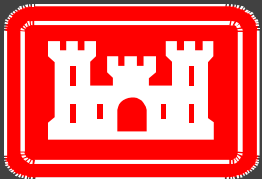


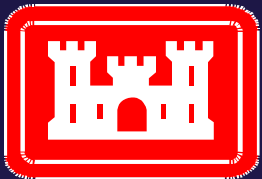
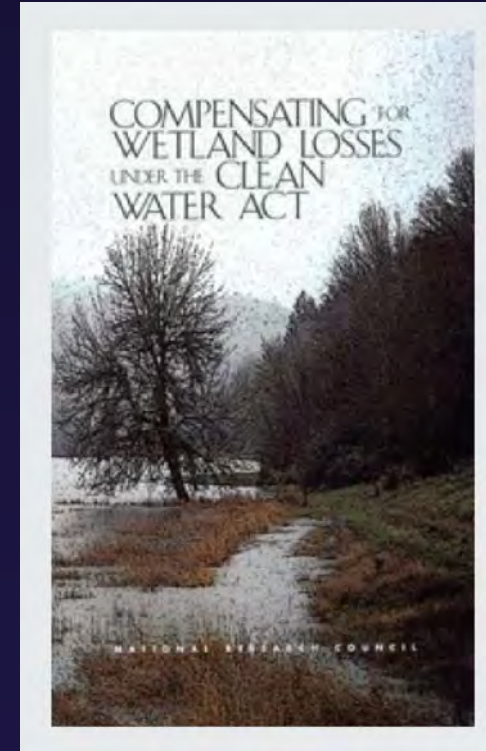
2008 Compensatory Mitigation Rule: *Overview and Highlights*

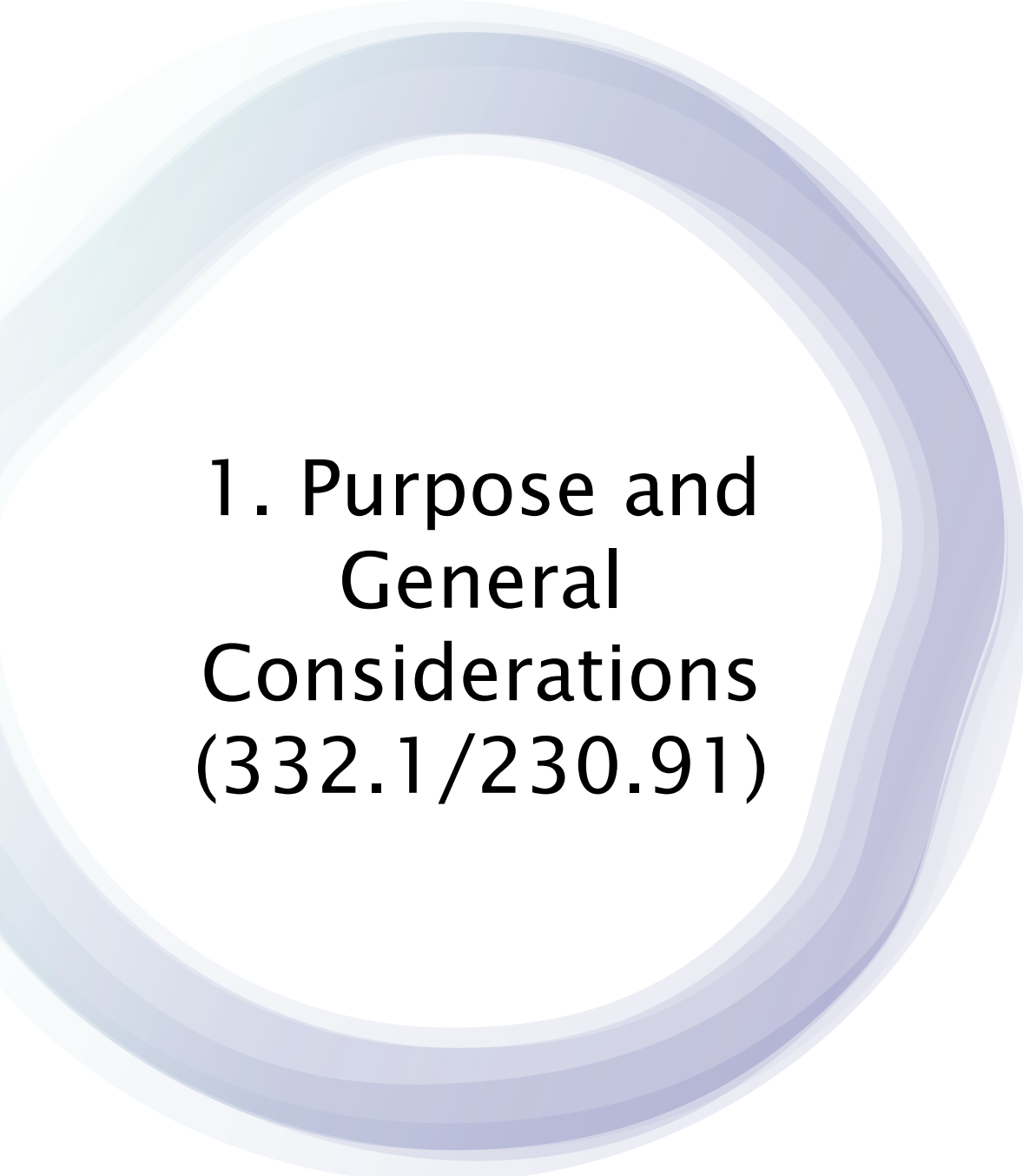
Michelle Lee Mattson
USACE, Institute for Water Resources (IWR)



