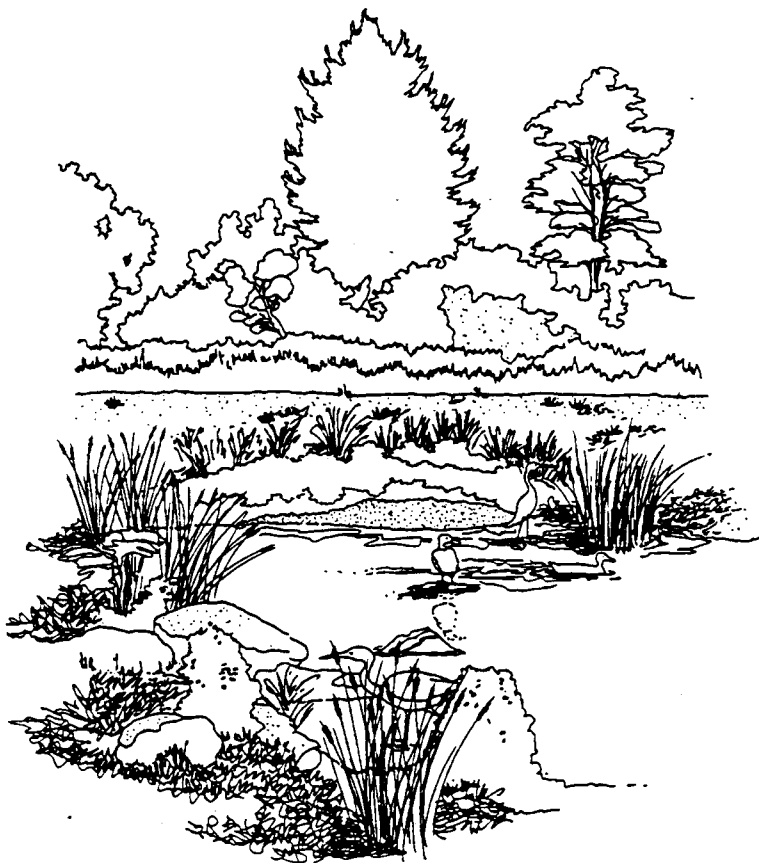


# ENVIRONMENTAL QUALITY

The goal and objectives developed by the Advisory Committee for Environmental Quality of the river are:

*Preserve, enhance and restore environmental resources in and along the river.*

- Improve and create natural plant and animal habitats.
- Increase water conservation efforts and provide for the most beneficial use of river water.
- Improve water quality and cleanliness of river.
- Improve air quality.





## A. EXISTING CONDITIONS

The Master Plan builds upon existing studies to develop recommendations for enhancing the environmental quality of the Los Angeles River. The description of the existing conditions is based on information gathered through discussions with the Environmental Quality Subcommittee, review of *The Biota of the Los Angeles River* and numerous site visits. The description outlines habitats (habitat types, vegetation, habitat systems, soil contamination, air quality), water sources and water quality, past practices that affect these environmental qualities and ongoing protection and enhancement efforts along the river.


### HABITATS

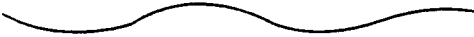
The most comprehensive description of the river environment, in terms of habitats, can be found in *The Biota of the Los Angeles River*, completed by Kimball Garrett of the Los Angeles County Museum of Natural History in 1993. This study documents the changes observed in the species that have historically occurred in and along the river. The report also provides an overview of plants, mollusks, fish, reptiles and amphibians, mammals and birds, and discusses the habitats in which they exist today.

More than two dozen distinct habitats once existed in the Los Angeles River watershed. Today, only a few remnant native and exotic habitats are found along the lowland reaches of the river. These were described in *The Biota of The Los Angeles River* study as:

**Brackish channel water:** Occurs where there is unrestricted tidal flows from the mouth of the river north to Anaheim Street. The lack of vegetation below Pacific Coast Highway indicates the presence of salt water where circulation is limited during most of the year.

**Wet concrete channel bottom with algal growth:** Occurs along the lower river channel, especially between Willow Street and Rosecrans Avenue, where the concrete is covered with a shallow sheet of water; also near the 134 Freeway and downstream of the 110 Freeway. In summer, the warm water supports algal growth on which invertebrates thrive. Shorebirds use this habitat, especially during their fall migration from July to September.





**Soft bottom channel with annually flooded riparian growth:** Soft bottom areas which are lined with cobble, sediment and boulders allow growth of willows and other riparian vegetation. This habitat occurs in three areas: Willow Street to Pacific Coast Highway; Glendale Narrows from the Burbank/Western Channel confluence (Victory Boulevard) to just above the Arroyo Seco confluence; and in the Sepulveda Flood Control Basin from the dam to above Balboa Boulevard.

