

## Watershed Systems

### ID Team Recommended Plan Components

**Background:** *Watershed condition is the state of the physical and biological characteristics and processes within a watershed that affect the soil and hydrologic functions supporting aquatic ecosystems. Watershed condition reflects a range of variability from natural pristine (functioning properly) to degraded (severely altered state or impaired). Watersheds that are functioning properly have terrestrial, riparian, and aquatic ecosystems that capture, store, and release water, sediment, wood, and nutrients within their range of natural variability for these processes. When watersheds are functioning properly, they create and sustain functional terrestrial, riparian, aquatic, and wetland habitats that are capable of supporting diverse populations of native aquatic- and riparian-dependent species (Potyondy, et al., 2010).*

Watersheds are both areas with discrete physical boundaries and systems governed by complex, interconnected functions and processes. This section includes the plan components required to maintain or restore the ecological integrity of watersheds in the plan area, specifically detailing plan components to maintain or restore structure, function, composition, and connectivity. Watershed systems (i.e., structure, composition, function, connectivity, and integrity) are viewed at multiple analytical scales. Analysis scale followed the Hierarchy Framework of Aquatic Ecological Units in North America (Maxwell et. al 1995). The four analysis scales are: basin (HUC-3), subbasin (HUC-4), watershed (HUC-5), and subwatershed (HUC-6). The smallest scale land unit used in this analysis was the subwatershed (10 to 50 square mile area); consistent with the Watershed Condition Framework (Potyondy, et al., 2010).

The planning regulations (36 CFR Part 219.8) require plan components “to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems ... structure, function, composition, and connectivity”; specifically considering the “interdependence of terrestrial and aquatic ecosystems”, “system drivers, including dominant ecological processes, disturbance regimes, and stressors”, and “opportunities for landscape restoration”.

Watershed structure, composition, function, and integrity are further divided into subsections used to develop plan components. Watershed structure includes: uplands, riparian areas, and stream channels; and are described in the Terrestrial Systems, Riparian Areas, and Aquatics sections, respectively. Watershed composition includes air, soil, water, and vegetation; each of which is described in separate plan component sections. Watershed function describes the ecosystem services (e.g., water filtration, flood regulation) provided by watershed components. Watershed integrity is the resilience of watershed structure, composition, and function in response to disturbance regimes, dominant ecological processes, and stressors like vegetation and road management, wildfire, climate change, and invasive species.

To address the complexity and interconnected nature of watershed systems, plan components are developed in a hierarchal system as follows:

A. Watershed Systems

a. Watershed Structure

i. Aquatic Systems

1. Physical
2. Biological

a. T&E species

ii. Riparian Areas

iii. Terrestrial Areas

1. Soils
2. Vegetation
  - a. Sensitive and T&E species
3. Wildlife Habitat
  - a. Sensitive and T&E species

b. Watershed Composition

i. Water Resources

1. Water quality and quantity
2. Groundwater and Groundwater Dependent Ecosystems
3. Public and Municipal Watersheds and Water Supplies

ii. Soil Resources

1. Productivity
2. Quality and Ecosystem Function

iii. Vegetation Resources

1. Timber

c. Watershed Function

i. Watershed Ecosystem Services

1. Clean water (filtration)
2. Flood control/regulation
3. Climate regulation
4. Soil Productivity
5. Carbon Sequestration

d. Watershed System Integrity

i. Watershed Maintenance & Restoration

1. Priority Watersheds – Watershed (Ecological?) Condition Framework (need this dedicated section outside of ACS to allow for a wide range of watershed restoration activities that may not be part of the ACS).

a. Identify those as priorities for maintaining level 1 status and those most in need of restoration, level 2 and 3

2. Aquatic Conservation Strategy - PACFISH/INFISH Direction?

a. Should not focus exclusively on level 3 watersheds?

~~d.~~e. System Drivers

- i. Wildfire
- ii. Invasive Species

- iii. Insects/Disease
- iv. Climate Change
- v. Management activities?
- ~~iv-vi.~~ floods?

**INSERT Graphic Here**

