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RAISING
WOOD DUCKS



NEBRASKA GAME AND PARKS COMMISSION

Raising Wood Ducks

Compiled by: Richard L. Nelson

1975

NEBRASKA GAME AND PARKS COMMISSION
2200 North 33rd Street
P.O. Box 30370
Lincoln, Nebraska 68503

NEBRASKA GAME AND PARKS COMMISSION



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Introduction

Numbered among Nature's most colorful creatures, wood ducks willingly accept a helping hand from man in establishing new homes. These birds adapt well to suitable habitat, and you can play an important part in bringing the wood duck to locations where they do not now nest. For groups or individuals who are willing to expend the effort necessary to undertake a wood duck restoration project and see it to completion, it is an exceptional gift from today's generation to those of decades and centuries to come.

Many areas in Nebraska provide suitable wood duck habitat, but do not have a

breeding population of wood ducks. Wood ducks seldom pioneer these spots, until a hen is forced out of another area because of a lack of nesting sites. This process could take several years, if it occurs at all.

Wood duck releases offer a way to establish birds in areas where habitat is adequate. Careful release-site selection, nest-box placement, and annual maintenance can mean a local breeding population. Building and installing nesting boxes can also increase the number of wood ducks in an area where a breeding population already exists.



Learning About the Bird

The wood duck has been described as Nebraska's most beautiful duck. Anyone who has had the opportunity to observe this bird in its natural habitat must surely agree. In spite of its almost gaudy colors and markings, the wood duck blends well with its surroundings and is quite unobtrusive.

Markings

This peacock of duckdom bears the scientific name *Aix sponsa*, a name which in part refers to the bird's colorful plumage. The generic name comes from the Greek, "a kind of waterfowl", and the specific name, *sponsa*, is of Latin derivation mean-

ing betrothed, as if in wedding dress. Common names include summer duck, woody, acorn duck, branchier (inhabitant of the branches), the bride, gray duck, squealer, swamp duck, tree duck, and wood wigeon.

Most distinctive field markings of a male in breeding plumage are the crested head, the iridescent combination of greens, blues, and purples on the head, the distinctive finger-like, white throat-patch, and the long and dark, squared tail.

Much less flamboyant in her markings than her mate, the female wood duck still displays more color than most female

ducks. She has a brownish-gray head with a long crest, a white teardrop-shaped patch around the eye, and a relatively square tail.

Behavior

On water, the wood duck gives a general impression of alertness. It rides quite high in the water, with head erect unless feeding. Flight is usually rapid, high, and direct. The head is held above the level of the body with the bill angled downward. In flight, agility is well demonstrated by its ability to fly in quite dense woods without disastrous results.

Range

Wood ducks are unique, since they are native to the North American continent. They breed throughout the United States, where habitat is suitable, but they are most common from the Missouri River eastward. Latitude ranges from the most southern states to the southern reaches of the Canadian provinces. They migrate south early in the fall, usually in September and early October. The birds travel only to the inland water areas of the southern states, then return to the northern portions of the breeding range soon after the ice is gone.

Habitat

Typical habitat is a small, isolated pool in marsh or swamp or alongside a stream.

Trees are always associated with the area. The birds may be found feeding industriously in such a pool or on the banks under the trees. It is not uncommon to see them sitting on tree branches, for they are quite at home there. At night, they normally roost on open pools in the woods. Plant food makes up about 90 percent of their diet.

Woodies are relatively small birds—only slightly larger than adult blue-winged teal and slightly smaller than the baldpate. They average 18 inches long, with a 24-inch wingspan. Adult birds weigh about 1½ pounds.

