

RESOURCE MANAGEMENT POLICIES

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ABOUT THIS DOCUMENT

Document Purpose

This Resource Management Policy document (RMP) defines the policies and practices used by the Midpeninsula Regional Open Space District to protect and manage resources on District lands. The word resources as used in this document includes plants, animals, water, soil, terrain, geologic formations, historic, scenic, and cultural features. Recreational resources are described in other documents.¹

The Resource Management Policies are intended as a tool to:

- Set the framework for the District's resource management program;
- Provide general direction for issue-specific and site-specific planning;
- Give staff and Board the basis for informed, consistent, and effective resource management decisions;
- Inform the public of the purpose and intentions of the District's resource management program;
- Provide a basis for evaluation of the District's progress in reaching its resource management objectives.

This document does not provide detailed plans for management of individual preserves or resources. Other more specific management plans will supplement these policies to resolve the implementation strategies on a site-specific basis.

Document Organization

The Resource Management Policies are organized into chapters by subject and resource category. The chapter format generally consists of an introduction, goal, policies, and implementation measures. Each introduction provides background and rationale for the goal and policies that follow. The goal is phrased as a broad, general statement describing the desired state or condition to be achieved. The policies state what steps the District will take in order to attain that goal.

Each policy includes one or more recommended implementation measures, highlighted by bullets (•). These implementation measures are intended to reflect current knowledge and practices regarding resource conservation, but are not necessarily comprehensive. They further define the policy by specifying the actions needed to carry it out.

The District will implement the RMP through a planning process emphasizing a team approach. It will draw upon varied expertise to balance resource needs and public interests. As part of the resource management review process, staff will present an annual report. It will describe existing and proposed resource management plans and projects, and progress towards resource management goals.

Carrying out the policies and implementation measures will be achieved over time, and is subject to funds being available. Competition for District funds requires balancing the expense of resource management with the needs of land acquisition and the cost of proposed access improvements.

¹These documents include **Use and Management Plans** for individual preserves, **Trail Use Guidelines and Mitigation Measures**, **Land Use Regulations** and the **Visitor's Guide to the Open Space Preserves**.

Document Review and Amendment

The RMP is a "living" document that will grow and change regularly, based on new experience and information. It will be reviewed and updated at least every five years to respond to changing conditions. The staff or Board may decide to amend the document for a significant single purpose at any time. Minor deviations from policy normally would not require amending the Policies document.

GOAL AND POLICY SUMMARY

This summary subsection includes all the goal and policy statements from the Resource Management Policies document. The introductory text and the alternative implementation measures are omitted to allow for easier reference to subjects, and to provide a concise document for adoption by the Board of Directors. The Board adopted this goal and policy summary section (pages iv-ix) on October 12, 1994.

1 Resource Management Mission Statement

The District will protect and restore the diversity and integrity of its resources for their value to the environment and to people, and will provide for the use of the preserves consistent with resource protection.

- 1.1 Favor protection of resources when use significantly interferes with resource protection.
- 1.2 Provide an effective interdisciplinary resource management program to protect and enhance natural and cultural resources. This program should include planning, interpretation, research, protective measures, maintenance, and monitoring practices.
- 1.3 Prevent or minimize human-caused and accelerated impacts, including erosion, invasion by non-native species, disruption of the natural flow of water, degradation of water quality, trampling of vegetation, and displacement of wildlife.
- 1.4 Protect and restore known rare, endangered, or special concern species and habitats, as well as seriously degraded or deteriorating areas. Give priority to endangered habitats and consider the relative scarcity of the specific resources involved.
- 1.5 Manage open space as a composite resource, not separate and isolated parts. Maintain ecological processes as well as individual species and features. Consider the regional context and cumulative impacts of resource management decisions. Favor long-term goals over short-term benefits.
- 1.6 Support recreational use of District lands, consistent with resource protection. Consider present and potential use.
- 1.7 Balance efforts to protect and restore resources with efforts to acquire and provide public access to lands.
- 1.8 Monitor changing conditions and the effectiveness of resource management practices.

2 Planning and Implementation

Goal: Informed, consistent, and effective resource management

- 2.1 Adopt a resource management planning process.
- 2.2 Prepare a Resource Management Plan for each preserve or geographic area addressing its specific resources and management needs.
- 2.3 Provide staff and budget, and assign responsibilities to support, effective resource management planning and implementation.
- 2.4 Review and amend resource management policies and implementation measures to improve their effectiveness.
- 2.5 Comply with environmental regulations and standards.

3 Natural Systems Management

Goal: Functioning, self-supporting ecosystems which maintain the natural abundance, diversity, and ecological integrity of plants and animals

- 3.1 Restore seriously degraded or deteriorating areas.
- 3.2 Maintain, restore, or simulate natural ecological processes where feasible.
- 3.3 Restore fire to a more natural role in preserve ecosystems.
- 3.4 Conserve genetic diversity.

4 Vegetation Management

Goal: Viable native plant communities characteristic of the region

- 4.1 Maintain the diversity of native plant communities.
- 4.2 Use native species occurring naturally on similar sites for vegetation replacement or enhancement projects.
- 4.3 Protect and enhance habitat for special status plant species.

5 Wildlife Management

Goal: A healthy, diverse native wildlife population

- 5.1 Understand and maintain the diversity of native wildlife.
- 5.2 Protect, maintain and enhance habitat features that have particular value to native wildlife.

- 5.3 Protect animal populations against the impact of human actions.
- 5.4 Protect and maintain the habitats and populations of special status animals.

6 *Non-Native Species Management*

Goal: Control non-native species which have a substantial impact on preserve resources.

- 6.1 Discourage spread of invasive non-native species whenever control is reasonably possible.
- 6.2 Manage both native and non-native species according to integrated pest management (IPM) techniques in cooperation with responsible agencies.

7 *Water Resources*

Goal: Natural Water Courses, wetlands and hydrologic processes

- 7.1 Protect surface and ground waters from contamination.
- 7.2 Minimize interference with natural flow of surface and ground water.
- 7.3 Understand and protect water rights and utilization.
- 7.4 Restore, maintain or enhance water quality on District lands.

8 *Geology and Soils*

Goal: Minimal soil loss and protected geologic features

- 8.1 Prevent unnatural soil erosion and sedimentation.
- 8.2 Locate and construct facilities to avoid high-risk areas subject to landslides and erosion.

- 8.3 Protect geologic features from human-caused damage.

9 *Scenic and Aesthetic Resources*

Goal: Lands with natural appearance, diversity, and minimal evidence of human impacts

- 9.1 Minimize evidence of human impacts within preserves.
- 9.2 Maintain significant landscapes or features that were formerly maintained by natural processes.
- 9.3 Minimize unnatural noise within preserves.

10 *Agricultural Use*

Goal: Agricultural uses that *do not* significantly impact natural resources, but *do* support heritage or scenic resources

- 10.1 Continue or reintroduce agricultural use in a preserve only when all of three conditions are met: land already disturbed, doesn't unreasonably limit public access, provides other resource management benefits, including income to the District.
- 10.2 Require sound agricultural management practices.
- 10.3 Let former agricultural areas return to a natural state.

11 *Heritage Resources*

Goal: Preservation of significant heritage resources for the education and enjoyment of present and future generations

- 11.1 Identify significant heritage resources, including historic structures, historic landscapes, historic trails, and archaeological and paleontological sites.
- 11.2 Create a program to provide information about the District's heritage resources.
- 11.3 Cooperate with historic preservation agencies and organizations.

- 11.4 Provide management plans to protect heritage resources, including historic structures and significant landscapes, artifacts, and archaeological and paleontological sites.
- 11.5 Support the rehabilitation and use of historically significant structures.

12 *Research and Information Collection*

Goal: Documented scientific knowledge of preserve resources and resource management techniques as a basis for management decisions

- 12.1 Maintain resource information files for each preserve and resource subject.
- 12.2 Coordinate and cooperate with institutions, agencies, organizations, and individuals who are conducting resource-related research.
- 12.3 Undertake research necessary for planning or management decisions, when information is unavailable through other sources.
- 12.4 Allow collecting, trapping, or other field research activities only in conjunction with legitimate research consistent with the District's management goals.

