

## 2. Data Sources and Methodology for Preserve Design

### Multiple Species Conservation Program – North County Plan Materials for: Steering Committee Meeting #2 and #3

The North County Plan (Plan) establishes the process for assembly of a North County Preserve (Preserve). The Preserve will be assembled in a manner that will ensure conservation of the covered species, and will provide conservation benefits to numerous other sensitive plant and animal species within the Plan Area. It will be an interconnected system of conserved lands, which will allow species to move across the landscape and maintain ecological processes. The Preserve will feature a diversity of vegetation communities across a range of elevations to allow species and habitats to shift spatially as a result of climate change.

The Preserve will be assembled during the 50-year permit term. It will be comprised of both existing (Baseline Preserve) and future conserved lands. The Baseline Preserve consists of easements and properties owned by the County, the state, federal agencies, land conservancies and other private entities that are permanently conserved and protected by means of easements, deed restrictions, or other legal assurances. In addition, lands protected by easements granted to the County or to conservancies on privately held lands are considered part of the Baseline Preserve. The Preserve will include acquisitions of land and easements by the County and other entities, and will be conserved and protected by means of easements, deed restrictions, or other legal assurances. The Preserve will also include lands protected by easements granted to the County or to conservancies on privately held lands.

The Preserve design approach for the North County Plan is based on the concept of a Pre-Approved Mitigation Area or PAMA, within which the Preserve will be assembled. Various models and analyses were utilized to create the PAMA to ensure it included high biological value areas and corridors for the movement of species. The design principles and methodology used to create the Preserve are described below.

#### 1. The PAMA ("Pre-Approved Mitigation Area")

The original PAMA for the North County Plan was created in 2003 by using a simulated annealing model called MARXAN (or "SITES"). SITES is a systematic reserve planning software that uses a mathematical algorithm to find the balance between areas identified to preserve biodiversity and cost (monetary, development, etc.) SITES is the most widely used tool for conservation planning. While the model creates areas for the system, the rest of the development of the PAMA was based primarily on the results of a "gap analysis", which was used to identify key resources in the Plan Area that were not captured within the Preserve using the SITES model alone. Part of the gap analysis involved enhancing several corridors and connections at the request of the United States Fish and Wildlife Service (USFWS) and the California Department of Fish (CDFW) (collectively referred to as Wildlife Agencies) to ensure the Preserve would have adequate function necessary for the Wildlife Agencies to approve the Plan.

In 2015, the County's MSCP team conducted an analysis to see if the PAMA still "fit" – or was up to date given that it was originally created twelve years prior. The team determined that the PAMA still covers the large natural areas of the North County study area and that the preserve system was still viable. However, it was agreed that the PAMA should be smaller, considering that the covered species list had been reduced, and due to other considerations. GIS was used to realign the PAMA designations to parcel lines, remove lands that had been purchased by jurisdictions not subject to the Plan, remove urban areas, and remove some areas not likely to produce conservation through development or acquisition.

The PAMA totals approximately 112,669 acres in the current Preliminary Draft North County Plan, and is shown in **Figure 1**.

## **2. Vegetation**

Vegetation was also considered in the 2015 re-assessment of PAMA, as land cover has changed extensively since 2003. The vegetation layer used in the preserve analysis was updated in fall of 2015 with the San Diego Association of Government's (SANDAG's) 2013 vegetation update that covers roughly 1/3 of the North County Plan area. For the other areas, using aerial imagery, data sets showing areas of agricultural expansion and development were updated manually. In addition, GIS was used to produce an analysis for biologists to determine if there were any areas of vegetation that experienced "type conversion" (areas that permanently changed from one type of vegetation to another) due to numerous wildfires. Biologists deemed that these areas had not converted.

## **3. Agricultural Land**

Agricultural land in the Plan Area was mapped into five categories: (1) intensive agriculture (primarily greenhouses, dairies, and poultry farms), (2) orchards and vineyards, (3) row crops, (4) field/pasture (irrigated), and (5) rangeland (non-irrigated). Non-irrigated rangeland, which includes native and non-native grasslands, is considered grassland vegetation. This differentiation allows for a more accurate evaluation of the biological value of agricultural lands, as opposed to viewing all agricultural lands uniformly. Color infrared orthophotos were also used to refine agriculture types. In a few cases, the agriculture type was not discernible from aerial photographs and the area was identified as general agriculture. In addition to allowing for the categorization of agricultural land, aerial photographs allowed revision of vegetation maps to reflect new agricultural or developed areas previously mapped as natural vegetation.

## **4. Species Observations**

Previous drafts of the North County Plan used only species data collected by a consultant team. The consultant team had compiled a dataset of point observations from various sources in 2006, including the United States Geological Survey, USFWS, and others. In 2015, with the updating of other data sources, the MSCP team decided to update the species data included in the North County Plan.

The current dataset includes the following sources: the County's SanBIOS data (species information supplied to the County through the development process as well as through monitoring and management plans), USFWS's current observation database, and San Diego Management and Monitoring Program's plant database. Biologists reviewed occurrence data for each species and deleted occurrences that were old, or for which the data source was undocumented. Biologists agreed the consultant team's data is still relevant, so the data was included in the final species database for the North County Plan. Each species data source can be downloaded freely from their associated websites except for the consultant team's dataset, which is prohibited under a distribution agreement. For the above reasons, the species data is considered up to date.

## **5. Species Predictive Models**

Another major component to the analysis for the North County Plan is the Species Predictive Models (also known as Tom's Brain). These models predict where species are likely to occur, based on a set of criteria developed by the County's long-term biologist, Tom Oberbauer. The criteria include vegetation, slope, elevation, soil texture, soil parent material, and ecoregion preferences. The criteria were updated in 2006 and peer-reviewed by expert science professionals. Though the criteria have not changed, the models now utilize the other current datasets, including vegetation.

## **6. Other Ecologically Important Lands within the Plan Area**

Other lands important for ecological functionality include lands owned by special districts and Caltrans right-of-ways (ROWs) that have habitat value. These lands total approximately 7,335 acres, as of 2016. Caltrans owns ROWs along Interstate 15 and State highways. Coastal sage scrub habitat adjacent to Interstate 15 functions as a north-south linkage for coastal California gnatcatchers. Special district lands important for ecological functionality include lands primarily owned by water districts.

Although considered important ecologically for the North County Plan Area, these special district and Caltrans properties are not designated as part of PAMA by the County, because they are not under the County's land use authority. If land is sold to a private entity for future development, the land would be subject to County authority and the property may be added to the Permit Area through an administrative action, if appropriate. Lands or interests in real property owned by a Special District at the time of Plan adoption may be transferred to the County through acquisition of land or grant of an easement. Such lands that were previously under Special District control can be incorporated into the Plan, and activities conducted on these lands and easements will be covered by means of an administrative change by the County. The North County Plan land category will revert to that which it would have been had the lands been under County land use authority at the time of Plan adoption.

### **Summary**

Together these six components – PAMA, vegetation, agricultural land, species observations, species predictive models, and other ecologically important lands – constitute the major components that are the foundation of developing a Preserve for the North County Plan. The data is reproducible, documented and defensible, as required under the Natural Community Conservation Planning Act and best planning practices.

Figure 1: Preliminary Draft Preserve – Baseline and PAMA

