

**WESTERN RIVERSIDE COUNTY MSHCP
BIOLOGICAL MONITORING PROGRAM
FY 2007-08 WORK PLAN AND COST ESTIMATE**

1.0 INTRODUCTION

The overall goal of the Biological Monitoring Program (or “Monitoring Program”) is to collect data on the 146 covered species and associated habitats for the purpose of assessing the MSHCP’s effectiveness at meeting conservation objectives and to provide information to the Adaptive Management Program. The activities described in this work plan for Fiscal Year 2007-08 continue the activities commenced in the previous fiscal year and follow the framework outlined in section 5.3 of the MSHCP. Fiscal Year 2007-08 begins the fourth fiscal year and the third biological year of a five to eight year inventory phase of the Biological Monitoring Program.

2.0 RESPONSIBILITIES

The Biological Monitoring Program is implemented within the MSHCP Conservation Area on lands that are owned and managed by the various MSHCP participants. To ensure consistency in monitoring efforts throughout the Conservation Area, the Biological Monitoring Program is overseen and implemented by a Monitoring Program Administrator selected by the Western Riverside County Regional Conservation Authority (RCA). The duties and responsibilities of the Monitoring Program Administrator are described in Section 6.6.6, volume 1 of the MSHCP. As per the MSHCP, the California Department of Fish and Game (CDFG) is the Monitoring Program Administrator for the first eight years of the permit.

The RCA works closely with the Monitoring Program Administrator to develop and implement the annual work plan and budget. The RCA has primary responsibility for funding the Biological Monitoring Program. The CDFG Monitoring Program Administrator implements the Biological Monitoring Program using staff contracted by the RCA. The CDFG is not contracted by, nor does it receive direct funding from, the RCA. Rather, the CDFG has committed staff and resources to oversee and administer the Biological Monitoring Program based on the availability of the State’s budget.

3.0 IMPLEMENTATION STRATEGY

The Biological Monitoring Program is responsible for monitoring the status and trend of the 146 Covered Species and associated species and habitats over a 500,000 acre Conservation Area. Because there is little existing scientifically-based data for the majority of Covered Species, the first five to eight years of the Biological Monitoring Program are devoted to an inventory phase. The purpose of the inventory phase is to determine where Covered Species occur within the Conservation Area, gather more information on their activity patterns, and develop protocols for detecting them. The development of protocols is necessary to test the reliability of survey methods, to detect whether a species is present in an area, and, if not detected, to provide the confidence level that the species is not present.

One of the goals of the Biological Monitoring Program is to develop efficient long-term monitoring protocols that reduce redundancies by collecting information on multiple species where possible. For example, bird species co-occurring in similar habitat (e.g., willow riparian) during the breeding season can be detected using the same survey protocols. There will always be some Covered Species that occur in isolated pockets within the Conservation Area or that are difficult to detect using standard survey protocols; for these species a focused survey effort will be required.

4.0 STAFF COMPOSITION

The Biological Monitoring Program is comprised of the following staff positions. These positions are filled based on availability of funding. Monitoring Program staff work as a team to coordinate, develop, and implement required monitoring activities for the MSHCP:

- Monitoring Program Administrator
- Monitoring Program Coordinator
- Lead Biologists
- Taxa Program Leads
- General Field Crew, bird specialization
- General Field Crew, mammal specialization
- General Field Crew, amphibian & reptile specialization
- General Field Crew, invertebrate specialization
- General Field Crew, plant specialization
- Database Manager
- GIS Analyst
- Office Manager
- Clerical Assistant

The majority of staff is funded by the RCA through contracts with the Santa Ana Watershed Association (SAWA), a local non-profit agency. The Monitoring Program Administrator, Monitoring Program Coordinator, and some of the field crew are funded by the Wildlife Agencies (CDFG and U.S. Fish and Wildlife Service).