13 *Education*

Goal: Increased public knowledge and appreciation of the natural and cultural resources of the preserves, and support for their conservation

- 13.1 Provide interpretive facilities and materials.
- 13.2 Provide environmental education outreach and opportunities.
- 13.3 Use environmental education to gain public support for resource management goals and policies.
- 13.4 Work with the Public Affairs Program to increase public awareness of resource values.

1 THE DISTRICT'S RESOURCE MANAGEMENT MISSION

Midpeninsula Regional Open Space District

Midpeninsula Regional Open Space District (MROSD) is a public agency that owns and manages 23 open space preserves totalling about 36,000 acres of land. Created by a voter mandate in 1972, the District's goal is to permanently preserve a regional open space greenbelt, linking District lands with other public parklands.

MROSD boundaries enclose an area of 330 square miles in northern Santa Clara and southern San Mateo counties, and a small portion of Santa Cruz County. Extending from San Carlos to Los Gatos, the District directly serves a population of over 600,000. Preserves vary in size from 54 acres (Stevens Creek Nature Study Area) to over 9,000 acres (Sierra Azul). Elevations range from sea level in the baylands preserves to 3,806 feet atop Loma Prieta in the Sierra Azul Range.

The District manages land to maintain or restore its natural condition. There are few "improvements," other than parking areas, some rest rooms, and informational signs. Over 250 miles of trails invite activities such as hiking, biking, jogging, horseback riding, and picnicking. The preserves are open to the public every day, free of charge. Because the preserves are "close to home," they serve as popular weekday as well as weekend recreational destinations.

District lands protect a variety of habitats rich in numbers and kinds of plants and animals. Tidal salt marshes--home to the endangered clapper rail and salt marsh harvest mouse and used by thousands of migratory birds--fringe San Francisco Bay. Above the intensely urbanized "flatlands" west of the bay, ridges of the Santa Cruz mountains form an impressive scenic backdrop. Their mix of oak woodland, grassland, chaparral, coastal scrub, evergreen and coniferous forests creates distinctive patterns on the hills. These lands are critical watersheds for San Francisco Bay and the central Pacific coast. They also provide a peaceful natural recreational setting for visitors seeking refuge from the pressures of urban life.

Purposes of Open Space

Open space preserves provide permanent sanctuaries for remnants of native wildlife and vegetation. Once abundant, these irreplaceable resources are rapidly disappearing as human presence and activity encroach on natural habitats. Other reasons to preserve open space discussed in the District's **Master Plan** include protecting scenic beauty, public health and safety, unique sites and agriculture; shaping urban growth; and providing low-intensity outdoor recreation opportunities.

Need for Resource Management Policies

MROSD faces many issues and choices in managing its land and resources. The preserves present a constantly changing mosaic of complex ecosystems with a wide variety of qualities and purposes. Managers must be able to distinguish and decide among competing priorities. There may be conflicts about proper values or actions to take. Ecosystems evolve, the amount of land managed by MROSD changes, employees who function as caretakers come and go, and the public's interests and use differ over time and place. A well-defined set of policies can help maintain consistent and effective resource management in light of these changes.

In March 1974 MROSD adopted its **Basic Policy**, stating the major goals that guide the District in its efforts to preserve open space. Objective 3 in the **Basic Policy** document specifically addresses resource management:

The District will follow a land management policy that provides proper care of open space land, allowing public access appropriate to the nature of the land and consistent with

ecological values.

Four policies then follow which address preservation, being a "good neighbor," public access, recreation, and agriculture.

Although Objective 3 implies a direction for managing the land, it does not offer specific guidance as to what constitutes "proper care." With increasing visitation and the resulting increase in pressures upon natural systems, it is important to plan wisely for long-term stewardship. This document is intended to help provide that guidance.

Mission Statement for Resource Management

The mission statement defines the purpose toward which the District directs its efforts. The guidance of the District's **Basic Policy, Master Plan**, and of state mandates, shows that the proper mission for the District's resource management program is one of stewardship. Stewardship involves protecting resources and sustaining them in perpetuity.

The District's **Master Plan** repeatedly cites protection and preservation as major goals of open space acquisition. The District calls its lands "preserves" rather than "parks," emphasizing its goal of resource preservation. The following overall mission statement reflects the District's commitment to resource management:

1 Resource Management Mission Statement

The District will protect and restore the diversity and integrity of its resources for their value to the environment and to people, and will provide for the use of the preserves consistent with resource protection.

Overall Resource Management Strategies

The following general policies summarize overall strategies the District will use to achieve its resource management mission.

- 1.1 Favor protection of resources when use significantly interferes with resource protection and preservation.**
- 1.2 Provide an effective interdisciplinary program to protect and enhance natural and cultural resources. This program should include planning, interpretation, research, protection, maintenance, and monitoring practices.**
- 1.3 Prevent or minimize human-caused and accelerated impacts, including erosion, invasion by non-native species, disruption of the natural flow of water, degradation of water quality, trampling of vegetation, and displacement of wildlife.**
- 1.4 Protect and restore known rare, endangered, or special concern species and habitats, as well as seriously degraded or deteriorating areas. Give priority to endangered habitats and consider the relative scarcity of the specific resources involved.**
- 1.5 Manage open space as a composite resource, rather than as separate and isolated parts. Maintain ecological processes as well as individual species**

and features. Consider the regional context and cumulative impacts of resource management decisions. Favor long-term goals over short-term benefits.

- 1.6 Support recreational use of District lands consistent with resource protection. Consider present and potential use.**
- 1.7 Balance efforts to protect and restore resources with efforts to acquire and provide public access to lands.**
- 1.8 Monitor changing conditions and the effectiveness of resource management practices.**

2 PLANNING AND IMPLEMENTATION

Policies in this chapter describe implementation procedures and standards in general terms. They outline the relationship to existing District policies and procedures where appropriate, and assign certain responsibilities. They also describe how resource management will be incorporated into the District's overall planning, budgeting, and decision making process.

Planning and Management Documents and Steps

Documents and steps used in planning and managing the preserves are outlined below. Planning documents, ordered from the general to the specific, include:

Basic Policies. The five overall objectives that guide the District in its efforts to preserve open space. Each objective is accompanied by additional clarifying policy statements. Objective 3 and its sub-policies, discussed in the previous chapter, relate to resource management.

Strategic Plan. A medium-term planning document to coordinate and project the annual action plan tasks toward 5- to 10-year horizons.

Annual Action Plan. Describes actions for each program and its sub-program. Intended to support each basic objective and related policies. Action Plans for the Planning and Operations programs propose those actions most specifically related to resource management.

Site Emphasis Plan. A five-year plan, updated annually, lists all District sites in relative order of priority for improvement and presenting current and proposed projects. It also provides a **Target Use and Management Plan Review Schedule**.

Resource Management Policies (RMP). This document, providing general policies for managing District resources.

Subject-Specific Management Guidelines. Provide guidance in managing a specific resource or issue, District-wide. Although the RMP provides many specific implementation measures, staff need additional guidance on technical issues and procedures. Procedures and standards are too detailed to include in the RMP and will take time to formulate. Development and review of a proposed implementation tool will often constitute a significant project in its own right. Existing examples of subject-specific guidelines are the **Trail Use Guidelines and Mitigation Measures** and the **Field Safety Procedures Manual**. New guidelines specific to resource management might include a District-wide fire management plan, or guidelines for managing a particular habitat type.

Preserve Use and Management Plans. Focus on existing conditions and designate uses and improvements for each preserve. Topics covered include site description and use, planning considerations, access and circulation, trail use designations, signing, brochure, structures and improvements, natural resources and agricultural management, visitor safety and public liability, special activities, dedication status, ADA compliance, and CEQA compliance.

Resource Management Plans. The RMP recommends augmenting or incorporating existing use and management plans with resource management plans to be developed for each preserve or geographic area. Each plan would include information contained in current use and management plans, as well as greatly expanded resource studies.

Resource management studies will provide detailed inventories of all resources, including physical, biotic,

scenic, aesthetic, and heritage resources. They will also consider the regional setting, adjacent land uses, and status of relevant cooperative planning efforts beyond the preserve boundaries. This detailed information will form the basis for site-specific goals and management recommendations. It will thus allow management decisions to be based on specific knowledge of site resources.

