## Table 11-1. Implementation Matrix

### MARKHAM RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| **Markham Ravine Water Quality (MR WQ)**<br>**MR WQ 1** Reduce the amount of pollutants entering the channel and being transported to downstream areas by 50% by 2010. | 1. Complete an assessment of sediment and pollutant delivery to the channel by 2005. | Medium | Landscape-level | None |
| | 2. If the assessment concludes that remedial action is needed, develop an action plan to implement the needed measures to accomplish the objective (2006). | Medium | Landscape-level | None |
| | 3. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| **Markham Ravine Plant Community (MR PC)**<br>**MR PC-1:** Develop a list of areas on which riparian forest, willow scrub, freshwater marsh, and adjacent upland habitat types have the potential to be created/expanded/enhanced for the watershed before 2004. | 1. Obtain recent orthorectified color aerial photographs for areas currently lacking coverage (2002). | Medium | Landscape-level | None |
| | 2. Complete habitat mapping based on aerial photographs and field site visits (2003). | Medium | Landscape-level | None |
| | 3. Finish digitizing mapped riparian forest habitat type and digitize willow scrub, freshwater marsh, and adjacent upland habitats. Import data to County GIS and calculate acreages (2003). | Medium | Landscape-level | None |
| | 4. Develop overlays of riparian vegetation types and soils on aerial photo base (2003). | Medium | Class-specific and Landscape-level | None |
| | 5. Identify, document, and prioritize new areas where opportunities exist to create/expand/enhance riparian forest, willow scrub, freshwater marsh, and adjacent upland habitat types (2003). | | | |

## Table 11-1. Implementation Matrix

### MARKHAM RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | | | | |
| **MR PC-2:** Replace 75 percent of existing Himalayan blackberry (HBB) with native understory species by 2015. | 1. Develop a protocol for determining which areas are suitable for HBB management and conversion to native species (2002). | Low | Landscape-level | None |
| | 2. Based on results from 1, identify potential conversion areas (2002). | Low | Class-specific | None |
| | 3. Identify and prioritize areas for HBB conversion (2003). | Low | Class-specific | None |
| | 4. Prepare HBB management and conversion plan and implementation templates; plan to address initial control methods, revegetation with native species, and long term maintenance (2003). | Low | Landscape-level | None |
| | 5. Implement management plan (2004). | Low | Landscape-level | DFG SAG, NWP 13 |
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Low | Landscape-level | None |
| **MR PC-3:** Create/expand/enhance 75 percent of the total area identified as existing and/or potential riparian forest habitat type, as identified in MR PC-1, by 2015. | 1. Develop generic enhancement concepts to be applied in appropriate settings in the watershed areas (2003). | Medium | Program-level | None |
| | 2. Identify specific enhancement strategies and design enhancement templates (2003). | Medium | Landscape-level | None |
| | 3. Implement projects, in coordination with MR PC-6 as appropriate, beginning in 2004. | Medium | Class-specific | DFG SAG, FESA, CESA, NWP 27, SWQW |
| | 4. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| **MR PC-4:** Create/expand/enhance 100% of | 1. Develop generic enhancement concepts to be applied in appropriate settings in | Medium | Program-level | None |

## Table 11-1. Implementation Matrix

### MARKHAM RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| the total area identified as existing and/or potential willow scrub habitat type, as identified in MR PC-1, by 2010. | the watershed areas (2003).<br>2. Identify specific enhancement strategies and design enhancement templates (2003).<br>3. Implement projects, in coordination with MR PC-6 as appropriate beginning in 2004.<br>4. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium<br>Medium<br>Medium | Landscape-level<br>Class-specific<br>Landscape-level | None<br>DFG SAG, FESA, CESA, NWP 27, SWQW<br>None |
| **MR PC-5:** Create/expand by 100% the total area, as identified in MR PC-1, of freshwater marsh habitat type, by 2010. | 1. Identify specific enhancement strategies and design enhancement templates in 2003.<br>2. Implement projects, in coordination with MR PC-6 as appropriate beginning in 2004.<br>3. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium<br>Medium<br>Medium | Landscape-level<br>Class-specific<br>Landscape-level | None<br>DFG SAG, FESA, CESA, NWP 27, SWQW<br>None |
| **MR PC-6**: Restore riparian corridor structure and function, as feasible and consistent with flood management, water quality, and aquatic and wildlife resources objectives from approximately Gladding Road downstream to its confluence with the Eastside Canal by 2015. | 1. Develop an implementation protocol, in cooperation with stakeholders, for a pilot project and full implementation (2003).<br>2. Complete necessary engineering studies, including hydrologic and hydraulic evaluations (2004).<br>3. Purchase conservation easements where necessary, conduct necessary environmental review, and obtain necessary permits (2004).<br>4. Relocate levees (2005). | Low<br>Low<br>Low<br>Low | Class-specific<br>Class-specific<br>Class-specific<br>Class-specific | None<br>None<br>None<br>DFG SAG, FESA, CESA, NWP 27, NWP 33, NWP 41, SWQW |

## Table 11-1. Implementation Matrix

### MARKHAM RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | 5. Initiate enhancement of expanded riparian corridor using strategies and templates described under MR PC-3, 4, and 5 (2005). | Low | Class-specific | DFG SAG, FESA, CESA NWP 27, SWQW |
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Low | Class-specific | None |
| **MR PC-7**: Restore existing riparian corridors impacted by grazing by implementing grazing management plans for all appropriate riparian areas by 2006. | 1. Identify candidate areas along grazed stream reaches within the watersheds (2003). | Medium | Class-specific | None |
| | 2. Develop and/or implement a mechanism to obtain input from stakeholders on grazing management needs (2003). | Medium | Program-level | None |
| | 3. Develop grazing management plans and several grazing prescription templates for various riparian types (2003). | Medium | Program-level | None |
| | 4. Establish a public outreach program (2003). | Medium | Program-level | None |
| | 5. Implement grazing management plans and purchase conservation easements as necessary (2004). | Medium | Class-specific | None |
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| **MR PC-8:** Conserve ecological structure and function of riparian corridors by establishing and maintaining minimum buffer widths along riparian corridors; optimize buffers along 50 percent | 1. Develop preliminary list of riparian buffer criteria. (2002). | Medium | Landscape-level | None |
| | 2. Evaluate the use and effectiveness of existing regulatory programs to protect riparian buffers and achieve identified criteria (2002). | Medium | Landscape-level | None |

## Table 11-1. Implementation Matrix

### MARKHAM RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| of stream reach in watershed areas by 2012. (Some of these buffers may be incorporated into projects completed under other objectives). | 3. Develop final buffer criteria and management plan. (2004). | Medium | Landscape-level | None |
| | 4. Implement buffer management plan. (2005). | Medium | Landscape-level | None |
| | 5. Perform annual monitoring and adaptive management to gage success and modify the program as needed.. | Medium | Landscape-level | None |
| **Markham Ravine Wildlife Resources (MR WR)** MR WR-1: Optimize American beaver population in the watershed by 2011. | 1. Conduct field studies to determine beaver population levels, distribution, and document effects on riparian vegetation, channel hydrodynamics, and fish passage (2003). | Low | Landscape-level | None |
| | 2. Develop a beaver management plan focusing on optimum population levels, consistent with other biological resources and channel stability objectives (2004). | Low | Landscape-level | None |
| | 3. Implement management plan beginning in 2005 | Low | Landscape-level | DFG SAG |
| | 4. Perform annual monitoring and adaptive management to gage success and modify the program as needed. (2005). | Low | Landscape-level | None |
| MR WR-2: Optimize the number of potential nest sites and any additional acreage of foraging habitat necessary to support these new nests along the channel, for Swainson's hawk, by 2010. | 1. Verify known Swainson's hawk nest sites and conduct additional surveys to determine is new nests have been established recently (2003). | Medium | Landscape-level | None |
| | 2. Develop criteria to support selection of potential new nest sites. | Medium | Landscape-level | None |
| | 3. Evaluate the riparian area to determine if potential new nest sites exist and if so, evaluate the presence or suitability of adjacent upland areas to support | Medium | Class-specific | None |

## Table 11-1. Implementation Matrix

### MARKHAM RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | sufficient foraging habitat to support any new nests. | | | |
| | 4. Implement any financial incentive or technical assistance program needed. | Medium | Landscape-level | None |
| | 5. Implement any conservation or improvement programs needed to create/expand/enhance potential nest sites and/or foraging habitats. | Medium | Landscape-level | DFG SAG, CESA |
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| MR WR-3: Increase the potential habitat for Valley elderberry longhorn beetle by creating a density of elderberry plants equivalent to 100 plants per linear mile of stream channel along those channels with suitable conditions to support elderberry plants and six plants per acre in other suitable riparian habitat types by 2012. | 1. Identify areas where elderberry plants can be enhanced, existing areas with plants expanded, and areas where new elderberry plants can be established and maintained (2002). | Medium | Class-specific | None |
| | 2. Obtain landowner cooperation through use of the financial incentives and/or technical assistance program (2002). | Medium | Program-level | None |
| | 3. Protect and restore those areas where plants currently exist. | Medium | Class-specific | DFG SAG, FESA, NWP 27, SWQW |
| | 4. In new areas without existing plants, install plantings, in accordance with Fish and Wildlife Service mitigation guidelines (2005). | Medium | Class-specific | DFG SAG, FESA, NWP27, SWQW |
| | 5. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| MR WR-4: Delineate existing habitat occupied by the giant garter snake (GGS), enhance existing occupied habitat as needed, and add 200 acres of | 1. Complete a survey to determine which areas are currently occupied by GGS, evaluate the quality of the occupied habitat and identify areas suitable for creation of new habitat in the lower | Medium | Class-specific | None |

## Table 11-1. Implementation Matrix

### MARKHAM RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| additional suitable habitat in the lower watershed area by 2010. | watershed (2002). | | | |
| | 2. Obtain landowner cooperation through use of the financial incentives and/or technical assistance program (2003). | Medium | Program-level | None |
| | 3. Initiate enhancement of existing occupied habitat, as needed (2003). | Medium | Class-specific | DFG SAG, FESA, CESA |
| | 4. Create new habitat for GGS in areas identified. | Medium | Class-specific | DFG SAG, FESA, CESA, NWP 27, NWP 41, NWP 13, NWP 7, SWQW |
| | 5. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |

**[1]Regulatory Permits**

1. Federal Endangered Species Act Section 7 or 10 Take Permit from the USFWS - FESA
2. State Endangered Species Act Take Permit - CESA
3. Federal Clean Water Act Section 404 permit, either a Nationwide Permit or Individual Permit. Nationwide Permits include one or more of the following:
   - NWP 7 (for outfall structures and maintenance)
   - NWP 13 ( for bank stabilization)
   - NWP 27 ( for stream and wetland restoration activities)
   - NWP 33 (for temporary construction, access and dewatering)
   - NWP 41 ( for reshaping existing drainage ditches)
   - NWP 42 (for recreational facilities)
4. State Water Quality Waiver from the RWQCB – SWQW
5. California Fish and Game Code Section 1601 or 1603 Streambed Alteration Agreement from the CDFG - DFG SAG

