Applications of North Carolina's Geographic Information System for Agricultural Emergencies

Satellite Conference and Live Webcast
Thursday, August 10, 2006
12:00 - 1:30 p.m. (Central Time)

Produced by the Alabama Department of Public Health
Video Communications and Distance Learning Division

Faculty

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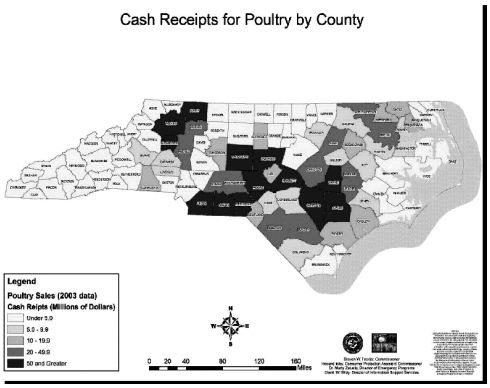
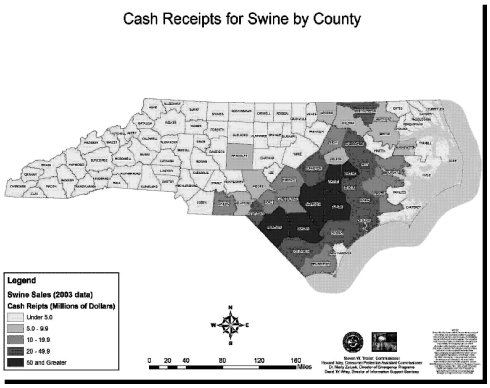
MHTD

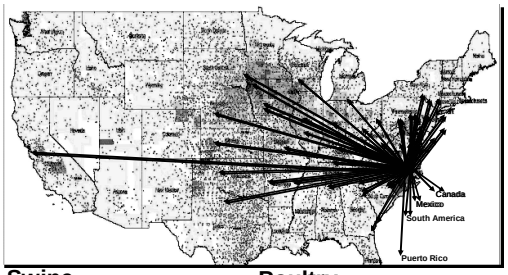
Program Objectives

- **Introduce the basic concepts of a Geographic Information System (GIS).**
- **Illustrate the value of GIS in responding to emergencies for agriculture.**
- **Describe the variety of applications of GIS in emergency response including response and recovery from disease events and hurricanes.**





North Carolina Live Animal Shipments



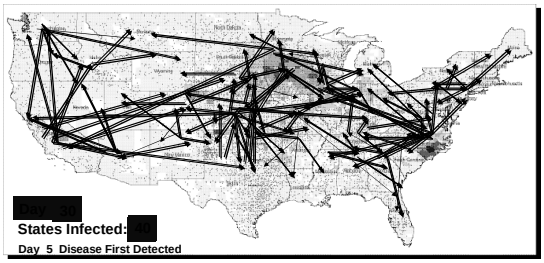
Swine
Goats
Sheep and Lambs

Poultry
Beef Cattle
Dairy Cattle

North Carolina Live Animal Shipments

- 20,400 livestock animals leave North Carolina each day.
- Live animals are shipped to a total of 27 states, Puerto Rico, Mexico, Canada and South America.

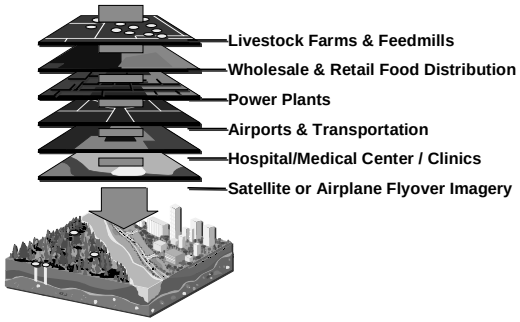
Potential FMD Disease Spread After a Simulated Terrorist Attack at Five Locations



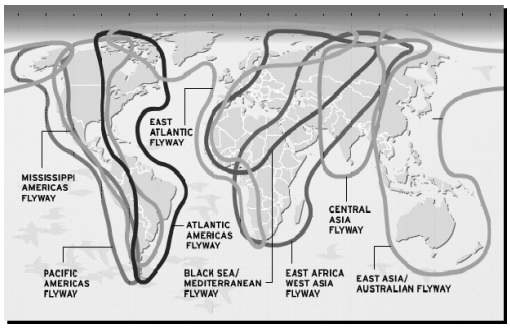
Potential FMD Disease Spread After a Simulated Terrorist Attack at Five Locations