The California Environmental Quality Act (CEQA) requires that state and local agencies identify and analyze the possible impacts of plans, policies, and regulatory programs, and specify ways that environmental damage can be reduced or avoided. According to CEQA, a significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment. Increasing knowledge of District resources through preparation of resource management plans will help staff identify potential environmental impacts and mitigation measures for District projects.

Project Implementation Plans. Define objectives and steps necessary for implementing a specific project, including schedules and budgets. They are supported by the annual budget.

2 *Planning and Implementation*

Goal: Informed, consistent, and effective resource management

Policies and Implementation Measures

2.1 Adopt a resource management planning process.

- Amend the adopted Open Space Use and Management Planning Process to include preparing a **Resource Management Plan** for each preserve or a designated geographic area.

2.2 Prepare a Resource Management Plan for each preserve or geographic area addressing its specific resources and management needs.

- In each **Resource Management Plan**, define and designate environmental zones or special management areas to simplify management practices and land use limitations.
- Formulate and use a site resources checklist to identify existing and potential resource management needs. Refer to this information when preparing or updating the **Resource Management Plan** and when planning resource projects.
- Add to the checklist as new data become available.

2.3 Provide staff and budget, and assign responsibilities to support effective resource management planning and implementation.

- Share responsibility for administration of these policies and implementation measures among the Planning, Operations, and Public Affairs Programs.
- Incorporate medium-to long-term resource management program goals into the District **Strategic Plan**.
- Identify specific resource management planning and implementation projects in both the **Site Emphasis Plan** and annual **Action Plan**.
- Undertake an annual program to complete these identified projects, and present an annual review of the results of this program as part of mid-year and year-end **Program Evaluation**.

- Prepare a schedule for **Resource Management Plan** preparation, and incorporate it into the **Target Use and Management Plan Review Schedule**.
- Provide staff and budget in the annual District budget to support preparation of resource management plans, implementation tools, resource management and restoration projects, and monitoring activities.

2.4 Review and amend resource management policies and implementation measures to improve their effectiveness.

- Amend policies and implementation measures through Board action when supported by new knowledge or events.
- Conduct an annual review of resource management actions and results, and amend policies and implementation measures as appropriate.
- Conduct a comprehensive review and update of the RMP and related documents and procedures every five years.

2.4 Comply with environmental regulations and standards.

- Stay abreast of, and inform appropriate staff of, new rules, regulations, lists, and guidelines published by responsible agencies and organizations.
- Review all projects following the provisions of the California Environmental Quality Act (CEQA) and, where appropriate, the National Environmental Policy Act (NEPA).

2.6 Monitor projects and take appropriate action if expected results do not occur. (See 1.8 and 3.1)

3 NATURAL SYSTEMS MANAGEMENT

Characteristics of Natural Resources and Ecosystems

Natural resources include both living (plants, animals, and microorganisms) and non-living components (light, heat, air, water, soil, and mineral nutrients). These components and their interactions are called ecosystems and defy precise definition. They are not geographically bounded and can be large or small. They are constantly changing as a result of genetic change, interactions among components, exposure to dynamic physical processes such as wind, fire, or rain, and especially to human influences.

The living organisms within a particular ecosystem are not random. In an undisturbed ecosystem plants and animals live together on a site because they are precisely adapted both to that physical environment and to each other. Ecological processes governing their relationships are complex, with consequences often not completely understood. Examples of such processes include energy flow, food webs, nutrient cycles, and the movement of water.

Since all parts of an ecosystem are interwoven, a change in one part is reflected throughout the entire system. A healthy ecosystem regulates itself by reactions that counter changes. If not overstressed, ecosystems have a remarkable ability to recover from outside disturbance. But severe environmental stress can interrupt ecological relationships that maintain balance and stability in an ecosystem. Even a small change may "snowball," producing unanticipated, undesirable side effects and eventual loss of organisms from the ecosystem.

A loss of even a single species reduces the ability of the ecosystem to restore itself. It becomes less stable and more vulnerable to further environmental change. When this happens, natural processes may result in an entirely new regime of plants and animals. Left alone, a deeply disturbed ecosystem will not necessarily restore itself or succeed to natural community types.

Importance of Preserving Biodiversity

An ecosystem will be more stable and less vulnerable to environmental change if it includes a diversity of species and habitats. Biodiversity describes the natural variety and abundance of plants and animals and the environments in which they live. Their interactions create a strong and flexible web of life that stabilizes the environment in which we live as well. Managing for biodiversity involves understanding these interdependent relationships and protecting processes that connect plants and animals to each other and to their environment.

Loss of biodiversity is an issue of great concern in California. Humans have a tendency to simplify ecosystems. Many native species and habitats have been degraded, fragmented, or lost because of human activity. In addition to development of habitat for human use these activities include water use, commodity use of biological resources such as grazing and logging, and pollution of air and water. The loss may be obvious, as in the destruction of a habitat or elimination of a particular species. Or it may be subtle, as in the gradual displacement of a population, or loss of genetic variation within a population.

Opportunities for preserving biodiversity occur at all levels of organization: genes, individuals, populations, species, communities, and ecosystems. Without some protection at all levels, especially the ecosystem level, diversity will be lost. Preserving large blocks of natural habitat is key to preserving biodiversity. When a species is reduced to a few isolated populations due to fragmentation of its habitat, a natural stressor such as fire or drought can wipe out one of the remnant populations. Each time this happens, the species comes closer to extinction.

Ecosystem Approach

The realization of the importance of habitat has caused a shift in focus in managing for biodiversity. Instead of trying to rescue endangered species one-at-a-time, the new approach attempts to preserve large areas of functioning natural communities or ecosystems. This broader focus thus improves the chances for threatened species. It should also help prevent other species in the same habitat from *becoming* endangered. The ecosystem approach has more chance of success and lower long-term cost than the single species approach.

It is also well-suited to cooperative regional conservation planning projects such as preserving continuous greenbelts.

Definition of Natural

The District defines natural and native to mean those plants, animals, conditions, and processes that evolved in California before European contact. Land management practices of Native Americans in California kept the land in balance for centuries. In contrast, human activities in the last two hundred years have permanently changed California's natural communities. Fencing open lands fragmented habitats, displacing or eliminating wildlife. Some plants and animals brought by immigrants from their homelands spread so aggressively that they have crowded out California natives. Domestic stock heavily graze and severely erode fertile lands once lightly grazed by native animals. Water has been diverted and natural fires suppressed. Even places that look "wild" usually bear imprints of human disturbance.

The biodiversity of the San Francisco Bay area has greatly decreased as a result of European settlement. Two hundred years ago the Santa Cruz Mountains supported a rich tapestry of plants and animals - nearly 2,000 species of plants and 350 species of vertebrate animals. Several thousand Ohlone were the only people living in the southern Bay area. Now more than two million people call this area home. Some animals that used to be common are gone, including the pronghorn antelope, California condor, tule elk, wolf, beaver, and grizzly bear. Many other species are suffering population declines. The Bay was once much bigger, and ringed with extensive marshes. Flocks of geese, ducks and other waterfowl were so plentiful that they literally darkened the sky.

Although it would be impossible to return the District preserves to a completely "natural" state, natural systems provide a goal to aim towards. Ecosystems that evolved in this area are uniquely well-suited to it. Varied native plants and animals give District preserves their distinctive characteristics and make them interesting places to explore. Healthy native ecosystems which are relatively intact can help to maintain this heritage. They also serve as informational models by which we may attempt to extend resource management principles and environmental education efforts to adjacent, disrupted areas.

Natural Resource Management

Natural resource management includes any activity intended to protect, maintain, or restore natural resources and processes. The main intent of natural resource management is to sustain normally functioning ecosystems in lands that humans use, and to introduce compensatory measures to mitigate adverse impacts of human activities.

Management practices may be either active or passive. Active management involves physical manipulation of plant and animal communities. Examples include: mowing, clearing, grazing, burning, seeding and planting, fertilizing, mulching, watering, and applying biological and chemical control methods. Some of these techniques can also be used to maintain or mimic natural ecological processes such as succession, flooding, burning, grazing, and burrowing.

Passive management leaves an area alone but protects it from further detrimental impacts so that normal restorative processes of the ecosystem may occur. Examples of passive management techniques include: regulating land use to protect habitat; creating a buffer zone through adjacent land acquisition; classifying sensitive areas and restricting or excluding public access to these areas.