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| **Auburn Ravine Water Quality (AR WQ)**<br>AR WQ 1 Reduce the amount of pollutants entering the channel and being transported to downstream areas by 50% by 2010. | 1. Complete an assessment of sediment and pollutant delivery to the channel by 2005. | High | Landscape-level | None |
| | 2. If the assessment concludes that remedial action is needed, develop an action plan to implement the needed measures to accomplish the objective (2006). | High | Landscape-level | None |
| | 3. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |
| **Auburn Ravine Plant Community (AR PC)**<br>**AR PC-1**: Develop a list of areas on which riparian forest, willow scrub, freshwater marsh, and adjacent upland habitat types have the potential to be created/expanded/enhanced for all four watersheds within the ERP planning area before 2004.<br><br>Integrate this objective with Objectives AR FR 1-2, AR PC 1-3, AR PC 6-8, and WR 1-4. | 1. Obtain recent orthorectified color aerial photographs for areas currently lacking coverage (2002). | Medium | Landscape-level | None |
| | 2. Complete habitat mapping based on aerial photographs and field site visits (2003). | Medium | Landscape-level | None |
| | 3. Finish digitizing mapped riparian forest habitat type and digitize willow scrub, freshwater marsh, and adjacent upland habitats. Import data to County GIS and calculate acreages (2003). | Medium | Landscape-level | None |
| | 4. Develop overlays of riparian vegetation types and soils on aerial photo base (2003). | Medium | Landscape-level | None |
| | 5. Identify, document, and prioritize new areas where opportunities exist to create/expand/enhance | Medium | Landscape-level | None |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | riparian forest, willow scrub, freshwater marsh, and adjacent upland habitat types (2003). | | | |
| **AR PC-2**: Replace 75 percent of existing Himalayan blackberry (HBB) with native understory species in all watershed areas by 2015.<br><br>Integrate this objective with Objectives AR FR 1-2, AR PC 1-3, AR PC 6-8, and WR 1-4. | 1. Develop a protocol for determining which areas are suitable for HBB management and conversion to native species (2002).<br>2. Based on results from 1, identify potential conversion areas (2002).<br>3. Identify and prioritize areas for HBB conversion (2003).<br>4. Prepare HBB management and conversion plan and implementation templates; plan to address initial control methods, revegetation with native species, and long term maintenance (2003).<br>5. Implement management plan (2004).<br>6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium<br>Medium<br>Medium<br>Medium<br>Medium<br>Medium | Landscape-level<br>Class-specific<br>Class-specific<br>Landscape-level<br>Landscape-level<br>Landscape-level | None<br>None<br>None<br>None<br>DFG SAG<br>None |
| **AR PC-3**: Create/expand/enhance 75 percent of the total area identified as existing and/or potential riparian forest habitat type, as identified in AR PC-1, by 2015.<br><br>Integrate this objective with Objectives AR FR 1-2, AR PC 1- | 1. Develop generic enhancement concepts to be applied in appropriate settings in the watershed areas (2003).<br>2. Identify specific enhancement strategies and design enhancement templates (2003).<br>3. Implement projects, in coordination with AR PC-6 as | High<br>High<br>High | Landscape-level<br>Landscape-level<br>Landscape-level | None<br>None<br>DFG SAG, FESA, CESA, NWP 27, SWQW |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| 3, AR PC 6-8, and WR 1-4. | appropriate, beginning in 2004.<br>4. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |
| **AR PC-4:** Create/expand/enhance 100% of the total area identified as existing and/or potential willow scrub habitat type, as identified in AR PC-1, by 2010. | 1. Develop generic enhancement concepts to be applied in appropriate settings in the watershed areas (2003).<br>2. Identify specific enhancement strategies and design enhancement templates (2003).<br>3. Implement projects, in coordination with AR PC-6 as appropriate beginning in 2004.<br>4. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High<br>High<br>High<br>High | Landscape-level<br>Landscape-level<br>Landscape-level<br>Landscape-level | None<br>None<br>DFG SAG, FESA, CESA, NWP 27, SWQW<br>None |
| **AR PC-5**: Create/expand by 100% the total area, as identified in AR PC-1, freshwater marsh habitat type, by 2010. | 1. Identify specific enhancement strategies and design enhancement templates in 2003.<br>2. Implement projects, in coordination with AR PC-6 as appropriate beginning in 2004.<br>3. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High<br>High<br>High | Landscape-level<br>Landscape-level<br>Landscape-level | None<br>DFG SAG, FESA, CESA, NWP 27, SWQW<br>None |
| **AR PC-6**: Restore riparian corridor structure and function, consistent with flood management, | 1. Develop an implementation protocol, in cooperation with stakeholders, for a pilot project | High | Landscape-level | None |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| water quality, and aquatic and wildlife resources objectives, in the lower reach of Auburn Ravine downstream from approximately Brewer Road to its confluence with the Eastside Canal by 2010.<br><br>Integrate this objective with Objectives AR FR 1-2, AR PC 1-3, AR PC 6-8, and WR 1-4. | and full implementation (2003).<br>2. Complete necessary engineering studies, including hydrologic and hydraulic evaluations (2004).<br>3. Purchase conservation easements where necessary, conduct necessary environmental review, and obtain necessary permits (2004).<br>4. Relocate levees (2005).<br>5. Initiate enhancement of expanded riparian corridor using strategies and templates described under AR PC-3, 4, and 5 (2005).<br>6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High<br>High<br>High<br>High | Class-specific<br>Class-specific<br>Class-specific<br>Landscape-level | None<br>None<br>DFG SAG, FESA, CESA, NWP 27, NWP 33, NWP 41, SWQW<br>DFG SAG, FESA, CESA NWP 27, SWQW |
| **AR PC-7:** Restore existing riparian corridors impacted by grazing by implementing grazing management plans for all appropriate riparian areas by 2006.<br><br>Integrate this objective with Objectives AR FR 1-2, AR PC 1-3, AR PC 6-8, and WR 1-4. | 1. Identify candidate areas along grazed stream reaches within the watersheds (2003).<br>2. Develop and/or implement a mechanism to obtain input from stakeholders on grazing management needs (2003).<br>3. Develop grazing management plans and several grazing prescription templates for various riparian types (2003).<br>4. Establish a public outreach program (2003). | High<br>High<br>High<br>High | Class-specific<br>Program-level<br>Program-level<br>Program-level | None<br>None<br>None<br>None |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | 5. Implement grazing management plans and purchase conservation easements as necessary (2004). | High | Class-specific | None |
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |
| **AR PC-8:** Conserve ecological structure and function of riparian corridors by establishing and maintaining minimum buffer widths along riparian corridors; optimize buffers along 50 percent of stream reach in watershed areas by 2012. (Some of these buffers may be incorporated into projects completed under other objectives).<br><br>Integrate this objective with Objectives AR FR 1-2, AR PC 1-3, AR PC 6-8, and WR 1-4. | 1. Develop preliminary list of riparian buffer criteria. (2002). | High | Landscape-level | None |
| | 2. Evaluate the use and effectiveness of existing regulatory programs to protect riparian buffers and achieve identified criteria (2002). | High | Landscape-level | None |
| | 3. Develop final buffer criteria and management plan. (2004). | High | Landscape-level | None |
| | 4. Implement buffer management plan. (2005). | High | Landscape-level | None |
| | 5. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |
| **Auburn Ravine Wildlife Resources (AR WR)**<br>**AR WR-1:** Optimize American beaver population in the watershed by 2011.<br><br>Integrate this objective with Objectives AR FR 1-2, AR PC 1-3, AR PC 6-8, and WR 1-4. | 1. Conduct field studies to determine beaver population levels, distribution, and document effects on riparian vegetation, channel hydrodynamics, and fish passage (2003). | Low | Landscape-level | None |
| | 2. Develop a beaver management plan focusing on optimum population levels, consistent with other biological resources and channel stability objectives (2004). | Low | Landscape-level | None |
| | 3. Implement management plan | Low | Class-specific | None |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | beginning in 2005<br>4. Perform annual monitoring and adaptive management to gage success and modify the program as needed. (2005). | Low | Landscape-level | None |
| **AR WR-2**: Optimize the number of potential nest sites and any additional acreage of foraging habitat necessary to support these new nests along streams in lower watershed, for Swainson's hawk, by 2010.<br><br>Integrate this objective with Objectives AR FR 1-2, AR PC 1-3, AR PC 6-8, and WR 1-4. | 1. Verify known Swainson's hawk nest sites and conduct additional surveys to determine is new nests have been established recently (2003).<br>2. Develop criteria to support selection of potential new nest sites.<br>3. Evaluate the riparian area to determine if potential new nest sites exist and if so, evaluate the presence or suitability of adjacent upland areas to support sufficient foraging habitat to support any new nests.<br>4. Implement any financial incentive or technical assistance program needed.<br>5. Implement any conservation or improvement programs needed to create/expand/enhance potential nest sites and/or foraging habitats.<br>6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High<br>High<br>High<br>High<br>High<br>High | Landscape-level<br>Landscape-level<br>Landscape-level<br>Program-level<br>Landscape-level<br>Landscape-level | None<br>None<br>None<br>None<br>DFG SAG, CESA<br>None |
| **AR WR-3:** Increase the potential habitat for Valley elderberry | 1. Identify areas where elderberry plants can be enhanced, existing | High | Landscape-level | None |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| longhorn beetle by creating a density of elderberry plants equivalent to 100 plants per linear mile of stream channel along those channels with suitable conditions to support elderberry plants and six plants per acre in other suitable riparian habitat types by 2012.<br><br>Integrate this objective with Objectives AR FR 1-2, AR PC 1-3, AR PC 6-8, and WR 1-4. | areas with plants expanded, and areas where new elderberry plants can be established and maintained (2002).<br>2. Obtain landowner cooperation through use of the financial incentives and/or technical assistance program (2002).<br>3. Protect and restore those areas where plants currently exist.<br>4. In new areas without existing plants, install plantings, in accordance with Fish and Wildlife Service mitigation guidelines (2005).<br>5. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | <br>High<br><br>High<br>High<br><br>High | <br>Class-specific<br><br>Class-specific<br>Class-specific<br><br>Landscape-level | <br>None<br><br>DFG SAG, FESA, NWP 27, SWQW<br>DFG SAG, FESA, NWP27, SWQW<br><br>None |
| **AR WR-4**: Delineate existing habitat occupied by the giant garter snake (GGS), enhance existing occupied habitat as needed, and add 500 acres of additional suitable habitat in the lower watershed area by 2010.<br><br>Integrate this objective with Objectives AR FR 1-2, AR PC 1-3, AR PC 6-8, and WR 1-4. | 1. Complete a survey to determine which areas are currently occupied by GGS, evaluate the quality of the occupied habitat and identify areas suitable for creation of new habitat in the lower watershed (2002).<br>2. Obtain landowner cooperation through use of the financial incentives and/or technical assistance program (2003).<br>3. Initiate enhancement of existing occupied habitat, as needed (2003). | Medium<br><br>Medium<br><br>Medium | Landscape-level<br><br>Class-specific<br><br>Class-specific | None<br><br>None<br><br>DFG SAG, FESA, CESA |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | 4. Create new habitat for GGS in areas identified. | Medium | Class-specific | DFG SAG, FESA, CESA, NWP 27, NWP 41, NWP 13, NWP 7, SWQW |
| | 5. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| **AR WR-5:** Determine the current status of California red-legged frog (CRLF) in the watershed and determine if the potential exists to increase the population and/or geographic distribution in the watershed by 2005. | 1. Determine the geographic distribution of California red-legged frog (CRLF) in upper watershed areas, map suitable habitats, and determine if habitat or some other factor(s) (e.g., predators or competition, etc.) are limiting CRLF populations and/or distribution (2002). | Medium | Landscape-level | None |
| | 2. If necessary, given the results of the evaluation in 1 above, develop a detailed plan to enhance the population and/or area of suitable habitat for CLRF (2004). | Medium | Class-specific and Landscape-level | None |
| **Auburn Ravine Fisheries Resources (AR FR)**<br>**AR FR 1:** Reduce stream channel sediment concentration (particles < 6.35 mm in diameter to less than 20 percent and particles < 0.833 mm in diameter to less than 10 percent) of the gravel/cobble substrate composition in Auburn Ravine upstream of Nelson Lane, near Lincoln, by 2010. | 1. **AR FR 1 Fuels/Wildlife Task 1:** Complete a fuels reduction program on the Mackenroth property upstream of Goldhill Road by 2004. | Medium | Class-specific | None |
| | 2. **AR FR 1 Fuels/Wildlife Task 2:** Complete a fuels level/fire potential/erosive soils assessment by November 2003. | Low | Landscape-level | None |
| | 3. **AR FR 1 Fuels/Wildlife Task 3:** Begin implementation of the fuels reduction program developed in | Low | Landscape-level and Class-specific | None |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | AR FR 1 Fuels/Wildlife above by November 2004. | | | |
| | 1. **AR FR 1 Roads/Culverts Task:** Complete an inventory and proposed remediation plan for all roads and culverts with sediment delivery potential in the watershed before 2004. | High | Landscape-level | DFG SAG, FESA, CESA, NWP 7, NWP 33, NWP 41, SWQW |
| | 4. **AR FR 1 Roads/Culverts** Beginning in 2004, implement the five year program developed in AR FR 1 Roads/Culverts above, beginning with the highest priority projects upstream of Highway 65 first. | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 33, NWP 41, SWQW |
| | 5. **AR FR 1 Individual Landowner Main Channel/Tributary Channel Sediment Reduction**: Complete an inventory and proposed remediation plan for all mainstem stream and tributary channels with sediment delivery potential in the watershed by 2004. | High | Landscape-level | DFG SAG, FESA, CESA, NWP 7, NWP 33, NWP 41, SWQW |