Compensation Rule: Goals

- Sustainable compensatory mitigation
- Equivalent and effective standards
- Use of best available science
- Addresses all applicable National Research Council recommendations
- Predictability and efficiency
- Expansion of public participation



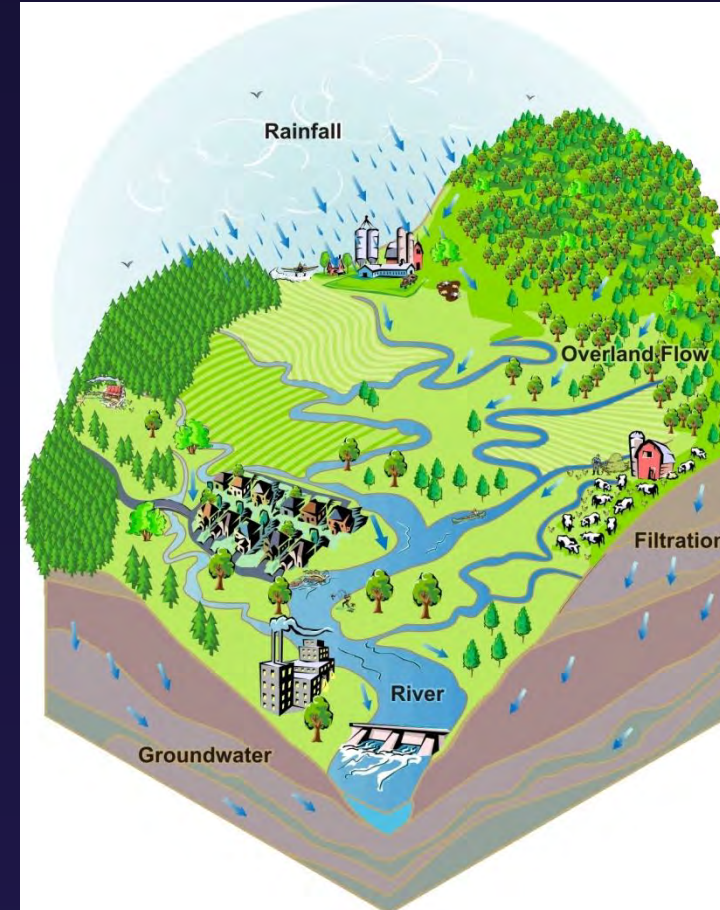


1. Purpose and General Considerations (332.1/230.91)

- *Purpose*
 - Standards/criteria for all three compensation mechanisms: PRM, banks, ILF
 - Equivalent standards (per NDAA of 2004)
- *Applicability* – not “when” but “how”
- *Sequencing* – still avoid and minimize first
- What about previous guidance?

2. Definitions (332.2/230.92)

- 43 definitions
- Most based on previous definitions
- New ones include:
 - Adaptive management
 - Advance credits
 - Temporal loss
 - Watershed approach
 - Watershed plan



Watershed

3. General Compensatory Mitigation Requirements (332.3/230.93)

- Objectives
- 4 Compensation Methods
- Type and location
- Compensation hierarchy
- Watershed approach
- Site selection criteria
- Amount
- Preservation criteria
- Buffers
- Relation to other programs
- Timing of plan approval
- Party responsible
- Timing of project implementation
- Short-term financial assurances

Type and Location of Mitigation

(332.3(b)/230.93(b))

Within same watershed as impact AND
where most likely to replace lost functions

- Consider:
 - Habitat diversity
 - Connectivity
 - Land use trends
 - Compatibility with adjacent uses
 - [see also 332.3(d)]
- Marine resources
- Risks to aviation
- Coastal watersheds



Other Physical Regions- Marine Considerations

Littoral Cell- Geographic areas that consists of sediment sources, transport paths, and sinks.