**River bank:** Earthen river banks can be found around the edges of some flood control basins, especially behind Hansen Dam.

**Freshwater marsh/cienega:** This habitat, which was once common along the river, now occurs only in small areas of the soft bottom channel.



**Open freshwater reservoirs:** Constructed reservoirs and lakes within the Los Angeles River watershed that offer feeding and resting habitat to migrating birds include Silver Lake, Encino, Los Angeles, Pacoima and Tujunga reservoirs and spreading grounds. These form part of the “habitat system” to which the river belongs.


**Floodplain forest:** This habitat is characterized by willows and cottonwoods, with dense shrubby undergrowth. Once common along the river, remnants of this habitat now occur only in Whittier Narrows, Sepulveda and Hansen flood control basins.

**Valley oak savanna:** Once occurred in the western area of the river drainage. Now only disturbed remnants remain near the Chatsworth Reservoir and in Sepulveda Basin.

**Alluvial scrub:** Occurred on alluvial washes, or bajadas. Big Tujunga Wash contains the only remnant of this habitat.

**Urban/suburban:** This highly modified habitat type, with mostly exotic tree and shrub species, is typical of the lowland portions of the Los Angeles River. The extensive urbanization of the flood plain and the channelization of the river and its tributaries have provided for the spread of this habitat type. While some native species survive, most native birds and animals do not adapt to this habitat.





**Aerial:** Animals that eat insects, such as bats, swallows and swifts, are common throughout the Los Angeles River watershed where conditions of vegetation, wind and topography produce ideal conditions for large concentrations of insects, and therefore, the species that feed on them.

*The Biota of The Los Angeles River* study concludes that four habitat types have experienced the greatest impacts due to urbanization and flood control programs of this century: coastal estuaries; seasonal and permanent freshwater and brackish wetlands; lowland riparian forests and thickets; and alluvial scrub.


Despite the losses of natural areas along the river, wildlife, especially birds, do thrive in the habitats that remain. More than 200 species of birds still feed, nest, or roost along the river. The highest concentrations of birds occur in the “soft bottom” and “wet concrete channel bottom with algal growth” habitats. For a list of species, see *The Biota of the Los Angeles River*.

## **VEGETATION**

In the past, little effort has been made to maintain or enhance plant growth along or in the river. With the channelization of the river, vegetation is cleared from the channel from time to time in order to maintain its water carrying capacity. In general, the edges of the river right-of-way (along the maintenance roads and outside levees), as well as some of the adjacent private land, support only occasional volunteer plants. The “soft bottom” habitats described above are the exceptions to this.

In downtown Los Angeles and through the City of Vernon, railroad tracks lie parallel to the river, often on both sides. Little or no vegetation grows here, and in many areas the soil is contaminated.

In recent years, concerned individuals and community groups have begun to install and tend plantings along the river. (See Aesthetics for a description of these areas.) Public agencies have also begun efforts to protect or increase the amount of vegetation in and along the river in order to screen facilities and develop greenways.





## HABITAT SYSTEM

The Environmental Subcommittee emphasized the importance of the Los Angeles River as one of several key regional habitats for wildlife. Migratory and resident birds move along major flyways between the river, nearby Significant Ecological Areas and other sites with surface water (such as Hansen Dam, Sepulveda Basin wildlife area and Pierce College). Together, these sites form a system of habitats critical to the wildlife of the region.

## SOIL CONTAMINATION


The soil is often contaminated on riverfront lands that have supported railroads or other industries. Taylor Yard in the Glendale Narrows area provides a case study that may be typical of similar industrial sites.


*The Multi-Use Study on the Los Angeles River at Taylor Yard* addressed the issue of soil toxicity, and the steps that must be taken to prepare such sites for other uses. After years of use for industry and railroad routing and maintenance, the soil on portions of Taylor Yard contains toxic levels of gasoline, diesel fuel, solvents and industrial waste. Measures needed to bring the land into compliance with standards for industrial and commercial land use include fixation to immobilize hazardous compounds, vacuum extraction to remove toxic vapors, removal of contaminated soil to regulated landfills and capping with clean soil. For water-related land uses (such as recreation or wetlands restoration), the soil would either need to be sealed from ground water movement or excavated and removed from the site.

The rehabilitation for reuse of other contaminated sites along the river may require similar detoxification measures. As another example, low-lying areas adjacent to natural washes were used by local citizens and companies as open dumps prior to channelization of the rivers. Over time, these dumps have been covered, but they are periodically unearthed during construction projects.

## AIR QUALITY

The air quality of the southern California region is generally characterized as poor. As with the rest of region, the air quality along the Los Angeles River reflects seasonal and daily changes in climatic conditions and other factors. The regional Air Quality Management Plan does not specifically address the Los Angeles River.





