6 Natural Resources

This chapter combines the requirements of the State-mandated conservation and open space elements. The conservation element is intended to cover water, forests, soils, rivers, harbors, fisheries, wildlife, minerals, and other natural resources. The open space element is intended to cover open space for the preservation of natural resources, outdoor recreation, and public health and safety.

6.1 CLIMATE

Pacific Grove has a coastal Mediterranean climate characterized by moderate temperatures throughout the year with mild winter rains and cool summers influenced by coastal fog and onshore breezes. The local climate is largely dominated by the Pacific High Pressure Cell. The proximity of this high pressure cell to the California coast is responsible for large-scale weather patterns within the Monterey Bay region, including rain, wind speed and direction, air temperature, and fog conditions.

Between April and September, prevailing winds are from the northwest nearly 60 percent of the time. During the winter, winds accompanying storm fronts will be from the south, southwest, or southeast. Prevailing winds are still from the northwest or north nearly 50 percent of the time, but are generally weaker than in spring or summer.

Average annual precipitation is about 16 inches, approximately 85 percent of which occurs between November and April. December and January are usually the wettest months of the year. July and August are virtually without rainfall. Fog is most common during July, August, and September, with a low-lying fog bank generally persisting in the area with only short afternoon breaks.

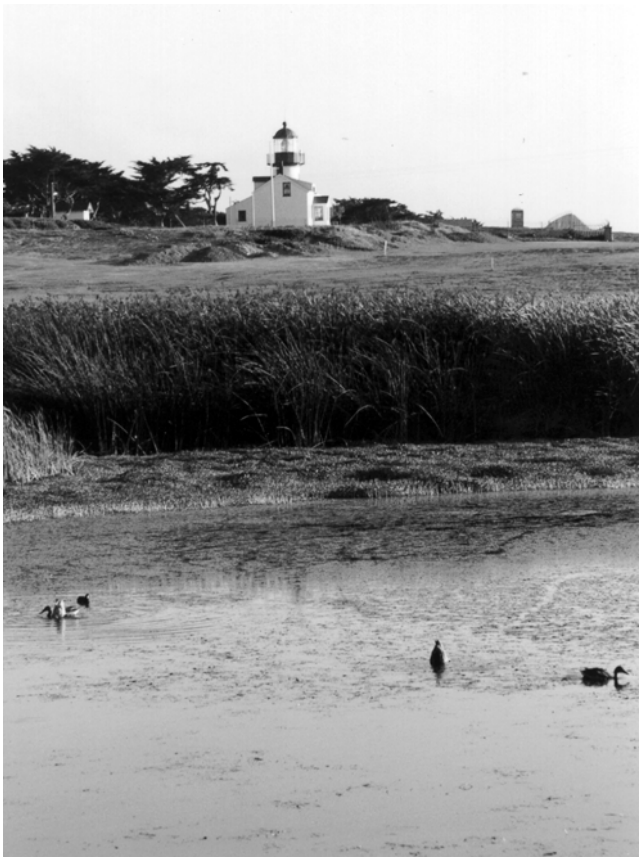
6.2 WATER RESOURCES AND WATER QUALITY

Water is essential to the development of housing, commerce, and industry, to recreation, and to the maintenance of high quality fish and wildlife habitats. Pacific Grove imports all of its fresh water, and no groundwater resources have been developed within the Planning Area.

6.2.1 Marine Water Resources

The most significant water resource in the Planning Area is the Pacific Ocean, including Monterey Bay, which is contiguous to approximately 5.4 miles of the city's boundary. Currents are weak, highly variable, and largely influenced by wind. The height of ocean waves varies seasonally. Summer waves build broad, gently-sloping beaches. The higher winter waves transport sand to the offshore zone, removing beaches completely or leaving them narrow, steep, and usually without a pronounced berm. The rocky intertidal and subtidal areas of the coastline are interspersed with sandy beaches and coastal bluffs, thus providing diverse and highly valued coastal habitats.

Marine water quality. Since the consolidation of sewage treatment facilities for the Monterey Peninsula in 1971 and the provision of a new outfall about two miles offshore in the center of Monterey Bay, there have been only a few water quality problems associated with municipal sewage disposal. Pumping station failures as well as failures in parts of the city's aging sewage system continue to cause occasional spills. Discharges from vessels (primarily fishing and sailboats) are potential sources of pollution. Oil spills from oil tankers are of great concern to Pacific Grove since such spills can be carried long distances making our coastline quite vulnerable. The city has a number of storm drains that discharge into near shore waters. Federal and state regulations are beginning to address pollution that may result from such discharges.



