

GA Invasive Species of Interest to GMCA

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Invasive Mosquito Species

A. Seems to have started with man's early travels. Eg. *Aedes aegypti* – Likely a tropical old-world species, probably introduced in early European explorations.

B. Or as recent as last month or last year. Eg.

Culex coronator – Found in GA in 2006

Ochlerotatus japonica – Found in GA in 2003

GA Invasive Mosquito Species I

Aedes albopictus – Asian Tiger Mosquito, our most problematic species in many areas.

1. Introduced into Houston 1985; spreading into upper mid-west and NE. Found in all GA counties by 1993
2. Container breeder very difficult to suppress with normal mosquito control tactics.
3. Public awareness and education is essential; has fostered educational aspects of today's mosquito control programs.

GA Invasive Mosquito Species II

Ochlerotatus japonica – Asian Bush Mosquito - Potential vector species – warrants attention

1. Initial collections – NJ, CT, NY in 1998
2. Evidence in NE indicates earlier - 1992-98
3. Distinctive noticeable appearance
4. Found from NE to Ohio, to middle GA; first found in NE GA, now down to Augusta, Columbus and Albany.
5. Probably mammalian feeder – late afternoon to 1-2 hours after dark.
6. Cautious approaching host, easily scared away
7. Larvae found in rock holes and wide variety of containers (stone, earthenware)

Ochlerotatus japonica 4a

County	2003	2004	2005	2006	2007	2008	2009	2010	2011	Grand Total
Clayton				4	13	2	54	8	10	91
Cobb		2	11	6	1	9	35	63	58	185
Columbia							6			6
DeKalb		23	32	22	2	13	109	86	33	320
Dougherty									1	1
Douglas			11							11
Floyd							1			1
Fulton	2	1		2	4	11	17	32		69
Gwinnett									1	1
Heard						2				2
Henry					2		21	2	3	28
Lumpkin		2								2
McIntosh									1	1
Meriwether								1		1
Muscogee							4	3		7
White		8								8
Grand Total	2	36	54	34	22	37	247	195	107	734

Ochlerotatus japonica 4b

County	unknown	CDC	Gravid	Grand Total
Clayton			91	91
Cobb			185	185
Columbia		6		6
DeKalb		2	318	320
Dougherty			1	1
Douglas			11	11
Floyd			1	1
Fulton	2	2	65	69
Gwinnett		1		1
Heard			2	2
Henry			28	28
Lumpkin			2	2
McIntosh			1	1
Meriwether			1	1
Muscogee			7	7
White			8	8
Grand Total	2	11	721	734

VECTOR POTENTIAL OF OC. JAPONICUS*

WNV- Excellent lab vector (better than *Ae. albopictus*), many positive pools in nature, MIR of 1.88 in 2002 (1 per 532 specimens)

SLE- Excellent lab vector (2X better than *Cx. pipiens*), no natural infections, could be enzootic or bridge vector

LAC- Excellent lab vector (= *Oc. triseriatus*), no natural infections, likely bridge vector

EEE- Moderately good lab vector, no natural infections, could function as bridge vector

* Based on studies by Sardelis, Turell and others at Ft. Detrick, MD

CONCLUSIONS

- *Oc. japonicus* is a potentially dangerous species that is spreading rapidly
- Very likely that high population densities of *japonicus* in certain sites will impact the number of human cases of mosquito-borne viruses in the eastern U.S.
- More information is urgently needed about the behavior and feeding habits of *japonicus*.
- Increased efforts are needed to eliminate solid waste and artificial containers
- Increased surveillance is needed to track and document the spread of *japonicus* in the U.S.

GA Invasive Mosquito Species III

Culex coronator

1. Newest invasive, found across S. GA where surveillance has been done.
2. Locations: Columbus, Albany, Valdosta, Savannah, likely all areas between.
3. Larval habitat – wide variety of container & ground pools in sun or shade, and in sylvatic or domestic areas.
4. Adults – tested + for WNV in TX and have demonstrated vector competence with SLE in lab.
5. Species not known as a human biter