Effective resource management decision making requires familiarity with preserve ecosystems. Among factors that must be known are: the components of a system; processes that influence them, including those impacted by people; the existing stage of ecological succession; the extent to which past human uses have

altered the natural evolution of the system; and the degree and types of alterations.

Resource management also includes inventorying and monitoring resources through field studies such as population surveys and plant transects. Over time, data from these studies shows whether conditions are improving, deteriorating, or staying about the same. Monitoring can help determine effectiveness of specific management actions and signal any need to shift from passive to active management or vice versa.

Resource Management Issues

Specific threats and challenges to District resources may include:

- Protection of particularly sensitive or endangered plants, animals, and habitats
- Suppression of fire in habitats where fire is ordinarily a natural part of maintaining a healthy, diverse ecosystem
- Cattle grazing
- Management of invasive non-native plants
- Introduced predators or feral animals
- Habitat fragmentation due to unnatural barriers to plant and animal movement
- Visitor use impacts
- Development adjacent to preserve boundaries
- Continuing negative impacts of past land use practices
- Erosion caused by human activities
- Watershed protection
- Toxic pollution

The policies in this section address broad threats to natural systems not covered in other subject-specific policy sections.

3 *Natural Systems Management*

Goal: Functioning, self-supporting ecosystems which maintain the natural abundance, diversity, and ecological integrity of the plants and animals

Policies and Implementation Measures

3.1 Restore seriously degraded or deteriorating areas.

- Identify seriously degraded or deteriorated areas in need of restoration. Photograph, map, and describe these sites. (See also 4.1.)
- Develop a rating system to rank potential restoration projects. Give priority to habitats with high diversity of native species, and to habitats which are rare or sensitive. Also consider potential for further resource damage, time necessary for restoration, probability of success, and availability of funding.
- Identify high priority restoration projects and estimate staffing and funding needs. Incorporate chosen projects into both the annual **Site Emphasis** and **Action Plans** (see 2.3.).
- Seek outside funding to plan and carry out restoration projects. Research potential funding sources including grants, "mitigation banks," and within the private sector.
- Work with the District's volunteer program and field staff to develop a trained volunteer "Habitat

Restoration Team" to help carry out restoration projects.

- Monitor and evaluate the success of restoration actions. Use this information to refine future efforts. Establish a monitoring plan before starting the project.

3.2 Maintain, restore, or simulate natural ecological processes where feasible.

- Allow natural ecological processes such as succession, flooding, burning, grazing, decay, predation, and insect activity to function undisturbed, except when they threaten human life, property, or significant natural resources.
- Rely on natural processes to control native animal populations. Consider modifying or curtailing human access when there is a conflict between humans and native animals. Intervene directly in consultation with responsible wildlife agencies when natural processes are not sufficient to control native animal populations and when human life, property, or significant natural resources are threatened. (See 5.3.)

3.3 Restore fire to a more natural role in preserving ecosystems.

- Work with the California Department of Forestry and other appropriate fire management and regulatory agencies to develop and carry out plans that use prescribed burns to maintain natural systems.
- Coordinate this policy with a District-wide fire management plan that will address reducing the hazard of wildfire on District lands.

3.4 Conserve genetic diversity.

- Use plants and seeds from the same geographic area for restoration projects in that area. (See 4.2)

4 VEGETATION MANAGEMENT

District Plant Communities

Located on a geologically active peninsula between the Pacific Ocean and San Francisco Bay, District lands have an unusually diverse and dynamic ecology. The San Andreas Fault, one of the world's longest and most active faults, cuts through the eastern side of the Santa Cruz Mountains. Continuing movement along the fault and differing composition of the underlying rocks created many soil types and terrain features. The area's mediterranean climate with mild wet winters and long hot summers produced a natural cycle of fires. These and other factors allowed diverse native plant communities precisely adapted to these complex and varied conditions to thrive.

A plant community is a group of plants growing in an interrelated manner on a particular site. Each community has characteristic dominant and associated species, spacing, and habitat.

Native plant communities in District preserves include the following general vegetation types:

- Salt marsh and brackish marsh
- Freshwater marsh
- Redwood forest
- Douglas fir forest
- Coastal scrub
- Chaparral
- Mixed evergreen forest
- Riparian forest
- Native grassland
- Oak woodland

The condition of vegetation affects other resources in the preserves. Vegetation determines the water-holding capacity of a watershed and helps control soil erosion. A mixture of natural plant communities gives scenic character to a landscape, and provides the diversity and stability needed to support native wildlife. Loss or fragmentation of plant communities reduces their ability to provide the full range of ecological benefits, including maintenance of species diversity, soil and watershed protection, wildlife, and recreational and aesthetic values. It is the main reason why animal species have become endangered or threatened.

Threats to Vegetation

Continuing effects of past and present land use practices, including fire suppression, grazing, logging, non-native plant invasion, feral animals, and uses which trample vegetation, threaten the District's native plant communities. Such activities have caused drastic and rapid changes in vegetation. In some areas the alteration is permanent.

Fire Suppression

Periodic fires were a part of natural ecological processes on lands which now make up the District preserves. As a result, many species evolved with fire adaptations and need periodic fire for renewal. Fire opens forests to new generations of younger trees, purges grassland of invasive shrubs, and stimulates seed germination and shoot growth in chaparral. Without fire, fire-adapted communities are eventually replaced by forest, and plant and animal species are lost. Fuel in unburned areas can build up to such a high level that when a wildfire occurs, it can have devastating effects.

Local Native Americans allowed natural fires to burn and also deliberately set fires to clear underbrush and create meadow areas attractive to deer and other animals. Open meadows improved visibility for hunting and encouraged the growth of acorn oaks and other edible plants. Later, policies of fire suppression created

problems.

Impacts of fire suppression continue to reduce biodiversity in the preserves. Grasslands and oak woodlands are decreasing in area due to invading brush and forest species. Stands of coastal scrub and chaparral have aged and are not being renewed. Dense tangles of brush and young trees have largely replaced the park-like understory beneath redwood and Douglas fir forests and mature oak woodlands described by early European explorers.

Protection of Sensitive Species

A number of plants listed by the California Native Plant Society as rare, endangered, or of limited distribution have been identified within or near District preserves. Although populations of several species have been accurately located, more site-specific information is needed to prevent inadvertent destruction of sensitive species.

Vegetation Management Alternatives

Vegetation management is the maintenance, establishment, or restoration of target vegetation that meets a preserve's management objectives. The terms restoration and revegetation are used interchangeably to describe the process of replacing existing vegetation on a site with desired vegetation that existed there before. Selecting effective vegetation management strategies requires understanding natural ecological processes at a specific site. It also may involve coordinating with neighbors, as part of the District's "good neighbor" policy.

Management measures may include actions such as eliminating or restricting activities that destroy vegetation, maintaining grasslands and meadows that were formerly maintained by natural processes, conducting or cooperating with other agencies in controlled burns, controlled grazing, and either planting or removing vegetation.

Methods commonly used to remove unwanted vegetation include mechanical (mowing or discing), chemical (herbicides), prescribed fire, and biological (insects and diseases, plant competition, grazing). Each method has different impacts on the species to be controlled and the species to be retained. Often it is best to combine two or more methods. Timing and intensity of the application(s) can greatly affect the results.

High Use Areas

High use areas such as those around parking lots, visitor centers, restrooms, and specially surfaced or whole access trails, require more intensive vegetation management than natural areas that make up the bulk of District land. Manual control of invasive non-native vegetation in high use areas is often ineffective and can damage trail surfaces. Careful use of systemic herbicides on target species appears to be the best solution to controlling vegetation in these areas.

4 Vegetation Management

Goal: Viable native plant communities characteristic of the region

Policies and Implementation Measures

4.1 Maintain the diversity of native plant communities.

- As part of the Resource Management Plan for a preserve or geographic area: map and describe plant communities; analyze successional trends using aerial photographs, sequential photographs from set photo points, and where necessary, plant transects; and formulate site-specific vegetation

management goals.

- Identify appropriate areas for restoring lost or altered native plant communities and restore them to a natural condition. This is often best done by restoring natural processes and controlling invasive plants, rather than by planting. (See 3.1.)
- Manage native grassland sites to encourage reestablishment and perpetuation of California native grasses.
- Manage oak woodland to encourage reestablishment and perpetuation of California native oaks.
- Control invasive non-native plants. (See Section 6.)

