

Maintaining Open Areas

By Don Owen

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Open areas contribute significantly to the experience of users of the Appalachian Trail. For both the day-hiker and long-distance hiker, these areas provide views of the surrounding landscape as well as a change from the forest canopy that covers much of the Appalachian Trail.

With the exception of lands above timberline, however, few of these areas are natural openings. Most are open because of prior (and in some cases, current) agricultural use, and active intervention is necessary to keep natural succession in check. Numerous factors enter any decision to maintain an open area. The principal factors that must be evaluated include:

Physical and legal access: Access to the site, by roads and across public lands, is an overriding consideration for any long-term maintenance plan for an open area that is dependent upon mowing, grazing, raising crops, or prescribed burning. If vehicular access is not available, openings should be comparatively small, to facilitate maintenance by volunteers using hand tools, power tools, or push-behind mowers.

Physical and financial resources: Trail-management partners are constrained by the amount of available manpower and funds for maintaining open areas. In general, the most efficient and cost-effective means of maintaining an open area should be employed, recognizing that a long-term commitment of manpower and funds is necessary. An approximate range of annual costs for each method of maintaining an existing, accessible open area is provided below. These estimates assume the availability of equipment and labor, and labor costs of \$6 to \$10 an hour, depending on the assignment; they exclude costs associated with training, administration, and access to the site:

Method	Estimated Annual Cost
Nonmotorized hand tools:	\$125–\$275/acre*
Hand-held power tools:	\$100–\$200/acre**
Walk-behind mowers:	\$60–\$100/acre
Contract mowing or planting crops:	\$35–\$60/acre
Mowing or planting crops under a special use permit:	\$0/acre***
Grazing under a special use permit (fenced area):	\$0/acre****
Prescribed burning (five-year cycle):	\$20–\$40/acre
Herbicides (hand treatment):	\$60–\$100/acre

* or 25–50 hours of volunteer labor

** or 20–40 hours volunteer labor

*** may receive payment of up to \$30 per acre for hayland and \$70 per acre for cropland.

**** may receive payment of up to \$20 per acre pastureland. Fencing, if not in place, may cost between \$2,000 and \$4,000 per mile (\$100 to \$200 per acre) and require periodic maintenance.

Reestablishment of historically open fields or meadows may cost significantly more than the estimates above.

Aesthetic/scenic benefits: In most cases, the primary attraction of an open area is the view that it provides of the surrounding landscape. Efforts should be focused on those open areas that provide such views and that can be easily recognized as making a contribution to the desired recreational experience for that section of the Trail. Conversely, maintaining an open area that doesn't provide a view or other perceived aesthetic attraction or isn't essential for protection of another significant natural or cultural resource may be a waste of available manpower and funds.

Impacts on natural and cultural resources: Some resources, such as wildlife, frequently benefit from projects to maintain or reestablish open areas. Other resources can be adversely affected. For example, populations of threatened and endangered species, though rarely present in an open area that has been maintained by active measures. An assessment or biological evaluation may be necessary to determine the impact (if any) of a management practice on threatened or endangered species. Cultural resources may be enhanced in a historic landscape or hurt by active maintenance measures in an area of pre-historic or historical occupation.

Limiting factors on specific methods: Other limiting factors, including terrain, vegetation type, climate, regional or local economic viability of agriculture, equipment availability, proximity of adjacent private lands, and public opposition, may preclude or severely constrain certain options for maintaining open areas.

These limiting factors, as well as advantages of specific methods, will be addressed in an article in the June 1992 issue of *The Register*.

Managing Open Areas: Eight Basic Options

By Don Owen

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Though many variations exist, there are eight basic options for management of open areas. The positive and negative aspects of each are summarized below:

Maintenance by nonmotorized hand tools (including scythes, swing blades, pruning shears, and saws):

Positive aspects: generally safer than power tools; effective on uneven, steep, or rocky terrain; highly selective; provides good exercise; silent; odorless; requires no vehicular access.

Negative aspects/limitations: slow by comparison to power tools (though equally as efficient in nonwoody vegetation); labor-intensive; generally only an option for comparatively small areas.

Best suited for relatively remote or sensitive areas (such as areas of biological concern), or small (less than five-acre) open areas not accessible by vehicles.

