

## **Resource Concerns Weighted by Percent for Ranking**

### **RESOURCE CONCERN COMPONENTS**

#### **% Value Resource Concerns**

- 2 •Sheet and Rill: Sheet and rill erosion is the detachment and transportation of soil particles caused by rainfall runoff/splash and/or irrigation events. Symptoms of soil erosion by water include: small rills and channels on the soil surface, soil deposited at the base of slopes, sediment in streams, lakes, and reservoirs, and pedestals of soil supporting pebbles and plant material.
- 2 •Classic Gullies: Classic gullies are forms of erosion created by the concentrated flow of water. Classic gully erosion generally occurs in well-defined drainage ways and generally is not obliterated by tillage. Untreated classic gullies may enlarge progressively by head cutting and/or lateral widening.
- 5 •Excessive Bank Erosion from Streams, Shorelines or Water Conveyance Channels: Stream stability is an active process, and while streambank erosion is a natural part of this process, it is often accelerated when land use management alters the stream system. When a stream's sediment load increases, the shape and function of the stream change, and the normal transport of sediment to downstream bottomlands is affected and the quality of wildlife habitat, both on land and in-stream, can be impacted.
- 2 •Ephemeral Gullies: Ephemeral gullies are forms of erosion created by the concentrated flow of water. Ephemeral gullies usually appear on cultivated fields during the planting or growing season, but are temporarily removed by cultivation. Ephemeral gullies can reappear at or near the same location on a yearly basis.
- 2 •Compaction: Management-induced soil compaction results in decreased rooting depth that reduces plant growth, animal habitat and soil biological activity. Compaction can lead to increased runoff and erosion from sloping land or waterlogged soils in flatter areas by reducing water infiltration into the soil.
- 2 •Organic Matter Depletion: Soil organic matter is carbon-rich material that includes plant, animal, and microbial residue in various stages of decomposition. Managing for soil carbon can enhance soil productivity and environmental quality. Increasing soil organic matter levels can reduce atmospheric carbon dioxide (CO<sub>2</sub>) levels. Ground and surface water quality can improve too because better structure, infiltration, and biological activity make soil a more effective filter.
- 2 •Inefficient Moisture Management: Inefficient moisture management can result in increased runoff, reduced soil moisture and diminished groundwater recharge.
- 2 •Inefficient Use of Irrigation Water: Irrigation water is not stored, delivered, scheduled and/or applied efficiently. Aquifer or surface water withdrawals threaten sustained availability of ground or surface water. Available irrigation water supplies have been reduced due to aquifer depletion, competition, regulation and/or drought.

- 2 •Excess Nutrients in Surface Water: Nutrients, organic and inorganic, are transported to receiving surface waters through runoff in quantities that degrade water quality. Increased nitrogen and phosphorus levels in water can produce excessive aquatic vegetation and algal blooms resulting in reduced dissolved oxygen, harmful toxins, and increased water temperature.
- 2 •Excess Nutrients in Groundwater: Nutrients, organic and inorganic, are leached into groundwater in quantities that degrade water quality and limit uses for other purposes, for example, public drinking water systems from shallow domestic wells.
- 2 •Pesticides Transported to Surface Water: Pest control chemicals are transported to receiving surface waters in quantities that degrade water quality. Pesticides typically enter surface water when rainfall or irrigation exceeds the infiltration capacity of soil and resulting runoff transports pesticides to streams, rivers, and other surface-water bodies.
- 2 •Pathogens and Chemicals from Manure, Bio-solids or Compost Applications Transported to Surface Water: Pathogens and other chemicals are carried by soil amendments applied to the land and subsequently transported to receiving surface waters in quantities that degrade water quality. Many potential pathogens (disease-causing microorganisms) can be found in manure, bio-solids or compost.
- 6 •Excessive Sediment in Surface Water: Off-site transport of sediment to surface water can impact water quality and aquatic habitat. Not only does sediment carry nutrients and pesticides that can negatively impact water quality, but the physical characteristics of sediment can clog stream channels, silt in reservoirs, cover fish spawning grounds, and reduce downstream water quality.
- 2 •Elevated Water Temperature: Water temperature has important ecological consequences and potential negative impacts for human use. As water temperature rises, there is a corresponding decrease in the availability of oxygen, carbon dioxide, and other gases important to aquatic life. Warm water also has the potential to increase the presence of dissolved toxic substances that may restrict the suitability of water for human use.
- 10 •Undesirable Plant Productivity and Health: Plants must be adapted to the site and provided with appropriate amounts of nutrients, water, and sunshine, and protected from unchecked animal, weed, insect, and disease pests. Plants established in the wrong climate or soil may be under stress and may never thrive, no matter how much fertilizer or water supplied. Natural events, such as drought, or mismanagement can cause plant stress. Plants under stress are more susceptible to disease and insect damage.
- 10 •Inadequate Structure and Composition: Plant communities, such as - wetland habitat, unique ecosystems or targeted plant communities, have insufficient diversity, density, distribution patterns, and three-dimensional structure necessary to achieve ecological functions and/or management objectives.

- 15 •Excessive Plant Pest Pressure: The term “pest” can be any animal, plant, insect, bacteria, or virus that results in plant damage or competes for space, nutrients, or water (e.g., weeds). Heat, drought, wind, sun, and cold create stress on plants that make them more susceptible to pests.
- 15 •Wildfire Hazard, Excess Biomass Accumulation: Accumulated plant residue (biomass) creates wildfire hazards that pose risks to human safety, structures, plants, animals, and air resources. While fire is an important and often beneficial part of the natural ecosystem, uncontrolled or “wild” fire poses a threat to life, health, and property.
- 10 •Habitat Degradation: Conserving existing habitat and restoring habitat improves the odds that fish and wildlife communities will thrive. The availability and arrangement of food, water, cover, shelter, habitat continuity and space determine the number of organisms that a region can support, also known as carrying capacity. Increasing carrying capacity is critical to attaining long-term population stability.
- 3 •Inadequate Livestock Water: 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. Livestock travel distance to water can result in surplus/deficient forage availability and excessive/insufficient plant utilization.
- 1 •Equipment and Facilities: Inefficient energy use occurs whenever facilities, equipment, or machinery operate more hours than needed to meet management goals. It may also occur when facilities, equipment, or machinery become worn out, outdated, or are poorly controlled or maintained.
- 1 •Farming/Ranching Practices and Field Operations: Inefficient energy use occurs whenever equipment or machinery operates more hours than needed to meet management goals. It may also occur when equipment or machinery becomes worn out, outdated, or poorly controlled.