Nesting

Wood ducks nest almost exclusively in trees. A typical nest site is a hollow tree or stump, sometimes as much as 50 feet above the ground. The female can pass through a 4-inch opening very nicely. She lays 8 to 15 buff-colored eggs in the bottom of the cavity, which she pads with down. Eggs are about 1½-by-2 inches in size. Incubation takes from 28 to 31 days and is done entirely by the female. As with most ducks, the male deserts the female soon after incubation begins. When the eggs have hatched, the female calls the ducklings from the nest. Young normally leave the nest cavity by simply jumping. Since the tiny ducklings are light and re-



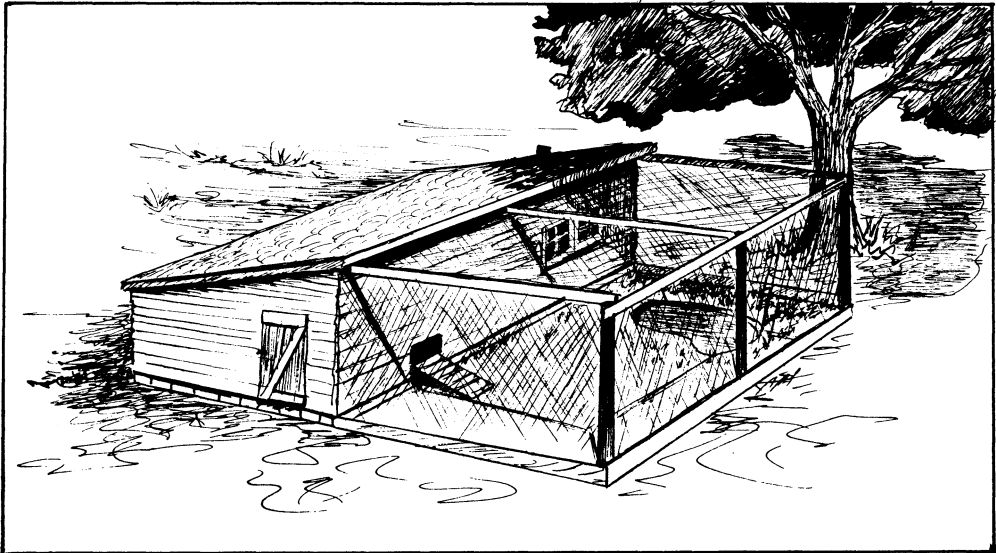
Good wood duck habitat has all requirements for nesting, feeding, loafing, and brooding.

silent, no harm is done, even from comparatively great heights. They flutter their wings and spread their feet to break the fall.

At one time, the wood duck was threatened with extinction. Much of their original natural habitat has been altered drastically. Woodlands have been cut and swamps drained. Not only were the birds hunted for their tasty meat, but for their plumage as well. Mounted specimens were in demand for collections. Feathers of males in breeding plumage were highly prized by manufacturers of certain artificial fishing flies. A prime full-plumaged skin sold for \$3 to \$4. In 1918, the U.S. and Canada closed the season on wood ducks. That closure lasted until 1941 when one woodie was allowed in the bag

in some states. During that time the species recovered, and several state conservation agencies have since initiated special wood duck studies. As a result, management practices have been developed which have enhanced the recovery of the population while allowing limited harvest.

Wood ducks are now quite common near certain water areas in the eastern third of Nebraska, and occasionally birds can be found along wooded stream courses throughout the rest of the state. A restoration project is being conducted by the Nebraska Game and Parks Commission in the Salt Valley near Lincoln. Hopefully, many more persons will be able to enjoy the sight of this beautiful, colorful bird in its native habitat in the near future.



A simply constructed brooder house and pen provides protection from predators and weather.

Raising the Birds

Legal Requirements

Anyone who wants to attempt a wood duck project must first obtain a special permit to hold the birds. In Nebraska, it is unlawful to keep any wild birds or animals in captivity without a special permit to do so. A \$1 Game Fancier or Pet Permit is required to keep 50 or less such birds or animals. Larger operations must obtain a "Commercial Game Farm Permit". Both permits are issued by the Nebraska Game and Parks Commission. In most cases, a wood duck restoration effort would necessitate only the \$1 permit. Federal law

requires record keeping and reporting, plus bird identification by toe clipping.

Preparation of the House and Pen

Facilities need not be fancy. A brooder house or a building with a floor, with about three square feet of space per bird, will suffice. The building should be predator-proof and protect young birds from the weather.

