USDA NRCS

United States Department of Agriculture
Natural Resources Conservation Service

Resource Concerns

ANIMALS

Habitat Degradation

Soil

Water

Air

Plants

Animals

Inadequate Habitat for Fish and Wildlife

Habitat Degradation

Livestock Production Limitation

Energy

Inadequate Habitat for Fish and Wildlife - Habitat Degradation

Quantity, quality or connectivity of food, cover, space, shelter and/or water is inadequate to meet requirements of identified fish, wildlife or invertebrate species.

What is it?

Because of deficient habitat, upland, wetland and/or aquatic organisms may lack: adequate food and proper nutrition to grow, maintain health, and reproduce; shelter from adverse environmental conditions; protection from predators; environmental features necessary for a particular life need; space to locate a mate, obtain sufficient food and water, and rest; and quality or quantity of water sufficient to support proper metabolism and maintain health.

Why is it important?

Perhaps the greatest threat to fish, wildlife, and invertebrate species is the destruction of their habitat. The availability and arrangement of food, cover, shelter, water, and space determine the number of organisms that a region can support, which is also known as carrying capacity. Increasing carrying capacity is critical to attaining long-term population stability. Conserving existing habitat and restoring habitat shortcomings improves the odds that fish and wildlife communities will thrive. When landowners keep wildlife communities intact, less regulatory intervention is required to ensure the survival of individual species.

What can be done about it?

Landowners can address some habitat shortcomings on their property by providing food plots, nest boxes, brush piles, watering facilities, etc. However, maintaining a sustainable population often requires cooperation of multiple landowners. Simply having considerable amounts of food, cover, or water does not ensure a sustainable wildlife population. Within any area, large quantities of potential food, water, or cover may go unused because they are too far apart in relation to the customary travels of the animals in an area. An animal could travel a long distance to find water if necessary, but it would do little good if the animal was preyed upon along the way. Properly arranging the habitat components across a landscape is important to ensure that each component benefits the species of concern. Accomplishing this goal requires an understanding of the specific habitat needs of the managed species.

Habitat Degradation at a Glance

Problems / Indicators - Loss of habitat to support desired wildlife species	
Causes	Solutions
• Insufficient shelter/cover • Insufficient food • Insufficient water quantity or quality • Fragmented habitat	• Nest boxes or platforms, brush piles, rock piles, root wads • Food plots and/or leave portions of crop fields unharvested • Watering facilities, • Buffers, hedgerows, windbreaks, and similar plant structures

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Livestock Production Limitation - Feed and Forage

Feed and forage quality or quantity is inadequate for nutritional needs and production goals of the kinds and classes of livestock.

What is it?

Livestock require five major classes of nutrients: energy, protein, minerals, vitamins, and water. All five are essential for normal health and production. Next to water, the greatest requirement is for energy, followed by protein, with minerals and vitamins needed in very small amounts. Without adequate energy from feed or forage, utilization of all other nutrients is impaired.

Why is it important?

Providing sufficient feed and forage helps to ensure animal health and performance. To sustain the resource base, it is critical to balance the required feed and kind of forage with the number and type of animals in the operation. Stocking rates and timing must be adjusted and supplements provided, as needed, for livestock grazing pasture or rangeland. Improving animal feed and forage can improve livestock productivity and farm income.

What can be done about it?

Applying the principles of forage production for livestock requires an understanding of how plants interact with soil and climate, as well as understanding the nutritional needs of the animals. Prescribed Grazing is the management of grazing land to adjust intensity, frequency, timing, and duration of grazing and/or browsing to meet the desired objectives for the plant communities and the grazing and/or browsing animal. A proper system manages animal number, grazing distribution, and length and time of grazing periods to provide grazed plants sufficient recovery time for regrowth and plant health. Feed and forage balance sheets and forage growth curves are used to make decisions about stocking rates and timing of grazing rotations based on plant growth and animal demands. Fencing and placement of livestock water can facilitate proper grazing management. Conservation practices, such as Forage and Biomass Planting and Forage Harvest Management, provide guidance to improve the forage base to support the prescribed grazing system.

