Mapping the Spread of Invasive Plants by UAV

Warburton, Linnea

Invasive plants pose a serious threat to ecosystems by displacing and killing native species. Phragmites australis, an invasive wetland reed, has begun to spread vigorously across North America in recent years, damaging important wetland habitats. In order for Phragmites australis to be managed and eradicated in different areas of the United States, the extent of its spread must be mapped. However, current mapping methods, such as aerial photography by plane or Synthetic Aperture Radar, are often too costly to be used. The objective of this experiment was to continue to develop a new, cost-effective method of mapping invasive plants through the use of Unmanned Aerial Vehicles, commonly known as UAV's. A Mobius action Camera was attached onto the bottom of a UAV built last year, which was then flown over various wetlands containing Phragmites australis in Lexington, Massachusetts. The aerial photographs collected by the UAV this year were then stitched into maps using panorama software. These maps were analyzed in order to determine the percentage of invasive plant versus native plant in these areas. The accuracy of the resulting maps demonstrates the viability of this new method of mapping invasive plants by UAV.

Awards Won: