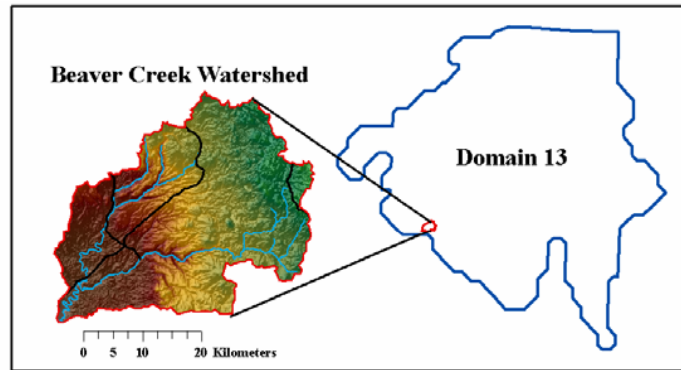


Beaver Creek Watershed (BCW)

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Location within Domain:



History: In 1956 the Beaver Creek Watershed was named a UNESCO Man and the Biosphere Reserve, which was established to function as a major center for watershed management research. The USFS Rocky Mountain Research Station is one of several agencies and organizations involved in managing the Beaver Creek Experimental Watershed. As a result of this designation and subsequent scientific research, the Beaver Creek Watershed has extensive “legacy data” available on the area’s climate, hydrology, fire, land use and management. This research has quantified effects vegetation treatments have on hydrology and wildlife, producing over 200 peer reviewed publications/reports on ecology, silviculture, geology, soils, and cultural anthropology.

Key Characteristics: The Beaver Creek Watershed is located 80 km south of Flagstaff in the Central Arizona Highlands, at the transition between the Basin and Range and Colorado Plateau physiographic provinces. Beaver Creek is one of several drainages that dissect the Mogollon Plateau and drain into the Verde River. The watershed is a natural ecological laboratory, providing habitats for a wide variety of flora and fauna. The watershed’s elevation gradient supports vegetation types ranging from Ponderosa pine, to juniper woodland and semi-desert shrub and grasslands. It is an excellent example of a typical southwestern hydrological system, with both perennial and intermittent reaches, drought-flood cycles, and hydraulically connected surface and groundwater. An “unmanaged” core wildland site would be complemented by nearby areas where various management regimes and experimental treatments have occurred.

Existing Infrastructure: There are four weather stations, four gages and two weirs are currently in operation in the Beaver Creek Watershed. Many more gages and weirs could be re-activated. There are 18 forest and woodland stand treatments initiated in the 1960’s. Just South of Flagstaff on NAU’s Centennial Forest complementary research infrastructure, including flux towers, are in place to test the effects of different land management at an urban-open space boundary.

Facilities: The USFS Happy Jack Ranger Station, within 10 km of proposed wildland sites, provides an ideal location for a national ecological observatory administrative site. Its infrastructure is designed for 100 people. The Merriam-Powell Research Station on the Arboretum at Flagstaff property could serve as an initial base of operations for visiting researchers. The Beaver Creek Ranger Station, with easy access from Phoenix and Sedona, would be an excellent education-outreach facility. Nearby Northern Arizona University (NAU) houses numerous facilities that could support and enhance NEON-related research. NAU facilities are available to conduct molecular genetic analyses, stable-isotope analyses, forest ecophysiology studies, aquatic sample processing, remote sensing, as well as wireless sensor development and deployment. Biological and paleo-ecological collections are also available.