Gulf and South Atlantic Regional Panel on Aquatic Invasive Species
April 12th–13th 2011 Meeting, Charleston SC

Updates on the status of invasive and non-indigenous species in South Carolina.

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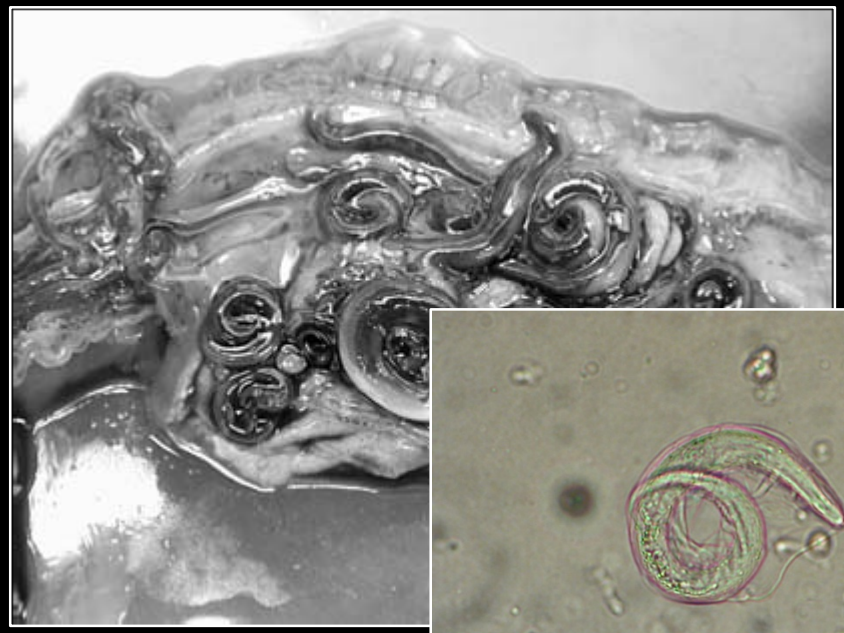
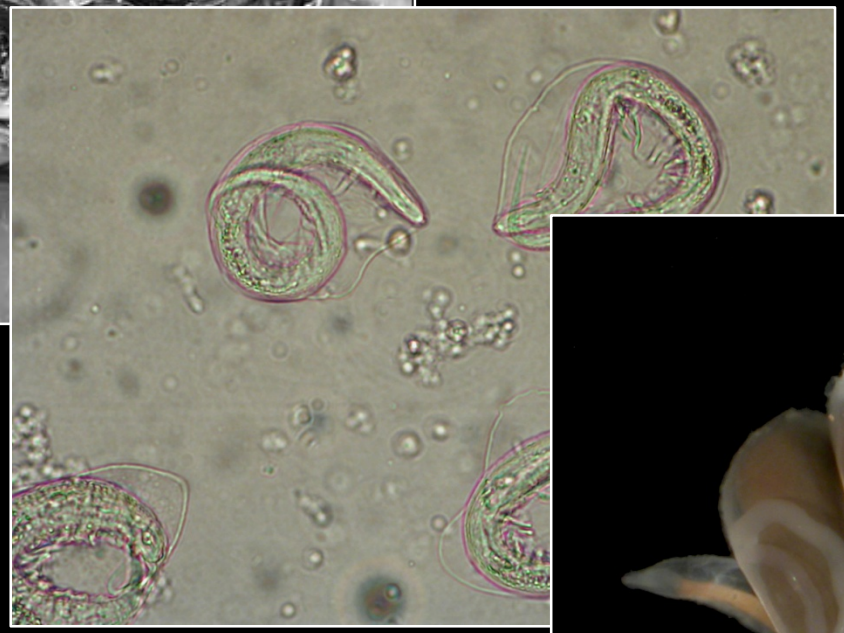
DNR

Infection of the invasive swim bladder nematode parasite *Anguillicoloides crassus* in South Carolina populations of the American eel *Anguilla rostrata*.



