals in metropolitan, suburban, small town and rural areas in 48 states.

The survey findings have been processed and analyzed mathematically and it is believed that the results of the survey are accurate to within 5 per cent.

In 1955, there was an estimated 118,366,000 Americans 12 years of age or older. Survey finds indicated that of this number, about twenty-five million hunted and/or fished in 1955. They spent nearly Personnel from the states and three billion dollars for five hunthe other agencies met on June dred million days of hunting and

(Continued on page 69)

#### Iowa Conservationist

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LEO A. HOEGH, Governor of Iowa BRUCE STILES, Director JOHN MADSON, Editor EVELYN BOUCHER, Associate Editor

MEMBERS OF THE COMMISSION GEORGE M. FOSTER, Chairman Ottumwa JOE STANTON, Vice Chairman Des Moines MRS JOHN CRABB Jamaica GEORGE V. JECK Spirit Lake FLOYD S. PEARSON.....Decorah . D. REYNOLDS. .....Creston TROST.....Fort Dodge

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# Conservation Law . . .

(Continued from page 65) properties to be used as "public parks, preserves, parkways, playgrounds, recreation centers, county forests, county wildlife areas and other county conservation and recreation purposes." Briefly, the county conservation board is authorized to:

1. Study the county's needs for shall, Story, Boone, Greene, Carsuch areas, and prepare plans of areas and facilities to meet such needs.

2. To acquire such recreational catine, Cass, Adair, Adams, Union areas for the county, giving consideration to their scenic, historic, archeologic or recreation values.

3. To file with and obtain approval from the State Conservation Commission on all plans for acquisiment programs of such areas.

4. To plan, develop, and maintain such areas, to construct, alter and renew buildings and other structures and equip and maintain them. 5. To accept gifts, bequests and appropriations of money and other personal property for conservation purposes.

6. To employ an executive officer responsible for carrying out the policies of the conservation board. 7. To charge and collect reasonable fees for the use of such areas and their facilities and for admission to amateur athletic contests and other noncommercial events.

8. To let out and rent privileges in or upon the areas as deemed to be in the public interest.

The county conservation board shall also make rules and regulations for the protection and control of the county areas, and these rules and regulations may not be contrary to state law.

#### The Money

When a county has officially adopted the conservation board plan, the board of supervisors may levy an annual tax of not less than 1/4 mill nor more than 1 mill on the dollar of the assessed valuation of all property in the county subject to county taxation.

This money shall be paid into a distinct "conservation fund", and will be paid out to the conserva-

# IOWA HUNTING AND TRAPPING SEASONS SET

Decatur, Wayne, Louisa, Wash-

ington, Keokuk, Mahaska, Dallas,

All 1956-57 Iowa hunting and East 7th and Court-Des Moines, Iowa trapping seasons have now been set by the State Conservation Commission, with few changes from last year's regulations.

> Season opening dates will vary slightly from the 1955 openings, since all 1956 hunting and trapping seasons will begin on Saturdays nearest the old opening dates.

> Pheasants: Open season, long zone from November 10 through December 3, 1956. Shooting hours 12 o'clock noon to 4:30 p.m. Bag and possession limit three (3) cock birds. Open counties: Lyon, Osceola, Dickinson, Emmet, Kossuth, Winnebago, Worth, Mitchell, Howard, Winneshiek, Allamakee, Clayton, Fayette, Chickasaw, Floyd, Cerro Gordo, Hancock, Palo Alto, Clay, O'Brien, Sioux, Plymouth, Cherokee, Buena Vista, Pocahontas, Humboldt, Wright, Franklin, Butler, Bremer, Woodbury, Ida, Sac, Calhoun, Webster, Hamilton, Hardin, Grundy, Black Hawk, Buchanan, Delaware, Dubuque, Jackson, Clinton, Scott, Jones, Linn, Benton, Tama, Marroll, Crawford, Monona, Shelby, Audubon, Guthrie, Jasper, Poweshiek, Iowa, Johnson, Cedar, Musand Taylor.

Open season in the short pheasant zone will extend from November 10 through November 22, 1956. Shooting hours 12 o'clock noon to 4:30 p.m. Bag and possession limit tion, development, and improve- three (3) cock birds. Open counties: Harrison, Pottawattamie, Madison, Clarke, Lucas, Ringgold,

tion board for payment of ex-

A number of Iowa counties are

taking an active part in this

county conservation program.

Here are some examples, and their

progress at the time of this writ-

board's duties.

penses incurred in carrying out the law, has appointed a county conservation board which is al-

> Buchanan County has organized a board and has appointed its offi-

> Scott, Iowa, Dubuque, Howard and Page counties are circulating

Mitchell County has approved

petitions for county conservatio missed so boards. Polk County has circulated ready active. petition and the proposal for

conservation board will be put o the ballot this November.

Mitchell County was one of the honor of first to establish a conservatio esteemed board, and has already leased an lea mon acquired land. That board recentl two of s leased a 5-acre tract of woode Vear's en land on the Cedar River south ( Ing. St. Ansgar for development as picnic and recreational area.

Mills, Montgomery, Fremont, Page

Monroe, Appanoose, Polk, Warre

Quail: Open season in long zon

(Continued on page 67)

and Marion.

In addition to picnicking, tr area will furnish access to the teath Cedar River, and the Mitche preading County board hopes to construct provided a dock and boat landing ram his our next year. According to the Osas of the ti Press, the Mitchell County col About 30 servation board is "working on long-range development progral special of the Cedar River as a recret tional, fishing and water conserve tion area."

apparen

Complete information on the den 'county conservation law" may 1 obtained by writing the Stal of my u Conservation Commission in De Has con Moines. Ask for House File 59 Prompt action can insure havin the your proposal for a county col of effort servation board on the ballots th November.



lowa trappers this year face a low muskrat population and dwindling water area Other fur crops are said to be good, and expert John Gilchrist of Cherokee Wil Loday w probably take his share of mink.



One of the first county recreation areas in northeastern lowa, this 5-acre patch of woods south of St. Ansgar will give access to the Cedar River. The Mitchell County Conservation Board hopes to add a boat landing ramp next year.



cording to the records, squirrel hunters using dogs last year didn't do as well as hunters not using dogs. But just the same, it's good to hear a feist barking around a squirrel tree.

# SOMETHING FOR SQUIRREL HUNTERS

Paul D. Kline Game Biologist

Low clouds scuttled by overhead we entered the woods. The timer was wet from intermittent rizzles and soon our trousers ung to us like wet hen feathers. oday was not particularly pleasat for squirrel hunting; but as y partner expressed it, he hadn't issed squirrel opening since his byhood and he wasn't going to iss one now because of a little eather.

A veteran of many squirrel unts, my partner had paid the onor of inviting me along on his steemed pastime. As he theorized, en months of anticipation and wo of satisfaction completed one ear's enjoyment of squirrel huntlg.