Embayment-

The entirety of a bay

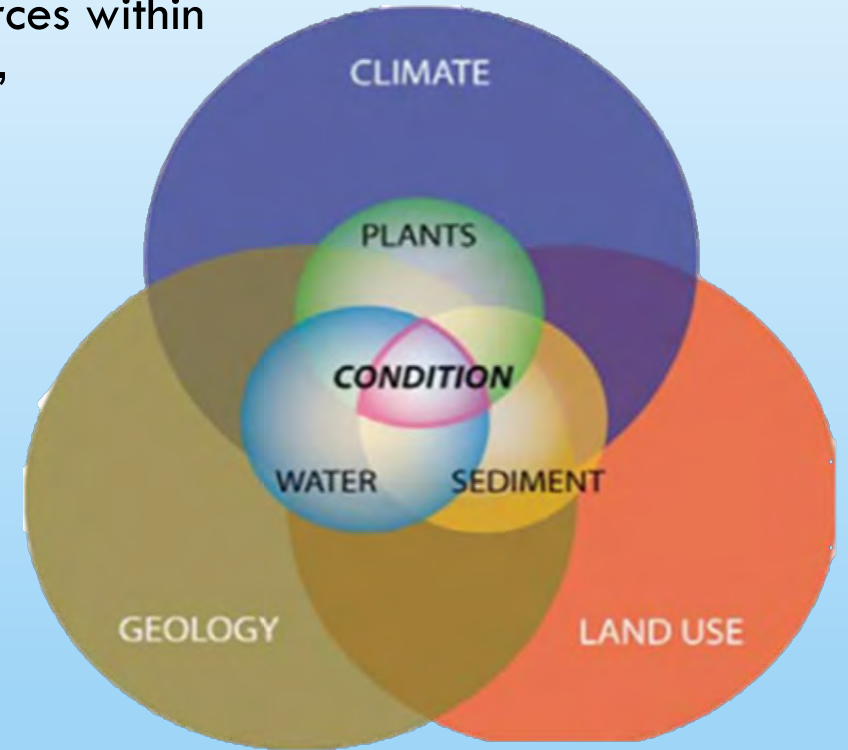


WATERSHED APPROACH OVERVIEW

332.3(C)

A general framework for better decision-making

- Goal: “maintain and improve the quality and quantity of aquatic resources within watersheds through **strategic selection** of compensatory mitigation sites”
- Use of preservation, riparian areas and uplands
 - Uses **landscape perspective** to identify the types/locations of mitigation projects to benefit watershed and offset losses.
 - **May** involve consideration of:
 - Historic and potential aquatic resource conditions
 - Past and projected aquatic resource impacts
 - Terrestrial connections between aquatic resources
 - Habitat requirements of important species
 - Other regulatory and non-regulatory programs



Focus on ecological processes!

COASTAL HISTORIC ECOLOGY

OVERVIEW

San Francisco Estuary Institute, Southern California Coastal Watershed Project (SCCWP), and Cal State University Northridge (2010)

- Review of 26 T-Sheets in Southern California Bight (Pt. Conception to SD)
- High resolution scans used to interpret and map base habitat types, including open water (freshwater and saltwater), woody vegetated areas, vegetated intertidal areas, unvegetated intertidal areas (e.g., mudflats), and dunes.
- Overlaid on recent aerial photography
- Atlas and Interactive Website: <http://www.caltsheets.org>