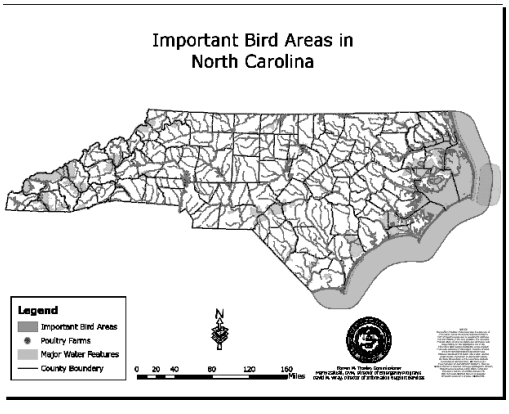
- Potential Impact:
  - Even if a national "Stop Movement" of all susceptible animals is ordered on Day 8, by the time the disease is eradicated the nation would lose still 23.6 million animals.

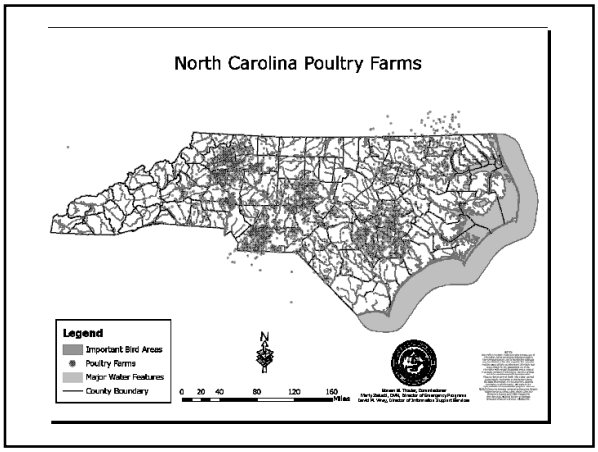
Data Layers Linking Digital Data to Geography



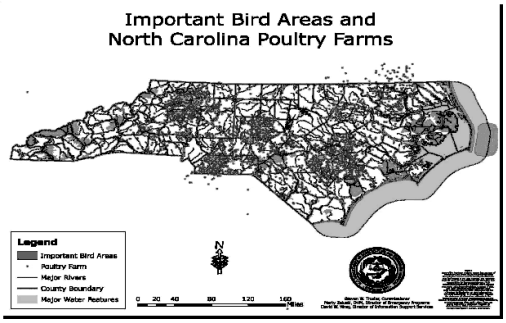
Risk of Avian Influenza and Migratory Flyways







Wild Bird and Waterfowl in NC with Poultry Farms

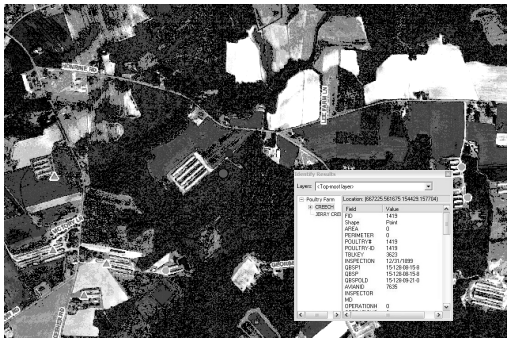


Animal Disease Control Using GIS/MHTD Technologies

Animal Disease Control Options

- Surveillance and reporting
- Epidemiological investigations
- Identification
- Quarantine
- Slaughter and disposal
- Cleaning and disinfection

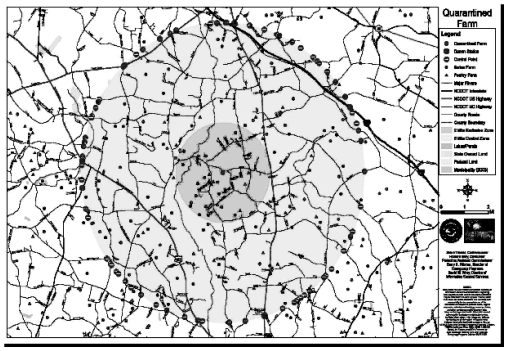
Close-Up of Positive Farm



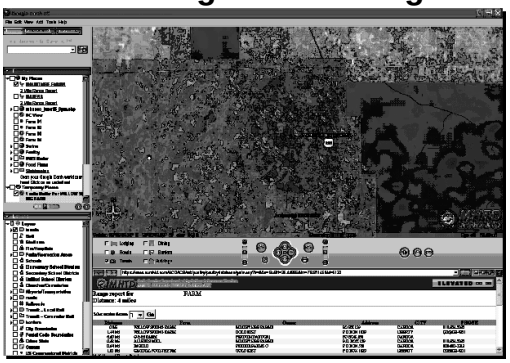
Disposal

- Map of depth to water for on farm burial.

