

# Operations & Maintenance Biological Surveys & Monitoring



## BIOLOGICAL SURVEYS AND MONITORING

Biological surveys and monitoring are a critical part of planning and implementing construction and maintenance activities. Creeks and their adjacent riparian corridors provide important habitat for fish, wildlife, and native plants, including species protected under state and federal laws. Surveys and monitoring help ensure that flood protection and water supply work is conducted responsibly, avoids or minimizes impacts to sensitive resources, and complies with applicable environmental regulations.

These efforts allow maintenance activities such as vegetation management, sediment removal, erosion repair, and debris removal to proceed while protecting ecological functions, water quality, and public trust resources.

## WHAT ARE BIOLOGICAL SURVEYS?

Biological surveys are field evaluations conducted by qualified biologists to identify biological resources that may be present within or near a proposed work area. Surveys are typically conducted before maintenance or construction activities begin and may include:

- Special-status (state and federally listed) species
- Riparian habitat and vegetation assessments
- Nesting birds during breeding season
- Aquatic species, including fish and amphibians
- Wetland and waters delineations to identify regulated aquatic features

Survey results are used to inform work planning, determine appropriate timing, and identify avoidance and minimization measures.



*A biologist conducts a wildlife survey prior to maintenance work.*

## WHAT IS BIOLOGICAL MONITORING?

Biological monitoring involves on-site oversight by a qualified biologist during maintenance activities. Monitoring ensures that required environmental protection measures are properly implemented, and that biological resources are identified and addressed promptly.

Monitoring may include:

- Pre-construction environmental awareness briefings for maintenance crews.
- On-site monitoring during vegetation removal, ground disturbance, or in-channel work activities.
- Establishment and verification of environmentally sensitive areas with fencing or buffers.
- Coordination with regulatory agencies if protected species or habitats are encountered.
- Documentation of compliance with permit conditions.



*A nesting Anna's hummingbird incubates its eggs.*

## REGULATORY BASIS FOR SURVEYS AND MONITORING

Biological surveys and monitoring are often required or recommended under the following laws and regulations:

- California Fish and Game Code (including Section 1602 – Lake and Streambed Alteration)
- Federal Endangered Species Act (ESA)
- California Endangered Species Act (CESA)
- Migratory Bird Treaty Act (MBTA)
- Clean Water Act (Sections 401 and 404)
- California Environmental Quality Act (CEQA)

Regulatory agencies such as the California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), U.S. Army Corps of Engineers (USACE), and Regional Water Quality Control Boards (RWQCBs) rely on survey data to evaluate potential impacts and establish permit conditions.



*A Black-tailed deer fawn bedded near a local stream.*

### WHEN ARE SURVEYS AND MONITORING REQUIRED?

The need for biological surveys and monitoring depends on the type, location, timing, and extent of proposed maintenance activities. Surveys and or monitoring are more likely to be required when work:

- Occurs within a creek, wetland, or riparian corridor.
- Involves vegetation or tree removal.
- Disturbs soil, bed, banks, or channel features.
- Takes place during sensitive periods (e.g., nesting bird season).
- Occurs in areas with known or potential special-status species.

Some minor activities, such as hand removal of trash, may not require surveys or monitoring if conducted in accordance with best management practices and outside of sensitive habitats.

### HOW SURVEYS AND MONITORING BENEFIT PROJECTS

Conducting biological surveys and monitoring provides multiple benefits:

- Reduces the risk of project delays caused by unexpected biological constraints.
- Supports regulatory compliance and defensible permitting decisions.
- Helps avoid impacts to protected species and habitats.
- Allows flexibility in maintenance scheduling through informed planning.
- Demonstrates environmental stewardship and responsible resource management.



*A biologist conducts a night-time survey for sensitive amphibians.*

### WHAT HAPPENS IF A BIOLOGICAL CONCERN IS IDENTIFIED?

If biological surveys or monitoring identify a sensitive resource or protected species that could be affected by the proposed maintenance or construction activity, additional protective measures are implemented to avoid or minimize impacts. Depending on the type of concern identified, this may include:

- Temporary delay of work until the biological concern is no longer present (e.g., waiting until the end of nesting season or after a species has moved out of the area).
- Establishment of protective buffers around sensitive resources, such as nests, dens, wetlands, or special-status plants.
- Modification of work methods or limits to reduce disturbance while still achieving the maintenance objective.

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