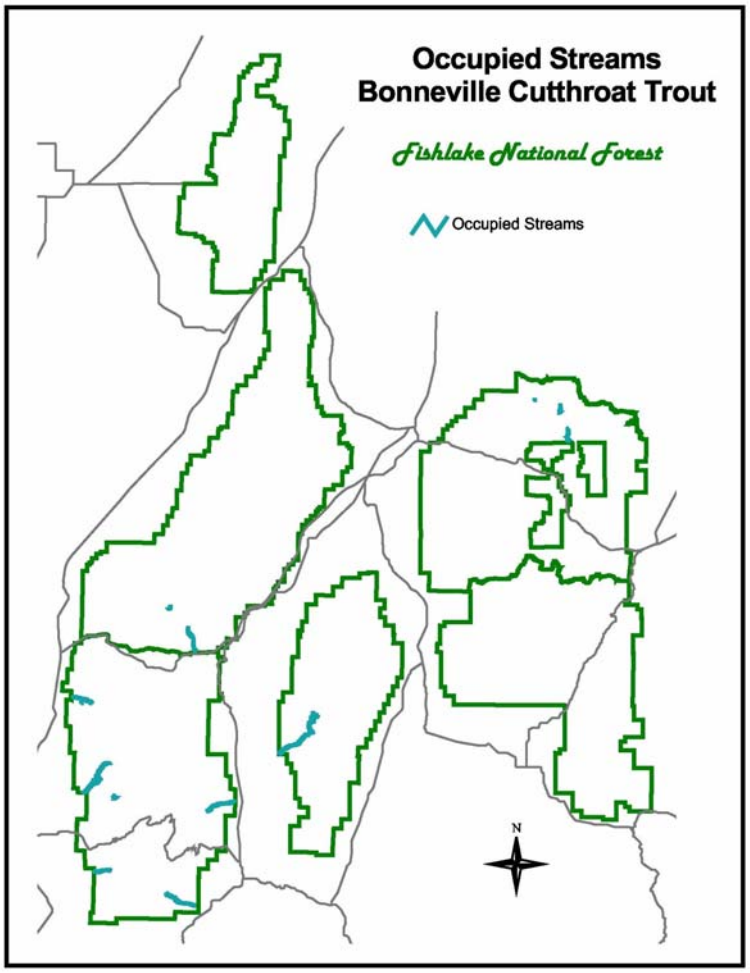
Fish

Bonneville Cutthroat Trout *(Oncorhynchus clarki utah)*

Bonneville cutthroat trout is one of three cutthroat trout subspecies native to Utah. Bonneville cutthroat trout historically occurred in the Pleistocene Lake Bonneville basin, which included portions of Idaho, Nevada, Utah, and Wyoming (Kershner 1995). The desiccation of Lake Bonneville into the smaller Great Salt Lake and fragmentation of other stream and lake habitats may have led to three slightly differentiated groups of Bonneville cutthroat trout from the Bear River basin, the Bonneville basin proper, and the Snake Valley (Behnke 1992). There are five known populations of pure strain Bonneville cutthroat trout on the Fishlake National Forest inhabiting approximately 38 miles of stream habitat.

The map below displays 38 miles of occupied Bonneville cutthroat trout habitat on the Fishlake National Forest.



Habitat for the Bonneville cutthroat trout is widely distributed and variable. It ranges from high elevation (3,500 m mean sea level) streams with coniferous and deciduous riparian trees to low elevation (1,000 m mean sea level) streams in sage-steppe grasslands containing herbaceous riparian zones

(Kershner 1995). As such, Bonneville cutthroat trout have adapted to a broad spectrum of habitat conditions throughout their range.

Sexual maturity is typically reached during the second year for males and the third year for females (May et al. 1978). Both the age at maturity and the annual timing of spawning vary geographically with elevation, temperature, and life history strategy. Lake resident trout may begin spawning at two years and usually continue throughout their lives, while adfluvial individuals may not spawn for several years. Annual spawning of Bonneville cutthroat trout usually occurs in the spring and early summer at higher elevations (Behnke 1980) at temperatures ranging from 4-10 degrees C (May et al. 1978). May et al. (1978) reported Bonneville cutthroat trout spawning in Birch Creek, Utah beginning in May and continuing into June. The wild brook stock at Manning Meadow Reservoir (9,500 ft. elevation) spawn from late June to early July (Hepworth and Ottenbacher 1995).

Fecundity is typically between 1800-200 eggs per kilogram of bodyweight (Behnke 1992). Incubation times for wild Bonneville cutthroat trout have not been verified but probably average 30 days (Gresswell and Varley 1988). Fry emerge in mid July through mid August (depending on spawning time) and migrate to channel margin habitats associated with stream banks (Moore and Gregory 1988). Growth of resident fish is highly dependent on stream productivity. Growth rates of Bonneville cutthroat trout tend to be slower in headwater drainages than in lacustrine environments. Because Bonneville cutthroat trout may be adapted to the rigorous conditions of high elevation headwater streams, these fish may have a competitive edge over nonnative salmonids in those areas (Binns 1981).

Bonneville cutthroat trout require relatively cool, well oxygenated, water and the presence of clean, well-sorted gravels with minimal fine sediments for successful spawning.

Both terrestrial and aquatic invertebrates are important food items for stream-dwelling Bonneville cutthroat trout (May et al. 1978, Binns 1981). Their diet was diverse during the summer in Birch Creek (May et al. 1978). Dipterans and debris were the dominant food items for immature trout and terrestrial insects were the dominant prey for mature individuals.

There are numerous threats to Bonneville cutthroat trout. These include hybridization and/or competition with nonnative salmonids, degradation of habitat from diversions, livestock grazing, road building, fire, mining and timber harvest activities, as well as angling.

Trend

Based on discussions with Dale Hepworth, DWR Regional Fish Program Manager, Bonneville cutthroat trout populations are increasing throughout the Southern Region. When DWR stated to restore the native Bonneville trout approximately 25 years ago there were approximately 5 miles of occupied stream habitat in the Southern Region. Based on information provided by DWR through personal communication, there are currently more than 75 miles of occupied stream habitat throughout southern Utah. This success has been the direst result of stream restoration work occurring from cooperative relations between DWR and the Forest Service. In addition to information collected by DWR, the total number of miles of occupied habitat on the forest has increased since 1986 from approximately 13 miles of habitat to 38 miles of occupied habitat, a 20-mile increase.

As a result of cooperative state and federal actions, increases of suitable and occupied Bonneville trout habitat has occurred on the forest, and in the Southern Region. The Bonneville cutthroat trout is experiencing an upward trend and is viable on the Fishlake National Forest.