

# watershed:

Fine volcanic and clay sediments of the alluvial-fan meadows absorb runoff from the Dry Lake Hills’ steep slopes, preventing flooding of nearby developed land. The land is part of two major Rio de Flag watershed drainages—Switzer Canyon to the east and south; Schultz Creek to the west. Water seeps through the meadows, gradually discharging downstream into ponds, springs, and creeks. Construction of roads, culverts, ditches and hardscape create erosion, destabilizing alluvial fans.



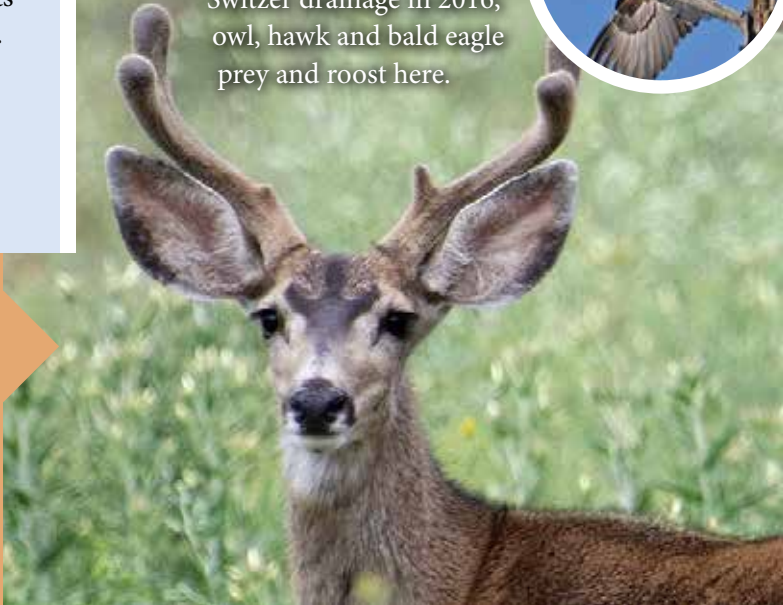
**OPPORTUNITIES:** Geologist Ann Youberg (along with UA, ASU, NAU professors) would study the alluvial fans to avoid a costly repeat of 2010 Schultz Fire-caused erosion. This research supports development of lacking (but needed) algorithms for alluvial fan hydrologic modeling.

An NAU geophysicist would research the thickness of the alluvial fan sediments and depth of its basalt bedrock. Hydrologists will determine if the alluvial fans are discharging water to Coyote Springs.

# wildlife:

**OPPORTUNITIES:** In 1956, eminent MNA Botanist Dr. Walter McDougall initiated vegetation studies, continued today through study of species distribution and phenology. Current grant-funded vegetative research is part of the Colorado Plateau Native Plant Materials Program and an Arizona State Forestry program. Habitat resiliency, diversity, interdependence, and sustainability research are possible. Partners: NAU’s Southwest Experimental Garden Array (SEGA) climate change project, SEINet, Flagstaff Arboretum, USFS.

Habitat patches provide complex ecological niches and microhabitats for 41 mammals. To support animal populations, wildlife managers advocate maintaining as many land connections as possible within and between the mountains (Dry Lake Hills, Elden, Peaks) and lower-elevation wildlands. Elk, deer, mountain lion and others use this land to reach the Rio de Flag wildlife and A-1 Mountain corridors, through which they migrate to and from piñon-juniper country. Osprey fledged two young in the Switzer drainage in 2016; owl, hawk and bald eagle prey and roost here.



Conservation of meadow habitats is critical for native pollinators, many in danger of extinction. Gunnison’s prairie dogs, a declining species of concern abundant before the 1990s, now return from an active MNA colony.

**OPPORTUNITIES:** With MNA’s Center of Bio-Cultural Diversity (partnering with USGS and NPS) and the SEGA garden program, biologists and animal ecologists will conduct research here. The area is a biological hotspot for arthropods—many new Colorado Plateau records of sighting are being recorded. MNA is collaborating on a manual on how prairie dog colonies and private landowners can coexist.

