Proposed Amendments & Data Collection

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Proposed Amendments

- Subaqueous drainage class
- Horizon designation “si”
- Shelly modifier
- Satiated Bulk density
- Reaction to H_2O_2
- Oxidized pH
- Jarosite
- Additional primes
- n-value

subaqueous

Free water is at or above the soil surface. The occurrence of internal free water is permanent having a positive water potential at the soil surface for more than 21 hours of each day. Peraquic feature - all soil layers are permanently saturated.

“si” designation

This symbol indicates the presence of sulfides in mineral or organic horizons.

Sulfidic horizons typically have dark colors; value and chroma <2. These horizons typically form in coastal environments that are permanently saturated (tidal marshes or estuarine subaqueous soils) and have a source of sulfur to form sulfides. Such horizons may have a sulfidic odor when first exposed to air.

shelly modifier

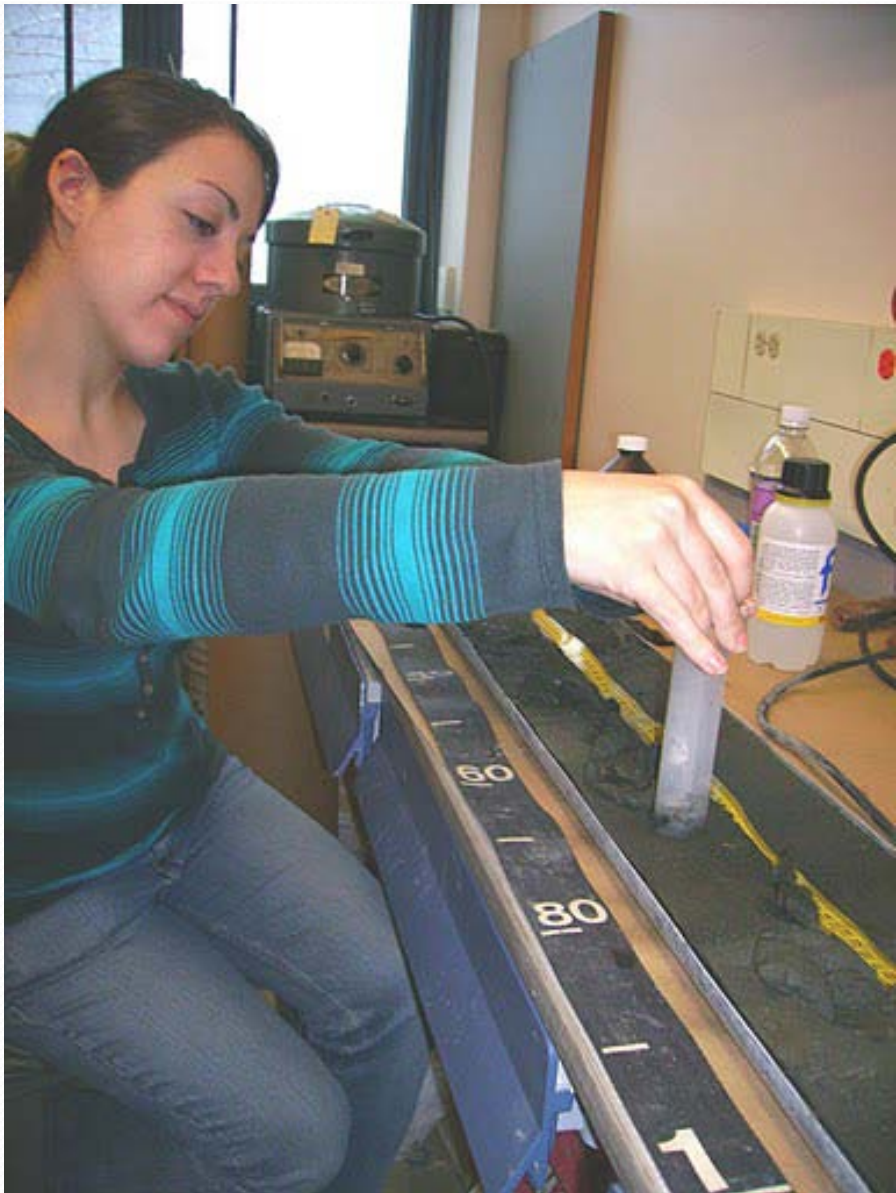
Addition of a shelly compound modifier based on the same ranges used for channery rock fragments.