4.2 Use native material occurring naturally on site or on similar sites for vegetation replacement or enhancement projects.

- Use only local seed sources to revegetate or enhance degraded areas. The best source of native seed is topsoil taken from adjacent intact habitat and applied thinly.
- Use fill, mulch, and seed mixtures that are as free as possible of non-native plants in restoration projects. Know where such materials come from. (See 8.1 for possible exception.)
- Set up a District plant nursery or work with a local nursery to grow native plants needed for restoration projects.
- To control erosion after fires, avoid seeding with rye grass, "Zorro" fescue, Harding grass, or other aggressive plants. Barley is preferable.
- Use locally collected plant material that is biologically and visually appropriate to the surrounding wild landscape and appropriate to the stage of plant community development at the site.
- Encourage District tenants to use native plants for landscaping to provide natural habitat.

4.3 Protect and enhance habitat for special status plant species.

(Special status plants include state and federally listed threatened, rare, and endangered species, species of special concern, and species listed by the California Native Plant Society.)

- Identify the location and condition of special status plants and their habitats as part of the Resource Management Plan for a preserve or geographical area.
- Conduct surveys for special status plants during the appropriate flowering season before significant site-specific development or any unusual anticipated increase in use. Modify the project or use to avoid impacting such plants.
- Protect areas with special status species from human activities and other negative impacts such as erosion. Examples of protective measures include trail rerouting, signs, and fencing.
- Do not transplant naturally occurring wild plants as a mitigation measure, except as a last resort.

5 WILDLIFE MANAGEMENT

As pressures from the expanding human population increase, District preserves become more important as refuges for wildlife. The term wildlife as used here includes all animals, from the smallest invertebrates to the largest mammals. Without a sufficient amount of proper habitat, an animal cannot survive. As a result, most

management of native wildlife involves management of habitat conditions and visitor activities rather than hands-on management of the animals themselves. Protection of habitat is key to protection of wildlife.

Animal Habitat Characteristics

Habitat refers to the area where an organism occurs, its natural home or "neighborhood." An animal's habitat includes plant communities which provide the shelter, food, and water it needs to live and reproduce. Outside forces and substances affecting an organism, such as geographic location, climate, and topography, are also part of its habitat.

Unlike plants, animals move from place to place and require a variety of land, both daily and seasonally. Some have precise habitat requirements; others are more flexible. Some species live their entire lives within one vegetation type. Others use several vegetation types in a single day or use different habitats at different stages of their lives. Some animals use one habitat for part of the year and migrate elsewhere for the rest. It is important to preserve all these habitats to preserve diversity of wildlife.

Critical habitats for wildlife are those which offer food, cover, topography, and other characteristics essential to survival and reproduction. Examples include springs and seeps, nesting and breeding sites such as standing dead trees, movement and migration corridors, pathways to perennial streams, and foraging areas. Some of these habitats are considered sensitive, in that they are vulnerable to disturbance and do not recover easily.

The Importance of Riparian Habitats

Certain habitats are intensively used by many kinds of wildlife. Riparian (streamside) habitat, with its wide variety of plants and readily available water, is perhaps the most important. It provides drinking water; dense, green foliage for cover and food; shade in which to rest and escape the heat; and protected corridors through dry, open areas or other adverse habitat conditions. Wildlife depend on water and will often travel long distances to reach it. People are also attracted to riparian areas. Excessive human use can cause problems from trampling, soil compaction, and destruction of vegetation.

Predators Indicate Habitat Health

The presence of large predators is a strong indicator of a healthy habitat. Large predators are at the top of the food pyramid and depend on the survival of large numbers of smaller animals. The greenbelts of District and neighboring public lands in the Skyline and Sierra Azul areas are large and diverse enough to support such wide-ranging predators as black bear, mountain lion, coyote, bobcat, fox, and numerous hawks and owls. The chance to see such animals is a big incentive for many people to visit the preserves.

Results of Habitat Fragmentation

In the last century, population growth, urban expansion, and construction of roads and highways have fragmented habitats and interrupted wildlife movement corridors. Fragmentation has four main consequences for wildlife:

1. Isolated habitat patches may not be large enough to support wildlife that require a certain size of habitat. Fragmentation may also destroy particular plant species that some animals require for food or cover.
2. Wide-ranging animals such as the larger predators can be cut off from territories they need for feeding and breeding.
3. Non-native species become more common, displacing natives and thereby also reducing biodiversity.
4. Inbreeding increases when populations are cut off from neighboring populations. The resulting lack of diversity in the gene pool reduces the population's long-term chance of survival. A single

environmental change or disease could then wipe out all members of the population.

5 *Wildlife Management*

Goal: A healthy, diverse native wildlife population

Policies and Implementation Measures

5.1 Understand and maintain the diversity of native wildlife.

- Inventory wildlife as part of the Resource Management Plan for a preserve. Identify wildlife movement patterns and habitat features with high value to wildlife and formulate site-specific wildlife management goals.
- Consider impacts on wildlife when planning trails and other facilities.
- Develop a wildlife data base to record wildlife sightings.
- Prohibit release of non-native or urban-adapted native wildlife into preserves.
- Do not allow release of native wildlife except where species can be marked or banded and enough data is available to support an introduction.

5.2 Protect, maintain and enhance habitat features that have particular value to native wildlife.

- Inventory critical and sensitive wildlife habitats and develop management strategies for their protection.
- Leave brush piles, snags, and fallen trees in areas where they do not pose a fire hazard, to provide cover and nesting sites for animals.
- Before removing man-made structures, evaluate their wildlife habitat value. Mitigate any impacts likely to be caused by their removal.
- Maintain stock ponds as wildlife watering sources (see 7.3).

5.3 Protect animal populations against the impact of human actions.

- Discourage human intrusion into sensitive wildlife habitats by appropriate placement of facilities and trails. Locate high-use areas near preserve boundaries to minimize fragmentation of interior habitat.
- Reduce roads, fences, and other barriers to wildlife movement within preserves. Identify and protect established wildlife crossings to allow movement across existing roads.
- Remove unnecessary fences and barbed wire from preserves.
- Seek to reduce barriers to wildlife movement on a more regional basis.
- Reduce conflicts between wildlife and humans through notification and education, control of human access and, as a last resort, control of wildlife presence or movement.
- Prohibit hunting or trapping in District preserves except as a management tool or for scientific or educational purposes (see 12.4).
- Develop criteria for designating temporary (e.g., day-use) access areas for domestic animals into

District preserves. Incorporate the criteria into District regulations.

5.4 Protect and maintain the habitats and populations of special status animals.
(Special status animals are those listed as state or federally rare or endangered, as well as federal candidate species and state species of special concern.)

- Identify location and condition of special status animals and their habitats as part of the Resource Management Plan for a preserve or geographic region.
- Conduct surveys of special status animals in affected areas *before* initiating significant development or any substantial increase in use. Resolve conflicts in favor of the animals.

6 NON-NATIVE SPECIES MANAGEMENT

The District defines native to mean species which occur, have occurred, or may occur in a preserve as a result of natural processes. Non-natives are species which moved into, or were introduced into, preserve environments as a result of human activities. Pests are animal or plants that proliferate beyond natural control and interfere with the natural processes which would otherwise occur on open space lands. Strategies for managing pest populations depend on whether the pest is a native or non-native species. Native pests are not controlled except where they significantly threaten human health or safety, or present an unacceptable threat to significant natural values (see 3.1).

Non-Native Plants

Non-native plants have greatly altered many of California's natural plant communities. Because they originated elsewhere, many non-native plants have no pests or diseases. They are extremely adaptable and can thrive in a wide range of conditions. The most invasive non-natives grow fast, reproduce early, produce many seeds which can remain dormant for years, and tolerate disturbance and full sun. They gradually crowd out native plants and reduce native habitat for wildlife. Instead of increasing diversity, they drastically reduce diversity and frustrate revegetation efforts.

