

Remote Aerial Vehicle for Environmental Management

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The purpose of this project is to develop an Unmanned Aerial Vehicle (UAV) platform for collecting aerial photographs in the context of environmental management. By using standard remote control (RC) airplane equipment, autopilot navigation software, and a digital camera, we plan to use the platform to collect valuable imagery that can be imported into a geographical information system (GIS) and to better assess environmental conditions and further research. This operable platform would be the primary deliverable for the Center of Environmental Justice and Sustainability for future use in a myriad of potential applications.

Furthermore, in order to conduct an appropriate field test, my faculty mentor, Wes Lauer, and I will use the UAV to collect images from the Elwha River, which is currently the focus of a massive ecosystem restoration effort in conjunction with the removal of the Glines Canyon and Elwha dams. The goal of this first application is to determine whether sediment accumulation on the flood plain is visible from the aerial photographs. This first set of flights would occur in the summer and then another set of flights would be undertaken in the winter after flood events.

The Elwha Ecosystem Restoration seeks to restore a historically high and varied salmonid population. It is the second biggest ecosystem restoration project and includes the biggest dam removal project in the history of the National Park Service. One of the biggest concerns is the fate and ecological effects of the sediment that has accumulated in the dam reservoirs for nearly a century.