



Generalized stratigraphic column for the northern Bighorn Basin, Wyoming, with timing of regional orogenic events and interpretation of tectonostratigraphic assemblages. Modified from May et al. (2013; GSA Bulletin, v. 125, p. 1403-1422), who in turn derived their figure from Fox and Dolton (1996; Wyoming Geological Association 47 Annual Field Conference Guidebook, p. 19-39).

The table below indicates exactly what you need to memorize from the Bighorn Basin stratigraphic column prior to arriving at field camp. Specifically, you need to know all the formations listed and the ages as shown in the column on the left (e.g., you need to know that the Cody Shale is Cretaceous in age, but you do not need to know that it is Late Cretaceous).

The column of members does not include all subunits that have been defined for the various formations in the Bighorn Basin, just the ones you need to know when you arrive at camp. For the latter, you DO need to know the stratigraphic position within the parent formation as shown in the strat column. For example, you can see that the Greybull Sandstone occurs at the top of the Cloverly Formation, in contrast to the Darwin Sandstone, which is situated at the base of the Amsden Formation. Also note that the Torchlight and Peay sandstones occur near, but not quite at, the top and bottom, respectively, of the Frontier Formation.

| Age              | Formation                     | Members                              |
|------------------|-------------------------------|--------------------------------------|
| Eocene           | Tatman Fm.                    |                                      |
| Paleocene-Eocene | Willwood Fm.                  |                                      |
| Paleocene        | Fort Union Fm.                |                                      |
| Cretaceous       | Lance Fm.                     |                                      |
| Cretaceous       | Meeteetse Fm.                 |                                      |
| Cretaceous       | Mesaverde Fm.                 |                                      |
| Cretaceous       | Cody Shale                    |                                      |
| Cretaceous       | Frontier Fm.                  | Torchlight Sandstone, Peay Sandstone |
| Cretaceous       | Mowry Shale                   |                                      |
| Cretaceous       | Shell Creek Shale             |                                      |
| Cretaceous       | Muddy Sandstone               |                                      |
| Cretaceous       | Thermopolis Shale             |                                      |
| Cretaceous       | Sykes Mtn. Fm. ("Rusty beds") |                                      |
| Cretaceous       | Cloverly Fm.                  | Greybull Sandstone                   |
| Jurassic         | Morrison Fm.                  |                                      |
| Jurassic         | Sundance Fm.                  |                                      |
| Jurassic         | Gypsum Spring Fm.             |                                      |
| Triassic         | Chugwater Formation           |                                      |
| Triassic         | Dinwoody Fm.                  |                                      |
| Permian          | Phosphoria/Goose Egg Fm.      |                                      |
| Pennsylvanian    | Tensleep Sandstone            |                                      |
| Pennsylvanian    | Amsden Fm.                    | Darwin Sandstone                     |
| Mississippian    | Madison Limestone             |                                      |
| Devonian         | Darby Formation               |                                      |
| Ordovician       | Bighorn Dolomite              | Lander Sandstone                     |
| Cambrian         | Gallatin Limestone            |                                      |
| Cambrian         | Gros Ventre Fm.               |                                      |
| Cambrian         | Flathead Sandstone            |                                      |
| Precambrian      | Crystalline basement          |                                      |