Crespi Pond

Pacific Grove has a long history of seeking to protect its shoreline and marine gardens through City and State regulations. In 1972, the California Department of Fish and Game established the Pacific Grove Marine Gardens Fish Refuge to preserve and protect this special marine environment for the use and benefit of the public. As amended in 1984, the Refuge extends from the southerly city limit at Spanish Bay to about 3rd Street, and from the line of highest tide to where the water depth is 60 feet, as measured from the level of mean low tide.

Also in 1972, the State designated the Hopkins Marine Station as a Marine Life Refuge. As amended in 1984, the Refuge extends from roughly 3rd Street in Pacific Grove to the Monterey city limit, and to depths from the line of highest tide to where the water depth is 60 feet, as measured from the level of mean low tide. Whereas the State *Fish and Game Code* allows limited sport fishing and scientific collection of specimens in the adjoining Pacific Grove Marine Gardens, it is illegal to enter the Hopkins Marine Life Refuge with the intent to take or possess any fish or marine plants.

A further protection was extended to the natural resources of the Pacific Grove shoreline in 1974. At that time the State Water Resources Control Board designated all of the Hopkins Marine Life Refuge, and the bayside portion of the Pacific Grove Marine Gardens between 3rd Street and Asilomar Avenue, an Area of Special Biological Significance. This designation recognizes the extraordinary value of the biological communities in the area, and it allows no risk of change to their environment, unless that change occurs as part of a natural process.

The Monterey Bay National Marine Sanctuary was officially designated by the federal government in September 1992 to protect an enormous variety of marine mammals, seabirds, fish, plants, and animals. This is the largest marine sanctuary in the country, with an area of 4,024 square nautical miles. The law that created the sanctuary establishes a permanent ban on exploring for, developing, or producing oil, gas, and minerals throughout the sanctuary.

6.2.2 Freshwater Resources

Crespi Pond, a 1.28-acre freshwater pond, is located on the Municipal Golf Course, about 150 feet inland from the coastline near Point Pinos. It provides a stopping place for migratory birds. The rapidly diminishing number of freshwater ponds in California gives Crespi Pond increasing ecological value.

The Majella Creek marsh at Asilomar State Beach and Conference Grounds totals approximately five acres. Comprised of a thick stand of willow, cattails, and sedges, it is of considerable value as a marsh for birds and mammals.

Although groundwater resources are critical to the water supply for the Monterey Peninsula, the groundwater basin serving Pacific Grove—the Carmel Valley basin—is located several miles southeast of the Planning Area. Natural flows in the Carmel River occur only during the winter and spring months. Dry season releases from the Los Padres and San Clemente reservoirs are timed to recharge the Carmel Valley aquifer.

Potable water supply. Pacific Grove's potable water is supplied by the California-American Water Company. (See Chapter 9, Public Facilities, Section 9.2, Water Service.)

Freshwater quality. Surface water quality issues are minor and localized. Crespi Pond experiences periodic growth of vegetation primarily as a result of eutrophication from golf course irrigation and precipitation runoff.

Water conservation is a far more pressing issue than water quality. Of particular concern is the desirability of reducing water consumption in order to reduce vulnerability to drought, while still permitting additional urban growth.

6.3 SOIL AND MINERAL RESOURCES

6.3.1 Soil

There are no agricultural uses within the Planning Area. With the notable exception of rock outcrops, soils in Pacific Grove are all sand or sandy loam. The permeability of the soil varies, as does the runoff rate. Erosion hazard is high along the coastline's rock outcroppings. Beach and sand dune areas are particularly susceptible to disturbance. The trampling of dune vegetation causes blowouts, in which the destabilized sand is carried away by the wind. Soil hazards to development are discussed in Chapter 10, Health and Safety, Sections 10.1 and 10.2.

