

APPENDIX B

Methodology for Characterizing Vegetation in the IID Drainage System

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A comprehensive survey of vegetation in the IID drainage system will be conducted. The survey will collect data necessary to quantify the amount and type of vegetation supported in the drainage system. The survey will be conducted by teams of two people. Prior to initiating the surveys, field personnel will be instructed in field techniques and data collection to ensure consistent characterization among crews.

Standard Methodology

The entire drainage system will be surveyed. For each drain, vegetation will be characterized starting at the upstream end of the drain and moving downstream. Crossings occur at regular intervals of about 0.5 mile along every drain (Figure B-1). Vegetation will be characterized by drain segment, with a segment defined as that portion of the drain between two crossings.

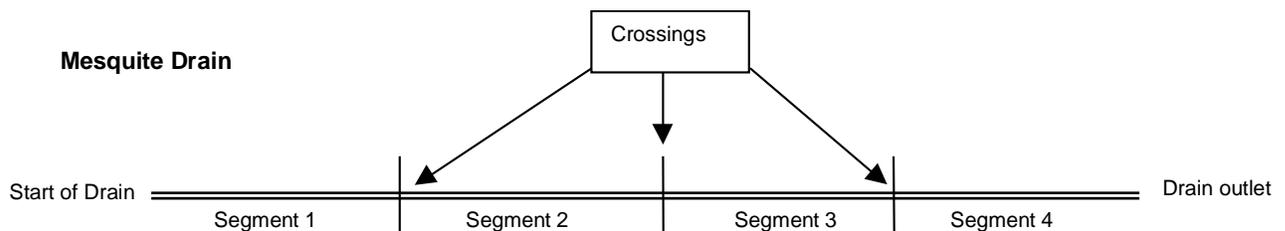


FIGURE B-1
Schematic of Drain Showing Crossings and Designations of Segments for Vegetation Characterization

In each segment, the following measurements, indicated on Figure B-2, will be taken:

- Top width of the drain, including overburden
- Projected (i.e., horizontal) width of the vegetation in the drain, including the width of the water surface
- Width of the water surface

The actual width of the vegetation will be developed from these measurements after field data collection. Because the width of the vegetation can vary along the length of the drain segment, the vegetation width measurement will reflect where the vegetation is concentrated and will not include small “pockets” of vegetation that occur sporadically on the banks of the drain. In addition, the height of the overburden will be estimated.

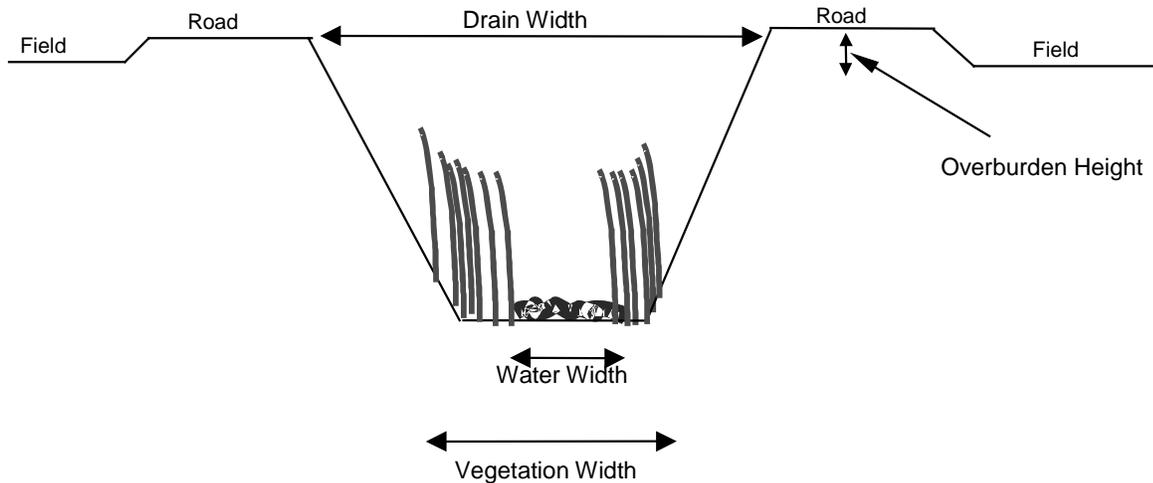


FIGURE B-2
Schematic of Drain Showing Data to Be Collected

Vegetation can occur on the drain banks and on the bottom of the drain. The vegetation width will be measured as the horizontal distance or projection rather than the slope distance covered by vegetation. Measuring vegetation width as the slope distance covered by vegetation was considered but not pursued for the following reasons:

- Habitat created under the HCP would be higher quality than the habitat in the drains, thus, compensating for any underestimation in the amount of vegetation resulting from using the horizontal distance rather than the slope distance to estimate the amount of habitat.
- Some portions of the drains could be inaccessible and may require using aerial photography to determine the amount of vegetation. If aerial photography were used, the acreages generated would reflect a horizontal distance rather than a slope distance.