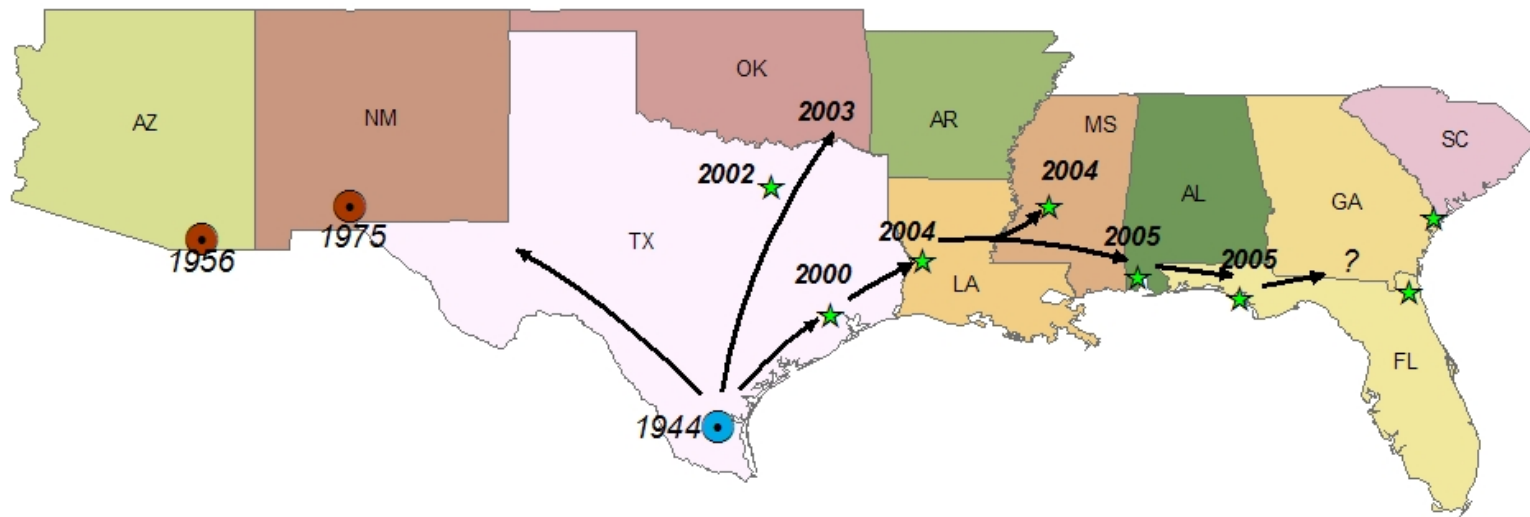
Culex coronator 5a

County	2006	2007	2008	2009	2011	Grand Total
Baker			158			158
Bulloch		1				1
Chatham		1	6	1	1	9
Dougherty	6	1	47	3		57
Lowndes		115				115
Muscogee	13	35	1	3		52
Grand Total	19	153	212	7	1	392

Culex coronator 5b

County	CDC	Gravid	Grand Total
Baker	110	48	158
Bulloch	1		1
Chatham	9		9
Dougherty	57		57
Lowndes	79	36	115
Muscogee	52		52
Grand Total	308	84	392

Expanding Distribution of *Culex coronator*



Data: Dr. Bruce Harrison
Map: Marcee Toliver
9-8-2006

Associated Larvae Found with *Cx. coronator* in Ditches and Ground Water in Mississippi

- *Aedes vexans*
- *Anopheles punctipennis*
- *Culex nigripalpus*
- *Culex restuans*
- *Culex salinarius*
- *Culex territans*

Other Recent Invasive Pests in GA I

Megacoptera cribaria – Kudzu Bug, Globular Stinkbug, Bean Plataspid – First in GA in 2009

1. First found in kudzu, can be found on a variety of other plants, eg. Soybean, figs, flowers etc;
2. Now found in several SE states and is potentially serious pest of soybeans and other crops.
3. Serious urban pest entering homes and buildings in fall similarly to some species of ladybugs.



Credit: Joseph Eger
Dow AgroSciences

Other Recent Invasive Pests in GA II

Brown Marmorated Stinkbug



Other Recent Invasive Pests in GA III

Soybean Aphid



Credit: Bob O'Neil
Purdue University

Cogongrass

Imperata cylindrica

- Perennial grass up to six feet tall
- Silvery, silky cylindrical panicle of flowers and seeds 2-8 inches long
- Off-center whitish mid-rib on leaf
- Rhizomes are whitish, scaly and have very sharp tips
- Extremely aggressive invader tolerant of a wide range of habitats



Most of Georgia's cogongrass infestations began from rhizomes...



