NMRAM Introduction

Overview of NMRAM

Purpose, history and process

Introduction to the Riverine NMRAM

Wetland of Interest and Sampling Area (SA)

Overview of NMRAM Process

NMRAM Design Teams

Assessment Design Team:

Wetlands Program, SWQB-NMED
Natural Heritage New Mexico, UNM
SWCA Environmental Consultants (Montane Version 1.1 only)
Plus members of Advisory Committees and Technical Teams by module

Advisory Committees

Wetlands experts drawn from around NM
Advisory Committee for each Subclass and Reference domain

Technical Teams

NHNM Staff
SWQB-NMED Staff

NMRAM Funding :

U.S. Environmental Protection Agency (EPA) through a Wetlands Program Development Grant awarded to SWBQ Wetlands Program

New Mexico Environment Department Surface Water Quality Bureau

Natural Heritage New Mexico Division of the Museum of Southwestern Biology, University of New Mexico

Wetland Assessment Objectives

- To evaluate the condition, function, quantity, distribution, and overall status of New Mexico's wetlands

- Identify stressors and threats to wetlands

- Conservation planning and mitigation

- Monitoring to support adaptive management

- Coordinate and communicate wetland activities using a common framework

Why Rapid Assessment?

- Cost effective way to get information about a large number of wetlands
- Limited time and funds
- Semi-quantitative
- Standardized and repeatable
- Allows comparisons between sites

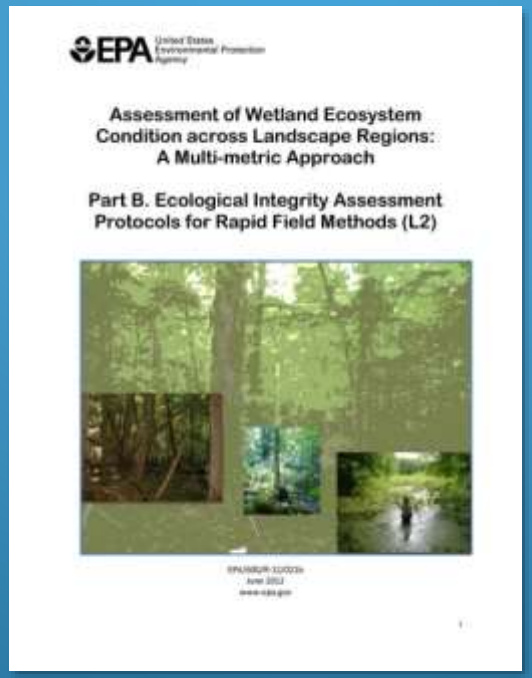
NMRAM Design Goals

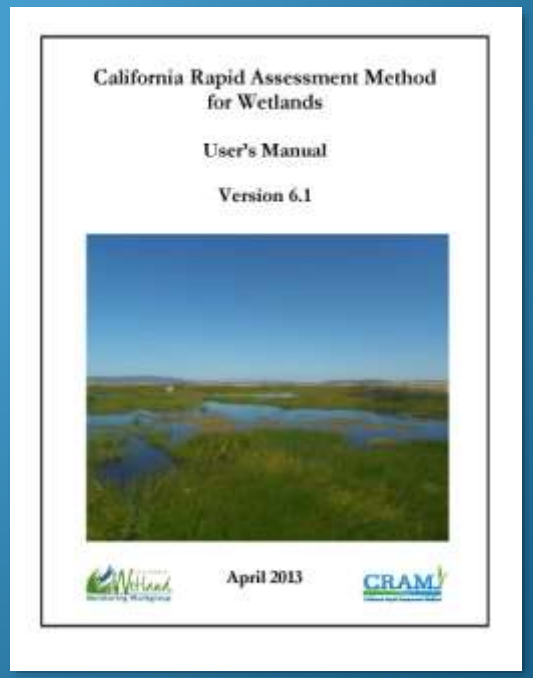
Create a science-based tool that provides a meaningful, rapid, and repeatable assessment of current wetland condition within a subclass

- Objective – based on observation of current conditions
  - Data based (wherever possible)
  - Guided best professional judgement
  - Assessment Record
- Designed for New Mexico Wetlands
  - Subclass type and description
  - Selection of features to be measured
- Rapid
  - Team of 2-3 competent trained users can complete in ½ to 1 day
- Repeatable
  - Competent trained users will arrive at similar score independently

NMRAM draws from:

- Functional approach—Hydrogeomorphic Assessments (HGM)
  - Ecological processes and ecosystem services imply condition
- Condition approach—Ecological Integrity Assessment (EIA)
  - Ecological conditions reflect processes and ecosystem services
- California Rapid Assessment Method (CRAM)
- All are semi-quantitative relying on various remotely sensed and field indicators to assess status of wetland





NMRAM Design

The NMRAM takes from CRAM, EIA, and HGM, but is primarily condition-based and uses:

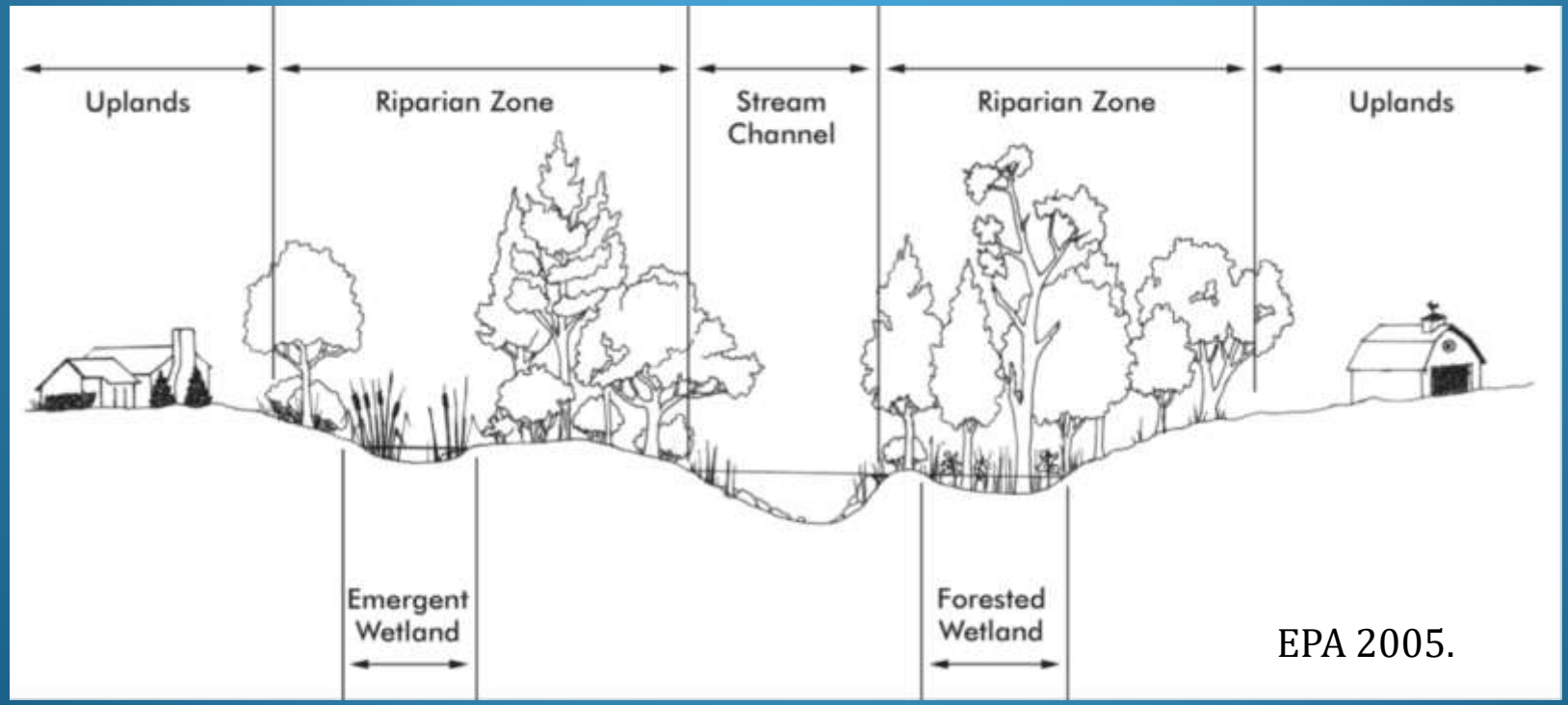
- A set of observable landscape and field metrics to express the condition of a particular wetland site relative to:
  - wetlands of a similar type (Subclass)
  - other sites on the disturbance gradient (Reference Set)
  - a given area (Reference Domain)
- Underlying assumptions that wetland condition:
  - will vary from most pristine to highly degraded along the disturbance gradient
  - can be evaluated and rated in a meaningful way based on the preponderance of evidence provided by the set of metrics
  - reflects ecosystem function and integrity

NMRAM Wetlands Definition (broad)

"Wetlands are generally defined as areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support vegetation that is typically adapted for life in saturated soil." Wetlands include fens, marshes, playas, wet meadows, and riparian areas.

