

## 14.0 Park Maintenance



## 14.0 PARK MAINTENANCE

### 14.1 GENERAL OPERATIONS AND MAINTENANCE

Operations and maintenance efforts in AWCWP strive to keep the park safe, functional and attractive for residents and visitors. A top priority is responsible stewardship of park resources for both present and future generations. Three staff, a Senior Park Ranger, Park Ranger II and Groundskeeper, provides enforcement management and maintenance for AWCWP.

On-going maintenance promotes successful implementation of management activities. The County will maintain facilities in the park to ensure that resource values are preserved and that management activities are supported.

- Perform routine operation and maintenance activities as directed by the policies contained in the NCCP/HCP.
- Maintain park facilities and infrastructure. Existing gates and roads restrict public access and allow for emergency and fire response. Ongoing maintenance of gates, fences, and roads will allow these functions to continue. Remove derelict/damaged structures in the park to enhance aesthetic values of the park.
- Maintain trailheads to retain the integrity and value of the park.
- Remove litter, trash, and debris that may attract nonnative wildlife and reduce the aesthetic values of the park. Establish responsibilities for removing trash and for regular collection at specific locations. Enlist the help of volunteers for clean-up events at the park.

Routine patrol of public use ensures compliance with the rules and regulations and allows staff to assess level of use by area of the park. County staff will continue to enforce park policies to promote safety for park visitors and protect park resources.

- Provide sufficient ranger staff to adequately manage and monitor the park.
- Monitor visitor use to determine trail popularity. On an annual basis, inspect park trails and mitigate for impacts. This may include restoring the outslope of the trail, installing soil swales, and pruning along the edge of the trail.
- Issue citations to persons that violate park regulations. Fines levied for abuse of park facilities resulting in harm to cultural and paleontological resources, wildlife, or sensitive habitat should be sufficient to discourage repeat occurrences.

Adaptive management depends on ongoing maintenance data collection to assess the success of management strategies and the potential impacts of public use on park resources. The County will develop a data management system to incorporate baseline data

collected for the preparation of this management plan. See Chapter 15.0 Monitoring and Adaptive Management Program for specific information regarding monitoring of natural resources.

## **14.2 FENCING AND BOUNDARY CONTROL**

As a result of AWCWP's irregular shape and size, the park has a lengthy perimeter that borders on several different communities. As a consequence, multiple access points are available for visitors entering and leaving the park. Approximately 36 entry sites into AWCWP are currently available as shown on Figure 18, Existing Public Access. Some of these entry points are gated meaning that they can be closed, as needed, to prevent unwanted access. The majority of these gates are open during park operating hours.

There are numerous unofficial entry points from community parks and schools along the Aliso Creek Bikeway and from adjacent residential neighborhoods. Some of these entry points are unauthorized, "end of street" points used to gain access to unauthorized trails; others are informal entries meaning that there are no developed trailheads at these locations. In addition, there are several trails and/or trail segments that leave AWCWP and venture onto or into and out of private property. In order to protect park resources and public safety, the County will enforce park boundaries by maintaining property fencing and access points and signing park property.

- Identify portions of the park where fencing may be needed. Fencing should be installed or reinforced in areas adjacent to residential lots, roads, and other level areas where accessibility impacts to sensitive park resources are problematic. Fencing should be maintained as needed and monitored annually.
- Establish property signs along the park boundary and at each access point, identifying the area as a wilderness park and providing directions for access and contact information.
- Ensure that all trail entrances to the park are across City (e.g., Laguna Beach, Laguna Niguel, Aliso Viejo) owned and managed property or with benefit of an easement from any other landowner. When an easement does not exist, erect a sign to signal "End of County Trail."
- Maintain park fencing and gates.
- Allow for wildlife movement.

## **14.3 ROAD AND TRAIL MAINTENANCE**

The County will evaluate the potential for new trail routes, but focus on improving the current network of trails and implementing management actions to minimize road and trail impacts. At present the County uses trail guidelines as detailed in the Regional Riding and Hiking Trails Design Manual (September 13, 1991). This section augments the detail found in that document and describes, in general, best management practices (BMPs), design standards,

maintenance, and management strategies that the County should implement for roads and trails within AWCWP.

Due to the wide variety of trail and resource conditions encountered within AWCWP, these guidelines should be adjusted based on specific on-site conditions. Before deciding when and where to reconstruct or upgrade a portion of a road or trail, the County should carefully consider different strategies and techniques available to remedy a particular problem and identify those that will have the least environmental impact.

### **14.3.1 Trail Design Guidelines**

The road and trail system already exists; therefore, planning for new routes is not a priority. However, new sections of trail may need to be constructed to reroute an existing road or trail in order to minimize environmental impacts. The following are general guidelines for trail design and selection of trail alignments:

#### **Location**

- Where needed, new trails should be integrated into the existing trail system.
- Trail location should utilize the maximum number of staging areas in order to disperse user loads and provide for the greatest variety of trail length options.
- Trail alignment should follow the natural contours of the landscape and take advantage of natural topographic features as turning points. Sharp angular turns over 50 degrees and long straight stretches, particularly downhill straights, should be avoided, as practicable.
- Trails should be designed and aligned so that minimal maintenance will be required.
- Hillside alignments should cross-drain over the natural slope and take advantage of natural drainage to minimize the need for major drainage modifications.
- Avoid mixing trail types without a proper segue. The transition from open and flowing to tight and technical should be gradual or on an uphill section of trail. Constant change from one type to the other encourages skidding and the formation of braking bumps. Mixing trail types should be avoided without a proper segue.

#### **Use**

- Consolidate different trail uses where safe within the same trail way, depending on the steepness, available right-of-way, safety, user frequencies, and other conditions. Some uses may be prohibited on a trail due to safety or environmental concerns.
- Where a trail is restricted to a particular type of user(s), the trail should be clearly designated with use signs and, where appropriate, barriers to discourage unauthorized use.
- The durability and erodibility of the native soils should be considered where mountain bike use is present. Many old road beds serving as trails are appropriate for mountain bike use because they tend to be wider, have greater sight distance, have more passing room between users, and have less slope.

## Dimensions

- Trail dimensions should be based on the type and volume of use anticipated, on the stability of native materials, and on the type of terrain along the route. Generally, a trail tread width should not be less than 18 inches for foot trails and 24 inches for single-track, multiple use riding and hiking trails.
- Minimum vertical distance from overhanging branches shall be 12 feet on trails open to equestrian or bicycle use. Minimum vertical distance from overhanging branches shall be 7 feet on hiking trails. Clearing shall be determined on a case-by-case basis to protect natural features (MHA 2001).
- Outsloping is an important part of the trail tread and design. Water will not flow across the trail tread without proper outslope. The finished tread should have a 3%-5% outslope from the back of the tread to the outer edge (IMBA 2005).

## Grade

- As a general rule, grades for new trails should not be steeper than 10%. For new trails, grades of less than 7% are ideal (Point Reyes National Seashore 2003).
- Where grades are steeper, long, gradual switchbacks should be used rather than short, steep switchbacks.
- In flatter areas, trails should be located so that there is some grade to provide for proper drainage.
- A grade should undulate gently to provide natural drainage and to eliminate monotonous level stretches and long, steep grades that are tiring to trail users.

## Environmental Considerations

- Before specific trail routes are implemented, biological resource assessments should be conducted as part of the trail alignment process. Assessments should be conducted by a qualified biologist and include surveys for sensitive habitats and special-status species in the appropriate seasons. These assessments should include recommendations to align the trail to avoid impacts to sensitive habitats, special-status species, and significant trees.
- Removal of native vegetation should be avoided as much as possible. The appropriate resource agencies should be contacted regarding any trail alignments that may impact sensitive habitats, special status species, or their habitat. Maintain a viable native plant gene pool by collecting and storing plant seeds from the site using replacement plants that are native to the area.
- In special status species habitat areas, trail use shall be limited as appropriate to ensure protection of resources. Techniques for limiting use may include, but are not limited to: physical access controls, seasonal or intermittent closures, restricted use permits, and exclusion of domestic pets.
- The Resource Specialist should evaluate existing vegetation patterns in terms of their fuel characteristics, such as ease of ignition, relative flammability, fuel load, responsiveness to suppression actions, and ramifications if the vegetation should burn.

Where alternate trail alignment siting is available, the alignment with the least flammable vegetation should be given priority.

### ADA Access

Where feasible, the design of AWCWP trails should recognize the intent of the American with Disabilities Act (ADA) and should emphasize accessibility for everyone. To determine feasibility and the degree to which trails will be designed for accessibility, the overall terrain conditions of the area surrounding the trail route should be evaluated. As feasible, all construction of new trails or modifications to existing trails should comply with the provisions of the ADA Accessibility Guidelines, as shown in Table O and described below. No guidelines exist for accessible recreation trails in primitive recreation settings (Resources Agency 1998).

**Table O: Summary of Design Standards for Accessible Recreation Trails**

	<b>Easy</b>	<b>Moderate</b>	<b>Difficult</b>
	(urban/rural)	(roaded/natural)	(semi-primitive)
Clear width (minimum)	48 inches	36 inches	28 inches
Sustained running slope (maximum)	5%	8.3%	12.55%
Maximum grade allowed for a maximum distance of 50 feet	10%	14%	20%
Cross slope (maximum)	3%	5%	8.3%
Passing space interval (maximum)	200 feet	300 feet	400 feet
Rest area interval (maximum)	400 feet	900 feet	1200 feet
Small level changes (maximum)	1 inch	2 inches	3 inches

Source: Resources Agency 1998

### ADA Accessibility Design Guidelines

- Accessible recreation trails should be designed to provide the gentlest slope possible within the constraints of the natural environment. The maximum sustained running slope allowed for accessible recreation trails in each setting is outlined above (Resources Agency 1998).
- If an accessible recreation trail has less than 60 inches of clear width, passing space must be provided at reasonable intervals not to exceed the distances outlined above. Each passing space must be at least 60 inches by 60 inches. A T-intersection of two trails is also an acceptable passing space (Resources Agency 1998).
- Passing spaces can provide valuable rest areas for all people. In urban/rural and roaded natural settings, benches and other types of fixed seating should be provided adjacent to passing spaces as a matter of convenience and accommodation and should be accessible. On accessible recreation trails, rest areas at passing spaces should be provided at reasonable intervals, as shown below (Resources Agency 1998).