The house and equipment should be thoroughly cleaned before the ducklings arrive. If previously used to raise chickens, it is best to disinfect the building. Any dis-

infectant commonly used for poultry will do fine for wood ducks. When the building and floor are thoroughly dry, spread litter on the floor. Wood shavings (not sawdust) are preferred, but oat or wheat straw can be used.

A brooder or heat lamp should be used to keep the ducklings warm. One heat lamp is needed per 25 ducklings to maintain a temperature of 90-95°F. An accurate thermometer is a good investment to be sure conditions are just right. Don't guess! Temperature can be gradually lowered as birds get older. The heat should be centered in the building, so ducklings can still move to the edges of the house, which will be cooler.

After about four weeks, ducklings may be allowed outdoors during good weather. A pen at least as large as the brooder house should be built from 1-inch mesh and covered completely to keep out predators. The bottom of the fencing material should be buried about six inches deep. The penned area should have a sandy or well-drained surface, with plenty of shade and grassy vegetation if possible. It is essential that the pen include a swimming pool (3 feet x 4 feet x 6 inches deep). And,

the pool **MUST** be cleaned daily.

Feed and Water

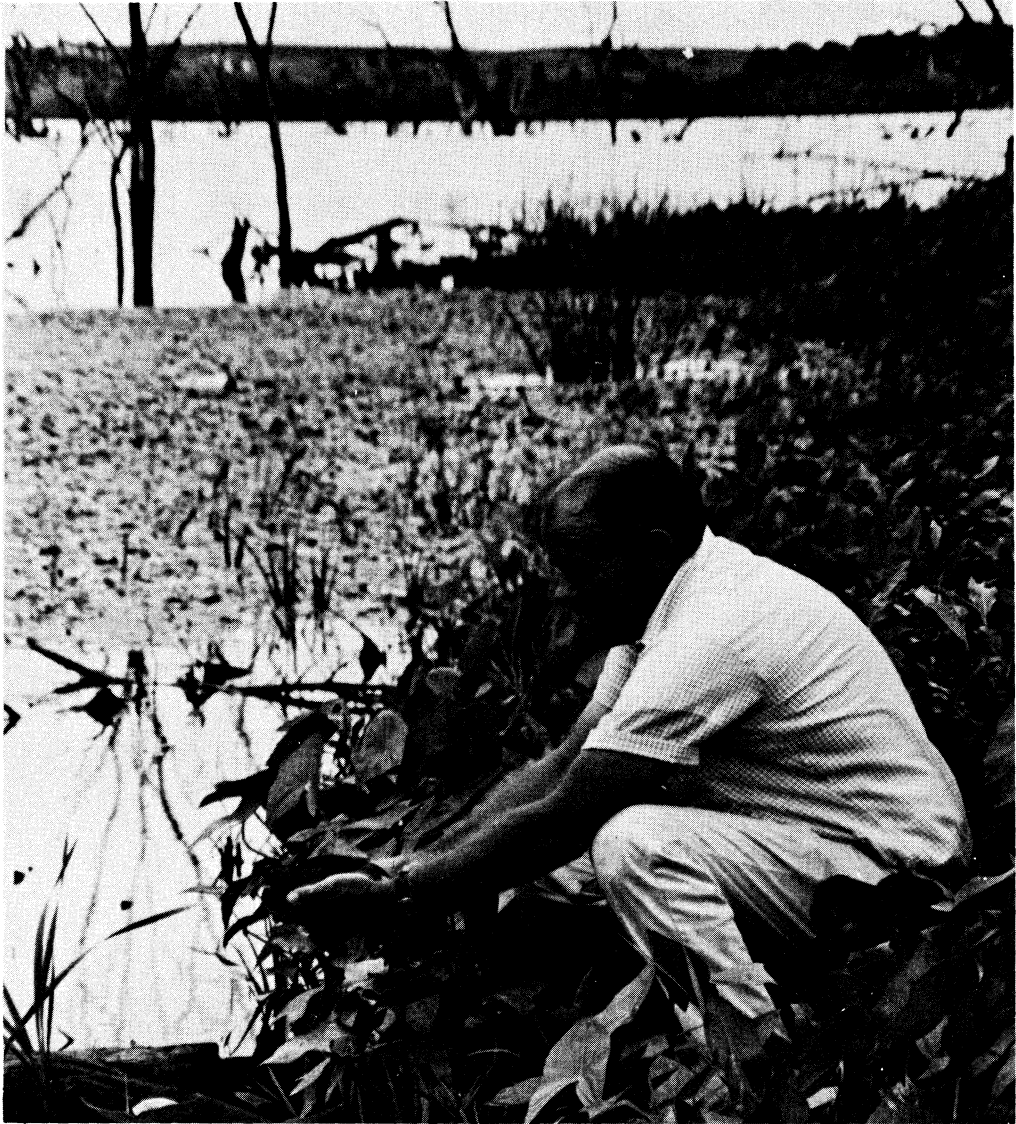
Ducklings must have a constant supply of clean drinking water. Several commercial chick waterers are available that will work. However, preference should be given to a waterer that ducklings cannot get into to contaminate the water. Placing the waterer on a mesh frame will keep the area from becoming a mud hole.

