

Executive Summary

This interim document has been prepared to summarize (1) the findings, results, and data collected for historic and existing conditions in the study area, and to forecast the most likely future without-project conditions, pertaining to physical and biological resources, cultural resources, socioeconomics, and recreation; (2) identified problems, opportunities, objectives, and constraints for the study area; and (3) formulation of preliminary alternative plans.

This effort was conducted and coordinated by the U.S. Army Corps of Engineers, Los Angeles District and the County of Orange, OC Watersheds. Many Federal, state and local government agencies; environmental resource agencies; interest groups; and other stakeholders have provided valuable contributions to the evaluation process that resulted in this report.

The purpose of this feasibility study is to evaluate opportunities for restoring degraded ecosystem function and stream channel stability in the lower Aliso Creek Mainstem. This study will formulate ecosystem restoration solutions designed to improve the potential for long-term survival of native, aquatic, wetland, and terrestrial complexes as self-regulating, functioning systems.

Without-Project Conditions

The Aliso Creek watershed is currently adversely impacted from a variety of water resource and related land resource problems. Most of these are related to widespread changes in the watershed, including changes in the hydrologic regime, channel instability, habitat loss, ecosystem degradation, and decline in water quality. The Aliso Creek watershed has suffered several recent dramatic changes that are negatively impacting watershed resources. The conversion of natural plant communities to first agriculture and then urbanized landscape has eliminated many native plants and their dependent wildlife. Development in the watershed has replaced natural habitat with structures, roads, and other infrastructure. Natural channels have been replaced by drains, culverts, and engineered channels. Paved surfaces allow less infiltration and create greater runoff within remaining natural channels. Large rainfall events produce larger runoff volumes, delivered with higher velocities, resulting in higher rates of erosion. These have produced widespread negative trends in the immediate area of Aliso Creek channel. These trends include channel degradation (incision of the invert or channel bed); decline in floodplain moisture (lowering of the water table) resulting to loss of riparian habitat and associated wildlife; expansion of the extent of invasive species; and damage to nearby infrastructure (utilities, roads, trails). Lower Aliso Creek is the most unstable reach in the watershed drainage system. The channel bed has incised up to 25 feet in the most degraded segment in the last 40 years. Additional downcutting (preliminary estimates approaching as much as 25 feet) is expected to continue before equilibrium is reached.

As the channel of Aliso Creek becomes more unstable, vegetation that formerly covered the banks and bed is lost to erosion. Tree die back has been observed downstream of the ACWHEP structure resulting from perched root systems. Loss of bed material results in a loss of breeding, foraging, and resting habitat. Species and food sources that rely on this habitat also disappear. In addition, water temperatures in the creek rise as shade canopy provided in the past by vegetation decreases; higher temperatures can be detrimental to many aquatic plant and wildlife species.

The study area is significantly impacted by the presence of invasive riparian plant species, which out-compete native riparian species, thus limiting native species diversity and reducing habitat and food for native wildlife. The prevalence of invasive plant species would increase in all locations within the study area, where it currently exists.

Overall, wildlife habitat value of the study area is projected to steadily decline in the future. Various wildlife species would have the potential to be extirpated from the area. Habitat value would continue to decrease for all habitat types.

Preliminary Measures and Alternatives

This report presents preliminary alternative measures that address the problems and opportunities identified through the planning process. Measures were organized by broad categories such as: channel stabilization; creation and/or improvement of habitats; and control of urban stormwater runoff and water quality improvement. Measures carried forward will be combined, in various configurations, to form a preliminary set of alternative plans. These preliminary plans were developed to encompass the broadest range of potential alternatives and intended to be subjected to a more rigorous evaluation. Preliminary plans include stabilization and protection of existing channel and floodplain; reconnection of the channel to the historic floodplain; intermediate floodplain connection; and incorporation of stormwater control features. A No Action plan will also be assessed.

Feasibility Study Documentation Process

Future documents that will be released during the course of the feasibility study will include: (1) a report summarizing alternatives formulation, evaluation, and identification of a tentatively recommended plan; (2) draft feasibility report for public review; (3) pre-final feasibility report; and (4) final feasibility report. Environmental compliance documentation will accompany each report product.