

GIS: 2012 Mapping, Assessment, and Analysis

Geographic Mapping Information, Communications, and Coordination

GIS (Geographic Information Systems) increasingly are employed in planning and tracking anti-mosquito interventions. Planning, operations, mapping excluded areas, assessment of results, monitoring, and dissemination and distribution of information to the public all rely on accurate and timely GIS data.

One multi-agency response protocol stipulates that the Massachusetts Department of Agricultural Resources (MDAR) shall coordinate the compilation of mosquito treatment sensitive areas GIS data layers (no-spray zones). Mosquito treatment sensitive areas data layers include:

- Certified organic farms
- Priority habitats for spray sensitive state-listed rare species
- Surface Water Supply resource areas
- Commercial Fish hatcheries/aquaculture

The data layers are developed by MDAR, Department of Fish and Wildlife (DFW) & Natural Heritage & Endangered Species Program (NHESP), and Department of Environmental Protection (DEP) within the designated MA Department of Public Health (DPH) delineated spray area into a final GIS data layer.

For the 2012 aerial spray operations occurring in July and August, each Department involved in the operation was made aware that spraying could occur up to 500 feet (one half the width of the spray swath) inside the exclusion areas, and the borders of the exclusion areas were created with this in mind. MDAR, for instance, buffered organic farms by 535 feet. The aerosol applied by the aircraft is designed to treat the airspace. The droplets are intended to float in the air column. Most would evaporate before impacting the ground. Hence, relatively little insecticide or carrier should be expected to reach crops or other terrestrial and aquatic environments.

The exchange and vetting of map layers between the various state agencies went relatively smoothly. All Departments posted their layers on the SharePoint folder set up by the Information Technology (IT) staff. DPH posted the overall spray area; NHESP posted critical endangered species habitat; DEP posted public water supplies; and MDAR posted a layer of organic farms and fresh water aquaculture. The spray area boundary was constructed to be about 1000 feet inside town boundaries so that no adjacent towns would receive spray, thus simplifying notifications to the public. Coastal exclusion areas were created to protect aquaculture and marshes, and a non-registered organic farm was added. Dynamic Aviation was very flexible and professional and accommodated several last minute change requests.