Sokowlowski & Dove 2006



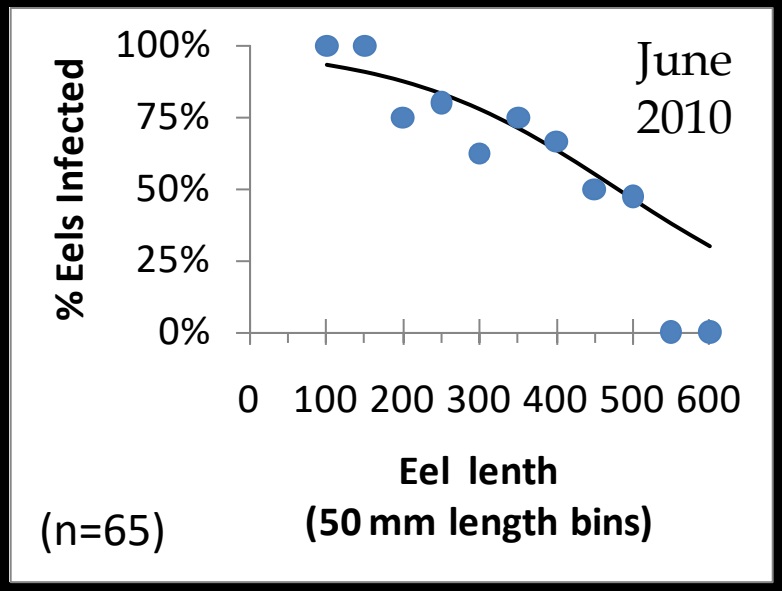
Hatchlings (courtesy of D. Knott)

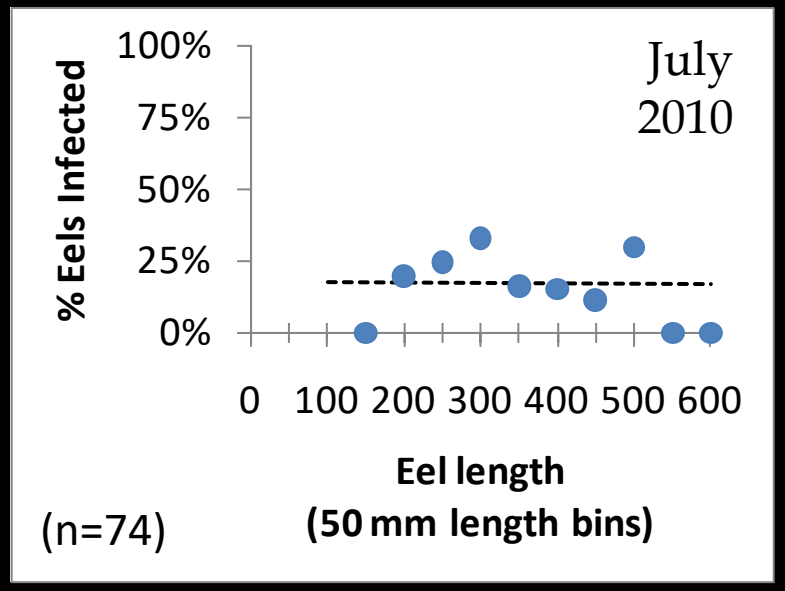
Adult (courtesy of D. Knott)


Juvenile parasites in eel swimbladder wall.
Photo courtesy of Jen Hein (College of Charleston).

