



CRITICAL HABITAT OUTDOOR LAB TEACHER'S GUIDE

Learning Goal: Students will be able to identify critical habitat types and understand the importance of these areas to the functioning and ecology of lake ecosystems.

Objectives:

- Identify critical habitat area types and factors that distinguish them from other habitat areas.
- Apply knowledge of critical habitat areas to animal habitat needs.
- Explain why an area of a lake would be designated as a critical habitat area.
- Navigate the lake via canoe, to different critical habitat locations and ID their locations on their map.

Note: When setting up for this lab, make sure you have enough safety boats to cover the area that encompasses the designated critical habitat sites that students will be visiting. Instructors should be equipped with whistles, anchors, a lab book, and laminated critical habitat designation sheet. Each student's canoe should have one Aquascope and a laminated critical habitat designation sheet. Instructors should understand what the students are being asked to fill out in their lab books so that they can guide them at each designated site.

1. Introduce the leaders and volunteers who will be involved in the module.
2. The module leader(s) should briefly review critical habitat designations and what they provide that is critical for the many species that inhabit lakes. For animals, habitats need to provide **food, water, shelter, and space that will allow them to grow, survive, and reproduce.**
3. Have students open their lab books to page 3 and give students directions on what they will be doing and how to fill out their lab book.
 - Show students the locations of the buoys and explain that instructors will be at each site to help stabilize the canoes and discuss the habitat characteristics.
 - Remind them to take a photo of the buoy and critical habitat at each site.
 - Review the directions in the student lab manual.
 - Important tip: Remind students to look over the side of the canoe one at a time to maintain balance and prevent capsizing.

4. Review canoe safety tips as students load into the canoes. Canoe teams depart to critical habitat areas marked by buoys (let students choose which site they want to visit first – it's optimal to have the canoes evenly distributed among the sites). Module leaders will need to boat out and anchor at the site (all instructors should be anchored to prevent drifting).
5. Instructors stationed at each site should take time to make their own observations and to identify critical habitat types around them. Make sure to review the laminated critical habitat designation sheet to be able to aid students. Consider a variety of examples of species that would benefit from the habitats at your assigned site.
6. Instructors will need to grab on to canoes while students use the Aquascopes and cameras to stabilize them and prevent drifting. Remind students that one of them should be filling out the lab book with the data about each site while the other one photographs the evidence. Clarify lab instructions for students if they seem confused about where to place their conclusions about the site. Make sure they write different examples of species and how they are connected to each critical habitat site.
7. Module leader should blow the whistle at least 5-10 minutes before the end of the rotation so that students have adequate time to return to the dock and complete their lab on page 2. Leaders should arrive before the students so they can guide them in filling out their books. Leaders should review key points and discuss critical thinking questions with students. Instructors should also initial the completed work on page 3, move the "Total score" to the cover page, and initial it.