After roving the timber for ome time we decided to relax on log of comfortable dimensions eneath a sizeable oak. Its widepreading limbs and many leaves rovided shelter from the light ain. Our eyes were focused most f the time on a large white oak bout 30 yards distant. Not an mpressive tree; it was something pecial. Broken and gnarled, and pparently clinging to its few renaining years of life, its many toles and hollows made it a squirel den tree par excellent.

The setting loosened the tongue of my usually taciturn companion. dis comment of "mighty poor lunting today" and our bag of only three squirrels in two hours of effort prompted my asking his dea of a good day for squirrel unting. He described at length hunter reports are records kept by more sunshine and produce more fried squirrel suppers.

calm, cool, clear autumn days and reminisced of his many successful hunts.

#### Clouds and Wind

My own thoughts turned to a study made by Dr. Ellis Hicks of Iowa State College 15 years ago when he learned of the squirrels and weather. Dr. Hicks found among other things that squirrels were "around and about" more on clear days than on cloudy ones. Also, wind of more than two miles per hour discouraged squirrel movement in proportion to its intensity. These facts correlated exactly with the beliefs of my companion. As he pointed out, windy days make squirrels hard to see because every bush and twig in the timber is in motion. At the same time they cannot be heard dropping nuts or scurrying about the trees because of wind noises.

Dr. Hicks' study also revealed squirrels in autumn were most active from 6:00 to 9:00 a.m. and at temperatures between 40 and 49 degrees F. Cold temperatures of less than 19 degrees F. and warm temperatures over 75 degrees F. kept many squirrels in their dens.

Our small bag testified to this being a poor day for squirrels. Reports from hunters indicated one squirrel in the bag meant an average of one hour and thirteen minutes of effort for one hunter in 1954. In 1955 the required effort was similar-one hour and twelve minutes per squirrel per man. We had hunted since 7:00 a.m. Now my watch read 9:15. We had hunted four and one-half man hours for three squirrels, or an hour and a half per squirrel.

#### Hunters' Reports

squirrel hunters all over Iowa. Each individual cooperating hunter records for every hunt he undertakes the time spent; number of squirrels killed, seen, and crippled; number of companions; type of gun used; and other facts of value to Conservation Commission biologists.

Other facts revealed by hunter surveys show that an average hunter stays in the woods two hours and 48 minutes per trip, long enough to bag 2.2 squirrels. During the hunt he sees 5.2 squirrels or an average of 1.9 per hour. Of course the hunters don't bring home tenths of squirrels. These are just average figures.

Hunting with one or more companions is commonplace. Compiled reports show parties of one to several men average 1.5 persons per trip. In other words the average fellow hunts alone half the trips and with a companion the other half. Shotgun hunters are not as prevalent as commonly believed. From one year to another the number of shotgunners vary from one-fourth to one-third of the total. The remainder use .22 calibre rifles.

#### How About Dogs?

One fact was surprising. In 1955 hunters who used dogs when squirrel hunting had much poorer success than those who did not. While non-dog-users required only one hour and six minutes to bag a squirrel the dog-users bagged only one every hour and 40 minutes. What was more convincing the hunters without dogs saw half again as many squirrels and crippled slightly fewer.

We kicked that around for awhile and arrived at the conclusion that too many untrained dogs were allowed to scuttle around in the timber ahead of the hunters. Of course a very few hunters were fortunate in having a real trained squirrel dog.

Our thoughts and low conversation were brought to a halt when a nice fox squirrel appeared on an overhead limb. Nervously flicking his tail he had evidently decided to investigate these intruders. My partner promptly picked him off with his twenty-two, and our bag had increased to four.

"Given the right weather conditions and choice of hunting places", I asked my friend, "what sort of place would you choose to hunt?

"A mature timber with lots of big oaks, hickories, or walnuts would be best", he declared emphatically. "If the timber is open enough to permit the trees to grow big and wide, hunt every den or mast-bearing tree. If the timber contains many close, tall, slender edge. trees then hunt the edge."

The fact is this: mast-bearing trees require lots of room to produce acorns or nuts. Consequently, in a thick growing timber those to the car, bringing our total to As I explained to my friend, the trees nearest the edge will receive five, and just enough for two good

# Hunting and Trapping . . .

(Continued from page 66) from November 3 through December 15, 1956. Shooting hours 8:30 a.m. to 4:30 p.m. daily. Bag and possession limit is six (6) birds. Open counties: Tama, Benton, Linn, Jones, Jackson, Jasper, Poweshiek, Iowa, Johnson, Cedar, Clinton, Scott, Madison, Warren, Marion, Mahaska, Keokuk, Washington, Muscatine, Louisa, Adair, Union, Clarke, Lucas, Monroe, Wapello, Jefferson, Henry, Des Moines, Taylor, Ringgold, Decatur, Wayne, Appanoose, Davis, Van Buren, Lee, Buchanan, Delaware, Dubuque, Guthrie, Dallas, Polk, Adams, Mills, Montgomery, Fremont and Page.

Open season in the short quail zone from November 3 through November 17, 1956. Shooting hours from 8:30 a.m. to 4:30 p.m. daily, with a bag and possession limit of six (6) birds. Open counties: Winneshiek, Allamakee, Fayette, Clayton, Black Hawk, Story, Marshall, Bremer, Chickasaw, Howard, Pottawattamie, Monona, Harrison and Cass.

Hungarian Partridge: Open season from November 10 through November 18. Shooting hours from 12 o'clock noon to 4:30 p.m., daily. Bag and possession limit two (2) birds. Open counties: Lyon, Sioux, Osceola, O'Brien, Dickinson, Clay, Emmet, Palo Alto, Kossuth, Winnebago and Hancock.

Squirrel: Open season for gray and fox squirrels from September 15 through November 15, 1956. Bag limit six (6) per day; possession limit after first day twelve (12). Entire state open.

Rabbits: Open season for cottontail and jackrabbit from September 15 through January 31, 1957. Shooting hours from 6 a.m. to 6 p.m. daily. Bag limit ten (10) per day. No possession limit. Entire state open.

Deer: Open season for bow and arrow only from October 13 through November 12, 1956. Entire state open. Open season for shotgun only from December 8 through December 9, 1956. Entire state open. Daily bag, 1 deer; possession limit, 1 deer; season limit, 1 deer.

Shooting hours for bow and arrow, 6:30 a.m. to 5 p.m. daily. Shooting hours for shotgun season from 8 a.m. to 4 p.m. daily. Open to Iowa residents only, and deer of any age or sex may be taken.

Ducks, Geese, Coot or Mudhen: (Continued on page 68)

nuts and acorns. That is where the feeding squirrels will be found. Besides, oftentimes adjoining cornfields will attract squirrels to the

It was now nearly 10:00 a.m., the time we had previously agreed to head for home. One squirrel was added to the bag on the way

# **BOWHUNTING FOR** SQUIRRELS: PRELUDE TO DEER

John Madson Education Assistant

With less than a month until the opening of the deer season for bow and arrow, it's high time that novice bowhunters get busy.

