Habitat Restoration and Conservation in Texas

What is habitat?

Ask this question to 15 different people and you are likely to get 15 different answers, most of which would describe their ideals of what "good habitat" would look like. The fact is that "good habitat" depends upon the management goals of the ecological region or species you are hoping to provide habitat for. The question asked, though – What is habitat? – is a general question that requires a general definition of the word.

Webster defines habitat as "the place or environment where a plant or animal naturally or normally lives and grows" or "the place where something is commonly found." This really does not quite answer the question either though, because habitat is more of a situation than it is an address. There are four main components of wildlife habitat. Habitat must provide food, water, shelter and space for the plants and wildlife found in that area. If all the components are present and accessible to the flora and fauna living in an area, then it is probably good habitat. If there is sufficient "good" habitat for your desired plants and animals to grow, survive and reproduce in your habitat, that's good habitat. Habitat involves not only the setting where the local flora and fauna of a particular ecosystem are present, but also the interactions between plants and animals and their environment. In other words, habitat includes the biological, geological and physical components of the surrounding area as well as the species that are found within the area.

Restoring, managing, and maintaining habitat may seem formidable because of the complexity of the undertaking. The natural world has been so impacted by humans that now human interaction and manipulation is often necessary for successful habitat restoration and maintenance of valuable wildlife. Managing habitat is like eating an elephant - you have to take one bite at a time!

It is helpful for landowners and managers to look closely at each component of wildlife habitat.

TEXAS PARKS & WILDLIFE

Life's better outside.®

FOOD addresses the nutritional needs of wildlife, and it is often where we start and stop when we think about providing for wildlife in our human settings. How many people feed birds? Feeders are an inferior way to provide for the nutritional needs of wildlife. The best source of nutrition for wildlife is plants, and we will address this in greater detail later in this publication.

SHELTER addresses some of the vital needs of wildlife. Shelter provides cover to avoid detection by predators, protection from inclement weather, and nesting and resting sites. Shelter is often the determining factor of whether or not an animal will be found in a particular location. It is often the first thing we remove when we begin to "develop" a property. In getting rid of all the brush you are inadvertently removing critical food and cover that is needed to restore wildlife around our homes.

WATER is often taken for granted when we consider wildlife habitat, yet it is one of the most – if not the most – insufficient and scarce resources for wildlife. Recent droughts have clearly demonstrated that those who provided water for wildlife often had attendance at their feeding stations, while those who did not were left wondering where the "critters went."

The final component, **SPACE**, is something we may not be able to greatly affect. Most of us are limited to the property we have. Surrounding property, even if available, is at such a premium that most people must work with what they already have. Although you may not be able to increase the size of your habitat space, you can improve its quality. Providing many layers of habitat in the space, such as native grasses, wildflowers, shrubs, vines and trees, will provide for a greater diversity of wildlife species.

Each of these components shares equally in the composition of habitat, and the absence of any one component needed by a particular organism, will result in the absence of that organism from the property. Juxtaposition is as important as presence when evaluating the needs of animals and plants on your property.

Is Biodiversity Really Important?

Biodiversity addresses the different plant and animal species that compose the community of living organisms within a given area. Webster defines it as "biological diversity in an environment as indicated by the numbers of different species of plants and animals." While the number of individual species is significant, the general composition of those species, or the number of different species, will tell us more about the health of a system. The biological integrity of your habitat will be directly proportional to the biodiversity found in your area. Biodiversity protects your property from environmental disasters. The habitat will have an increased capacity to survive and regenerate after a major disturbance.

A monoculture, the production of a single species of plant on a property, is not a natural situation and is unknown in natural settings. Only opportunistic and generalist species that will live anywhere and eat anything will be found in a monoculture. These generalist species tend to be unwanted pests, such as house sparrows and grackles.

Often monocultures develop as a direct result of the introduction of an invasive plant. This is generally the result of one of two mechanisms. The first mechanism is the introduction of a non-native plant or animal species that has few or no natural population controls, such as predators. The check and balance system that naturally occurs among native species is lacking with exotic plants or animals. Alternatively, a monoculture may result from the lack of human interference in a system that controls an invasive species This lack of control invites the non-native species to simply take over and out-compete all other species, and this can occur with native or non-native species. **INVASIVE PLANTS** are often difficult to control and may persist regardless of efforts to eliminate them. Most, though not all, invasive plants are exotic species, species not native to the local region.