To ensure consistency in the event that aerial photography is necessary to delimit certain areas of vegetation for this survey (or future surveys), vegetation width will be measured as the horizontal distance.

The total percent coverage of vegetation will be classified, according to the California Native Plant Society system (Table B-1). In estimating the percent coverage, the area covered by water will be excluded so the estimate reflects the density of the vegetation along the banks. Within the vegetated area (i.e., that portion of the drain covered by vegetation [vegetation width – water width]), the plant species composition will be characterized by identifying the plant species present and assigning a vegetation cover class, according to Table B-1. Plant species likely to occur in the drains that will be individually identified are listed in Table B-2. The percent coverage of herbaceous plants not listed in Table B-2 will be addressed collectively as “herbaceous.” Additional plant species of importance to wildlife could be encountered during the field surveys; such species will be individually identified and added to Table B-2. Dead or senescent vegetation will be included in estimating the total percent coverage and species composition.

TABLE B-1
Vegetation Cover Classes

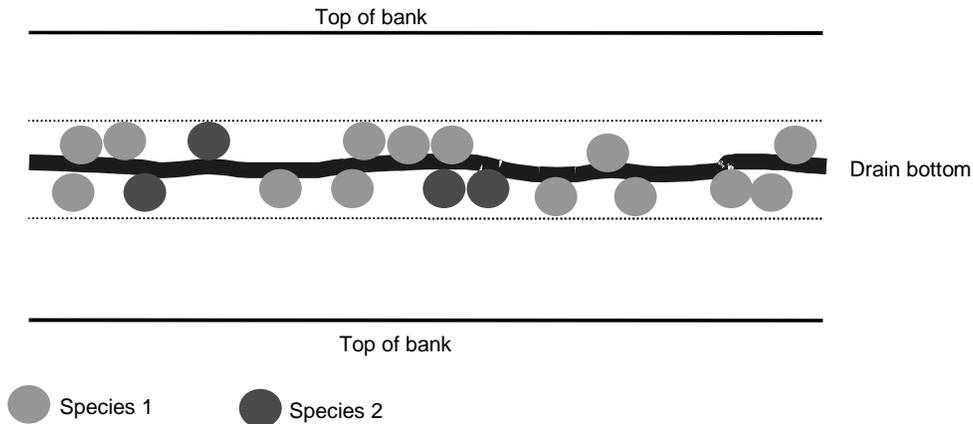
Class	Percent Coverage
1	≤ 1
2	> 1 – 5
3	> 5 – 25
4	> 25 – 50
5	> 50 – 75
6	> 75 – 100

TABLE B-2
Plant Species for Which Percent Coverage Will Be Individually Classified

<i>Atriplex</i> spp. (saltbush)	<i>Prosopis</i> spp. (mesquite)
<i>Carex</i> spp. (sedge)	<i>Rumex crispus</i> (curly dock)
<i>Juncus</i> spp. (rush)	<i>Salix</i> spp. (willow)
<i>Larrea tridentata</i> (creosote bush)	<i>Scirpus</i> spp. (bulrush)
<i>Phragmites communis</i> (common reed)	<i>Suaeda torreyana ramosissima</i> (iodine bush)
<i>Pluchea sericea</i> (arrowweed)	<i>Tamarix</i> spp. (salt cedar)
<i>Polygonum</i> spp. (smartweed)	<i>Typha</i> spp. (cattail)

EXAMPLE

Total percent coverage: Class 5 (>50 – 75%)
 Plant Species 1: Class 6 (>75 – 100%)
 Plant Species 2: Class 3 (>5 – 25%)



In addition to the quantitative information on vegetation, the field crew will note the following information:

- Presence of aquatic vegetation
- Dead vegetation
- Indication of recent maintenance activities (e.g., herbicide application, mechanical cleaning)

