

## 5.0 Management & Monitoring

---



the integrity of the data. The Monitoring Program Administrator will forward the data to the data management personnel for organization, storage, and producing and distributing mirror copies. Data analysis will also be the responsibility of the Monitoring Program Administrator.

### 5.3.9 Anticipated Levels of Effort and Estimated Costs

The anticipated levels of effort and estimated cost to implement the Biological Monitoring Program are summarized in *Tables 5-9 and 5-10*. The anticipated levels of effort and estimated cost are based on Personnel-Years (PYs), which are defined as 1,770 work hours per year. A 10% contingency fund has been added to the estimated cost to cover any additional, unforeseen monitoring efforts. The total estimated cost provided is anticipated to be the maximum cost (in 2002 dollars) to implement the Biological Monitoring Program in a given year. A budget will be submitted annually to the RMOC which will contain an outline of costs for the following year's monitoring efforts and any unforeseen events that may require contingency funding.

The estimate of PYs assumes implementation of the monitoring program over the entire MSHCP Conservation Area as it is assembled. The initial inventory and assessment phase is expected to require fewer personnel-years than during the long-term monitoring phase due to the anticipated lag time of program start-up and the initial reduced number of acres available for surveys. With the exception of program administration, data management, and GIS support, monitoring activities will largely be conducted by temporary employees.

The following assumptions have been made with regards to levels of effort:

**Administration.** Two permanent, full-time, senior-level positions (2 PY's) will be required for developing annual implementation/work plans and field protocols, submitting budgets, coordinating with the County, RMOC, and Wildlife Agencies, overseeing field crews, overseeing data management and GIS support personnel, managing contracts, analyzing data, writing annual reports, and presenting results.

**Data Retrieval, Storage, and Management.** One permanent, part-time, associate-level position (0.5 PY's) will be required for updating the species occurrences database, gathering environmental data from other agencies (e.g., CDF, RWQCB), storing and managing data received from field crews into a query-able database, and creating standard field forms for field crews.

## 5.0 Management & Monitoring

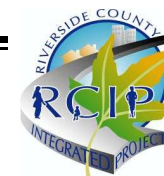


**TABLE 5-9. ESTIMATED TOTAL PERSONNEL - YEARS BY LEVEL OF EFFORT AND POSITION LEVEL**

| Estimated Personnel (PY's)   | Inventory and Assessment Phase |           |           |           |           | Long-Term Monitoring Phase |             |             |             |             |
|--|--------------------------------|-----------|-----------|-----------|-----------|----------------------------|-------------|-------------|-------------|-------------|
|  | Year 1                         | Year 2    | Year 3    | Year 4    | Year 5    | Year 6                     | Year 7      | Year 8      | Year 9      | Year 10     |
| <b>ADMINISTRATION</b>  |                                |           |           |           |           |                            |             |             |             |             |
| Program Administrator/Senior Field Supervisor                      | 2                              | 2         | 2         | 2         | 2         | 2                          | 2           | 2           | 2           | 2           |
| <b>DATA RETRIEVAL, STORAGE, &amp; MANAGEMENT</b>                   |                                |           |           |           |           |                            |             |             |             |             |
| Research Analyst II  | 0.5                            | 0.5       | 0.5       | 0.5       | 0.5       | 0.5                        | 0.5         | 0.5         | 0.5         | 0.5         |
| <b>GIS SUPPORT</b>   |                                |           |           |           |           |                            |             |             |             |             |
| Research Analyst II  | 1                              | 1         | 1         | 1         | 1         | 1                          | 1           | 1           | 1           | 1           |
| Research Analyst I   | 0                              | 0         | 0         | 0         | 0         | 0                          | 1           | 1           | 1           | 1           |
| <b>VEGETATION &amp; WILDLIFE RAPID ASSESSMENT PROTOCOL SURVEYS</b> |                                |           |           |           |           |                            |             |             |             |             |
| Associate Botanist   | †                              | 0         | 0         | 0         | 0         | 0                          | †           | †           | 0           | 0           |
| Biologist  | 1.5                            | 0         | 0         | 0         | 0         | 0                          | 0           | 1.5         | 0           | 0           |
| Seasonal Aid   | 1.5                            | 0         | 0         | 0         | 0         | 0                          | 0           | 1.5         | 0           | 0           |
| <b>COVERED SPECIES SURVEYS</b>                                     |                                |           |           |           |           |                            |             |             |             |             |
| Associate Biologist  | 5                              | 5         | 5         | 5         | 5         | 5                          | 5           | 5           | 5           | 5           |
| Biologist  | 6.5                            | 6.5       | 6.5       | 6.5       | 6.5       | 11                         | 11          | 11          | 11          | 11          |
| Seasonal Aid   | 6                              | 6         | 6         | 6         | 6         | 9                          | 9           | 9           | 9           | 9           |
| <b>Estimated Total PYs</b>   | <b>24</b>                      | <b>21</b> | <b>21</b> | <b>21</b> | <b>21</b> | <b>28.5</b>                | <b>29.5</b> | <b>32.5</b> | <b>29.5</b> | <b>29.5</b> |