The safest and most effective way to protect biodiversity and prevent a monoculture is by using native plants in your habitat. A good guide for native plants can be found on the Texas Wildscapes DVD available through Texas Parks and Wildlife Department or in the book *Texas Wildscapes Gardening for Wildlife*. On larger properties, maintaining an appropriate grazing and stocking program and the proper use of controlled burning will also help.

The question then arises, "**How can I protect and restore shelter?**" A key to shelter is the structure of plants within your landscape, and how they fit together to provide cover that the animals can move through easily and in which they will be protected from predators and other threats. This is achieved by combining plants that grow to diverse heights within the landscape so that these plants "layer" on top of one another. This generally means a mixture of tall trees that reach to the tops of the typical canopy for the area, short trees that fill in the understory, brush and shrubs, wildflowers, grasses and native vines. **BRUSH** is an important feature of this shelter, and combined with grasses is the most common layer in which birds and other wildlife nest. Removing brush, a common practice in building and preparing a lot for development, removes a significant layer of shelter for wildlife.

In some areas too much brush is not a natural or desirable feature. **PRAIRIES** are composed primarily of grasses that grow in clumping patterns interspersed with wildflowers and forbs (non-woody green plants). Bunch grasses provide the critical shelter that birds, small mammals, reptiles and other prairie animals require. Historically, brush encroached into this area for three to seven years, and then it was burned out by a periodic wildfire. Today, with the suppression of fire, brush grows uncontrolled in some of our historically prairie regions.

It is often necessary to look at historical records and pictures to see what the region looked like prior to extensive human intervention. Habitat restoration efforts should strive to re-create and maintain this native ecosystem. The greatest benefit for wildlife would be achieved if the historic nature of the land could be restored.

The reintroduction of plants that are native to your local ecoregion will provide **FOOD** resources within your habitat. Quality food resources include the materials produced directly by the plants and the animals that are attracted by the plant resources. All parts of the plant – the fruit or nuts, the leaves, the stems, the roots, the nectar, etc., are food for some wildlife species. If we realize this, and do not run for the pesticides every time we see something chewing up our milkweed or other plants, we will be rewarded with a diversity of insect and bird species in our habitat. As the number and type of wildlife increases in your habitat, more and different kinds of animals will now be attracted to the surroundings, leading to even greater diversity in our gardens and pastures. A good mixture of quality

native plant species on the property will provide a greater diversity and density of wildlife than any feeder will, in most cases.

Water quality and quantity may be a greater challenge to restore and protect than shelter or food. Animals need water, and it is tempting to simply allow livestock access to the water directly. This practice, however, will often degrade riparian habitat and foul water quality. One of the best things you can do to protect your water is to divert some of the water away from the natural supply point to water livestock.

Collecting available rainwater in tanks and guzzlers and slowing the flow of rainwater off of your property will also help. There are many methods available now for rainwater harvesting. Earthen dams, strategically placed barriers and the planting of native plants that control erosion will slow water flow, allow the water to infiltrate into the soil and help to conserve water for both plants and wildlife while retaining water supplies for livestock. Diversity biologists responsible for your county can provide consultation on native erosion control plants that protect soil quality while protecting the diversity on your property.

Some brush species, like salt cedar, eastern red cedar and mesquite, have a reputation for using a lot of water, which may or may not be justified. The removal of some brush to allow more grass will improve both range and habitat quality. This does not justify removing all brush from the property (see shelter discussions above), but judicious thinning and control can be beneficial.

LIVESTOCK GRAZING is an important tool for effective maintenance of quality wildlife habitat. In order to maintain plant diversity, the livestock on your range should be kept to appropriate stocking levels and regularly rotated to different pastures so that the habitat will be able to support both grazing and browsing species without damaging the rangeland. This practice will reduce the probability of habitat degradation and loss of diversity.

For more assistance in maintaining your property in a way that will enhance and protect wildlife habitat, you can contact the Wildlife Diversity Program at (512) 389-4644 or your county diversity or technical guidance biologists. These individuals can be found through www.tpwd.state.tx.us/landwater/land/technical_guidance/biologists/. Assistance can also be found through the Texas AgriLife Extension Service county extension offices.

TEXAS PARKS & WILDLIFE

4200 Smith School Road • Austin, Texas 78744
www.tpwd.state.tx.us