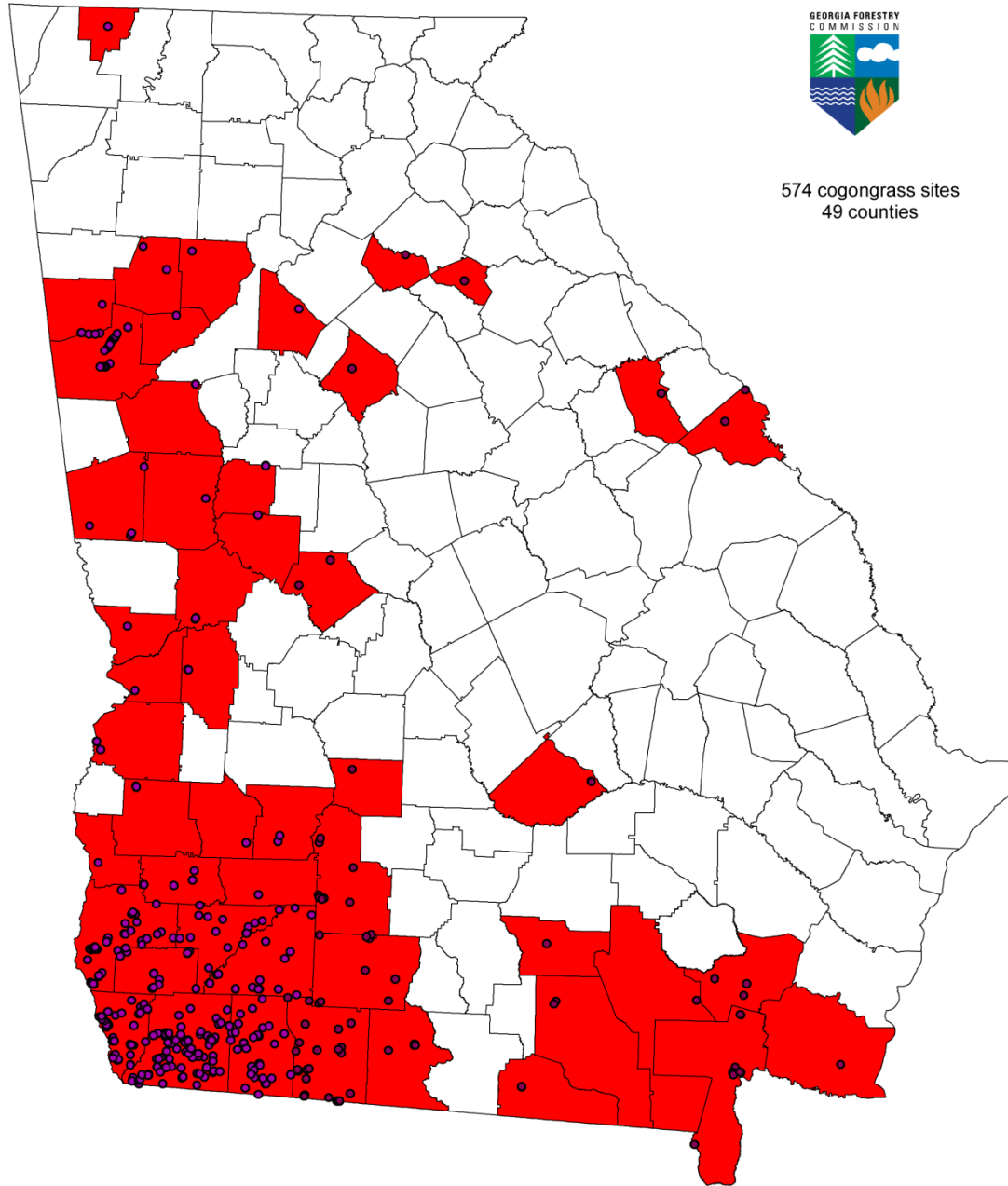
Cogongrass



Known Cogongrass in Georgia



574 cogongrass sites
49 counties




August 17, 2011



Burmese python



Northern African python

A photograph showing two large pythons on a sandy, dry ground with some sparse vegetation. The python on the left is a Northern African Python, characterized by its lighter brown and tan mottled pattern. The python on the right is a Burmese Python, featuring a darker brown and black pattern with prominent yellowish-gold bands. Both snakes are coiled on the ground.

