

Initial Environmental Assessment

of the

Newly Acquired Land

of the

Council of the Magickal Arts

near

Cistern, Texas

Prepared by the Environmental Impact Assessment Team of CMA.

Presented to the Officers and Membership of CMA on September 2000.

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Introduction

On January 21, 2000 the Council of the Magickal Arts (CMA) acquired (at long last!) 101.55 acres of land near the community of Cistern, Texas. This land is intended to be used for the twice-yearly gatherings of CMA, and perhaps for more frequent gatherings in the future. In an effort to minimize negative impacts to the land that might result from this use, the CMA administration created the Environmental Impact Assessment Committee to "conduct basic environmental assessments on the site, to become knowledgeable about the flora and fauna existing there, and to do research in order to provide CMA with a variety of suggestions for development that are low impact."

It is important for members to remember, however, that CMA is *not* an environmental organization. While it may be accurate to generalize that most members of CMA are concerned about the environment, and some of the religious traditions involved with CMA are closely bound to the earth, CMA itself exists to hold two campouts per year and publish a newsletter.

Therefore, it is the goal of the Land Development Team to balance both the practical use of the land as an efficiently utilized recreational property for the purpose of camping by all CMA members with the appropriate environmental protection that is very important to many of the members.

In keeping with this goal, this report provides an overview of the current environmental status of the newly acquired land and makes some proposals for immediate and long-term action that will help protect the land without undue restrictions on the land's primary purpose.

This report is based on information gathered from environmental surveys of the property conducted on March 11 and 25 and April 8, 2000 by B. Tracy and J. Key. In addition, information was acquired from U.S. Geological Survey (USGS) 7.5' quadrangle maps, Fayette County survey records, aerial photographs (Vargis LLC, 1996), and preliminary findings of the Fayette County Soil Survey (Natural Resource Conservation Service [NRCS], not yet published).

Overview of the Land

The property is rectangular in shape (approximately 3100 feet (ft) along an east-west axis and 1400 ft along an north-south axis) and is 101.55 acres in area. It is located approximately 2 miles southeast of the community of Cistern, Texas and can be found on the Cistern, Texas USGS 7.5' quad map (Figures 1 and 2).

The land is approximately 40% forested in a combination of bottomland hardwood and upland hardwood areas. The remaining area is composed of pasture dominated by mature honey mesquite (*Prosopis glandulosa*) and numerous grasses and forbs interspersed with some areas of open pasture that contain very little woody vegetation.

The land is crossed from northwest to southeast by Live Oak Creek, which flows in a southeasterly direction. This creek effectively divides the property into halves. These will be referred to as the eastern and western halves of the property.

The eastern half has several large open areas that will likely serve well as parking areas, but to date have remained unaltered by volunteer efforts on the land. The focus of past volunteer efforts has been on the western half of the property, primarily for the purpose of clearing some of the mesquite to make the area more accessible to camping. It is here that the primary camping, meeting, and activity areas will likely be located for the foreseeable future.

Plant Community Descriptions

Upland Woodland Area

This community type exists primarily as an approximately 150-ft wide band adjacent to the western fence of the property. It is a fairly dense woodland with an overstory (85% closure) of cedar elm (*Ulmus crassifolia*) and post oak (*Quercus stellata*). The dense midstory is composed of cedar elm, sugarberry (*Celtis laevigata*), and yaupon (*Ilex vomitoria*) patches. In the understory is some greenbrier (*Smilax* spp.), a few grasses, and a moderately thick leaf litter.

There are three smaller occurrences of this community type along the northern bound of the property and one area of younger, denser growth of similar vegetation adjacent to the bottomland forest area on the north side of the road (Figure 3).

Bottomland Hardwood Forest

This community type exists in the low area that surrounds the channel of Live Oak Creek as it flows from the northwest to the southeast corner of the property. The channel of the creek winds through this area in a serpentine fashion, exiting and re-entering the property once on the northern boundary (Figure 3).

The vegetation here is composed mostly of cedar elm in the overstory with occasional clumps and spectacular individuals of water oak (*Quercus nigra*) and even more rare occurrences of hickory (*Carya* spp.). The midstory is composed almost exclusively of sapling-stage cedar elm. There is a very low and frequently sparse understory. The complete canopy closure results in a scarcity of direct sunlight to the ground. This and the lack of underbrush and low branches give this area an otherworldly and open feel.