6.3.2 Minerals

The State Surface Mining and Reclamation Act requires the State Geologist to classify mineral areas in the state, and the State Mining and Geology Board to designate mineral deposits of regional or statewide significance. The Pacific Grove area was evaluated for the presence or likely occurrence of specific mineral deposits based on past mineral production and modern geologic concepts relating to mineral occurrence. Since such large areas are covered with decomposed granite, marine terrace deposits, dune sands, and alluvium, the amount of good material is impossible to determine without detailed drilling and sampling. The deposit is therefore classified as "MRZ-3, areas containing mineral deposits, the significance of which cannot be evaluated from available data." As a practical matter, Pacific Grove is nearly built-out, precluding any mineral extraction.

6.4 BIOLOGICAL RESOURCES

For an urban area, Pacific Grove has an unusually rich complement of native flora and fauna. The flora and fauna of the Planning Area are in delicate balance with the current level of urbanization. Sustaining the vegetation resources is critical to the area and will require deliberate and careful attention in future planning and regulatory activities.

6.4.1 Flora; Open Space for the Preservation of Natural Resources

The vegetation of the Planning Area serves several critical ecological functions. First, the tree cover greatly influences the local microclimate by serving as a windbreak from the coastal weather. Protection of the city from high winds is important in maintaining a hospitable human environment. Second, the vegetative cover supports rare, uncommon, and sensitive species of flora and fauna. Third, the sandy soils characteristic of the Planning Area are easily disturbed and prone to erosion. The vegetative cover and root structure protects the soil from wind and other disturbances that could lead to increased soil erosion and dune migration. Fourth, Monterey pines—besides protecting understory and ground vegetation from both sun and wind—gather fog, which then drips to the ground. This dry-season water is critical to many coastal organisms that cannot otherwise survive. Fifth, Pacific Grove's coastline and its forest groves contribute greatly to the scenic value of the area. The pine forest is, however, in a precarious position due to gradual loss of tree cover as a result of urban development, and insufficient replacement tree planting.

The following paragraphs describe major plant communities and their subgroups.

Shoreline habitats. *Exposed rocky shore* consists of consolidated rock outcrops and boulders subject to alternate exposure and submergence from tidal fluctuation. It is generally devoid of vascular plant cover, but it may support various species of algae.

Beach is defined as the narrow, gently sloping strip of sandy substrate, of varying width, along the coast from the mean tide line to the foredune or the base of the coastal bluffs. It is an unstable substrate of relatively pure sand under the direct influence of wind and wave action. Generally the lower portion of the beach is barren of vegetation, but the upper portion is thinly populated with herbaceous perennials such as beach bur, yellow and pink sand-verbena, beach saltbush, and beach sagewort.

Coastal bluffs are the low headlands separating the exposed rocky shore and beach habitats from the

coastal terrace and dune landforms immediately inland. Consisting of eroding and decomposing bedrock, the bluffs form a low rampart ranging from a few to several feet in height. The bluff scarp is steep as a result of wave cutting and wind erosion.

Plants occupying the coastal bluffs are exposed to nearly constant winds with high salt content. They typically form a dense scrub under two feet in height. Some common native plants are dwarf coyote-bush, common yarrow, Monterey paintbrush, California beach-aster, seaside daisy, dune buckwheat, and California poppy. This natural vegetation is extremely fragile. The only good example of coastal bluff scrub remaining within the Planning Area is located along the one-mile shoreline of Asilomar State Beach and Conference Grounds.

Coastal dune habitats. *Dunes* are formed from beach sand that is blown inland by prevailing winds and stabilized gradually over time by vegetation. The dunes within the Planning Area border the coast from Point Pinos south. They developed as a series of parallel ridges generally aligned with the prevailing northwesterly winds. The dunes extend up to a half-mile from the coast, increasing in height as they advance inland. In some places, they reach a height of 100 feet or more.

The dune vegetation is a mosaic of native and exotic species. At several points, the Monterey pine forest occupies extensive portions of the older dunes, but much of the area is dominated by shrubs, sedges, and succulents.

The Asilomar Dunes complex is a distinct geologic formation that extends from Point Pinos to Cypress Point in Pebble Beach. Within the City of Pacific Grove, the Asilomar Dunes encompass the area between Asilomar Avenue and the shoreline. This area



Coastal dunes, 1905

Source: The Pat Hathaway Collection



Monterey pine

contains a number of unique biological and geological resources, including at least six rare or endangered plant and animal species and dune landforms that are composed almost entirely of pure quartz sand.