| | 6. **AR FR 1 Main Channel/Tributary Channel Sediment Reduction:** Complete a watershed restoration program on Dutch Ravine by 2005. Restoration objectives include fuels reduction, riparian vegetation improvement, 95% reduction in sediment delivered to the active channel, sediment removal from active channel as appropriate, | High | Landscape-level | DFG SAG, FESA, CESA, NWP 7, NWP 33, NWP 41, SWQW |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | aquatic habitat improvements as appropriate, and optimization of wildlife values consistent with landowner objectives. | | | |
| | 7. **AR FR 1 Main Channel/Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program on Auburn Ravine between river mile 22.0 and 27.6 as defined in the sediment chapter of the assessment (Chapter 5) by 2005. Restoration objectives will include fuels reduction within 100 yards of the stream channel or as appropriate to reduce the potential for sediment to be delivered to the channel after a wildfire or during heavy runoff periods, rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives consistent with adjacent landowner objectives, and any sediment removal or aquatic habitat improvement as appropriate. | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 33, NWP 41, SWQW |
| | 8. **ARFR 1 Main Channel/Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program on Auburn Ravine between river mile 18.5 | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 33, NWP 41, SWQW |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | and 22.0 as defined in the sediment chapter of the assessment (Chapter 5) by 2006. Restoration objectives will include fuels reduction within 100 yards of the stream channel or as appropriate to reduce the potential for sediment to be delivered to the channel after a wildfire or during heavy runoff periods, rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives consistent with adjacent landowner objectives, any sediment removal or aquatic habitat improvement as appropriate, and installation of means to facilitate stream sediment transport as appropriate. | | | |
| | 9. **ARFR 1 Main Channel/Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program on Auburn Ravine in the vicinity of the Fowler Road crossing by 2004. Restoration objectives include rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives consistent with adjacent landowner objectives, any | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 33, NWP 41, SWQW |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | sediment removal or aquatic habitat improvement as appropriate, and installation of means to facilitate stream sediment transport as appropriate. | | | |
| | 10. **ARFR 1 Main Channel/Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program on Auburn Ravine from the point where Sierra College Blvd, if extended, would cross the stream, downstream to the Highway 193 crossing in the City of Lincoln by 2007. Restoration objectives include rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives consistent with adjacent landowner objectives, any sediment removal or aquatic habitat improvement as appropriate, and installation of means to facilitate stream sediment transport as appropriate. | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 33, NWP 41, SWQW |
| | 11. **ARFR 1 Main Channel/Tributary Channel Sediment Reduction:** Complete an intensive evaluation of the NID gauging structure, just west of Highway 65, to determine its effect on sediment deposition, | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 33, NWP 41, SWQW |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | sediment transport, and channel stability by 2004. Initiate corrective actions in 2004 if warranted.<br>12. **ARFR 1 Maintain Channel /Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program on Auburn Ravine from the Highway 193 crossing in the City of Lincoln, downstream to the Nelson Lane crossing by 2009. Restoration objectives include rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives, consistent with adjacent landowner objectives, any sediment removal or aquatic habitat improvement as appropriate, and stream sediment transport as appropriate. | High | Class-specific | DFG SAG, FESA, CESA, NWP 27, NWP 13, NWP 33, SWQW |
| **AR FR 2** Increase the quantity and quality of riparian habitats, consistent with flood management and landowner objectives, by 100 percent downstream from Nelson Lane to the confluence with the Eastside Canal by 2010.<br><br>Integrate this objective with Objectives AR FR 1, AR PC 1-3, | 1. **AR FR 2 Riparian/Floodplain:** In cooperation with adjacent landowners, Placer County, City of Auburn, City of Lincoln, and others, complete an assessment of opportunities to complete specific vegetative planting projects, conservation easements, floodplain zoning restrictions, etc., designed to reduce sediment input to | High | Landscape-level | None |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| AR PC 6-8, and WR 1-4. | Auburn Ravine, by 2003. | | | |
| | 2. **AR FR 2 Riparian/Floodplain:** City of Lincoln completes floodplain management plan for Auburn Ravine within its City limits, by 2004. | Medium | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 33, NWP 41, SWQW |
| | 3. **AR FR 2 Riparian/Floodplain:** County of Placer completes floodplain management plan for Auburn Ravine by 2004. | Medium | Landscape-level | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 33, NWP 41, SWQW |
| | 4. **AR FR 2 Riparian/Floodplain:** Complete a pilot project to determine if sediment levels in the channel can be reduced either by mechanical means or through improvements in channel hydraulics. Project to be conducted between Nelson Lane and the confluence with Eastside Canal by 2005. | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 33, SWQW |
| | 5. **AR FR 2 Riparian/Floodplain:** Placer County, Sutter County, City of Lincoln, stakeholders, and interested landowners shall prepare and deliver a request to the State Reclamation Board and U.S. Army Corps of Engineers to change the operational guidelines on opening the Fremont and Sacramento weirs on the | Medium | Class-specific | FESA |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | Sacramento River during high flow events by 2003. The objective of the request will be to determine if the weirs can be opened at lower water surface elevations in order to reduce the backwatering into the Cross and Eastside canals. | | | |
| | 6. **AR FR 2 Riparian/Floodplain:** Placer and Sutter counties complete a pilot project to evaluate a setback levee project designed to reduce the extent and acreage susceptible to flooding, reduce sediment input to the channel, test the utility of conservation easements, test the feasibility of riparian restoration in conjunction with acceptable farming practices, and explore mechanisms to remove sediment or increase sediment transport potential within the channel proper by 2006. | Medium | | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 33, NWP 41, SWQW |
| **AR FR 3:** Provide adult chinook salmon and steelhead trout unrestricted access over diversion structures or gauging stations to spawning areas, by 2008. | 1. **AR FR 3 Diversion Dam Installation and Removal Timing:** Review current literature to define adult migration timing for steelhead and chinook salmon into Auburn Ravine. Literature review completed by November 2002. | High | Program-level | None |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | 2. **AR FR 3 Diversion Dam Installation and Removal Timing:** If necessary, conduct adult migration timing surveys for steelhead and chinook salmon to more specifically define spawning migration timing into Auburn Ravine. Study completed by June 2004. | High | Landscape-level | None |
| | 3. **AR FR 3 Diversion Dam Adult Fish Passage:** Complete minor infrastructure modifications at all South Sutter Water District diversion dams by November 2004. | High | Class-specific | FESA |
| | 4. **AR FR 3 Diversion Dam Adult Fish Passage:** Design and complete a temporary steep pass project at two diversion dams which will provide passage during the period from dam flashboards installation until May 15th. Project completed by July 2005. | High | Class-specific | DFG SAG, FESA, NWP 7, NWP 33 |
| | 5. **AR FR 3 Diversion Dam Adult Fish Passage:** Depending on the outcome of AR FR 2 Diversion Dam Adult Fish Passage Task 2 above, Implement steep pass projects at all remaining splash board diversion dams, as appropriate, by June 2007. | High | Class-specific | DFG SAG, FESA, NWP 7, NWP 33 |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | 6. **AR FR 3 Diversion Dam Adult Fish Passage:** Design and construct a fish passage structure at NID's Auburn Ravine One Diversion Dam by October 2005. | High | Class-specific | DFG SAG, FESA, NWP 7, NWP 33 |
| | 7. **AR FR 3 Diversion Dam Adult Fish Passage:** Design and construct a fish passage structure at NID's Hemphill Diversion Dam by October 2006. | High | Class-specific | DFG SAG, FESA, NWP 7, NWP 33 |
| | 8. **AR FR 3 Diversion Dam Adult Fish Passage:** Correct fish passage impediments at the NID gauging station, near Highway 65 either by improving structure hydraulics or replacing the structure with a pool and chute fishway (Recommendation to replace the structure is based on sediment and channel morphology analysis completed and presented in Chapter 5 of the Watershed Assessment. Complete this project by November 2006. | High | Class-specific | DFG SAG, FESA, NWP 7, NWP 33 |
| | 9. **AR FR 3 Water Flows for Adult Fish Passage:** Evaluate and develop an implementation plan, if necessary, to provide sufficient water depth, through additional | High | Landscape-level | FESA |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | flows, to allow upstream passage of adult chinook salmon and/or steelhead. Depending on if and how effluent from the new Lincoln Wastewater Treatment and Reclamation Facility is discharged, requirements could change dramatically. Complete evaluation and plan by August 2004. Implement supplemental flows by October 2005. | | | |
| | 10. **AR FR 3 Channel Morphology Changes to Facilitate Adult Fish Passage:** Evaluate and develop an implementation plan, if necessary, to provide sufficient water depth, through changes in channel morphology, to allow upstream passage of adult chinook salmon and/or steelhead. Depending on if and how effluent from the new Lincoln Wastewater Treatment and Reclamation Facility is discharged, requirements could change dramatically. Complete evaluation and plan by June 2003. Implement measures to change channel morphology by October 2004. | High | Landscape-level | DFG SAG, CESA, FESA, NWP 13, NWP 27, and SWQW |
| | 11. **AR FR 3 Alternative Water Diversion/Supply Techniques to** | High | Landscape-level | None |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | **Facilitate Adult Fish Passage:** Evaluate and develop an implementation plan, if necessary, to provide sufficient water flow and/or alternative water diversion techniques to facilitate upstream passage of adult chinook salmon and/or steelhead. Complete evaluation and plan by June 2003. | | | |
| **AR FR 4:** Provide juvenile chinook salmon and steelhead trout unrestricted access to the Sacramento River during emigration, by 2009. | 1. **AR FR 4 Juvenile Mortality Reduction at Pumps:** Provide a fish exclusion device at the private pumping station located near Pleasant Grove Road by November 2005. | High | Class-specific | FESA, NWP 33, NWP 7 |
| | 2. **AR FR 4 Juvenile Mortality Reduction at Pumps:** Provide a fish exclusion device at the private pumping station located near Brewer Road by November 2005. | High | Class-specific | FESA, NWP 33, NWP 7 |
| | 3. **AR FR 4 Juvenile Mortality Reduction at Pumps:** Provide a fish exclusion device at the private pumping station located near Nelson Lane by November 2006. | High | Class-specific | FESA, NWP 33, NWP 7 |
| | 4. **AR FR 4 Juvenile Mortality Reduction at Gravity Flow Diversions:** Complete installation of a fish exclusion device at NID's Auburn Ravine One diversion point by October 2005. | High | Class-specific | FESA, NWP 33, NWP 7 |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | 5. **AR FR 4 Juvenile Mortality Reduction at Gravity Flow Diversions:** Complete installation of a fish exclusion device at NID's Hemphill Diversion Dam by October 2006. | High | Class-specific | FESA, NWP 33, NWP 7 |
| | 6. **AR FR 4 Juvenile Mortality Reduction at Gravity Flow Diversions:** Complete installation of a fish exclusion device at the diversion point located on the former Aitken Ranch property by October 2004. | High | Class-specific | FESA, NWP 33, NWP 7 |
| | 7. **AR FR 4 Juvenile Fish Passage at Diversion Dams:** Provide a notch with a minimum of 8 inches of water flowing through it and a splash pool at the bottom of the diversion dam to prevent injury or may be combined with tasks identified in AR FR 3 Diversion Dam Adult Fish Passage Tasks 2 and 3. Implement projects at all diversion dams, as appropriate, by November 2006. | High | Class-specific | DFG SAG, FESA, NWP 33, NWP 7 |
| **AR FR 5:** Optimize (pool to riffle ratio to approximate 60 percent pool habitat and 40 percent riffle habitat.) juvenile salmonid rearing habitat upstream of Moore Road, by 2009. | 1. **AR FR 5 Optimize the Stream's Pool to Riffle Ratio:** Complete an hydrological and stream dynamics analysis in order to determine if it is feasible to alter the pool to riffle ratio of the stream if desired. Complete this | Medium | Landscape-level | None |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | analysis by September 2003. | | | |
| | 2. **AR FR 5 Optimize the Stream's Pool to Riffle Ratio:** In cooperation with adjacent landowners, complete a physical habitat inventory which includes pool: riffle ratios and adjacent riparian vegetation by December 2003. | Medium | Landscape-level | None |
| | 3. **AR FR 5 Optimize the Stream's Pool to Riffle Ratio:** Based on the results from tasks AR FR 5 Optimize the Stream's Pool to Riffle Ratio Tasks 1 and 2, above, develop an implementation plan to begin altering the pool to riffle ratio at selected sites by: June 2004. | Medium | Landscape-level | None |
| | 4. **AR FR 5 Optimize the Stream's Pool to Riffle Ratio:** Begin implementation of changes in pool to riffle ratio at sites beginning upstream and working downstream by September 2005. | Medium | Landscape-level | DFG SAG, FESA, NWP 27, NWP 33, NWP 13, SWQW |
| | 5. **AR FR 5 Conserve, Protect, Rehabilitate, and Reestablish Riparian Vegetation:** Using the results from the evaluation completed in AR FR 5 Optimize the Stream's Pool to Riffle Ratio above, initiate a series of riparian conservation, protection, rehabilitation, and replanting projects beginning somewhere | Medium | Landscape-level | DFG SAG, FESA, CESA, NWP 13, NWP 27, SWQW |

