

River Formation, Fossil Butte National Monument.

Lithology and formation [\[edit\]](#)

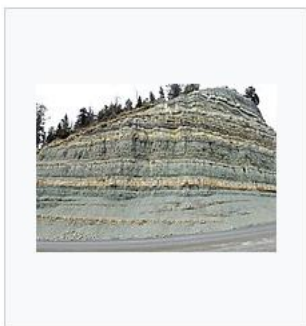
The formation of [intermontane](#) basin / lake environments during the Eocene resulted from mountain building and uplift of the [Rocky Mountains](#) (late Cretaceous [Sevier orogeny](#) and the [Paleogene Laramide orogeny](#)). Tectonic highlands supplied the Eocene sedimentary basins with sediment from all directions: the [Uinta Mountains](#) in the center; the [Wind River Mountains](#) to the north; the [Front Range](#), [Park Range](#) and [Sawatch Range](#) of the Colorado Rockies to the east; the [Uncompahgre Plateau](#) and the [San Juan Mountains](#) to the south and finally, the [Wasatch Mountains](#) of Utah and the ranges of eastern Idaho to the west.

The lithology of the lake sediments is varied and includes [sandstones](#), [mudstones](#), [siltstones](#), [oil shales](#), [coal beds](#), [saline evaporite beds](#), and a variety of lacustrine [limestones](#) and [dolomites](#). Volcanic ash layers within the various sediments from the then active [Absaroka Volcanic field](#) to the north in the vicinity of [Yellowstone](#) and the [San Juan volcanic field](#) to the southeast provide dateable horizons within the sediments.

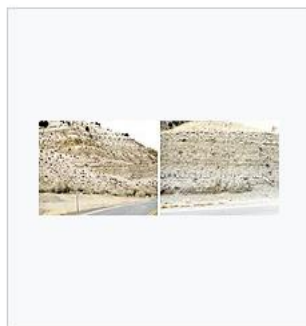
The [trona](#) (hydrated sodium bicarbonate carbonate) beds of Sweetwater County, Wyoming are noted for a variety of rare evaporite minerals. The Green River Formation, is the type locality for eight rare minerals: [bradleyite](#), [ewaldite](#), [loughlinite](#), [mckelveyite-\(Y\)](#), [norsethite](#), [paralabuntsovite-Mg](#), [shortite](#) and [wegscheiderite](#). It also has a natural occurrence of [moissanite](#) (SiC) and 23 other valid mineral species.^[2]

Cyclicality [\[edit\]](#)

The beds display a pronounced [cyclicality](#), with the precession, obliquity, and eccentricity orbital components all clearly detectable. This enables the beds to be internally dated with a high degree of accuracy, and [astrochronological](#) dates agree very well with [radiometric](#) dates.^[3]



Unnamed middle member, Green River



Unnamed upper member, saline facies,



Transition facies, unnamed upper member



Transition facies exposed in road cut

