Photo Monitoring and Reporting Protocol
Established by the Executive Officer

April 30, 2014

Requirement for Photo Monitoring and Reporting

The Agricultural Order, No. R3-2012-0011 (Part E, ¶ 69, Page 29), and the associated Monitoring and Reporting Program (MRP), Orders No. R3-2012-0011-02 (Part 4A, ¶ 1- 2, Page 14) and R3-2012-0011-03 (Part 4A, ¶ 1-2, Page 14 and Part 7A, ¶ 1-2, Page 20-21), require dischargers to conduct photo monitoring and reporting. The requirement to conduct Photo Monitoring and Reporting applies to Tier 2 and Tier 3 dischargers whose properties contain or are adjacent to a waterbody identified on the 2010 Clean Water Act section 303(d) List of Impaired Waterbodies for temperature, turbidity, or sediment.

The Order requires Tier 2 and Tier 3 dischargers to 1) document the condition of perennial, intermittent, or ephemeral streams and riparian wetland area habitat; 2) conduct photo monitoring consistent with these protocols established by the Executive Officer; and 3) demonstrate how practices in the photos meet the Basin Plan requirements for erosion and sedimentation (Chapter 5, p. V-13, Section V.G.4), including relevant management practices and/or treatment and control measures implemented to prevent conditions, erosion, or sediment discharges that may or do cause or contribute to impairments for temperature, turbidity, or sediment. The Executive Officer may request additional photographs if needed.

The Order requires Tier 2 dischargers to conduct Photo Monitoring and Reporting by June 1, 2014, and again, at the same photo monitoring point locations using the same photo monitoring methods, by June 1, 2017. Photos and associated documentation must be maintained in the Farm Water Quality Plan (Farm Plan), in the formats specified in this document (approved by the Executive Officer), and must be submitted upon request of the Executive Officer.

The Order requires Tier 3 dischargers to implement the same requirements as Tier 2 and further requires some Tier 3 dischargers to conduct photo monitoring and reporting annually to document progress on their Water Quality Buffer Plan starting in 2016 (Agricultural Order R3-2012-0011, Page 30-31).

Farms/Ranches that are adjacent to impaired surface waterbodies and do not have any surface water leaving the sites are not required to conduct photo monitoring. Information reported in the eNOI database about discharge characteristics and maps showing ranch locations will provide evidence for these cases. The Executive Officer may request additional information or photographs for additional evidence if needed.

This protocol describes methods to conduct on-the-ground photo monitoring and reporting to meet these requirements. Alternative methods, such as use of aerial photos or photos taken from an elevated point, may be conducted in lieu of the specific methods described for on-the-ground photo monitoring, provided the alternative methods do the following:

- Document the condition of perennial, intermittent, or ephemeral streams and riparian wetland area habitat, with the following features visible in each photo: center of riparian area, waterbody bank, top of bank and any non-cropped areas adjacent to the waterbody, such as unpaved roads.
- Demonstrate how practices in the photos meet the Basin Plan requirements for erosion and sedimentation (Chapter 5, p. V-13, Section V.G.4), including relevant management practices and/or treatment and control measures implemented to prevent conditions, erosion, or sediment discharges that may or do cause or contribute to impairments for temperature, turbidity, or sediment.
- Document management practices using the Photo Documentation Reporting Form in Attachment 1 of this protocol.
- Are repeatable so that change over time can be observed in the documentation provided.

If an alternative photo documentation method is used, documentation (e.g., labeling) and reporting (e.g., providing descriptive information of management practices and vegetative cover) must be equivalent to the documentation methods in the section below (page 7) titled “Methodology for Documentation and Reporting.” In addition, a description of the proposed alternate method must be maintained with photo documentation in the Farm Plan.

Methodology for On-the-Ground Photo Monitoring

1. Establish Photo Monitoring Points

Place a permanent marker in view of the photo monitoring point if one does not already exist (i.e. a building, fencepost or large tree). A permanent marker is necessary for a) property owners to ensure that the same location is used for the photo point every four years and b) Water Board Staff to compare the view in subsequent photos taken from the same location.