5.0 SPECIFIC TASKS OF THE MONITORING PROGRAM

5.1 Administration & Coordination

Administering and coordinating the monitoring program requires a significant amount of effort. Sufficient staff and resources must be acquired, field work must be scheduled, land access must be coordinated with other agencies, and survey activities must take place. The Monitoring Program Administrator, Monitoring Program Coordinator, Office Manager, and Lead Biologists carry out the following tasks:

- Develop annual work plans and budgets
- Identify contract needs, write scopes of work, manage contracts
- Advertise, interview, and hire monitoring program staff; conduct performance reviews
- Develop training manuals and training programs for staff

- Coordinate staff activity schedules
- Identify field supply and equipment needs; submit orders; maintain inventory, including vehicles
- Identify land access needs and coordinate with agencies on access agreements
- Facilitate monthly reserve management/monitoring coordination meeting
- Attend monthly RCA team meetings and other agency meetings
- Occasional presentations to the RCA Board
- Coordinate with Wildlife Agencies on survey methodology and monitoring activities
- Develop the operations and implementation manuals

5.2 Biological Surveys

Conducting biological surveys is the most visible part of the Biological Monitoring Program. It is also the component that requires the most staff. Prior to collecting data, all aspects of a project must be developed: the purpose of the survey is identified, the data collection method and sampling locations are chosen, and how the data will be analyzed and what answers the data are expected to provide are determined. The following tasks are carried out by the Monitoring Program Coordinator, Lead Biologists, GIS Analyst, Taxa Program Leads, and Field Crew.

- Develop protocols and sampling designs
- Implement focused species surveys
- Conduct community surveys for multiple species
- Conduct vegetation analyses

5.3 Training

The Monitoring Program is required to have a training program approved by the Wildlife Agencies to ensure consistent data collection, uniform implementation of protocols, handling procedures, and appropriate experience with covered species (MSHCP vol. 1, sec. 7). The types of species training needed in any given year is dependent on the types of survey activities planned; however, safety training (e.g., first aid, CPR) is provided every year. Training is provided both by experienced Monitoring Program staff and by qualified outside entities (e.g., USGS, USFWS). The following training is required of monitoring staff:

- Endangered species identification and handling
- Local flora and fauna identification
- Wilderness first aid training & CPR
- Defensive driver training

5.4 Data Management & Reports

All of the data collected by the Monitoring Program must be carefully managed. Prior to field work, data forms are developed and survey locations are mapped. As data returns from the field, it is entered into a database and checked for accuracy. After data collection is completed, the data is analyzed and a summary report is written describing survey results. The results of each year's monitoring efforts are provided in the Annual Report submitted to the RCA. All Monitoring Program staff contribute to the following tasks.

- Field form & protocol development
- GIS mapping to support surveys, analysis, & reports
- Database development
- Data entry and quality control
- Data analysis, statistics
- Project summary reports
- Annual report
- Maintain computer equipment and database
- Develop web pages to share monitoring activities and data

6.0 MONITORING EFFORTS IN FY 2007-08

The Biological Monitoring Program activities planned for FY 2007-08 are largely based on the requirements of the MSHCP species objectives found in volume 2 of the MSHCP. The species objectives specify time intervals for detecting and reporting on each of the Covered Species in the Conservation Area. When the species objectives do not specify a time interval, the status of the Covered Species must be reported on at least once every eight years as per General Management Measure 7 (vol. 1 sec. 5.0). In addition to the species objectives, survey priorities are influenced by the quantity and quality of information available for each species (i.e. little or poor information means more survey effort sooner), whether another agency is already conducting surveys (i.e. less effort required on our part), relative ease of gathering information (e.g., yellow warbler surveys during least Bell's vireo surveys), and priority of the species to the RCA and wildlife agencies (e.g., burrowing owl). Funding availability is also considered when deciding monitoring activities.

An overview of the monitoring efforts planned for FY 2007-08 along with rationale for surveys is provided below. Details of survey methodology can be found in the survey protocols available at the Biological Monitoring Program office in Riverside, CA.

6.1 Invertebrates

6.1.1 Quino Checkerspot Survey

The species objectives for Quino checkerspot require the MSHCP to document its distribution on an annual basis. The Monitoring Program has surveyed for Quino checkerspot in the Conservation Area during the last two biological years. Due to funding limitations, the Monitoring Program will not conduct surveys for Quino checkerspot in FY 2007-08. The U.S. Fish and Wildlife Service will likely continue to conduct minimal surveys at known sites within the Planning Area (i.e. Lake Skinner, Oak Mountain, Silverado Ranch) to provide life-history information for its permitting program.