# culture:

Archaeological features include prehistoric habitation sites, field houses, an apparent irrigation channel and an artifact concentration. Forest Service land north of Mt. Elden Lookout Road contains other habitation features and a community room near the 89 acres. This complex comprises one of the best extant examples of Sinagua culture’s Rio de Flag Phase (A.D. 850-1050). Fewer sites exist than of the later Elden Phase, as they were buried by Sunset Crater eruption, other geological processes (or by urban development).

**OPPORTUNITIES:** This cluster of features is a prime resource for advancing archaeological field school research. Historic features include the 1858 Beale Camel Road alignment, running along the land’s north edge and Elden Lookout Road; a later historic road runs through Switzer Meadow’s south end and the Colton House. A mound of historic artifacts dating to 1875-85 is notable, as pre-1890 Flagstaff sites are rare. A trail used by horseback riders, hikers and bikers has long run along the eastern edge.

**OPPORTUNITIES:** In collaboration with the City of Flagstaff, Coconino County, USFS, Friends of the Rio de Flag, and other organizations, an educational trail system (including existing social trails) can be developed to interpret aspects of regional geology, watersheds, prehistoric occupation, historic homesteading, forest values, meadow ecosystems, and more.





# agriculture:

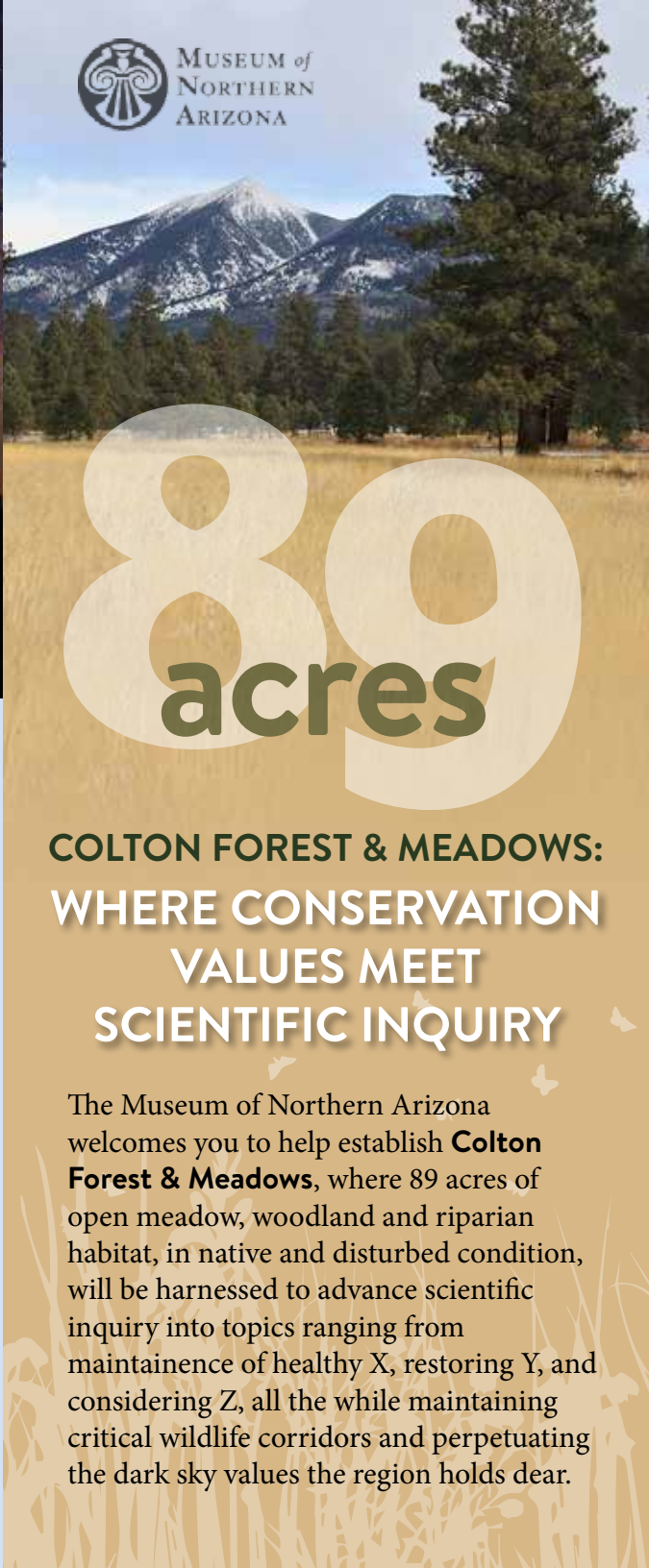
Mary-Russell Ferrell Colton researched grain and vegetable production on the cultivated fields, and MNA botanist Dr. Walter McDougall studied plant succession. MNA botanists continue observations.