2. Document Monitoring Points

Identify the exact location of each photo monitoring point on a ranch map or aerial photo and label each photo monitoring point using a unique site code (Photo Point #). Ranch maps (or aerial photos), labeled with photo monitoring points, must be kept with the Farm Plan. Example maps (Diagrams 1-4) and additional detailed description of the two types of photo monitoring points: "in-stream condition photo monitoring points" and "riparian vegetation condition photo monitoring points" are provided in the following text.

3. Establish In-stream Condition Photo Monitoring Points

Establish photo monitoring points to document in-stream riparian condition at the upstream and downstream boundaries of the stream, wetland, or other waterbody. If one photo point is not visible from the other (due to a significant bend in the waterbody), or there is more than ½ mile of stream length between photo points, additional photo points must be established (Diagram 2). The unique photo point numbers and the order in which photos are taken may be determined by the Ranch operator, but must be unique to each photo point location. Example photo point numbers are provided in the following section.

In-stream photo monitoring point 001

Establish a permanent photo monitoring point at the downstream most edge of the waterbody on the ranch property. Ensure the location has a permanent marker that will be visible in the photo if one does not already exist (such as a large tree or fence post). Position the monitoring point on the top of the bank of the waterbody. Take a minimum of one photo from this monitoring point looking upstream. In this photo, the following should be visible: permanent marker, center of riparian area, waterbody bank, top of bank and vegetation on adjacent non-cropped areas such as a road (Figure 1). Multiple photos may be taken so that they can be overlaid and show all of the above from photo point 001. If multiple photos must be taken at a given photo monitoring point, they shall be labeled with the site point number and letters a-z (i.e.001a, 001b, 001c etc). For each in-stream photo monitoring point and its photos, complete one "Photo Documentation Reporting Form".

In-stream photo monitoring point 002

Establish a permanent photo monitoring point at the upstream most edge of the waterbody on the ranch property. Position the monitoring point on the top of the bank of the waterbody. Take a minimum of one photo from this monitoring point, looking downstream. Again the following should be visible in the photo: permanent marker, center of riparian area, waterbody bank, top of bank and vegetation on non-cropped areas such as unpaved roads (Figure 1). Complete one "Photo Documentation Reporting Form" for this in-stream photo monitoring point.

Figure 1. Example of in-stream photo 001. This photo shows the permanent marker (orange post), center of waterway, waterbody bank, top of bank and vegetation on non-cropped areas.

Diagram 1. Example ranch map showing ranch boundary, the location of each In-stream Condition Photo Monitoring Points, and unique photo point number. Note - this diagram does not contain all of the required elements of the photo monitoring map

If there is a significant bend in the waterbody or the ranch has more than ½ mile of stream length, additional photo monitoring points must be established (as shown in Diagram 2). From each of the points, two photos must be taken. From this point take two photos: 1) facing downstream (photo 002dn) and 2) facing upstream (photo 002up), Again, the following should be visible in each photo: center of riparian area, waterbody bank, top of bank and vegetation on non-cropped areas such as unpaved roads. Complete two “Photo Documentation Reporting Forms”, one for each in-stream photo monitoring point view. For a ranch like the one shown in Diagram 2, five in-stream photo monitoring points must be established and a total of eight photos will be taken to adequately document the conditions and riparian habitat on the stream banks and in the stream.

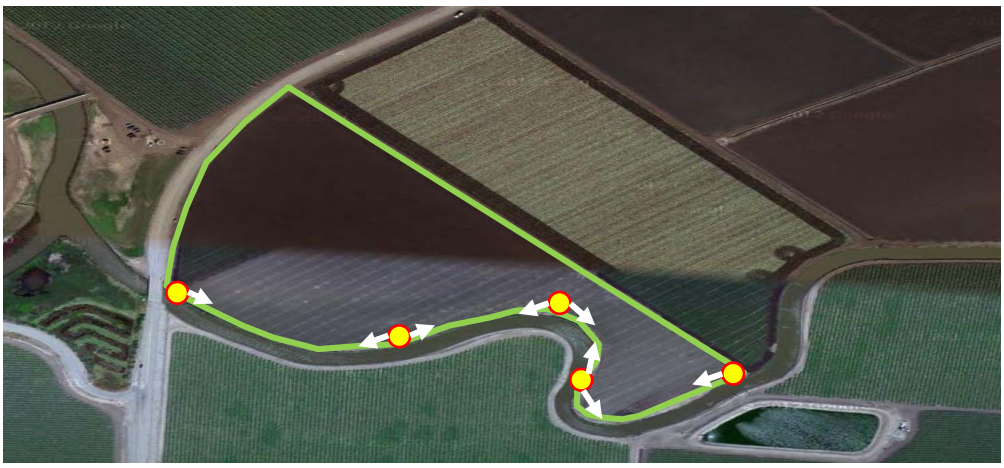

Diagram 2. Example map showing additional in-stream condition monitoring points (if needed).

