

# FishPAC Multi-Species Camera Project Guidance and Deployment Protocol



## Overview

Caltrans Headquarters Office of Biological Science and Innovation is loaning cameras to Districts to implement the FishPAC camera plan to obtain data on terrestrial species use at specified State Highway System locations. Please refer to the current FishPAC Multi-Species Camera Plan on the FishPAC website ([www.cafishpac.org](http://www.cafishpac.org)) to determine identified camera deployment sites, and contact the designated Fish Passage Coordinator.

If designed and constructed appropriately, bridges and culverts on the State Highway System have the potential to facilitate connectivity for all aquatic and terrestrial species that migrate or spend portions of their life cycle in watersheds. Fish passage remediation projects typically provide multi-species connectivity benefits and ensure that salmon, Steelhead, and other threatened and endangered species can respond and adapt to climate change stressors, such as drought, wildfire, sea level rise, changes in stream flow, and water temperature changes.

## Fish Passage Location Categories

- 1) **Completed** – Since 2006, Caltrans has completed more than 50 fish passage remediation projects, which account for about 795 miles of improved access to salmon and Steelhead habitat. Most well-designed, completed fish passage projects afford opportunities for other aquatic and terrestrial connectivity.
- 2) **Priority** – Priority locations are determined within the geographic area of each FishPAC, based on threatened and endangered species diversity, quality and quantity of habitat, and professional knowledge, through an ongoing nomination and ranking process. Current priority locations on the CA State Highway System account for an estimated 385 miles of blocked habitat, which is either high quality, and/or identified specifically for recovery of salmon and Steelhead species.
- 3) **Active** – Active fish passage locations have been funded for fish passage remediation and are currently in the project development process. Active locations account for an estimated 313 miles of currently blocked habitat for salmon and Steelhead. Many of the active remediation solutions will facilitate aquatic and terrestrial species that migrate or spend portions of their life cycle in the watershed.
- 4) **Threatened and Endangered Species** – Other locations considered and approved by FishPAC within the range of other identified threatened and endangered species, both aquatic and terrestrial. These locations are not included in the FishPAC camera plan and will need to be considered, based on species diversity, habitat quality, and other professional knowledge, as they are identified.

## Camera Deployment

- **Familiarize yourself** with capabilities of the cameras that will be deployed to ensure that camera settings and site placement are optimal. Ensure that the time and date stamp are accurate, as well as the desired number of photos and timing intervals between photos and/or videos.
- **Site-specific conditions** dictate **safe and effective deployment** options for each designated location. Available features, such as trees, posts, or if approved, attached directly to the facility (e.g., bridge or culvert headwall), will inform the best site-specific option. It's important to consider the potential for theft and deploy cameras within security lock boxes and using Master Lock cables for added security.
- **When placing a camera to detect terrestrial species**, be mindful that wildlife is typically low to the ground. Either the camera will need to be safely and securely mounted low to the ground, or if a higher

elevation is needed for security purposes, the camera will need to be angled toward the ground to ensure that the sensors and lens capture effective photos of species.

- **Undersized culverts** or culverts with a **drop at the outlet** – For certain locations, one camera at the inlet or outlet may be sufficient to determine if species approach the facility but choose not to enter. Photos that depict species approaching but not using the facility demonstrate refusal and indicate the site would likely benefit from improved terrestrial connectivity, if the facility were larger, and species felt safe.
- **Vegetation** – If you deploy the camera in or near vegetation, it may be necessary to trim vegetation in or around the view of the camera. Otherwise during windy events the vegetation will likely trip the camera which will result in many photos of the adjacent vegetation.
- **Monitoring a Passable or Completed Remediation Site** – If a site is likely passable for terrestrial species or post remediation, deploy two cameras to capture migratory use at each end of the facility.
- **Camera Settings** – Set camera to desired setting based on the site conditions and project needs. At a minimum the camera must be set to take photographs (video is optional) and must have the location coordinates set for each camera (for best results set this in the office or come prepared with a GPS enabled device). The Latitude/Longitude must have at least 6 decimal places for accuracy.

### **Deploying Cameras on Facilities (if approved)**

Deploying cameras at locations with limited vantage options or high risk of theft, may make deployment on the facility the only reasonable and feasible option. Mounting the camera directly to the Caltrans facility requires coordination with District Maintenance, Bridge Managers, or other District specific staff.

- Contact District Maintenance, Special Crews, and the Bridge Supervisor to inform them of a request to mount a research camera on identified location(s).
- See the FishPAC fact sheet Deploying Research Cameras on Caltrans Facilities to consider preferred techniques for mounting the security box or camera.
- Provide Maintenance and Structures information on all locations where camera safety and research would benefit from a facility mounted camera.
- Prior to mounting any cameras ensure that the appropriate permissions have been granted.

### **Camera Maintenance and Memory Card Exchange**

The FishPAC camera contract requires photos be submitted every six weeks. Staff will need to visit sites, ensure cameras are maintained and functioning optimally, and swap out memory cards in order to submit timely data.

