

Emerging Pesticide Technologies and the Endangered Species Act

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Challenges that Create Opportunities

Registration decisions happen at national scale

- Risk evaluation
 - Ecological risk assessment
 - ESA risk assessment
- Impact
- Use directions including risk mitigation

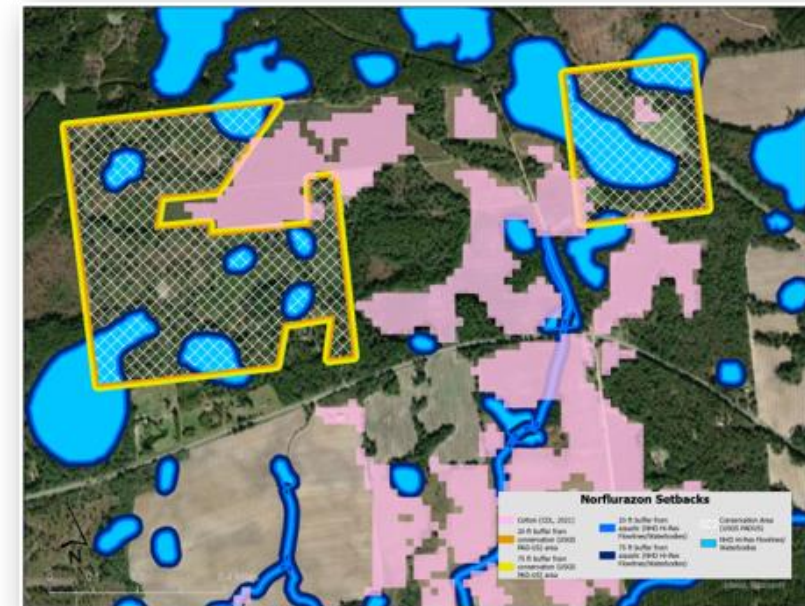


MALATHION 57 EC EPA REG. NO. 34704-108				
Crop	Pest	Application Rate P/A	Directions	Pre-Harvest Interval (PHI) (Days)
Apricots	Orange tortrix Soft scale	2.0	The Restricted Entry Interval (REI) is 12 hours. The maximum single application rate is 1.5 lb AIA (2.4 pt Malathion 57 EC); the maximum number of applications /yr is 2; and the minimum retreatment interval is 7 days.	
Asparagus	Asparagus aphid Asparagus beetle Thrips	1.5 to 2.0	The Restricted Entry Interval (REI) is 12 hours. The maximum single application rate is 1.25 lb AIA (2.0 pt Malathion 57 EC); the maximum number of applications /yr is 2; and the minimum retreatment interval is 7 days.	1
Barley	English grain aphid Greenbugs Young grasshoppers Armyworms	1.5 to 2.0	The Restricted Entry Interval (REI) is 12 hours. The maximum single application rate is 1.25 lb AIA (2.0 pt Malathion 57 EC); the maximum number of applications /yr is 2; and the minimum retreatment interval is 7 days.	7
Beets, Garden (including tops) (Do not apply to Sugar beets)	Aphids	1.5 to 2.0	The Restricted Entry Interval (REI) is 12 hours. The maximum single application rate is 1.25 lb AIA (2.0 pt Malathion 57 EC); the maximum number of applications /yr is 3; and the minimum retreatment interval is 7 days.	7
Blackberries Boysenberries Dewberries Gooseberries Loganberries Raspberries	Rose scale aphids Japanese beetle Leafhoppers Mites Thrips	3.0 1.5	The Restricted Entry Interval (REI) is 12 hours. The maximum single application rate is 2.0 lb AIA (3.2 pt Malathion 57 EC); the maximum number of applications /yr is 3; and the minimum retreatment interval is 7 days. The standard dilute spray for this crop is 200 gal of water/A.	1
Blueberries	Japanese beetle Cherry fruitworm Caneberry fruitworm Plum curculia Sharp-nosed leafhopper	1.5 1.6 2.0	The Restricted Entry Interval (REI) is 12 hours. The maximum single application rate is 1.25 lb AIA (2.0 pt Malathion 57 EC); the maximum number of applications /yr is 3; and the minimum retreatment interval is 5 days. The standard dilute spray for this crop is 200 gal of water/A.	1
Broccoli Brussels sprouts Cauliflower	Aphids Cabbage looper Carrot weevil Imported cabbageworm	1.0 to 2.0	The Restricted Entry Interval (REI) is 48 hours. The maximum single application rate is 1.25 lb AIA (2.0 pt Malathion 57 EC); the maximum number of applications /yr is 2; and the minimum retreatment interval is 7 days.	2



Management and implementation happen at local scale

- Local land conditions
- Conservation practices
- Impact
- Application and risk mitigation
 - Non-target species, incl. ESA



