Central Southern Striped Bass Genetics Update

DEPARTMENT OF ENVIRONMENTAL QUALITY

Marine Fisheries

Marine Fisheries Commission | Charlton Godwin | November 17, 2016

OUTLINE

- Public concerns around the status of the striped bass stock(s) in the Tar/Pamlico and Neuse systems
- Update on joint agencies' Striped Bass Working Group
- Results of hatchery contribution by system from 2016 division sampling from areas other than the spawning grounds
- Expedited plan review

STATUS OF THE STOCKS

- Over the past several months, the Marine Fisheries Commission and Division of Marine Fisheries have received requests to implement immediate management measures in the Tar/Pamlico and Neuse rivers.
- Public concerns have centered around high levels of fishing mortality and high levels of hatchery-reared fish, as sampled on the spawning grounds.

STATUS OF THE STOCKS

- The division shares these concerns, but does not have a sufficient quantitative basis or a peer-reviewed stock assessment to support a finding that:

    1. There is a genetically distinct fish population(s) in the Central Southern Management Area; and

    2. These stocks are presently “overfished” or are experiencing “overfishing” in accordance with definitions found in North Carolina General Statutes.

- Limited data for the Central Southern systems prevented a quantifiable stock determination in the 2013 Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan; therefore, the stock status is currently listed as “concern.”

STRIPED BASS WORKING GROUP

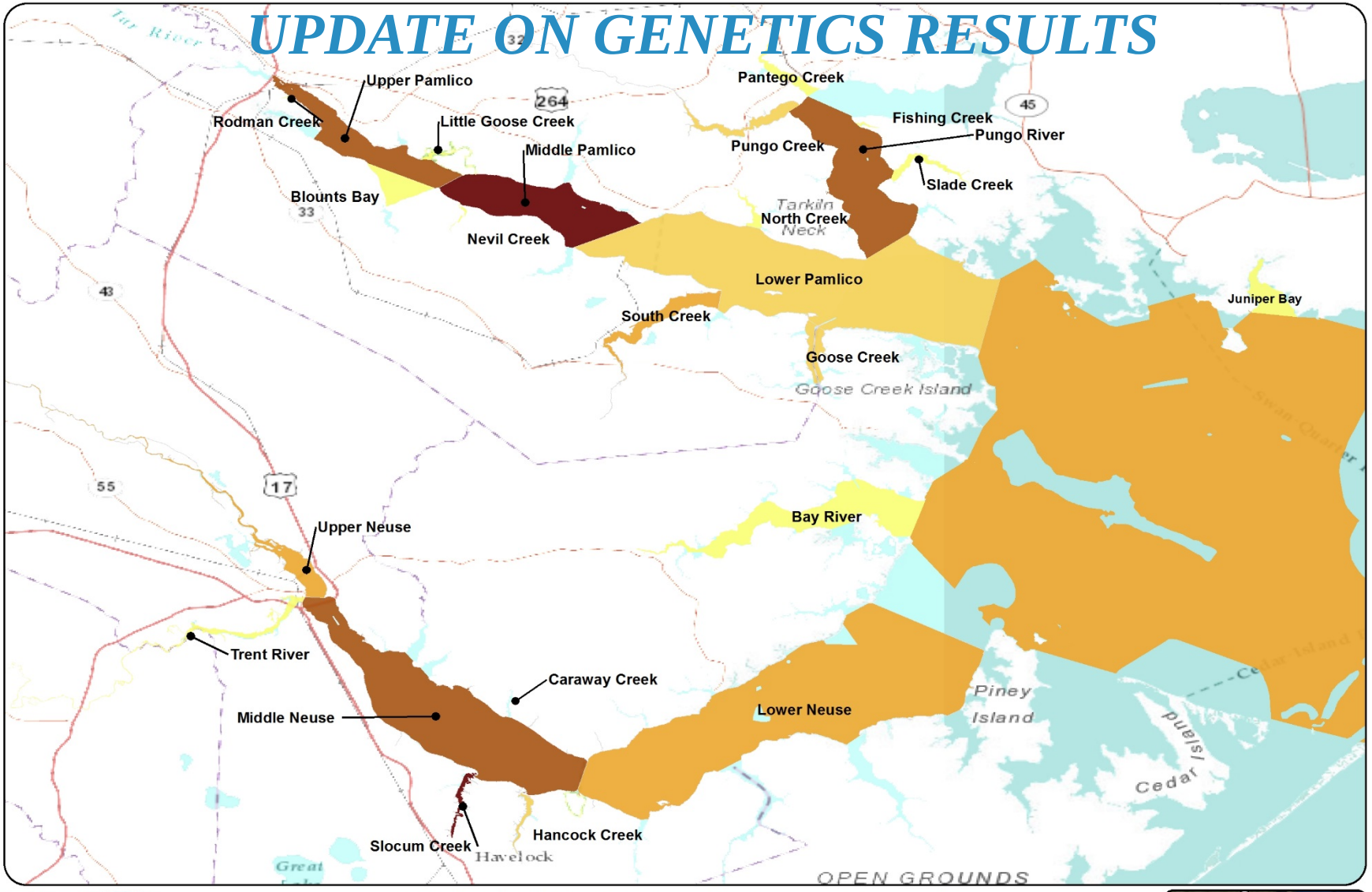
- At the August 2016 business meeting, the commission voted to expedite the full review of the North Carolina Estuarine Striped Bass plan to begin in 2017 instead of 2018.
- To front load the full review, a “Striped Bass Working Group,” made up of staff from both the Wildlife Resources Commission and the division, was formed in the spring of 2016.
- The group identified priority topics which were approved by each agency’s director.