## Table 11-1. Implementation Matrix

### AUBURN RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | near Fowler Road and moving downstream in subsequent years. Initiate first project by September 2004. Subsequent projects to occur yearly thereafter. | | | |
| | 6. **AR FR 5 Conserve, Protect, Rehabilitate, and Reestablish Riparian Vegetation:** Using part of the results from the evaluation completed in AR FR 5 Optimize the Stream's Pool to Riffle Ratio above, complete a concept design document that would provide for low height levees to contain flood waters. These levees would be less than 5 ft. high and encompass enough flood plain area to meet the vegetative needs of riparian dependent species of fish and wildlife, accommodate reasonable flood flows, and reduce the overall area subjected to flooding in all but the higher flood flow occurrences. Emphasis would be placed on minimizing changes in adjacent land uses and developing a funding mechanism to fully compensate adjacent landowners. Complete conceptual design by September 2006. | Medium | Landscape-level | None |
| | 7. **AR FR 5 Conserve, Protect, Rehabilitate, and Reestablish Riparian Vegetation:** Implement the design proposed in AR FR 5 | Medium | Landscape-level | DFG SAG, CESA, FESA, NWP 27, NWP 33, NSP 41, SWQW |

**Table 11-1. Implementation Matrix**

**AUBURN RAVINE IMPLEMENTATION**

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | Conserve, Protect, Rehabilitate, and Reestablish Riparian Vegetation: above, starting at the upstream end of the project and working downstream. Initial project phase to be initiated by October 2008. | | | |

**[1]Regulatory Permits**

1. Federal Endangered Species Act Section 7 or 10 Take Permit from the USFWS - FESA
2. State Endangered Species Act Take Permit - CESA
3. Federal Clean Water Act Section 404 permit, either a Nationwide Permit or Individual Permit. Nationwide Permits include one or more of the following:

   NWP 7 (for outfall structures and maintenance)
   NWP 13 (for bank stabilization)
   NWP 27 (for stream and wetland restoration activities)
   NWP 33 (for temporary construction, access and dewatering)
   NWP 41 (for reshaping existing drainage ditches)
   NWP 42 (for recreational facilities)

4. State Water Quality Waiver from the RWQCB – SWQW
5. California Fish and Game Code Section 1601 or 1603 Streambed Alteration Agreement from the CDFG - DFG SAG

