Summary of Changes Made to CRAM Episodic Riverine Field Book

Version 1.0 (Dec 2015) to Version 6.2 (June 2020)

June 24th, 2020

Title Page:

- Updated version number and date of release
- Removed words "User's Manual"

Foreword:

- Edited text to remove references to User's Manual and to fix spelling errors.

Citation:

- Updated date and name of Central Coast Wetlands Group

Chapter 1:

- Changed title of chapter to "Where to Use the Episodic Module"
- Removed extraneous text
- Clarified where to use the episodic module based on local indicators and geography
- Updated flowchart text with episodic indicators

Chapter 2:

- Changed title of chapter to "Characterizing the Site"
- Re-arranged chapter sections for clarity and utility

2.1 Episodic Stream Sub-types:

- Simplified sub-types to two categories: Multi-thread and Single-thread

2.2 Verify the Appropriate Assessment Window

- Removed extraneous text

2.3 Establish the Assessment Area

- Edited text for clarity
- Updated table numbers
- Added Table 2.3: Steps to establish episodic AAs
- Clarified rules for determining the lateral extent of the AA
- Added Table 2.4: General size guidelines for AAs in episodic streams
- Added Table 2.5: Steps to establish AAs on alluvial fans

Chapter 3:

- Changed title of chapter to "Procedures to Conduct CRAM Attributes and Metrics"
- Edited text for clarity

Attribute 1: Buffer and Landscape Context

- Removed extraneous text

Metric 1: Stream Corridor Continuity

- Updated Figure 3.1 to birds-eye-view with more accurate AA outline

Metric 2: Buffer

- Created new Figure 3.2 to illustrate the Percent with Buffer Sub-metric
- Created new Figure 3.3 to illustrate the Buffer Width Sub-metric
- Added Worksheet 3.3 to record buffer width measurements
- Created new Figure 3.4 to illustrate the Buffer Condition Sub-metric
- Incorporated vegetation characteristics as secondary criterion to score the Buffer Condition Sub-metric, and revised narrative table to reflect the consideration of vegetation

Attribute 2: Hydrology

Metric 1: Water Source

- Revised text to more specifically address arid episodic streams
- Removed reference to initial office assessment
- Created new example diagrams in Figure 3.5 for scoring Water Source

Metric 2: Sediment Transport

- Changed episodic stream sub-types to Multi-thread and Single-thread
- Added indicators of natural processes and indicators of altered sediment transport for both types

Metric 3: Hydrologic Connectivity

- Edited text for clarity
- Added reference in scoring table narrative to “unnaturally steep banks” as an indicator of anthropogenic alterations to hydrologic connectivity to the floodplain

Attribute 3: Physical Structure

Metric 1: Structural Patch Richness

- Condensed text
- Revised potential expected patches for the two sub-types (Multi-thread and Single-thread)
- Adjusted scoring thresholds for Single-thread systems
- Edited Patch Type definitions
    - Abundant wrackline: revised to clarify that wrack can be carried by wind or water

- Animal mounds and burrows: revised to include animal mounds made by invertebrates (ants, termites, etc.)
- Bank slumps: edited to elaborate on the functions provided by this structure in arid streams
- Pools or depressions in channels: clarified that these can be present in deep parts of dry channels, and may have indicators of prolonged inundation
- Sand ripples: removed specific reference to low gradient streams and clarified that these can be found in the channel or floodplain
- Secondary channels: text revised to indicate that these are usually topographically higher than the main channel, but that is not a requirement
- Standing snags: this patch type was added to the list, with the additional description of species that may form snags in arid environments, such as saguaro cacti and Joshua trees
- Vegetated islands: added text regarding islands being exposed at high water stage

Metric 2: Topographic Complexity

- Condensed text
- Created new diagrams for Multi-thread and Single-thread systems
- Revised narrative scoring text

Attribute 4: Biotic Structure

Metric 1: Plant Community

- Revised guidance on timing of assessments
- Condensed text

Plant Community Submetric A: Number of Plant Layers Present

- Added examples of typical species found in each layer
- Adjusted height of Very Short Layer to 0.1 m

Plant Community Submetric B: Number of Co-dominant Species

- Updated scoring thresholds for Number of Co-dominant species. Reduced threshold for multi-thread, increased it for single-thread.

Metric 2: Horizontal Interspersion and Zonation

- Added requirement for a zone to be 5% of the AA
- Updated figures

Metric 3: Vertical Structure

- Updated figures
- Changed D category to specify less than 1% overlap