Bowhunting and the proper use of archery tackle isn't something that can be mastered in a few days before hunting season. But almost a month of steady practice should put the beginner in good shape for deer hunting, and give him a fighting chance to kill his buck.

"Roving", or just walking through the woods and pulling down on any stump, leaf or stick that catches your eye, will do a lot to polish a bowhunter. Probably the finest practice is actually going squirrel hunting with bow and arrow. Squirrels may be bowhunted in Iowa with a regular hunting license, and they constitute ticklish targets.

A Squirrel Hunt

Squirrel hunting with the bow is similar to other forms, and consists of sitting beneath a tree, nocking an arrow to your bowstring, and waiting. A hunting bow is surprisingly accurate, and is deadly on bushy-tails. We went squirrel hunting with Francis Melton, a well-known Des Moines archer. Melton-as always-was armed with a bow, I was armed with a .22, and photographer Jim Sherman was armed with his camera and a thousand rounds of verbal ammunition.

We spotted a big fox squirrel in the top of an oak, and I took a snap shot with the rifle. And missed. The squirrel, which was evidently in strange territory, didn't switch trees but ran a short distance down the limb and paused.

"See him?" I yelled at Melton. "Yeah," he answered. "Want to come around here and take him with your firestick?"

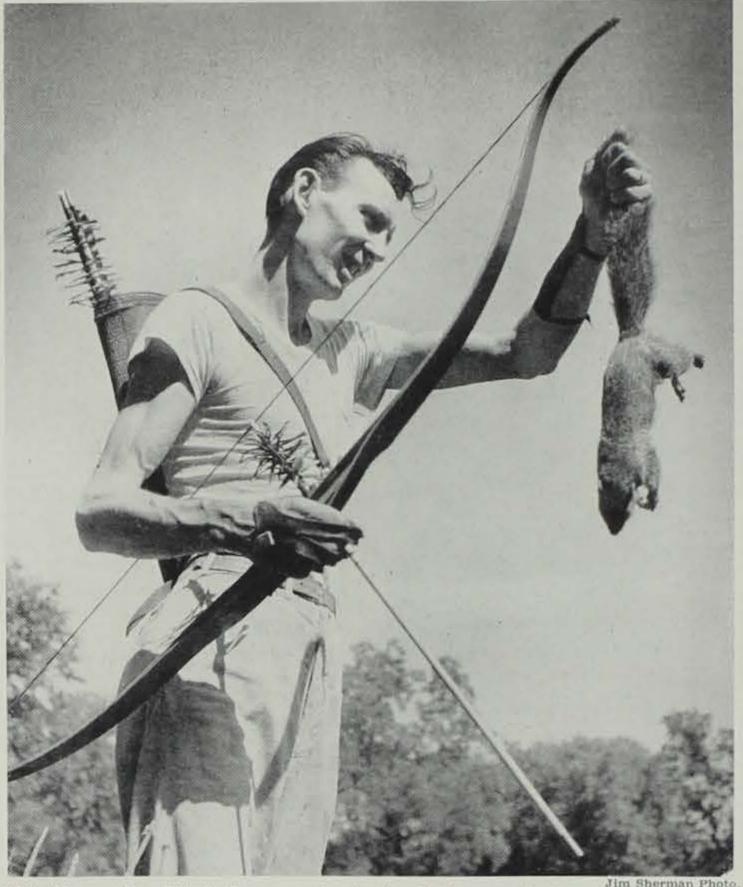
"No, I can't see him," I said. "Try your bow."

In one movement, Melton drew his bow to the arrow's feathers and released. There was a sharp thunk!, the blunt arrow fell to the ground, and the squirrel fell after it.

I lowered my rifle—not knowing what else to do with it—and heard Jim Sherman cackling in the way he does whenever I've h ad my eye that.

#### "Blunts"

For such hunting Melton uses a ledge of his new equipment. beautiful 55-pound recurved hunting bow and blunt-tipped arrows. These arrows may be tipped with regular blunt points, (not "target points"), or with .38 Special shells. Melton tells us that blunts offer much greater shocking power than sharp arrowheads, and are most effective on small game. Then, too, | pull, and a bow drawing 40 pounds



With his peculiar "flu-flu" arrows, bowhunter Melton wreaks havoc in the squirrel timbers. But even while he was shooting this squirrel high in an oak, Melton was thinking of deer.

arrows tipped with broadheads or or slightly more is a good one for even target points often stick high | the new archer. Good bows of lamin a tree and are lost, while blunt- inated glass and wood can be had tipped arrows rebound and are for \$30 and up. It might be wise to

Some squirrel hunters use "fluflu" arrows, on which the feathers are wrapped in a spiral around the shaft. This large, loose fletching kills arrow speed rapidly and may cause it to fall to the ground within 50 yards. An ordinary arrow not striking squirrel or tree might be

Hunting squirrels with the bow doesn't always produce limits, even for a good man like Melton. However, it produces all the squirrels he needs.

"Besides," he says, "my shooting is limited in the summer, and bowhunting isn't something you can neglect. The squirrel season sharpens me up for deer."

#### Waiting Game

In either squirrel or deer hunting, the most successful hunters play the waiting game. A month of squirrelling and field shooting wiped. He loves exhibitions like with the bow hones the experienced archer to a fine edge, and can give the beginner a good working know-

For that beginner, Melton and most other good archers recommend bows of less than 50-pound pull. The novice should not attempt to learn with a too-heavy bow, for he'll be discouraged more easily.

The legal minimum in Iowa for a deer-hunting bow is a 40-pound

easily recovered. avoid the more inexpensive recurved bows. They're lovely things, but the tips may twist when the arrow is at full draw, and may cause erratic arrow flight. This is eliminated in the more expensive recurved bows. In the low price range, the beginner might be better off with a "straight" bow.

> If you're new at this bowhunting game, better buy about a dozen practice arrows. Excellent arrows with target tips can be purchased for about \$10 or \$12 a dozen. Broadhead hunting arrows of cedar or spruce will run about \$15 a doz-

> You should buy an arm guard to protect your forearm from the painful slap of the bowstring (experienced archers often forgo this, having learned to avoid the bowstring). You may want finger guards to pad your fingertips while drawing the bowstring. You'll want a hunting quiver, preferably one with arrow stalls to prevent rattling of the shafts.

And above all, you'll want practice.

#### "Instinct Shooting"

Most expert bowhunters use "instinct" shooting, drawing and releasing the arrow without conscious aim. Melton often does this, not using the classic, careful form of the target shooter.

"Mostly, I shoot by 'feel'," he

told us. "Some archers draw the bow, sight down the arrow, then look at the animal, check the arrow again, and miss. Just look at the target. Draw your arrow and release it without taking your eyes from the target. Practice and conditioned reflexes take care of the rest."

