

Restoration Protocol, 2015-2016

Senior Managers

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The Restoration study is dedicated to restoring and maintaining the health of the creek by reintroducing native species to the ecosystem and removing invasive species, litter, and dams created by trash or organic debris.

Equipment

Weed wrenches

Shovels (multiple sizes)

"Litter Gitters"

Trash bags (including bags designated for recyclables)

Loppers

Gloves

Clippers

Rakes

Bow saws

Handsaws

Pry bars

Tarps

Gloves and boots (*required* by ALL members in order to get hours)

Safety

All outings to the creek should have *at least* four team-members. The buddy system should always be implemented if the group needs to split up for any reason, such as an emergency or injury. All members should be well versed on the proper use of tools; no horseplay with these instruments will be tolerated. All team members should carry the phone numbers of the sheriff, Mr. Carson, and fire department. In case of emergency, 911 should not be called first, as the local sheriffs will respond faster. If an area of the creek feels unsafe for any reason, always turn back and stop work in this area.

Trash and Recyclables

All trash and recyclables should be removed from the creek when possible. Separate bags should be kept for each. Some recyclables may be filled with sediment and gunk from the creek. If this cannot be removed, the items should be placed in the trash bag, as they cannot be properly recycled. All trash and recyclables should be disposed of in proper containers when an outing is concluded, or kept and taken care of later if no proper receptacles are available.

Eradication Protocol

Himalayan Blackberry

If you are at Site E you may ask the ARC groundskeeper for a receptacle. If you are at Site C the garbage bins may be used to haul blackberry back and forth from the creek to the trash area. Otherwise you should use the tarp to hold all green waste until the outing is completed and then dump it into the proper receptacle(s), or an area far away from the creek bank. The stalks of the Himalayan blackberry should be removed (loppers are the most effective) first and disposed of. The roots can then be removed with a weed wrench, rake, or shovel, depending on the size of the roots. Use the shovel/rake to dig out any left-over roots. As Himalayan blackberry grows back easily, when removing a patch make sure the entire patch is removed and frequently check for re-growth.

American Pokeweed

For American Pokeweed, the berries must be removed first and placed in a trash bag. The stalks are then cut with loppers. Then, depending on the location of the pokeweed, the roots are dug up with a shovel or pulled out with a weed wrench. If the invasive is located on the creek slope, leave the roots in, as it will help to prevent future erosion of the creek slope.

Arundo

Removal of arundo may also require a tarp. Arundo stalks, when green, should be removed with loppers. When dead they should simply be removed with weed wrenches. All roots should be removed with shovels or weed wrenches. Once removed the location should be noted in order to check for re-growth.

Red Sesbania

Red Sesbania (when not in bloom) should simply be removed with weed wrenches. When in bloom, small Ziploc bags should be placed over seedpods. The seedpods should then be cut off and contained within the Ziploc bags, in order to prevent seed dispersal. The leftover stalk should then be removed using a weed wrench or shovel.

Palm Trees

Members of restoration should be especially careful around palm trees, as they are poisonous. The fronds should first be removed with loppers. Make sure all poisonous spikes are removed before continuing. Use a shovel to dig around the base of the palm tree until the roots are visible. Using a lopper the roots should then be snipped. Using leverage, reveal more roots until all of the roots are cut. The palm tree should then be removed and disposed of. Using a shovel, the remaining roots should be dug up and disposed of.

A Note on Poison Oak

Poison oak is a **native species**, and should *never* be removed on the creek. All members, however, should be able to identify this plant and safely avoid it. Note where large areas of poison oak growth are, for safety reasons.

Interaction with other Studies

Botany

Work with Botany to learn plant identification (knowledge of both native and invasive species is required). The herbarium may be used to view pressed specimens of different plants, but the identification of living specimens is vital, and a field outing is highly recommended. Consult with botany for which native plants should be re-introduced in the spring, and which invasives are particularly pressing problems at which site.

Long Mapping

Work with Long Mapping to find out where dams, thalwags, or potential hazards are located.

Habitat

Work with Habitat to help identify plant species located in certain transects. This will let the team help practice identifying both native and non-native species and allow for more opportunities to familiarize yourself with the plants before actually going out to the creek.

Restoration of Native Species

START EARLY. Contact multiple nurseries in the fall so that the team is able to start planting by the spring semester. Talk with the managers from Botany, Habitat, and Long Mapping to find the best site and the best locations for the plants. Be sure to discuss when the best time to plant specific species is and what conditions are ideal for them. For future Restoration groups, be sure to document where the native plants have been planted and what is necessary for them to survive. Consistently maintain these restored areas, by removing any invasive species that may threaten the new plants.

Native grasslands have been restored on the corner of Watt Avenue and Longview Drive. These efforts need to be maintained through constant watering. Blue oak trees were also planted in this area.

Logistics, Management, and Facilitation

Sign-in Sheets

Sign-in sheets need to be brought to every outing and each attending member must sign in and sign out in order to receive credit for that outing. These hour sheets must be stored in a safe place so that they can be brought to the next hour check. If an outing goes on without managers present, restoration members must bring the sheets to the managers so they can sign off.

Hours

Each team member is responsible for filling out his or her personal accountability sheet in case of discrepancies. If team members are not properly attired (long pants, boots, and gloves) they will not receive hours for that outing.

Conservation Outings

Have multiple restoration team members at each inter-study outing to be leaders for the participants of other studies. Help other studies with plant identification, tool use, protocol, and safety. Set a limit on time waiting for people to show up, so that the full amount of time can be spent working. With larger groups it is advisable to break into several smaller groups with different leaders from the restoration team. Eradication of plants should be closely supervised due to the possibility of a misidentified invasive. One teacher should always be present at inter-study outings. Sign in sheets should be handed out by study (both restoration sheets and conservation sheets); it is easiest to have a separate hour sheet for each study. Restoration members can attend conservation outings in order to attain restoration hours.

Communication

Strong communication between the team is of the utmost importance. There is a Facebook group where dates, times, and locations of outings will be posted. Members can “Like” a post if they are coming to an outing, which lets the managers know if there are enough members attending to carry out a safe outing. Make sure to also email the team before an outing to remind them about it. Schedule monthly meetings to keep everyone updated with their hours and outings. Cell numbers, especially of managers, should be distributed. Ensure that Mr. Carson is included in every email so that he has evidence of outings in case of any problems with a member.

Quizzes/Tests

Start out the school year with a test to assess the members’ basic knowledge on plants, and quiz them again after a lecture is given on all of the protocol and invasive species. Being part of restoration, it is vital that everyone knows the protocol and invasives. If a student fails the restoration quiz, and the managers do not feel they are prepared enough, they should not be allowed on outings until they pass the quiz and demonstrate adequate knowledge.