Ducklings should be fed a 23+% protein *non-medicated* starter. Either game bird, duckling, or chick starter can be used. Several medications used in regular chick feed affect duckling development, so a *non-medicated* feed is preferable. Regular tray-type chicken feeders are okay, but should allow 1-inch feeder space per bird. Don't let wet feed accumulate in or near the feeder. Moldy feed can cause disease problems. Everyday attention to cleanliness will insure healthy ducklings.

REMEMBER—There are no magic remedies to replace careful planning, constant watchfulness, and good sanitation. No attempt should be made to make pets of ducklings. They cannot be tamed and should not be.



Good brood habitat contains standing and downed trees, and emergent vegetation.



After release good habitat is the key to survival.

Release to the Wild

Young wood ducks should be released into the wild when 40-45 days old. Young birds can fly at about 60 days, and they will identify with the area at that time. Female wood ducks have a strong homing tendency and will return to the same locale.

Great care should be taken when selecting a release site for wood ducks, because that choice will determine the success or failure of your project. Releases made in poor habitat mean little chance for establishing a wood duck breeding population. Whenever possible, obtain technical assistance to help evaluate your wood duck habitat.

Habitat Requirements

A pair of nesting wood ducks require extensive cover, both around them and overhead for security, but it must allow free movement through the water. Cover may be more open for breeders than for broods. Shrubs, trees, or both are best.

The optimum cover stage is young tree growth, which furnishes low overhead, as well as lateral cover. Forest trees, attractive to wood ducks in early spring, are important to breeders. In Nebraska, black willow, sand bar willow, cottonwood, silver maple, ash, elm, and sycamore are heavily used.



This area meets all requirements for a good release site.

There are a number of shrubs that fulfill cover requirements. The height, shape, spacing, and longevity of shrubs determine their value to wood ducks. Mature shrubs are best. The ideal shape includes a strong, durable stem that rises approximately two feet above the water and spreads into dense, overhanging branches with room beneath the crown so ducks may swim freely. Such plants are usually spaced to permit protected movement for the birds between plants, with frequent openings for flying in and out.

In areas where desirable shrubs are not available, certain water plants will satisfy wood duck cover requirements. Such species include cattail, bulrushes, smartweed, arrowheads, and sedges.

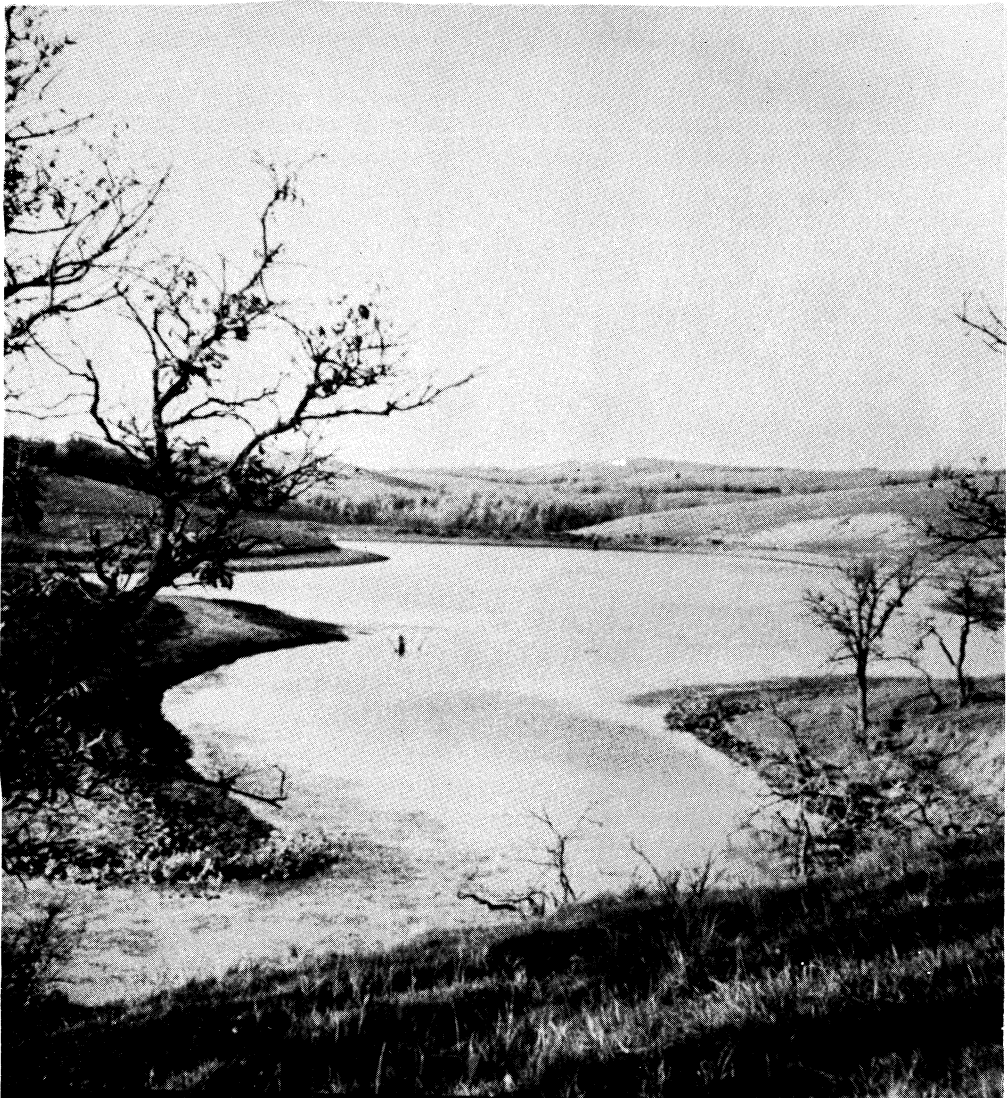
Breeding pairs also need loafing sites such as logs, stumps, muskrat mounds, islands, or small, open plots of shoreline.

Water requirements for breeding wood ducks must fall within certain limits. Since wood ducks do not normally feed at depths greater than 18 inches, most of the area should be within a 3-to-18-inch range. Wood ducks prefer still or slow-moving water, sheltered from the wind.

Good brood habitat is very often the factor that limits wood duck populations. Dense cover is of great importance, and water must exist until the young are able to fly. Certain water plants increase in importance and trees become less important for broods, compared to breeding cover.



Many streams have potential for wood ducks.



Lack of suitable brood cover makes this a very poor choice for a release.

Food Requirements

Animal foods are essential to newly hatched and young ducklings, particularly surface-swimming and crawling insects and those insects that fly within a foot of the water surface. Duck weeds are important not only as food but also for the animal life they harbor.

Cover Requirements

Overhead cover within a foot or two of water is vital for wood duck broods. Shrubs alone can provide excellent brood cover, which living trees alone cannot. Tangles of dead, dying, and downed trees in shallow water up to three feet deep also provide excellent cover. The best shrub cover comes from plants that grow as densely as possible, but still allow the

brood to move about freely under the crown. Ideal composition would be 75 percent shrubs and water plants to 25 percent open water. Loafing sites such as logs, stumps, muskrat mounds, islands, or open plots of shoreline are also important to broods.

Water Requirements

Generally, all wood duck needs are met between the shoreline and a water depth of six feet. The best distribution of water depths in brood habitat is estimated as:

0-1 foot, 25% of the area

1-3 feet, 50% of the area

3-6 feet, 25% of the area

Suitable water **must** be available until the young are on the wing.



Limiting Factors

Ideal habitat conditions should result in excellent wood duck production. However, as with all wildlife, factors are always at work to keep populations below the maximum capacity of the habitat. These include predation, competition, disease, accidents, weather, parasites, and human disturbance. The significance of these factors and the agents causing them often vary considerably within the range of the wood duck.

Predators are the most significant limiting factor on wood ducks. In some cases, it may be desirable to remove individual predators or small groups of predators that are persistently troublesome. Generally, though, it is better to use some device or habitat manipulation to put the wood ducks beyond the reach of predators, rather than attempt to destroy the predators.

Predators on eggs and incubating hens

1. Raccoons—The raccoon is by far the most serious predator on nesting wood ducks. In addition to eating the eggs, it will often kill incubating hens. The raccoon is most destructive in the later stages of incubation. Several factors make the raccoon the most serious predator on wood ducks.

- Its geographical range overlaps all wood duck range.
- The raccoon has a high level of learning ability and adaptability.
- Its climbing capability makes all natural cavities accessible.
- Wood ducks normally begin nesting when available food for raccoons is probably at the lowest level.
- Wood ducks tend to nest between water and upland woods which is also the most important food-search area of the raccoon.
- Food demands by raccoons are at an annual high during the wood duck nesting period because young raccoons must be fed.



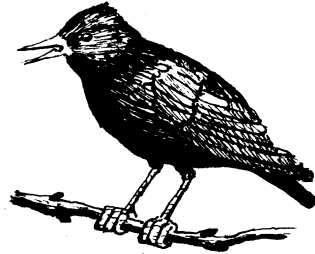
2. Fox Squirrels—Damage is greatest early in incubation. Losses are primarily limited to eggs, although occasionally a hen trapped on her nest will be killed. Where raccoons will systematically search for nests, squirrel predation appears to be accidental and random.



3. Mink—Although mink are found throughout the wood duck range, they are nowhere abundant. Their predation on nests appears to be more opportunistic than deliberate. Since mink are associated with water, duck nests at the edge of or over water are more vulnerable than those in uplands. Mink will often kill the hen and ducklings.



4. Small Birds—In some areas, birds (especially red-headed woodpeckers, flickers, and starlings) will puncture eggs during the laying period. Losses can be locally important, particularly where populations of these predator species are high.



5. Other Predators—The Norway rat and opossum are occasionally responsible for egg losses.



Predators on ducklings

Lack of information makes it impossible to do more than list known and suspected predators on ducklings. They include mink, snapping turtles, predaceous fish (largemouth bass, pike), bullfrogs, snakes, crows, herons, gulls, black-crowned night herons, hawks, owls, raccoons, foxes, weasels, and domestic cats and dogs.

Competition

Although competition from other animals does not cause actual losses of wood ducks or their eggs, the results can be serious. Competition for nest sites can become so intense that hens are unable to nest or are forced to nest in unsuitable locations with a resultant decrease in success. Whether competition in brood habitat is a serious factor is still unknown.

1. Starlings—Found within most of the wood duck range, these birds are serious competitors in boxes but ap-

parently not in natural cavities. Competition is most serious in urban, farm, and open and parklike areas. Starlings are rarely a problem in areas containing a large number of small cavities.

2. Fox Squirrels—When populations are high, fox squirrels become important competitors for natural cavities, particularly since they use the cavities for dens and occupy them earlier than wood ducks.



A well built nest box, suitably located will likely insure successful reproduction.

Wood Duck Nesting Boxes

Construction and Installation

The wood duck nests in hollow trees formed by decay through the years. These hollowed-out nest sites or natural cavities are short-lived, and are not always the best nest locations. In addition, many old trees with good cavities are removed each year or are blown down by strong winds.

Wood ducks can be induced to nest in boxes, if they are provided near water areas. Because of their social behavior, wood ducks can be crowded into a given area in fairly large numbers. Where a wood duck release is made, proper nest-box construction, placement, and maintenance is a must. The accompanying plans tell you how to make, place, and maintain the nest box.

MATERIALS

1. Ten linear feet of 1" x 12" lumber
2. Two hinges for door
3. One screen-door hook
4. One 6" x 14" piece of hardware cloth (hailscreen). Use ¼" material
5. Screws or nails—For best endurance, use wood screws or screw nails.
6. Paint: Inside—Flat Black or other dark color
Outside—Brown seems to work well (do not use white)

Use latex type paint or stain that will not leave a shine or glare. A good paint on the outside will give the box a longer life.

Note: The entrance hole should be cut to an elliptical shape 3" x 4". This will

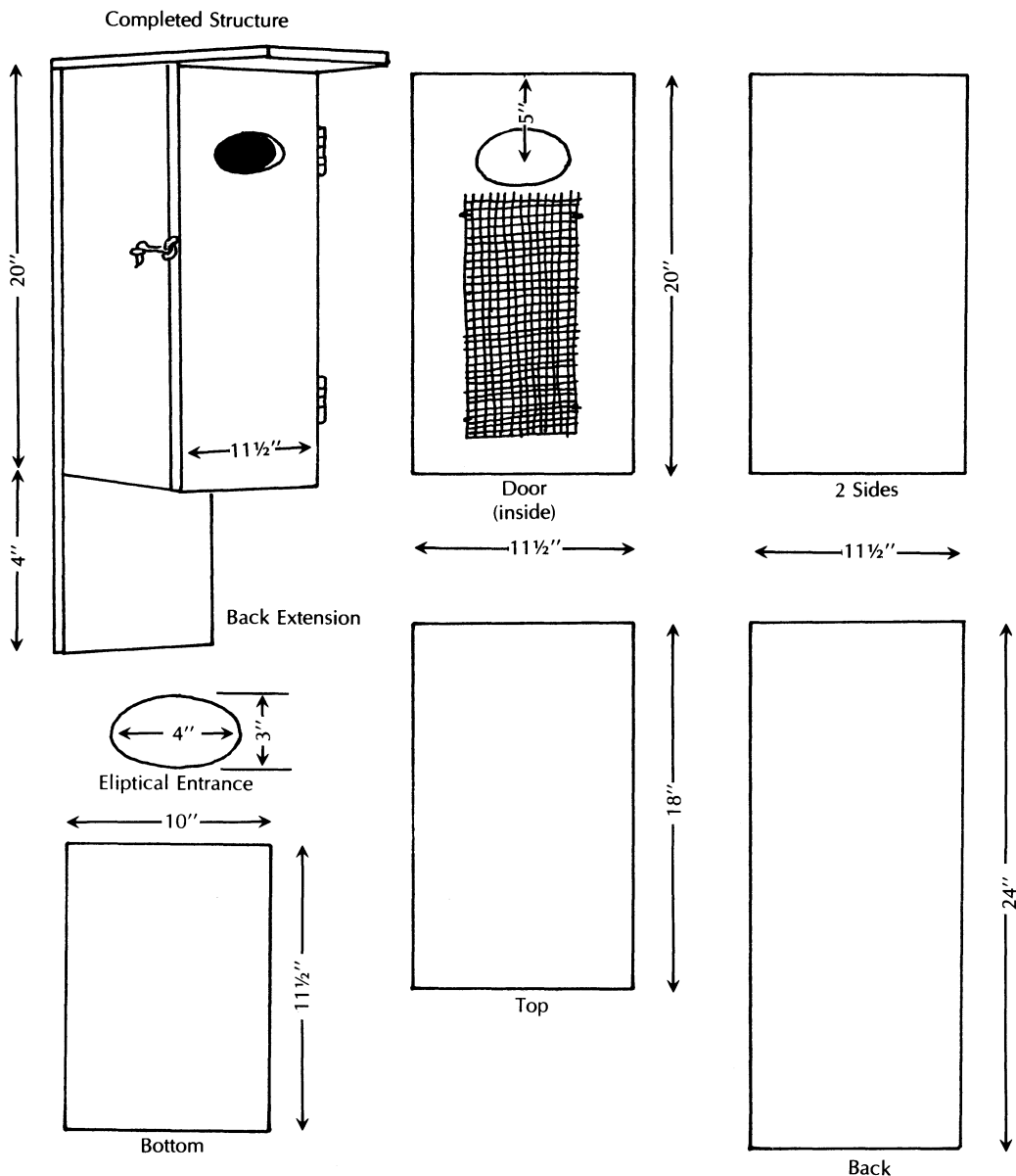
deter raccoons from entering the box. If raccoons are not a problem, the hole may be a 4" circular shape.