The time to begin bowhunting is now. It's less than a month, and you don't want to muff a close shot at a big deer just because of lack of practice.

The 1956 Iowa bow-and-arrow deer season will extend from October 13 through November 12, both dates inclusive. This season is a week longer than last year's, when Iowa archers killed 58 deer. Daily shooting hours will be from 6:30 a.m. to 5 p.m.

Application must be made for a bow-and-arrow deer license, but there is no deadline for such application, and no limit on the number to "specific of bow licenses that will be issued. I hoots,

License applications are now available from all state conserva- Vation tion officers and from the Conservation Commission's Des Moines shing a office. Applications should be com- ber aut pleted and returned with \$10 to lie in the Conservation Commission, East tion 7th and Court, Des Moines.

# Hunting and Trapping . . .

(Continued from page 67) Open season from October 6 2 years through December 14, 1956. Each 3.737,000 day (including opening day) shoot- 8.420,000 ing is allowed from one half hour ien, and before sunrise to one-half hour be- later, Of fore sunset. Daily bag limit of ducks is four (4). Possession limit of ducks after first day is eight (8). One (1) hooded merganser may be possessed. Closed season on Ross' Geese, grebes, rails (except coot), gallinules, mourning dove, woodcock, wood duck, and swan.

Bag and possession limit of geese is five (5). No more than two of the limit may be Canada geese, their subspecies, or whitefronted geese. Two (2) of any of the above may be included in the limit. The entire bag may be made up of either blue or snow geese or any combination of blue and snow geese.

Bag and possession limit of cool or mudhen is ten (10).

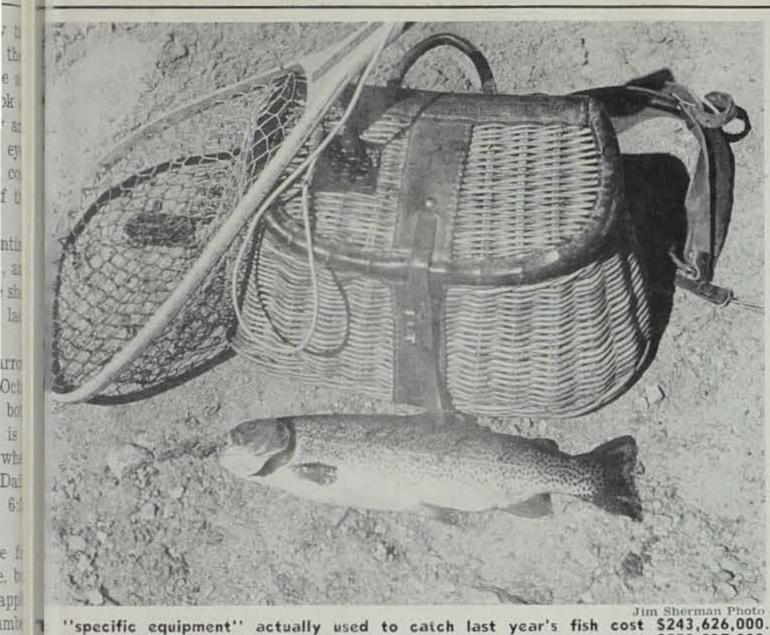
Wilson's Snipe or Jacksnipe-Open season from October 6 through November 4, 1956. Bag and possession limit eight (8) Daily shooting hours the same as 18% for ducks and geese.

Raccoon: Open entire state for hunting only from 12 o'clock noon October 27 to midnight February 10, 1957. (See trapping seasons). No daily bag limit or possession limit.

#### Open Trapping Seasons

Mink-Muskrat-Open on the Mississippi River east of the Chicago, Milwaukee and St. Paul Railroad tracks from the Minnesota state line to the south city limits

(Continued on page 70)



boots, tents, and other "general equipment", you sportsmen spent \$550,037,000.

lational Survey . . .

(Continued from page 65)

[Oil ling, and last year they drove
col ir automobiles over ten billion
10 les in pursuit of outdoor recre-

#### Fishing

As might be expected, fishing s 1955's most popular sport. out 20,813,000 individuals over years of age went fishing, and 737,000 required licenses. About 420,000 were freshwater fisherin, and 4,557,000 fished in salt ter. Of the total:

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12,938,000 were men 18 years of age or older. 4,689,000 were women 18 years

of age or older. 3,186,000 were minors.

Total fishing expenditures were \$1,914,292,000, or an average of \$91.98 per person. Freshwater fishermen spent \$1,425,353,000 or an average of \$77.38, and saltwater fishermen spent \$488,939,000 or an average of \$107.29.

Expenditures on equipment were:

Specific equipment...\$243,626,000 General equipment...\$550,037,000 TOTAL....\$793,663,000 "Specific equipment" was listed

by the survey as being rods, reels, guns, decoys, ammunition, etc. "General equipment" was sleeping bags, tents, special clothing, boots, etc.

For fishing trips, the survey indicated the following total expenditures:

Food .......\$106,101,000 Lodging ......\$73,080,000 Auto transportation .\$271,827,000 Other expenses .....\$596,700,000 TOTAL ....\$1,047,708,000 Automobile transportation in-

Automobile transportation included gas, oil, tires and maintenance, but not insurance, licenses and depreciation. These costs were computed on the basis of  $3\frac{1}{2}\phi$  per mile. The typical fisherman travelled 319 miles during 1955 on fishing trips.

"Other expenses" were guides, refreshments, charters, etc.

Fishermen also spent \$37,240,000 in license fees, \$836,000 on leases, and \$34,845,000 on club dues and magazines.

#### Hunting

The nation's hunting bill was not quite as large as that of fishing, and average expenditures were less. An approximate total of 11,784,000 persons hunted during 1955, of whom about 9,951,000 purchased licenses. About 2,057,000 purchased federal duck stamps.

Of the nation's total hunters:

4,414,000 were big game hunters. 9,822,000 were small game hunters 1,986,000 hunted waterfowl 9,675,000 were men 18 years of

age or older. 418,000 were women 18 years of age or older.

1,691,000 were minors Total hunting expenditures:

\$936,687,000 or an average per person of \$79.49. \$323,909,000 was spent for big game hunting, for an average of \$73.39.

\$494,033,000 was spent for small game hunting, for an average of \$50.30.

Specific equipment ... \$350,958,000

Specific equipment ...\$350,958,000 General equipment ...\$137,671,000 TOTAL ....\$488,629,000 Trips:

Other expenditures:

Licenses and stamps .\$ 39,935,000 Leases and privileges .\$ 2,463,000 Duck Stamps . . . . \$ 4,114,000 Dogs and expenses . . \$124,388,000 All other expenses . . \$ 26,072,000

Fishing and Hunting

Of the 24,917,000 Americans who hunted and fished last year, about 13,133,000 fished only; 4,-104,000 hunted only, and 7,680,000 did both. The greatest number of hunters and fishermen came from rural areas, followed in number by surburban dwellers, residents of towns, and residents of large cities. It was found that on the average, one out of every three households had a hunter or fisherman.