Quarantine



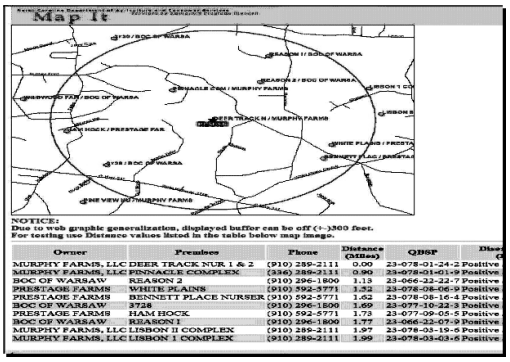
MHTD & Google Earth Integration



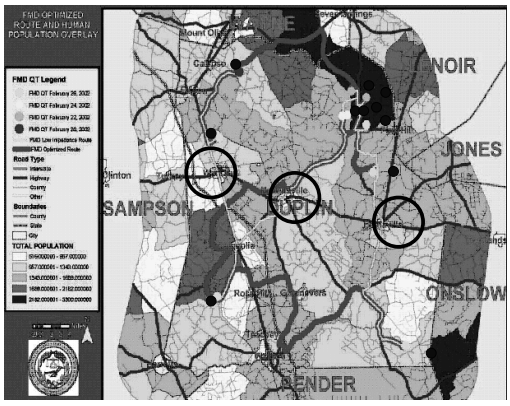
Notification

- Circle letter
  - –Positive farm in center.
  - –Other farms identified.
  - –Surrounding farms listed at bottom with contact information & test results.
- Web, email, fax.
- Important for increased biosecurity awareness.