BOLSA CHICA – PORT MITIGATION



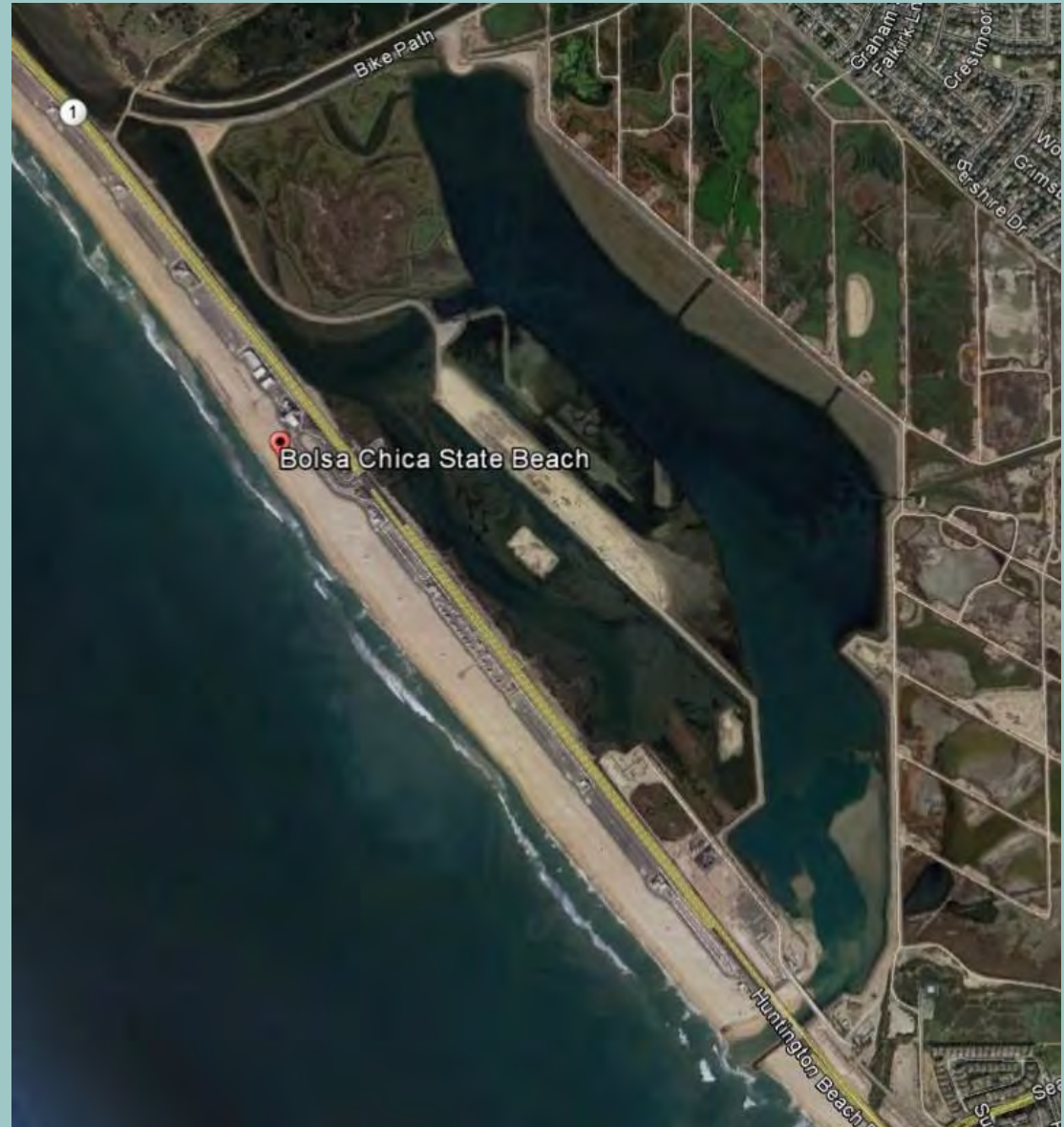
BOLSA CHICA – PORT MITIGATION

Mitigation Drivers

- Open Water Mitigation for LA and Ventura Ports
- Open Water and Essential Fish Habitat
- Full tidal regime (permanently open inlet)

Results

- Completed in 2006
- Expensive bi-annual dredging operation (~400k)
- Low habitat diversity and sustainability
- Doesn't mimic the historic wetland mosaic



BOLSA CHICA – T-SHEET COMPARISON



Preference Hierarchy for Compensation (332.3(b)/ 230.93(b))