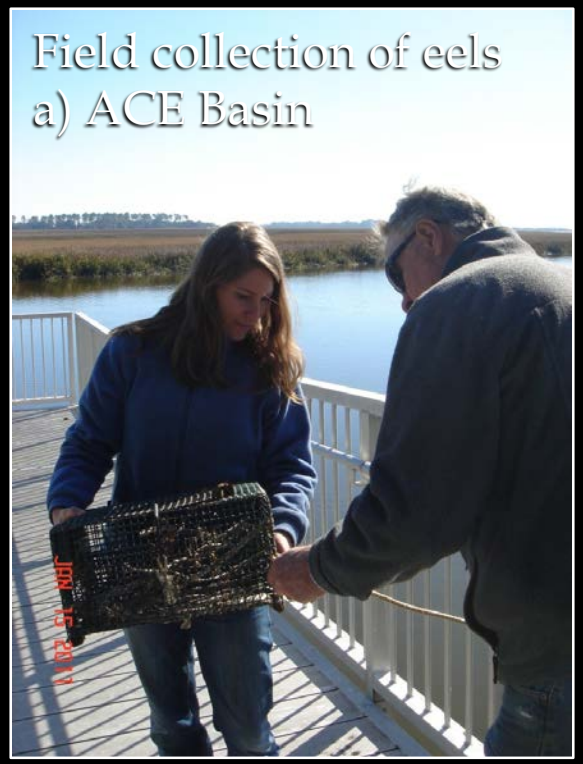
Infection of the invasive swim bladder nematode parasite *Anguillicoloides crassus* in South Carolina populations of the American eel *Anguilla rostrata*.

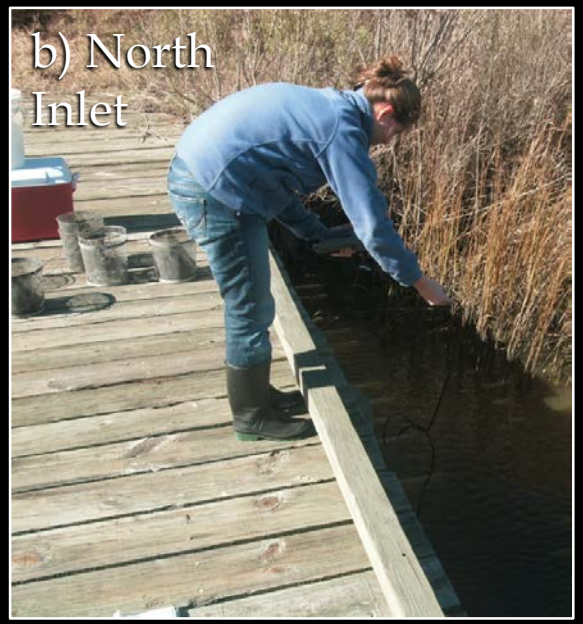
- Summer 2010 intern (MIMES Program) initiated interest
- Overall 38% eels infected; 62%in June 2010 vs. 18% in July 2010
- Rates of infection higher in June 2010 than July 2010
- Infection rate size-dependent in June; 83% <300m vs. 43% <500mm