Mesquite Areas

This community type occurs on upland areas in two regions of the property. The eastern half of the property is almost completely composed of this community, and a large area also exists in the western half east of the upland hardwood area and south of the bottomland forest area (Figure 3).

These areas were once pasture, and have a ground cover that is largely dominated by the same herbaceous plants that are prevalent in the open pastures. However, over time they have become dominated by 10 to 20-foot tall mesquite, often approaching complete canopy closure in a low overstory. These areas of denser coverage are also sometimes heavily

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covered with prickly-pear (*Opuntia* spp.) and Christmas cactus (a.k.a. pencil cactus) (*Opuntia leptocaulas*).

Pasture

These areas occur interspersed among the Mesquite Areas (Figure 3). They possess no or almost no woody vegetation, and are dominated exclusively by herbaceous plants and grasses.

Soils

The soil types found on the property are clay loams, fine sandy loams, and loamy fine sands. In general, the soils on the property do not readily accept water, but once water does penetrate into the soil, it drains away fairly quickly.

The low permeability of the soils on the property encourages soil erosion, since water will more readily flow over the top of the soil surface than penetrate into it. During a heavy rainstorm, there is a high probability of erosion occurring on exposed surfaces. It is very important that as little area as possible be allowed to remain unprotected from erosion for any length of time. This can be done either by promoting vegetative cover or, if all else fails, by installing erosion control devices. These can range from something as simple as laying thatch or matting on relatively flat surfaces to the installation of sandbags or similar permanent devices on channel banks.

Specific information about each soil type present on the property can be found in Table 1 and a corresponding map of soil type locations can be seen on Figure 4.

Table 1. Descriptions of the soil mapping units found on the land acquired by CMA on January 21, 2000.

Uf: Uhland clay loam, frequently flooded

The Uhland series consists of very deep, moderately well drained, moderately slowly permeable soils in floodplains of streams. Typically, the surface horizon is very dark grayish brown loam about 3 inches thick. The subhorizons from 3 to 55 inches are layers of very fine sandy loam and loam in shades of brown. The lower layer from 55 to greater than 80 inches is very dark gray clay loam. Slopes range from 0 to 1 percent.

WsA: Wilson clay loam, 0 - 1 % slopes

The Wilson series consists of very deep, moderately well drained, very slowly permeable, nearly level to gently sloping soils on terraces. The soil formed in alkaline clayey alluvium. In a representative profile, the surface layer is very dark gray silt loam about 5 inches thick. The subsoil is silty clay that is very dark gray in the upper part and grayish brown in the lower part. Below 6 inches the soil is olive gray silty clay.

Table 1. continued

ZuA: Zulch fine sandy loam, 0 - 2 % slopes

The Zulch series consists of moderately deep to weathered shale, moderately well drained, very slowly permeable, nearly level to gently sloping soils on uplands. In a representative profile, the surface to 5 inches is dark grayish brown fine sandy loam. From 5 to 13 inches is very dark grayish brown clay with few brownish mottles. From 13 to 16 inches is very dark gray and dark gray clay. Below is grayish brown weakly consolidated alkaline shale that has clay texture.

ChB: Chazos loamy fine sand, 1 - 3 % slopes

The Chazos series consists of very deep, moderately well drained, slowly permeable, nearly level to moderately sloping soils on stream terraces. The soil formed in loamy and clayey sediments. Typically, the surface layer is dark brown and yellowish brown loamy fine sand about 15 inches thick. The upper part of the subsoil to 22 inches is red clay. The lower part to 65 inches is yellowish, grayish and olive clay loam and sandy clay loam. Below 65 inches is reddish brown silty clay loam.

IzA: Inez fine sandy loam, 0 - 1 % slopes

The Inez series consists of very deep, moderately well drained, very slowly permeable soils on uplands. These soils formed in clayey and loamy sediments of Pleistocene age. The surface layer is fine sandy loam 14 inches thick. It is grayish brown in upper 8 inches and light brownish gray in the lower 6 inches. The subsoil is grayish clay with many redoximorphic features.