<b>Level of Accessibility</b>	<b>Type of Trail</b>	<b>Interval of Rest Areas</b>
Easy	Urban/rural	Minimum every other passing space
Moderate	Roaded natural	Minimum every third passing space
Difficult	Semi-private	Minimum every third passing space
Most Difficult	Primitive	Not Applicable

- Resting intervals should be 60 inches minimum in length, should have a width at least as wide as the widest portion of the trail segment leading to the resting interval, and have a slope not exceeding 5% in any direction (Architectural 1999).
- Accessible trails whose edges drop off sharply (greater than 12.5%) or have hazardous edge conditions should have a 6 inch minimum high curb at the trail's edge, a safety railing with diagonal or bull rails, or both. All safety railings should be 32 inches high and be placed at the trail's edge. Railing must be required on both sides of the trail on all ramps where hazardous conditions warrant (U.S. Department of Transportation 2004).
- Distinctive tactile surface textures should be provided in areas of potential danger to persons with visual impairments. In addition, distinctive tactile surface textures should be provided to call attention to any interpretive displays, panels, or information signs (U.S. Department of Transportation 2004).
- Whether natural or manmade, the surface of accessible trails should be firm and stable. Where manmade trail surfaces (*i.e.*, planking, decking, concrete) are used to make trails accessible, openings in the trail surface should not be larger than ½-inch in diameter. Elongated openings (*i.e.*, wood decking) should be placed so that the long dimension is perpendicular or diagonal to the dominant direction of travel (Architectural 1999).
- No obstacles (*i.e.*, interpretive signs, plaques, benches, lighting) should overhang the edge of accessible trails by more than 4 inches, if the lower edge of the obstacle is more than 27 inches above the trail's surface (U.S. Department of Transportation 2004).
- Accessibility guidelines are not yet available regarding the use of cross-drains and water bars in outdoor recreation settings. Designers and managers of recreation settings are encouraged to use their best judgment in ensuring that the use of cross-drains or water bars does not create an undue barrier to accessibility on recreation trails (Resources Agency 1998).
- If the surface of an accessible recreation trail changes in level more than the allowed maximums, such change must be accomplished by means of a graded surface. An accessible recreation trail may not include stairs or steps (Resources Agency 1998).
- All accessible recreation trails must have clear head room of at least 80 inches. If vertical clearance of an area adjoining an accessible recreation trail is reduced to less than 80 inches, a barrier must be provided to warn people with limited vision (Resources Agency 1998).

### 14.3.2 Trail Amenities

#### Signage

- Sign standards should be adopted and implemented uniformly throughout AWCWP.
- Each trailhead should have an informational kiosk. Informational kiosks should include a copy of the most recent AWCWP map of the roads and trails. These kiosks should provide a summary of the rules and regulations regarding use of the roads and trails, trail safety guidelines, wilderness cautions and wilderness sightings, and describe benefits of using the designated system of roads and trails and the detriments of non-system trail use and construction.

- Identity signs should be located at all staging areas and trail intersections. Identity signs should include: trail name and distance to staging areas, intersections with other trails, or other points of interest along the trail route.
- Use signs should inform visitors of which types of trail use are appropriate, permitted, or prohibited on the trail; identify accessibility conditions and other ADA related information; educate trail users about respecting private property along the trail route and/or any special land use considerations; and prohibit smoking and use of matches or lighters. Use signs should be placed at each trail staging area.
- Safety signs should display warnings of upcoming underpasses, street intersections, and blind curves; advise trail users of the need to reduce speed or dismount and walk their bicycles or horses; warn of wildlife danger; identify any use restrictions during the fire season; and explain the hierarchy of yielding among trail users. Safety signs should be located on an as-needed basis.
- Private property signs should be posted at regular intervals in conformance with legal requirements to remind the trail user not to trespass. The County should also sign its park boundaries.
- Interpretive and protective signs should be located where appropriate. Interpretive and protective signs should indicate natural resource or historical points of interest or sensitive areas. Signs should be designed to identify specimen habitat types and to educate the visitor by describing resource characteristics and values.

### **Structures/Facilities**

- Trail crossings of freshwater stream zones and drainages should be designed to minimize disturbance, through the use of bridges or culverts, whichever is least environmentally damaging. Bridges and culverts should be designed so that they visually and functionally blend with the environment and do not interfere with the movement of native fish.
- Switchbacks should be used to reduce trail grades by lengthening the trail. Trail grades should rarely exceed 10 to 15 percent. Switchback turns (or landings) must be located on stable soils to reduce erosion. Favor flat benches or areas with the least slope. A minimum turning radius of 4 feet is required for hiking trails; 8 feet is required for other trail users. Shortcut trails often develop at switchbacks. Construct log, rock, or shrub barriers at trail turns to ensure that users remain on the trail. Alternatively, attractive features such as benches and vistas may be located at the turn (Rathke and Baughman 2005).
- Steps may be required on steep terrain with highly erodible soil. Steps should be thoughtfully placed to ensure that hikers will use them. Steps should be in the most appropriate place to walk and have evenly spaced rise and run. Steps should rise at least 5 inches but not more than 9 inches. Construction materials for steps include stone slabs, railroad ties, or rough-sawn, rot-resistant timbers (Rathke and Baughman 2005).
- When designing equestrian trailhead facilities, provide for parking of tandem axle vehicles, turning radius, off loading of horses, and space for ingress and egress of additional vehicles. Class II base material crushed shale provides the surest footing. An area should be provided for saddling the animals. Several single or double hitching posts

are generally better than one long hitching post. Water may be provided for horses at the trail head in troughs or in a container suitable for horses.

- When developing trailhead facilities, it is important to design the trail head access points to meet both management and user needs. For trails designed for multiple use, a step-through stile is appropriate. Through use of barriers, stiles, vegetation, and natural terrain, access can be provided for the intended users and eliminated for off-road vehicles. A simple and effective stile that accommodates both hikers and horses is a walk-through stile. This stile uses the combination of posts, log step-over barriers, gates, and log and rock barriers. The posts are placed 5 feet apart to provide an opening for both hikers and horses. The log step-over barriers are placed in front of the opening. Three logs 18-inch in diameter are placed parallel to the opening with 30-inch landings in between them. They are then bedded 4 inches into the ground and anchored with either pipe or rebar. Two additional logs are then placed perpendicular to these logs across their ends. They also are bedded 4 inches into the ground and pinned. All five logs should have a finished height of 14 inches above the trail grade (U.S. Department of Transportation 2004).

### **Drainage Structures**

Ideally, pathways built along hillsides will have an outsloped tread that allows water to flow off the pathway before it can do any damage. However, where an outslope cannot be maintained, where the volume of water coming onto a trail overwhelms the ability of the outslope to shed it, where pools of water form, or where trail users exacerbate the effects of erosion, drainage structures, rolling grade dips, waterbars and knicks may be needed to insure a long life for the trail.

- In the construction of a trail, the trail surface should be outsloped 3 to 5 percent grade toward the downhill side.
- Rolling grade dips can also be used to divert water from the trail. Grade dips are short trail sections cut at a grade opposite that of the prevailing trail surface. Grade dips are typically established at natural drainage ways or ditches with intermittent flows. Grade dips are permanent and low maintenance. They often take advantage of natural features, descending into and then climbing out of slight folds in the terrain. Rolling grade dips are ideal for trails frequented by cyclists or wheelchairs because they provide for barrier-free drainage.
- For existing trails, drain dips can be dug into the tread. Drain dips can most effectively be installed in trails with a prevailing grade of no more than 12 percent. The dip must be large enough to divert water from the trail and to withstand the impact of traveler's feet, hooves, and wheels. Outslope the dip to direct water toward the spill point and protect the spillway with rocks (Resources Agency 1998).
- Waterbars can also be used for existing trails. Waterbars can be made of rubber, a combination of wood and belt or a compacted soil. Both devices are designed to divert water off the trail. On gentle trails, a waterbar should be set at a maximum 5 degree angle. On steeper routes where the speed of the water may wash out barriers embedded at shallow angles, a waterbar may need to be set at a maximum angle of 10 degrees. Five feet or more of tread called an apron is shaped to direct water off the trail;

and an outlet ditch is used to capture diverted water. Waterbars are often placed in switchbacks and in climbing turns to prevent water flowing down the upper leg or a trail from continuing onto the lower leg (Resources Agency 1998).

- In determining where to place a water bar, a site should be selected that will discourage travelers from going around the ends of the bar. A tree or boulder can be a good barrier. If no natural barriers present themselves, a few large rocks should be embedded near one or both ends of the water bar to direct traffic toward the center of the trail.
- Once the waterbar has been installed, the trail tread should be sculpted for 5 feet or more leading down to the bar in such a way that water will gradually turn off of the pathway, exiting the trail a foot or more before hitting the bar itself. The effectiveness of this funnel-shaped apron may be tested by rolling an orange toward the water bar; the track of the orange will indicate the route that the water will take.
- Complete the waterbar by digging a rainwater diversion outlet ditch from the low point of the apron far enough away to assure that water will be carried away from the trail. Steep sideslopes may not require ditches at all, while a waterbar ditch on a moderate hillside may extend several yards or more. Each ditch should be cut wider than the blade of a shovel to facilitate easy maintenance in years to come. On steeper slopes, stones placed below the end of the ditch will dissipate the force of exiting water and help protect the downslope from erosion.
- Soil removed during construction or maintenance of a waterbar can be shoveled against the uptrail side of the waterbar to allow for natural gravity replacement of soil lost down hill. Some trail builders also advocate packing soil against the upper side of a waterbar barrier to restore the curving outslope of the tread, especially when erosion has begun to undercut the bar.

### 14.3.3 Trail Closure

#### Decommissioning

The goal of decommissioning is to restore natural topography and habitat as much as possible so that maintenance work is no longer needed and to prevent future environmental impacts. Unauthorized trails must be eliminated as soon as they are discovered. If left uncorrected, these unauthorized trails will encourage additional use and lead to damaged vegetation, soil erosion, and drainage problems. A key component of any trail closure plan is to create a fun and sustainable alternative.

- In areas where the old trail is being relocated or abandoned, time should be taken to obliterate the old trail and restore it to as natural a condition as possible. This will avoid confusion as to which trail to use, eliminate sources of erosion, restore it to a more natural appearance, and help eliminate short cutting. Depending on the terrain, one may use rock, brush, fallen timber, and transplanted vegetation. It may, in some extreme cases, require the construction of temporary fencing to prevent use.
- Compacted soil in the old trail tread should be broken up or scarified to allow the seeds and roots of new plants to penetrate.