4. Riparian Vegetation Condition Photo Monitoring Points

Establish photo monitoring points to document riparian vegetation condition at a minimum of three locations on the ranch property, positioned 100 feet back from the riparian vegetation edge (and into the fields). Establish the first photo monitoring point at the downstream edge of the waterbody and ranch property. Establish the second point mid-ranch (mid-way between the up and downstream edges). Establish the final photo monitoring point at the upstream most edge of the ranch property. If one edge of the ranch is not visible from the other edge (due to a significant bend in the waterbody), or the ranch has more than ½ mile of stream length, additional photo points must be established. Photo Documentation Reporting Forms, are not required for riparian vegetation condition photo monitoring points.

Riparian vegetation condition photo monitoring point 003 (example shown in Diagrams 1 & 3)
Establish the photo monitoring point at the upstream edge of the ranch/waterbody and 100 feet away from the top of the waterbody bank (into the field). Face downstream but at a 45-degree angle to the riparian area and take one picture. In this photo, the following should be visible: the upstream edge of the property/waterbody, midpoint of the property/waterbody, the ground adjacent to the riparian vegetation and the riparian vegetation looking downstream. Diagram 3 illustrates the photos needed for each riparian vegetation photo monitoring point.

Riparian vegetation condition photo monitoring point 004
Establish the photo monitoring point at a midpoint between the upstream and downstream edges of the ranch/waterbody (Diagram 3). Again, this photo monitoring point is on the field and 100 feet away from the top of the waterbody bank. From this point take three photos: 1) facing downstream, at a 45-degree angle (photo 004dn), 2) facing directly toward the riparian vegetation (photo 004m), and 3) facing upstream, at a 45 degree angle (photo 004up). If there is a significant bend in the waterbody and the edge of the ranch is not visible from this point, establish additional photo points moving downstream and repeat this procedure (Diagram 4). Establish the monitoring points so that the view in one photo slightly overlaps with the next.

Riparian vegetation condition photo monitoring point 005

Establish the photo monitoring point at the downstream edge of the ranch/waterbody and on the field, 100 feet away from the top of the waterbody bank (Diagram 3). Face upstream but at a 45 degree angle to the riparian area and take one picture. In this photo, the following should be visible: downstream edge of the property/waterbody, midpoint of the property/waterbody, ground adjacent to the riparian vegetation and riparian vegetation looking upstream.

Diagram 3. Example map showing riparian vegetation condition photo monitoring points. Top of diagram is upstream from bottom of diagram. Photographer is positioned 100 feet back from the water's edge, standing in the field.

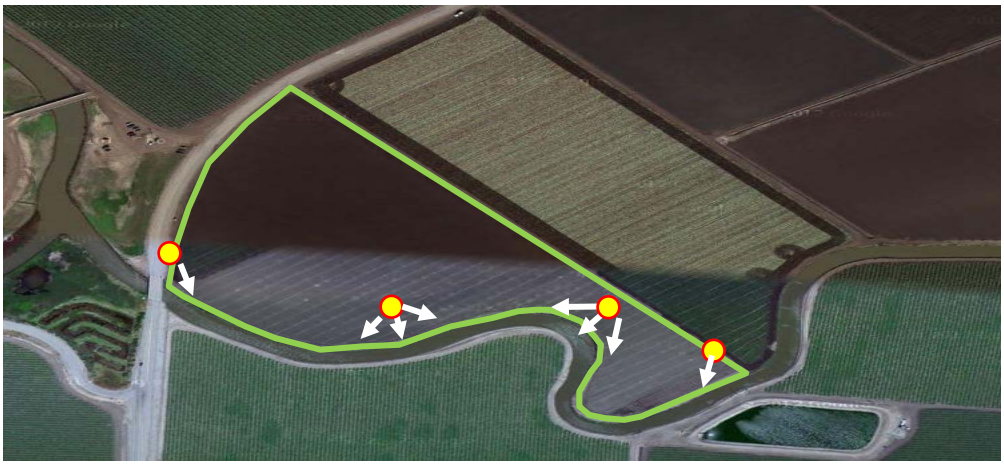

Diagram 4. Example map showing additional riparian vegetation condition monitoring points (if needed).