The main invasive non-native plant species in District preserves include: French Broom, Scotch Broom, Pampas Grass, and Yellow Star Thistle. Others include: Acacia, Ailanthus, Harding Grass, Purple Star Thistle, Black Locust, Himalayan Blackberry, Fennel, Milk Thistle, Poison Hemlock, Periwinkle, and Eucalyptus. Once established, these species become very difficult to control and impossible to altogether eradicate.

Non-Native Animals

Ranking second to loss of habitat resulting from human intrusion, non-native animals pose the greatest threat to native wildlife. Escaped domestic animals and other non-natives can thrive in this favorable climate. Once established in a preserve, they compete for valuable resources and disturb the sensitive balance of natural food webs. Bullfrogs and wild pigs are examples of invasive introduced animals found in District preserves.

Wild (feral) pigs are the non-native species with the most obvious impact on District lands. They have been widespread in the central coast of California since about 1970 and have rapidly increased their range in recent years. They are particularly abundant in Sierra Azul Open Space Preserve as well as in surrounding areas, and are starting to invade other foothill and skyline preserves. They reproduce rapidly, dig up meadows and wetlands, and carry diseases which can affect people and livestock. They eat acorns, bulbs, and soil animals, and are intelligent and difficult to control. Under ideal conditions, their population can double every four months.

Integrated Pest Management

Integrated pest management (IPM) refers to coordinating environmental information with pest management techniques to prevent unacceptable levels of damage with the least hazard to people, property, and the environment. It often involves using a combination of chemical and non-chemical techniques to control pests.

For example, two treatments may be equally effective for controlling invasive plants, but one may require less labor and another require less herbicide. Treatment choice thus depends on organizational objectives and available resources. Programs to control non-native plant and animal species require long-term commitment. With many non-natives, short-term lapses in management activity may negate years of expensive control programs.

6 *Non-Native Species Management*

Goal: Control of non-native species which have a substantial impact on preserve resources, whenever control is reasonably possible

Policies and Implementation Measures

6.1 Discourage spread of invasive non-native species.

- Develop a program to monitor invasive non-native plant and animal species to detect population growth and range expansion. Post information about invasives at appropriate trailheads.
- Take measures to prevent invasion of non-natives in undertaking projects that disturb vegetation.
- Give highest priority for control efforts to non-native species which are actively displacing native species, especially in sensitive habitats, areas next to private property, and areas with high visitor use.
- Coordinate and cooperate with neighbors to control invasive species.
- Consider the impact of removal of non-native species on native wildlife.
- Do not introduce non-native plants and animals into preserves, except to control detrimental non-native species, and then only when the following two conditions are met: (1) available native species will not meet the needs of the management program; and (2) the non-native species will not become a pest (based on best available information).
- If a non-native animal becomes a problem and removal is advisable, make an effort to save the animal's life by finding a suitable home in a non-natural setting.

6.2 Manage both native and non-native species according to integrated pest management (IPM) techniques in cooperation with responsible agencies.

- Use IPM procedures to determine when to control pests and whether to use mechanical, chemical, fire, biological, or other means.
- Understand the biology of an invading species, determine its disruptive potential, and assign acceptable levels of damage. Use control methods that cause the least hazard to people, property, and the environment. Identify a proposed control or elimination program and its effects prior to its implementation. For example, before using prescribed fire to control encroaching vegetation, consider fire's impact on the overall habitat and landscape and weigh this against other control methods such as physical removal.
- Take action against pests only when and where natural controls appear to be failing and the pest will cause unacceptable impacts on preserve resources, neighboring private property, or human health.
- Consider the full range of pest control alternatives. Choose strategies and times of treatment that are the least disruptive to natural controls, least hazardous to human health, least toxic to non-target organisms, least damaging to the general environment, and most cost-effective. Direct the control method narrowly at the target organism to avoid broad impacts on the ecosystem.
- Use chemicals only where alternative methods are known to be ineffective. Apply biodegradable chemicals in an environmentally safe manner. Take all reasonable precautions to protect the environment, the health and safety of District employees, and preserve visitors.

- Attempt to monitor non-pest populations in treated areas before and after applying pesticide to detect any unanticipated effects. Keep records of all pesticides applied and all pest monitoring activities. Submit an annual report of all pesticide and herbicide use to the Board of Directors.

7 WATER RESOURCES

Water is one of the most important forces shaping habitats and biodiversity. District water resources include groundwater (springs and seeps), freshwater (streams, ponds, reservoirs), salt water tidal wetlands (San Francisco Bay), and seasonal wetlands. These water resources have natural, scenic, recreational, scientific, and educational values.

Wetlands are lands that are transitional between terrestrial and aquatic systems. The water table is usually at or near the surface, or land is covered by shallow water. Some functions of wetlands include the following: provide habitat for fish and aquatic wildlife, offer foraging habitat or water for terrestrial wildlife and birds, absorb flood waters, reduce erosion, recharge aquifers, cleanse pollutants, provide aesthetic values, support unique plant associations, and provide habitat for many rare species of plants and wildlife. In California, wetlands of all types have been greatly reduced in area from their historic extent and are being rapidly lost or adversely impacted.

Watersheds Within the District

Twelve major permanent streams originate within and drain District preserves. From north to south they include: Purisima; Lobitos; Tunitas; La Honda/San Gregorio; Pescadero; Cordilleras; San Francisquito; Adobe; Permanente; Stevens; Los Gatos; and Guadalupe Creeks. The headwaters of these watersheds are currently relatively undisturbed, yielding water of excellent quality.

Most preserve watersheds contain steep ridges and deep canyons typical of the Santa Cruz Mountains. The sources of surface water, runoff, and groundwater are precipitation, coming as rain mostly between November and April, and springs. Many smaller creeks and streams are intermittent, reflecting this seasonal distribution of rainfall. Winter flows are higher, especially during and immediately following storms.

The Influence of Water Movement

Water flows in predictable patterns on the surface, through rocks beneath the soil, and in underground water tables. Plants and animals are adapted to specific movement patterns of water, sediment, and nutrients occurring in their area. A significant change in any of these factors may reduce or eliminate original species in favor of those better able to survive in the new conditions. Maintaining and restoring hydrologic patterns is important in maintaining healthy ecosystems.

The condition of soil and vegetation influences the rate at which water moves as well as its quality and quantity. Dry leaf litter acts as a mulch that helps absorb and conserve rainwater. Maintaining an adequate cover of vegetation and vegetation residue is the most successful long-term approach to controlling erosion and maintaining water quality and quantity.

Water Resource Issues

Issues having potential to lower the water quality on District lands include:

- Erosion and sedimentation
- Fire
- Agricultural runoff, including runoff from livestock operations, tree farms, herbicides, pesticides, and fertilizers
- Septic system wastewater disposal
- Chemical contamination from neighboring areas or from former use of preserves
- Cumulative impacts from preserve use, area development, and other general nonpoint sources of pollution.

7 Water Resources

Goal: Natural water courses, wetlands and hydrologic processes

Policies and Implementation Measures

7.1 Protect surface and ground waters from contamination.

- Inventory existing facilities and uses that affect riparian areas and wetlands, and prepare plans for protection or restoration, as appropriate.
- Research and pursue cleanup of potential sources of pollution, such as buried fuel tanks, improperly dumped or stored material, and faulty waste or drainage systems.
- Use self-contained sanitary facilities or place rest rooms where they cannot contaminate water sources.
- Regulate and control activities having a high potential for pollution.

7.2 Minimize interference with natural flow of surface and ground water.

- Manage human activities to control erosion--for example, close certain trails to bicycle and equestrian use during the wet season, and route trails away from stream banks.
- Restore hydrologic processes altered by human activity by installing culverts, drainage diversions, and erosion control materials and structures.
- Minimize soil disturbance during all construction projects.
- If possible, construct trails, roads, parking areas, and buildings so that streams are neither diverted nor interrupted, and runoff is not concentrated. Minimize creation of impermeable surfaces.
- Identify and mitigate significant impacts of altered water flow on plants and animals, including aquatic organisms.

7.3 Understand and protect water rights and utilization.

- Identify existing uses of surface water on newly acquired lands, as part of the acquisition process. Include non-human use. Protect water rights for appropriate and beneficial existing or possible future uses.
- Monitor impacts of water usage on District and neighboring lands.
- Maintain stock ponds as wildlife watering sources (see 5.2).
- Comment on land use decisions affecting District water resources. Recommend and support measures to maintain natural water quality, channel flow, and sedimentation rates.

