

JOB SAFETY ANALYSIS

Safety Information for the University of California, Berkeley
Berkeley Global Campus at Richmond Bay, Richmond Field Station Site

BGC RICHMOND FIELD STATION REMEDIATION AND RESTORATION PROJECT TIDAL MARSH PLANTING, WEEDING, SAMPLING, MARINE DEBRIS REMOVAL, ETC.

TASK	HAZARDS	CONTROLS
1. Determine potential exposure to contaminated sediments.	Ingestion of or dermal (skin) exposure to soil containing heavy metals, pesticides, PCBs and other organic chemical, and/or pathogenic bacteria.	Consult with current map (below) noting locations of un-remediated sediments, or other restricted access locations prior to any planting or weeding activities. This map must be referenced so employees or volunteers are fully informed of potential hazards when the ground is disturbed. The Project Manager communicates this information to employees or volunteers.
2. Determine exposure to adverse weather conditions.	Sunburn.	Sunblock, hats, long-sleeved shirts.
	Heat exhaustion.	Light clothing. Reduce work time. Take breaks.
	Hypothermia.	Heavy clothing and rain gear. Reduce work time
3. Digging in marsh sediment to plant or weed.	Exposure to sediments or water containing chemicals of concern or microbiological contaminants.	Wear personal protective equipment (see below). Avoid touching exposed skin with muddy tools or gloves.

		Impact to others from using hand tools.	If you are using tools such as axes or picks that require swinging to provide sufficient impact on the soil or roots, be sure you are clear of someone else and you announce, "swinging" or "heads up" or something similar before you begin.
		Muscle strain (back strain, repetitive motion strain)	Don't rush. Use tools with the advantage of your weight. Keep the weight of shovelfuls manageable.
		Impact of use of hand tools by others ("struck by").	Keep your eyes open about what others are doing in your area.
		Exposure to foot injury from heavy objects (tools such as digging bars, vehicles)	Steel toed shoes with metal shank arches are required when using equipment that could cause injury to the foot. Operators of motorized vehicles should stay clear of pedestrians.
		Slips, falls to grade or becoming stuck in the mud.	Evaluate terrain before entry. Probe area of sloughs with a stick or long-handled hand tools near bends to determine depth of fine sediments. When working in areas with substantial fine sediments work with a buddy.
		Tsunami	In the event of a tsunami warning or strong earthquake, leave the marsh area and go inland far away from shore. Tsunami waves can be as high as 16 feet or more in the East Bay.

		<p>Biological hazards-</p> <p>1) poison oak</p> <p>2) mosquitoes, ticks, yellow jackets</p>	<p>1) Learn to recognize the plant and avoid contact.</p> <p>2) Wear long-sleeved shirts and mosquito repellent. Watch wear you walk for ground-nesting yellow jackets. Check clothing for ticks frequently and when you leave.</p>
		Marine debris- sharps and hazardous materials	In the marsh and at the shoreline wash line, watch where you step for broken glass, nails in boards, disposed needles or hazardous materials that have been deposited as marine debris. For haz mats, if safe remove to a safe location and contact EH&S for management.
	4. Washing tools and personal protective equipment	Exposure to sediment containing chemicals of concern.	Use scrub brushes to thoroughly remove mud with water until none is visible on tools, boots or gloves (discard rinse water below high tide line). Discard disposable gloves in the trash. Complete a final rinse with clean, soapy water (discard to grass or in sanitary sewer)
	5. Natural resource protection	Stege Marsh is habitat for the endangered Ridgways rails and for other marsh plants and animals. Entry into nesting habitat or loud noises and other disturbances during rail nesting season is prohibited (February 1 to August 31)	Consult and obtain approval from the campus EH&S before activities during the rail nesting season.

Contributors: Created: JSA Library Number:	Required Training: Hazards associated with the disturbance or exposure to sediments containing chemicals of concern.	Required Personal Protective Equipment (PPE) 1. Gloves 2. Boots 3. Standard work clothes (coveralls etc. to be used at work only) 4. Wash hands and face when done
	EH&S December 2005. Revised February 2016. Office of Environment, Health & Safety 642-3073 ehs.berkely.edu	

The following aerial photo of Berkeley Global Campus at Richmond Bay, Richmond Field Station Site, Western Stege Marsh shows the upper extent of tidally influenced salt marsh as the red line at approximately 4- 5 feet above the mean sea level. Areas 2, 3 and M3 have been excavated and back-filled with clean fill. These are tidal- marsh areas being restored through planting and weeding. Subunit 2B Marsh to the west of M3 and Areas 2 and 3 is unremediated.