- Surface drainage on abandoned routes needs to be addressed so that it is self-maintaining, adequately serves the area it drains, and does not deliver sediment to a creek. Abandoned tread should be stabilized to prevent further erosion. This will promote natural revegetation in some instances. Trails break natural drainage patterns and collect and concentrate surface water flows. Restoring the natural contour of the slope reestablishes the local drainage patterns and reduces the likelihood of erosion. Recontouring usually eliminates any temptation to use the old trail and facilitates revegetation efforts.
- Starting plants on the old trail is the best way to restore the landscape. Disturbed soil often provides an opportunity for invasive plant species to take hold. Only native species should be planted in these areas. Proper transplanting techniques, fertilizer, and a portable drip irrigation system should be used to reduce transplant shock.
- The best way to keep people off the closed trail is to make it look like it was never there. The goal is to eliminate the visual corridor, including the airspace above the old trail tread. Logs and branches may be dragged across the tread and deadfall planted in the ground vertically to block the corridor at eye level. Leaves and other organic matter should be raked over the tread as the final step to complete the disguise and aid new plants. As a last resort, the beginning and end of the trail may be blocked with a fence and signs. However, the fence will look out of place, and could draw more attention to the closure, which may cause controversy. Answer expected questions by posting signage explaining the closure on, or near the fence. When the trail has been closed for a while the fence can be removed.

### **Seasonal Closure**

- Minimizing heavy traffic loads, especially during the rainy season, is one of the simplest ways to maintain an unpaved road or trail.
- Close roads and trails susceptible to erosion whenever possible provided that they do not allow access to critical public water supply facilities or utilities.
- All entry points onto a closed trail should be signed appropriately. Some consideration may be given to including on the sign reference the estimated reopening date. Care should be exercised to promptly remove all closure signs when conditions have changed.

### **14.3.4 Trail Maintenance**

Trail work should be planned and implemented with the objective of providing for visitor safety, resource protection, and public access. Operating within budgetary and staffing constraints, the trail maintenance program should include:

1. Regular monitoring of each trail
2. Annual trail work aimed toward preventing serious damage during the cooler months after each rainfall
3. Emergency repair work and/or signing to eliminate or to identify a possible safety hazard

### General Trail Maintenance Guidelines

- Practice environmentally sound maintenance and use techniques appropriate for the type of trail. For example, avoid the use of chemicals to retard vegetation growth.
- Prepare an annual Trail Maintenance Plan.
- Assess the type of volume of use by reviewing trail register records and counting the type and volume of vehicles at the trailhead.
- Repair heavily used trails in the spring and maintain them throughout the season on an as-needed basis.
- Priorities for trail maintenance tasks are: 1) to correct unsafe trail conditions, 2) to repair environmental damage, and 3) to restore the trail to the desired conditions.

### Annual Spring and Early Summer Tasks

- Clear windfalls and dangerous trees from the trail bed for safety and to prevent detouring.
- Remove loose rocks and debris from the tread surface.
- Repair trail wash-outs.
- Remove new plant growth on the trail annually. Clear in the spring and early summer when the new growth is soft. Vegetation on the sides of the trail should be pruned to allow passage, but should be preserved, as much as possible, to protect the aesthetic quality of the trail. Typically, vegetation is cleared to a height of seven feet to accommodate hikers and to a height of ten feet to accommodate equestrian use. Good pruning practices must be followed, including cutting branches almost flush with the limb and cutting stumps at ground level or below. Large limbs should be pruned almost flush with the trunk. Dead and dying limbs and snags which may fall on the trail should be removed. Ground cover plants and low shrubs should not be removed except on the actual trail tread.
- Level the trail tread as necessary and restore the tread grade to the original slopes. Use local material to fill ruts, holes, low spots, or muddy areas.
- Repair erosion-damaged facilities promptly to prevent further damage. Check for erosion effects after spring runoff. Check and repair water bars, drainage ditches, culverts, and drainage dips. Construct additional drainage structures if needed. Corrective work for drainage or erosion problems shall be performed within a reasonable period of time. Where necessary, barriers to prevent further erosion shall be erected until problems are corrected.
- Check and repair all structures after spring runoff and after severe summer storms.
- Check, repair, or replace signs and trail markers prior to the major use season.
- Clear rainwater runoff diverters of silt and brush.

### Weekly or Monthly Tasks (As Warranted)

- Maintain trailhead facilities such as toilets and waste containers.

- Resupply trailhead information kiosks with route or safety brochures.
- Maintain switchbacks to reduce the need of costly reconstruction. Switchback maintenance involves the reshaping of tread to the intended drainage, cleaning of the inboard ditch on the upper leg, maintenance of the landing between upper and lower legs and the rehabilitation of any short cuts developing between legs.

### **14.3.5 Monitoring**

A yearly inventory of all trail maintenance, including drainage, vegetation clearing, signing, surfacing, need for graffiti removal and repair of structures, gates, fences and barriers should be pursued in early spring, prior to the heavy use period. A sample trail assessment form is located in Appendix G. Based on maintenance reports done yearly at the end of fall, trails should be subject to seasonal closures or repair as warranted.

## **14.4 VIEWSHED PROTECTION**

AWCWP represents a significant visual and scenic resource within the region offering panoramic views of the Pacific Ocean, Santa Catalina Island, and the community of Laguna Beach to the west; the San Gabriel and San Bernardino Mountains to the northeast; and Wood Canyon and surrounding urban development to the south and east. Situated in the midst of a highly developed region, the AWCWP includes a variety of landscapes from the solitude of Wood Canyon and the rugged Mathis Canyon, to the meandering walk with the creek and beautiful trees of Aliso Creek. The historic uses of the property for grazing has preserved the property from development, affording visitors with dramatic panoramic views of the region. Together the properties provide a wealth of viewing conditions and opportunities. The County will protect and enhance views and distinctive landscape features that contribute to the setting, character, and visitor experience of the park.

- Expand recreation and interpretive opportunities associated with the visual and scenic resources of the park. Opportunities include view-oriented day-use facilities and interpretive programming in key locations.
- Work with local jurisdictions in the land use planning and development process to protect key views in AWCWP from continued visual intrusion from surrounding development. This coordination will include appropriate general plan land use designations, zoning to regulate building height and setbacks, ridgeline protection ordinances and development review and enforcement.
- Work with local jurisdictions in the land use planning and development process to protect the AWCWP from existing and future ambient light sources in nearby developments.
- Coordinate protection and enhancement of visual resources in AWCWP with efforts to enhance County holdings through land acquisition. Priority areas for protection and enhancement include focal public use areas and main recreational facilities within AWCWP to prevent visual intrusion from adjacent development.
- Native plantings should be used to visually buffer developed areas, enhance visual quality and integrate with the surrounding native landscape.

- Site structures (e.g. Restrooms, Interpretive Kiosks) to be sensitive to scenic views from and into the AWCWP.

## 14.5 WILDLIFE CORRIDOR MAINTENANCE

### 14.5.1 Existing Wildlife Corridors

As described in Section 4.4, the NCCP/HCP identifies several important linkage functions for the AWCWP that unify locally established open space and wilderness areas. Several wildlife corridors still exist, although they have been significantly reduced in width and continuity due to dense residential developments immediately west and east of AWCWP. Existing wildlife corridors within AWCWP are described below and shown on Figure 15, Wildlife Corridors.

**Corridor A:** Corridor A consists of several segments linking AWCWP with LCWP. One steep portion of Corridor A connects LCWP to the northernmost section of AWCWP through Upper Wood Canyon near El Toro Road and State Route 73 and crosses over El Toro Road and Laguna Canyon Road. Sparse riparian habitat also continues under the State Route 73 bridge into James Dilley Greenbelt Reserve. A similarly steep and open section of the corridor exists along the entire length of the northern two-thirds of Wood Canyon. This wide, natural corridor continues west to LCWP after passing over Laguna Canyon Road, which is lined with homes and small businesses. These segments make up a nearly contiguous, wide passage that is suitable for use by most plant and wildlife species. This area is scattered with rock outcroppings and densely vegetated with mature coastal sage scrub, and chaparral.

**Corridor B:** Corridor B consists of the upper portion of Aliso Creek between Moulton Parkway and the confluence with Wood Canyon. The Aliso Creek Bikeway and Aliso Creek Trail pass through this area. This section of Aliso Creek is vegetated with a very narrow band of willow riparian forest edged with coyote bush scrub and coastal goldenbush scrub but has large section that are infested with nonnative giant reed. Beyond Moulton Parkway, Aliso Creek narrows through dense urban development and agriculture and continues eastward nearly to the Cleveland National Forest.

**Corridor C:** A second corridor from upper Aliso Creek (Corridor C) passes along Sulphur Creek between the main park entry under Alicia Parkway to the Sulphur Creek Reservoir open space area.

**Corridor D:** This connection includes several narrow corridors through residential communities in Laguna Beach. From lower Aliso Canyon, this corridor passes west over the steep and naturally vegetated hills topped by Aswut Trail near Meadows Trail and then passes northwest through currently undeveloped land and patches of ridgetop homes before crossing over Laguna Canyon Road into LCWP. This same route could also be accessed from the southernmost portion of Aliso Canyon but would also pass through ridgetop homes after passing through very steep and heavily vegetated hills owned by the Athens Group, just west of the Coastal Treatment Plant.

**Corridors E and F:** Two eastern corridors (Corridors E and F) pass from lower Aliso Creek, up the steep slope northeast of the Coastal Treatment Plant, then over Aliso Summit Trail through narrow portions of a housing tract. Corridor E terminates in non-reserve open space; while Corridor F terminates in an existing use area. Both canyon corridors terminate before meeting Crown Valley Parkway and extensive residential developments. The vegetation along these corridors and within the canyons is dominated by coastal sage scrub and chaparral.

**Corridor G:** Corridor G passes through two small patches of AWCWP, crossing Emerald Ridge Trail, Monarch Point Trail, Sea Island Drive, and Pacific Island Drive. This corridor also has a somewhat interrupted connection to Salt Creek Corridor Regional Park, a narrow park that terminates at Golden Lantern Street. The corridor is vegetated with native scrub and chaparral, while Salt Creek Corridor Regional Park is vegetated with nonnative annual grasses and forbs with patches of native plant communities along the riparian scrub creek channel.

