



## Week 9 – Field Activity

### Field activity instructions and checklists

Given that you, as students, are from a very wide geographic range of conditions and we cannot be sure if there are suitable study sites close by your home, here we provide a choice of exercises for water quality and environmental monitoring. **Choose only one exercise from among the three.** This selection will depend upon access to streams, lakes, or ponds near where you live or if you have an active construction site nearby. We would like you to focus on only a single exercise and spend the time and effort to do it to the best of your ability rather than trying to do too much this week.

### Water Quality

#### Option A (if you have access to different waterbodies near your house)

Visit briefly two or three different waterways near your house; ideally these are in three different conditions. For example, a stream or pond in a municipal or state park, a stream near an active construction site, an urban stream that flows through a developed area. At each location spend some time and draw a sketch map, take photographs, and observe closely the aquatic environment. Does one have more algae and plant growth than the others? Does one receive brown stormwater and the others do not? Are the urban ones coated in a fine layer of silt on the bottom while in the municipal park is clean flowing over gravel and cobble?

Clearly we cannot visually see water quality but we can look for indicators such as those listed above or others. The intent of this exercise is to become familiar with looking deeply and intensely at the stream or pond for these indicators. It is impossible to separate water quality from the physical condition of a stream or pond, so while recording and noting indicators of water quality also note the channel morphology, substrate condition, riparian area etc. (recall these from stream habitat measurements). All of these things are deeply integrated together and the effective environmental technician strives to observe all of these things and communicate their condition.

#### Option B (if you do not have access to different waterbodies near your house)

This is not a field exercise but rather an office-based exercise. For your geographic area do some research on the water quality issues in your state. This can be overwhelming as there can be a very large number of issues so after becoming familiar with three to five of the issues, select one issue to explore in greater detail. Write a maximum of two paragraphs describing the issue and how it negatively affects water quality in your region. For example you might choose pH or temperature or heavy metal contamination. To keep this manageable focus only on one parameter.

#### Environmental Monitoring (if you have access to an active construction site near your house)

The field activity for environmental monitoring is optional as it depends entirely upon there being construction activities near where you live. If you cannot do this activity please focus only on the water quality activity described above.

If you have construction activity near where you live go to the construction site to make observations. **Very importantly from a safety perspective stay off of the site: do not go on to a construction site!** You can make observations through the fence or from a position safely outside of the site.

From a safe position look at the construction site through the lens of environmental monitoring. If there are slopes on the site do they appear that they would be susceptible to erosion and sediment transport? Do you see activities or conditions that pose potential risk to the environment? Do you actually see harm to the environment? Can you think of any corrective actions that could be taken to reduce or avoid harm? (**Note**, we will be investigating erosion and sediment control much more deeply next week). Do structures such as silt fences appear to be functioning or are they failing? Is there garbage and litter on the site or is it kept in specific places? Can you identify where the machines are fueling up and is it more than 30 meters away from any water sources?

This exercise is intended to begin to give you practice to observe those risks and harms briefly outlined in the online module.

**Do NOT take photographs of the construction site** as that can potentially lead to conflict with developers and workers on site. Instead draw a sketch map in your field book of the site and identify those areas that you believe are at potential risk or where harm is actually occurring.