

Soils Data Information

June 2020

As part of the CRMS program, soil characteristics are surveyed approximately every 6 to 10 years at all sites. Soil properties data can be downloaded either by project, by CRMS site or by station ID (CRMS0000-S0X). There have been two coastwide soil core data collection efforts; one during site construction where each site was sampled as it was established (2006 to 2008) and a second coastwide effort in 2018. Forested sites are sampled approximately every six years (2006-2008 and 2014).

Separately, and as part of the Systemwide Assessment and Monitoring Program (SWAMP), biomass and nutrient data are collected from a subset of CRMS sites. Biomass stations are associated with seven target taxa (*Spartina alterniflora*, *Spartina patens*, *Sagittaria latifolia*, *Sagittaria lancifolia*, *Zizaniopsis miliacea*, *Typha* spp., and *Phragmites* spp). At each biomass station, vegetation data are collected from a 2m x 2m plot in the same manner as is done for all CRMS vegetation stations (% Cover, Height). Within the vegetation plot, a 0.5m x 0.5m area is harvested for aboveground vegetation and two cores are extracted, one for belowground biomass and one for soil nutrients (Figure 1). Three replicate plots are collected at each CRMS site for this effort.

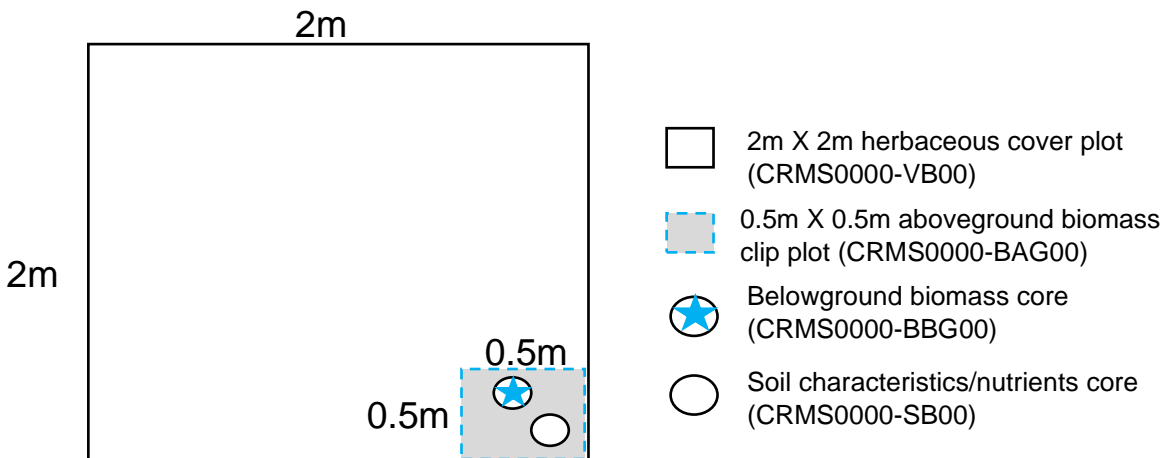


Figure 1. Diagram of the nested herbaceous biomass cover plot, aboveground and belowground biomass sampling area, and soil core collected at a subset of CRMS sites associated with the SWAMP effort. Three replicate samples of each are collected per sampling event. Note that a 10m buffer is maintained around the CRMS data collection area (i.e., boardwalk area) as well as the CRMS vegetation transect for this sampling effort.

Soil Characteristics Associated with the CRMS program:

Station ID (CRMS0000-S01, -S02, etc.): Soil cores are collected at approximately 10-year intervals from 3 plots per CRMS site at all CRMS sites. Cores are sectioned in 4-cm increments to 24 cm. Soil parameters are soil moisture content, bulk density, percent organic matter, and wet & dry volume. Wet & dry soil pH, soil specific conductance, and soil salinity were initially analyzed, but subsequently removed from analyses. Data are housed in the soil properties section within the Coastal Information Management System (CIMS) database.

Soil Characteristics Associated with the SWAMP program:

Station ID (CRMS0000-SB01, -SB02, etc.): Soil cores are collected at approximately 6-year intervals from 3 plots per CRMS site at a subset of CRMS sites. Cores are sectioned in 4-cm increments to 24 cm. Sites represent specific vegetation communities. Soil parameters are soil moisture content, bulk density, percent organic matter, and wet & dry volume, total carbon, total nitrogen, total phosphorus, organic density and carbon density. Organic density (g/cm^3) is calculated in CIMS by multiplying organic matter (%) by bulk density (g/cm^3). Carbon density (mg/cm^3) is calculated in CIMS by multiplying total carbon (g/kg) by bulk density (g/cm^3). Data are housed in the soil properties section within the Coastal Information Management System (CIMS) database.

Herbaceous Vegetation Cover Associated with Biomass Sampling:

Station ID (CRMS0000-VB01, -VB02, etc.): Species composition and percent cover are collected during aboveground biomass sampling at 3 biomass plots per CRMS site at a subset of CRMS sites. Plots are 2x2 m. Data are housed in the herbaceous marsh vegetation section within the Coastal Information Management System (CIMS) database.

Aboveground Biomass:

Station ID (CRMS0000-BAG01, -BAG02, etc.): Biomass and nutrient parameters are collected at approximately 5-year intervals from 3 plots per CRMS site at a subset of CRMS sites. Sites represent specific vegetation communities that contain at least one of the seven target taxa wherever feasible. Whole plot parameters are total aboveground live and dead biomass. Species specific parameters are number of live stems, average height and diameter of live stems, live biomass, total carbon, total nitrogen and total phosphorous. Plots are 0.5 x 0.5 m. Data are housed in the aboveground vegetation biomass section within the Coastal Information Management System (CIMS) database.

Belowground Biomass:

Station ID (CRMS0000-BBG01, -BBG02, etc.): Biomass cores are collected at approximately 5-year intervals from 3 plots per CRMS site at a subset of CRMS sites. Cores are sectioned in 8-cm increments to 24 cm depth. Sites represent specific vegetation communities that contain at least one of the seven target taxa. Belowground biomass is reported as live and dead biomass components. Data are housed in the soil properties section within the Coastal Information Management System (CIMS) database.