Wetland habitats. *Coastal brackish marsh* occurs where dune swales have been eroded to the water table. These depressions are permanently flooded with fresh water that is rendered somewhat saline through a combination of wind-borne salt spray and intrusion of salt water into the coastal groundwater. The soil is thoroughly saturated, but the water is quiet and lacks a significant current.

Crespi Pond is a good example. The central portion of the depression is occupied by open water, and the margins of the pond are dominated by broad-leaved cattail and California bulrush.

Riparian scrub is primarily a low, streamside thicket dominated by arroyo willow, found in moist to saturated bottom lands along low-gradient streams that transect the dunes complex. The Majella Creek marsh is the most significant example of riparian habitat within the Planning Area.

Monterey pine forest. Native stands of Monterey pine have an extremely limited distribution, covering three small areas of the central California coast. The pines persist in coastal areas with the highest frequency of summer fog. The forest canopy is composed of dense, evenly-aged stands of Monterey pine to 100 feet in height. Coast live oak is the next most abundant tree species and frequently is found as an understory in the pine forest. Some of the shrubs commonly found in Monterey pine forests include manzanita, ceanothus, blackberry, poison oak, and huckleberry.

Although much of the city was once covered by a forest of Monterey pines, today there are only a few small areas of undeveloped Monterey pine forest in Pacific Grove. Washington Park supports a relatively small remnant stand of native forest. A larger and more undisturbed stand occurs in Lynn "Rip" Van Winkle Open Space. The pine forest once extended out to Sunset Drive in some locations, but it is receding inland as the eroding dunes lose their effectiveness as a protective barrier against the ocean winds.

Flora in the urban area. Isolated specimen trees of Monterey pine and coast live oak occur over much of Pacific Grove. A few large tracts within the urban area are covered by a dense Monterey pine forest. One is the forested portion of the Asilomar State Beach and Conference Grounds and the Asilomar residential area, in general.

A vegetation type called "mixed ornamental" is found extensively in the civic and commercial center of Pacific Grove and in the older residential area bounded by Washington Park on the west, Sinex Avenue on the south, Lighthouse Avenue on the north, and Eardley Avenue on the east. This name is a catchall for the variety of exotics and landscape trees that have been planted in the older portion of the developed area. A separate vegetation type is called "lawns and golf courses" and applies to extensive areas of playing turf at the Municipal Golf Course and school athletic fields. "Developed area" is a term applied to extensive areas that are covered by structures and impervious surfaces or are otherwise devoid of plant cover.

6.4.2 Wildlife

The area's diverse flora provide habitat for numerous mammals, birds, reptiles, amphibians, and invertebrates, unique for an urban setting. The Planning Area is also a major stopover for a large number of migratory species ranging from the Monarch butterfly to the gray whale.

The Monarch butterfly uses primarily Monterey pine and introduced blue gum eucalyptus forest for overwintering in its annual migration. This important habitat is found at two locations in Pacific Grove where Monarch butterflies congregate in great numbers during winter: the Monarch Grove Sanctuary on Grove Acre Avenue, and Washington Park.

Both of these locations have been the subject of considerable effort to protect the butterfly habitat. In November 1990, local voters passed an initiative authorizing the City to purchase the 2.7-acre site on Grove Acre to establish it as permanent open space and butterfly habitat. As a result of this bond issue plus a grant from the Wildlife Conservation Board, this site was purchased by the City in 1992. The City is also implementing a trail system and a reforestation plan to reestablish the Washington Park butterfly habitat, which in the 1980s experienced a decline in the number of Monarchs overwintering.