5. Photos Documenting Management Practices

Additional photos must be taken to document any management practices and/or treatment and control measures used to prevent erosion, sediment discharges and conditions, that may or do cause or contribute to impairments for temperature, turbidity, or sediment. There is no specific photo monitoring methods for photos documenting additional management practices or measures that are not located at established photo monitoring points. However, the Photo Documentation Reporting Form (Attachment 1) is required to accompany photos taken to document management practices or measures. Complete one Photo Documentation Reporting Form for each management practice, and its photo or set of photos. Forms are used to identify the type of practice or measure. Identify the exact location of each management practice photo monitoring point on a second ranch map or aerial photo as described below and using a unique site code (Photo Point #). Label management practice photos as described below in the Methodology and Documentation for Reporting section. Photos taken to document management practices, associated Photo Documentation Reporting Forms and the labeled ranch map must be kept with the Farm Plan. See next section.

Methodology for Documentation and Reporting

Dischargers will maintain photo monitoring point data, including 1) maps showing exact locations of each photo monitoring point, 2) photos and 3) completed photo reporting forms, in their Farm Plan. Discharges will submit photo monitoring point data upon request of the Executive Officer. Dischargers must maintain the following information in the format specified below.

1. Ranch Map or Aerial Photo

   Both printed and electronic formats are acceptable. All maps must contain the following information:
   - Outline showing boundaries of the ranch
   - Line or outline of all waterbodies on ranch
   - Global ID number for the ranch (ALG #)
   - Points (i.e. hand drawn marks) showing the location of each photo monitoring point
   - Labels for each photo monitoring point (unique photo point #)
   - Map scale
   - North marker
   - Landmarks such as labeled road crossings and waterways

2. Photos - Labeling, Mapping and Describing
   Electronic formats are preferred (i.e., JPEG). Printed and labeled photos are also acceptable.
   - In-stream and riparian vegetation condition photos must be labeled to include the following information:
     - Unique site code (Global ID # & Photo Point #). NOTE: Global ID appears on the eNOI ranch information page as follows: "Global ID: AGL##########"

  - Photo Date (Formatted: DayMonthYear or 05May2012)
- Each in-stream and riparian condition photo must be labeled with this format: Global ID #_Photo Point #_Photo Date. For example, a photo taken at site 003 on ranch Global ID # ALG1234 on May 5th 2012 would have the following label:
  - If image is digital use file name "AGL1234_003_5May2012.jpg"
  - If image is printed, , write this label on the back of the photo, AGL1234_003_5May2012
- Additional management practice photos must be labeled as follows: Global ID #_MP_#_Photo Date. For example, If two practices are documented with photos, on Global ID # 1234 taken on May 5th 2012, Photos must have the following labels:
  - Digital Image file names: AGL1234_MP001_5May2012.jpg and AGL1234_MP002_5May2012.jpg
  - Printed photo: AGL1234_MP001_5May2012 and AGL1234_MP002_5May2012
- If possible, use a camera with a GPS feature (such as smart phones or tablets) so that the coordinates of the photo locations are automatically associated with the picture file.

3. Photo Documentation Reporting Forms
   - Reporting forms are required for in-stream monitoring point and management practice photos only. Reporting forms are not required for riparian vegetation condition photo-monitoring points.
   - The photo documentation reporting form must be filled out and maintained in the Farm Plan for each in-stream monitoring point and management practice photo. The form is Attachment 1 to this document.
   - Each Form records the following data and information about a single photo:
     - Photo monitoring point data including AGL#, waterbody name, purpose of the photo, photo monitoring point # and date.
     - Explanations and descriptions of the management practices demonstrated in the photos (if applicable).
     - Estimated widths of buffer and riparian areas from top of bank (top edge of water holding capacity for the waterbody) to the edge of either cropped area or non-cropped areas like roads, whichever is closer. This should be an estimate of the average width for the view in the photo.