Northern
African Python

Burmese Python

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Burmese python

Python molurus ssp. bivittatus Kuhl, 1820

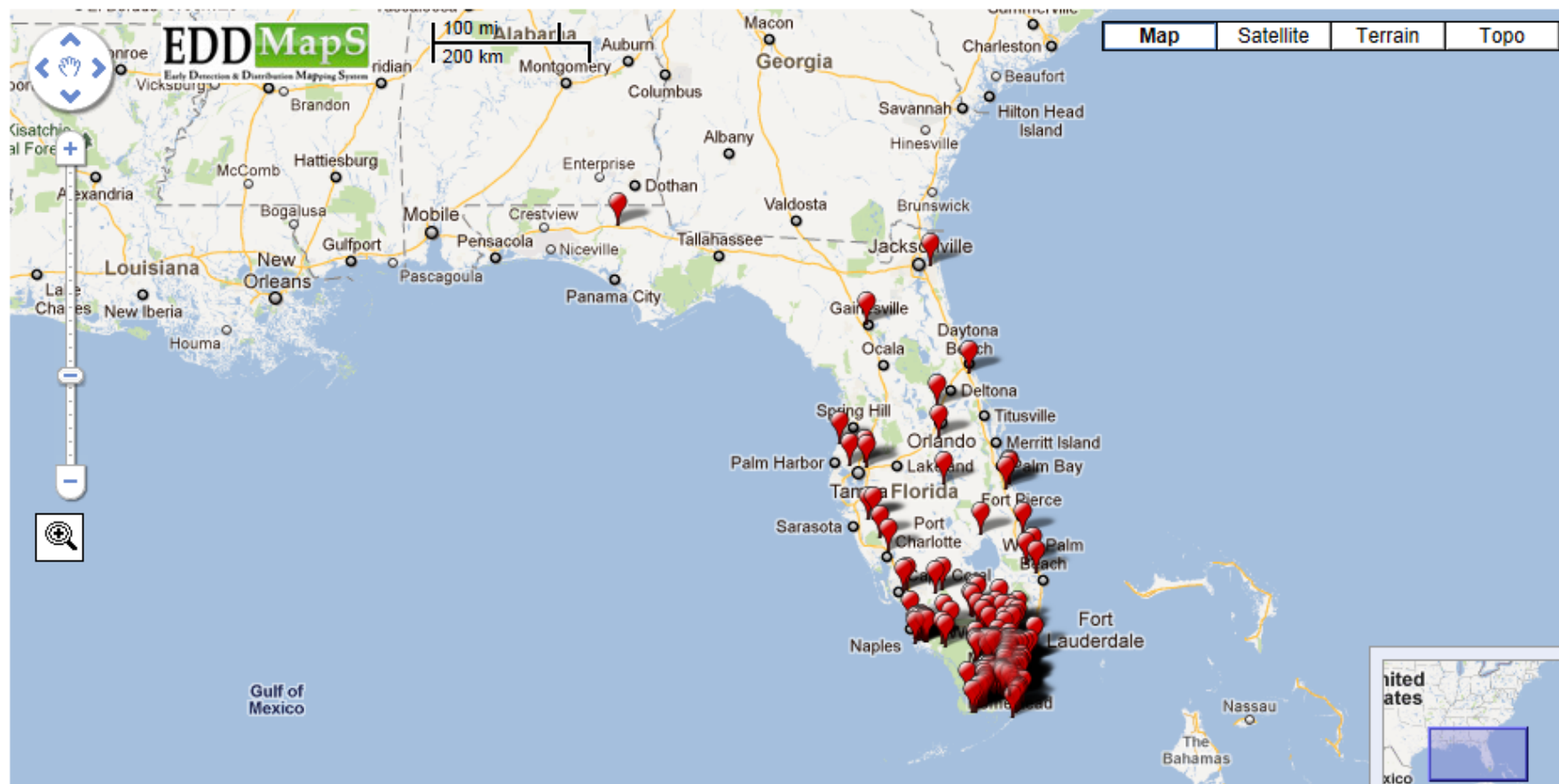


Multiple Points



Single Point

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black and white tegu

Distribution Maps

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Tupinambis merianae Linnaeus, 1758

