

Activity 1: Short-Eared Owl, *Asio flammeus***Identifying Characteristics**

The short-eared owl received its name from its lack of "ear" tufts. It's about the size of a crow, 13 to 17 inches high, and has a 38 to 44-inch wingspan. Color is variable, from light to dark brown. The dark patches on undersides of wings, and large buff-color patches on upper sides are most distinctive. There are also dark patches around the eyes.

Biology/Natural History

Short-eared owls are birds of open country. They may be found in Pennsylvania throughout the year. They nest on the ground, sometimes in colonial groups. The nest is a slight depression, sparsely lined with grass and feathers, often at the base of a clump of weeds or grasses. A normal clutch consists of four to seven white eggs. Young hatch about three weeks after egg laying, and are able to fly in about a month. Unlike most other owls, the short-eared is active at dusk, dawn and—at times—even in mid-day; therefore, they are seen more often than other owl species.

Preferred Habitat

These owls have been nesting in the southeast corner of Pennsylvania, in the marshland and meadows around the Philadelphia International Airport. Recently, they have been found nesting on reclaimed strip mine sites in Clarion County. Short-eared owls are more likely to be encountered here in the winter when several may be seen together, hovering or flying low and in circles over agricultural fields in search of their main prey, meadow mice.

Threat

Suitable nesting habitat for the short-eared owl is extremely limited in Pennsylvania, and intensive agricultural practices make many potential habitats unsuitable.

**Management Programs**

In Pennsylvania, most open lands are farmlands and, therefore, subject to repeated disturbance. Accordingly, the welfare of grassland nesting birds is threatened. This may be why the only known nests of short-eared owls were discovered in extensive and low-disturbance open lands such as strip mine reclaimed to grass. Future management, based on the needs for safe nesting habitat for all grassland nesters, should include the creation of large, herbaceous reserves suitable for all grassland nesters. Such reserves might include airports, reclaimed strip mines and large pastures. Primary management of these areas must assure a disturbance-free nesting season.

State Status

Endangered

Activity 1: Showy Lady Slippers, *Cypripedium reginae***Range**

Showy lady's slippers have been found in swamps, bogs and wet woods extending from Newfoundland and Quebec to North Dakota and south through New Jersey, Pennsylvania, Ohio, Indiana, Illinois and Missouri to the Appalachian Mountains as far south as North Carolina and Georgia. Pennsylvania populations historically occurred in alkaline wetlands from northwest through central to southeast areas of the state, but can be found today only in the glaciated northwest.

Appearance

Showy Lady's slipper orchids are named for the inflated pouch formed by the lower petal. The single or paired, 1 to 2 inch white and rose-pink flowers are the largest of our native orchids. Plants stand one to two feet high with 8 inch oval leaves clasping the stems.

Biology/Natural History

This species is a member of the Orchid Family (Orchidaceae). Plants of this genus are perennial herbs. Flowers bloom in June and July.

Threats

Loss of habitat from recreational and housing development in addition to water pollution from mineral extraction have taken their toll. Although 29 populations have been documented by historical collections, only five are known to exist here today. Threats include collection by nurserymen and misguided gardeners.



The probability of showy lady's slippers surviving a transplant from their wetland habitat is poor. Even casual picking of the flowers destroys the plant's chances of reproducing.

Management

One showy lady's slipper population is protected in a natural area owned by the Western Pennsylvania Conservancy. A second is located on a state game lands. Owners of the three other sites must protect the sites.

State Status

Threatened

Activity 1: *New Jersey Chorus Frog, Pseudacris feriarum kalmi***Identifying Characteristics**

This subspecies of the western chorus frog is similar in size (3/4 - 1 1/2 inches long), but is somewhat more robust. The outermost pair of the three dark stripes on the back start at the snout and continue backward through the eye and down each side. These may be variously broken. A prominent light line is present beneath each eye along the upper lip.

Biology/Natural History

New Jersey chorus frogs move to small, sometimes temporary, bodies of water to breed, anytime from February to June. Males may arrive at the ponds before females and call loudly from sedgy or grassy clumps in the open. The eggs are deposited irregularly in loose gelatinous masses on the stems of matted vegetation not far below the surface of the water. The 1 to 1.5-inch tadpoles are blackish to olive above with a bronzy belly. They transform to the adult stage within two months. Adults leave the breeding pools following mating and egg laying, and are only occasionally encountered in wooded areas.

Preferred Habitat

In Pennsylvania the New Jersey chorus frog breeds in small, relatively open bodies of water with a mixture of shrubby and herbaceous aquatic vegetation, or sometimes in the shallow backwater areas of larger bodies of water with similar vegetation.

Threats

The populations of the New Jersey chorus frog in Pennsylvania are small and threatened because of heavy



industrial use of the areas they inhabit. Many of the small breeding ponds and forested areas they require have been filled in or cleared. During breeding season, many amphibians are crushed by vehicles while crossing busy roads to get to breeding ponds.

Management Practices

The Fish and Boat Commission reviews projects in which possible threats to habitat of this small frog is concerned. The populations are monitored each spring.

State Status

Endangered

Activity 1: Bog Turtle, *Clemmys muhlenbergii***Range**

The historic bog turtle range runs from southern New England to northern Georgia. A 250-mile gap in Virginia separates the species into distinct northern and southern populations.

In Pennsylvania, the turtle is found mostly in the rapidly developing southeastern portion of the state. Turtle populations once found in the western part of the state are gone.

Appearance

The bog turtle is one of the smallest North American turtles with the adult shell measuring 3 to 4.5 inches in length. It is easily distinguished from other turtles by the large, conspicuous bright orange, yellow or red blotch on each side of its head. The upper shell is dark brown with yellow to orange markings and covered with ridged plates that are eventually worn smooth; the lower shell is dark brown or black, sometimes with scattered light markings.

Biology/Natural History

Bog turtles are active from spring to fall, and hibernate during the winter. They are most difficult to find in midsummer, possibly inactive during the hottest part of the year. When danger threatens, the turtle burrows rapidly into the mucky bottom. They eat a diet of beetles, insect larvae, snails, seeds and millipedes. Female bog turtles mature at 5 to 8 years of age. They mate in May and June, and in June or July the females deposit two to six white eggs on sphagnum moss or sedge tussocks that are exposed to sunlight. The eggs hatch after an incubation period of 42 to 56 days, and the young emerge in August or early September. Infertile eggs are common, and not all females produce egg clutches each year.

Preferred Habitat

Bog turtles live in wetlands which are shallow, spring-fed fen; sphagnum bogs; and swamps, marshy meadows and pastures with soft, muddy bottoms, slow-flowing water and open canopies. They depend on this hydro-



logic mosaic, using shallow water in the spring and mud during winter hibernation. These wetlands gradually undergo succession and become a closed-canopy, wooded swamps unsuitable for bog turtle habitation. Historically, bog turtles probably moved from one open-canopy wetland patch to another, as succession closed wetland canopies in some areas and natural processes, such as fire, opened canopies in other areas.

Threats

The primary reason for the bog turtle's status is the draining or destruction of its habitat. Bog turtles have always been considered the rarest of North American turtles and are highly valued by turtle fanciers in this country, and possibly twice as much overseas. Many, therefore, have been illegally removed for commercial purposes. Because their habitats are widely separated, other turtles are not likely to move in and replace those removed.

State Status

Endangered

Federal Status

Considered for listing as a threatened species.

Activity 1: Whitetailed Deer - Page 1 (1/3)

The white-tailed deer, *Odocoileus virginianus*, received its name from the white hair on the underside of its tail which it occasionally holds erect so that the white undersurface is visible. Whitetails belong to the Cervidae family, split hoof mammals with no incisor teeth in the upper jaw, which in North America includes the elk, moose, caribou and mule deer. They are classed as ruminant animals, meaning they have a four-chambered stomach and frequently chew a "cud." Adult male whitetails grow and shed a set of antlers each year. The northern woodland whitetail is the subspecies which occurs commonly throughout Pennsylvania.

In Pennsylvania the average adult buck weighs about 140 pounds live weight and stands 32 to 34 inches at the shoulder. He is about 70 inches long from the tip of his nose to the base of his tail. Does tend to average less in weight and body length than males of the same age from the same area. Hair color is alike in both sexes. Fawns are born with white spots in the upper coat. When a fawn is lying on the ground or in dry leaves its coat provides excellent camouflage for the fawns.

Deer can run at 40 miles per hour for short bursts and maintain speeds of 25 miles per hour for longer periods. They are also good jumpers capable of clearing obstacles up to nine feet high or 25 feet wide. The air-filled hairs of their coats enable them to swim easily. They mark trails with scent glands and have an excellent sense of smell.

Although antler growth is evident on male fawns, a buck's first set of antlers begins to grow when it's about 10 months old. Each year after the buck reaches this age, it will grow and shed a new set of antlers. If the yearling buck comes from an area with poor food conditions, his first set of antlers may be only "spikes" -- antlers consisting of single main beams only. Spikes are more common in yearling deer than older ones because antler growth starts at a time when the young buck's



body is still growing rapidly. But because antler development is tied in closely with the animal's nutritional status, older bucks might also carry spikes if they come from an area with poor food conditions.

Antlers generally begin to grow in March or April. Growing antlers are covered by a skin called "velvet." This velvet is covered with soft hairs and contains blood vessels which supply nutrients to the growing antlers. The solid bone-like substance which makes up the polished antler is secreted by cells on the inside of the velvet. By August or early September antler growth ceases and the velvet is shed or rubbed off by the buck as he rubs saplings or rocks with his antlers. Polished antlers are carried throughout most of the breeding season, which can last into late February. The antlers are shed at the end of this period, and a new set begins to grow in March or April.

Social Organization

The social organization of the whitetail is largely matriarchal. The most common social group is an adult doe, her fawns and her yearling female offspring.

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Sometimes three or four generations of related does are present in a family group. When fawning season rolls around in late May, adult does leave the family group and remain alone to bear and rear their fawns.