Shell Fragments: hard remains of the protective outer covering of aquatic animals composed primarily of calcium carbonate such as mollusks (e.g. clams, oysters, or snails) or coral fragments; fragments may be the entire covering or broken pieces greater than 2 mm.

Satiated Bulk Density (0 bar H_2O)

The oven dried weight of the less than 2 mm soil material per unit volume of soil at a water tension of 0 bar.

Very low bulk density soils in submerged environments often contain a large percentage of water, making them very fluid.



Reaction to Hydrogen Peroxide (H_2O_2)

The presence of reduced monosulfides is indicated with a change in color with the addition of 3% Hydrogen peroxide solution.

Yes: Color change with addition of 3% Hydrogen Peroxide

No: No color change with addition of 3% Hydrogen Peroxide

Oxidized pH

To identify the presence of sulfidic materials in mineral or organic soil horizons that have a pH value of more than 3.5, and that if incubated as a layer 1 cm thick under moist conditions (field capacity) at room temperature, show a drop in pH of 0.5 or more units to a pH value of 4.0 or less (1:1 by weight in water or in a minimum of water to permit measurement) within 16 weeks (USDA NRCS, 2006).

Jarosite

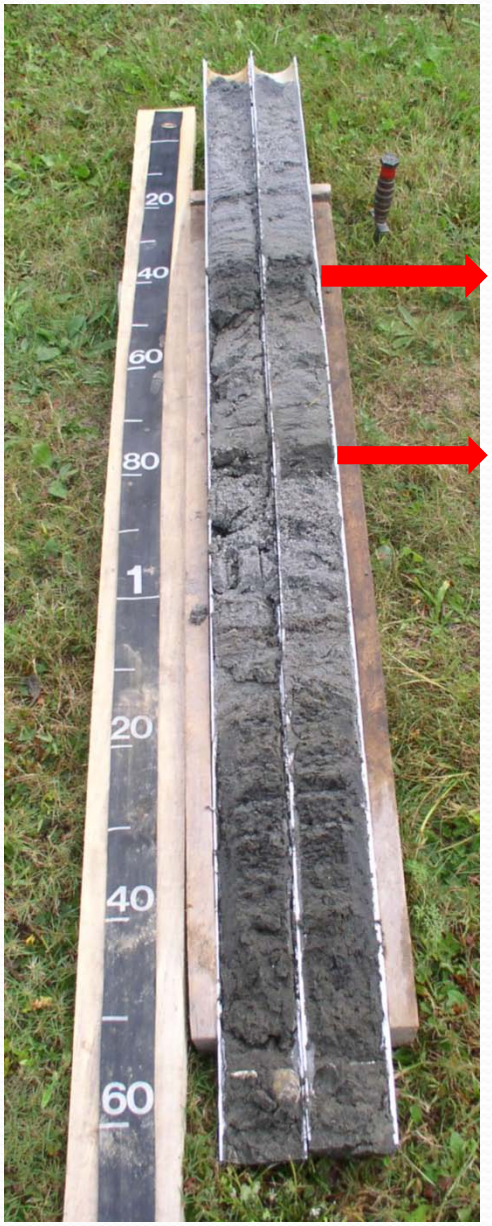
Jarosite, an iron sulfate mineral, is a kind of diagnostic feature of sulfuric horizons and evidence of acid sulfate weathering.

Jarosite is a pale yellow mineral deposit which forms in acid sulfate soils under strongly oxidizing, severely acid conditions. Jarosite is used as a morphologic feature to identify active and post active stages of acid sulfate soils.

Additional Primes

A character used to indicate that this horizon has an identical horizon designation as some overlying horizon. The two horizons in question are separated by at least one other horizon.

Choice list is modified to include 5 primes. (’’’’’’’’’’’’’’’)



Conventional Radiocarbon Age

650 +/- 40BP

710 +/- 40BP

n- value

Data Collection - Recommendations

Data Collection - Recommendations

In the Wassents Suborder, Frasiwassents are defined as having an electrical conductivity of <0.2 dS/m in a 5:1 by volume mixture of water and soil.