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| **Doty Ravine Water Quality (DR WQ)**<br>**DR WQ 1:** Reduce the amount of pollutants entering the channel and being transported to downstream areas by 50% by 2010. | 1. Complete an assessment of sediment and pollutant delivery to the channel by 2005. | Medium | Landscape-level | None |
| | 2. If the assessment concludes that remedial action is needed, develop an action plan to implement the needed measures to accomplish the objective (2006). | Medium | Landscape-level | None |
| | 3. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| **Doty Ravine Plant Community (DR PC)**<br>**DR PC-1:** Develop a list of areas on which riparian forest, willow scrub, freshwater marsh, and adjacent upland habitat types have the potential to be created/expanded/enhanced for all four watersheds within the ERP planning area before 2004. | 1. Obtain recent orthorectified color aerial photographs for areas currently lacking coverage (2002). | Low | Landscape-level | None |
| | 2. Complete habitat mapping based on aerial photographs and field site visits (2003). | Low | Landscape-level | None |
| | 3. Finish digitizing mapped riparian forest habitat type and digitize willow scrub, freshwater marsh, and adjacent upland habitats. Import data to County GIS and calculate acreages (2003). | Low | Landscape-level | None |
| | 4. Develop overlays of riparian vegetation types and soils on aerial photo base (2003). | Low | Landscape-level | None |
| | 5. Identify, document, and prioritize new areas where opportunities exist to create/expand/enhance | Low | Landscape-level | None |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | riparian forest, willow scrub, freshwater marsh, and adjacent upland habitat types (2003). | | | |
| **DR PC-2:** Replace 75 percent of existing Himalayan blackberry (HBB) with native understory species by 2015. | 1. Develop a protocol for determining which areas are suitable for HBB management and conversion to native species (2002). | Low | Landscape-level | None |
| | 2. Based on results from 1, identify potential conversion areas (2002). | Low | Class-specific | None |
| | 3. Identify and prioritize areas for HBB conversion (2003). | Low | Class-specific | None |
| | 4. Prepare HBB management and conversion plan and implementation templates; plan to address initial control methods, revegetation with native species, and long-term maintenance (2003). | Low | Landscape-level | None |
| | 5. Implement management plan (2004). | Low | Landscape-level | DFG SAG |
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Low | Landscape-level | None |
| **DR PC-3**: Create/expand/enhance 75 percent of the total area identified as existing and/or potential riparian forest habitat type, as identified in DR PC-1, by 2015. | 1. Develop generic enhancement concepts to be applied in appropriate settings in the watershed areas (2003). | Medium | Landscape-level | None |
| | 2. Identify specific enhancement strategies and design enhancement templates (2003). | Medium | Landscape-level | None |
| | 3. Implement projects, in coordination with DR PC-6 as | Medium | Landscape-level and Class-specific | DFG SAG, FESA, CESA, NWP 27, SWQW |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | appropriate, beginning in 2004.<br>4. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| **DR PC-4**: Create/expand/enhance 100% of the total area identified as existing and/or potential willow scrub habitat type, as identified in DR PC-1, by 2010. | 1. Develop generic enhancement concepts to be applied in appropriate settings in the watershed areas (2003).<br>2. Identify specific enhancement strategies and design enhancement templates (2003).<br>3. Implement projects, in coordination with DR PC-6 as appropriate beginning in 2004.<br>4. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium<br>Medium<br>Medium<br>Medium | Landscape-level<br>Landscape-level<br>Landscape-level and Class-specific<br>Landscape-level | None<br>None<br>DFG SAG, FESA, CESA, NWP 27, SWQW<br>None |
| **DR PC-5**: Create/expand by 100% the total area, as identified in DR PC-1, freshwater marsh habitat type, by 2010. | 1. Identify specific enhancement strategies and design enhancement templates in 2003.<br>2. Implement projects, in coordination with DR PC-6 as appropriate beginning in 2004.<br>3. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium<br>Medium<br>Medium | Landscape-level<br>Landscape-level and Class-specific<br>Landscape-level | None<br>DFG SAG, FESA, CESA, NWP 27, SWQW<br>None |
| **DR PC-6**: Restore riparian corridor structure and function, consistent with flood management, water quality, and aquatic and wildlife resources objectives, | 1. Develop an implementation protocol, in cooperation with stakeholders, for a pilot project and full implementation (2003).<br>2. Complete necessary engineering | Medium<br>Medium | Program-level<br>Class-specific | None<br>None |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| downstream from approximately Wise Road to its confluence with Coon Creek by 2010. | studies, including hydrologic and hydraulic evaluations (2004).<br>3. Purchase conservation easements where necessary, conduct necessary environmental review, and obtain necessary permits (2004). | Medium | Class-specific | None |
| | 4. Relocate levees (2005). | Medium | Class-specific | DFG SAG, FESA, CESA, NWP 27, NWP 33, NWP 41, SWQW |
| | 5. Initiate enhancement of expanded riparian corridor using strategies and templates described under DR PC-3, 4, and 5 (2005). | Medium | Landscape-level | DFG SAG, FESA, CESA NWP 27, SWQW |
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| **DR PC-7**: Restore existing riparian corridors impacted by grazing by implementing grazing management plans for all appropriate riparian areas by 2006. | 1. Identify candidate areas along grazed stream reaches within the watersheds (2003). | Medium | Class-specific | None |
| | 2. Develop and/or implement a mechanism to obtain input from stakeholders on grazing management needs (2003). | Medium | Program-level | None |
| | 3. Develop grazing management plans and several grazing prescription templates for various riparian types (2003). | Medium | Landscape-level | None |
| | 4. Establish a public outreach program (2003). | High | Program-level | None |
| | 5. Implement grazing management plans and purchase conservation easements as necessary (2004). | Medium | Landscape-level | None |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| **DR PC-8**: Conserve ecological structure and function of riparian corridors by establishing and maintaining minimum buffer widths along riparian corridors; optimize buffers along 50 percent of stream reach in watershed areas by 2012. (Some of these buffers may be incorporated into projects completed under other objectives). | 1. Develop a preliminary list of riparian buffer criteria. (2002). | High | Landscape-level | None |
| | 2. Evaluate the use and effectiveness of existing regulatory programs to protect riparian buffers and achieve identified criteria (2002). | High | Landscape-level | None |
| | 3. Develop final buffer criteria and management plan. (2004). | High | Landscape-level | None |
| | 4. Implement buffer management plan. (2005). | High | Landscape-level | None |
| | 5. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |
| **Doty Ravine Wildlife Resources (DR WR)**<br>**DR WR-1**: Optimize American beaver population in the watershed by 2007. | 1. Conduct field studies to determine beaver population levels, distribution, and document effects on riparian vegetation, channel hydrodynamics, and fish passage (2003). | Low | Landscape-level | None |
| | 2. Develop a beaver management plan focusing on optimum population levels, consistent with other biological resources and channel stability objectives (2004). | Low | Landscape-level | None |
| | 3. Implement management plan beginning in 2005 | Low | Landscape-level | None |
| | 4. Perform annual monitoring and adaptive management to gage | Low | Landscape-level | None |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | success and modify the program as needed. (2005). | | | |
| **DR WR-2**: Optimize the number of potential Swainson's hawk nest sites and any additional acreage of foraging habitat necessary to support these new nests along the stream downstream of Gladding Road by 2010. | 1. Verify known Swainson's hawk nest sites and conduct additional surveys to determine if new nests have been established recently (2003). | High | Landscape-level | None |
| | 2. Develop criteria to support selection of potential new nest sites. | High | Landscape-level | None |
| | 3. Evaluate the riparian area to determine if potential new nest sites exist and if so, evaluate the presence or suitability of adjacent upland areas to support sufficient foraging habitat to support any new nests. | High | Landscape-level | None |
| | 4. Implement any financial incentive or technical assistance program needed. | High | Program-level | None |
| | 5. Implement any conservation or improvement programs needed to create/expand/enhance potential nest sites and/or foraging habitats. | High | Landscape-level and Class-specific | DFG SAG, CESA |
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |
| **DR WR-3**: Increase the potential habitat for Valley elderberry longhorn beetle by creating a density of elderberry plants equivalent to 100 plants per linear mile of stream channel along those | 1. Identify areas where elderberry plants can be enhanced, existing areas with plants expanded, and areas where new elderberry plants can be established and maintained (2002). | High | Landscape-level | None |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| channels with suitable conditions to support elderberry plants and six plants per acre in other suitable riparian habitat types by 2012. | 2. Obtain landowner cooperation through use of the financial incentives and/or technical assistance program (2002). | High | Program-level | None |
| | 3. Protect and restore those areas where plants currently exist. | High | Class-specific | DFG SAG, FESA, NWP 27, SWQW |
| | 4. In new areas without existing plants, install plantings, in accordance with Fish and Wildlife Service mitigation guidelines (2005). | High | Class-specific | DFG SAG, FESA, NWP27, SWQW |
| | 5. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |
| **DR WR-5**: Determine the current status of California red-legged frog (CRLF) in the watershed and determine if the potential exists to increase the population and/or geographic distribution in the watershed by 2005. | 1. Determine the geographic distribution of California red-legged frog (CRLF) in upper watershed areas, map suitable habitats, and determine if habitat or some other factor(s) (e.g., predators or competition, etc.) are limiting CRLF populations and/or distribution (2002). | Medium | Landscape-level | None |
| | 2. If necessary, given the results of the evaluation in 1 above, develop a detailed plan to enhance the population and/or area of suitable habitat for CLRF (2004). | Medium | Class-specific | None |
| **Doty Ravine Fisheries Resources (DR FR)**<br>**DR FR 1:** Reduce stream channel sediment concentration (particles < 6.35 mm in diameter to less than | 1. **DR FR 1 Fuels/Wildlife:** Complete a fuels level/fire potential/erosive soils assessment by November 2003. | Low | Landscape-level | None |
| | 2. **DR FR 1 Fuels/Wildlife:** Begin | Low | Landscape-level | CESA |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| 20 percent and particles < 0.833 mm in diameter to less than 10 percent) of the gravel/cobble substrate composition upstream of Crosby Herold Road, by 2010. | implementation of the fuels reduction program developed in DR FR 1 Fuels/Wildlife Task 1 above by November 2004. | | | |
| | 3. **DR FR 1 Roads/Culverts:** Complete an inventory and proposed remediation plan for all roads and culverts with sediment delivery potential in the watershed before 2004. | High | Landscape-level | DFG SAG, FESA, CESA, NWP 7, NWP 33, NWP 41, SWQW |
| | 4. **DR FR 1 Roads/Culverts:** Beginning in 2004, implement the five-year program developed in DR FR 1 Roads/Culverts Task 1 above, beginning with the highest priority projects upstream of Crosby Herold Road first. | High | Landscape-level and Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 33, NWP 41, SWQW |
| | 5. **DR FR 1 Individual Landowner Main Channel/Tributary Channel Sediment Reduction:** Complete an inventory and proposed remediation plan for all mainstem stream and tributary channels with sediment delivery potential in the watershed by 2004. | High | Landscape-level | DFG SAG, FESA, CESA, NWP 7, NWP 33, NWP 41, SWQW |
| | 6. **Main Channel/Tributary Channel Sediment Reduction:** Complete a watershed restoration program between Crosby Herold and Wise Roads by 2005. Restoration objectives include fuels reduction, riparian vegetation improvement, 95% | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 27, NWP 33, NWP 41, SWQW |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | reduction in sediment delivered to the active channel, sediment removal from active channel as appropriate, aquatic habitat improvements as appropriate, and optimization of wildlife values consistent with landowner objectives. | | | |
| | 7. **Main Channel/Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program upstream of Wise Road by 2008. Restoration objectives will include fuels reduction within 100 yards of the stream channel or as appropriate to reduce the potential for sediment to be delivered to the channel after a wildfire or during heavy runoff periods, rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives consistent with adjacent landowner objectives, and any sediment removal or aquatic habitat improvement as appropriate. | High | Landscape-level | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 27, NWP 33, NWP 41, SWQW |
| | 8. **Main Channel/Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program between Crosby Herold and | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 27, NWP 33, NWP 41, SWQW |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | Gladding Roads by 2007. Restoration objectives will include fuels reduction within 100 yards of the stream channel or as appropriate to reduce the potential for sediment to be delivered to the channel after a wildfire or during heavy runoff periods, rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives consistent with adjacent landowner objectives, any sediment removal or aquatic habitat improvement as appropriate, and installation of means to facilitate stream sediment transport as appropriate. | | | |
| | 9. **Main Channel/Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program between Gladding Road downstream to the channel's confluence with Coon Creek near Highway 65 by 2010. Restoration objectives include rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives consistent with adjacent landowner objectives, any | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 27, NWP 33, NWP 41, SWQW |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | sediment removal or aquatic habitat improvement as appropriate, and installation of means to facilitate stream sediment transport as appropriate. | | | |
| **Objective DR FR 2** Increase the quantity and quality of riparian habitats, consistent with flood management and landowner objectives, by 100 percent by 2010. | 1. **DR FR 2 Riparian/Floodplain:** In cooperation with adjacent landowners, Placer County, City of Auburn, and others, complete an assessment of opportunities to complete specific vegetative planting projects, conservation easements, floodplain zoning restrictions, etc., designed to reduce sediment input by 2003. | High | Landscape-level | None |
| | 2. **DR FR 2 Riparian/Floodplain:** County of Placer completes floodplain management plan by 2004. | High | Landscape-level | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 33, NWP 41, SWQW |
| | 3. **DR FR 2 Riparian/Floodplain:** Complete a pilot project to determine if sediment levels in the channel can be reduced either by mechanical means or through improvements in channel hydraulics. Project to be conducted between Crosby Herold and Wise Roads by 2005. | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 33, NWP 41, SWQW |
| **Objective DR FR 3:** Provide adult chinook salmon and steelhead trout unrestricted access over diversion structures to | 4. **DR FR 3 Diversion Dam Installation and Removal Timing:** Review current literature to define adult migration timing for steelhead and chinook salmon | High | Landscape-level | None |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| spawning areas, by 2008. | into Doty Ravine. Literature review completed by November 2002. | | | |
| | 5. **DR FR 3 Diversion Dam** Installation and Removal Timing: If necessary, conduct adult migration timing surveys for steelhead and chinook salmon to more specifically define spawning migration timing. Study completed by June 2004. | High | Landscape-level | None |
| | 6. **DR FR 3 Diversion Dam Adult Fish Passage:** Complete comprehensive assessment of fish passage needs at the NID's Doty South Diversion Dam by 2004. | High | Class-specific | None |
| | 7. **DR FR 3 Diversion Dam Adult Fish Passage:** If passage improvements are needed, implement these improvements by November 2006. | High | Landscape-level | DFG SAG, FESA, NWP 27, NWP 33, SWQW |
| | 8. **DR FR 3 Water Flows for Adult Fish Passage:** Evaluate and develop an implementation plan, if necessary, to provide sufficient water depth, through additional flows, to allow upstream passage of adult chinook salmon and/or steelhead. Complete evaluation and plan by August 2004. Implement supplemental flows by October 2005. | High | Landscape-level | FESA |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | 9. **DR FR 3 Channel Morphology Changes to Facilitate Adult Fish Passage:** Evaluate and develop an implementation plan, if necessary, to provide sufficient water depth, through changes in channel morphology, to allow upstream passage of adult chinook salmon and/or steelhead. Complete evaluation and plan by June 2003. Implement measures to change channel morphology by October 2004. | High | Landscape-level | DFG SAG, CESA, FESA, NWP 13, NWP 27, NWP 33, SWQW |
| | 10. **DR FR 3 Alternative Water Diversion/Supply Techniques to Facilitate Adult Fish Passage:** Evaluate and develop an implementation plan, if necessary, to provide sufficient water flow and/or alternative water diversion techniques to facilitate upstream passage of adult chinook salmon and/or steelhead. Complete evaluation and plan by June 2003 | High | Landscape-level | None |
| **DR FR 4:** Provide juvenile chinook salmon and steelhead trout unrestricted access to the Sacramento River during emigration, by 2009. | 1. **DR FR 4 Juvenile Mortality Reduction at Gravity Flow Diversions:** Provide a fish exclusion device at NID's Doty South Diversion Dam by November 2005. | High | Class-specific | FESA, NWP 7, NWP 33 |
| **DR FR 5:** Optimize (pool to riffle ratio to approximate 60 percent pool habitat and 40 percent riffle habitat.) juvenile salmonid rearing | 1. **DR FR 5 Optimize the Stream's Pool to Riffle Ratio:** Complete a hydrological and stream dynamics analysis in order to determine if it | High | Landscape-level | None |

