

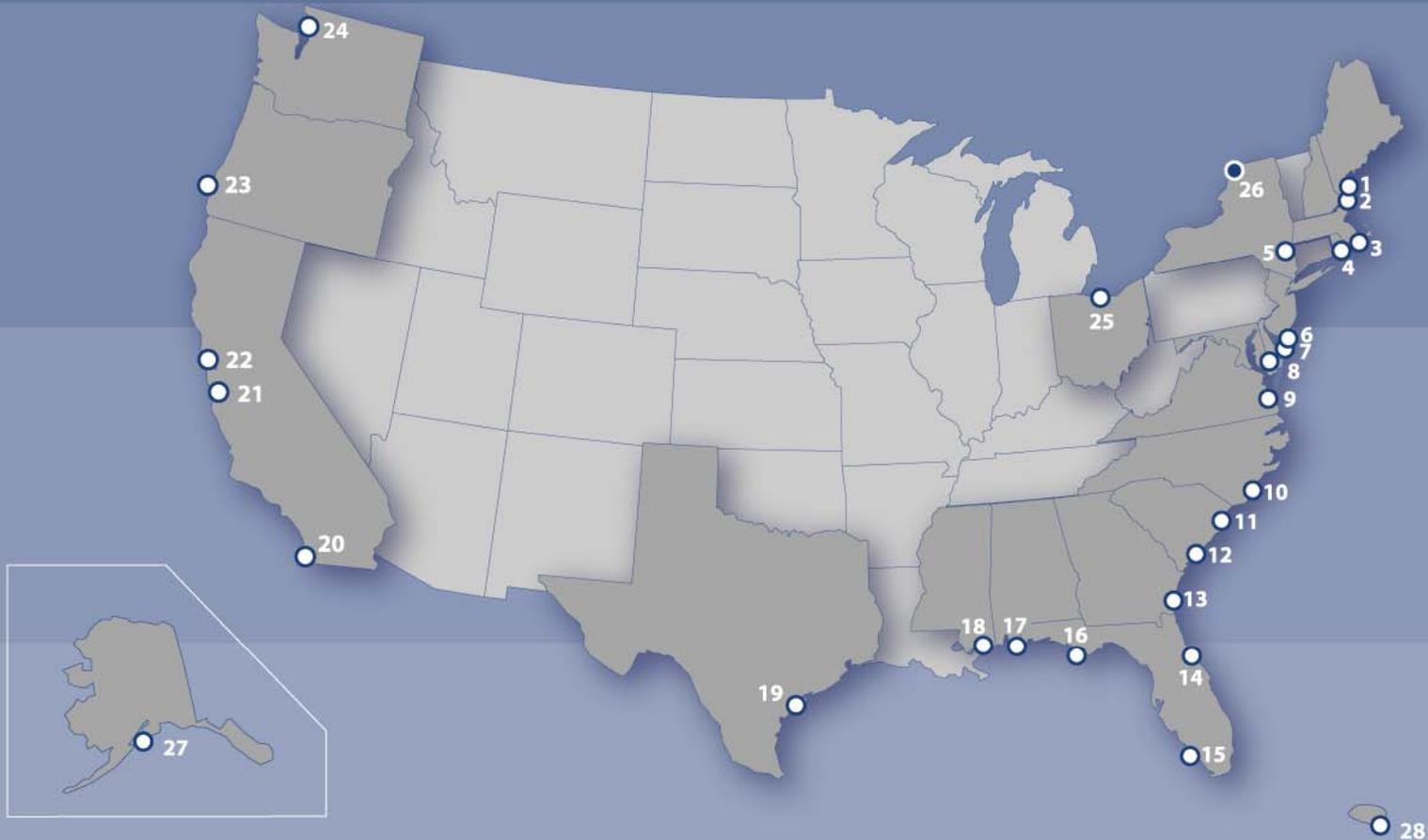
Selection of an Effective Classification Scheme

National Estuarine Research Reserve System

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A Network of 27 Protected Areas ...



National System



- Promoting stewardship of the nation's estuaries through science and education ...
- Using a system of locally owned and managed protected areas ...



System-wide Monitoring Program

Abiotic Monitoring

- Water quality
- Weather parameters

Ecological Monitoring

- Habitat Extent
- Eutrophication

Land Cover Change



Problem:

There are a **ZILLION** things
to consider when choosing
an appropriate
classification system...



- Physical Scale
- Geographic Extent
- Specific Parameters of Interest
- Ecological Systems
- Level of Detail
- Modeling Capacities
- User Capabilities
- Source Data
- Interpretation Methods

- Software Compatibility
- Audience
- Complexity
- Crosswalking
- Compatibility
- Compliance
- User Bias
- Objectivity
- Accessibility
- More...



...but only one reason to choose a scheme...

1. To Facilitate Project Objectives

2. Baseline for unforeseen analyses??



A classification scheme is only **A TOOL**



- STEP 1: Identify your Objectives
- STEP 2: Select the Appropriate Scheme (if one exists)...

Anderson et al.

NERRS CMECS MLCD

Cowardin et al.
USNVC

...but how?