6.1.2 Delhi Fly Survey

The species objectives for the Delhi fly require the MSHCP to document successful reproduction of this species at all three Core Areas identified in the MSHCP every year for the first five years of the permit. The Monitoring Program has surveyed for the Delhi fly within accessible Core Areas in the Conservation Area during the last two biological

years. Surveys for the Delhi fly will continue in FY 2007-08, but due to funding limitations, efforts will be reduced.

6.2 Birds

6.2.1 Riparian Bird Survey and Nest Searching

The species objectives for the following species require the MSHCP to maintain continued use and successful reproduction within Core Areas once every three or five years: least Bell's vireo, willow flycatcher, yellow warbler, yellow-breasted chat, yellow-billed cuckoo. There are eight other covered bird species that occur in riparian areas that can be detected using the same survey protocol. Surveys in FY 2007-08 for all riparian covered bird species will continue efforts begun in FY 2006-07 but will only be conducted in Core Areas where the species objectives were not met in FY 2006-07. Nest searching to demonstrate successful reproduction of the above species will occur in conjunction with the riparian bird survey. The riparian bird survey effort will be coordinated with surveys conducted by the local Resource Conservation Districts within the Santa Ana River watershed.

6.2.2 Coastal Sage Scrub Bird Survey and Nest Searching

The species objectives for California gnatcatcher require the MSHCP to maintain continued use and successful reproduction within Core Areas once every three years. There are three other covered bird species that occur in coastal sage scrub that can be detected using the same survey protocol. Surveys in FY 2007-08 for all coastal sage scrub covered bird species will continue efforts begun in FY 2006-07 and will be conducted in accessible sage coastal scrub habitat and Core Areas within the Conservation Area. Nest searching to demonstrate successful reproduction of the California gnatcatcher will occur in conjunction with the coastal sage scrub bird survey.

6.2.3 Burrowing Owl Survey

The species objectives for the burrowing owl require the MSHCP to conserve five Core Areas plus interconnecting linkages, all containing a breeding population of 120 owls with no fewer than five pairs in any one Core Area. The RCA requested that the Biological Monitoring Program conduct a survey for burrowing owl within suitable habitat in the entire Conservation Area during the 2006 and 2007 breeding seasons. Surveys for the burrowing owl in FY07-08 will continue surveys begun in February 2007 using a protocol that can detect five other co-occurring covered bird species, including grasshopper sparrow.

6.3 Amphibians

6.3.1 Amphibian Stream Surveys

The species objectives for the following amphibian species require the MSHCP to maintain breeding populations within the Conservation Area as measured across any consecutive five year period: arroyo toad, mountain yellow-legged frog, California red-legged frog, and coast range newt. Surveys for stream-dependent amphibians in FY 2007-08 will be conducted in accessible habitat within the Conservation Area in conjunction with efforts carried out by the U.S. Forest Service and U.S. Geological Survey.

6.4 Mammals

6.4.1 Small Mammal Trapping

There are seven covered small mammal species that can be detected using the same trapping protocol: Los Angeles pocket mouse, San Bernardino kangaroo rat, Stephen's kangaroo rat, San Diego pocket mouse, Aguanga kangaroo rat, Dulzura kangaroo rat, and San Diego desert woodrat. The species objectives for these seven species are varied, ranging from simply detecting them in the Conservation Area once every eight years to determining if populations are stable or increasing within Core Areas. Trapping for covered small mammal species will be conducted in FY 2007-08 within accessible suitable habitat in the Conservation Area.

6.5 Rare Plants

6.5.1 Rare Plant Surveys

There are 63 covered plant species with species objectives that require the MSHCP to conserve and monitor known populations within the Conservation Area. Surveys for rare plants in FY 2007-08 will continue efforts begun over two years ago to determine the status of each species at known recorded sites on accessible lands within the Conservation Area. The focal species are dependent on weather conditions and accessibility of recorded sites.

6.5.2 Engelmann Oak Study

The species objectives for Engelmann oak require the MSHCP to maintain recruitment of seedling and sapling oaks within conserved populations as measured across any consecutive 5-year period. Surveys for Engelmann oaks in FY 2007-08 will continue efforts begun in FY 2005-06 to measure recruitment within accessible lands in the Conservation Area.