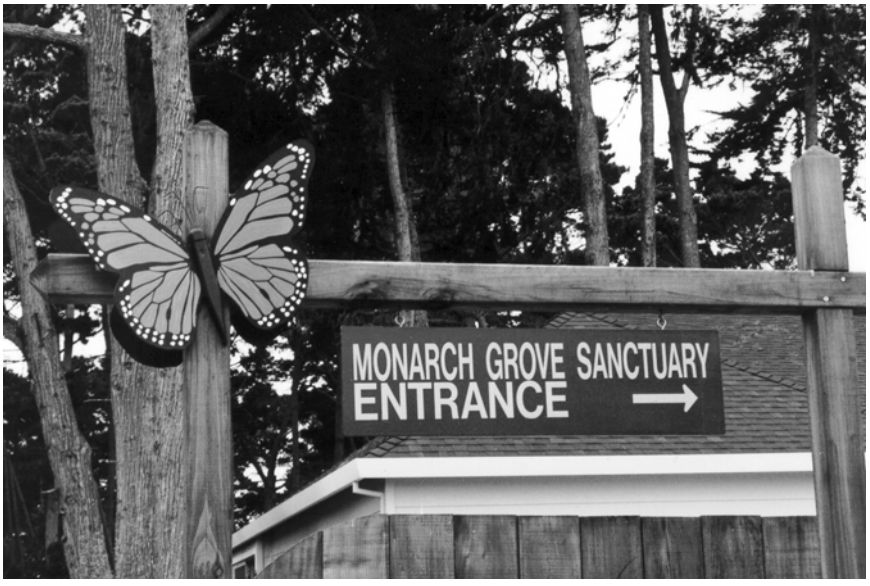
Because of its unique coastal location at the tip of the Monterey Peninsula and at the edge of Monterey Bay with its submarine canyon, Pacific Grove has proved to be a magnet for both breeding species and (especially) migratory species of birds which pass through the area in spring and fall migrations. Seabirds that use Monterey Bay are also often pushed near the Pacific Grove shoreline in high winds. These unique circumstances, plus the regular recording of wildlife since the turn of the century, have contributed to a documented list of 349 species of birds which have been recorded within the boundaries of Pacific Grove, giving the city one of the highest municipal bird lists on the continent.

Animals typically found in the area's habitat types (discussed above under "flora") are listed below.

Shoreline habitats. The *exposed rocky shore* is home to mollusks, sea stars, sea urchins, and small fish. Invertebrates found there include abalone, barnacles, limpets, lined shore crabs, and litorine snails. The rocky shore also serves as a feeding and roosting ground for the harbor seal, gulls, and various shore birds, such as the black oystercatcher and the black turnstone. The black oystercatcher and the western gull also nest on the rocks in small numbers.

Beach habitats sustain a variety of shorebirds that feed on intertidal invertebrates or the beach hopper colonies in seaweed piles.

Coastal dune habitats. The *open dunes* provide essentially no habitat for wildlife. The *native dune scrub,* however, is an important area for wildlife. Mammals like





Monarch Grove Sanctuary

The Butterfly Parade

The annual Butterfly Parade has been held the second Saturday in October since 1939. The school children of Pacific Grove welcome the return of the Monarchs with a dress-up parade that has become a treasured community tradition. The kindergarten children have the honor of dressing in Monarch butterfly costumes and leading the parade.



Monarchs in the Butterfly Parade, circa 1970

Source: The Pat Hathaway Collection



Deer grazing in cemetery

the raccoon, black-tailed mule deer, and black-tailed jackrabbit are found there, along with the black legless lizard and birds like the American kestrel. *Dune swales* are dominated by dense patches of sedges—an important food resource and cover for marsh birds, sparrows, finches, and the horned lark. Many birds, such as mallards, use sedge stands for nesting.

Wetland habitats. *Coastal brackish marsh* is home to the California meadow mouse and provides feeding spots for some local and migratory birds.

Riparian scrub provides cover or nesting habitat for rabbits, numerous small birds, and some rodents. It also provides an important food resource for deer, rabbits, and birds.

Monterey pine forest. The pine forests are the most species-rich habitats in the Planning Area, but these forested areas are not all alike. In some parts, the trees are dense; in others they are sparse. In some areas, the forest consists of trees and ground cover but no bushes or young trees; other areas have all three structural components of the forest: tall trees, understory, and ground cover of low herbaceous plants.

Deer live in the forest, but feed in forest openings. Northern flicker and American robin also depend on these openings. Pacific-slope flycatcher, fox sparrow, and dark-eyed junco live in the forest only where it has all three component parts, and Allen's hummingbird lives along the forest edges. Acorn woodpecker, Nuttall's woodpecker, plain titmouse, and Hutton's vireo depend on the oak trees. The brown creeper will only live in old growth trees. Newts and other salamanders need the cool darkness of damp, well-canopied forests; most reptiles need the warm, dry, open-canopied forests.