Mitigation bank credits

In-lieu fee program credits

Permittee-responsible mitigation under a watershed approach

On-site and/or in-kind permittee-responsible mitigation

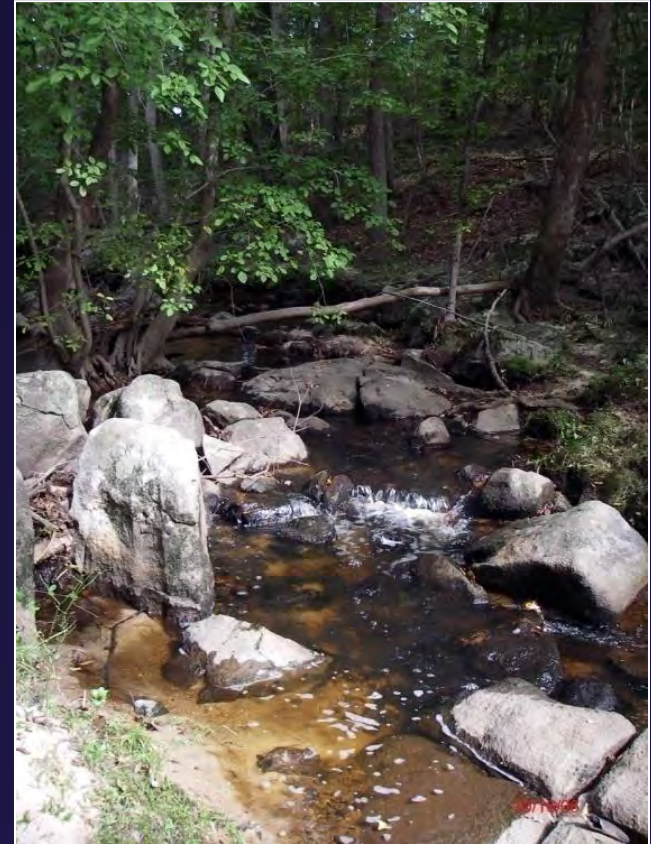
Off-site and/or out-of-kind permittee-responsible mitigation

- Consider what is “environmentally preferable” (33 CFR 332.3(a)(1))
- Consider likelihood of success, risk, uncertainty, and temporal loss

Preservation Criteria

(332.3(h)/230.93(h))

- Use of preservation*:
 - Provides important functions
 - Contributes to watershed sustainability
 - Appropriate and practicable
 - Permanently protected
 - Under threat of destruction or adverse modification



*Preferably in conjunction with restoration and other methods

Relation to Other Programs

(332.3(a) and (j) / 230.93(a) and (j))

- Mitigation may be sited on public or private lands (332.3(a)(3))
- May also satisfy requirements of other Federal, State, Tribal, or local programs
 - Must provide appropriate compensation to offset 404 impacts
 - No “double dipping”
- Federally funded projects (e.g., WRP, Partners for Wildlife) may not generate compensation credits
 - “Supplemental” projects



*Kimball Island Mitigation Bank,
Sacramento County, CA. – a joint
Conservation-Wetland Mitigation Bank*

4. Planning and Documentation (332.4/230.94)



Mitigation Plan Components



1. Objectives
2. Site selection factors
3. Site protection instrument
4. Baseline information
5. Credit determination
6. Work plan
7. Maintenance plan
8. Performance standards
9. Monitoring requirements
10. Long-term management plan
11. Adaptive management plan
12. Financial assurances



5. Ecological Performance Standards (332.5/230.95)



- Objective and verifiable
- Based on best available science assessed in a practicable manner
- Enforceable

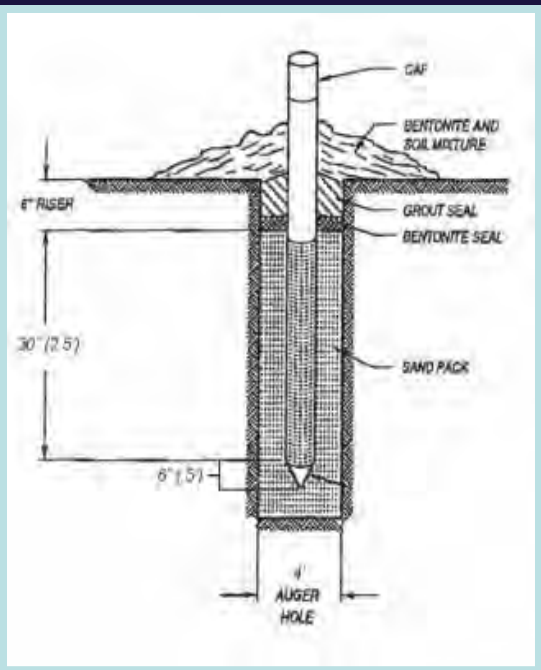
Variable*	Pre construction FCI Scores 2002	Post construction Baseline FCI Scores 2008	Post construction Year 1 FCI Scores 2009	Post construction Year 2* FCI Scores 2010	Maximum Score Obtainable	Year 5 Projected Score
HYDROLOGIC FUNCTIONS						
Maintenance of Characteristic Channel Dynamics	0.38	0.43	0.48	0.53	0.64	0.32
Dynamic Surface Water Storage and Energy Dissipation	0.35	0.39	0.48	0.60	0.88	0.32
Long-term Surface Water Storage	0.47	0.56	0.56	0.75	0.75	0.40
Dynamic Subsurface Water Storage	0.42	0.37	0.37	0.50	0.50	0.36
BIOGEOCHEMICAL FUNCTIONS						
Nutrient Cycling	0.24	0.28	0.45	0.58	0.92	0.24
<i>(NOTE: Use lowest index score as the limiting factor)</i>	0.39	0.44	0.44	0.42	0.91	0.39
Detention of Imported Elements and Compounds	0.32	0.40	0.47	0.60	0.81	0.30
Detention of Particulates	0.33	0.37	0.44	0.55	0.79	0.31
Organic Carbon Export	0.38	0.39	0.45	0.52	0.72	0.36