## Table 11-1. Implementation Matrix

### DOTY RAVINE IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| habitat upstream of NID's Doty South Diversion Dam, by 2009. | is feasible to alter the pool to riffle ratio of the stream if desired. Complete this analysis by September 2003. | | | |
| | 2. **DR FR 5 Optimize the Stream's Pool to Riffle Ratio:** In cooperation with adjacent landowners, complete a physical habitat inventory that includes pool: riffle ratios and adjacent riparian vegetation by December 2003. | High | Landscape-level | None |
| | 3. **DR FR 5 Optimize the Stream's Pool to Riffle Ratio:** Based on the results from tasks DR FR 5 Optimize the Stream's Pool to Riffle Ratio, above, develop an implementation plan to begin altering the pool to riffle ratio at selected sites by June 2005. | High | Landscape-level | DFG SAG, CESA, FESA, NWP 13, NWP 27 |
| | 4. **DR FR 5 Optimize the Stream's Pool to Riffle Ratio:** Begin implementation of changes in pool to riffle ratio at sites beginning upstream and working downstream by September 2006. | High | Landscape-level | DFG SAG, CESA, FESA, NWP 13, NWP 27 |
| | 5. **DR FR 5 Conserve, Protect, Rehabilitate, and Reestablish Riparian Vegetation:** Initiate riparian conservation, protection, rehabilitation, and replanting projects beginning at the confluence with Coon Creek and moving upstream in subsequent | High | Class-specific | DFG SAG, CESA, FESA, NWP 13, NWP 27 |

**Table 11-1. Implementation Matrix**

**DOTY RAVINE IMPLEMENTATION**

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | years to Gladding Road and further upstream as warranted. Initiate first project by September 2004. Subsequent projects to occur yearly thereafter. | | | |

**[1]Regulatory Permits**

1. Federal Endangered Species Act Section 7 or 10 Take Permit from the USFWS - FESA
2. State Endangered Species Act Take Permit - CESA
3. Federal Clean Water Act Section 404 permit, either a Nationwide Permit or Individual Permit. Nationwide Permits include one or more of the following:

   NWP 7 (for outfall structures and maintenance)
   NWP 13 (for bank stabilization)
   NWP 27 (for stream and wetland restoration activities)
   NWP 33 (for temporary construction, access and dewatering)
   NWP 41 (for reshaping existing drainage ditches)
   NWP 42 (for recreational facilities)

4. State Water Quality Waiver from the RWQCB - SWQW
5. California Fish and Game Code Section 1601 or 1603 Streambed Alteration Agreement from the CDFG - DFG SAG

