Saltmarsh Season Study Protocols

1. Record date, start time and names of observers present on the data sheet. Record the current weather conditions. Temperature, tide and wind can be estimated, or entered later with data from a weather station. Note any unusual conditions at the site.

Plant Phenology Observations

2. Follow the trail map to find the marked sites for each plant species. There are three replicates (either marked plots or individuals) for each species. You can complete your observations by visiting the three replicates sequentially or by plot as you progress along the trail.

3. Folow the data sheets to determine which phenological observations should be made for each species.

EXAMPLE

Sporobolus alterniflorus (Spartina alterniflora) Smooth Cordgrass

Plot #1	Plot #2	Plot #3
Initial growth YES NO ?	Initial growth YES NO ?	Initial growth YES NO ?
Leaves YES NO ?	Leaves YES NO ?	Leaves YES NO ?
% green <5 5-24 25-49 50-74 75-94 >95	% green <5 5-24 25-49 50-74 75-94 >95	% green <5 5-24 25-49 50-74 75-94 >95
Flower heads YES NO ?	Flower heads YES NO ?	Flower heads YES NO ?
#heads <3 3-10 11-100	#heads <3 3-10 11-100	#heads <3 3-10 11-100

For each phenophase,circle one of the following choices:
- Yes- if you saw that the phenophase is occurring
- No- if you saw that the phenophase is not occurring
- Uncertain(?)- if you were not certain whether the phenophase was occurring
- Do not circle anything if you did not check for the phenophase.

It is very important to record this information, even if nothing has changed on the plant since your last visit. Knowing when a plant is not in a given phenophase is just as important as knowing when it is. The species descriptions in the Phenology Guide provide detailed descriptions of each phenophase.

4. Record the intensity of the phenophase as indicated. Intensity may be reported as numbers present (for example, number of flower heads) or as a percentage (example, percent of fruits that are ripe) depending on the phenophase being observed. Use your best estimate for numbers and percentages. If there are phenophases and/or intensity measures on which you do not want to report for a species because they are too difficult to observe or identify, or don't have time, cross them out on the datasheets and do not circle or enter anything for them when you enter the data online.

Once a phenophase has ended you should continue to look for signs of it and record whether or not it occurs again. Sometimes phenophases will occur a second or third (or more) time in a season, whether because of a killing frost, rain, pests, etc.

5. Record the ending time of your observation period.

Animal Observations

Birds

1. Check the appropriate line for the site and replicate location and record the date, start time and names of observers present on the data sheet. Record the current weather conditions. Temperature, tide and wind can be estimated, or entered later with data from a weather station. Note any unusual conditions at the site.

2. Perform a three minute observation at each replicate location. There are three replicate locations at each site, generally one at the start, one near the middle, and one at the end of the trail. Follow the data sheet and enter observed behaviors of the species indicated.

Record the total number of individuals of the target species that you see during the 3-minute observation period. On most days you will probably not see or hear most of the birds on the observation list, and you may not see or hear some species all year. Absence data can be as important as presence data.

For species observed, record if any individuals are engaged in the behaviors listed on the data sheet. Descriptions of the behaviors are given in the Phenology Guide. You are recording only whether or not the behavior is occurring, not the number of individuals engaged in the behavior. Circle the yes (Y), no (N) or unsure (?).

3. Optional: Record any additional, non-target species observed.

Insects

Protocols for insect surveys are still under development.

Phenology Monitoring Field Check List

- ☐ Data sheets- 6 pages for plants and 3 copies of bird data sheet for each trail
- ☐ Clip board, pencils
- ☐ Phenology Monitoring Guide (if you are not familiar with the sites or phenophases)
- ☐ Watch or phone for recording time
- ☐ Binoculars
- ☐ Hand lens
- ☐ Camera
- ☐ Field safety- water, sunscreen, insect repellent, appropriate clothing, first aid kit