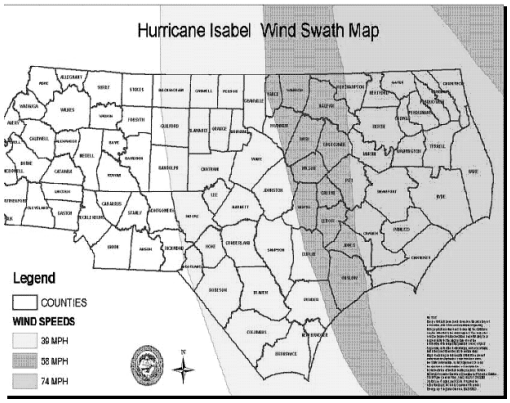
Notification

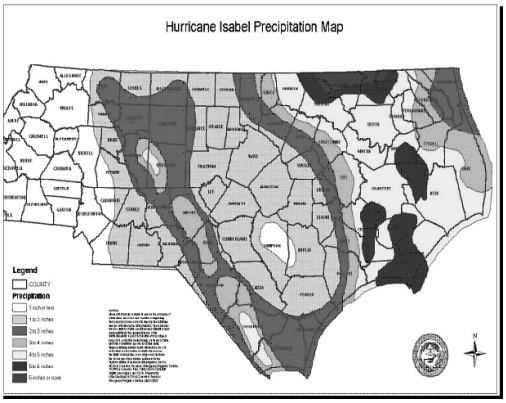


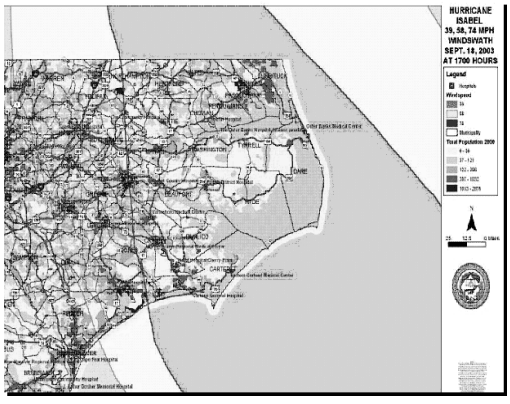
Owner	Premises	Phone	Distance (Miles)	QDSP
MURPHY FARMS, LLC	DEER TRACK NUR 1 & 2	(910) 289-2111	0.00	23-078-01-24-2 Positive
MURPHY FARMS, LLC	PINNACLE COMPLEX	(336) 289-2111	0.99	23-078-01-01-9 Positive
BOC OF WARSAW	REASON 2	(910) 296-1800	1.13	23-066-22-22-7 Positive
PRESTAGE FARMS	WHITE PLAINS	(910) 592-5771	1.32	23-078-08-06-9 Positive
PRESTAGE FARMS	BENNETT PLACE NURSER	(910) 592-5771	1.62	23-078-08-16-4 Positive
BOC OF WARSAW	3728	(910) 296-1800	1.69	23-077-10-22-3 Positive
PRESTAGE FARMS	HAM HOCK	(910) 592-5771	1.73	23-077-09-05-5 Positive
BOC OF WARSAW	REASON 1	(910) 296-1800	1.77	23-066-22-07-9 Positive
MURPHY FARMS, LLC	LISBON II COMPLEX	(910) 289-2111	1.97	23-078-03-19-5 Positive
MURPHY FARMS, LLC	LISBON 1 COMPLEX	(910) 289-2111	1.99	23-078-03-03-6 Positive

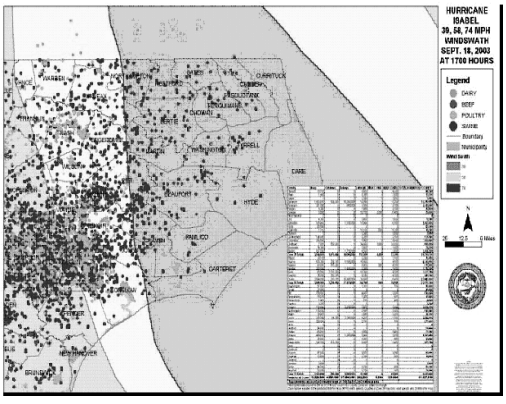


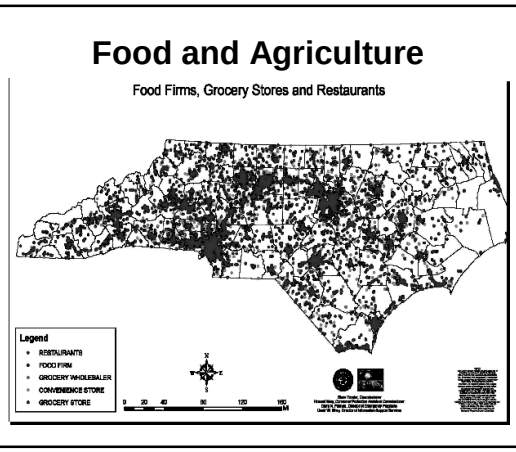
Hurricane Planning and Response

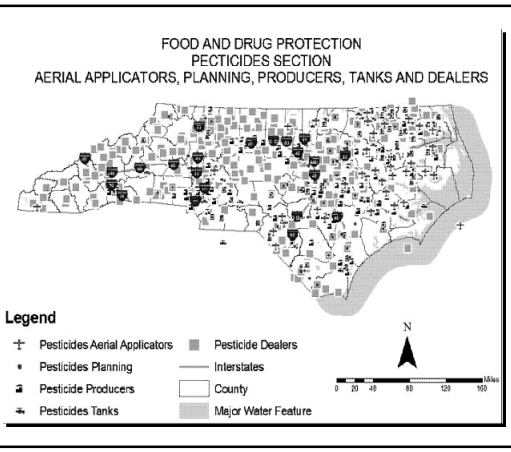

Hurricane Isabel Wind Swath Map
Legend
COUNTIES
WIND SPEEDS
39 MPH
58 MPH
74 MPH


Hurricane Isabel Precipitation Map
Legend
COUNTY
Precipitation

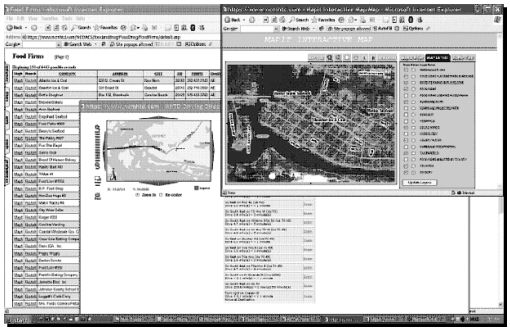

HURRICANE ISABEL 39, 58, 74 MPH WINDSWATH SEPT. 18, 2003 AT 1700 HOURS
Legend


HURRICANE ISABEL 39, 58, 74 MPH WINDSWATH SEPT. 18, 2003 AT 1700 HOURS
Legend
DAIRY
BEEF
POULTRY
SWINE


Food and Agriculture
Food Firms, Grocery Stores and Restaurants
Legend
RESTAURANTS
FOOD FIRM
GROCERY WHOLESALER
CONVENIENCE STORE
GROCERY STORE