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| **Coon Creek Water Quality (CC WQ)**<br>**CC WQ 1**: Reduce the amount of pollutants entering the channel and being transported to downstream areas by 50% by 2010. | 1. Complete an assessment of sediment and pollutant delivery to the channel by 2005. | High | Landscape-level | None |
| | 2. If the assessment concludes that remedial action is needed, develop an action plan to implement the needed measures to accomplish the objective (2006). | High | Landscape-level | None |
| | 3. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |
| **Coon Creek Plant Community (CC PC)**<br>**CC PC-1**: Develop a list of areas on which riparian forest, willow scrub, freshwater marsh, and adjacent upland habitat types have the potential to be created/expanded/enhanced for all four watersheds within the ERP planning area before 2004. | 1. Obtain recent orthorectified color aerial photographs for areas currently lacking coverage (2002). | Low | Landscape-level | None |
| | 2. Complete habitat mapping based on aerial photographs and field site visits (2003). | Low | Landscape-level | None |
| | 3. Finish digitizing mapped riparian forest habitat type and digitize willow scrub, freshwater marsh, and adjacent upland habitats. Import data to County GIS and calculate acreages (2003). | Low | Landscape-level | None |
| | 4. Develop overlays of riparian vegetation types and soils on aerial photo base (2003). | Low | Landscape-level | None |
| | 5. Identify, document, and prioritize new areas where opportunities exist to create/expand/enhance riparian forest, willow scrub, freshwater marsh, and adjacent | Low | Landscape-level | None |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | upland habitat types (2003). | | | |
| **CC PC-2:** Replace 75 percent of existing Himalayan blackberry (HBB) with native understory species in all watershed areas by 2015. | 1. Develop a protocol for determining which areas are suitable for HBB management and conversion to native species (2002). | Medium | Landscape-level | None |
| | 2. Based on results from 1, identify potential conversion areas (2002). | Medium | Landscape-level | None |
| | 3. Identify and prioritize areas for HBB conversion (2003). | Medium | Class-specific | None |
| | 4. Prepare HBB management and conversion plan and implementation templates; plan to address initial control methods, revegetation with native species, and long-term maintenance (2003). | Medium | Class-specific | None |
| | 5. Implement management plan (2004). | Medium | Landscape-level | DFG SAG, NWP 13, SWQW |
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| **CC PC-3:** Create/expand/enhance 75 percent of the total area identified as existing and/or potential riparian forest habitat type, as identified in CC PC-1, by 2015. | 1. Develop generic enhancement concepts to be applied in appropriate settings in the watershed areas (2003). | Medium | Landscape-level | None |
| | 2. Identify specific enhancement strategies and design enhancement templates (2003). | Medium | Landscape-level | None |
| | 3. Implement projects, in coordination with CC PC-6 as appropriate, beginning in 2004. | Medium | Landscape-level and Class-specific | DFG SAG, CESA, FESA, NWP 13, NWP 27, NWP 33, SWQW |
| | 4. Perform annual monitoring and | Medium | Landscape-level | None |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | adaptive management to gage success and modify the program as needed. | | | |
| **CC PC-4:** Create/expand/enhance 100% of the total area identified as existing and/or potential willow scrub habitat type, as identified in CC PC-1, by 2010. | 1. Develop generic enhancement concepts to be applied in appropriate settings in the watershed areas (2003). | Medium | Landscape-level | None |
| | 2. Identify specific enhancement strategies and design enhancement templates (2003). | Medium | Landscape-level | None |
| | 3. Implement projects, in coordination with CC PC-6 as appropriate beginning in 2004. | Medium | Landscape-level and Class-specific | DFG SAG, CESA, FESA, NWP 13, NWP 27, NWP 33, SWQW |
| | 4. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| **CC PC-5:** Create/expand by 100% the total area, as identified in CC PC-1, freshwater marsh habitat type, by 2010. | 1. Identify specific enhancement strategies and design enhancement templates in 2003. | High | Landscape-level | None |
| | 2. Implement projects, in coordination with CC PC-6 as appropriate beginning in 2004. | High | Landscape-level and Class-specific | DFG SAG, CESA, FESA, NWP 13, NWP 27, NWP 33, SWQW |
| | 3. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |
| **CC PC-6:** Restore riparian corridor structure and function, consistent with flood management, water quality, and aquatic and wildlife resources objectives, in the watershed downstream to its confluence with the Eastside Canal | 1. Develop an implementation protocol, in cooperation with stakeholders, for a pilot project and full implementation (2003). | High | Program-level | None |
| | 2. Complete necessary engineering studies, including hydrologic and hydraulic evaluations (2004). | High | Class-specific | None |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| by 2010. | 3. Purchase conservation easements where necessary, conduct necessary environmental review, and obtain necessary permits (2004). | High | Class-specific | None |
| | 4. Relocate levees (2005). | High | Class-specific | DFG SAG, CESA, FESA, NWP 7, NWP 13, NWP 27, NWP 33, NWP 41, SWQW (for Tasks 4 and 5) |
| | 5. Initiate enhancement of expanded riparian corridor using strategies and templates described under CC PC-3, 4, and 5 (2005). | High | Landscape-level and Class-specific | |
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |
| **CC PC-7:** Restore existing riparian corridors impacted by grazing by implementing grazing management plans for all appropriate riparian areas by 2006. | 1. Identify candidate areas along grazed stream reaches within the watersheds (2003). | High | Class-specific | None |
| | 2. Develop and/or implement a mechanism to obtain input from stakeholders on grazing management needs (2003). | High | Program-level | None |
| | 3. Develop grazing management plans and several grazing prescription templates for various riparian types (2003). | High | Landscape-level | None |
| | 4. Establish a public outreach program (2003). | High | Program-level | None |
| | 5. Implement grazing management plans and purchase conservation easements as necessary (2004). | High | Landscape-level | None |
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| **CC PC-8:** Conserve ecological structure and function of riparian corridors by establishing and maintaining minimum buffer widths along riparian corridors; optimize buffers along 50 percent of stream reach in watershed areas by 2012. (Some of these buffers may be incorporated into projects completed under other objectives). | 1. Develop preliminary list of riparian buffer criteria. (2002). | High | Landscape-level | None |
| | 2. Evaluate the use and effectiveness of existing regulatory programs to protect riparian buffers and achieve identified criteria (2002). | High | Landscape-level | None |
| | 3. Develop final buffer criteria and management plan. (2004). | High | Landscape-level | None |
| | 4. Implement buffer management plan. (2005). | High | Landscape-level | None |
| | 5. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |
| **Coon Creek Wildlife Resources (CC WR)**<br>**CC WR-1:** Optimize American beaver population in the watershed by 2011. | 1. Conduct field studies to determine beaver population levels, distribution, and document effects on riparian vegetation, channel hydrodynamics, and fish passage (2003). | Low | Landscape-level | None |
| | 2. Develop a beaver management plan focusing on optimum population levels, consistent with other biological resources and channel stability objectives (2004). | Low | Landscape-level | None |
| | 3. Implement management plan beginning in 2005 | Low | Landscape-level | None |
| | 4. Perform annual monitoring and adaptive management to gage success and modify the program as needed. (2005). | Low | Landscape-level | None |
| **CC WR-2:** Optimize the number of Swainson's hawk potential nest sites and any additional acreage of | 1. Verify known Swainson's hawk nest sites and conduct additional surveys to determine is new nests | Medium | Landscape-level | None |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| foraging habitat necessary to support these new nests downstream of Gladding Road by 2010. | have been established recently (2003). | | | |
| | 2. Develop criteria to support selection of potential new nest sites. | Medium | Landscape-level | None |
| | 3. Evaluate the riparian area to determine if potential new nest sites exist and if so, evaluate the presence or suitability of adjacent upland areas to support sufficient foraging habitat to support any new nests. | Medium | Landscape-level | None |
| | 4. Implement any financial incentive or technical assistance program needed. | Medium | Program-level | None |
| | 5. Implement any conservation or improvement programs needed to create/expand/enhance potential nest sites and/or foraging habitats. | Medium | Landscape-level and Class-specific | DFG SAG, CESA |
| | 6. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | Landscape-level | None |
| **CC WR-3:** Increase the potential habitat for Valley elderberry longhorn beetle by creating a density of elderberry plants equivalent to 100 plants per linear mile of stream channel along those channels with suitable conditions to support elderberry plants, including the Eastside and Cross canals and six plants per acre in other suitable riparian habitat | 1. Identify areas where elderberry plants can be enhanced, existing areas with plants expanded, and areas where new elderberry plants can be established and maintained (2002). | High | Landscape-level | None |
| | 2. Obtain landowner cooperation through use of the financial incentives and/or technical assistance program (2002). | High | Program-level | None |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| types by 2012. | 3. Protect and restore those areas where plants currently exist. | High | Landscape-level and Class-specific | DFG SAG, FESA, NWP 27, SWQW |
| | 4. In new areas without existing plants, install plantings, in accordance with Fish and Wildlife Service mitigation guidelines (2005). | High | Landscape-level and Class-specific | DFG SAG, FESA, NWP 27, SWQW |
| | 5. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | High | Landscape-level | None |
| **CC WR-4**: Delineate existing habitat occupied by the giant garter snake (GGS), enhance existing occupied habitat as needed, and add 500 acres of additional suitable habitat in the lower watershed, including the Eastside and Cross canals by 2010. | 1. Complete a survey to determine which areas are currently occupied by GGS, evaluate the quality of the occupied habitat and identify areas suitable for creation of new habitat in the lower watershed (2002). | Medium | Landscape-level | None |
| | 2. Obtain landowner cooperation through use of the financial incentives and/or technical assistance program (2003). | Medium | Program-level | None |
| | 3. Initiate enhancement of existing occupied habitat, as needed (2003). | Medium | Landscape-level and Class-specific | DFG SAG, FESA, NWP 7, NWP 27, NWP 33, NWP 41, SWQW |
| | 4. Create new habitat for GGS in areas identified. | Medium | Landscape-level and Class-specific | DFG SAG, FESA, NWP 7, NWP 27, NWP 33, NWP 41, SWQW |
| | 5. Perform annual monitoring and adaptive management to gage success and modify the program as needed. | Medium | | None |
| **CC WR-5:** Determine the current status of California red-legged | 1. Determine the geographic distribution of California red- | High | Landscape-level | None |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| frog (CRLF) in the watershed and determine if the potential exists to increase the population and/or geographic distribution in the watershed by 2005. | legged frog (CRLF) in upper watershed areas, map suitable habitats, and determine if habitat or some other factor(s) (e.g., predators or competition, etc.) are limiting CRLF populations and/or distribution (2002).<br>2. If necessary, given the results of the evaluation in 1 above, develop a detailed plan to enhance the population and/or area of suitable habitat for CLRF (2004). | High | Landscape-level | None |
| **Coon Creek Fisheries Resources (CC FR)**<br>**CC FR 1:** Reduce stream channel sediment concentration (particles < 6.35 mm in diameter to less than 20 percent and particles < 0.833 mm in diameter to less than 10 percent) of the gravel/cobble substrate composition upstream of Gladding Road by 2010. | 1. **CC FR 1 Individual Landowner Main Channel/Tributary Channel Sediment Reduction:** Complete an inventory and proposed remediation plan for all mainstem stream and tributary channels with sediment delivery potential in the watershed by 2004.<br>2. **Main Channel/Tributary Channel Sediment Reduction:** Complete a watershed restoration program upstream of Garden Bar Road by 2005. Restoration objectives include fuels reduction, riparian vegetation improvement, 95% reduction in sediment delivered to the active channel, sediment removal from active channel as appropriate, aquatic habitat improvements as appropriate, and optimization of wildlife values consistent with | High<br>High | Landscape-level<br>Landscape-level | None<br>DFG SAG, FESA, CESA, NSP 13, NWP 27, SWQW |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | landowner objectives. | | | |
| | 3. **Main Channel/Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program between Gladding Road and Garden Bar Road by 2006. Restoration objectives will include fuels reduction within 100 yards of the stream channel or as appropriate to reduce the potential for sediment to be delivered to the channel after a wildfire or during heavy runoff periods, rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives consistent with adjacent landowner objectives, and any sediment removal or aquatic habitat improvement as appropriate. | High | Class-specific | DFG SAG, FESA, CESA, NSP 13, NWP 27, SWQW |
| | 4. **Main Channel/Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program between Highway 65 and Gladding Road by 2006. Restoration objectives will include fuels reduction within 100 yards of the stream channel or as appropriate to reduce the potential for sediment to be delivered to the channel after a wildfire or during heavy runoff | High | Class-specific | DFG SAG, FESA, CESA, NSP 13, NWP 27, SWQW |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | periods, rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives consistent with adjacent landowner objectives, any sediment removal or aquatic habitat improvement as appropriate, and installation of means to facilitate stream sediment transport as appropriate. | | | |
| | 5. **Main Channel/Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program between Brewer Road and Highway 65 by 2007. Restoration objectives include rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives consistent with adjacent landowner objectives, any sediment removal or aquatic habitat improvement as appropriate, and installation of means to facilitate stream sediment transport as appropriate. | High | Class-specific | DFG SAG, FESA, CESA, NSP 13, NWP 27, SWQW |
| | 6. **Main Channel/Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program between Coon Creek's confluence with the Eastside Canal and Brewer Road | High | Class-specific | DFG SAG, FESA, CESA, NSP 13, NWP 27, SWQW |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | by 2008. Restoration objectives include rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives consistent with adjacent landowner objectives, any sediment removal or aquatic habitat improvement as appropriate, and installation of means to facilitate stream sediment transport as appropriate. | | | |
| | 7. **Main Channel/Tributary Channel Sediment Reduction:** Complete a channel and adjacent lands restoration program on the Eastside Canal by 2009. Restoration objectives include rehabilitation of eroding stream banks, rehabilitation or enhancement of riparian vegetation for bank stability and wildlife objectives consistent with adjacent landowner objectives, any sediment removal or aquatic habitat improvement as appropriate, and installation of means to facilitate stream sediment transport as appropriate. | High | Class-specific | DFG SAG, FESA, CESA, NSP 13, NWP 27, SWQW |
| | 8. **CC FR 1 Fuels/Wildlife:** Complete a fuels level/fire potential/erosive soils assessment by November 2003. | Medium | Landscape-level | None |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | 9. **CC FR 1 Fuels/Wildlife:** Begin implementation of the fuels reduction program developed in CC FR 1 Fuels/Wildlife above by November 2004. | Medium | Landscape-level | CESA, FESA |
| **CC FR 2** Increase the quantity and quality of riparian habitats, consistent with flood management and landowner objectives, by 100 percent downstream from Highway 65 to the confluence with the Eastside Canal by 2010. | 1. **CC FR 2 Riparian/Floodplain:** In cooperation with adjacent landowners, Placer and Sutter Counties, and others, complete an assessment of opportunities to complete specific vegetative planting projects, conservation easements, floodplain zoning restrictions, etc., designed to reduce sediment input to Coon Creek, by 2003. | High | Landscape-level | None |
| | 2. **CC FR 2 Riparian/Floodplain:** Placer and Sutter Counties complete floodplain management plan for Coon Creek by 2004. | High | Landscape-level | None |
| | 3. **CC FR 2 Riparian/Floodplain:** Complete a pilot project to determine if sediment levels in the channel can be reduced either by mechanical means or through improvements in channel hydraulics. Project to be conducted between Highway 65 and the confluence with Eastside Canal by 2005. | High | Class-specific | DFG SAG, NWP 7, NWP 13, NWP 27, NWP 33, NWP 41, SWQW |
| | 4. **CC FR 2 Riparian/Floodplain:** Placer County, Sutter County, City of Lincoln, stakeholders, and interested landowners shall | High | Class-specific | CESA, FESA |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | prepare and deliver a request to the State Reclamation Board and U.S. Army Corps of Engineers to change the operational guidelines on opening the Fremont and Sacramento weirs on the Sacramento River during high flow events by 2003. The objective of the request will be to determine if the weirs can be opened at lower water surface elevations in order to reduce the backwatering into the Cross and Eastside canals. | | | |
| | 5. **CC FR 2 Riparian/Floodplain:** Placer and Sutter counties complete a pilot project to evaluate a setback levee project designed to reduce the extent and acreage susceptible to flooding, reduce sediment input to the channel, test the utility of conservation easements, test the feasibility of riparian restoration in conjunction with acceptable farming practices, and explore mechanisms to remove sediment or increase sediment transport potential within the channel proper by 2006. | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 27, SWQW |
| | 6. **CC FR 2 Riparian/Floodplain Task 1:** In cooperation with adjacent landowners, Placer and Sutter Counties, and others, complete an assessment of | High | Landscape-level | None |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | opportunities to complete specific vegetative planting projects, conservation easements, floodplain zoning restrictions, etc., designed to reduce sediment input to Coon Creek, by 2003. | | | |
| | 7. **CC FR 2 Riparian/Floodplain:** Placer and Sutter Counties complete floodplain management plan for Coon Creek by 2004. | High | Landscape-level | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 27, SWQW |
| | 8. **CC FR 2 Riparian/Floodplain:** Complete a pilot project to determine if sediment levels in the channel can be reduced either by mechanical means or through improvements in channel hydraulics. Project to be conducted between Highway 65 and the confluence with Eastside Canal by 2005. | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 27, SWQW |
| | 9. **CC FR 2 Riparian/Floodplain:** Placer County, Sutter County, City of Lincoln, stakeholders, and interested landowners shall prepare and deliver a request to the State Reclamation Board and U.S. Army Corps of Engineers to change the operational guidelines on opening the Fremont and Sacramento weirs on the Sacramento River during high flow events by 2003. The objective of the request will be to determine if the weirs can be | High | Class-specific | CESA, FESA |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | opened at lower water surface elevations in order to reduce the backwatering into the Cross and Eastside canals.<br>10. **CC FR 2 Riparian/Floodplain:** Placer and Sutter counties complete a pilot project to evaluate a setback levee project designed to reduce the extent and acreage susceptible to flooding, reduce sediment input to the channel, test the utility of conservation easements, test the feasibility of riparian restoration in conjunction with acceptable farming practices, and explore mechanisms to remove sediment or increase sediment transport potential within the channel proper by 2006. | High | Class-specific | DFG SAG, FESA, CESA, NWP 7, NWP 13, NWP 27, NWP 33, NWP 41, SWQW |
| **CC FR 3:** Provide adult chinook salmon and steelhead trout unrestricted access over diversion structures to spawning areas, by 2008. | 1. **CC FR 3 Diversion Dam Installation and Removal Timing:** Review current literature to define adult migration timing for steelhead and chinook salmon into Coon Creek. Literature review completed by November 2002. | High | Landscape-level | None |
| | 2. **CC FR 3 Diversion Dam Installation and Removal Timing:** If necessary, conduct adult migration timing surveys for steelhead and chinook salmon to more specifically define spawning migration timing into Coon Creek. | High | Landscape-level | None |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | Study completed by June 2004. | | | |
| | 3. **CC FR 3 Diversion Dam Adult Fish Passage:** Complete minor infrastructure modifications at all South Sutter Water District diversion dams by November 2004. | High | Class-specific | FESA, NWP 33, SWQW |
| | 4. **CC FR 3 Diversion Dam Adult Fish Passage:** Design and complete a temporary steep pass project at one diversion dam which will provide passage during the period from dam flashboards installation until May 15th. Project completed by July 2005. | High | Class-specific | DFG SAG, FESA, NWP, SWQW |
| | 5. **CC FR 3 Diversion Dam Adult Fish Passage:** Depending on the outcome of CC FR 3 Diversion Dam Adult Fish Passage above, Implement steep pass projects at all remaining splash board diversion dams, as appropriate, by June 2006. | High | Class-specific | DFG SAG, FESA, NWP, SWQW |
| | 6. **CC FR 3 Water Flows for Adult Fish Passage:** Evaluate and develop an implementation plan, if necessary, to provide sufficient water depth, through additional flows, to allow upstream passage of adult chinook salmon and/or steelhead. Complete evaluation and plan by August 2004. Implement supplemental flows by October 2005. | High | Landscape-level | FESA |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | 7. **CC FR 3 Channel Morphology Changes to Facilitate Adult Fish Passage:** Evaluate and develop an implementation plan, if necessary, to provide sufficient water depth, through changes in channel morphology, to allow upstream passage of adult chinook salmon and/or steelhead. Complete evaluation and plan by June 2003. Implement measures to change channel morphology by October 2004. | High | Landscape-level | DFG SAG, FESA, NWP 27, SWQW |
| | 8. **CC FR 3 Alternative Water Diversion/Supply Techniques to Facilitate Adult Fish Passage:** Evaluate and develop an implementation plan, if necessary, to provide sufficient water flow and/or alternative water diversion techniques to facilitate upstream passage of adult chinook salmon and/or steelhead. Complete evaluation and plan by June 2003. | High | Landscape-level | DFG SAG, FESA, NWP 27, SWQW |
| **CC FR 4:** Provide juvenile chinook salmon and steelhead trout unrestricted access to the Sacramento River during emigration, by 2009. | 1. **CC FR 4 Juvenile Mortality Reduction at Pumps:** Provide a fish exclusion device at private pumping stations located by November 2007. | High | Class-specific | FESA, NWP 33, SWQW |
| | 2. **CC FR 4 Juvenile Mortality Reduction at Gravity Flow Diversions:** Complete installation of a fish exclusion device at gravity diversions by October | High | Class-specific | FESA, NWP 33, SWQW |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | 2006.<br>3. **CC FR 4 Juvenile Fish Passage at Diversion Dams:** Provide a notch with a minimum of 8 inches of water flowing through it and a splash pool at the bottom of the diversion dam to prevent injury or may be combined with tasks identified in CC FR 3 Diversion Dam Adult Fish Passage Tasks 2 and 3. Implement projects at all diversion dams, as appropriate, by November 2005. | High | Class-specific | FESA, NWP 33, SWQW |
| **CC FR 5:** Optimize (pool to riffle ratio to approximate 60 percent pool habitat and 40 percent riffle habitat.) juvenile salmonid rearing habitat upstream of Gladding Road, by 2009. | 1. **CC FR 5 Optimize the Stream's Pool to Riffle Ratio:** Complete an hydrological and stream dynamics analysis in order to determine if it is feasible to alter the pool to riffle ratio of the stream if desired. Complete this analysis by September 2003. | Medium | Landscape-level | None |
| | 2. **CC FR 5 Optimize the Stream's Pool to Riffle Ratio:** In cooperation with adjacent landowners, complete a physical habitat inventory which includes pool:riffle ratios and adjacent riparian vegetation, downstream of Gladding Road to the confluence with the Eastside Canal by December 2003. | Medium | Landscape-level | None |
| | 3. **CC FR 5 Optimize the Stream's Pool to Riffle Ratio:** Based on the results from tasks CC FR 5 | Medium | Landscape-level | None |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | Optimize the Stream's Pool to Riffle Ratio, above, develop an implementation plan to begin altering the pool to riffle ratio at selected sites by June 2004. | | | |
| | 4. **CC FR 5 Optimize the Stream's Pool to Riffle Ratio:** Begin implementation of changes in pool to riffle ratio at sites beginning upstream and working downstream by September 2005. | Medium | Landscape-level and Class-specific | DFG SAG, CESA, FESA, NWP 27, NWP 33 |
| | 5. **CC FR 5 Conserve, Protect, Rehabilitate, and Reestablish Riparian Vegetation:** Using the results from the evaluation completed in CC FR 5 Optimize the Stream's Pool to Riffle Ratio above, initiate a series of riparian conservation, protection, rehabilitation, and replanting projects beginning at Highway 49 and moving downstream in subsequent years. Initiate first project by September 2004. Subsequent projects to occur yearly thereafter. | Medium | Landscape-level | DFG SAG, NWP 13, NWP 27, SWQW |
| | 6. **CC FR 5 Conserve, Protect, Rehabilitate, and Reestablish Riparian Vegetation:** Using part of the results from the evaluation completed in CC FR 5 Optimize the Stream's Pool to Riffle Ratio above, complete a concept design document that would provide for | Medium | Landscape-level | DFG SAG, CESA, FESA, NWP 13, NWP 27, NWP 33, NWP 41, SWQW |