Specific Feature Descriptions and Recommendations

Area Specific Recommendations

Using the community types as a guide, 8 management units and 3 special features were designated. Management units are composed of areas similar enough in character to be managed together. Special features are areas, structures, or items that require individual consideration when making management decisions. Each of these units and features was given a distinctive name and is discussed in detail below. Refer to Figure 5 for details on the location of these areas.

Eastern Potential Camping Area

This management unit is a large expanse of mixed pasture (50%) and mesquite-dominated (50%) areas. It is bounded on the north by a fence shared with an adjacent property, on the east by Anchor Ranch Loop Road and a fence shared with an adjacent property, on the south by a fence shared with an adjacent property, and on the west by the Creekside Forest area.

Several of the open areas are of sufficient size to serve well as parking areas. One concern that must be met is the threat of mesquite thorns to tires. This risk can be minimized by keeping vehicles only on the roads and parking areas, by placing the parking areas only where there is no previous growth of mesquite (thus minimizing the danger from branches and thorns lying on the ground), and by using gravel or road-base as a paving for the designated parking areas. Covering the parking areas in this fashion will also minimize damage to the ground surface by tires in wet weather.

Lower Field

This management unit is an approximately 5-acre area of completely open pasture. It is bounded on the north by the road, on the east by the Creekside Forest management unit, on the south by a fence shared with an adjacent property, and on the west by the Western Potential Camping Area management unit. There are numerous species of grasses and herbs in the ground cover, and no shrubs or trees. This is an ideal place for setting up pavilions or activities that require open spaces. The fact that there has never been mesquite here means that the likelihood of encountering thorns in this area is minimal.

There is little that needs to be done to this area in the short term. Occasional cutting, burning, or grazing over the next several years should be sufficient to prevent the encroachment of trees into this area and maintain its current state.

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Revel Area

This management unit began as a natural opening in the Western Potential Camping Area management unit that has been expanded and cleared for use as a bonfire area. It is bounded on the north by the northern fork of the road and is otherwise surrounded by the Western Potential Camping Area management unit.

Since the primary purpose of this area is the safe enjoyment of a bonfire, the main concern must be preventing the spread of fire. A large fire ring has already been cut into the turf to prevent the possibility of a creeping ground fire. Plans have been made to build a more substantial stone fire ring in the near future. Nonetheless, vigilance must be exercised in preventing the spread of fire.

Of equal concern to keeping the fire safe is keeping those who would enjoy it safe as well. This area frequently will be used at night, so it is important that it be kept clear of obstacles that could trip or harm a nightwalker. The area was widened by removing several mesquite trees, but many stumps remain. These should be cut to the groundline before any large-scale nighttime use of the area takes place.

Western Woods

This management unit is bounded on the west by a fence shared with an adjacent property, on the north by the Creekside Forest management unit, on the east by the Western Potential Camping Area management unit, and on the south by a fence shared with an adjacent property.

There are some well-established cow trails through this area that could easily be improved to provide access by foot. The canopy in these woods is high and the midstory is relatively open in many areas. It is a pleasant place to walk through and serves nicely as a buffer from any activity or observation from the adjacent property to the west.

This area would be best left essentially as it is. Other than the possible improvement of some trails in these woods to be used as walking trails, the Western Woods area should not require any major changes to make it compatible with the intended land use.

Old Well Pad

This management unit is an approximately 2-acre opening within the Western Woods that appears to be an abandoned well pad (a capped well was discovered in the midst of this area). Since the area was only relatively recently allowed to revert to forest, it is dominated by cedar elm, hawthorn (*Crataegus* spp.), with some young mesquite and eastern redcedar (*Juniperus virginiana*) all of approximately the same height (10-ft tall).

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The eastern edge of this area meets the western edge of the Western Potential Camping Area management unit and is most easily accessed from there. While still being well buffered from the adjacent property to the west, this area is also quite remote from all areas that are currently being developed on this property. The surrounding trees and distance would provide a fine sound barrier, establishing this area as a preferred location for any event requiring quiet or solitude. Prior to any large-scale use, however, some clearing within this area would be required.

