

**Conservation Study Forum's
Recommendations for**

CONSERVING ROCK OUTCROPS

7/22/17

Background:

Rock outcrops provide habitat essential to some native plants and animals by providing shelter and microsites which facilitate those species of plants and animals existing in an area. Rock outcrops, springs, seeps and riparian sites, despite being only relatively small areas, all contribute disproportionately to diversity of both plants and animals and are often found in the same areas. By virtue of their structure rock outcrops are often either not suitable for development or difficult to develop. Conserving these features can help preserve the diversity of plants and animals and some scenic values with minimum or no loss of development opportunities. These recommendations recognize there will be some loss of diversity with development but attempt to conserve what we can with minimal impact on development.

Some rare plants are limited to very specific conditions found on or near rock outcrops. For example:

- Cliff Fleabane (Erigeron saxatilis) is an endemic species that occurs only in northern and central Arizona where it inhabits sheer canyon walls, moist north-facing slopes, steep solid rock and bedrock outcrops from 5,000 to 8,350 ft.
- Flagstaff pennyroyal (Hedeoma diffusum) is a small perennial, mat like herb that grows on dolomitic limestone outcrops or soils in ponderosa pine forests

Animals associated with rock outcrops around Flagstaff include:

- Sonoran Mountain Kingsnake (Lampropeltis pyromelana) are often found on rocky slopes and in canyon bottoms.
- Arizona Black rattlesnake (Crotalus Cerberus) is also often found in rocky canyons and on rocky slopes.
- Hopi Rattlesnake (Crotalus viridus nuntius) is often found near rock outcrops and rocky ridges.
- Plateau Fence Lizard (Sceloporus tristichus) is found in a variety of sites including rocky canyons, uses rock piles for basking.
- Tree Lizard (Urosaurus ornatus) is often found in riparian and on rocky slopes.
- Many Lined Skink (Plestiodon multivirgatus) is often found in rocky canyon bottoms.
- Grey Fox (Urocyon cinereoargenteus) often den in rocky outcrops.
- Ringtail (Bassariscus astutus) largely a canyon dweller and our state mammal.

Given the conservation goals of both Flagstaff's Regional Plan 2030 and Coconino County's 2015 Comprehensive Plan, Conservation Study Forum recommends that the following standards be integrated into zoning codes for both the City and the Coconino County Community Development Departments.

How to Identify

Protection is intended for rock outcrops and volcanic extrusions connected to bedrock not piles of loose rock. The distinction is intended to focus on outcrops which are often difficult and expensive to build on versus loose piles of rock which can be more easily moved. Rock outcrops with a connection to other natural features such as ridges, drainages or canyons are usually more valuable than those that are isolated. Sometimes springs and seeps are found along rock outcrops and these are especially valuable and can make a disproportionate contribution to the diversity of an area.

Protection Standards

- Rock outcrops larger than 25 feet in their longest dimension should be protected by a no development buffer of 25 to 250 feet on all sides. The size of the buffer should be determined by what is needed to protect the plant community on the outcrop assuming it is different from the surrounding plant community.