FOOD AND DRUG PROTECTION
PECTICIDES SECTION
AERIAL APPLICATORS, PLANNING, PRODUCERS, TANKS AND DEALERS
Legend
Pesticides Aerial Applicators
Pesticides Planning
Pesticide Producers
Pesticides Tanks
Pesticide Dealers
Interstates
County
Major Water Feature

Food and Drug Protection Food Program - Food Firms



Hurricane Impact Aerial Assessment

Benefits

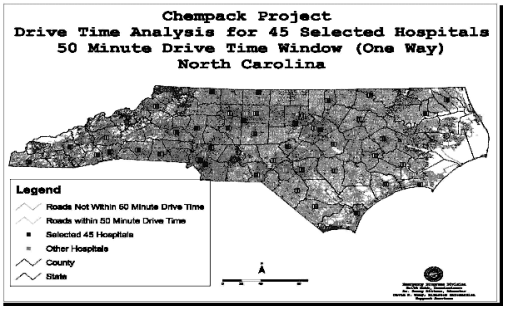
- Locate and manage resources.
- Develop training scenarios.
- Improve decision accuracy.
- Disease tracking and mapping.
- Prioritize recovery efforts.

Benefits

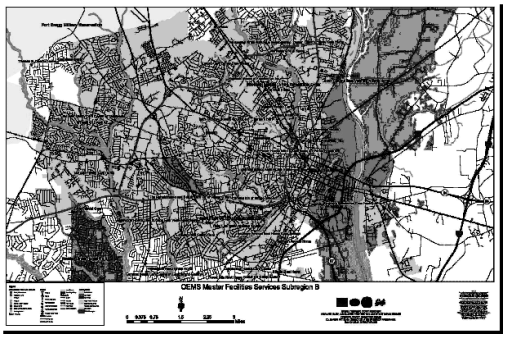
- Improve situational awareness.
  - Determine scale of emergency.
  - Estimate rate of spread or progression.
  - Locate resources.
  - Identify at-risk populations.
- Allows for rapid communication of complex information.
- Assist in rapid recovery.
- A state asset.

Other Applications and Partnerships

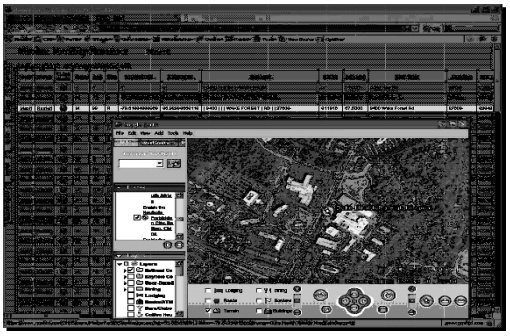
Public Health Travel Time Analysis for Chempack



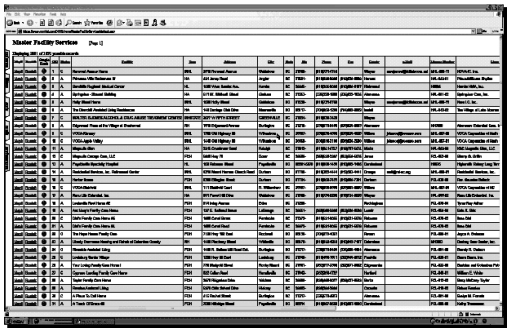
OEMS
Master Facilities Database



OEMS
Google Earth Integration



OEMS Master Facilities Database Google Earth



SBI Remote Sensors 2005 US Open

SBI Remote Sensors 2005 US Open

Upcoming Programs

Staffing for Emergency Response and Recovery
Tuesday, August 29, 2006
12:00 - 1:30 p.m. (Central Time)

For complete list of upcoming programs visit: www.adph.org/alphtn