People walking or riding along the river find some areas tainted by the odors of decomposing plant matter, illegally dumped debris, chemical residues in the reclaimed water or vehicle exhaust from adjacent freeways. Beyond these localized occurrences, the air quality is the same as in surrounding areas.

## **WATER SOURCES**


In an average year, about 77% of the total base flow in the river is tertiary-treated effluent from the Tillman and Glendale Treatment Plants. This totals approximately 89 million gallons (274 acre-feet) on an average day. Other sources are industrial discharge, urban runoff and seepage when groundwater rises. Future demand and markets for reclaimed water will result in lower flows available for habitat and other uses.


Water purveyors in the region are currently developing a distribution system for reclaimed water. In some locations, these water lines are close enough to provide a source of irrigation water for future Master Plan projects.

## **WATER QUALITY**

Due to the high proportion of tertiary treated effluent in the flows, the quality of the river water can be relatively good and used for irrigation. At times, pollutants from industrial and urban runoff lower the water quality. Reclaimed water has high nutrient levels that cause algal growth above the normal limits in a natural river.

As required by the Clean Water Act, any discharge of pollutants to waters of the United States from storm water is effectively prohibited, unless the discharge is in compliance with the National Pollutant Discharge Elimination System (NPDES) Permit. In California, these permits are issued through the State Water Resources Control Board and the nine Regional Water Quality Control Boards. In June 1990, the first Municipal NPDES Storm Water Permit was issued jointly to Los Angeles County and 85 cities. The county has been identified as the Principal Permittee (with other cities being co-Permittees). The Los Angeles County Department of Public Works, as the lead agency for the county, has been assigned to coordinate the required Municipal Storm Water Permit activities.





The Regional Board has recently undertaken a watershed approach for water quality protection. This approach will combine the processes of permitting, receiving water assessments and non-point source initiatives into one program in each of six identified watersheds.

Water quality in the river is presently monitored by the Los Angeles County Department of Public Works and the Regional Water Quality Control Board.

### **IMPACTS OF PAST PRACTICES ON ENVIRONMENTAL QUALITY**

The state of the river today reflects land use and flood protection decisions made in the past which placed a low priority on maintaining the river's natural environment. Throughout this century, rapid development has taken place along the river's former flood plain. This development, along with the concurrent development of flood control systems demanded by land owners and government agencies, has eliminated most of the river's natural qualities.


Over the last few decades much of the once-permeable land along the river has been paved. Instead of being absorbed into the soil, rainwater falling on streets, rooftops and driveways now flows quickly into storm drains that discharge into the river channel. Urbanization continues today, and the increasing runoff further alters the river environment and potentially threatens to overwhelm the carrying capacity of storm drainage systems.

For public safety and because of past litigation, management of the river right-of-way since channelization has focused primarily on flood control functions. In a few locations, in cooperation with neighboring communities, efforts have been made to enhance sites to help meet local open space and recreational needs. (Some of these are described below and in the Recreation section.) Other opportunities exist for improving the river environment, many of which are described in this Master Plan.





## CURRENT ENVIRONMENTAL PROTECTION AND ENHANCEMENT EFFORTS

- The Los Angeles County Department of Public Works, in cooperation with the Los Angeles River Advisory Committee, the City of Long Beach and the U.S. Army Corps of Engineers, is developing the Dominguez Gap demonstration project. This project will remove exotic plants from Dominguez Gap near Del Amo Boulevard, plant native vegetation and install interpretive signs.
  - Los Angeles County Department of Public Works will study the possibility of removing portions of the concrete channel and widening Tujunga Wash. The river environment would be enhanced through the creation of a natural wildlife habitat.
  - For the last several years hundreds of people have turned out for annual river clean-ups organized by Friends of The Los Angeles River.
  - A citizens' group, NorthEast Trees, has planted a two-mile area of the Los Angeles River and Arroyo Seco with native trees.
  - Wildlife groups are exploring the possibility of designating Sepulveda Flood Control Basin as an urban wildlife refuge.
  - The California Department of Fish and Game is considering the Los Angeles River as a potential site for its Urban Fishing Program. This would involve developing fishery habitat at locations where access can be safely provided and monitored.
  - The Regional Water Quality Control Board, Los Angeles County Department of Public Works and some cities have sponsored the stenciling of storm drain inlets to raise awareness of water quality issues.
  - The California Native Plant Society and other groups carry out habitat enhancement programs in Sepulveda Basin.
  - The Army Corps of Engineers is planning to double the size of the wildlife area in Sepulveda Basin, increasing its size to 225 acres.
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## B. RECOMMENDATIONS