To accommodate these species, the forest must be managed to include the full spectrum of successional stages, including a full complement of associated species such as oaks, California huckleberry, shaggy-bark manzanita, California blackberry, and poison oak. Many of the native bird species depend on standing dead trees (snags) for nesting sites and as a food source.

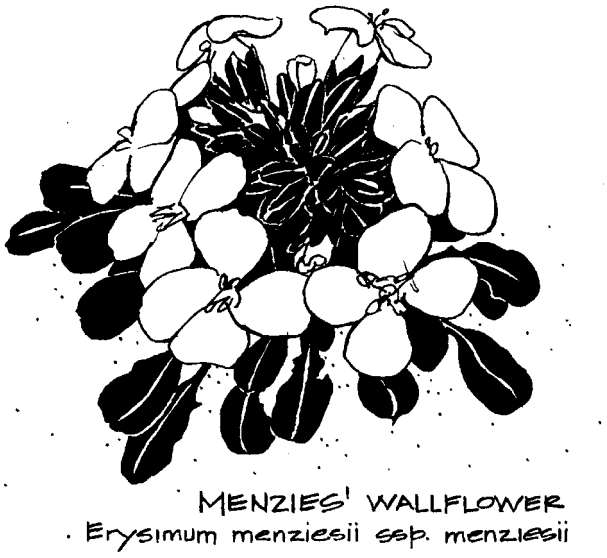
The size of the Pacific Grove deer herd has greatly increased in recent years, mainly in response to supplemental feeding by residents. Feeding deer and other wildlife creates problems involving overpopulation, increased concentrations of animals, nutritional imbalances, and disease. Consequently, feeding of wildlife (deer, raccoons, Beechey ground squirrels, gray squirrels, and pigeons) is prohibited in Pacific Grove.

Wildlife in the urban area. Most of the *mixed ornamental* habitats exist on private land or public land maintained strictly for aesthetic purposes. Wildlife tolerant of urban settings exist within these habitats and can be quite diverse. Wildlife is beginning to cause problems in some of the urban areas.

Studies have shown that most wildlife species need small patches of "wildness" in order to survive in urban settings. This wildness can simply be a brush pile or brush thicket between two manicured lawns, or it can be provided by a complex system of wildlife corridors leading to and from wild areas. Besides



Southern Sea Otter



mammals like the broad-handed mole and Botta's pocket gopher, a number of birds can be found in *mixed ornamental* habitats, including the barn owl, Anna's hummingbird, cedar waxwing, house sparrow, Brewer's blackbird, barn swallow, mockingbird, American robin, European starling, purple finch, house finch, California towhee, and dark-eyed junco.

Lawns and golf courses appeal to a select group of wildlife, including kildeers, robins, and bluebirds, and provide grazing for deer. This habitat can be made more diverse by allowing shrubs to grow to the edge of the fairways or grassy expanses, and by providing "islands" of wild areas in less-used portions.

6.5 RARE, ENDANGERED, AND THREATENED SPECIES

According to the records of the California Natural Diversity Data Base, several species listed as rare, endangered, or threatened have been identified within the Planning Area. In addition, the Planning Area contains habitat that may be used by additional rare or endangered species.

6.5.1 Fauna

The southern sea otter frequents the nearshore area along the entire Planning Area coastline, and the gray whale can be sighted off the peninsula headlands during its annual migration. The black legless lizard, which is proposed for listing as an endangered species by the United States Fish and Wildlife Service, occurs in the Asilomar Dunes. The California brown pelican roosts on the coastal rocks and forages in the near-shore water. The American peregrine falcon is a migratory visitor.

6.5.2 Flora

As of 1994, five federally listed endangered plants were found in a number of places in the Asilomar Dunes: Menzies' wallflower, Tidestrom's lupine, dune layia, sand gilia, and Monterey spineflower. These plants are declining in number as a result of residential and golf course development, the spread of exotic plants (particularly iceplant), and foot traffic.

Smith's blue butterfly is found in the dunes around Marina and along the Big Sur coast. The larvae of this species feed on two species of wild buckwheat, one of which—dune buckwheat—grows in the Pacific Grove Planning Area. This host plant for Smith's blue butterfly warrants special protection.