The 6" x 14" hardware cloth is attached to the inside of the door so ducklings can climb out of the nest. Box should be constructed as tight as

possible to exclude the entrance of light. The only light entering the box should be through the entrance hole.

Back section of box is sawed 24" long to facilitate mounting of box to tree or post.

Wood Duck Nesting Facility



Installation of Nest Box

Wood ducks have been known to nest as high as 50 feet and as low as 3 feet. However, the average is about 17 feet. It is probably a good idea to mount nest boxes at least 10 feet high, although the birds will nest in boxes that are lower. A steel post makes an excellent mount, since it restricts squirrels and raccoons, both persistent predators.

An old telephone pole is also a likely mount for a nest box. The pole should be located near the water's edge or in the water if at all possible. Sheet metal should be fastened to the pole to prevent predators from climbing to the box.

A solitary tree can also serve as a good mounting site. Its isolation will prevent squirrels from jumping to it from an adjacent tree. Sheet metal can also be used around the tree trunk to restrict climbing predators. If a tree is used, be sure that the box is not mounted above a limb. Ducklings can be injured by hitting the limb as they leave the nest.

Although wood ducks will nest a con-

siderable distance from water, it is a good practice to mount boxes near the water or over the water if possible. This will cut down on predation and will also reduce duckling mortality. The shorter the walk to water, the better.

The box should be mounted to the post or tree with lag bolts, ring-shank nails, or screws. A solidly attached box will last longer.

Since wood ducks return to Nebraska during March to search out nest sites, it's a good idea to have the box installed no later than March 15 of each year. Old boxes should also be cleaned out by this time.

Most experts agree that the direction of the entrance hole does not make much difference. However, there is some evidence that wood ducks are a little reluctant to use a box where the morning sun shines in the entrance hole. Since they prefer to nest in a dark site, the entrance hole should probably face any direction but east. Some shade on the box is also desirable.



Placing a nest box over open water is not a must but a good idea.



Annual nest box maintenance is a requirement for a successful program.

Maintenance

It is most important to clean the box and add new litter by the middle of March each year. The bottom four inches of the box should be filled with wood shavings. Sawdust will work, but shavings are best. Do not use material with a high resin content.

The wood duck hen will not use a box that has no litter, since she uses this material to cover the eggs as they are laid. She will also hesitate to use a box full of the previous year's litter or which contains old nests such as those built by starlings or squirrels.

Egg Laying, Hatching, and Leaving the Nest

Depending on weather conditions, the wood duck hen will start laying eggs about the second week in April. She will usually lay 8-15 before incubation begins, although she may lay more. She will also cover each egg with the wood shavings to hide them from predators.

Toward the end of egg laying, she will start lining the nest with down until a nice round nest is formed. Incubation normally averages about 30 days, but may range from 25-37 days.

After hatching, the hen will brood the young ducklings for about 24 hours before leaving the nest. She will then drop to the ground or water below and start calling the ducklings out of the nest, providing all is clear. This usually occurs early in the morning, but can happen anytime in the forenoon. Ducklings very seldom leave the nest past noon.

One at a time, the young ducklings climb the hardware cloth to the entrance hole and drop to the water or ground below, apparently without serious consequences. The hen then gathers her young and moves off to good brooding cover.

Witnessing young wood ducks pop out of a nesting box is a thrilling sight at any time, but it is particularly rewarding when you've had a hand in making it happen.



Slow flowing streams or backwater areas can provide good brood habitat.