Maintenance by hand-held power tools (chain saws, brushcutters, and weed eaters):

Positive aspects: less tiring for operator; generally more efficient than non-motorized tools,

particularly in woody vegetation; requires no vehicular access.

Negative aspects/limitations: requires proper safety training and equipment; equipment repairs and maintenance are much more frequent than for non-motorized; equipment transport more difficult than with nonmotorized tools.

Best suited for maintenance or reestablishment of small (less than five-acre) open areas inaccessible by vehicle but easily accessible on foot.

Maintenance by walk-behind mowers (sicklebar mowers, minibushhogs, and string trimmers):

Positive aspects: more efficient than motorized or nonmotorized hand tools; self-propelled mowers can be easily transported to remote areas across most terrain; minibushhogs and stringtrimmers mulch cuttings, improve soil; mowers capable of cutting up to one-inch saplings.

Negative aspects/limitations: maybe difficult or impossible to transport to remote sites over rough terrain; tiring to operate; expensive; frequent equipment maintenance and repair.

Best suited for 1-to 10-acre open areas inaccessible by vehicles.

Maintenance by contract mowing or planting crops (tractor and bushhog or other farm equipment):

Positive aspects: agricultural use generally complementary; aesthetically pleasing and consistent with Trail philosophy, limited disturbance to area most of the year.

Negative aspects/limitations: requires vehicular access and monitoring and supervision of contractor; maintenance may not coincide with Trail values; limited to relatively level, rock-free terrain; may require use of herbicides and/or chemical fertilizers; generally not suitable on slopes that exceed 30 to 35 percent.

Best suited for larger open areas both legally and physically accessible by vehicle.

Maintenance by mowing or planting crops under a special-use permit (tractor and bushhog or other farm equipment):

Positive aspects: agricultural use generally considered complementary; aesthetically pleasing and consistent with philosophy of Trail as a "working environment;" limited disturbance for most of year; limited to relatively level, rock-free terrain; potential financial return to the agency.

Negative aspects/limitations: requires vehicular access and monitoring and supervision of permittee; maintenance may not be carried out in a manner sensitive to Trail values; generally not a long-term solution in regions where agricultural economy is weak; may require use of herbicides and/or chemical fertilizers.

Best suited for larger open areas that are legally and physically accessible by vehicle.

Maintenance by grazing under a special-use permit:

Positive aspects: efficient; a complementary land use, aesthetically pleasing; in some instances, fencing costs borne by permittee.

Negative aspects: requires vehicular access in all but most unusual circumstances; fencing is easily vandalized and expensive to maintain; adequate water source for livestock essential; could have adverse effect on potability of water sources; could affect compaction and/or increase erosion of soils near water sources; in some regions, difficult to find a permittee; livestock subject to predators; poisonous plants a concern in certain areas; safety of hikers a concern if livestock includes bulls.

Best suited for larger open areas easily accessible by vehicle, but generally only a long-term solution in regions where agriculture is a viable economic activity.

Maintenance by prescribed burning:

Positive aspects: limited commitment over long time period; inexpensive; can be accomplished for comparatively large areas; excellent for field and meadow reestablishment in early successional stages.

Negative aspects: requires specialized training and extensive coordination with state and federal officials; usually only narrow window exists for weather conditions necessary to achieve desired results; can stimulate undesirable vegetation in certain locations; adjacent landowners may express concern over possibility of wildfire; adverse visual impact until vegetation "greens up" the following spring.

Best suited for control of woody vegetation in larger open areas that are accessible by vehicle but removed from development.

Maintenance by herbicides (by hand treatment):

Positive aspects: prevents resprouting of woody vegetation without affecting other vegetation; more efficient and less expensive than repeated cutting of woody vegetation by hand.

Negative aspects: requires specialized training and approvals from state and federal officials; short-term negative visual effect (dead vegetation); difficult to administer properly; potential for surface or groundwater pollution from improper handling or application; viewed by some as inappropriate.

In addition, timber harvesting and aerial spraying of herbicides could be used to control vegetation, although these management actions are prohibited within the A.T. management areas of national forests except in unique circumstances. Alternative techniques, such as horse-drawn mowers, may be effective in certain situations.