† Associate Botanist position is included in the Associate Biologist positions listed under the Covered Species Surveys level of effort.

## 5.0 Management & Monitoring



**TABLE 5-10. ESTIMATED TOTAL COST (IN 2002 DOLLARS) FOR PERSONNEL AND EQUIPMENT/  
SUPPLIES BY LEVEL OF EFFORT AND POSITION LEVEL**

| Estimated Personnel (PYs)                           | Salary* | Inventory and Assessment Phase |                  |                  |                  |                  | Long-Term Monitoring Phase |                  |                  |                  |                  |
|---|---------|--------------------------------|------------------|------------------|------------------|------------------|----------------------------|------------------|------------------|------------------|------------------|
|   |         | Year 1                         | Year 2           | Year 3           | Year 4           | Year 5           | Year 6                     | Year 7           | Year 8           | Year 9           | Year 10          |
| <b>ADMINISTRATION</b>                               |         |                                |                  |                  |                  |                  |                            |                  |                  |                  |                  |
| Program Administrator/Sr. Field Supervisor          | 100,000 | 200,000                        | 200,000          | 200,000          | 200,000          | 200,000          | 200,000                    | 200,000          | 200,000          | 200,000          | 200,000          |
| <b>DATA RETRIEVAL, STORAGE, &amp; MGMT</b>          |         |                                |                  |                  |                  |                  |                            |                  |                  |                  |                  |
| Research Analyst II                                 | 80,000  | 40,000                         | 40,000           | 40,000           | 40,000           | 40,000           | 40,000                     | 40,000           | 40,000           | 40,000           | 40,000           |
| <b>GIS SUPPORT</b>                                  |         |                                |                  |                  |                  |                  |                            |                  |                  |                  |                  |
| Research Analyst II                                 | 80,000  | 80,000                         | 80,000           | 80,000           | 80,000           | 80,000           | 80,000                     | 80,000           | 80,000           | 80,000           | 80,000           |
| Research Analyst I                                  | 70,000  | 0                              | 0                | 0                | 0                | 0                | 0                          | 70,000           | 70,000           | 70,000           | 70,000           |
| <b>VEG. &amp; WILDLIFE RAPID ASSESSMENT SURVEYS</b> |         |                                |                  |                  |                  |                  |                            |                  |                  |                  |                  |
| Associate Botanist                                  | 80,000  | †                              | 0                | 0                | 0                | 0                | 0                          | †                | †                | 0                | 0                |
| Biologist   | 70,000  | 105,000                        | 0                | 0                | 0                | 0                | 0                          | 0                | 105,000          | 0                | 0                |
| Seasonal Aid  | 30,000  | 45,000                         | 0                | 0                | 0                | 0                | 0                          | 0                | 45,000           | 0                | 0                |
| <b>COVERED SPECIES SURVEYS</b>                      |         |                                |                  |                  |                  |                  |                            |                  |                  |                  |                  |
| Associate Biologist                                 | 80,000  | 400,000                        | 400,000          | 400,000          | 400,000          | 400,000          | 400,000                    | 400,000          | 400,000          | 400,000          | 400,000          |
| Biologist   | 70,000  | 455,000                        | 455,000          | 455,000          | 455,000          | 455,000          | 770,000                    | 770,000          | 770,000          | 770,000          | 770,000          |
| Seasonal Aid  | 30,000  | 180,000                        | 180,000          | 180,000          | 180,000          | 180,000          | 270,000                    | 270,000          | 270,000          | 270,000          | 270,000          |
| <b>Subtotal Personnel</b>                           |         | <b>1,505,000</b>               | <b>1,355,000</b> | <b>1,355,000</b> | <b>1,355,000</b> | <b>1,355,000</b> | <b>1,760,000</b>           | <b>1,830,000</b> | <b>1,980,000</b> | <b>1,830,000</b> | <b>1,830,000</b> |
| <b>EQUIPMENT &amp; SUPPLIES</b>                     |         |                                |                  |                  |                  |                  |                            |                  |                  |                  |                  |
| Aerial/Satellite Imagery                            |         | 50,000                         |                  |                  |                  |                  |                            | 100,000          |                  |                  |                  |
| Sampling Gear                                       |         | 30,000                         | 30,000           | 30,000           | 30,000           | 30,000           | 30,000                     | 30,000           | 30,000           | 30,000           | 30,000           |
| Transect Set-up & Maintenance                       |         | 5,000                          | 5,000            | 5,000            | 5,000            | 5,000            | 1,000                      | 1,000            | 1,000            | 1,000            | 1,000            |
| Radio-tracking Equipment                            |         | 5,000                          |                  | 2,000            |                  | 2,000            |                            | 2,000            |                  | 2,000            | 20,000           |
| Other Supplies                                      |         | 10,000                         | 10,000           | 10,000           | 10,000           | 10,000           | 10,000                     | 10,000           | 10,000           | 10,000           | 10,000           |
| <b>Subtotal Equipment and Supplies</b>              |         | <b>100,000</b>                 | <b>45,000</b>    | <b>47,000</b>    | <b>45,000</b>    | <b>47,000</b>    | <b>41,000</b>              | <b>143,000</b>   | <b>41,000</b>    | <b>43,000</b>    | <b>61,000</b>    |
| <b>Estimated SubTotal</b>                           |         | <b>1,605,000</b>               | <b>1,400,000</b> | <b>1,402,000</b> | <b>1,400,000</b> | <b>1,402,000</b> | <b>1,801,000</b>           | <b>1,973,000</b> | <b>2,021,000</b> | <b>1,873,000</b> | <b>1,891,000</b> |
| 10% Contingency                                     |         | 160,500                        | 140,000          | 140,200          | 140,000          | 140,200          | 180,100                    | 197,300          | 202,100          | 187,300          | 189,100          |
| <b>Estimated Total Cost**</b>                       |         | <b>1,765,500</b>               | <b>1,540,000</b> | <b>1,542,200</b> | <b>1,540,000</b> | <b>1,542,200</b> | <b>1,981,100</b>           | <b>2,170,300</b> | <b>2,223,100</b> | <b>2,060,300</b> | <b>2,080,100</b> |