Data pooled from Cooper River and Winyah Bay, SC

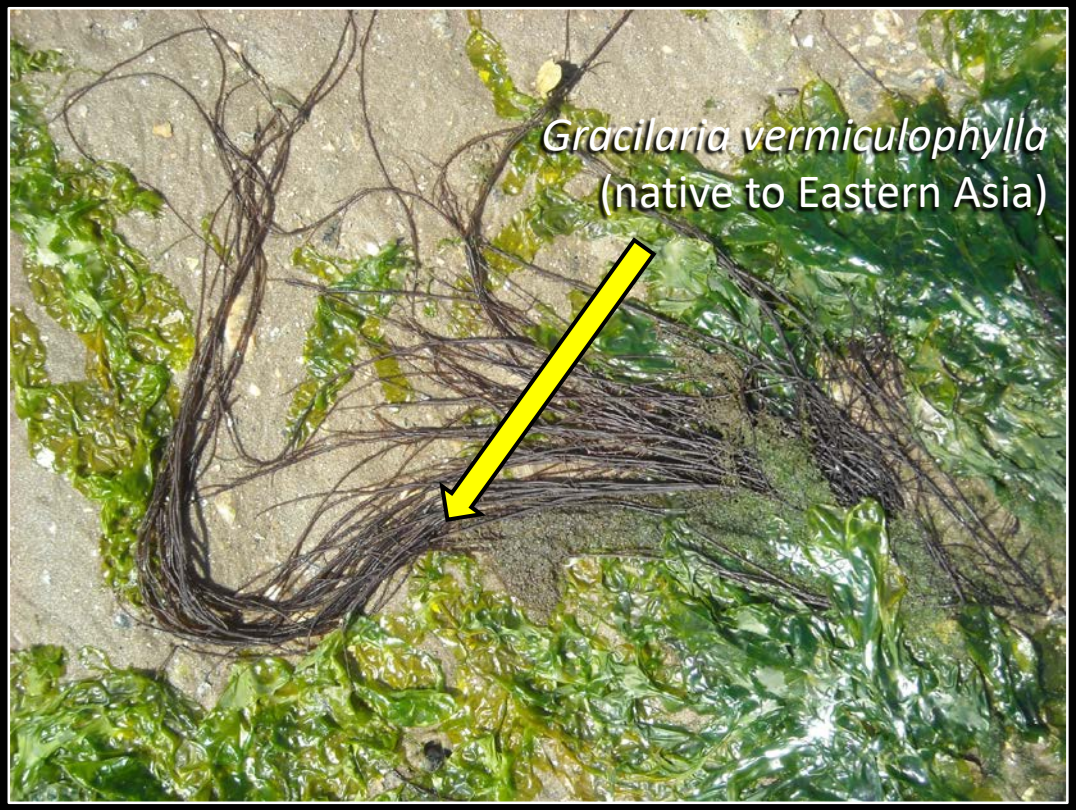




Infection of the invasive swim bladder nematode parasite *Anguillicoloides crassus* in South Carolina populations of the American eel *Anguilla rostrata*.

- Fall 2010 – College of Charleston Masters project
- Jen Hein (left) – Major advisor Dr. Isaure de Buron
- NERR NOAA Fellowship and MIMES students
- Documentation of infection rates in the ACE Basin, North Inlet & Cooper River
- Results: Early elver stages exhibit high infection rates
- Ongoing laboratory experiments to determine effects on survival and growth

Understanding the impacts of the Asian seaweed, *Gracilaria vermiculophylla* on estuarine community dynamics.



- Rapid proliferation of *G. vermiculophylla* over the past decade
- High salinity mudflats in Georgia and South Carolina estuaries
- Invasion of areas previously devoid of macrophytes
- Tolerant of wide temperature ranges and low light conditions
- Interactions with tube-building worms on mudflats


Fort Johnson, Charleston Harbor, SC
November 2002 – No obvious signs of G. vermiculophylla
18. 11. 2002 14:17


Fort Johnson, Charleston Harbor, SC
January 2006 – abundant clumps of G. vermiculophylla


Fort Johnson, Charleston Harbor, SC
March 17th 2011

Understanding the impacts of the Asian seaweed, *Gracilaria vermiculophylla* on estuarine community dynamics.

