Snowpack Table of Field Variables

Measureable Variable:	Measure with:	Method:	Useful for:
New snowfall depth	Snowfall board and meter stick (**Protocol 9)** or CoCoRaHS In-depth snow measuring protocol (see http://www.cocorahs.org/Media/Training/Training_Snow.html)	Measure and record snowfall from a snow event, use to calculate snow water equivalent	If done in different locations, gives information on local factors influencing new snow
Snowpack depth	Meter stick (**Protocol 9)** or CoCoRaHS In-depth snow measuring protocol (see http://www.cocorahs.org/Media/Training/Training_Snow.html)	Measure and record snow depth at regular intervals, using a meter stick (or permanently install a stake marked with cm in the ground) Read at each sampling event.	Determine how snowpack depth is influenced by local conditions
Snow water equivalent	Cylinder, meter stick (or depth measurements on the outside of cylinder) spatula, zipper bag (**Protocol 10)** or CoCoRaHS "Measuring the water content of snow by weight" http://www.cocorahs.org/Media/Training/Training_SnowByWeight.html	Collect snow sample for melting and determining how much water is in the snow	Determine how much water is stored as snow
Snowpack profiling	Shovel, meter stick, thermometer, golf tees, camera (**Protocol from Upham Woods or NASA)**	Dig snow pit, measure the depth of the different snow layers and characterize	Depth and characteristics of different layers gives a history of the winter at that one location
Temperature- air, snow, soil	Thermometer, meter stick	Collect data on air temperature, snow temperature (at least at one depth: 3 cm above the surface of the soil), and soil temperature	Determine the insulating capacity of the snow
Canopy cover	Densiometer (**Protocol 4)**	Measure canopy cover directly over the in area around sampling site.	Amount of cover may affect the amount of precipitation that reaches the ground
Vegetation type	ID, field sheets, compass, tape measure (both large and small) (**Protocol 5)**	Collect data about the trees and shrubs along transect at a sampling site.	Vegetation may affect snow depth and snowpack characteristics
Stand density	ID, tape measure (**Protocol 5)**	Determine how many of any particular tree species are in the area around the sampling location.	May affect snow depth and snowpack characteristics
Elevation	Topo map	Locate sampling location on map, find elevation from contour lines	May affect temperature, wind, type of precipitation
Aspect	Topo map, compass	Record whether the sampling site is N, S, E or W-facing	May affect temperature, effects of prevailing winds, amount of fog, other factors
Topography	Topo map	Use map to determine topography: rolling, hilly, flat, etc.	Amount of cover may affect patterns of precipitation that reaches the ground