According to the survey, Iowa is in the heart of the area containing the greatest percentage of fishermen per capita, and the area ranked second in the percentage of hunters. In other words, 26 per cent of persons 12 years of age or older in the upper midwest are fishermen. The next ranking area is a great block of western states in which 25 per cent of these persons were fishermen.

In this group of upper midwestern states, 17 per cent of the persons 12 years of age or older were

(Continued on page 71)

FISHING

17%

26%

18%

18%

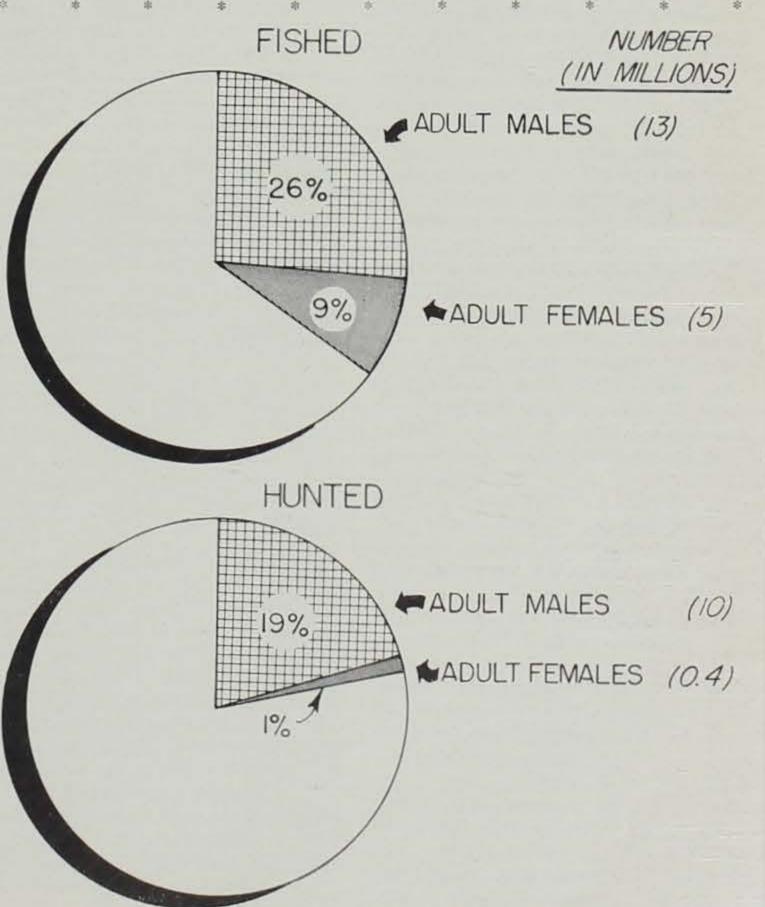
17%

10%

10%

11%

ographical variation in percentage of persons aged 12 and over who hunted and fished in 1955.



Percentages of all adults (18 and over) who hunted and fished in 1955.



Ernie Kuyt, a Canadian biologist, compares the bills of juvenile teal. The banding program joined Canadian, federal and state game managers into a common team.

Report . . .

(Continued from page 65) 28th at Regina, Saskatchewan, for final instructions. The crew to which I was assigned consisted of four men.

Banding operations were to be carried on through the central onethird of Saskatchewan from the Montana border on the south to the edge of the wilderness on the north. This area consists of a strip about 175 miles wide and 325 miles long and is largely prairie land with perhaps twenty per cent of the area in the northeast part being made up of the so-called "park lands."

#### Pothole Country

The prairie lands of Saskatchewan, Alberta and Manitoba produce most of the ducks hatched on the North American continent. These prairies are made up almost entirely of wheat land and pasture. The level and nearly level lands are usually under cultivation while the rolling lands are largely virgin prairie and are used for grazing.

Throughout this area the prairie "pot-holes" are abundant and it is on or near these that the ducks nest and produce the bulk of our waterfowl. These pot-holes are usually shallow water areas from one to four feet deep and range in size from temporary ponds of less than one acre to large sloughs and lakes covering several square miles. It is on the little areas of less than ten acres, however, that the majority of the ducks are hatched. Aquatic vegetation is abundant along the shorelines and often covers the entire water area. Looking at these vast prairies, it is difficult to realize that much of our own state of Iowa was once very similar. Agricultural drainage, however, has removed nearly all the water areas from northern Iowa and replaced our duck factories with cornfields.

While the prairies are almost devoid of trees in any form the northeastern "park lands" are dotted with small clumps of trees and shrubs. Many of these clumps of vegetation are around potholes

where they obtain sufficient moisture for growth. Here, as in the prairies, the principal crop is wheat and the farmers cultivate around the clumps of trees. Because of the brush it is much easier to catch and band waterfowl on the prairie potholes than in the park lands.

#### Mallards, Pintails Important

Of primary importance in such banding are the mallard and the pintail since these two species rank highest in importance to the hunter. They are, however, the two most difficult species of puddle ducks to capture since the young birds will invariably take to the heavy grass and weeds when the potholes are approached by man. Many of the other species, notably blue-winged teal, remain in the open water and are much easier to capture. The numbers of birds of the various species captured, therefore, do not represent their relative abundance in the areas worked.

The crew to which I was assigned banded a total of 2062 birds during the five-week period spent on banding operations. The species, and the number of each banded were:

Mallard	93			7.0		749	12	2		(4)	W	ă)	97	'n.		W		V.	4	3	1
Pintail	A A A	57	W	34	1/2	Pali	1		W.	39	6		1		83	¥1.	¥,		3.	z	6
Canvasba	ack			13		-		÷ :		14	ě.	60	23		p.)	ŵ()	ě,	d		3	3
Redhead	1919	180	ēĞ,		. A	*	ï	65	R19	a			¥,	ā	ď.	60	90	4		1	4
Baldpate		-	a,		-30	(4)	-	Þ	ΕO	0.0	0	(0)	0	t	9.0	0	6		1	0	Š
Gadwall					20	(W)	4	E	*	20	4	(2)	1	ŧ	2)	=	8	8	2	3	ü
Shoveller		(0)	83		10	100	×	9	*5	15.5	Se.	( ± )		6			1	Þ	14	18	8
Lesser S	eau	33				0.81	4	80-1		100		20	-				٠.				3.3
Ringneck Blue-Wit	٠.	4	80	-	05	3		7)					7)	ń		×	8		-	7	4
Blue-Wil	nge	a	3	T	e	a	L	70			Ē	8						ì	-	せの	4
Green-W																					
Coot	0.4		0.	1 1	-10		(9)							2		3		i		4	<u>si</u>

The figures indicate a high ratio of puddle ducks to diving ducks. This is in no way an indication of the relative abundance of the two types since little effort was expended in trying to take the divers. They, along with the coot, were banded only when they happened to be taken along with the more desirable species. The gadwall, although a puddle duck, is difficult to drive and capture, the young ordinarily diving and escaping the drivers.