Siblings tend to remain together throughout most of summer. Sibling groups with yearling bucks separate in September as the rut approaches. Yearling bucks tend to disperse from the mother's home range at this time. Yearling does remain in the mother's home range and generally rejoin their mother and her new fawns between September and October.

During the breeding season adult and yearling bucks tend to stay alone except when in pursuit of a female approaching estrus. After the breeding season in late January, yearling and adult bucks form loose associations of small groups, usually two to four animals, which remain together throughout most of the winter and summer months. These groups break up around September when the rut starts.

The mating season of white-tailed deer begins as early as September and can last into late January. Breeding activity reaches its peak in mid-November, and most adult females have been bred by the end of December.

Food Habits

Whitetails eat a wide variety of herbaceous and woody plants. In a Pennsylvania study, more than half the food eaten by deer were tree, shrub or vine species, the remainder, herbaceous plants. Whitetail food preferences are largely dependent on plant species occurring in an area and the time of year. Green leaves, herbaceous plants and new growth on woody plants are eaten in the spring and summer. In late summer, fall and early winter, both hard and soft fruits such as apples, pears and acorns are a major component of their diet. In winter, evergreen leaves, hard browse and dry leaves

are eaten. Good supplies of a variety of natural foods at all times of the year are essential if an area is to carry a healthy deer population.

Habitat

Deer prefer to eat the buds, stems and leaves found in the forest understory. Young forests in the seedling/sapling stage especially provide an abundance of food and hiding space. These forests are created when a disturbance such as a fire, insect outbreak or timber harvest kills or removes mature trees, allowing space for new trees and plants to grow. Even-age forest management practices such as clear-cutting and shelterwood harvests help create these young forests that deer prefer. To ensure a sustainable forest, timber harvests should account for “regeneration,” the young trees and plants that will make up the future forest. Also, snags, den trees, mast trees and unique tree species should be left behind to assure a good habitat diversity for an abundance of wildlife.

Management

Deer are not only part of our beautiful wildlife heritage but they are a valuable natural resource to Pennsylvania. They are at the heart of a rich hunting and wildlife-watching tradition for millions of Pennsylvanians. Hunting, fishing and wildlife-related recreation approaches \$6 billion for the state's economy. Deer have adapted readily to the changes in land development. Without natural predators and hunting, they can quickly overpopulate the range they inhabit.

Since the early 1990s, the deer population has grown from 1.2 million to nearly 1.6 million. They occupy every habitat from forests, farmlands, wetlands, suburban neighborhoods and urban lands. When overpopulation occurs, deer strip their habitat of its life-supporting qualities, not just for deer, but for many woodland

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wildlife species. Deer invade backyard gardens for food as well as regenerating forests. Crop damages and other farm property problems relating to deer have been increasing. Deer-vehicle collisions have escalated. Up to 100,000 deer-vehicle collisions occur each year. This translates into 3,200 to 5,000 human injuries and \$220 million in vehicle damage.

Every three years more than 350,000 acres of rural and forested habitats are being converted to other uses in Pennsylvania. Deer herds are adapting to this changing landscape. Land development can sometimes offer additional food sources for deer and refuges to survive hunting season. This dynamic can lead to ballooning populations that can wreak havoc on surrounding forests. The dilemma must address the impact of land development on the deer herd, its impact on the surrounding forest, and efforts to control them through hunting. Foresters are concerned about the impact of deer on regenerating forests. Currently, less than 50 percent of Pennsylvania's forests are regenerating. Alleviating deer impacts will help ensure more forests regenerate to provide clean air, clean water, plant and wildlife habitat, and provide wood products to society through the state's \$4 billion forest products industry.

In some areas, deer herds impact agricultural crops and gardens. Farmers report losing an estimated \$9,000 a year to deer damage. The key to managing deer is keeping their populations at healthy levels. This essentially entails ensuring they don't exceed their range's ability to support them. As development occurs, the pressure on deer populations grow.

Managing the deer population brings controversy. In Pennsylvania, hunting is a primary tool to adjust deer populations. There are pros and cons to the issue of doe and buck seasons as well as to the success of hunting. Population control can be facilitated through a rationed harvest of female deer. Deer populations and density goals based upon habitat, along with hunter success rates, are used to gauge how many hunting permits should be issued. Public support of a sound management program which includes addressing habitat management is essential to maintaining the deer population as a public asset to be enjoyed by future generations of Pennsylvanians and visitors to Pennsylvania

Activity 1: Problem Solving Worksheet

Name _____

Title of Article _____ **Source of Article** _____

Read the article and answer the following questions. Share and discuss with others.

1. Identify the problem presented in the article.

2. Identify the issue(s).

3. Is this problem local, regional, national or international? Why?

4. Who are the different groups or individuals that are interested in or affected by the problem?
Why are they concerned? What is their view?

Who?	Why?/What?
_____	_____
_____	_____
_____	_____
_____	_____

5. What factors are affecting the problem?

6. What are the possible solutions to the problem?

7. List three additional things you want to know and where would you find information.