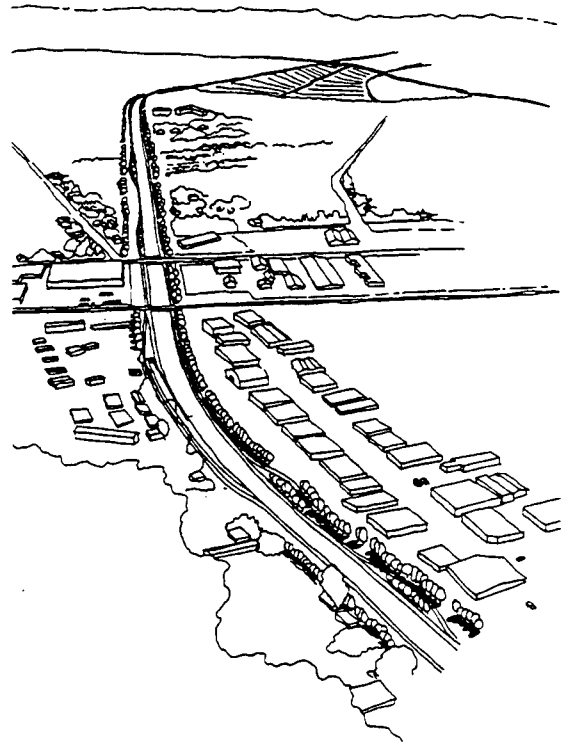
Among the agencies, groups and individuals that have participated in the development of the Master Plan, there is almost unanimous agreement that enhancement of the river environment—for wildlife and for people—is a top priority. A number of recommendations for achieving these objectives are listed below.


### • Planting

- **Plant a continuous greenway of trees** for increased cooling, forage and roosting and nesting habitat.
- **Develop guidelines for planting** within the constraints of various sites: limitations on size; type and location for flood control maintenance and access; limitations on size of root systems (on levees, for example); water demand and availability; tree height (shorter trees required in utility easements); types of vegetation cover (must discourage burrowing animals from potentially undermining structural stability of levees); potential for wildlife habitat; and site visibility from trails, homes, roads and freeways.
- **Begin plantings at bridges** and other high-visibility locations such as at trail access points, places where trails intersect with streets and around areas with historical or aesthetic value.
- **Plant at locations cited in the *Biota of The Los Angeles River* study** as having potentially high habitat value, such as spreading basins and areas adjacent to the soft bottom sections of the river.

### • Habitat Restoration

- Undertake a program of **riparian and upland habitat restoration** in selected areas.
- Conduct further investigations to **identify appropriate sites for restoration** and/or preservation as recommended in *The Biota of The Los Angeles River* study.



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- Pursue **restoration projects previously identified as high potential**: Dominguez Gap, Sepulveda Basin, Taylor Yard and the estuary. (The almost complete loss of the original wetlands and the altered hydrology of the river make it difficult to know what types of wetlands would most successfully respond to restoration efforts. As a result, wetland restoration will require careful study of several variables, including current flow patterns and future water availability.)
  - Undertake **further studies of the river bird life** as recommended in *The Biota of the Los Angeles River*:
    - a. Monitor sensitive bird species (see *The Biota of The Los Angeles River* study for list)
    - b. Examine options for reestablishing populations of birds which once bred here.
    - c. Study the role of sediment and algal growth in the establishment of shorebird habitat to allow for management of the lower river as this type of habitat in conjunction with its flood control mission.
    - d. Undertake programs to reduce the numbers of brown-headed cowbirds and feral predators such as foxes.


- **Habitat Protection**

- **Protect areas that currently serve as habitat**. Consider ways to protect wildlife in the urban environment.

- **Water Quality and Environmental Education**



- **Initiate water quality and environmental education programs** by developing interpretation sites at Hansen Dam, Dominguez Gap, Pacoima and Tujunga Washes and at other appropriate facilities in urban areas.

- **Air Quality**

- Where appropriate, **plant native tree species**, such as sycamores, which will contribute to cleaner air. (See Recreation section for trail proposals for trip reduction and air quality improvement.)
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## **C. CHANGES IN POLICY AND PRACTICES TO SUPPORT ENHANCEMENT OF ENVIRONMENTAL QUALITY**

- The Los Angeles County Department of Public Works and the U.S. Army Corps of Engineers, who are the primary managers of the river right-of-way, should pursue funding for protection and enhancement projects on identified critical sites.
  - Controlling agencies and jurisdictions could assist environmental enhancement efforts by facilitating access to the river, providing funding, in-kind services and technical assistance and by developing design guidelines and encouraging their use.
  - Controlling agencies and jurisdictions could enter into cooperative agreements with organizations such as the Santa Monica Mountains Conservancy and the Trust for Public Land to acquire land and develop and fund projects.
  - Cities could revise Open Space elements of their General Plans to allow and encourage river enhancement projects. To support wetlands restoration along the river, NPDES permittees could use a multi-objective approach when implementing Best Management Practices for urban runoff pollution control.
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# REGIONAL CONTEXT MAP

## FLOOD MANAGEMENT AND WATER CONSERVATION