6.5.3 Vegetation Surveys

Vegetation surveys are a part of every project conducted by the Monitoring Program. The purpose of vegetation surveys is to quantify the habitat within surveys areas to gain a better understanding of where species do and do not occur.

6.6 Vernal Pool Survey

There are three covered crustacean species, one covered amphibian species, and 12 covered plant species that are found in vernal pool habitats. Surveys of vernal pools in FY 2007-08 will occur if there is adequate rainfall to fill the pools. Preparation efforts began in FY 2006-07 and will continue in FY 2007-08 in anticipation of a wet year in the near future.

6.7 Coastal Sage Scrub Long-term Monitoring Pilot Study

As per the MSHCP, the long-term monitoring phase is anticipated to begin after the first five years of the permit. The first five years of the permit are devoted to an inventory of species and habitats and the development of protocols and long-term monitoring strategies. In FY 2007-08, the Monitoring Program will begin to assemble all of upland protocols developed during the inventory phase into a pilot study that will focus on assessing the distribution and condition of coastal sage scrub across the Conservation Area and the status and condition of all Covered Species within this habitat type.

7.0 SCHEDULE OF MONITORING EFFORTS FOR FY 2007-08

Below is a tentative calendar of when surveys are planned for FY 2007-08. The “biological year” or “survey season” does not match the fiscal year, thus the calendar represents two different survey seasons. The first half of the calendar continues many of the activities commenced in FY 2006-07 (e.g., Delhi fly surveys begin in June 2007, burrowing owl survey begin in February 2007).

Survey	Jul07	Aug07	Sep07	Oct07	Nov07	Dec07	Jan08	Feb08	Mar08	Apr08	May08	Jun08
Quino Checkerspot Survey ^A												
Delhi Fly Survey												
Riparian Bird & Nest Survey ^B												
CSS Bird & Nest Survey												
Burrowing Owl Survey												
Amphibian Stream Survey ^C												
Small Mammal Trapping												
Rare Plant Surveys												
Engelmann Oak Study												
Vegetation Surveys												
Vernal Pool Survey												
Pilot CSS Monitoring Study												

A = Conducted by the U.S. Fish and Wildlife Service only

B = Conducted in conjunction with the Resource Conservation Districts

C = Conducted in conjunction with the U.S. Geological Survey and U.S. Forest Service

8.0 BIOLOGICAL MONITORING PROGRAM COST ESTIMATE FOR FY 2007-08

The FY 2007-08 proposed Biological Monitoring Program Budget is similar to previous budgets submitted to and approved by the Reserve Management Oversight Committee (RMOC) and RCA. The CDFG funds a portion of the Biological Monitoring Program based on the availability of the State's budget. The RCA has primary responsibility for funding the Biological Monitoring Program. The majority of funding is allocated to contracts for monitoring staff. This budget assumes that the Monitoring Program Coordinator position is funded by U.S. Fish and Wildlife Service (USFWS).

ALLOCATION	COST
CDFG Funded Labor & Supplies	
Monitoring Program Administrator	112,000
Biologist	75,000
General Field Crew (Scientific Aides)	136,000
Vehicle usage (fuel & maintenance)	65,000
Field supplies & equipment	60,000
Subtotal CDFG Funded Labor & Supplies	\$448,000
USFWS Funded Labor	
Monitoring Program Coordinator	115,000
Subtotal USFWS Funded Labor	\$115,000
RCA Funded Contracts	
Agency Contract – SAWA (staff)	1,375,000
Agency Contract – USGS (database support)	10,000
Subtotal RCA Funded Contracts	\$1,385,000
RCA Funded Operating Expenses & Equipment	
Rent – Lease Buildings	81,146
Equipment – Computer (fixed asset)	5,000
Office Equipment & Misc (non-fixed assets)	46,854
Office Supplies	14,000
Communications (Phones/DSL)	3,500
Maint - Computer Equipment	1,000
Training – Other	8,500
Subtotal RCA Funded O&E	\$160,000
Total Program Cost	\$2,108,000
Minus Total CDFG Cost	- \$448,000
Minus Total USFWS Cost	- \$115,000
Total RCA Cost	\$1,545,000

9.0 Contact Info

The FY 2007-08 Work Plan and Cost Estimate was prepared by the Monitoring Program Administrator and was submitted to the Regional Conservation Authority for approval. For more information, contact:

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