\* Salary includes benefits, worker's compensation, travel, office supplies, etc.

\*\* Estimate does not include cost of office space or vehicles; it is assumed that the County and Wildlife Agencies will provide office space and vehicles as needed.

† Associate Botanist position is included in the Covered Species Surveys level of effort.

## 5.0 Management & Monitoring

---



**GIS Support.** One permanent, full-time, associate-level position (1 PY's) and one permanent, full-time, entry-level position (1 PY's) (beginning in Year 7) will be required for creating and managing GIS layers, obtaining and managing aerial and/or satellite imagery, and assisting with the predictive modeling effort. Every 8 years, a new environmental conditions map will need to be produced and compared against previous maps for changes in vegetation coverage and condition, fire history, invasive exotic spread, etc.

**Vegetation and Wildlife Rapid Assessment Protocol Surveys.** The Rapid Assessment Protocol surveys will be conducted at a minimum of every 8 years to assess the coverage and condition of vegetation and wildlife Habitat in the Conservation Area. One permanent, full-time, associate-level botanist (1 PY's) will be required to analyze aerial photography and/or satellite imagery during the latter portion of the year prior to surveys to determine survey needs, assist GIS personnel with updating the environmental conditions map, and oversee field crews the following year. This position will also be responsible for the covered plant species surveys conducted at some level every year (see below).

Three temporary entry-level positions (1.5 PY's) and three temporary seasonal positions (1.5 PY's) (three 3-person crews) will be required for conducting the vegetation and wildlife Rapid Assessment Protocol surveys, entering field data collected into a specified database, and will be required to assist GIS personnel with updating the environmental conditions map.