## Table 11-1. Implementation Matrix

### COON CREEK IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | low height levees to contain flood waters. These levees would be less than 5 ft. high and encompass enough flood plain area to meet the vegetative needs of riparian dependent species of fish and wildlife, accommodate reasonable flood flows, and reduce the overall area subjected to flooding in all but the higher flood flow occurrences. Emphasis would be placed on minimizing changes in adjacent land uses and developing a funding mechanism to fully compensate adjacent landowners. Complete conceptual design by September 2004. | | | |
| | 7. **CC FR 5 Conserve, Protect, Rehabilitate, and Reestablish Riparian Vegetation:** Implement the design proposed in CC FR 5 Conserve, Protect, Rehabilitate, and Reestablish Riparian Vegetation: above, starting at the upstream end of the project and working downstream. Initial project phase to be initiated by October 2006. | Medium | Landscape-level | DFG SAG, CESA, FESA, NWP 13, NWP 27, NWP 33, NWP 41, SWQW |

**[1]Regulatory Permits**

1. Federal Endangered Species Act Section 7 or 10 Take Permit from the USFWS - FESA
2. State Endangered Species Act Take Permit - CESA

3. Federal Clean Water Act Section 404 permit, either a Nationwide Permit or Individual Permit. Nationwide Permits include one or more of the following:

   NWP 7 (for outfall structures and maintenance)
   NWP 13 (for bank stabilization)
   NWP 27 (for stream and wetland restoration activities)
   NWP 33 (for temporary construction, access and dewatering)
   NWP 41 (for reshaping existing drainage ditches)
   NWP 42 (for recreational facilities)

4. State Water Quality Waiver from the RWQCB – SWQW
5. California Fish and Game Code Section 1601 or 1603 Streambed Alteration Agreement from the CDFG - DFG SAG

## Table 11-1. Implementation Matrix

### ENTIRE ERP PLANNING AREA IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| **Public Outreach (PO)**<br>PO 1 Provide individuals involved in the implementation of this Ecosystem Restoration Plan with information regarding the scientific basis and rationale to support recommended actions by 2004. | 1. Determine which formats (e.g., brochure, leaflets, short technical reports, slide presentation, computer generated presentation graphics, etc.) are suitable for outreach materials for the individuals in these watersheds (2003). | High | Program-level | None |
| | 2. Develop a list of subject matter areas for which outreach materials are desired (2003). Suggested subject matter topics include but are not limited to: 1) fish screening, 2) fish passage, 3) need for survey and assessment data, 4) value and needs for riparian areas, 5) riparian restoration techniques, 6) flood management corridors, 7) native vegetation suitable for restoration activities, 8) understanding the federal and state endangered species acts, 9) financial incentive programs available to implement this plan, 10) sources of technical assistance available to help plan and implement actions recommended in this plan, 11) permitting and approval process necessary for each type of project to be implemented, 12) effects of nonnative plants and predators on the riparian ecosystem, and 12) | High | Program-level | None |

## Table 11-1. Implementation Matrix

### ENTIRE ERP PLANNING AREA IMPLEMENTATION

| OBJECTIVES | TASKS | PRIORITY | IMPLEMENTATION CATEGORY | REGULATORY REQUIREMENTS |
|---|---|---|---|---|
| | others as needed. | | | |
| | 3. Canvas resource agencies, watershed groups, and others to determine if needed subject area materials are already in use and determine if these materials can be adapted for these watersheds (2003). | High | Program-level | None |
| | 4. Adapt existing outreach materials for use in these watersheds (2003). | High | Program-level | None |
| | 5. Develop new materials for desired subject matter areas (2004). | High | Program-level | None |