#### 14.5.2 Wildlife Corridor Maintenance

In general, AWCWP is an established park surrounded by urbanization; therefore, resource management is necessary to preserve corridor usage as much as possible particularly along the interface between natural and developed areas. Corridor function can be influenced by fire management practices, exotic species encroachment, recreational use, and existing or future structures such as parking lots, buildings, lighting features, fencing, trails and roads. Park management and planning processes shall implement corridor enhancement and maintenance measures. This process should be considered ongoing, as new information will become available that provide specific baseline data and management practices. Research studies from AWCWP can demonstrate wildlife use areas that can be avoided or managed. The following should be considered as part of wildlife corridor maintenance.

- Conduct fire management only within designated areas and the approved fuel modification zones. Mitigate any impacts to protected areas with habitat restoration to maintain corridor function.
- Eradicate exotic species, both plant and animal, to prevent negative impacts to naturally occurring species. The presence of exotic plants and animals can impede corridor function (e.g., dense vegetative growth) and successful usage (e.g., increased predation pressures, displace wildlife and activity functions).
- Enforce prohibition of domestic pets (e.g., dogs), including monitoring for the presence of feral individuals and implementing, as needed, trapping.
- Avoid disturbing natural environments, building structures or adding human-made elements in natural areas whenever possible, particularly high use wildlife areas.
- Reduce night lighting so that it covers only the needed area with the minimum amount of intensity and range. Light glare and spillage into wilderness areas shall be reduced or eliminated.

- Utilize barrier fencing that allows for wildlife movement through the area, whenever possible. Animals should be able to jump over (e.g., deer) or pass under (e.g., reptiles, small mammals) barrier fencing.
- Manage and monitor access to wildlife corridor areas. Maintain trails and roads so side trails are not illegally created. Consider potential impacts to wildlife movement when planning for new roads or trails.
- Install traffic control features within wildlife crossing areas, particularly along Laguna Canyon Road and El Toro Road. Safety is a concern for both vehicle traffic and wildlife use. Warning systems (i.e., flashing warning lights, posting reduced speed limit, installation of raised pavement markers [Botts' dots]) can be helpful.

## **14.6 EROSION/SEDIMENT CONTROL/LANDSLIDE MANAGEMENT PRACTICES**

Wind, water, and human land use practices have resulted in severe erosion in parts of AWCWP. Roads, trails, and unvegetated areas along steep slopes are the most susceptible to erosion. Erosion control is critical for maintaining natural drainage patterns, water and soil quality, healthy aquatic ecosystems, and safe trail conditions. The County will maintain trails and roads to prevent erosion and provide a safe and high quality visitor experience.

- Restrict or prohibit trail users from areas where erosion has created a public hazard.
- Correct erosion problems especially where adjacent to sensitive plant populations. Identify areas that have the potential to impact these populations. Install repairs that reduce or eliminate erosion problems.
- Install swales across dirt roads and trails. Soil swales made of local native soils is the preferred method to control erosion. Identify locations where erosion problems can be minimized by maintaining trails and roads and installing water bars.

### **14.6.1 Erosion Control Guidelines**

Due to the wide variety of soil conditions encountered within AWCWP, these guidelines should be adjusted based on specific on-site conditions. The County should carefully consider different strategies and techniques available to remedy a particular problem and identify those that will have the minimum environmental impact. These guidelines augment the trail and road design guidelines described in Section 14.3.

- Develop a comprehensive Erosion and Sediment Control Plan. The Erosion and Sediment Control Plan should include: description of all structural erosion and sediment control measures; description of seeding and mulching plan including locations, seed mixes, and mulch/matting methods; design calculations for structural control measures; and description of the inspection, maintenance, and records program for control measures.
- Evaluate the site. On-site areas that are subject to severe erosion should be evaluated by a qualified erosion control professional each year prior to and immediately following

the rainy season. Trees and vegetation to be preserved should be located and flagged and areas where access should be limited should be identified.

- Select and install erosion/sediment control practices. A qualified professional should determine the specific practices needed and direct installation as appropriate. All Best Management Practices (BMPs) must be chosen carefully, located and installed correctly, and maintained well to be effective in controlling erosion and sediment. Ensure that sediment-trapping devices and erosion control measures are accessible for maintenance and removal. The following BMPs should be considered, designed, and implemented on a site-specific basis (roughly in order from source to destination):
  - Interceptor berms or wattles at the top of slope to divert and dissipate runoff away from unstable or denuded areas
  - Properly designed culverts and drains that avoid concentration of runoff
  - Vegetation (preserved and/or planted)
  - Mulch (straw, wood chips, hydromulch, erosion control blankets etc.)
  - Contour wattles, rolling dips or water bars to slow down and divert runoff on steep slopes, trails and roads.
  - Gravel filters, sand bags, permeable dams etc. for filtering sediment out of runoff
  - Sediment traps/basins at base of slope to allow soil particles to settle out and to attenuate runoff peaks
- Develop a practice maintenance program. Maintenance of all BMPs is essential for them to function properly. They should be inspected regularly and after each rainfall event. When a problem is identified, repair the practice immediately.
- Control surface water runoff. Divert and disperse surface water runoff originating upgrade of exposed areas to reduce erosion and sediment loss.

## 14.7 RECOMMENDATIONS

### General Actions

- Perform routine operation and maintenance activities consistent with the NCCP/HCP.
- Provide sufficient ranger staff to adequately manage and monitor the park.
- Maintain a record of management and monitoring activities.
- Establish property signs along the park boundary and at each access point, identifying the area as a wilderness park and providing directions for access and contact information.
- Allow for wildlife movement. Adopt the measures contained in Section 14.5.2 of this RMP to protect and enhance wildlife corridors.
- Work with local jurisdictions in the land use planning and development process to protect key views in AWCWP from continued visual intrusion by surrounding development. This coordination will include appropriate general plan land use designations, zoning to

regulate building height and setbacks, ridgeline protection ordinances and development review and enforcement.

- Work with local jurisdictions in the land use planning and development process to protect the AWCWP from existing and future ambient light sources in nearby developments.
- Coordinate protection and enhancement of visual resources in AWCWP with efforts to enhance County holdings through land acquisition. Priority areas for protection and enhancement include focal public use areas and main recreational facilities within AWCWP to prevent visual intrusion from adjacent development.

### **As-Needed Actions**

- Remove litter, trash, and debris that may attract nonnative wildlife and reduces the aesthetic values of the park.
- Establish responsibilities for removing trash and for regular collection at specific locations.
- Enlist the help of volunteers for clean-up events at the park.
- Issue citations to persons that violate park regulations. Fines levied for abuse of park facilities resulting in harm to cultural and paleontological resources, wildlife, or sensitive habitat should be sufficient to discourage repeat occurrences.
- Implement the appropriate design guidelines, as detailed in Section 14.3, when constructing new trails or re-routing existing trails or roads in order to minimize environmental impacts.
- Use native plantings to visually buffer developed areas, enhance visual quality and integrate with the surrounding native landscape.
- Site structures (e.g. Restrooms, Interpretive Kiosks) to be sensitive to scenic views from and into the AWCWP.
- Restrict or prohibit trail users from areas where erosion has created a public hazard.
- Correct erosion problems especially where adjacent to sensitive plant populations. Identify areas that have the potential to impact these populations. Install repairs that reduce or eliminate erosion problems.
- Install swales across dirt roads and trails. Soil swales made of local native soils is the preferred method to control erosion. Identify locations where erosion problems can be minimized by maintaining trails and roads and installing water bars.
- Implement the erosion control guidelines as detailed in Section 14.6, as appropriate, to repair and prevent erosion within the park.

### **Annual Actions**

- Maintain facilities, including trailheads, gates, roads, and infrastructure to retain the integrity and value of the park.
- Monitor visitor use to determine trail traffic volumes. On an annual basis, inspect park trails and make appropriate repairs.

- Identify portions of the park where fencing may be needed. Fencing should be installed or reinforced in areas adjacent to residential lots, roads, and other level areas where accessibility impacts to sensitive park resources are problematic. Fencing should be maintained as needed and monitored annually.

#### **Five Year Actions**

- Expand recreation and interpretive opportunities associated with the visual and scenic resources of the park. Opportunities include view-oriented day-use facilities and interpretive programming in key locations.

## 15.0 Monitoring and Adaptive Management



## **15.0 MONITORING AND ADAPTIVE MANAGEMENT PROGRAM**

### **15.1 ADAPTIVE MANAGEMENT**

Adaptive management is defined as a flexible, iterative approach to long-term management of biotic resources that is directed over time by the results of ongoing monitoring activities and other information. Under this approach, biological management techniques and specific objectives are regularly evaluated in light of monitoring results and other new information. These periodic evaluations are used over time to adapt both the management objectives and techniques to better achieve overall management goals. This approach involves managing CSS and adjacent habitats in a manner designed to support a broad range of "CSS Species" over the long term, with particular emphasis on the "target and identified" species.

#### **15.1.1 Elements of the Adaptive Management Program**

Each of the management elements below contributes to the maintenance of natural resources in the AWCWP, and is discussed in the following sections.

- Monitoring and associated adaptive management of the biological resources located within the park
- Restoration and enhancement actions (other than creation of new CSS habitat) such as eradication of invasive, non-native plant species, predator control, and fuel modification activities
- Management carried out by means of short-term and long-term fire management programs within the park
- Management of public access and recreational uses within the park
- Management designed to minimize the impacts of ongoing operations/maintenance of uses within the park that existed prior to approval of the NCCP/HCP
- Assurance that permitted infrastructure uses proceed in the manner provided for in the NCCP/HCP in order to minimize impacts of new uses to be allowed within the AWCWP

### **15.2 BIOLOGICAL RESOURCE MANAGEMENT AND MONITORING**

Monitoring and targeted studies for the park shall be designed to assist management decision-making. Under this model, management moves forward in a scientifically-based way that involves monitoring, conducting targeted studies, and applying management activities as experimental treatments. The results feed back into decision-making, reducing uncertainty and improving the effectiveness of the program through time.

Steps that may be involved in a long-term adaptive implementation program include opportunistic learning, hypothesis testing, management, monitoring, and directing the results of analysis and assessment back into the program through decision makers. Existing biological inventory, direct observation, and empirical information are expected to inform the strategy for implementing the RMP's Goals and Strategies (Section 6.0).