Creekside Forest

The management unit lies within the area surrounding the channel of Live Oak Creek. This is a sharply depressed and level area that is flooded every few years, if not every year, for some length of time. It crosses the land in a broad strip running from northwest to southeast.

This is a highly sensitive area subject to government regulation at least in the sense that it lies within the 100-year floodplain, and perhaps in addition as a wetland under the jurisdiction of Section 404 of the Clean Water Act. It is sensitive to erosion and could be damaged by thoughtless activity. It is highly recommended that no construction or clearing be done in this area until the consequences of such activity are better understood. Any proposed activity in this area should be carefully evaluated in terms of environmental impact and regulatory jurisdiction.

There is a potentially useful upland area (Grandmother's Grove management unit) on the northern edge of the property that is currently essentially inaccessible due to the creek. A footbridge of some sort will need to be constructed to give access to this area, as well as to much of the bottomland itself (the majority of the Creekside Forest management unit lies on the north side of the creek). The footbridge is important not just because it will make access easier, but also because it will make it less likely that people will attempt to cross the creek. Every time someone crosses the creek other than over a bridge, it creates a place of potential bank erosion, and every group of people that cross together almost guarantees such damage. Until that time, the use of the area on the north side of the creek should be discouraged or alternate access should be developed.

The creek is crossed by the road near the center of the property. This will be a naturally high traffic area as people cross from one half of the land to the other. Use of this bridge by foot traffic should be encouraged and cutting across the creek on foot should be strongly discouraged. To further this aim, it may be desirable to develop a system of trails leading from areas of high use to other such areas by way of this bridge. This is not a high priority issue now, as most of the use of the land will be concentrated in the lower half

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where the camping and revel areas are for now, but it should be kept in mind as use of the land grows.

Grandmother's Grove

This management unit is an area composed of a combination of upland hardwood forest, mesquite, and pasture areas. It lies atop a small hill on the north side of Live Oak Creek with an approximately 250-ft wide, more-or-less circular opening on its southern side. It is bounded on the east by the Eastern Potential Camping Area management unit, on the south and west by the Creekside Forest management unit, and on the north by a fence shared with an adjacent property.

This is another area that seems ideal for any use requiring solitude, silence, or removal from the main camping and activity areas. Currently, the least potentially-damaging access to this area is provided only from the eastern half of the property, and this is a long and rough walk from the western camping areas. Nonetheless, to minimize impacts to the creekside forest, access should be encouraged via this route rather than directly across the creek until and unless a footbridge and more direct path across the creek can be constructed. Please refer to the discussion of the Creekside Forest management unit for details on this subject.

Livestock Pen

This management unit is an approximately 3-acre fenced pasture enclosure in the northeast corner of the property. This is the logical place to keep cattle or other livestock that roam the property during membership events on the land. This enclosure also holds a very old building that is in an advanced state of decay. To ensure that this area remain useful as a livestock enclosure, no other activity should be allowed in this area. In addition, care should be taken to ensure that the fences around this enclosure are kept in good repair.

Pipeline Right-of-Way

This special feature is a pipeline right-of-way (ROW) flagged as "GPM". It runs from the southwestern corner of the property, along the southern boundary, turns approximately 20 degrees to the north just prior to crossing under Live Oak Creek, and then runs across the southern half of the Eastern Potential Camping Area until crossing the eastern fence line halfway between the gate and the southeastern corner of the property. (It should be noted that the route observed on the ground differs from that mapped on the Fayette County survey records.)

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This is a sensitive area that should be kept in mind for any construction in these areas. Although the risk of damaging the pipeline via surface activity is slight, there may be restrictions placed on activities that are allowed in the pipeline ROW. These restrictions, if any, must be understood and complied with. It is recommended that CMA contact the owners of the pipeline to discover what restrictions have been placed on this area.

The Council Oak

This special feature is a singular post oak approximately 50 feet south of the road near the eastern edge of the Western Potential Camping area. This specimen is of sufficient height and diameter to make it an instantly recognizable landmark and meeting place. It is located near the center of the property, and so serves as an effective focus and symbol of the property as a whole. It is recommended that every effort be made to protect this tree.