#### 10,000 Per Day

Ducks were abundant in most of

the areas visited and it was not tails, which are noted for their unusual to see as many as half a dozen broods of young birds on a pothole no larger than half an acre in size. It would be very difficult to estimate the number of birds sighted during any given period, but, counting both adult and juvenile birds, it was not unusual to see upwards of 10,000 birds in a day. It is hard to compare this number of birds with concentrations seen in other trips to Saskatchewan since my previous visits were made in the fall when the young birds were flying and tended to concentrate in great numbers on the larger sloughs.

#### Large Crop

It is generally agreed by all observers that the 1956 spring breeding population of ducks was the largest in several years. Early estimates of nesting success by competent observers were not too optimistic since there was considerable destruction of early nests by farming operations. An extremely dry spring was blamed for much of this loss, since conditions made it possible for farmers to cultivate much of the marginal land around sloughs which are ordinarily too wet to farm.

The birds which had their nests destroyed will renest but ordinarily the renestings result in smaller broods and consequently a slightly smaller overall production. Renesting this year, however, apparently produced broods comparable in size with the early broods and veteran observers now believe that the duck crop will be about the same or slightly better than in 1955.

#### Now Flying

Recent rains have also assured the birds of a water supply until they are able to fly and there should be no loss of birds due to the drying up of marsh areas. Most of the early broods were flying by the time banding operations were completed, which was the first week in August, and most of the broods observed were probably on the wing by September 1st. Pin-

early nesting, were nearly all flying by August 1st and most other species were at or near the flying stage. Large numbers of mallards were also flying and even the youngest broods of this species appear to be far enough along to be out of any danger of being caught flightless when the freeze-up comes.

#### Good Season Coming?

From all observations made on the breeding grounds it would appear that the hunting season of 1956 should find adequate numbers of ducks migrating through the States. The number of available water areas and the weather will play important roles, of course, in determining the number of birds which will stop in Iowa. The Iowa waterfowler may be assured, however, that the duck population is good and if everything goes well he should have at least a few mornings of very excellent shooting before the birds move on to their winter homes.

# Hunting and Trapping . .

(Continued from page 68) of the city of Davenport and from the south city limits of the city of Davenport east of Highway No. 61 to Missouri state line from 12:00 noon, December 1, 1956 until midnight, December 31, 1956.

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Remainder of state open from 12:00 noon, December 1, 1956 to kkery midnight, December 15, 1956.

Beaver-Open entire state from De Sur 12:00 noon, December 1, 1956, until tek ov midnight, March 1, 1957.

Badger, Skunk, Opossum, Civet Uthe Cat-12:00 noon, November 10, Couple 1956 until midnight, January 10, He was 1957.

Raccoon-Open season from ecogniz 12:00 noon, November 10, 1956 lowever until midnight, February 10, 1957. Arubby Water sets permitted only during tree open mink and muskrat season.

Weasel, Red Fox, Gray Fox, Four Ground Hog, Wolf-Coyote-Con- W from tinuous open season, entire state of The

Otter-Continuous closed season, Peamed entire state.



Most of the flightless ducks were taken during drives, trapped in a device similar to the fisherman's hoop net. Where pond-side vegetation was heavy, little birds were almost impossible to locate.



cent in appearance, this three-leafed trouble maker can create pure misery. The leaves always have three leaflets, but their margins vary in pattern.

# THREE-LEAVED TROUBLE MAKER

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by John H. Roger, Jr. (Condensed from Missouri Conservationist)

Fred Jones eased up to the big kory and quietly crouched down, rifle resting across his knees. e sun was just beginning to k over the horizon and soon re would be enough light to pick the shapes of squirrels feeding ouple of trees away.

He was careful to avoid a vine sting up around the tree for he ognized it at once as poison ivy. wever, Fred didn't recognize the ubby plants around the base of tree. These, too, were poison

four days later he was sufferfrom a severe case of poison . The vacation he planned and amed of on cold winter nights l now turned into a miserable ek of burning and itching.

Poison ivy had claimed another tim through his inability to recnize this three-leaved trouble ker of the plant world.

Because of its wide distribution I the variety of conditions under ich it thrives, most hunters and termen are likely to come in stact with poison ivy in their ivities afield. As Fred Jones disrered, it doesn't have any easily ognized feature that calls attion to its unpleasant characistics.

While it may occur in thickets isisting entirely of poison ivy, as a vine-like mat on a tree, it y grow among other woody and baceous plants, too. The leaves d twigs of these different forms, wever, are similar, and skin nptoms of susceptible people identical.

Poison ivy has alternate compound leaves. That is, the leaves do not grow opposite one another on the stem, but are staggered. Each leaf is made up of three leaflets. These may vary from two to four inches in length and are roughly oval in shape. The edges vary from smooth (not sawtoothed) to large coarse teeth or even lobes. Usually the leaf surfaces are smooth and shiny, but fine hair.

vivid reds of plants growing in the direct sunlight.

What is it in the poison ivy plant that causes all the trouble? It's a fluid oleoresin contained in the tiny canals of the leaflets, leaf stems, twigs and bark. To become afflicted, actual contact with the oleoresin is necessary. Light contact with the plant will not liberate the poisonous juice, and only by bruising the leaves or other parts of the plant will the toxic oleoresin be exuded.

compound and inflammation can be caused even from a dead and dried out plant. Bad cases of poison ivy can be contracted when burning the plant because soot particles carry the oleoresin.

Researchers have found that almost everyone starts life immune to poison ivy and that sensitivity is an acquired condition. In fact, once a person has become sensitized, only a small amount of the poisonous juice is necessary for a skin reaction. People vary in the amount of exposure necessary to make them sensitive. Although many people come in contact with the plant and have no unpleasant effects, cases have been reported where such seemingly immune people suddenly become sensitized with a resulting severe skin reaction.

An old man living down in the Ozarks claims he comes down with poison ivy every spring even though he steers clear of the plant. He says, "the wind carried the poison, how else could I get it?" sometimes they are covered with This is a common belief but not true. Poison ivy pollen does not In spring and summer the leaves have the oleoresin nor is it carare a rich green changing in fall to ried by the wind. The wind, howbrilliant colors ranging from the ever, may be a dog that has yellow of shaded plants to the brushed through the plant and

Poison ivy takes many forms, one of which is shrubby. The plant may also grow low on the ground, or in large vines reaching high into trees.

brings home the poison. Many cases of poison ivy can be traced to the family dog.

Usually, if you are sensitive to poison ivy, symptoms will begin to show in one or two days after contact with the plant. But people not sensitive may go from one week to twenty days after exposure while sensitivity is acquired

(Continued on page 72)

# National Survey .

(Continued from page 69) Oleoresin is a stable chemical hunters, but in the western states 18 per cent of the group were hunters.