Monitoring allows the supervising park ranger to measure resource condition and responses of the resource to human-caused and natural perturbations. Ideally, monitoring can identify problems early so that corrective management action can be taken as soon as it is needed. In contrast, targeted studies (at small spatial scales or in pilot studies) may be more appropriately used to resolve critical questions regarding ecosystem functioning or management applications. While some management activities may have little uncertainty regarding application or outcomes (e.g., habitat restoration), such activities should be designed as experiments to increase our understanding of the system and the effectiveness of management (e.g., determining the most effective way to control exotic species). The results from monitoring and targeted studies will be evaluated and used to refine goals and conceptual models, improve the management program for the park, and refine monitoring methods.

### 15.2.1 Active Monitoring Strategy

The following methods will be used to monitor sensitive species on a regular basis to keep track of the current status of the species within the park and to monitor wildlife to determine the health, quality, and functionality of different portions of the park. All data are ideally collected into a spatially linked (e.g., GIS) database to allow for better comparison and tracking.

Direct monitoring of some of the "target and identified species" and key vegetation communities (e.g., coastal sage scrub, riparian habitat) is necessary to evaluate the effectiveness of the AWCWP adaptive management program. Data from annual park-wide plot monitoring activities primarily provide information on the overall status of target resources, especially in key portions of the park (e.g., habitats dominated by coastal sage scrub, habitats dominated by cactus, Aliso and Wood Creeks). Further, target resource monitoring contributes basic knowledge of the park's biodiversity, dispersal and demography of the "target species" studied, and community dynamics.

Target resource monitoring will be accomplished through a systematic sampling program designed by biologists with appropriate management expertise and field experience. Strategically directed sampling will be employed, rather than repeating broad census/inventory efforts. Elements of the sampling program will focus on target species of the CSS community (i.e., coastal California gnatcatcher, coastal cactus wren, and western whiptail<sup>5</sup>), the CSS vegetation, and representative riparian bird species, with other selected vertebrate and invertebrate species. Table P summarizes a recommended initial monitoring

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<sup>5</sup> The orange-throated whiptail is one of the target species designated in the NCCP/HCP. The more common western whiptail is used here because it is more readily observable and will serve as a good indicator species.

schedule for the cited species. This schedule may be modified in the future as monitoring needs are refined through adaptive management.

**Table P: Monitoring Schedule for Species of Interest in AWCWP**

Species/Resource	Description	Activity/ Blooming Period	Monitoring Frequency
AMPHIBIANS			
Black-bellied slender salamander <i>Batrachoseps nigriventris</i>	Survey for presence every five years.	December –February Rainy nights	Every 5 years
BIRDS			
Coastal cactus wren <i>Campylorhynchus brunneicapillus sandiegensis</i>	Survey existing territories to determine if still present and/or expanding.	Year-round Breeds March –June	Every 2 years
Coastal California gnatcatcher <i>Poliophtila californica californica</i>	Survey existing territories to determine if still present and/or expanding.	Year-round Breeds March – May	Every 2 years
Least Bell's vireo <i>Vireo bellii pusillus</i>	Survey for presence during the appropriate survey period.	Mid April –July	Every 2 years
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	Survey for presence during the appropriate survey period.	Mid May –July	Every 2 years
INVERTEBRATES			
Butterfly species	Survey for presence.	June – July	Every 2 years
REPTILES			
Western whiptail <i>Cnemidophorus tigris</i>	Survey for presence.	June –September	Every 5 years
VASCULAR PLANTS*			
In conjunction with the vegetation community plot and transect surveys, the following rare plants will be quantified, qualified, mapped, and the plant community in which they occur recorded.			
Big-leaved crown-beard <i>Verbesina dissita</i>	Record species data.	Perennial Blooms April – July	Annually
Catalina mariposa lily <i>Calochortus catalinae</i>	Record species data.	Perennial Blooms February -May	Annually
Intermediate mariposa lily <i>Calochortus weedii var. intermedius</i>	Record species data.	Perennial Blooms May - July	Annually
Laguna Beach dudleya <i>Dudleya stolonifera</i>	Record species data.	Perennial Blooms May – July	Annually
Many-stemmed dudleya <i>Dudleya multicaulis</i>	Record species data.	Perennial Blooms February -May	Annually
Nuttall's scrub oak <i>Quercus dumosa</i>	Record species data.	Evergreen Blooms February - April	Annually
Palmer's grappling-hook <i>Harpagonella palmeri</i>	Record species data.	Annual Blooms March - May	Annually
Small-flowered Microseris	Record species data.	Annual	Annually

Species/Resource	Description	Activity/ Blooming Period	Monitoring Frequency
<i>Microseris douglasii</i> ssp. <i>Platycarpha</i>		Blooms March -May	
Small-flowered morning glory <i>Convolvulus simulans</i>	Record species data.	Annual Blooms March - July	Annually
Summer Holly <i>Comarostaphylis diversifolia</i> ssp. <i>Diversifolia</i>	Record species data.	Evergreen Blooms April - June	Annually
Thread-leaved brodiaea <i>Brodiaea filifolia</i>	Record species data.	Annual Blooms March - June	Annually
Vernal barley <i>Hordeum intercedens</i>	Record species data.	Annual Blooms March - June	Annually
Western dichondra <i>Dichondra occidentalis</i>	Record species data.	Perennial Blooms March - July	Annually

\*The vascular plants listed in this table pertain to the Plant community composition survey in Table Q.

Target resource monitoring will occur on semi-permanent plots (e.g., 2 to 40 acres) each with a point-intercept line transect of 25- and 100-meters (plot or transect locations may be adjusted if subsequent data analysis and/or additional surveys show changes to be warranted).

- Plots will be of a size and shape to allow statistically valid analysis (e.g., 2 to 40 acres), and wherever feasible, located and shaped so that at least half of their area is coastal sage scrub. Plot shape will be as regular as possible, but flexible given the constraints of strategic locations.
- Point-intercept line transects will be established for habitat areas that require progress monitoring, such as areas that have been actively revegetated, treated for weeds, or impacted by fire, landslide or other unexpected events. Point-intercept line transects will be used to gather vegetation data as the area matures, reestablishes through natural recruitment and regeneration and/or active plantings/seeding of plant species.

In general, each point-intercept line transect shall be 100 meters in length (or less [e.g., 25 meter] depending on the study area size) and species and cover data recorded at every 1 meter mark. Transect locations and spacing shall be placed randomly and in suitable numbers for representative sampling of existing and expected future conditions.

- Plots will be strategically located and of variable size and quality to monitor overall population status of the "target species" in Table P, intended function of the park, and detect relative changes.
  - To monitor overall population status, approximately one-third of the plots will be established at representative locations in core habitat areas of the park.
  - To monitor intended function of the park, the remaining plots will be located in non-core areas believed to be of particular importance to park function. These include

areas designated as wildlife corridors, fuel modification areas, and areas of high recreational use.

### 15.2.2 Active Management Monitoring Activities

Table P provides a survey schedule and summarizes the following monitoring activities, which use the above described transect and plot survey techniques.

- **Coastal Western Whiptail** - each plot will include one semi-permanent 200-meter long transect. The transect will be located in representative habitat types within the plot and along a trail or dirt road, to the degree practical, to maximize lizard detectability. It will be walked once every five years during late spring/summer/early fall and under appropriate weather conditions for high lizard activity. The data to be collected includes number of lizards seen per transect and number of lizards per kilometer of transect in various habitat types.
- **Black-bellied Slender Salamander** - plots selected for black-bellied salamander habitat (oak woodlands, grasslands, and streamsides) will include one semi-permanent 200 meter long transect with cover boards placed every five meters on alternating sides of the transect. The transect will be located in representative habitat types within the plot and along Aliso and Wood Creeks to the degree practical, to maximize salamander detectability. It will be walked once every five years during the winter months and under appropriate weather conditions for high salamander activity. The data to be collected includes the number of salamanders seen per transect and the number of salamanders per kilometer of transect according to habitat types.
- **Coastal Cactus Wren** - each cactus patch within a plot will be visited once every two years to determine if cactus wrens are present. The number of patches visited in each plot will be recorded, as well as the number of patches having cactus >1 m tall. If wrens are present, their status (single, pair, family group) and estimated number will be recorded. The data to be collected includes number of cactus patches per plot, proportion of patches potentially suitable for wren nesting (those with cactus > 1 m tall), and the estimated number and status of wrens in each plot.
- **Coastal California Gnatcatchers and Southern California Rufous-crowned Sparrow** - each plot will be surveyed for California gnatcatchers and/or rufous-crowned sparrow once every two years, at least one week apart and in summer/early fall to the degree possible (after nesting and before dispersal, focused on determining overall population trends). Any gnatcatchers and/or sparrows with all or a portion of their home range within the plot will be recorded, along with their status (single, pair, with young) and estimated number. Location of nesting pairs (within or outside the plot) will be determined. Data collected includes frequency of gnatcatchers and/or sparrows per plot (proportion of plots where gnatcatchers and/or sparrows are detected) and nesting pair density (number of nesting pairs per plot area).
- **Least Bell's Vireo and Southwestern Willow Flycatcher** - each plot will be surveyed for least Bell's vireos and southwestern willow flycatchers once every two years, in mid spring/early summer to the degree possible, focusing on determining overall population trends). Any vireos and/or flycatchers with all or a portion of their home range within the plot will be recorded, along with their status (single, pair, with young) and estimated

number. Territory location of any nesting pairs (within or outside the plot) will be determined. Data collected includes frequency of vireos and/or flycatchers per plot (proportion of plots where vireos and/or flycatchers are detected) and nesting pair density (number of nesting pairs per plot area).

- **Butterfly Species** - each plot will include one semi-permanent 800 meter long transect. The transect will be located in representative habitat types within the plot. It will be walked once every two years during June or July and under appropriate weather conditions (e.g., calm, clear, and warm) for high butterfly activity. The data to be collected includes number of butterflies seen per plot transect and the number of butterflies per kilometer of transect according to each habitat type.

The following monitoring activities and schedules are summarized in Table Q.