7.4 Restore, maintain or enhance water quality on District lands.

- Protect and enhance vegetation to improve watershed productivity and water quality.
- Manage agricultural leases to protect and enhance riparian areas and to maximize the protection or

enhancement of water quality.

- Regulate the nature and intensity of human use to protect water quality.

8 GEOLOGY AND SOILS

District lands include a diverse, interesting, and challenging set of dynamic geological resources to manage. These include steep slopes, earthquake faults, landslide hazards, unstable and erosive soils, and attractive but fragile rock formations. Often, open space is the only appropriate use for such areas.

Soil - A Valuable and Fragile Resource

The most important part of any land resource is its surface layer. Soil provides the rooting medium for plants and supplies most of the nutrients they require. As plant communities mature, plant roots, surface debris, and animal remains break down and are incorporated into the soil. Over time, this organic material builds up soil structure and fertility. If depleted or lost, soil takes a long time to regenerate.

Factors Contributing to Soil Loss

In some areas, District soils are eroding faster than normal due to loss of plant cover, disruption of natural drainage patterns, and/or landslide activity. Past land use practices are often at fault. Poor placement of roads or trails, shortcutting of trails, grazing or cultivation practices, and development of facilities can speed up natural erosion. These activities destroy protective plant and mulch cover, exposing soil to wind and water. Recovery of soils from such disturbances is slow. Monitoring, preventing, and, where necessary, remedying human-caused erosion are all important parts of the District's resource management responsibilities.

8 *Geology and Soils*

Goal: Limited soil loss and protected geologic features

Policies and Implementation Measures

8.1 **Prevent unnatural soil erosion and sedimentation.**

- Identify and monitor problem areas of soil erosion and slope failure.
- Reduce significant human-caused erosion by limiting the causative activity, properly locating or relocating facilities, installing drainage or erosion control devices, or revegetating the area. Construct roads and trails that direct water flow into natural patterns and thus avoid gully formation.
- Reconstruct roads and trails that display significant erosion.
- Limit agricultural activities, facility development, and trail construction in riparian areas to protect them from disturbance.
- Minimize soil disturbance associated with construction and maintenance operations.
- Seed to rehabilitate disturbed ground and lessen erosion. Time seeding projects to ensure adequate soil moisture for seed germination.
- If erosion control is the objective, use the most effective plants. Consider using native plants alone and native and non-native mixtures, in combination with mulching or mechanical measures.

- Prevent, to the extent possible, the physical removal or contamination of soil and contamination of other resources.

8.2 Locate and construct facilities to avoid high-risk areas subject to landslides and erosion.

- Avoid construction of major improvements (examples: buildings, roads, pipelines, and septic tanks) in landslide-prone areas and near active fault traces. Identify these areas in the Resource Management Plan for the preserve.
- Align and re-align trails so as to follow existing roads, paths, and natural landform contours as much as possible, to reduce vegetation and soil loss.

8.3 Protect geologic features from human damage.

- Identify locations and document the condition of geologic features (example: sandstone formations, serpentine outcrops, sag ponds).
- Monitor such features to determine if action is needed to prevent or stop damage.
- Control access to features requiring protection by informing visitors, placing signs and barriers, and enforcing restrictions (see 13.1).

9 SCENIC AND AESTHETIC RESOURCES

The District's **Basic Policy** and **Acquisition Policy** documents recognize protection of scenic values as one of the primary benefits of open space acquisition. The scenic and aesthetic resources of District lands provide physical and psychological relief from the stresses and uniformity of urban life. They also contribute to our "sense of place" - our appreciation of the qualities which set this area apart from others and make it feel like home.

District preserves include a variety of natural settings and landscapes which form magnificent scenic backdrops to the urbanized peninsula. Local residents and visitors particularly appreciate the interplay of color, pattern, form, and light on the coastal mountains, where rugged topography, hot sun, wind, and fog combine to create dramatic and appealing contrasts in vegetation.

In some cases, preserving a significant scenic or historic landscape may involve managing it to actually *prevent* natural succession. For example, a shallow pond may gradually fill in and become a meadow. An open grassland may be replaced by coastal scrub. Restoring or mimicking natural processes can help maintain the appealing visual and biological diversity of native communities.

9 *Scenic and Aesthetic Resources*

Goal: Lands with natural appearance, diversity, and minimal evidence of human impacts

Policies and Implementation Measures

9.1 Minimize evidence of human impacts within preserves.

- Clarify and document appropriate standards for designing and locating trails, parking areas, and buildings.
- Locate trails to minimize their visibility from a distance.
- Where feasible, locate telecommunication towers, power lines, water towers, firebreaks, and other infrastructure along margins of roads, next to existing structures or where vegetation and terrain help ease undesirable visual and environmental impacts. Install utility lines underground, if practical.
- Cluster new facilities near existing development, where possible.
- Design facilities such as structures, bridges, fencing, benches, and barriers to harmonize with natural landscape features, colors, and materials.
- Cluster, reduce, and place signs to lessen their visual impact.
- Rehabilitate areas degraded by human use by restricting access or type(s) of use, rerouting trails and roads, removing unsightly man-made features and non-native plants, restoring natural contours, and revegetating with native plants.

9.2 Maintain significant landscapes or features that were formerly maintained by

natural processes.

- Control encroaching vegetation where it adversely affects significant scenic, historic or habitat resources (see Sections 4, 6, 11).
- Control vegetation to create or maintain important scenic viewpoints and vistas (see Sections 4, 6).
- Require District tenants to maintain landscapes and improvements to acceptable visual standards that do not detract from the visitor's experience or adversely impact wildlife.

9.3 Minimize unnatural noise within preserves

- Prevent or reduce unnatural sounds that adversely impact preserve resources or visitors' enjoyment of them.

10 AGRICULTURAL USE

Most of the District's land was formerly used for agricultural production. Today, the District maintains some limited agricultural activities on its land. Current agricultural uses include grazing, a Christmas tree farm, vineyards, a chestnut orchard, and a working farm for environmental education.

Many past agricultural uses substantially altered natural systems. Some of this land recovered naturally. Other land requires active management to restore it to a natural condition. Some areas that were intensively grazed are now thick with invasive weeds, such as yellow star thistle, that continue to spread and displace natives. Erosion, sedimentation, and logjams cause problems in some formerly logged areas. It is important to understand the impacts of agricultural activities and manage them properly for these uses to be consistent with natural resource protection. The District does not consider commercial logging as agriculture.

Properly managed agricultural uses can benefit the District. They can provide wildlife habitat and maintain scenic or heritage resources. Often, they have aesthetic value that enhances our quality of life. Agriculture can be used to instruct the public about recent historic uses, and to reduce fire hazards by reducing fuel accumulation.

10 Agricultural Use

Goal: Agricultural uses that *do not* significantly impact natural resources, but *do* support heritage or scenic resources

Policies and Implementation Measures

10.1 Continue or reintroduce agricultural use in a preserve only when all of the following conditions are met:

- The natural landscape has already been disturbed in a manner and extent similar to that which would be caused by the proposed agricultural use.
- The agricultural use will provide other resource benefits such as provision of wildlife habitat, heritage protection, reduction of fire hazards, public education, or income to the District.
- The agricultural use will not unreasonably limit public access.

10.2 Require sound agricultural management practices.

- As part of an agricultural lease, require agricultural activities to be supported by management plans that protect natural, heritage, and scenic resources, and reduce potential conflicts with recreational use.
- Mitigate soil erosion associated with agricultural activities to prevent soil loss and protect surface water from increased sediment loads. Employ measures such as: reseeding; mowing instead of discing; excluding grazing, or using seasonal or rotational grazing systems; reducing animal numbers; and improving animal distribution (e.g., put salt licks, hay, water, etc. out in various locations to keep livestock from excessively disturbing one part of the site).

10.3 Let former agricultural areas return to a natural state.

- Use active management techniques where necessary.

11 HERITAGE RESOURCES

Heritage resources include any object or feature passed down from preceding generations, such as archaeological/paleontological artifacts, and historic sites and structures. Prehistoric resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark, friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic resources include stone or adobe foundations or walls, structures and remains with square nails, and refuse deposits, often found in old wells and privies. In addition, historic landscapes, such as cleared ridgetops or vineyards, may be considered heritage resources.