Potatoes in WA



Blueberries in ME



Corn in IA



Soybeans in OH



Almonds in CA



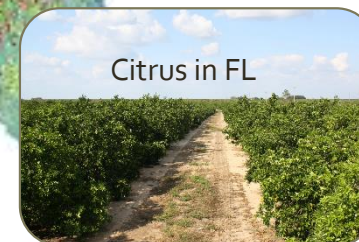
Wheat in Kansas



Cotton in TX



Citrus in FL



Land Use/Cover Variability and Changing Landscapes

USGS National Landcover Database

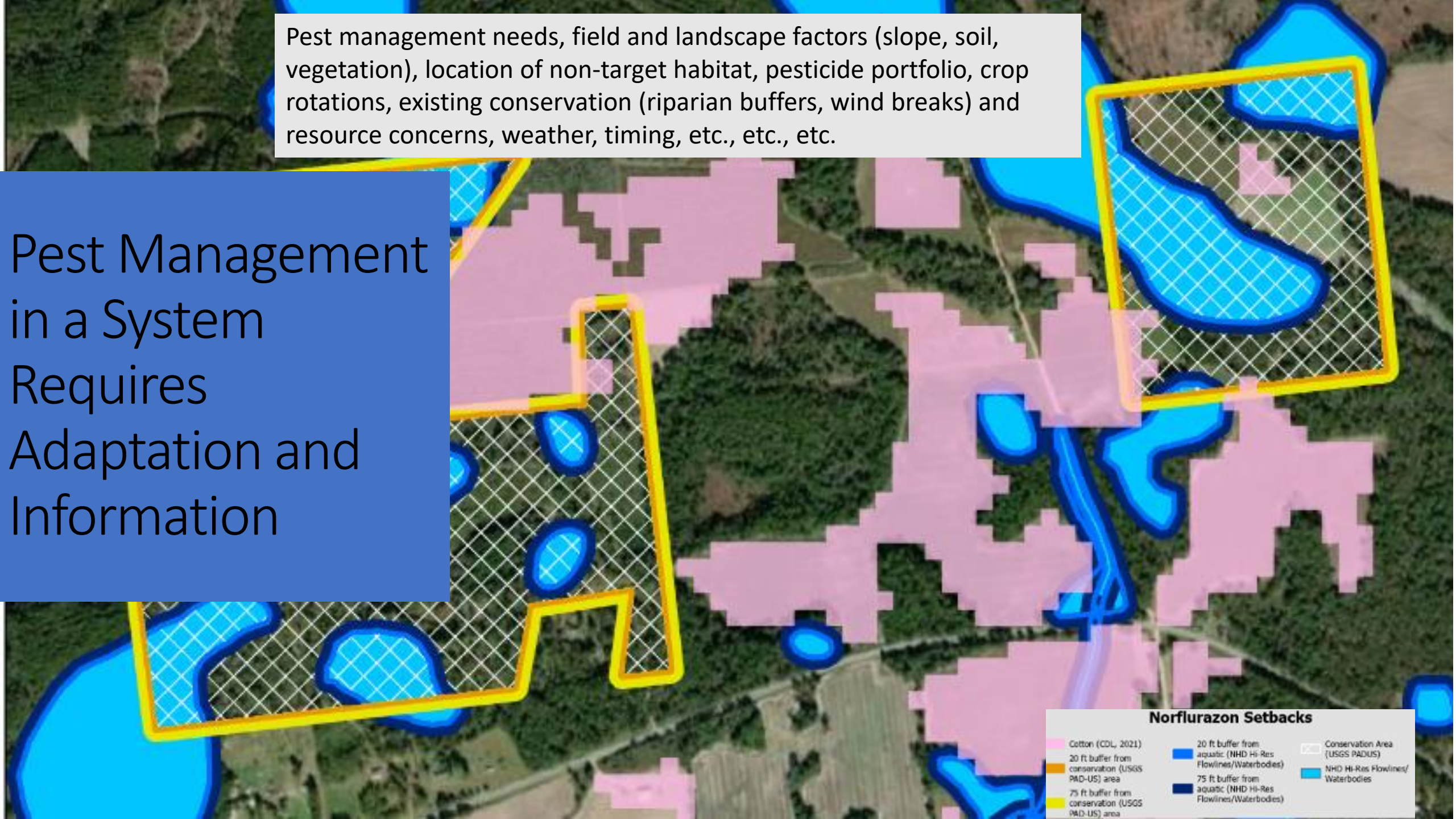




ESA-listed species habitat and needs variability

Pest management needs, field and landscape factors (slope, soil, vegetation), location of non-target habitat, pesticide portfolio, crop rotations, existing conservation (riparian buffers, wind breaks) and resource concerns, weather, timing, etc., etc., etc.

Pest Management in a System Requires Adaptation and Information





Grassed waterways

Harnessing the Power of Data



Pollinator habitat
www.fs.usda.gov



Thank you!

Contact me with any questions!

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