Coastal Modifiers[a]	Inland Modifiers[b]	Salinity (parts per thousand)	Approximate specific conductance (µMhos at 25°C)
Hyperhaline	Hypersaline	>40	>60,000
Euhaline	Eusaline	30.0-40	45,000-60,000
Mixohaline (Brackish)	Mixosaline[c]	0.5-30	800-45,000
Polyhaline	Polysaline	18.0-30	30,000-45,000
Mesohaline	Mesosaline	5.0-18	8,000-30,000
Oligohaline	Oligosaline	0.5-5	800-8,000
Fresh	Fresh	<0.5	<800

[a]Coastal Modifiers are used in the Marine and Estuarine Systems.
[b]Inland Modifiers are used in the Riverine, Lacustrine, and Palustrine Systems.
[c]The term Brackish should not be used for inland wetlands or deepwater habitats.

Cowardin et al. 1979

Data Collection - Recommendations

Vertical Datums Relationship to Tidal Datums

MSL is a tidal datum and is often confused with the fixed datums of the North American Vertical Datum of 1988 (NAVD 88).

Fixed geodetic datums (NAVD 88) do not reflect the changes in sea level and because they represent a "best" fit over a broad area, their relationship to local mean sea level differs from one location to another.

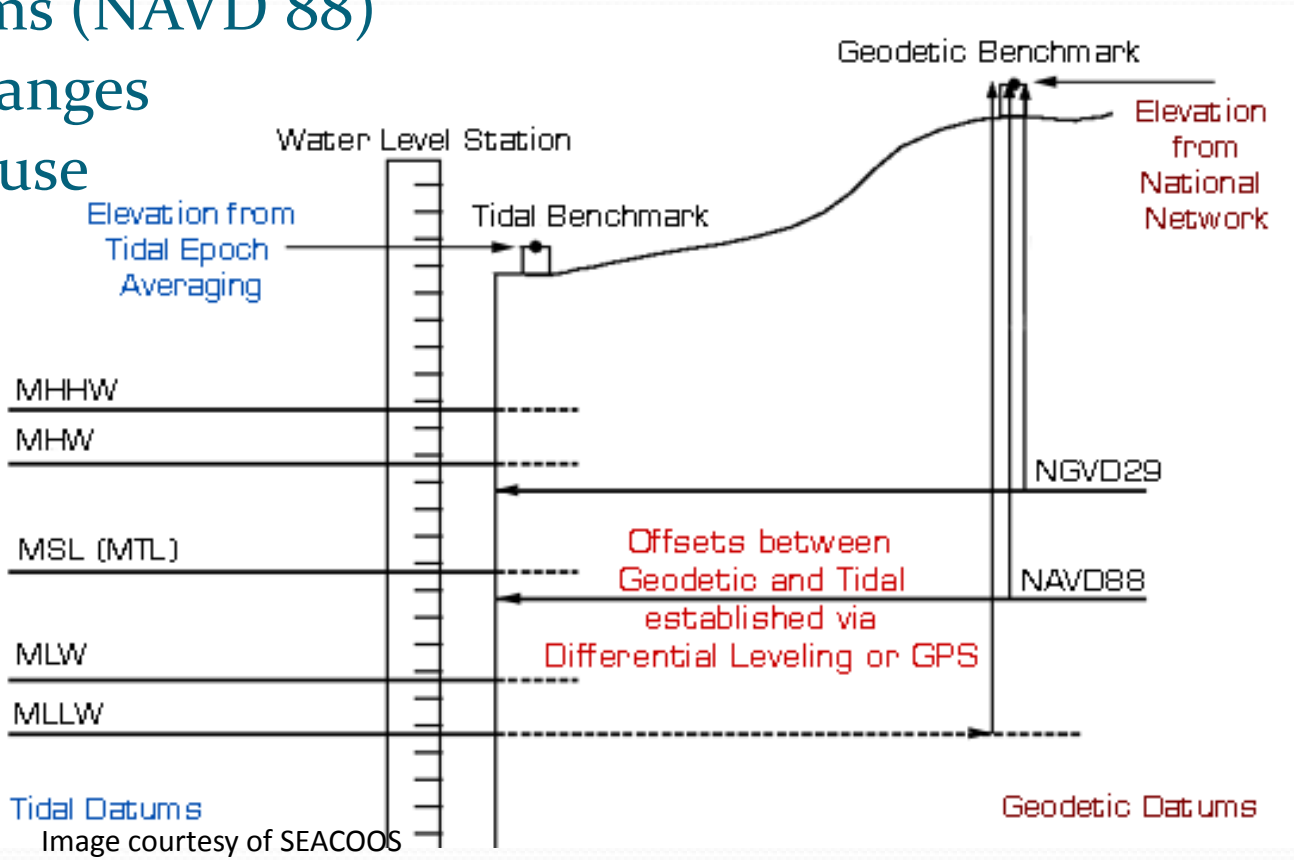
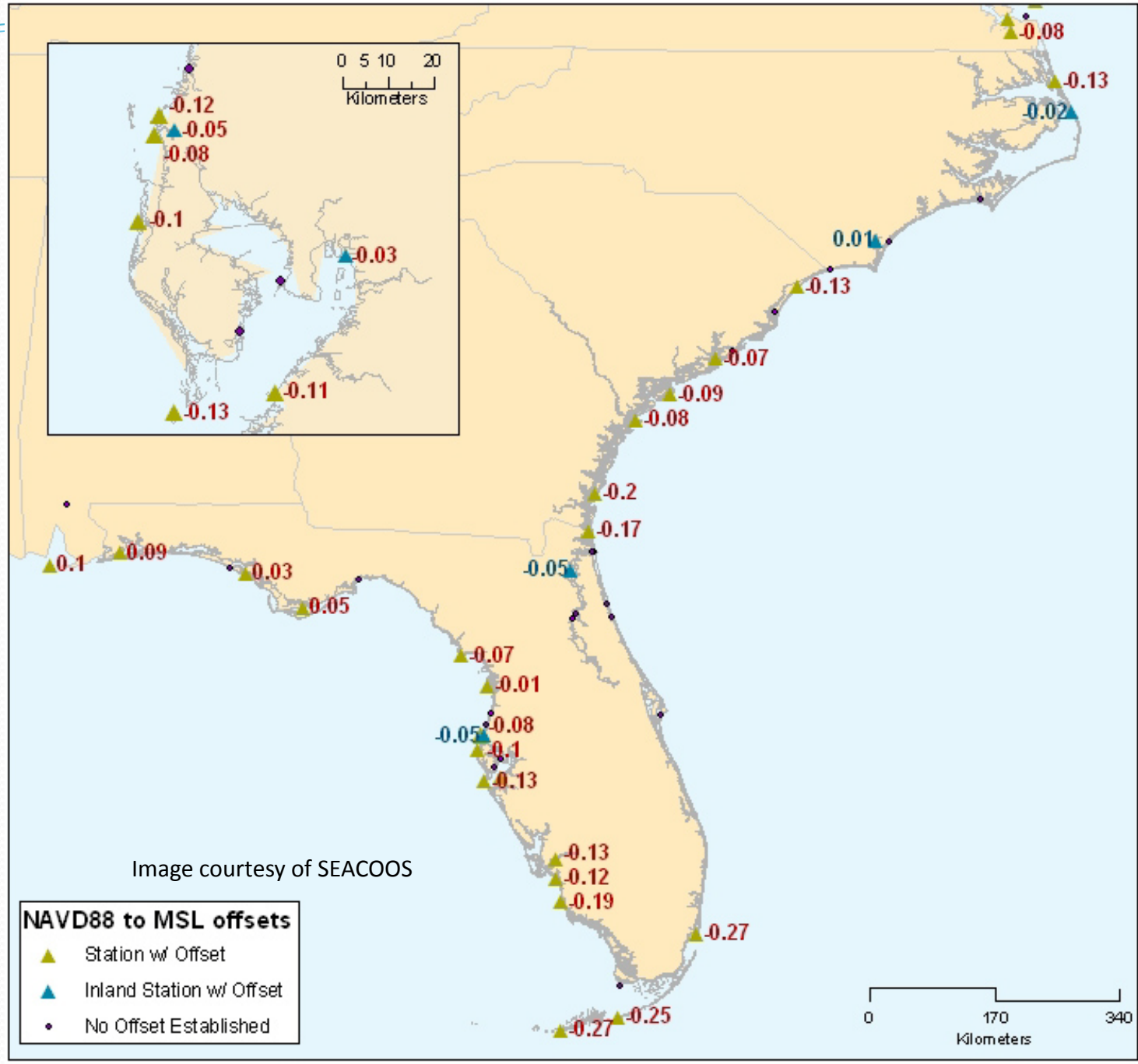


Image courtesy of SEACOOS

Offsets indicate moving from NAVD88 zero level to MSL zero level in meters.



Data Collection - Recommendations

Color

- Recheck the color a half hour after opening the core. For soils that show this color change, rewetting of the soil after drying to check if the color is due to organics or sulfides.

