Reference: RA112859/1
Status: Authorised

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Summary

Date Created	28/05/2025	**Confidential?**	No
Start Date	16/06/2025	**End Date**	16/06/2026

Assessment Title:

Acoustic Monitoring of Aquatic Plant Photosynthesis

Assessment Outline:

This experiment investigates acoustic signals emitted by aquatic plants during photosynthesis, under varying environmental conditions. We will measure the frequency and intensity of emitted bubble sounds, correlating these data with plant biomass, growth rates, and stress conditions (e.g., poor water quality, low nutrients).

Area Responsible (for management of risks)		**Location of Risks**	
Division, School, Faculty, Institute:	Faculty of Life Sciences	**On/Off Site:**	On-Site
Department:	Div of Biosciences	**Building:**	One Pool Street
Group/Unit:	All Groups/Units	**Area:**	Ground and Above
		Sub Area:	Laboratory

Further Location Information:

Filename	**Category**	**File size**	**Date uploaded**

Description of attachments

Location-non-electronic-documents

Assessor(s)	**Approver(s)**
Chen, Changqi	HAYLEY BOAKES
	Isabel Bishop

Authorised By	**Date**
Isabel Bishop	16/06/2025 14:30
HAYLEY BOAKES	16/06/2025 15:57

none

Assessor Safety Competence

Team Leader

Reason For Review Type	**Reason For Review**

PEOPLE AT RISK (from the Activities covered by this Risk Assessment) *	
CATEGORY	ESTIMATED NO.
Post-Graduates	0

1. lab experiment

This experiment involves setting up two tanks in the Teaching Lab at One Pool Street, UCL, to conduct acoustic monitoring of aquatic plants (specifically Elodea canadensis) during photosynthesis. Under controlled laboratory conditions, underwater microphones (hydromoths) will record acoustic signals generated by oxygen bubbles emitted from the plants. The experiment will systematically vary environmental parameters including water quality (nutrient concentration, pH), temperature, and light intensity, to investigate how these stressors affect the acoustic emissions. Data obtained will help evaluate correlations between bubble acoustic signals, plant biomass, growth rates, and stress indicators.

List those managing this Activity and their competence:

Hazard 1. Electrical equipment near water

Risk of electrical shock or electrocution from water contact with electrical devices.

Existing Control Measures

Ensure all electrical equipment (e.g., filters, microphones) is designed for aquatic use, regularly inspected, and placed securely away from water spillage areas.

Hazard 2. Chemical exposure

Risk of chemical burns, irritation, inhalation of harmful vapors, or poisoning if ingested.

Existing Control Measures

Use personal protective equipment (gloves, goggles) when handling chemicals. Store chemicals securely in labeled containers following lab safety guidelines.

Hazard 3. Water leakage/flooding

Risk of damage to lab equipment or infrastructure due to water leaks, flooding, or spills.

Existing Control Measures

Regularly inspect aquariums for cracks or leaks. Keep tanks on waterproof trays or spill containment surfaces.

Risk Level

With Existing Controls

Risk Level: B - Low / Tolerable

Actions

Actions associated with this Risk Assessment

***** No Actions have been recorded*****

Distribution List

Forname	Surname	Int/Ext	Email	Date Added	Read Receipt
Juan Sebastian	Canas Silva	Internal	juan.canas@ucl.ac.uk	29/05/2025	☐
Reshma	Tilwani	Internal	reshma.tilwani@ucl.ac.uk	16/06/2025	☐