In this regard, it would appear that Iowa is part of a seven-state area unsurpassed nationally for its total percentage of hunters and fishermen!

#### The Total Bill

Total hunting and fishing expenditures during 1955: \$2,850,979,000, or an average of \$114.42 for every sportsman.

Equipment (hunting and fishing):

specific	F (		1,001,000
General		\$68	7,708,000
TO	TAL	.\$1,28	2,292,000
Trips:		11/19/100	
Lodging		\$ 8	8,951,000
Food		\$14	14,587,000
Auto trai	nsportation		5,799,000
Othon car	TO AND AND AND AND AND	0.00	0 457 000

TOTAL .....\$1,298,794,000 Licenses and stamps .\$ 77,175,000 Leases and privileges .\$ 3,299,000 Duck Stamps ..... \$ 4,114,000 Other expenditures ..\$185,305,000

#### "Everyone Benefits"

The Survey report concludes with: "All people benefit in some way from this enormous yearly expenditure. The number of participants, the amount of money expended, and the sustained interest from youth to old age all emphasize that hunting and fishing continue to be the most popular American sports. Apart from benefits to national health and wellbeing, it is evident that conservation actions are warranted purely on the grounds of national income, as well as for their recreational values to approximately 20 million adults and 5 million minors who hunt and fish."

While this national survey was being made, an additional survey of Iowa alone was conducted, and these state statistics will be released later this fall when the Crossley Company has completed its analysis. Iowa Conservation Commission officials — and the heads of some other state fish and game departments-felt that more detailed information on a state level would be desirable.

The results of these state and federal surveys, indicating the immense scope of our outdoor recreation, will be of quick interest to industry, commerce and politics, particularly in this election year.

The figures should also be of interest to a growing, uncoordinated giant: the American sportsman. It is difficult to believe that a block of 25,000,000 Americans can not make its interests known to government and business, and act with power and decision to protect those interests.

### Trouble Maker . . .

(Continued from page 71) without any visible symptoms. Such sensitized persons, however, will show a skin reaction in one is to relieve itching and dry up ing the skin with white petroor two days after their next contact with the plant. The first reaction is reddening, and then itching and burning followed by blisters. The fluid from these blisters

eruption to uninfected areas.

One medical researcher lists 250 remedies for poison ivy dermatitis. The main value of these remedies ments. A qualified dermatologist conium salts indicate that applicashould be consulted in severe cases.

Clinical tests show that annointthe blisters. In spite of the best leum, 10 per cent ferric chloride, remedies on the market, the erup- 10 per cent perborate ointment, or tion will very often reach a cer- the use of a 10 per cent solution told misery, there is no need to cain peak of severity before it can of ferric chloride before contact oe brought under control. In the with the oleoresin only occasiondoes not cause additional skin wet or blistering stage, lotions or ully prevents poison ivy. Recent ognize the real thing.

astringents are better than oint- experiments with ointments of zirtion of the ointment one hour after contact with the oleoresin will prevent the development of poison ivy in some instances.

While poison ivy does cause up shy away from every three-leaved plant encountered. Learn to rec