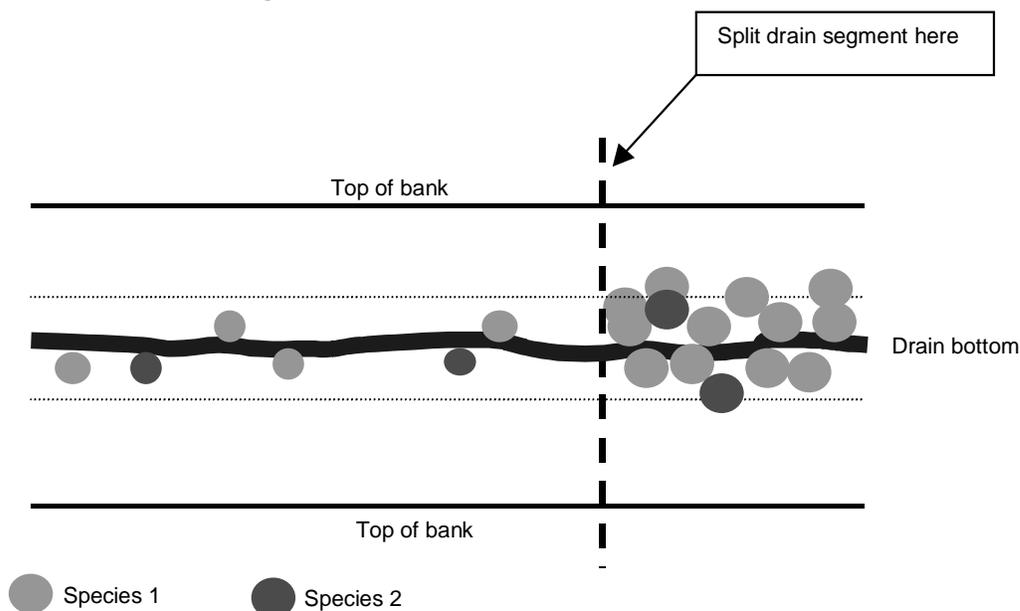
Although the focus of the survey is to characterize the vegetation, the field crews also will note covered species in or along the drains.

Special Conditions Methodologies

Most of the drains have vegetation consisting of one or two plant species in a narrow band along the water's edge for most of the length of the segment. However, some drains have a more complex vegetation pattern. Two special conditions were identified during a field visit to develop the survey protocol. First, along some drains, the type and extent of vegetation varies substantially along the segment length. Second, vegetation in the drain exists as two distinct bands, with dense emergent vegetation on the bottom of the drain and more xeric species on the drain banks. The following describes the approach to characterizing vegetation in these two circumstances. These techniques will be used only where there are distinct differences in plant species composition or percent coverage.

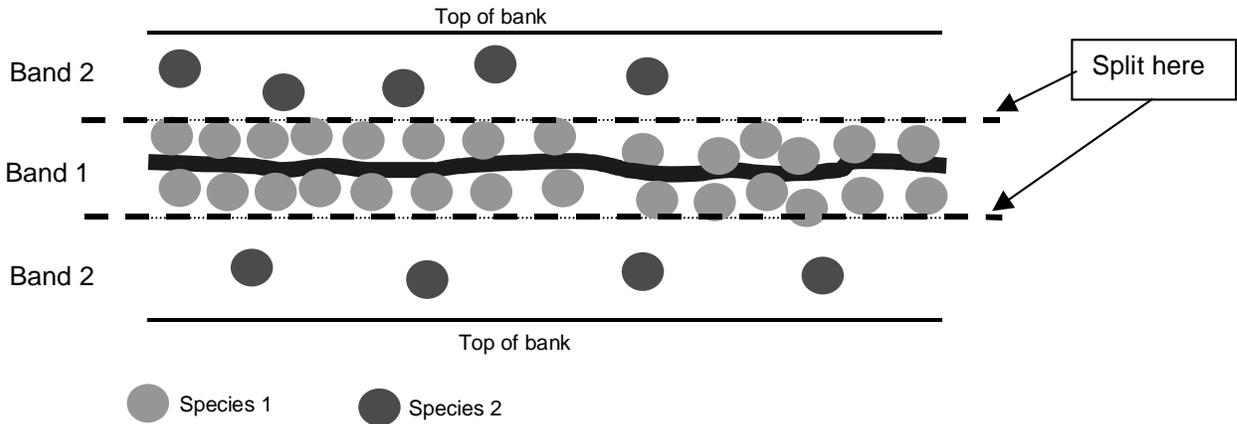
Condition 1: Variable Vegetation Along Segment Length

Along some drains, the density or width of the vegetation can change abruptly, as shown schematically. In this case, the drain segment will be split into two subsegments and the vegetation characteristics quantified individually for each subsegment. The subsegments will be distinguished with a letter (e.g., Mesquite Drain Segment 1a and 1b). The location of the split will be designated through Global Positioning System coordinates or as a distance from the nearest crossing.



Condition 2: Two or More Distinct Vegetation Bands

Along some drains, two distinct bands of vegetation with different species composition and percent coverage occur. This condition is illustrated below. In this case, the vegetation will be split into two bands and the vegetation characteristics quantified. The band flanking the water will be referred to as Band 1, with the band occurring higher on the drain bank referred to as Band 2. Typically, the vegetation characteristics of Band 2 are the same on both sides of the drain and, therefore, will be combined in estimating the width and percent coverage.



Vegetation flanking the water, but on opposite sides of the water, could differ substantially in terms of percent coverage as illustrated below. If the percent coverage of the vegetation differs by more than 50 percent between the two sides, the vegetation flanking the water will be split into two bands as shown. The side with the highest percent coverage will be designated Band 1, and vegetation width will be measured as the width of the vegetation in Band 1 plus the water width. The vegetation on the opposite bank will be designated Band 2, and its width and percent coverage estimated as described above.