NMRAM Riverine Wetlands are:

an ecological system where riverine forested, shrub, and herbaceous wetlands and adjacent “riparian” communities are all part of a dynamic patch mosaic whose patterns and processes are driven primarily by the hydrological regime of the adjacent river.



EPA 2005.

NMRAM Materials

NMRAM Manual

- Covers all modules to date
- Information on development and rationales

NMRAM Field Guides

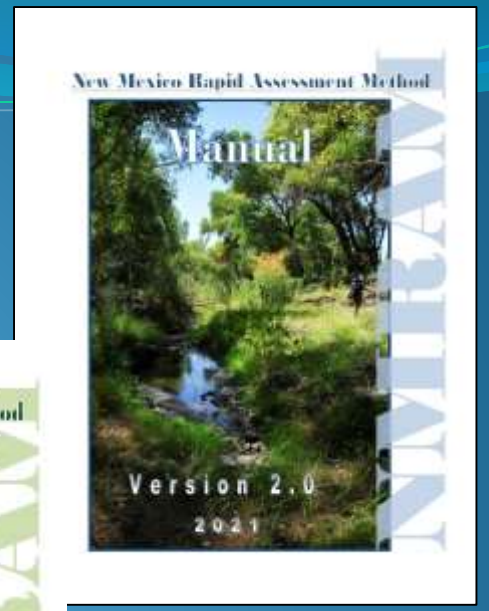
- Subclass specific
- Protocols and data collection methods

Worksheets

- Data collection and SA scoring
- Activated pdf formats available
- Appendix A in each field guide

Appendices (every field guide)

- Appendix B – Data Collection Reference
- Appendix C – Species List
- Appendix D – Noxious Weed List
- Appendix E – Photo Point Guide
- Appendix F – Glossary
- Appendix G – Return Interval Calculation Guide (Lowland only)



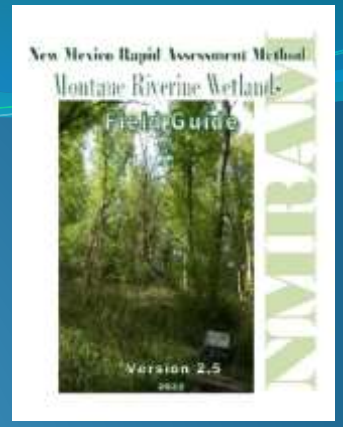
NMRAM - Defining Subclasses

- NMRAM Modules based on similar types per the Hydrogeomorphic Classification of Wetlands (HGM) and the US National Vegetation Classification (USNVC.org):

- HGM Class:
  - **Classes: Riverine Wetlands and Depressional Wetlands (Playas)**

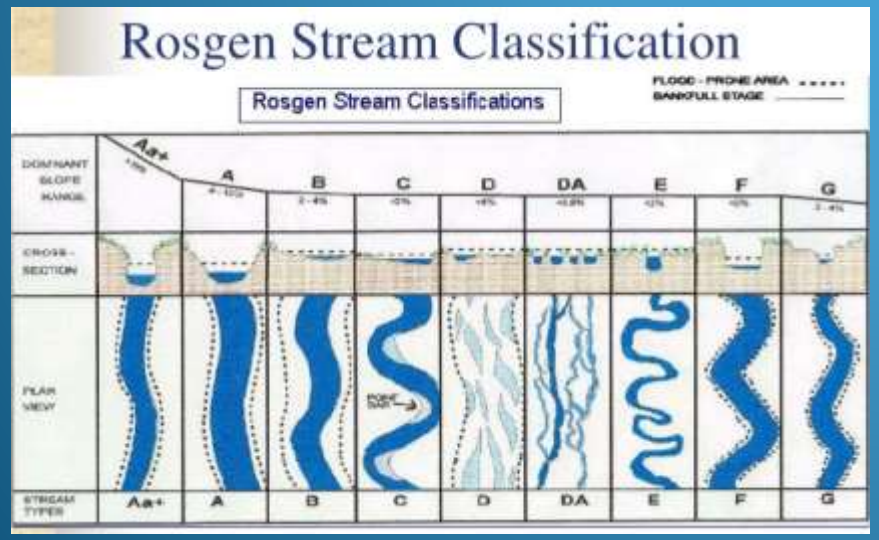
- NMRAM Riverine Subclasses:
  - Lowland Riverine Wetlands
  - Montane Riverine Wetlands
  - Confined Valley Riverine Wetlands
    - Defined by:
      - Stream gradient and flow
      - Elevation
      - Stream order
      - Channel, floodplain, and valley dimensions
      - Wetland vegetation communities