4. Reporting:
   - Dischargers are NOT required to submit the map, photos, or photo documentation forms to the Central Coast Water Board at this time.
   - All photos and photo documentation forms must be placed in the Farm Plan by June 1, 2014 and again by June 1, 2017 and every four years thereafter by June 1.
   - Photo monitoring documentation must be submitted to the Water Board upon request of the Executive Officer.
   - Dischargers must indicate on the Annual Compliance Form, Section K, if and when they have completed the documentation required as in 1-3 above and added it to the Farm Plan as required.

Definitions

Riparian vegetation or vegetated cover- the naturally occurring vegetation found along creek channels, typically willows and other trees, shrubs, and grasses.

Width of vegetated cover- the width measured or estimated for each bank from top of bank to edge of vegetation.

Right bank- bank on the right while the observer is facing downstream.

Left bank- bank on the left while the observer is facing downstream.

References

Hall. F.C. March 2002. Photo Point Monitoring Handbook: Part A-Field Procedures. U.S. Department of Agriculture, Forest Service. Portland, OR.

Photo Documentation Reporting Form

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Form Instructions:
Use one form for each photo taken. Mark each photo location on a printed map or aerial photo.

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Global ID (AGL) #: _____ Photo Monitoring Point #:_____

Waterbody Name: _____ Photo Date: _____

Type of Photo (Choose one)

- ☐ In-stream condition (photo on bank)
- ☐ Documenting management practices
- ☐ Other methodology – method description is kept in the Farm Plan

1. Identify management practice(s) demonstrated in photo (Choose one or more of the following).

- ☐ Maintain vegetative cover (Herbaceous plants)
- ☐ Maintain vegetative cover (small woody plants, < 15 ft tall)
- ☐ Maintain vegetative cover (large woody plants , >15 ft tall)
- ☐ Plant vegetative cover, filter or buffer strip (Herbaceous plants)
- ☐ Plant vegetative cover, filter or buffer strip (small woody plants, < 15 ft tall)
- ☐ Plant vegetative cover, filter or buffer strip (large woody plants , >15 ft tall)
- ☐ Vegetative treatment system
- ☐ Seeding (hydro seed or hydraulic planting)
- ☐ Rolled Erosion Control Products (Biodegradable netting, mats or blankets)
- ☐ Biodegradable mulches (straw or fiber), netting or mats
- ☐ Gravel or rock to stabilize soil
- ☐ Impervious covers (plastic or woven sheeting)
- ☐ Sediment control basin or traps
- ☐ Silt fences
- ☐ Tracking Control (rumbles strips or rock)
- ☐ Other _____
- ☐ None

Photo Documentation Reporting Form

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2. Identify the dominate type of cover on the right bank (Circle one of the following).

   - ☐ Trees
   - ☐ Shrubs
   - ☐ Grasses
   - ☐ Bare Soil
   - ☐ Other
   - ☐ Not applicable, not my property

3. Estimate average width of riparian vegetated cover on the right bank (top of bank to edge of farm or non-cropped areas such as a road). (Circle one of the following).

   - ☐ Not applicable, not my property
   - ☐ 0 ft (bare soil)
   - ☐ 1-5 ft
   - ☐ 6-10 ft
   - ☐ 11-15 ft
   - ☐ 15-20 ft
   - ☐ 21-25 ft
   - ☐ 26-30 ft
   - ☐ > 30 ft

4. Identify the dominate type of cover on the left bank (Circle one of the following).

   - ☐ Trees
   - ☐ Shrubs
   - ☐ Grasses
   - ☐ Bare Soil
   - ☐ Other
   - ☐ Not applicable, not my property

5. Estimate average width of riparian vegetated cover on the left bank (top of bank to edge of farm or non-cropped areas such as a road). (Circle one of the following).

   - ☐ Not applicable, not my property
   - ☐ 0 ft (bare soil)
   - ☐ 1-5 ft
   - ☐ 6-10 ft
   - ☐ 11-15 ft
   - ☐ 15-20 ft
   - ☐ 21-25 ft
   - ☐ 26-30 ft
   - ☐ > 30 ft