

## Considerations for ongoing understory management practices in oak habitats

| Mowing or masticating  | Prescribed burning  | Targeted grazing/browsing   |
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| <ul style="list-style-type: none"> <li>❖ Mowing/masticating will return thatch and woody debris to the soil. While recycling nutrients and maintaining habitat structure, this will not support fire-dependent native plants.</li> <li>❖ The size of woody debris produced through mowing, mulching, or masticating can have important and distinct implications. Smaller debris breaks down quicker than larger debris. Different machines result in different outcomes.</li> <li>❖ Stumps, both small and large, can restrict access or damage equipment. When carrying out an initial thinning, grind/masticate stumps flush with ground or make sure mower/masticator can be set to a height above cut stump level.</li> <li>❖ Timing: avoid equipment work while the ground is saturated. Avoid mowing between Feb 15 and July 1 so as not disturb nesting birds. If you must mow during this window (i.e. to reduce fire hazard around residences or roads), walk through the area first to locate nests and flush out birds and other wildlife. Observe the life cycle of native plants and mow after they have set seed (typically by late July, with some late-blooming exceptions).</li> <li>❖ Maintain refugia (unmowed/masticated areas) each season for insects, birds, and mammals.</li> <li>❖ A large tractor with a mowing attachment may function if shrubs are young and tender. A weed whacker with a brush-cutting attachment is effective for woody stems &lt;1" diameter. A heavier duty machine such as a skid steer may be required for more established shrubs and saplings.</li> </ul> | <ul style="list-style-type: none"> <li>❖ <b>Do not</b> attempt a prescribed burn without professional help and trained fire personnel and equipment.</li> <li>❖ Many oak-associated plant species are fire-dependent, meaning they cannot persist without fire. Fire and associated smoke can reduce pests, return a stable form of carbon to the soil, and open up bare ground which is useful for bird and insect pollinator nesting and plant reseeding. Depending on a variety of factors, fire could also stimulate growth of some invasive weeds and pasture grasses.</li> <li>❖ Are you willing to work with external agencies like Tribes, ODF, USFWS, and contractors to carry out a burn?</li> <li>❖ A controlled burn can take years to plan and carry out, is dependent on favorable weather, and involves numerous logistical hurdles. Is there a back-up management option if burning is not feasible?</li> <li>❖ A thick layer of mulched material can smolder and create lots of smoke during a burn making it infeasible until said material breaks down.</li> <li>❖ Burning in a woodland will require some build-up of 1 hour and 10 hour fuels to carry the fire.</li> <li>❖ Emphasize reduction of "fuel ladders" to prevent canopy fires.</li> <li>❖ In preparation for burning, prioritize creating accessible fire breaks around potential burn units.</li> </ul> | <ul style="list-style-type: none"> <li>❖ Are there other places for the animals to be when they aren't being used for ecological maintenance?</li> <li>❖ Do grazers compete with or displace native ungulates?</li> <li>❖ <i>Breed</i>—Different species and breeds have different nutritional needs and ecological impacts ("A goat is not a goat").</li> <li>❖ <i>Seasonality</i>—Animals may trample emerging spring plants and eat flowers. This can either be damaging to desirable native plants, or beneficial in the case of invasive plants. Time grazing strategically according to habitat goals, and do plant surveys regularly to monitor impacts.</li> <li>❖ <i>Duration and intensity</i>—animals must be rotated frequently in order to provide ecological benefit. Rotational grazing/browsing requires regular and frequent management and attention to the plant community.</li> <li>❖ <i>Infrastructure</i>—Mobile fencing, water, shelter.</li> <li>❖ <i>Number of animals</i>—mob grazing by a larger herd can be beneficial for a short period of time, but should not exceed carrying capacity of the ecosystem to support them otherwise they will cause degradation.</li> <li>❖ <i>Ground saturation</i>—hoof prints in wet soil can damage plant communities and cause soil compaction.</li> <li>❖ <i>Seed spread</i>—animals can introduce unwanted seeds through their manure, hooves, fur/wool, or supplementary feed.</li> </ul> |