6.6 NATURAL RESOURCES GOALS, POLICIES, AND PROGRAMS

The City's Local Coastal Program Land Use Plan (LUP) is an element of this General Plan. Its policies, in great detail and depth, address all of the natural resources issues in the city's coastal zone. (The coastal zone includes all land and water generally seaward of Central Avenue, Pacific Avenue, Ocean View Boulevard, and Asilomar Avenue.)

This chapter of the General Plan does not repeat the LUP policies verbatim. In some cases, this chapter refers to specific sections of the LUP to cross-reference what the City has already adopted as a method for accomplishing a natural resources goal, policy, or program. In other cases, the City intends that one or more of the LUP policies be adopted citywide. In those situations, the goal, policy, or program in this chapter attempts to employ the same words used in the LUP so that the General Plan will be internally consistent.

GOAL 1 **Comprehensively manage Pacific Grove's vegetation and wildlife habitat.**

POLICY 1 **Consult with the Pacific Grove Museum of Natural History staff regarding matters of natural resource management.**

POLICY 2 **Develop a vegetation and wildlife habitat management program.**

Program A Work in concert with the California Department of Fish and Game to manage wildlife.

POLICY 3 **Actively promote tree planting to maintain and renew the urban forest.**

The Local Coastal Program Land Use Plan calls for the City to undertake and implement a tree management program to maintain and enhance the Monterey pine and cypress stands within the city. LUP 2.3.6.1 calls for a complete inventory of the trees within the city's coastal zone to determine age, disease, and need for reforestation. The City intends to develop a citywide tree management program to include replacement plantings of Monterey pines, Monterey cypresses, and coast live oaks.

Program B Prepare and adopt a comprehensive and citywide urban forest management plan.

Among other issues, the urban forest management plan will address aesthetics, forest renewal, and safety.

Program C Work with citizens to encourage tree planting on private property.

The City will refine and publish a planting list of desirable and adaptable trees, and native drought-resistant vegetation.

Program D Encourage the restoration and maintenance of native plants.

POLICY 4 Mitigate development in environmentally sensitive areas.

POLICY 5 Manage the use of publicly-owned environmentally sensitive areas.

For example, maintaining the Monterey pine forest in Pacific Grove is particularly important to preserving the city's unique natural heritage and protecting the Monarch butterfly. Pacific Grove is one of only a few locations in California where large clusters of the Monarch butterfly overwinter. It is the only known site that has native trees.

Program E Construct pathways in sensitive areas, where necessary.

The pathways are intended to protect sensitive habitat by restricting pedestrians to specific locations. This is especially critical in dune habitats, which are very sensitive to trampling. Boardwalks have proven beneficial in some areas.

Program F Maintain contiguous areas of undisturbed land in open space uses wherever possible to protect environmentally sensitive habitat areas and associated wildlife values (LUP, 3.4.4.3).

The City's Local Coastal Program Land Use Plan will allow new subdivisions within or immediately adjacent to environmentally sensitive habitat areas only at densities compatible with protecting and maintaining natural resources. New subdivisions must first demonstrate that normal residential development, including driveway and utility connections, will not damage environmentally sensitive habitat (LUP, 3.4.4.3). There may be other areas of the city to which these concerns apply.



Boardwalk on sand dunes

POLICY 6 Review the role of the City Beautification Committee with respect to management of Pacific Grove's vegetation and wildlife.

POLICY 7 Develop procedures to more effectively focus the abundance of environmental and other volunteerism available to the City.

GOAL 2 Protect Pacific Grove's coastal resources.

The City's Local Coastal Program Land Use Plan, an element of this General Plan, addresses this goal. It calls for developing an overall Coastal Parks Plan to manage and, where necessary, restore Pacific Grove's coastal park lands. LUP 2.1.5.1 requires the design of any new seawalls or the extension of existing seawalls to eliminate or mitigate adverse impacts on the local shoreline. LUP 2.1.4.2 calls for coordinating the planning and management of Pacific Grove's coastal park lands with adjacent jurisdictions and other public agencies.

Program G Seek funds to purchase vacant parcels on Asilomar Avenue that would be appropriate for preservation as permanent open space.

GOAL 3 Preserve public visual access to the ocean.

LUP 3.4.4.1 controls new development in the Asilomar Dunes area to protect coastal scenic values. LUP 3.4.4.2 aims to maintain the Asilomar Dunes neighborhood as a low density residential area.

