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| **Student Name:** | **Ariel Koh** |
| **Matriculation number:** | **s2227491** |
| **Degree Programme:** | **Ecological and Environmental Sciences with Management** |
| **Supervisor:** | **James Watt** |
| **Project Title:** | **Investigating the impact of floating photovoltaic (PV) cells on the water chemistry of water bodies** |
| **Brief Description of Project and Methods:**  *Description*  Many individuals, companies and governments have shifted their attention and efforts into installing PV cells on a larger scale. However, this shift has come with many issues, the most significant of which are space constraints – PV cells take up a lot of space and there is not a lot of space available, and efficiency concerns – PV cells heat up quickly and are not very efficient when hot. The solution that many experts are suggesting is floating PV cells, where installing them on water bodies would take up less land space and water would provide a cooling surface to improve the efficiency of solar panels. However, the environmental impact of installation of floating PV cells on water bodies has yet to be studied in depth, leading to significant knowledge gaps in this field. Specific studies on the sheltering effect of solar panels on the water chemistry of water bodies have yet to be conducted. Installing floating PV cells has been found to change the albedo of the water bodies as well as the water surfaces’ exposure to sun and air (oxygen). This study aims to investigate impact of sheltering a water body with PV cells on water body processes such as lake turnovers and eutrophications, and in turn their impact on the overall water chemistry of the lake.  *Methods*  My first step is to familiarise myself with the MyLake modelling software by conducting a sensitivity analysis. I will then carry out a literature review to obtain appropriate parameteres to input into the software to accurately model the intended lake – including factors such as windspeed, water temperature, concentration of plankton, etc. Next, I will determine the scenarios to be modelled – a control without the installation of PV cells, and potentially scenario where the coverage of floating PV cells increases in predetermined increments. Using these scenarios, I can then run simulations to model the impact of installing floating PV cells on water chemistry. | |

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| **Please tick one or more of the following:** | | |
| The proposed project will involve fieldwork and / or overseas travel. I have assessed the risks using the appropriate form and this has been seen by my Supervisor. | |  |
| The proposed project will involve lab work. My Supervisor and I have completed the appropriate Lab Safety Forms. Lab work will not involve lone working. | |  |
| The proposed project will involve long periods of computer usage. I have taken note of the University guidance on the use of computers and will take appropriate rest breaks. | |  |
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| **Supporting forms must be submitted for review by via Learn.** | | |
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| **I agree to abide by the precautions noted on the submitted risk assessments and undertake to review the forms should the project parameters change or the control measures are shown to be inadequate.** | | |
| **Print Name (Student):** | **Ariel Koh** | |
| **Signed (Student):** |  | |
| **Date:** | **17/5/2024** | |
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| **I have reviewed the safety forms for this project and am satisfied that all reasonable steps have been taken by the student to ensure their health and safety during the project.** | | |
| **Print Name (Supervisor):** | **James Watt** | |
| **Signed (Supervisor):** |  | |
| **Date:** | **17/05/2024** | |