6. Monitoring (332.6/230.96)

- To determine if the mitigation project is meeting performance standards

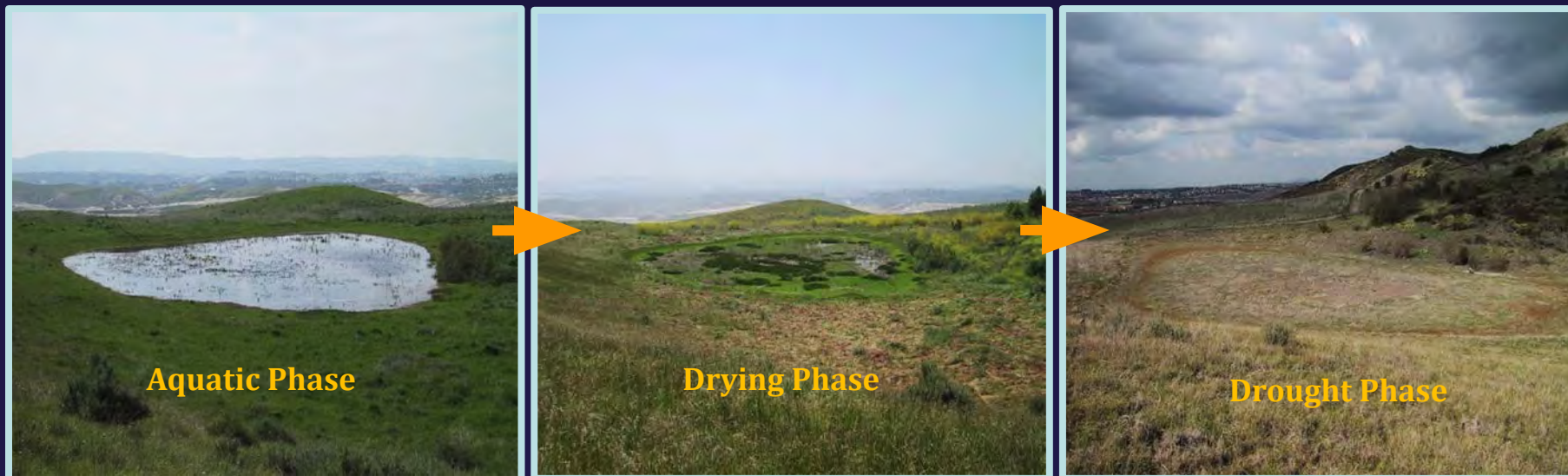


- Mitigation plan must include:
- Parameters to be monitored
 - Length of monitoring period
 - Party responsible
 - Content of monitoring reports
 - Frequency of report submittal



6. Monitoring, cont. (332.6)

- Monitoring period – Until success criteria are met or 5 years, whichever is longer
 - Must be extended for slow developing resource types
 - e.g. vernal pools and tidal marsh
- Develop a comprehensive monitoring program
 - Hydrology, Soils, Vegetation and Condition/Function
 - EPA Level 1, 2, 3 Wetland Monitoring Framework



MITIGATION MONITORING AND MANAGEMENT LIFE CYCLE

Monitoring Program
Feedback Loop(s)

Goals/Objectives
Baseline Data Collection

SUSTAINABILITY!!