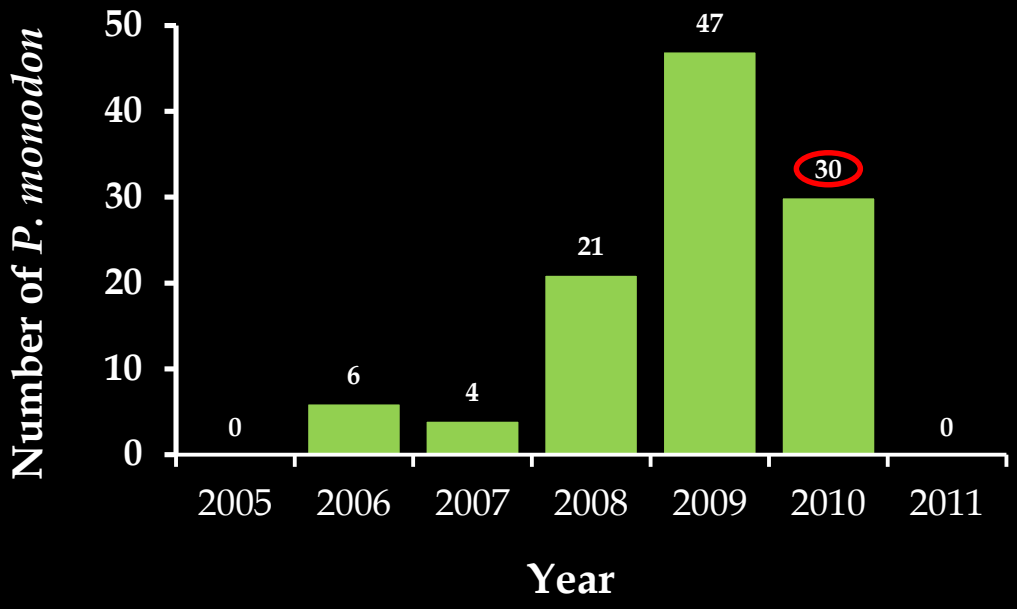
- NSF funding for collaborative study by Dr. Erik Sotka (CofC) and Dr. Jeb Byers (UGA) to study mechanisms by which *Gracilaria* can affect native community structure:
  1) increased rates of secondary production
  2) increased mudflat microbial production (nutrient leaching)
  3) increased detrital input to microbial and macrobial food webs

G. vermiculophylla
Wappoo Cut, Charleston, SC
Photo courtesy of Erik Sotka

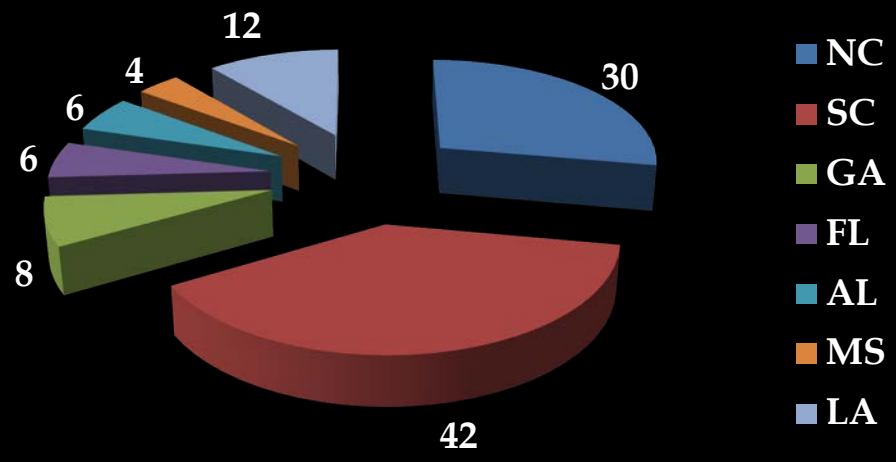
Updated numbers for Asian tiger shrimp, *Penaeus monodon* catches from SC commercial trawling activity.

	NC	SC	GA	FL	MS	LA	AL	TOTAL
As of October 2010	0	4	0	1	0	5	0	10
2010 Season	0	20	1	2	0	7	0	**30**

Wild-caught captures of *P. monodon* in commercial shrimp trawls in South Atlantic and Gulf coast states



Contribution to *P. monodon* catches by state.



Collection of live adult specimens of Island apple snails, *Pomacea insularum* and hatching of juveniles under laboratory conditions.

- Since the last meeting, a live adult and several egg masses have been collected from the previously reported location in Mt. Pleasant, SC
- Successfully hatched egg masses and raised juvenile for ~3 months
- Data yet to be collected on growth at ambient lab temperature (22°C)

Live adult *Pomacea insularum*

Pomacea insularum egg masses