The Local Coastal Program Land Use Plan also aims to maintain vacant private parcels west of Jewell Avenue on the seaward side of Sunset Drive as open space (LUP, 3.4.5.4). The open space would be made permanent through dedication of scenic conservation easements, acquisition in fee, or purchase of development rights by the City, by another governmental entity, or by a private foundation. The same methods would be applied to preserving scenic values, remnant native pine forest, and environmentally sensitive dune habitat on private parcels along the seaward side of Asilomar Avenue, from the vicinity of the Pico Avenue intersection southwards to the Asilomar Conference Grounds (LUP, 3.4.5.5). It is the intent of this General Plan to achieve this goal with the cooperation of the private property owner.

Program H Seek funds to purchase vacant parcels that would be appropriate for preservation as permanent open space (LUP, 3.4.6.2).

GOAL 4 Protect Pacific Grove's water and marine resources.

LUP 2.2.4.1 calls for the City to coordinate with the State Department of Fish and Game and other agencies in enforcing State and local regulations protecting the Pacific Grove Marine Gardens and its resources. LUP 2.2.4.2 calls on the City to assist appropriate institutions or agencies in undertaking long-term ecological studies to monitor the marine resources and water quality of the Pacific Grove Marine Gardens.

The Local Coastal Program Land Use Plan considers the city's tidelands, Crespi Pond, and Majella Slough to be environmentally sensitive habitat areas (LUP, 2.2.4.3). No diking, filling, or dredging is allowed in the city's tidelands, and the only alteration allowed at Crespi Pond and Majella Slough—freshwater wetlands—is for maintenance dredging or activities essential to restoring natural habitat (LUP, 2.2.4.4).

POLICY 8 When reimbursement is available, cooperate with State and federal agencies in reducing impacts from urban runoff.

Program I Adopt citywide, comprehensive pollution, erosion, and drainage control ordinances.

The City will cooperate with State and federal agencies in protecting the Marine Gardens and its resources from pollution and siltation originating from building sites, inappropriate dumping, and storm water runoff.

Program J Use the CEQA process to identify and avoid or mitigate potential groundwater pollution problems resulting from new development.

POLICY 9 Prohibit the unsafe use of chemical pesticides and herbicides.

Program K Continue to require that City personnel using approved pesticides and herbicides are properly trained and licensed for such use.

Program L Cooperate with the Monterey Regional Waste Management District to provide a substation in the city for collection of hazardous materials.

Program M Encourage the City Recycling Advisory Committee to investigate and promote methods for easy disposal of used oil and other pollution-causing automobile and household by-products for recycling.

Program N Enforce existing laws regulating the use and disposal of automobile by-products, chemicals, and hazardous materials that may find their way into groundwater and the marine environment.

The City will implement and maintain storm and sump water capture facilities, where practical, on City property. It will use captured water, where practical, and will encourage private individuals to do the same.

GOAL 5 Protect Pacific Grove's biological resources.

Pacific Grove's vegetation resources, including the Monarch butterfly habitat, are threatened (and in some cases have already been destroyed or signifi-

cantly disturbed) by urban development, clearing, introduction of exotic plants, and overuse of vegetation resource areas.

The Local Coastal Program Land Use Plan aims to maintain and enhance the City's protective policies and ordinances concerning the overwintering Monarch butterfly population in Pacific Grove. LUP 2.3.4.1 encourages the planting and preservation of vegetation that the Monarch butterfly needs for feeding or clustering. It ensures that any new development near trees used by butterflies will not adversely affect the butterflies or the habitat.

LUP 2.3.4.2 aims to protect, maintain, and enhance the habitat of endangered species such as Menzies' wallflower and Tidestrom's lupine. Also see LUP 2.3.5.3.

POLICY 10 **Continue to promote Pacific Grove as "Butterfly Town U.S.A."**

POLICY 11 **Support the adoption of enhanced penalties for dumping of trash and/or hazardous materials that will affect environmentally sensitive areas.**

GOAL 6 Protect endangered species.

POLICY 12 **Develop methods to maintain endangered species within the Asilomar Dunes neighborhood, Asilomar State Beach and Conference Grounds, the U.S. Coast Guard Reservation, the Pacific Grove shoreline, and other appropriate areas (LUP, 2.3.6.2).**

Program O Encourage the Museum of Natural History to enhance and maintain a native plant garden.