Montane Riverine Wetlands Subclass

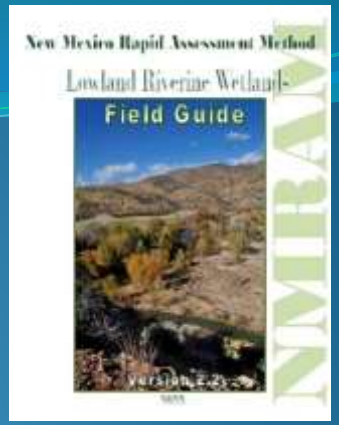


- HGM Class:
  - **Class: Riverine Wetlands**

- NMRAM Subclass (defined as part of Module design):
  - **Subclass: Montane Riverine Wetlands**
    - Moderate gradient (1-2%)
    - Middle elevation reaches (approx. 6,000 to 8,500 ft)
    - Small and mid-order streams (channel width 2-10 m)
    - Rosgen C-channel types, rarely B-channel types
    - Floodplain at least 80 m wide (unconfined)
    - Montane riparian vegetation: narrowleaf cottonwood, box elder, thinleaf alder, bluestem willow, etc.

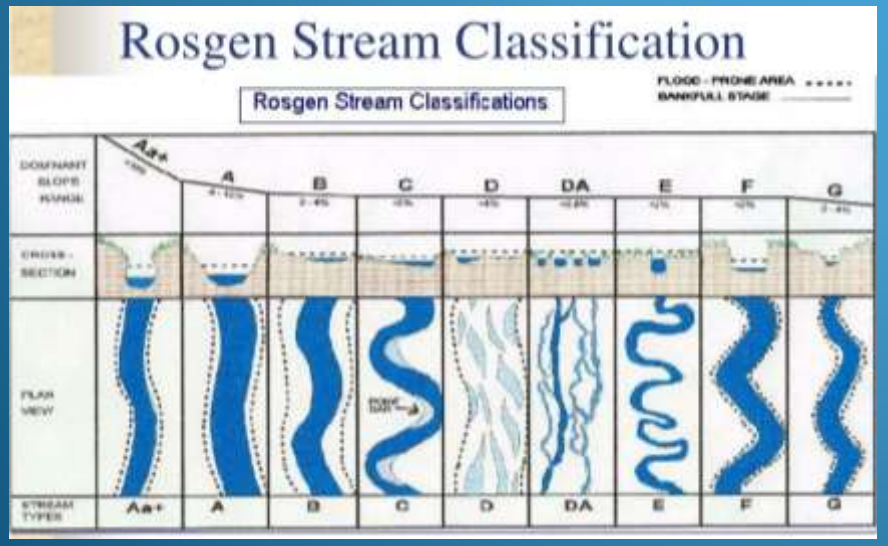


Lowland Riverine Wetlands Subclass



- HGM Class:
  - **Class: Riverine Wetlands**

- NMRAM Subclass (defined as part of Module design):
  - **Subclass: Lowland Riverine Wetlands**
    - Low gradient (<1%)
    - Lower elevation (approx. < 5,500 ft)
    - > 1,300 cfs bankfull discharge
    - Rosgen C , D or F channel types,
    - Broad floodplain valleys (unconfined)
    - Lowland riparian vegetation: Plains or Rio Grande cottonwood, Arizona sycamore, Goodding's willow, peachleaf willow, coyote willow, seepwillow



NMRAM Framework

- **Attributes: basic broad classes of wetland condition:**
  - Absolute Size
  - Landscape context
  - Biotic
  - Abiotic

- **Metrics: measurable components of an attribute class:**
  - Selected for relevance
  - When combined provide a preponderance of evidence for the wetland condition assessment

- **NMRAM Ecological Condition Rank**

4 = A	**Excellent Condition**
3 = B	**Good Condition**
2 = C	**Fair Condition**
1 = D	**Poor Condition**

- **NMRAM Condition Scores: Big Boxes**
  - More robust
  - Aids in rapidity
  - Less sensitive

- **Trained technicians can perform consistently and efficiently**