- **Moisture and heat** – Moisture and extreme heat will damage the camera. Make sure the camera is watertight. During the summer, be mindful of cameras in vehicles during periods of extreme heat.
- **Damage or theft** – If the camera becomes damaged or stolen immediately notify the District Fish Passage Coordinator and the HQ Fish Passage Experts at the Office of Biology and Innovation.
- **Memory card and batteries** – When visiting the site to exchange memory cards bring new batteries just in case. Due to weather events (heat and cold) batteries may not perform well and may need replacement frequently. Bring a Ziplock bag for dead batteries or storage of batteries that have remaining power.
- **Prior to Deployment** - Prior to each time the camera is deployed, clean the camera, including the battery compartment, and test the camera to ensure it is functioning optimally. Use a soft cloth to clean the lens and sensors.
- **Routine maintenance** - Each time you visit the site to exchange memory cards, clean the camera and check the battery compartment to ensure optimal function. Use a soft cloth to clean the lens and sensors.

- **Post deployment** - Clean the camera, the security box, and cable. Use a soft cloth to clean the lens and sensors. If the camera will be stored for any length of time, remove the batteries.

## Photo and Data Submittal

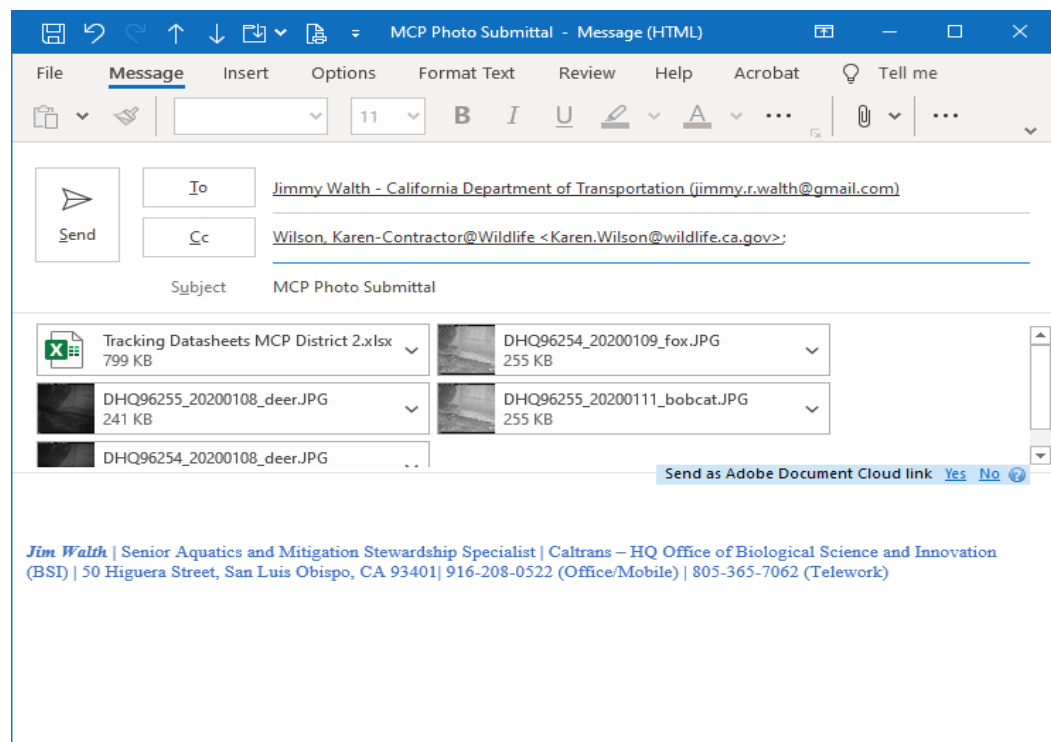
The camera contract requires photos and the tracking datasheet be completed and submitted every six weeks. Photos and occurrence data will be included in the Multi-Species Connectivity story map and database. The District must log all species occurrences into the tracking datasheet. However, a limited number of photos, representative of species use (or refusal), shall be submitted. Many locations will have few high integrity photos, while others may have as many as ten or twelve. If you plan to submit more than twelve photos, please contact the HQ fish passage to provide support for content of interest and how to convey a greater number of photos.

The Multi-Species Camera Plan Tracking Datasheet includes instructions, project site information, and event information that will accompany the photos that will be submitted to the Multi-species Camera Database. Refer to the Tracking Datasheet to include all required information for each camera deployment and data submittal.

### Interim Photo Submittal plan

Photos will be submitted via email and labelled using the following protocol.

- **Photo Labeling** – Label each photo with the format: [Camera CT tag]\_[yyyymmdd]\_[species].
  - For example: [HQ96254\\_20200108\\_deer](#)
- **Tracking Datasheet** – The tracking datasheet accompanies photos selected to represent species use, in order to track and share species and frequency of occurrence data. Ensure the Tracking Datasheet is updated and matches the information for each photo
- **Email Submittal** – Email the tracking datasheet with 1-12 photos to the email: [jimmy.walth@dot.ca.gov](mailto:jimmy.walth@dot.ca.gov) and CC: [Karen.Wilson@wildlife.ca.gov](mailto:Karen.Wilson@wildlife.ca.gov)
  - Use the subject line: MCP Photo Submittal
  - Send additional emails if necessary
  - Example:



## Photo Examples

**Below:** example, daytime photo applicable for submittal.



**Below:** example, daytime photo not ideal for submittal.



**Below:** example, night-time photo applicable for submittal.



**Below:** example, night-time photo not ideal for submittal.