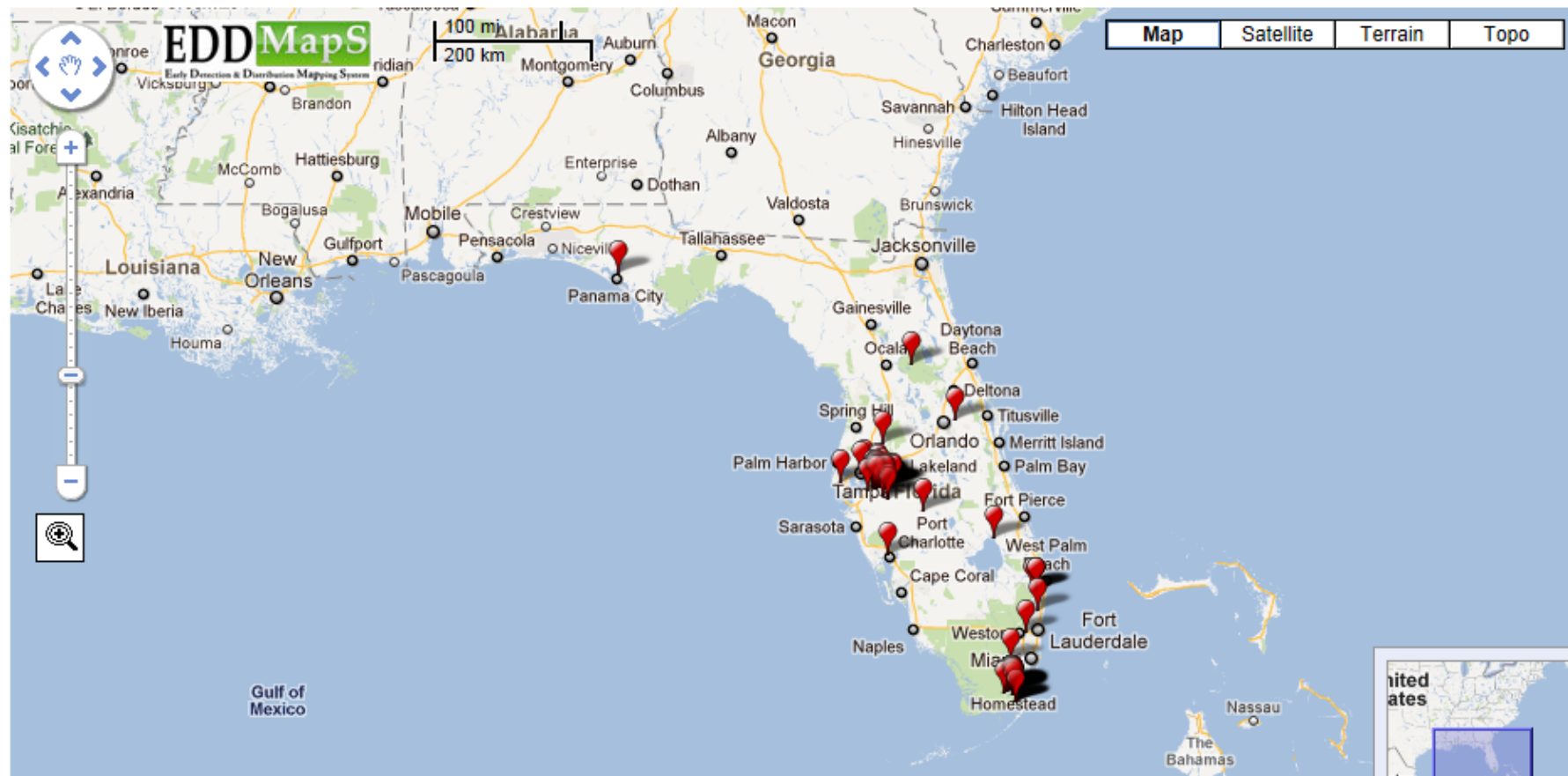


Multiple Points



Single Point

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Nile monitor

Distribution Maps

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About

Nile monitor

Varanus niloticus (Linnaeus in Hasselquist, 1762)



Multiple Points



Single Point



Print



Excel



Google Earth