At the very least, a vehicle-free zone should be established under the tree to protect its roots from soil compaction and vehicle leaks. It may also be desirable to restrict camping or the erection of temporary or permanent structures within the potential root zone of this tree (approximately 90 ft radius). It is recommended that a definite policy be established regarding the care of this magnificent specimen.

The Road ("The Pagan Way")

The property is accessed from a gate in the approximate middle of the eastern fence. From here, a dirt road in good condition runs west and southwest across the eastern half of the property, crosses the Creekside Forest management unit and Live Oak Creek over a culverted cement crossing, and continues generally westward more-or-less on the boundary between the Lower Field management unit and the Creekside Forest management unit. Just prior to crossing the Revel Area management unit, the road forks, with the main way continuing northwestward along the border of the Creekside Forest management unit and the Revel Area management unit, becoming less developed as it goes, until it ends at the junction of the Western Woods management unit and the Creekside Forests management unit in the northwest corner of the property. The lesser fork runs due south to the southern fence line.

The bridge crossing the creek is quite low and will quickly be overrun by water in the event of a flood. To prevent the possibility of anyone becoming stranded on the western half of the property, this crossing should be improved as soon as circumstances allow. Ideally, the improved crossing

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needs to be high enough to allow enough water under it so that it will remain passable in all but the worst flooding. In addition, it may be desirable to make it wide enough to allow two vehicles to pass side-by-side, but it could also be argued that, since it is a short bridge, requiring vehicles to cross in turn would be worth the savings in construction and materials.

Another, less expensive option may be to install a high-water crossing just south of the current crossing using culverts. This may require the removal of a few trees and improvement of the existing road. Other easement options should be investigated as well.

The fork that runs off to the south under a canopy of mesquite has already been largely cleared out by volunteer crews, and so is quite open. This would make an ideal place to put the vendors at CMA gatherings. The road would provide a good focal point and the tree cover would provide shade for the vendors and the patrons. No other place on the property has these features as well as such a central location. Only minimal impacts associated with camping and foot traffic would be expected from locating this here, and this area could absorb these impacts with little detriment.

Overall Recommendations

Car Placement

Tree roots are easily damaged by the soil compaction that inevitably results from off-road vehicle use. This use includes parking or simply driving off of the roads. Almost all vehicles leak some amount of toxic fluids. Hot catalytic converters can ignite dry grasses. In short, vehicles are hard on the land. However, some areas are less likely to be negatively impacted by vehicles than others.

It is recommended that areas least likely to be negatively impacted by the long-term presence (greater than 24 hours) of vehicles be identified, and that some of these areas be designated and improved as necessary to provide parking areas. In addition, some similar areas should be improved as necessary and designated for car-camping. Vehicles should not be allowed into other areas except for the two potential camping areas, and then only for short-duration (less than 2 hours) loading and unloading purposes.

Litter Awareness

Members of CMA are, on the whole, conscientious people who understand the concept of a land ethic. Nonetheless, it is imperative that all potential visitors be made aware that they are all stewards for the land, and that everyone must hold himself or herself responsible for its care. One

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particularity sensitive resource is Live Oak Creek, and anything spilled or left on the ground at virtually any point on the property has the potential to be washed into the creek. Trash is usually well controlled at CMA events, but there are still people who don't seem to understand that a cigarette butt is litter. Trash cans should be made available and all visitors encouraged to use them.

Trail system

There are numerous wildlife trails that run through the forested areas of the property. These trails could easily be improved and augmented with new paths to create a system of trails. Such a trail system would provide access to most of the areas of the land, would connect the major activity areas, and would help minimize impacts to sensitive areas by discouraging people from cutting across them. Also, by connecting the major activity areas with a system of trails, people would be less likely to become lost while traveling from one to the other. It is therefore recommended that a trail system be designed that makes use of existing paths to provide these benefits.

Foot Traffic in the Creekside Forest

It is certainly understandable that one of the first places on the land that most people will want to visit is the deep green wood of the bottomland. However, it needs to be understood that this area is fragile and prone to erosion. Where trails are available, their use should be encouraged. Crossing the creek on foot should be strongly discouraged (in this regard, it may be sufficient to make people aware that creeks and creekbeds are prime habitat for cottonmouth snakes (*Agkistrodon piscivorus*), which are venomous and hostile if they feel threatened).