Performance Standards

Long-term Management
& Monitoring

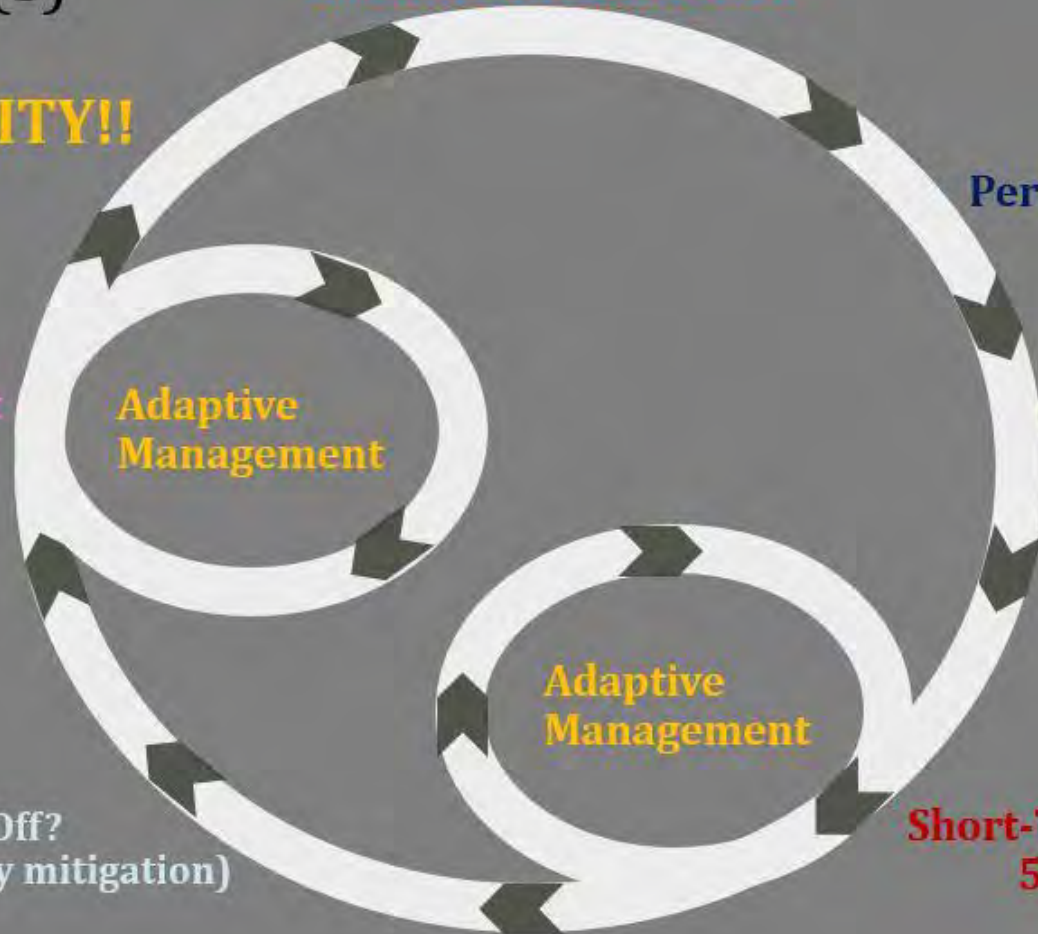
Adaptive
Management

Construction/Installation
Monitoring 120-Days

Adaptive
Management

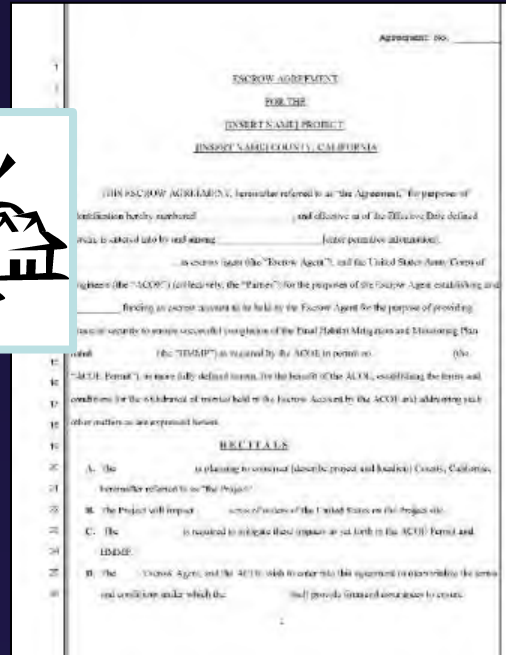
Success/Sign-Off?
(compensatory mitigation)

Short-Term Monitoring
5-years min.



7. Management ^(332.7)

- Site protection
 - Goal: “permanent protection”
 - Prohibit incompatible uses



- Adaptive management plan
 - Performance Standards
- Long-term management
 - Identify responsible party
 - Identify management needs
 - Describe funding amount and arrangements