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# DUCK HUNTING HOURS

# 1956 IOWA CONSERVATION COMMISSION STATE OF IOWA — 30 MINUTES BEFORE SUNKISE AND 30 MINUTES BEFORE SUNSET SCHEDULE Ume

CENTRAL STANDARD TIME

_		2200		1		- Contract	CENTRAL STANDARD TIME					222	n valere	OWAWA	MEDD	SIOUX	CIT
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Oct.	6	5:34	5:06	5:35	5:08	5:35	5:08	5:38	5:10	5:42	5:12	0:40	5:18	5:05	5:28	5:58	51
	7	5:35	5:05	5:36	5:07	5:37	5:05	5:39	5:08	5:43	5:10	5:47	5:17	5:56	5:27	5:59	57
	8	5:37	5:04	5:38	5:05	5:38	5:03	5:39	5:08	5:44	5:09	5:49	5;15	5:58	5:25	6:00	5.1
-	9	5:38	5:02	5:39	5:03	5:39	5:02	5:40	5:06	5:45	5:07	5:49	5:13	5:59	5:23	6:02	5:
	10	5:39	5:00	5:40	5:02	5:40	5:00	5:41	5:05	5:46	5105	5:51	5:12	6:00	5:20	6:04	51
	11	5:40	4:58	5:41	5:00	5:41	4:59	5:42	5:03	5:47	5:04	5:52	5:09	6:02	5:19	6:05	5:
	13	5:41	4:57	5:42	4:59	5:42	4:57	5:44	5:01	5:49 5:50	5:02	5:54	5:07	6:03	5:17	6:06	51
-	14	5:43	4:53	5:43	4:56	5:43	4:54	5:46	4:58	5:51	4:59	5:55	5:06	6:04	5:16	6:07	51
	15	5:44	4:52	5:45	4:54	5:46	4:52	5:47	4:57	5:52	4:57	5:56	5:04	6:05	5:14	6:08	51
	16	5:45	4:51	5:46	4:53	5:47	4:50	5:48	4:55	5:53	4:55	5:58	5:02	6:07	5:12	6:09	5;
	17	5:46	4:49	5:47	4:51	5:48	4:49	5:49	4:54	5:54	4:54	5:58	5:01	6:07	5:11	6:10	51
	18	5:48	4:48	5:48	4:50	5:49	4:47	5:50	4:52	5:56	4:52	6:00	4:59	6:09	5:09	6:12	51
	19	5:50	4:47	5:50	4:48	5:50	4:46	5.51	4:51	5:57	4:51	6:01	4:58	6:10	5:08	6:13	5
	20	5:51	4:45	5:51	4:47	5:51	4:44	5:52	4:50	5;58	4:49	6:03	4:56	6:12	5:06	6:14	51
	21	5:52	4:44	5:52	4:45	5:53	4:43	5:53	4:48	5:59	4:47	6:03	4:55	6:12	5105	6:16	51
	22	5:53	4:43	5:53	4:44	5:54	4:41	5:54	4:47	6:00	4:46	6:05	4:53	6:14	5:03	6:16	0.1
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	24	5155	4:40	5:55	4.41	5:56	4:38	5:56	4:44	6:03	4:43	6:07	4:50	6:16	5:00	6:19	43
	25	5:56	4:39	5:56	4:39	5;57	4:37	5:58	4:43	6:04	4:42	6:07	4:49	6:16	4:59	6:21	4
	26	5:57	4:37	5:57	4:38	5:59	4:35	5:59	4:42	6:05	4:41	6:08	4:48	6:17	4:58	6:23	4:
	27	5:59	4:35	5:59	4:37	6:00	4:34	6:00	4:40	6:06	4:39	6:11	4:46	6:20	4:56	6:24	4
-	28	6:00	4:34	6:00	4:35	6:01	4.33	6:01	4:39	6:07	4:38	6:11	4:45	6:20	4:55	6:25	41
-	29	6:01	4:32	6:01	4:34	6:02	4:31	6;02	4:38	6:09	4:36	6:13	4:43	6:22	4:52	6:27	43
-	30	6:02	4:31	6:02	4:33	6:03	4:30	6:03	4:36	6:10	4:35	6:14	4:42	6:23	4:51	6:28	41
Nov.		6:03	4:30	6:03	4:31	6:05	4:29	6:04	4:35	6:11	4:34	6:14	4:41	6:26	4:49	6:28	4
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-	4	6:08	4:25	6:08	4:27	6:10	4:24	6:09	4:30	6:16	4:29	6:20	4:36	6:29	4:46	6:33	43
	5	6:09	4:24	6:09	4:26	6:11	4:22	6:10	4:29	6:17	4:28	6:21	4:35	6:30	4:45	6:34	41
	6	6:11	4:23	6:11	4:25	6:12	4:21	6:11	4:28	6:19	4:26	6:23	4:34	6:32	4:44	6:36	4
	7	6:12	4:21	6:12	4:23	6:13	4:20	6:12	4:28	6:20	4:25	6:24	4:32	6:33	4:42	6:37	4:
	8	6:13	4:20	6:13	4:22	6:15	4:19	6:13	4:26	6:21	4:24	6:25	4:31	6:34	4:41	6:38	43
	9	6:14	4:19	6:14	4:21	6:16	4:18	6:15	4:25	6:22	4:23	6:26	4:30	6:35	4:40	6:39	41
	1.0	6:15	4:18	6:15	4:20	6:17	4:17	6:16	4:24	6:24	4:22	6:27	4:29	6:36	4:39	6:40	41
	11	6:16	4:17	6:16	4:20	6:19	4:16	6:17	4:23	6:25	4:21	6:28	4:28	6:37	4:38	6:42	43
	12	6:18	4:16	6:17	4:19	6;20	4:15	6:18	4:23	6:26	4:20	6:30	4:27	6:39	4:37	6:43	-
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_	14	6:20	4:14	6:20	4:17	6:22	4:13	6:20	4:21	6:29	4:18	6:32	4:26	6:41	4:36	6:45	13.1
	15	6:21	4:13	6:21	4:16	6:23	4:12	6:21	4:20	6:30	4:17	6:33	4:25	6:42	4:35	6:47 6:48	- 49
	16	6:22	4:12	6:22	4:15	6:24	4:11	6:23	4:19	6:31	4:16	6:34	4:24	6:43	4:34	6.50	43
-	17	6:24	4:12	6:23	4:14	6:25	4:11	6:24	4:18	6:33	4:15	6:36	4:23	6:45	4:33	6:51	4
	18	6:25	4:11	6:24	4:14	6:27	4:10	6:25	4:18	6:34	4:14	6:37	4:22	6:46	4:32	6:53	41
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-	21	6:28	4:10	6:27 6:28	4:12	6:29	4:08	6:27 6:28	4:16	6:36	4:13 4:12	6:40	4:20	6:49	4:30	6:55	4:
-	22	6:29	4:08	6:29	4:11	6:32	4:07	6:29	4:15	6:39	4:11	6:41	4:20	6:50	4:30	6:56	4
	23	6:31	4:08	6:30	4:11	6:33	4:06	6:30	4:15	6:40	4:11	6:43	4:19	6:52	4:29	6:56	4.
	24	6:32	4:07	6:31	4:10	6:34	4:06	6:32	4:14	6:41	4:10	6:44	4:19	6:53	4:29	6:58	4
	25	6:33	4:06	6:32	4:10	6:35	4:05	6:33	4:14	6:42	4:09	6:45	4:18	6:54	4:28	7:00	43
	26	6:34	4:06	6:33	4:09	6:36	4:05	6:34	4:13	6:44	4:09	6:46	4:18	6:55	4:28	7:01	40
	27	6:35	4:05	6:34	4:09	6:37	4:04	6:35	4:13	6:45	4:08	6:47	4:17	6:56	4:27	7:02	4.
	28	6:36	4:05	6:35	4:08	6:38	4:04	6:36	4:12	6:46	4:08	6:48	4:17	6:57	4:27	7:03	4
	29	6:37	4:04	6:36	4:08	6:39	4:04	6:37	4:12	6:47	4:07	6:49	4:16	6:58	4:26	7:04	4
	30	6:38	4:04	6:37	4:08	6:41	4:03	6:38	4:12	6:48	4:07	6:50	4:16	6:59	4:26	7:05	10
Dec.		6:39	4:04	6:38	4:07	6:42	4:03	6:39	4:11	6:49	4:07	6;51	4:16	7:00	4:26	7:06	4
	2	6:40	4:03	6:39	4:07	6:43	4:03	6:40	4:11	6:50	4:06	6:52	4:15	7:01	4:25	7:07	1
	3	6:41	4:03	6:40	4:07	6:44	4:02	6:41	4:11	6:51	4:06	6:53	4:15	7:02	4:25	7:09	4
	4	6:42	4:03	6:41	4:07	6:45	4:02	6:42	4:11	6:52	4:06	6:54	4:15 4:15	7:03	4:25	7:10	4
-	5	6:43	4:03	6:42	4:07	6:46	4:02	6:43	4:11	6:53	4:06	6:55	4:15	7:04	4:25	7:11	40
-	7	6:44	4:03	6:43	4:07	6:47	4:02	6:44	4:11	6:55	4:06	6:57	4:15	7:06	4:25	7:12	4
-		6:45	4:03 4:03	6:44	4:07	6:49	4:02	6:46	4:11	6:56	4:06	6:58	4:15	7:07	4:25	7:13	4
-	8	6:47	4:03	6:46	4:07	6:49	4:02	6:46	4:11	6:57	4:06	6:59	4:15	7:08	4:25	7:14	4
-	10	6:48		6:47	4:07	6:50	4:02	6:47	4:11	6:58	4:06	7:00	4:15	7:09	4:25	7:15	4
-	11	6:49	4:03	6:48	4:07	6:51	4:02	6:48	4:11	6:59	4:06	7:01	4:15	7:10	4:25	7:16	4
	12	6:50		6:48	4:07	6:52	4:02	6:49	4:11	7:00	4:06	7:01	4:15	7:10	4:25	7:17	41
-	13	6:50		6:49	4:07	6:53	4:02	6:50	4:11	7:00	4:06	7:02	4:15	7:11	4:25	7:17	4
-	14	6:51	4:03	6:50	4:07	6:53	4:02	6:50	4:11	7:01	4:06	7:03	4:15	7:12	4:25	7:18	41
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(Note: This table has been compiled from official schedules furnished by the Weather Bureau Stations listed. A schedule from the Omaha, Nebr., So tion is used because there is no station in southwestern Iowa. The difference in time between stations should be taken into consideration in figurit the exact time at your particular location.)