Horizon Boundary and Distinctness

- Do not record topography of horizon boundaries since based on cores. Distinctness should be recorded.

Data Collection - Recommendations

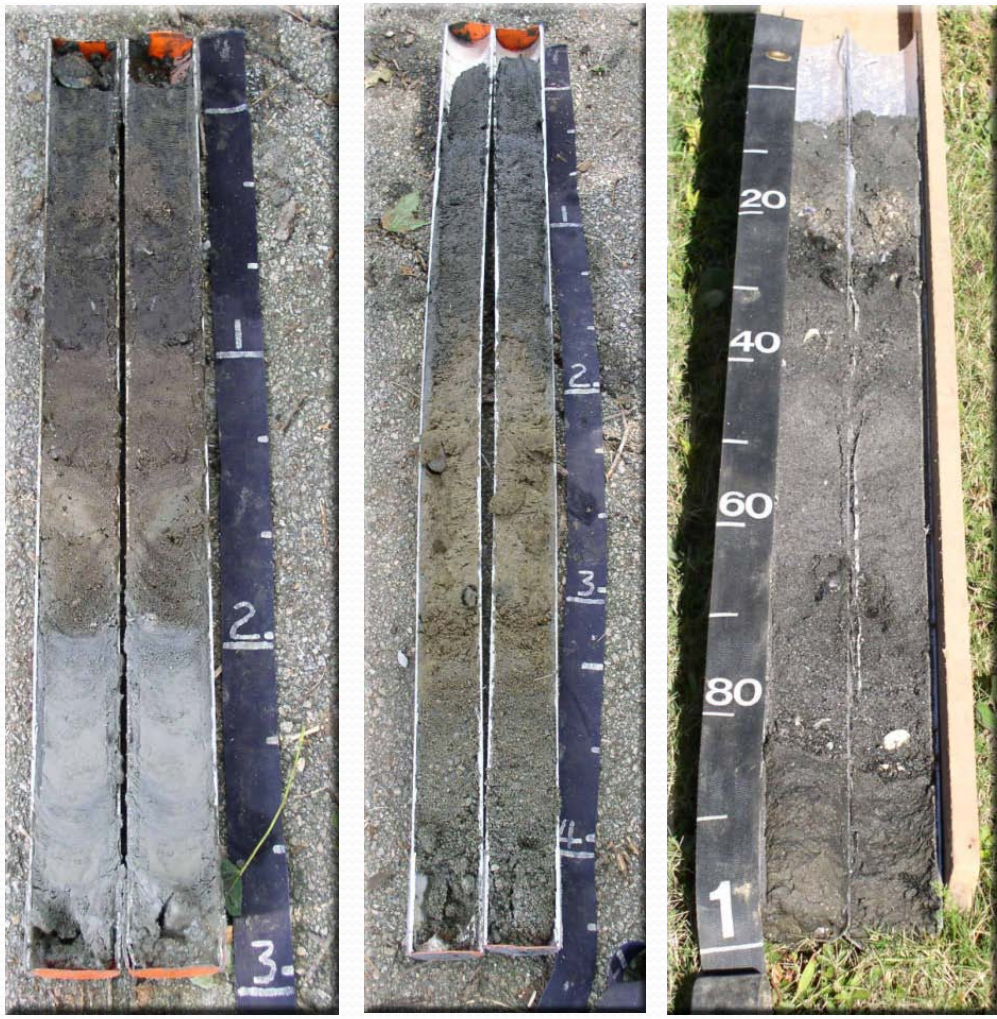
Flooding & Ponding

- Very frequent class is intended to be used in tidal situations. If the soils are completely exposed at low tide it works within the definition.
- Ponding is defined as being for standing water in closed depressions, so it does not apply.

Data Collection - Recommendations

Horizon designations

- "g" – use if the horizon has a chroma of 2 or less, moist and a value of 6 or more dry.
- If the chroma is 2 or less, moist and a value of 6 or more, dry cannot be met we will still assign a "g" to the horizon.
- Do not use a "g" on A, AC, or AB horizons since the dark colors of these layers would be affected by organics.



Photographs of three vibracores taken from Little Narragansett Bay. From left - the Napatree, Anguilla, and Rhodesfolly tentative series.

Data Collection - Recommendations

- Annual Average Water Temperature (depth?)
- Mean Annual Water Temperature
- Water Clarity (Secchi disk)

Data Collection - Recommendations

Data Collection - Recommendations

Data Collection - Recommendations


TWO