Camping

The Creekside Forest management unit is seen by many members as a highly desirable place to camp during a CMA event. However, there are several factors that argue against allowing camping in this area.

Firstly, due to the low permeability rate of the soils and the fact that the Creekside Forest management unit is located in a FEMA-designated 100-year floodplain, it is possible that this area may be completely submerged during flash flood events. Another safety concern is the presence of potentially dangerous wildlife, such as cottonmouth snakes and feral hogs (*Sus scrofa*). Also, the bottomlands are the most fragile of the areas on the property, and may be damaged by camping and the activities associated with camping, such as fires, tents, and frequent foot travel to and from camp.

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It is strongly recommended that a more detailed study of the potential impacts to this area resulting from camping activity be conducted. Until such a study is completed, it is recommended that no camping be allowed in the Creekside Forest management unit.

Except for the Livestock Pen management unit, camping will likely have little negative impact on the 4 other management units on the property. It is nonetheless recommended that a definite policy regarding which areas are available for camping be established.

Firewood Gathering

One of the results of the frequent flooding that takes place in the bottomland is the accumulation of piles of debris that are deposited by floodwaters. To the inexperienced eye, these may appear to be ready-made piles of firewood. However, not only is this debris usually too rotted to burn well, it provides a very important function during floods: as the creek overflows its banks, the debris and standing vegetation slow the water, which lessen erosion and allow important chemical reactions to take place between the water and submerged soil surface.

Therefore, the collection of firewood from the bottomlands should be restricted. The land clearing activities that have been occurring and that will likely continue in the future will provide some wood, but visitors should expect to have to bring their own firewood if they expect to have a campfire, just as when we rented land. The land will not be able to sustain the demand for wood that would otherwise be placed upon it for very long.

Native Vegetation

Native vegetation tends to be easier to establish and provides appropriate habitat for existing wildlife. Non-native vegetation can become invasive and out-compete native species to the detriment of native wildlife. Therefore, in the event that any planting is done on the land, it is recommended that only species native to the area be used unless a specific need requires otherwise.

Conclusion

The land recently acquired by CMA near Cistern, Texas is a beautiful property with a variety of plant and animal habitats present. Its past use has not been too harsh, and so the land still has a "live" feel to it. In fact, some people have reported that they have felt an awakening of the spirit there just in the three months that CMA has owned and been working on the land.

With proper care, attention to the needs of the land, and a conscious attempt to minimize impacts resulting from the desired uses of the land, the membership of CMA can look forward to a lifetime of coexistence with the land and the joy of not only watching the land grow more healthy, but knowing that they had a significant part in making that growth happen.

References

- Vargis LLC. 1996. Cistern SE orthorectified digital-composite image of aerial photographs from National Aerial Photography Program (NAPP), 1995. Image number: 2997154. Herndon, VA.
- United States Geological Survey (USGS). 1981. Cistern Texas 7.5 Minute Quadrangle Map. United States Department of the Interior Geological Survey. Reston, VA 1982.
- Survey Records of Fayette County, Texas. Peggy Brown Survey Abstract 21.
- Natural Resource Conservation Service (NRCS). Unpublished soil survey data for the Soil Survey of Fayette County, Texas. Sheet number 32. United States Department of Agriculture.

Appendix A: Figures

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Figure 1. Location of the land acquired by CMA on January 21, 2000 near the community of Cistern, Texas. The cutout and overview image are from the Cistern, Texas 7.5 minute USGS quadrangle map.

Figure 2. Photo of the land acquired by CMA on January 21, 2000. This photo was taken from a low flying aircraft near the time the land was acquired. Visible in the center of the image is the eastern portion of the land and the road leading across the creek. (Photo by Greg Evans)

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Figure 3. Habitat types present on the land acquired by CMA on January 21, 2000 as recorded in surveys made in March and April 2000.

Figure 4. Soil mapping units present on the land acquired by CMA on January 21, 2000.

Figure 5. Proposed management areas of the land acquired by CMA on January 21, 2000.