- **General Bird Surveys** - shall be conducted every two years to record species diversity in the park as a whole.
- **Focused Bird Surveys** (e.g., least Bell's vireo, southwestern willow flycatcher) – shall be conducted every two years at the appropriate time of year for detection since these birds are migratory. The survey period is summarized in Table Q.
- **Plant Community Composition** - will be recorded and documented every two years on each plot at four semi permanent photo points. Each plot will include two semi-permanent line-intercept transects 100-400 m long, located to be representative of slopes, aspects, and soil types within each plot. Each year, the transects in one fifth of the plots will be read (each transect pair is read every five years), and the proportion of the transect falling into different plant communities will be recorded. The data to be collected includes qualitative habitat conditions (photos) and quantitative data on the relative extent of plant communities within the plot. Specific plant species to be surveyed for include the sensitive species listed in Table P.
- **Accidental Burns and Prescribed Vegetation Clearing** – can be monitored using plot and/or transect survey techniques. Accidental burns are possible within AWCWP, but prescribed burns are not a feasible fire management alternative within AWCWP due to proximity to urban development and residential communities. This monitoring should be applied to any unintended burn areas, with recognition that the pre-burn data will likely not be available. For accidental burns and prescribed vegetation clearing, pre-clearing data on plant communities and vegetative structure and composition within communities will be collected by use of plots (including photo plots) and/ or transects. The area will also be surveyed for coastal cactus wren, coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher as described above. Sizes and numbers of plots and transects will be adjusted to fit the size of the prescribed cleared area. Following the clearing or burning, the same surveys will be performed in years one, three and five. Quantitative data will be collected on the relative extent and composition of plant communities and the densities and distribution of the coastal California gnatcatcher and the least Bell's vireo both before the burn and as they reestablish after the burn.
- **Fuel Modification Areas** - will be surveyed every two years and appropriate vegetation cover and composition data will be collected depending on the vegetation type being

cleared. The data collected will be quantitative data on vegetation cover and composition in fuel modification and adjacent non-fuel modification areas so the effects of fuel modification can be evaluated.

- **Fuel Modification Programs** - will also be qualitatively monitored twice a year to prevent excessive fuel modification.
- **Vertebrate Pest Species** - Treatment data for cowbird trapping and other vertebrate pest management (e.g., feral cats and dogs) will be derived from records of pest individuals trapped and disposed of every two years. A treatment index of pest species abundance will be determined from the number of individuals caught per trap day over the trapping efforts. Data to be collected will be an index of pest species abundance at the beginning and during control efforts, suitable for analysis to determine if pest abundance changes as a result of treatment. Appropriate controls for seasonal and other effects on pest species abundance will be incorporated into the study.
- **Noxious Weed Eradication** - For noxious weed eradication efforts, baseline plant frequency and/or cover data will be collected from semi-permanent line- or point-intercept transects or plots appropriate to the weed being removed. The number and size of plots and transects will be adjusted to fit the size of the weed eradication unit. Following the eradication, the same surveys will be performed in years one, three and five. Data collected will be quantitative with respect to the relative extent and composition of plant communities, both before and after the eradication work.
- **Habitat Enhancement and Restoration Activities** - will be monitored and annual monitoring reports produced with written and photographic documentation of each restoration/enhancement site.
- **Habitat Enhancement and Restoration Map**<sup>6</sup> - shall be created and updated annually, showing existing and future restoration and enhancement areas.
- **Other Forms of Active Management** - will be permissible and consistent with the overall objective of the AWCWP. Monitoring programs consistent with the examples above and including treatment monitoring will be developed and approved for such activities.

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<sup>6</sup> If the data become available, a Habitat Enhancement and Restoration map will be prepared before the Resource Management Plan is finished.

**Table Q: Schedule of Additional Monitoring Activities for AWCWP**

Monitoring Activity	Description	Time of Year	Monitoring Frequency
General bird surveys	Survey all birds observed for biodiversity measure.	Spring	Every 2 years
Plant community composition survey	Record proportion of transect falling into different plant communities and characteristics. Photographs.	Same time each year	Annually in 5 year rotations
Accidental burns or prescribed vegetation clearing	Pre- and post-clearing data on plant communities, California gnatcatcher, and least Bell's vireo distribution.	Any	For any burns or prescribed clearing
Fuel modification areas	Vegetation cover/composition data for both modified and unmodified areas	Any	Every 2 years
Fuel modification programs	Qualitative monitoring	Any	Every 6 months
Vertebrate pest species	Use records from trappings	Any	Every 2 years
Noxious weed eradication	Frequency and/or cover data before and after eradication	Any	For any eradication
Habitat enhancement and restoration	Reported and photographed	Any	Annually
Habitat enhancement and restoration map	Update	Any	Annually
Perturbation event	Qualitative/Quantitative monitoring of how community recovers after perturbation event.	Any	For any perturbation event
Photo points	Qualitative habitat quality monitoring	Same time each year	Annually
Suitable habitat survey	Survey areas in the park for new suitable habitat.	Any	Every 5 years
Habitat types and quality	Track trends and changes over time with photographs.	Same time each year	Annually

### 15.2.3 Passive Management Monitoring Activities

The Resource Specialist will schedule studies to collect data on passively managed special interest species and resources, and will focus on identifying any special management needs for such species/resources and on identifying any previously unrecognized resources. Data will be qualitative in most cases, using techniques such as permanent photo points accompanied by a description of current management practices.

- **Perturbation Event** - When a periodic perturbation event (e.g., a significant wildfire, flood) occurs, the supervising park ranger may schedule passive management monitoring in response to the event for one or more years. The techniques to be used will be quantitative where practical, and will be similar to those described above, but will

be tailored to the event and the monitoring opportunity. The types of data to be collected include data on the nature and timing of a community's response to a perturbation event.

- **Aliso Creek Channel Map.** A GIS map of the Aliso creek channel will be created and updated, as needed, to monitor the extent to which the creek channel meanders so that appropriate management measures can be taken. After implementation of the SUPER project, channel dynamics may be reduced. If this is confirmed (*i.e.*, monitoring shows no migration after 10 to 15 years that include some major storm event), the success of the SUPER project would be demonstrated and creek monitoring may be discontinued.
- **Photo points** - shall be established along the creeks and at vantage points overlooking the park. In 2005, the County GIS division collected survey data and photos along Aliso Creek from the main park entry to the Coastal Treatment Plant as part of the Aliso Creek SOCWA Bridge to Aliso and Wood Canyons Park Project (Project 056056WS400009); this information should be used as baseline data for lower Aliso Creek. The collection of similar survey data and photos should be initiated for Wood Creek and upper Aliso Creek. It is recommended that data be collected every five years to track changes along these drainages.
- **Suitable Sensitive Plant Habitat Surveys** - shall be conducted in areas that are not known to have sensitive plants or suitable sensitive plant habitat. Survey once every five years during the spring.
- **Habitat Map** – The NROC habitat map will be updated once every ten years using the County's habitat classification system (Gray and Bramlet 1992, Jones and Stokes Associated, Inc. 1993). This map will be used to track changes in habitat distribution, with a particular emphasis on detecting displacement of native vegetation types. If such losses and/or significant native habitat type conversion occur, the causes will be investigated. Remedial action will be implemented as appropriate to remedy human-induced effects on native habitat values. However, natural succession will be allowed to occur. During the vegetation mapping effort invasive plant species shall be mapped to determine if control of these populations should be considered a priority within certain areas of the AWCWP.

### 15.3 DATA ANALYSIS

The data collected through the monitoring program must be analyzed and used as the basis for evaluating and guiding park management. A key responsibility of the Resource Specialist will be to compile and analyze the monitoring data, and in collaboration with park rangers, make regular assessments of park management based on the analyzed data.

- Data from "target, identified and special interest" species monitoring will be compiled and analyzed as monitoring cycles are completed. Analysis will include comparisons of current and previous year data, with greater emphasis on identifying long-term trends rather than short-term phenomena. These data may be used in a population model, if a proven and tested model is available; to help assess the park's function/viability. Particular emphasis will be given to identifying any management activities needed to improve or maintain necessary park functions.

- Data from "active management" efforts will be analyzed to assess the effectiveness of the management effort, and will guide decisions on future management efforts.
- Data from "active" species inventories will be compiled in files and a GIS database. Data from "passive" management/monitoring will be compiled into report format for use in guiding future management.

## 15.4 RESEARCH

Provide opportunities of university-level research especially in cases where research would help to answer fundamental management questions or contribute to the conceptual models of species of interest and habitats. Work with university researchers and graduate students to develop projects that would provide useful information to the supervising park ranger and the Resource Specialist. Research proposals would be evaluated on a case-by-case basis in consideration of potential impacts associated with the research.

Whenever possible, the supervising park ranger will obtain data from interested parties (e.g., local agencies, local chapter of the National Audubon Society) to compile with the park's monitoring data. These data may be qualitative or quantitative in nature and will be used to augment general information about the park's natural resources. Data may be submitted to an internal website to which only the supervising park ranger has access since some data may be considered and not suitable for public distribution.

## 15.5 RECOMMENDATIONS

### General Actions

- Monitor species and habitat enhancement and restoration activities as part of the adaptive management program. Evaluate the effectiveness and progress of habitat enhancement and restoration efforts. Through monitoring, seek to identify new enhancement and restoration opportunities and priorities within the park.
- Develop an electronic data management system to include baseline data collected for the preparation of this RMP and that allows for new information to be added.
  1. Maintain a general record of management and monitoring activities, as needed.
  2. Incorporate monitoring data collected to track the responses of resources to management actions. Data from "active" species inventories will be compiled in files and a GIS database. Data from "passive" management/monitoring will be compiled into report format for use in guiding future management. Incorporate data when available.
  3. Coordinate with managers in other parts of the NCCP/HCP to compare monitoring and management results, as needed.
  4. Incorporate data from NROC studies (e.g., wildlife movement, target species, habitat restoration activities) into the park database and use to adapt management practices.

### **As-Needed Actions**

- Monitor key ecological processes, such as perturbation events either actively or passively, which ever is more appropriate, as determined by the Resource Specialist and other concerned parties to interpret biological change and responses to management measures.
- Create a GIS map of the Aliso Creek channel to track the creek's migration.

### **Annual Actions**

- Record monitoring data for all resource management activities, as described in the NROC Monitoring and Adaptive Management Program. Data from species inventories will be compiled in files and a GIS database. Monitoring frequency may vary and should be evaluated by the supervising park ranger, the Resource Specialist, NROC, and resource agencies (e.g., CDFG, USFWS). Produce report and photographic documentation for each site.
- Conduct annual inspections of fuel modification zones and park boundaries to monitor fuel modification zone limits, erosion, exotic plant and animal species, including feral domestic animals.

### **One, Three, and Five Year Actions**

- Actively monitor noxious weed eradication using semi-permanent line or point-intercept transects or plots, depending on the area characteristics, to collect quantitative data both before eradication, to collect baseline data, and after eradication in years one, three, and five.
- Actively monitor accidental burns and prescribed vegetation clearing areas for floral and faunal characteristics. Methods shall include plot and transect techniques and other suitable techniques.