**Covered Species Surveys.** It is anticipated that Covered Species surveys will be conducted at some level every year. It is assumed that fewer personnel will be required during the first five years due to fewer number of acres available for surveys and because the initial inventory and assessment phase is anticipated to be less field intensive than the long-term monitoring phase. Due to overlapping survey periods and differences in field expertise, separate field crews will be required to conduct surveys for the different suites of species. Field crews will be expected to enter field data collected into a specified database. Associate-level positions will be responsible for checking field forms and databases for errors before forwarding the information to database management personnel.

## **5.0 Management & Monitoring**



The following field crews will be required (except where noted, positions are filled only during the appropriate field season period lasting no more than 6 months):

### **Initial Inventory and Assessment Phase**

#### ***Fish and Amphibian Surveys***

- 1 temporary full-time associate-level biologist position (0.5 PYs)
- 2 temporary full-time entry-level biologist positions (1 PYs)
- 4 Seasonal Aids (2 PYs)

#### ***Reptile Surveys***

- 1 temporary full-time associate-level biologist position (0.5 PYs)
- 1 temporary full-time entry-level biologist position (0.5 PYs)
- 2 Seasonal Aids (1 PYs)

#### ***Bird Surveys***

- 1 temporary full-time associate-level biologist position (0.5 PYs)
- 3 temporary full-time entry-level biologist positions (1.5 PYs)
- 2 Seasonal Aids (1 PYs)

#### ***Large Mammal Surveys***

- 1 temporary full-time associate-level biologist position (0.5 PYs)
- 1 Seasonal Aid (0.5 PYs)

#### ***Small Mammals Surveys***

- 1 temporary full-time associate-level biologist position (0.5 PYs)
- 1 temporary full-time entry-level biologist position (0.5 PYs)
- 2 Seasonal Aids (1 PYs)

#### ***Crustacean (Fairy Shrimp) Surveys***

- 1 temporary full-time associate-level biologist position (0.5 PYs)
- 1 Seasonal Aid (0.5 PYs)

#### ***Insect (Delhi Fly and Quino) Surveys***

- 1 temporary full-time associate-level biologist position, year-round (1 PYs)
- 3 temporary full-time entry-level biologist positions (1.5 PYs)

## **5.0 Management & Monitoring**



### ***Plant Surveys***

- 1 permanent, full-time associate-level botanist position, year-round (1 PYs)
- 3 temporary full-time entry-level botanist positions (1.5 PYs)

### **Long-Term Monitoring Phase**

#### ***Fish and Amphibian Surveys***

- 1 temporary full-time associate-level biologist position (0.5 PYs)
- 2 temporary full-time entry-level positions (1 PYs)
- 6 Seasonal Aids (3 PYs)

#### ***Reptile Surveys***

- 1 temporary full-time associate-level biologist position (0.5 PYs)
- 2 temporary full-time entry-level biologist positions (1 PYs)
- 3 Seasonal Aids (1.5 PYs)

#### ***Bird Surveys:***

- 1 temporary full-time associate-level biologist position (0.5 PYs)
- 5 temporary full-time entry-level biologist positions (2.5 PYs)
- 3 Seasonal Aids (1.5 PYs)

#### ***Large Mammal Surveys:***

- 1 temporary full-time associate-level biologist position (0.5 PYs)
- 1 temporary full-time entry-level biologist position (0.5 PYs)
- 2 Seasonal Aids (1 PYs)

#### ***Small Mammal Surveys:***

- 1 temporary full-time associate-level biologist position (0.5 PYs)
- 2 temporary full-time entry-level biologist positions (1 PYs)
- 3 Seasonal Aids (1.5 PYs)

#### ***Crustacean (Fairy Shrimp) Surveys:***

- 1 temporary full-time associate-level biologist position (0.5 PYs)
- 1 Seasonal Aid (0.5 PYs)

## ***5.0 Management & Monitoring***

---



### ***Insect (Delhi Fly and Quino) Surveys:***

- 1 temporary full-time associate-level biologist position, year-round (1 PYs)
- 5 temporary full-time entry-level biologist positions (2.5 PYs)

### ***Plant Surveys:***

- 1 permanent full-time associate-level botanist position, year-round (1 PYs)
- 5 temporary full-time entry-level botanist positions (2.5 PYs)