Historic Uses of District Lands

District lands have played a significant role in local history. The land was home to the Ohlone Indians, and became the site of early mission holdings and of Mexican land grants. Cattle ranching predominated in the flatlands and oak woodlands. Logging operations occurred throughout the redwood forests. Evidence of past uses can be found on many preserves--Indian artifacts at Rancho San Antonio and Russian Ridge, logging at Purisima Creek Redwoods and El Corte De Madera Creek, and historic structures and ranching at Sierra Azul and Fremont Older.

Although District land is undeveloped, many of its familiar landscapes are the result of years of human activity such as grazing, farming, or burning. To maintain these historic landscapes, active management may be necessary. Some examples of historic landscapes on District property include the grassland ridges at Monte Bello, Windy Hill, and Russian Ridge, and the vineyard at Picchetti Ranch.

Some structures on District property have historic significance. The District has received grants to restore historic houses, an historic vineyard, and other historic structures on District preserves.

11 *Heritage Resources*

Goal: Preservation of significant heritage resources for the education and enjoyment of present and future generations

Policies and Implementation Measures

11.1 Identify significant heritage resources, including historic structures, historic landscapes, and archaeological and paleontological sites. (See 12.1.)

- Collect heritage resource information as part of the research for resource management plan.
- Compile a District-wide heritage resource inventory with the assistance of interns and volunteers. Gather information from knowledgeable local sources, such as universities, historical societies, and residents including remnant Ohlone peoples.
- Seek information on local Native American culture, including medicinal/food use of native plants, dwellings, etc.

11.2 Create a program to provide information about the District's heritage resources.

- Include heritage resource information in the docent training program. Offer public hikes that focus on heritage resources.
- Include information about heritage resources and local history in District publications.
- Install signs to interpret heritage resources. Where appropriate to protect the resource install signs at trailheads, rather than on-site.
- Investigate a location to display artifacts found on the preserves.

11.3 Cooperate with historic preservation agencies and organizations to gather information and protect resources.

- Support legitimate archaeological research.

11.4 Provide management plans to protect heritage resources, including historic structures and artifacts, archaeological and paleontological sites, and significant historic landscapes.

- Assess the vulnerability of heritage resources, in order to determine the appropriate level of public information. When ethnographic resources are involved, consult associated ethnic groups and take their concerns into account as appropriate.
- Locate facilities, such as trails, staging areas, and planned structures so as to avoid loss or degradation of significant heritage resources.
- Manage significant historic landscapes, such as grassy ridges and man-made ponds or reservoirs, to ensure their continued existence.
- Follow federal, state, and local regulations on cultural resources. If artifacts are uncovered during construction, stop work until a cultural resource consultant has evaluated the situation.
- Follow the guidelines set forth in "A Professional Guide for the Preservation and Protection of Native American Remains and Associated Grave Goods."
- Leave archaeological resources undisturbed, unless removal of artifacts or digging in one site is justified by protection, research, interpretive, or development requirements.

11.5 Support the rehabilitation and use of historically significant structures

- Support projects proposed by individuals and other organizations to rehabilitate or otherwise use these structures, consistent with preservation, public appreciation, and public safety.
- Apply for grants and pursue cooperative projects to finance rehabilitation and interpretive signing.
- Make additions to historic structures when appropriate for their continued use. Additions should harmonize with the older work.

12 RESEARCH AND INFORMATION COLLECTION

Achieving the District's resource management objectives requires support in the form of basic academic research and applied field studies. This level of research is usually conducted by colleges and universities, by consultants as part of environmental analysis for project proposals, or by environmental and wildlife organizations such as the California Native Plant Society, the Nature Conservancy, or the Audubon Society. Although the District may conduct or sponsor research directly, it will continue to depend on, and support, outside research to expand its knowledge about the natural resources under its care, and to provide the basis for sound planning and management decisions.

12 Research and Information Collection

Goal: Documented scientific knowledge of preserve resources and resource management techniques as a basis for management decisions

Policies and Implementation Measures

12.1 Maintain resource information files for each preserve and resource subject.

- Organize a filing system for resource information. Systematically gather information from appropriate agencies, studies, reports, etc.
- Recruit interns and volunteers to help organize and maintain resource information files, in cooperation with the District's volunteer program.
- Prepare a standardized reporting format and procedure to allow field staff, docents, volunteers, and interested public to contribute information to the resource files.
- Where appropriate, provide a clearinghouse function for regional resource information.

12.2 Coordinate and cooperate with institutions, agencies, organizations, and individuals conducting resource-related research.

- Maintain contacts and participate as appropriate in events and activities supporting scientific research and sound resource management practices.
- Maintain a list of potential resource management research projects. Encourage research directed to specific sites, District-related issues, or resource management practices.
- Provide limited financial or internship support for appropriate research.

12.3 Undertake research necessary for planning or management decisions, when information is unavailable through other sources.

- Carefully research existing information. Explore opportunities for cooperative studies to collect additional information.

- Retain qualified consultants or researchers to collect additional information or conduct studies, when information is unavailable through other sources.
- Share significant new information through resource agency contacts and local and regional data bases, such as the California Natural Diversity Data Base.

12.4 Allow collecting, trapping, or other field research activities only in conjunction with legitimate research consistent with the District's management goals.

- Require a District permit for collection, trapping, archaeological research, or field studies on District lands. Develop a standard form for this purpose, to be administered by the Operations Program and requiring approval from the Resource Planner.
- Require the researcher to share the information resulting from the studies with the District and other appropriate parties.
- Require the researcher to obtain appropriate permits from responsible wildlife agencies, such as the State Department of Fish and Game and the Federal Fish and Wildlife Agency.

13 EDUCATION

Education is the key to developing broad public support for acquiring and protecting open space. Increasing public knowledge and appreciation of the preserves' natural and cultural values will improve support for their conservation. We need to alert the public to the treasures that are out there, so they will care about protecting them.

The resource management program will play a vital role in education by providing a greatly improved information base. Studying the current condition of preserve resources and discovering how best to maintain and restore them will reveal information that stimulates public interest, makes the preserves more enjoyable places to visit, and inspires respect and a sense of stewardship.

The District's Public Affairs and Visitor Services programs are the main vehicles to communicate this information to the public. Staff works closely with the public, local school districts, and other agencies to provide environmental education to students, organizations, and the general public. The Public Affairs program gets the word out through publications, presentations, and working with the media. The volunteer and docent subprograms greatly increase public outreach opportunities by teaching others to help. The volunteer program provides a means for the public to learn firsthand about stewardship, by participating in District projects. The docent program trains docents to conduct tours of the preserves and interpret District resources.

Interpretation is an educational method that aims to reveal meanings and relationships by firsthand experience, and by illustrative media. The District's interpretive program includes personal communication by District staff and docents, as well as brochures and other publications, exhibits, and audiovisual presentations.

Interpretive programs are often the most effective means of stimulating understanding and appreciation of open space, providing information, promoting stewardship of resources, and helping ensure visitor safety.

13 Education

Goal: Increased public knowledge and appreciation of the natural and cultural resources of the preserves, and support for their conservation

Policies and Implementation Measures

13.1 Provide interpretive facilities and materials.

- When appropriate, coordinate and cooperate with local agencies and organizations, particularly schools, that would like to use District lands and facilities for environmental education.
- Provide interpretive signs and brochures at preserves and the administrative office.
- Complete the David Daniels Nature Center at Skyline Ridge Open Space Preserve. Operate an interpretive program with volunteer staff to support its use by the general public and local schools and organizations.
- Maintain and expand the District's interpretive trails.

13.2 Provide environmental education outreach and opportunities.

- Involve school children in District-sponsored environmental projects and educational activities.
- Publish information about the District's mission, resources, management practices, and goals in District publications. Encourage publication of this material in the general media.
- Provide environmental education programs and materials to schools, groups, and organizations.
- Support and/or participate in special events and programs which foster public knowledge and appreciation of open space resources.
- Provide opportunities to learn about natural resources and support resource management activities through the docent and volunteer programs.
- Provide additional "refresher courses" for docents to help them provide interpretive services.

13.3 Use environmental education to gain public support for resource management goals and policies.

13.4 Work with the Public Affairs Program to increase public awareness of resource values.