### **Biannual Actions**

- Map habitat enhancement and restoration activities and update the Habitat Enhancement and Restoration Map (HERM; at NROC) to show existing and future restoration and enhancement areas.
- Actively monitor the populations of the "targeted and identified species," general bird species, plant community composition, and other sensitive resources, including CSS vegetation and their responses to management actions. Methods shall include plot and transect sampling techniques.
- Actively monitor fuel modification areas collecting qualitative and quantitative data every two years.
- Update treatment data for vertebrate pest management (e.g., brown-headed cowbird, feral animals).

### **Five Year Actions**

- Monitor locally uncommon, sensitive, federally-threatened or endangered species and other sensitive resources to track the populations, identify threats, develop management

recommendations, and determine the effectiveness of management actions. Monitoring frequency should be evaluated by the supervising park ranger, the Resource Specialist or Resource Coordinator, NROC, and resource agencies (e.g., CDFG, USFWS). Once every five years, recommended.

- To assess coastal sage scrub and riparian habitat quality, survey for the following species: the threatened coastal California gnatcatcher and endangered southwestern willow flycatcher and least Bell's vireo, and the sensitive yellow-breasted chat and yellow warbler.
- Conduct suitable sensitive plant habitat surveys in areas not known to have sensitive plant habitat. Survey every five years during the spring.
- Establish photopoints and collect survey data along the creeks. Utilize baseline data for lower Aliso Creek collected as part of the Aliso Creek SOCWA Bridge to Aliso and Wood Canyons Park Project (Project 056056WS400009). Collect similar survey data and photos for Wood Creek and upper Aliso Creek. Collect data every five years to track changes along these drainages.
- Evaluate the suitability of the data management system for management purposes and refine the system, as necessary.

#### **Ten Year Actions**

- Create a habitat map using the County's habitat classification system (Gray and Bramlet 1992, Jones and Stokes Associates, Inc. 1993) to track changes in habitat distribution, with emphasis on detecting conversion to ruderal habitats. Displacement causes will be investigated. Remedial action will be implemented, as appropriate, but natural succession will be allowed.
- Research opportunities for university-level research and data contributions by interested parties should be encouraged. Project development and proposals would be evaluated by the supervising park ranger and the Resource Specialist. Data submission should be facilitated either through an internal website or other secure methods.

## 16.0 Administration, Operations and Management



## 16.0 PARK ADMINISTRATION, MANAGEMENT AND OPERATIONS

Orange County Parks (OC Parks) will continue to administer and operate AWCWP. OC Parks is responsible for the entire parkland within the current border excluding inholdings such as the Coastal Treatment Plant and easements.

Park administrative operations may continue in a park office at the Main Entry. The park office may be incorporated into the site plan and architectural plans for a renovated interpretive center at the main entry. This office will be the center of control for all park operations and resource management operations. Maintenance operations will continue to be conducted from the maintenance yard at the park's main entry.

Visitors hiking, riding horses, or cycling into AWCWP are not charged an admission fee. A fee is charged at the main entry for motor vehicle parking. Fees are collected using a pay box. Annual passes are available for purchase.

### 16.1 INTERIM PARK OPERATIONS PLAN

Aliso and Wood Canyons Regional Park opened for limited public use in 1990. Prior to this public opening, the Regional Park Operations Division of OC Parks prepared an Interim Operations Plan that the Board of Supervisors subsequently approved. Through the intervening years the plan has served as a general procedural guide for the management of the park and resources, public recreation and safety, and environmental education.

A copy of the Interim Operations Plan is included in Appendix H.

### 16.2 CURRENT OPERATIONS

The County of Orange Codified Ordinance, Article 2. Recreational Areas in General, provides detailed information regarding the operations of County parks, permitted and prohibited uses as summarized below.

**Park Hours.** AWCWP is open from 7 a.m. to sunset, seven days a week. No person shall enter or remain in AWCWP at any time other than during these hours. Heavy rains or high fire danger may necessitate closure of trails or road or the entire park (Section 2-5-46).

**Trails and Closed Areas.** The OC Parks Director designates horseback riding, bicycle riding and hiking trails within AWCWP. The OC Parks Director may also designate closed areas where entry is prohibited for safety or for the protection of natural or cultural resources. No person shall enter (foot, horseback, bicycle) areas within AWCWP that are posted as closed. No person may leave a designated trail other than for law enforcement, lifesaving or emergency purposes. (Section 2-5-46).

**Special Permits.** Written permits are required for public gatherings (picnics, special events, meetings) larger than 100 persons. (Section 2-5-25)

### **Prohibited Activities**

Prohibited activities within AWCWP include those activities that result in the loss or degradation of park resources and facilities.

- **Collecting.** Collecting plants and animals, paleontological, historical and cultural specimens and cultural or archaeological artifacts is prohibited except with valid research collecting permit. (Section 2-5-40).
- **Camping.** No camping at AWCWP.
- **Fires and Fireworks.** Fires, fireworks, and firearms (including air guns, paint ball guns, BB guns, slingshots) are prohibited at AWCWP (Section 2-5-65).
- **Domestic Animals.** Dogs are not permitted at AWCWP, except in designated areas. No person shall leave an animal unattended, tied to an object or confined in a vehicle. People shall remove and dispose of animal waste. (Section 2-5-39).
- **Motorized Vehicles.** Operation of motorized vehicles (including motorcycles, motor bikes, motor dirt bikes) within AWCWP beyond the designated roads at the main entry parking area is not permitted. Authorized exceptions include park access for management, maintenance, police and fire service or by easement or special permit. (Section 2-5-29).
- **Boating.** Public boating is not permitted at AWCWP.
- **Bicycles.** Bicycles may be operated only on designated roads or trails. Bicycles may not be operated in any manner that endangers a person or animal, with regard for other users, surface, width and grade and in no event in excess of 10 miles per hour, unless posted otherwise. (Section 2-5-43).
- **Swimming and Wading.** Swimming or wading is not allowed at AWCWP.

## **16.3 LAW AND ORDINANCE ENFORCEMENT**

Applicable local, state and federal laws and/or ordinances pertaining to the protection and use of AWCWP are in effect and enforced (see Appendix I).

## **16.4 ADMINISTRATION AND MANAGEMENT**

Administration and management will continue to be the responsibility of the County of Orange, OC Parks, Regional Parks Operations staff. At present, there are four staff positions whose work responsibilities are dedicated solely to AWCWP. A Senior Ranger, Park Ranger II (two positions), and a Groundskeeper provide enforcement, management and maintenance for AWCWP. In addition, an Interpretive Specialist provides oversight of interpretive facilities and programs for both AWCWP and Laguna Coast Wilderness Park (LCWP). These existing staff positions are described below:

**Senior Park Ranger (One Position).** The Senior Park Ranger manages, operates and provides resource protection at AWCWP. The Senior Park Ranger also directs and supervises the work of other staff that may include Park Rangers and Groundskeepers. The Senior Park Ranger also organizes and directs the work/activities of volunteers and other alternative work forces; provides community liaison and is primary contact for police, fire and other public programs such as the National Communities Conservation Program, Resource Management and General Development Plans.

- Manages and ensures resource protection in assigned facility by enforcement of County Ordinances, Resource Management Plans, Natural Communities Conservation Plan Documents (where applicable), and other planning or management guidelines that may be adopted; retains land management responsibilities for OC Parks facilities during emergency situations.
- Liaisons and establishes cooperative relationships with local, state and federal agencies, environmental, youth, community, homeowner associations and other special interest groups; represents OC Parks at various meetings and on assigned committees.
- Organizes, plans, supervises and evaluates the work of Park Rangers, Park Maintenance Supervisors and park maintenance personnel; coordinates and provides direction to volunteer groups and other community support groups; supervises and evaluates contractors' work; assists code enforcement, planning and design and engineering sections with facility projects.
- Establishes and manages interpretive, educational, recreational and other public programs (either fee based or at no cost) and assigns qualified staff or volunteers; establishes facility based training and safety programs.
- Responsible for contract enforcement and encroachment abatement within assigned facility; issues parking citations to the public as required.
- Administers permits, reservations and other revenue generating activities; identifies and/or coordinates acquisition of non-traditional funding such as grants, donations, corporate sponsorships; plans and coordinates fund raising activities.
- First responder to medical, fire and other life threatening emergencies within OC Parks facilities; administers basic first aid and fire suppression; remains in command of emergency situation until appropriate response team arrives.

**Park Ranger II (Two Positions).** The Park Ranger II has patrol and shift responsibility for the operation and maintenance of AWCWP. Under direction, the Park Ranger II provides resource protection and visitor safety; responds to all emergencies within assigned facility; enforces the codified Ordinances and County Policy and Procedures; directs and supervises the work of subordinate staff, contractors, volunteers, alternative work force or other County staff doing work within their assigned facility; liaisons with community groups, police, Sheriff, fire and other public organizations; provides visitor or specialized services including recreation, interpretive, special events, volunteer coordination, division training or administrative function.

- In the absence of the Supervising and Senior Park Rangers, the Park Ranger II is responsible for the operation and maintenance of assigned facility.
- Responsible for public safety and resource protection during assigned shift by enforcement of Codified Ordinances, Resource Management Plans, Natural Communities Conservation Plan documents (where applicable) and other planning or management guidelines that may be adopted.
- May issue parking citations as required.
- Retains land management responsibilities for OC Parks facilities during emergency situations until such time as relieved by Supervising and Senior Park Rangers or OC Parks management.
- Is first responder to medical, fire and other life threatening emergencies within OC Parks facilities.
- In the absence of the Supervising and Senior Park Rangers, liaisons with other local, state and federal public safety agencies in the course of their job duties and protects the natural, cultural, historical and structural resources of their assigned facility.
- May conduct training and safety programs, conduct visitor services either directly or via contract service providers,
- Develops and supervises volunteer programs/activities and supervises special events/permit activities.

**Interpretive Specialist (One Position).** This position is responsible for developing and implementing the interpretive programs developed for AWCWP. The Interpretive Specialist is shared with LCWP due to the close proximity and similar resources and comparable interpretive themes. The Interpretive Specialist coordinates interpretive programming with other South Coast Wilderness Park agencies and non-profit support groups.

**Groundskeeper (One Position).** The groundskeeper performs routine grounds maintenance, landscape gardening and facility maintenance and repair work along with other work as required.