Work Backwards

1. **Identify your objectives** in detail
2. Identify data products needed to reach objectives
3. Identify parameters needed in the data products
4. Identify most effective/efficient ways to collect those parameters
5. Choose a classification scheme that contains the parameters and is compatible with data collection methods...and is **useable**



Two Types of Schemes

1. Ordered List

2. Strictly Nested Hierarchy

3. Somewhere in-between



Ordered List

Nested Hierarchy

0 Background

1 Unclassified

Uplands

2 Developed, High Intensity

3 Developed, Medium Intensity

4 Developed, Low Intensity

5 Developed, Open Space

6 Cultivated Crops

7 Pasture/Hay

8 Grassland/Herbaceous

9 Sedge / Herbaceous

10 Deciduous Forest

11 Evergreen Forest

12 Mixed Forest

13 Scrub/Shrub

14 Dwarf Scrub

15 Barren Land

Wetlands

16 Palustrine Forested Wetland

17 Palustrine Scrub/Shrub Wetland

18 Palustrine Emergent Wetland (Persistent)

19 Estuarine Forested Wetland

20 Estuarine Scrub / Shrub Wetland

21 Estuarine Emergent Wetland

22 Unconsolidated Shore

23 Open Water

24 Palustrine Aquatic Bed

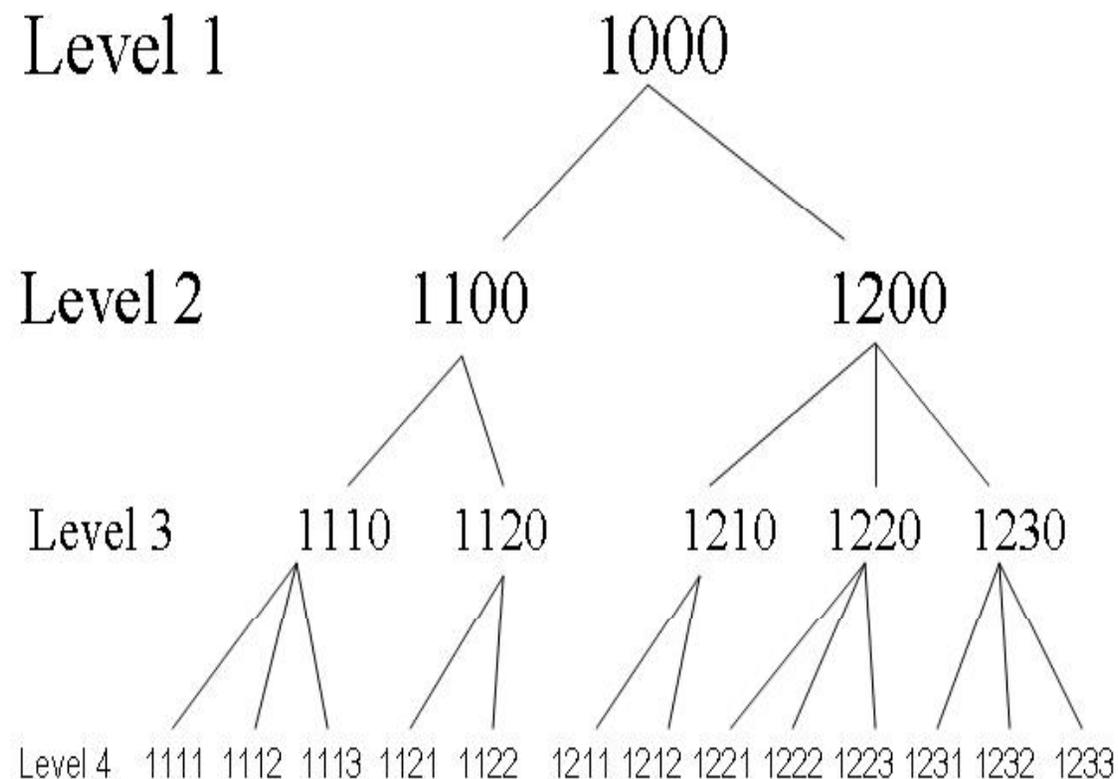
25 Estuarine Aquatic Bed

26 Tundra

27 Perennial Ice/Snow

28 Moss

29 Lichens



Ordered List

Nested Hierarchy

Pros and Cons

Simple to use

Descriptive definitions

Single Data Column

Usually confined by list

Limited analytical capacity

Structure based on feasibility

More complex

Strict rules

Multiple columns

Usually open-ended

Robust analytical tool

Structure based on ecology

Lend themselves to...

Remote Sensing

Automated Classification

Lower Detail

RS plus Ground Truthing

Photointerpretation

High Detail



Lessons and Caveats

- No scheme is perfect...they are all compromises
- Don't try to fit everything into one scheme
- Pick the SIMPLEST scheme that does the job, unless...
- Keep your eye on the ball...objectives
- Evolution beats revolution... 99.99%
- Technology is a tool to facilitate your objectives, not drive them...if you want data soon, don't employ experimental technologies
- “You can please some of the people some of the time...” (don't take it personally)