**RESEARCH AND EDUCATIONAL OPPORTUNITIES:** NAU and UA professors would study species succession over the intervening years, investigating disturbed soils, undisturbed cryptogams/bio-crust, biotic communities, native annuals and invasive species, and ecological treatments to restore meadows to healthy ecosystems of native plants and pollinators. MNA's nearby Colton Community Garden provides opportunities to educate youth about plant succession and vegetation differences of cultivated and uncultivated areas

*Yucca baccata* Torr.      *Asperoglossa*  
USA, Arizona, Coconino County, Flagstaff, Picture Canyon,  
35.2316N -111.5532W  
Ponderosa Pine Forest, by black basaltic rocks.  
Clay with Cinder top.  
Associated species: *Pinus ponderosa*, *Eriogonum*  
*nauseosum*, *Rhus aromatica*, *Bouteloua gracilis*  
L. Garino 6

# open space, dark sky:

Conserving open space and dark skies are priority goals in County and City plans. Open space is required by animals needing to see predators from afar, or to travel fast/easily, unencumbered by trees or shrubs. Open space supports dark skies, vital for the night/dusk/dawn activities of bats, raccoons, skunks, owls, nighthawks and other vertebrates, as well as invertebrates, which are primarily nocturnal. Dark skies and open spaces have aesthetic viewshed values.



89  
acres

## COLTON FOREST & MEADOWS: WHERE CONSERVATION VALUES MEET SCIENTIFIC INQUIRY

The Museum of Northern Arizona welcomes you to help establish **Colton Forest & Meadows**, where 89 acres of open meadow, woodland and riparian habitat, in native and disturbed condition, will be harnessed to advance scientific inquiry into topics ranging from maintenance of healthy X, restoring Y, and considering Z, all the while maintaining critical wildlife corridors and perpetuating the dark sky values the region holds dear.

### I GET IT! HOW CAN I HELP?

With its location adjacent to both the Museum's Discovery Camp and the Harold S. Colton Research Campus, the scientific and educational opportunities are boundless.

Consider a Charitable Gift Annuity, in which you pledge your capital resources to the project for a designated period of time, allowing the Museum to benefit from the interest of those invested dollars. This gift ensures that Colton Meadows enjoy a conservation easement in the short-term, and provides needed time for a permanent endowment to be raised, allowing the Museum to place a permanent conservation easement on the land.

Contribute directly to the Colton Forest & Meadows Endowment! Your gift helps us to reach our \$3 million goal, at which point a permanent easement will be placed on the land, allowing for the open space, view shed, and other community benefits it provides.

\_\_\_ YES! I'd like to make a Charitable Gift Annuity of the below amount.\*  
\_\_\_\$25,000    \_\_\_\$50,000    \_\_\_\$100,000    \_\_\_ Other amount \$ \_\_\_\_\_

for a duration of:    \_\_\_5 years    \_\_\_10 years

\_\_\_YES! I'd like to make an Endowment gift, ensuring this land remains open in perpetuity.\*  
\_\_\_\$25,000    \_\_\_\$50,000    \_\_\_\$100,000    \_\_\_ Other amount \$ \_\_\_\_\_

\_\_\_YES! I'd like to support this effort, but need more information. Please contact me.

NAME: \_\_\_\_\_

E-MAIL: \_\_\_\_\_

PHONE: \_\_\_\_\_

Please return this form to:  
Colton Forest & Meadows Project  
Museum of Northern Arizona  
3101 N Fort Valley Road  
Flagstaff, AZ 86001

Or scan and email to:  
jthomas@musnaz.org  
Subject: Colton Meadows

\*All gifts will be held in escrow by a third party until the total required fund can be raised