Feed and Forage at a Glance

Problems / Indicators - Feed and forage not adequate to support the livestock operation	
Causes	Solutions
• Insufficient livestock feed • Overstocking of livestock • Inadequate distribution of livestock grazing • Poor feed quality • Weed, insect, or disease problems	• Prescribed grazing systems • Adequate water distribution • Production of high quality feed and forage • Forage analysis for nutrient quantity and quality

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Livestock Production Limitation - Livestock Shelter

Livestock lack adequate shelter from climatic conditions to maintain health or production goals.

What is it?

Natural vegetation or landscape features are not adequate to provide shelter for livestock during periods of severe climatic circumstances.

Why is it important?

Livestock performance is reduced during periods of high heat or extreme cold weather. Providing sufficient shelter to offset these climatic conditions can be beneficial to animal performance and health. Without adequate upland shelter, livestock may seek shelter in low-lying areas, such as streams, which may cause riparian area deterioration and/or water quality issues.

What can be done about it?

Shelters or windbreaks can be provided using natural vegetation or constructed sanctuaries to give animals sufficient protection from harsh climatic conditions. When livestock shelter is constructed or planted with ample buffer distances from riparian areas or water bodies, and in locations not susceptible to runoff and erosion, environmental risks associated with livestock concentration are minimized. Further, use of portable structures that are periodically moved helps prevent areas of heavy use and increased erosion possibilities.

Livestock Shelter at a Glance

Problems / Indicators - Vegetative, landscape, and/or structural options for livestock shelter do not exist; livestock are exposed to severe climatic conditions	
Causes	Solutions
• Exposure to extreme wind and cold in system that supports tree growth • Historical shelterbelt is partially functioning • Exposure to extreme wind and cold in area where plant options are limited or temporary shelter is preferred	• Permanent windbreak establishment using native or naturally occurring plant materials • Renovate partially existing shelter belt • Portable season-long fabricated shelter

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Livestock Production Limitation - Livestock Water

Quantity, quality, and/or distribution of drinking water are insufficient to maintain health or production goals for the kinds and classes of livestock.

What is it?

Water is an important but often overlooked nutrient for livestock. Water makes up over 98 percent of all molecules in the body and is necessary for regulation of body temperature, growth, reproduction, lactation, digestion, lubrication of joints, eyesight, and as a cleansing agent. Livestock water requirements are influenced by several factors, including rate of gain, pregnancy, lactation, activity, type of diet, feed intake, and environmental temperature.

Why is it important?

Water quality for livestock consumption can be detrimental based on several parameters, such as nitrates, sulfates, salinity, bacteria, pH, pesticides, and total dissolved solids. Water quantity and distribution of suitable water sources can affect livestock based on the basic need to meet daily intake requirements and issues related to grazing patterns and travel distance to water that may result in surplus/deficient forage availability and excessive/insufficient plant utilization. All of these ultimately affect livestock health and resource stability.

What can be done about it?

Water quality concerns, for both livestock health and the environment, can be addressed by limiting livestock access to ponds and water bodies or by installing watering facilities. Proper layout of water facilities will provide more even distribution of grazing that will enhance forage utilization. Animals do not graze or utilize areas that are remote from water sources and the size of the facility should be designed to avoid crowding. Having watering sites as evenly distributed as possible in a grazing system will help circumvent overused or underused areas of the pasture.

Livestock Water at a Glance

Problems / Indicators - Lack of water, poor water quality, poor distribution can affect livestock health	
Causes	Solutions
• Water availability is limited • Spring area trampled by livestock • Livestock in stream or pond creating potential health concerns	• Inventory, evaluate, and plan watering system for livestock type • Develop spring for livestock water and outlet for wet area for native plants and wildlife • Establish select watering points and construct watering facilities to move livestock away from streams and ponds

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