- Performs routine groundskeeping work such as cultivating planter areas, planting, preparing soil for planting and applying insecticides; rakes leaves and picks up papers and rubbish; edges and sweeps walks and other paved areas.
- Operates and maintains power equipment such as light tractors, mowers, gang mowers, power parking lot sweepers, litter lifts, sprayers, edgers and clippers; may drive a light truck to carry equipment and crews to and from work areas and haul trash.
- Performs routine grounds maintenance or laboring work such as collecting trash, replacing posts, digging trenches, clearing brush and weeds, and cleaning garbage cans.
- Cleans, stocks and maintains restrooms; performs limited custodial duties at isolated locations in connection with regular assigned tasks.

#### 16.4.1 Proposed Staffing For Resource Management

The RMP includes recommendations for natural and cultural resource protection that will require the need for additional staffing. Improved connections to adjacent corridors (e.g., Aliso Beach Park and Laguna Coast Wilderness Park), will likely present new issues related to enforcement: how to make sure that park users visit the park during operating hours. Recommendations to close and restore many of the unauthorized trails will require planning, work effort, and diligent enforcement. The time commitment and physical labor required to implement the program for resource management (e.g., removal of invasives) cannot be initiated with current staffing. The following premises guide the recommendations below:

- AWCWP will continue to be operated by the County of Orange, Harbors, Beaches and Parks.
- The County manages the entire property, including parcels owned by the City of Laguna Beach.
- The park is in need of a staff person with experience in resource management who can coordinate resource management activities.
- LCWP, in close proximity to AWCWP, may offer opportunities for sharing of certain recommended positions.

**Upgrade Existing Groundskeeper Position.** The existing groundskeeper position should be upgraded to "Parks Maintenance Worker" to better reflect the expected and assigned duties and responsibilities performed by this position. Such duties and responsibilities include: trail construction and maintenance exotic species removal and habitat enhancement projects, park sign and interpretive kiosk construction, fencing installation to protect sensitive park resources. The Parks Maintenance Worker would perform routine maintenance activities as recommended in this RMP.

**Resource Specialist/Resource Coordinator.** Resource protection will continue to be a major focus for park operations at AWCWP. A full time position, Resource Specialist or Resource Coordinator, is recommended as a technical specialist responsible for implementing the overall resource management program. Duties would include:

- Hold detailed knowledge of the natural and cultural resources of AWCWP.
- Implement vegetation management, habitat enhancement and removal of invasive exotic species.
- Ensure conformance between the NCCP/HCP and the AWCWP RMP.
- Perform on-site surveys and prepare monitoring reports with assessments and recommendations.
- Supervise the workforce to implement resource strategies including the maintenance staff and volunteer groups.
- Serve as the technical interface with the County Fire Authority, the County Planning Department, adjacent jurisdictions and homeowner groups and others to insure appropriate trail connections, consistent trail signing, improved staging areas, and needed fire breaks.

- Design and assist in implementing the interpretive program for AWCWP.
- Provide expertise in wildland management and interpretation.

This position could be shared with Laguna Coast Wilderness Park due to the close proximity and similar landscape with comparable management issues. The addition of the Resource Coordinator would increase the need for administrative/operations work space at AWCWP. A resource program would require a storage area for maintenance equipment and supplies (approximately 1000 square feet) in the vicinity of the other Administrative functions at the Main Park Entry. Under a more ambitious scenario, this facility could ultimately be expanded in support of the museum with an interpretive center for the public that could also be used by school classes, bike clubs and others for meetings and other park-related programs.

## 16.5 PUBLIC SAFETY

AWCWP is a wilderness park and subject to inherent public dangers. Park visitors will continue to be informed of these potential dangers with signs and trail entries, information on handouts, and more detail on the internet. These warnings read as follows:

This area is characterized by certain inherent dangers. These include but are not limited to: mountain lions, rattlesnakes, poisonous insects, extremes in weather and rugged terrain. Your safety can not be guaranteed. Stay alert to potential danger.

## 16.6 BUDGET

Appropriations for AWCWP operations are incorporated in the OC Parks Fund 405 Budget.

## 16.7 VOLUNTEER PROGRAMS

Volunteers are playing an increasing role in assisting with a variety of public services, including park and recreation services. Their value to AWCWP may be much greater than the tasks that they perform. Volunteers contribute to a constituency for the park that increases community involvement and provides political support. Management and supervision of volunteers is critical to their effectiveness. Volunteers must be used to fill maintenance voids that existing staff cannot handle, without jeopardizing the jobs of park staff. Volunteers should work under the direction of park staff. AWCWP has a long history of local support. Some of volunteer groups working in and for the park include:

**Laguna Canyon Foundation** is a 501(C)(3) nonprofit corporation that has worked to preserve the land within and around Laguna Canyon since 1991. Through contributions, the Laguna Canyon Foundation provides financial support to protect and enhance existing parkland and to preserve additional wilderness. The Laguna Canyon Foundation is a partnership between community and environmental activists, civic and municipal leaders, and private property owners and developers.

**Laguna Greenbelt, Inc.** is a grassroots organization founded in 1967 to promote the preservation of Orange County open space for the benefit of the general public, and to inform and educate the public about local natural history. The Laguna Greenbelt has established several self-guiding nature trails and provides trained volunteer naturalists that offer guided tours of LCWP.

**County's Adopt-A-Park Program.** The County's Adopt a Park Program organizes volunteers wanting to assist Harbors, Beaches, and Parks. Some volunteer activities include: greeting visitors at nature centers; working with computers in administrative offices; taking photographs; planting trees and seeding damaged areas as well as seed collecting for new plant growth; presenting environmental education programs/nature walks and programs; building and repairing nesting boxes, picnic tables, and other structures; and building and repairing trails.

**County's Ranger Reserves Program.** To assist with the management of County open space, the Park Ranger Reserves program was developed. The Park Ranger Reserves is an ancillary unit of dedicated volunteers responsible for assisting with park management, operations, and patrol for several hours per month following a training program.

**Orange Coast Watershed and Environmental Center (OCWEC).** The OCWEC is a non-profit group dedicated to the watershed and environmental education and awareness. In conjunction with OC Parks, the OCWEC will develop a permanent watershed interpretive facility at AWCWP to provide hands-on experience and up-close observation of the creek environment and its surroundings. It is the intention of the OCWEC to partner with governmental watershed agencies, local colleges and universities, and other watershed program providers for program support.

**Trails 4 All.** Trails 4 All was established in 1992 as the Trails Council of Orange County and incorporate as a 501(C)(3) nonprofit organization in 1995. Trails 4 All assists coordinating and funding volunteer trail projects throughout Orange County. Through donations and the work of volunteers, Trails 4 All is able to help maintain and improve facilities for recreation use. Trails 4 All is involved with trail construction, instructional seminars, creek and watershed clean-up, youth programs, and trail maintenance.

**SHARE Mountain Bike Club.** SHARE is a non-profit, International Mountain Bicycling Association (IMBA) affiliated, organization dedicated to promoting responsible mountain biking. SHARE has organized trail maintenance programs and education programs in Crystal Cove State Park (CCSP), AWCWP, Limestone Canyon & Whiting Ranch Wilderness Park, and Peters Canyon Regional Park. SHARE has also assisted with trail projects in LCWP. Several members are also docents with the Nature Conservancy and serve on the Nature Conservancy's IMBA National Mountain Bike Patrol Program in LCWP and CCSP.

### 16.7.1 Proposed Volunteer Programs

**Trail Patrol.** To supplement the Ranger Reserves Program, a group of "Park Watch" volunteers could be formed to patrol the park on weekends, evenings, and high-use times to answer visitors' questions, inform visitors about park rules and immediately report violations.

The volunteers would be supplied with radios to enable them to inform the park ranger and/or police of situations needing their attention. The volunteers could be trained by the park ranger and the local police departments experienced in "Neighborhood Watch" programs.

This program could also include a volunteer bike patrol that would focus their attention on mountain bikers who use the park, especially keeping an eye out for the creation and use of unauthorized trails and unsafe trail use. Mountain bikers are more likely to cooperate with other bikers than with volunteers on foot. Regular volunteer bike patrols have the potential to be very effective in reducing the number of hiker/cyclist conflicts and in reducing both the number of new trails created and the number of unauthorized trail re-opening attempts. Trail closure efforts on damaged and unauthorized trails are easily undone by cyclists and hikers who ignore or destroy barricades and off limit signs. Regular reminders from volunteer patrollers may also increase the number of riders who wear helmets.

The use of volunteer crime watch groups and volunteer trail patrols is expected to provide an additional level of security and safety provided that an adequate number of volunteers can be relied on for the long-term.

**Maintenance Crews.** Volunteer trail crews, composed of cycling enthusiasts, and other dedicated park users can be a valuable asset. A trail maintenance coordinator (e.g. park ranger or resource coordinator) could strengthen the services of volunteer groups to assist with trail maintenance and to patrol park trails. Cycling organizations can assist the rangers with trail repair oversight and to provide regular bike patrols to educate other cyclists on trail etiquette and safety. Volunteers would benefit from workshop training to discourage the use of unauthorized trails by placing logs, brush, and other obstructions across the head of the trails. Trained volunteers could provide skilled oversight to assist the park rangers in directing trail crew volunteers. If the additional funds for repair materials and tools are provided, then volunteer labor can be more effectively directed.

Multiple opportunities for trail repair training are available in California, including annual workshops offered by the California Trails and Greenways Foundation, the California State Parks Trail Building School, the Student Conservation Organization, and the International Mountain Biking Association (IMBA), among others.

Restoration volunteers could be recruited to assist with the implementation of restoration techniques. Restoration efforts could be overseen and directed by park personnel or by a restoration consultant. The benefits of volunteer labor would include educational opportunities in restoration, a sense of teamwork and accomplishment, and increased commitment to and care of the park by volunteers.

## 16.8 RECOMMENDATIONS

### General Actions

- Upgrade the Existing Groundskeeper Position to Parks Maintenance Worker.

- Create a new position, Resource Specialist, to implement the overall resource management program.
- Form a group of volunteers to patrol the park on weekends, evenings and high-use times to answer visitors' questions, inform visitors about park rules and immediately report violations.
- Use volunteer trail crews to assist with trail maintenance. Conduct workshop training to discourage the use of unauthorized trails by placing logs, brush, and other obstructions across the head of the trails.
- Recruit volunteers to assist with the implementation of restoration techniques.

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