Swarm Robotics in Natural Habitat Reconstruction

# Project Brief

40% of the world’s species rely on wetlands, and yet since 1970 we have seen a 33% reduction due to agriculture, climate change and poor conservation measures. Despite their massive contribution to ecosystems, water purification qualities, and carbon locking potential, wetlands are widely undervalued and manual protection measures are falling short of the demand. We need to establish a scalable way to protect existing wetlands or repair damaged wetlands. This project aims to assess the application of robotics and automation in tackling the diminishing wetlands, first evaluating the shortcoming of existing measures and going on to consider the technological, practical, economic and environmental and human (ethical) implications for technological intervention. These findings will look to identify key problem areas, and a final design is to be proposed for tackling the most appropriate of these problem areas.

# Potential Directions

* Restoration of geo-morphological structures (i.e. salt marshes) to allow wetland plants to recolonise areas
* Diverting waterways for ideal resource allocation/prevent flooding
* Dredge back-filling to restore original topography
* Construction of coastal barriers to prevent natural flooding
* Depolderisation measures