

2. *Pseudotsuga menziesii* - *Quercus gambelii* Forest Association

Douglas fir - Gambel oak Forest Association

This community is characterized by an upper tree canopy co-dominated by Douglas fir (*Pseudotsuga menziesii*) and Gambel oak (*Quercus gambelii*), with common associates Rocky Mountain juniper (*Juniperus scopulorum*) and ponderosa pine (*Pinus ponderosa*). Total cover in the upper canopy (>5 m) ranges from 25% to 60%, while the lower canopy (2–5 m) is sparser and often absent. Gambel oak (*Q. gambelii*) reaches heights of up to 14 meters, but is generally around 8 meters tall, with cover ranging from 8% to 45%. Douglas fir (*P. menziesii*) is a large-canopied tree, ranging from 12 to 25 meters in height and providing cover between 10% and 30%. Rocky Mountain juniper (*J. scopulorum*) averages 10 meters tall, with cover between 3% and 10%. Ponderosa pine (*P. ponderosa*) heights match those of the fir, while providing cover that fluctuates from 2% to 30%. Muttongrass (*Poa fendleriana*) and canyon grape (*Vitis arizonica*) are the two most common species in the field stratum (<0.5 m), at times being dominant, but with only a few percent cover. Where this community occupies canyon mouths, at the outskirts of the riparian zone and broader floodplain, other species typically associated with riparian systems are observed in moderate (but sometimes high) numbers, such as narrowleaf cottonwood (*Populus angustifolia*), Arizona walnut (*Juglans major*), boxelder (*Acer negundo*), and velvet ash (*Fraxinus velutina*). When this type occupies drier sites, higher on the north-facing backslopes above the drainage, ponderosa pine (*P. ponderosa*) may become the dominant canopy tree, contributing cover ranging from 12% to 23%. In these areas, Douglas fir (*P. menziesii*) is either co-dominant or subdominant to ponderosa pine (*P. ponderosa*), with cover around 15%.

This community occupies deep canyon drainages from 1,737 to 1,820 meters (5,700–6,000 ft), primarily Cliff Dweller Canyon and its tributaries. It can also be present on north- or northwest-facing slopes above minor drainages throughout the project area. Overall, this community covers 5.6% (59.25 ha/146.41 ac) of the project area and 8.41% (17.94 ha/44.34 ac) of the monument, exclusively in the main unit.

Common species

- *Pseudotsuga menziesii*
- *Quercus gambelii*
- *Juniperus scopulorum*
- *Pinus ponderosa*
- *Poa fendleriana*