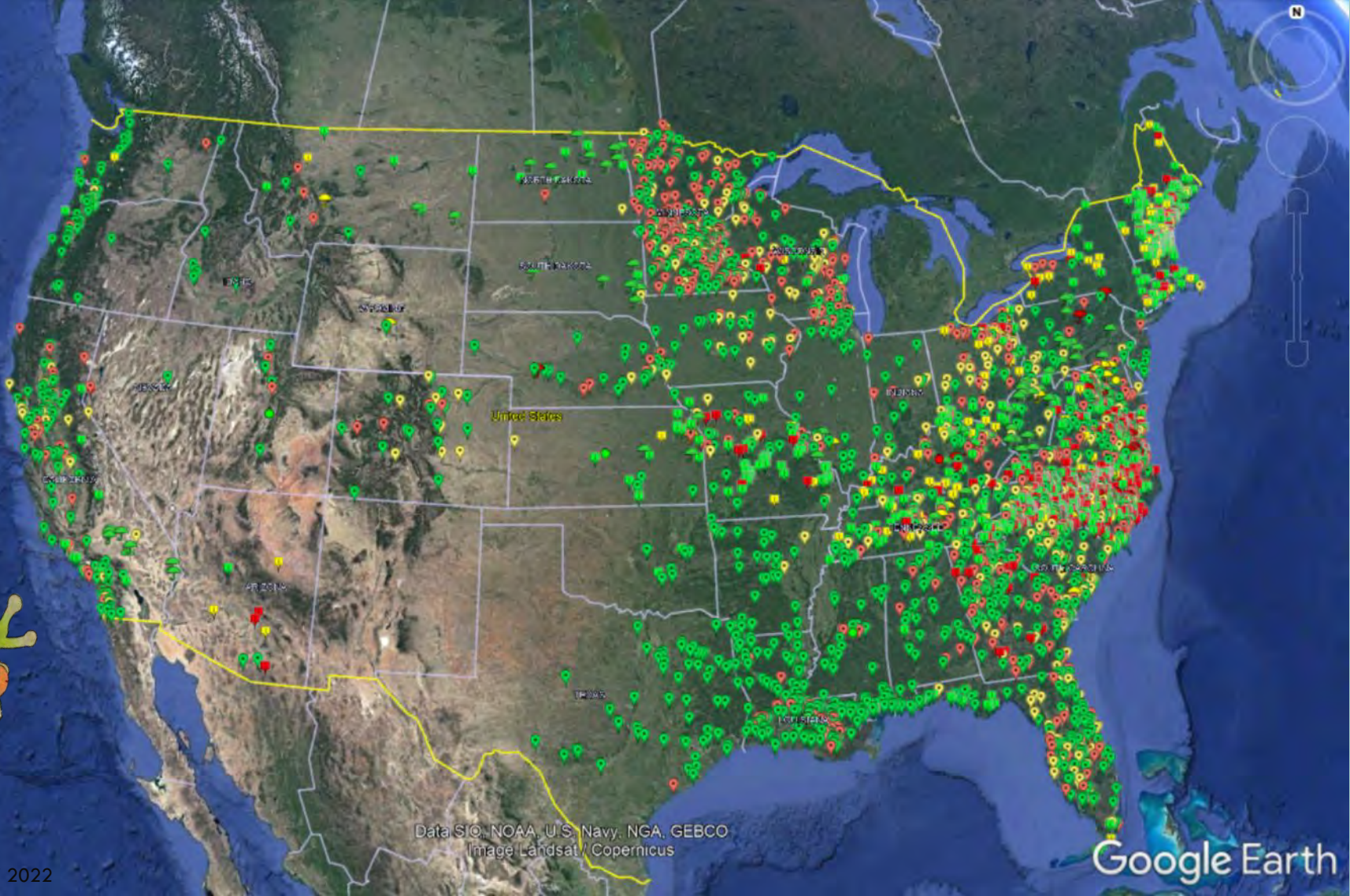


- Sustainability
 - Limit engineered structures
 - Maintenance Plan

8. Mitigation Banks and ILF Programs (332.8/230.98)

- Must have instrument signed by DE
 - Instrument requirements
 - Service areas, credit release schedules, reporting
 - Instrument review/modification process
- Interagency review team (IRT)
- Dispute resolution process
- Sponsor assumes responsibility for the mitigation

BANK AND ILF SITE LOCATIONS - 2021



>2600 404 Banks

>1400 ILF Sites



NMEBC MAY 2022

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat / Copernicus

Google Earth



If You Have Questions

- Corps IWR: Michelle Mattson or Valerie Layne
 - Michelle.L.Mattson@usace.army.mil
 - Valerie.L.Layne@usace.army.mil
- RIBITS Website for Bank/ILF Tracking:
 - <https://ribits.ops.usace.army.mil>
- EPA HQ: Brian Topping and Palmer Hough
 - Topping.brian@epa.gov
 - Hough.palmer@epa.gov
- EPA Compensatory Mitigation Website:
 - <https://www.epa.gov/cwa-404/compensatory-mitigation>