STRIPED BASS WORKING GROUP

Topics discussed by the Striped Bass Working Group to date and upcoming meeting topics include:

- ✓Consensus recommendation to start the full plan review in 2017
- ✓Develop draft revisions to the fishery management plan Goals and Objectives
- ✓Continue to collaborate with academia to identify and implement research projects to address the lack of natural recruitment of striped bass in the Central Southern Management Area
- Consider potential stock assessment models in light of new genetics information (data used will be through 2016)
- Develop draft revisions to the stocking program objectives and strategies

UPDATE ON GENETICS RESULTS



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2016 DMF Striped Bass Genetic

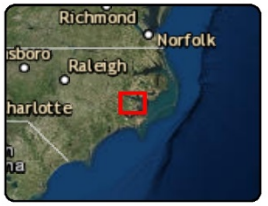
Samples by Waterbody

< = 5	26 - 50
6 - 15.	> = 50
16 - 25	

Kilometers: 0 — 12.5 — 25

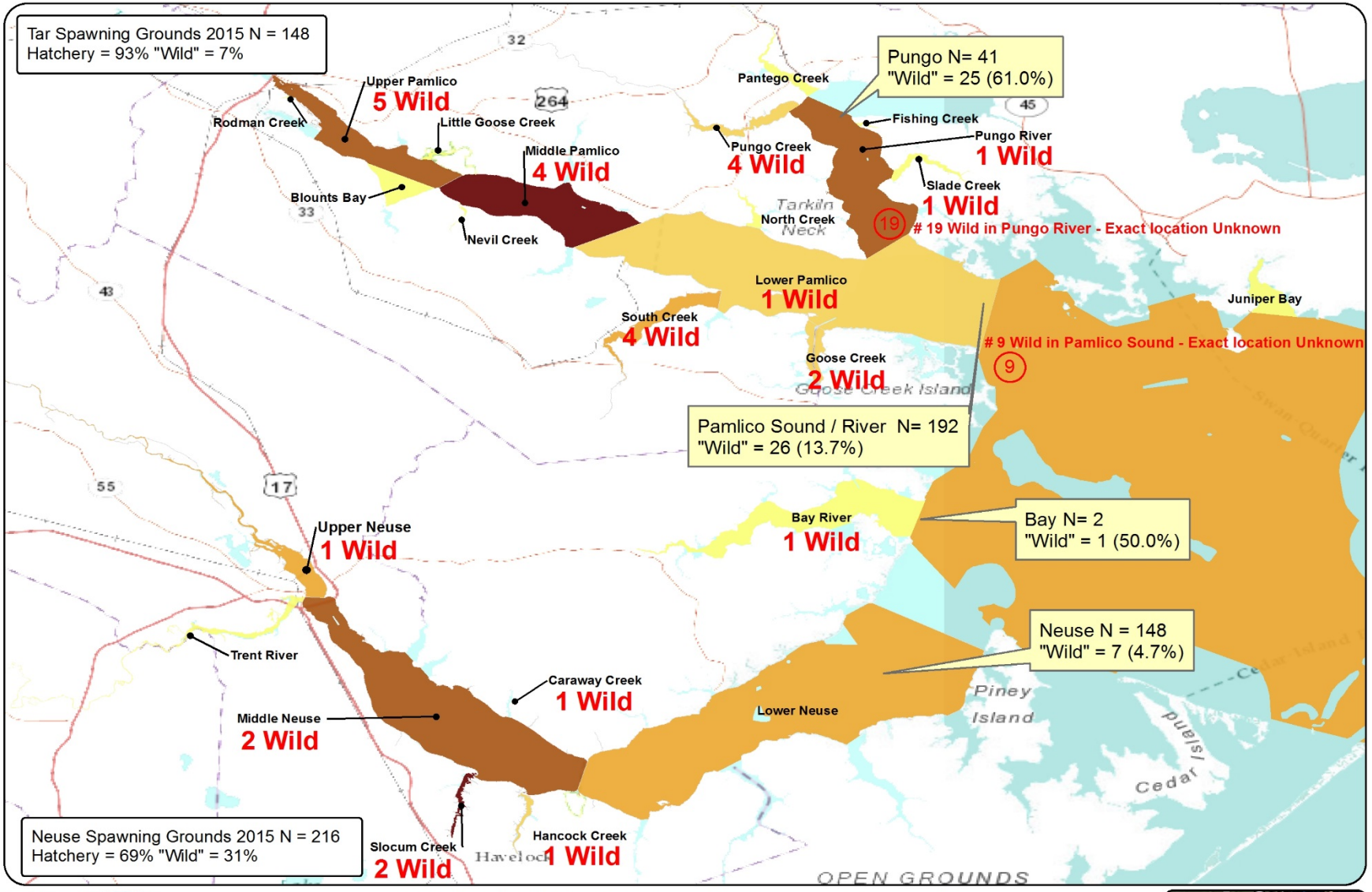
Miles: 0 — 12.5 — 25

N W E S



UPDATE ON GENETICS RESULTS

System	Designation	Number	Contribution (%)
Tar/Pamlico River Spawning Grounds (2015)	Cultured	199	92.9
	"Wild"	15	7.1
Total		214	100.0
Pamlico River and tributaries (2016)	Cultured	164	86.3
	"Wild"	26	13.7
	Hybrid	2	0.0
Total		192	100.0
Pungo River and tributaries (2016)	Cultured	16	39.0
	"Wild"	25	61.0
Total		41	100.0
Neuse River Spawning Grounds (2015)	Cultured	149	68.9
	"Wild"	67	31.1
Total		216	100.0
Bay River (2016)	Cultured	1	50.0
	"Wild"	1	50.0
Total		2	100.0
Neuse River and tributaries (2016)	Cultured	141	95.3
	"Wild"	7	4.7
Total		148	100.0



2016 DMF Striped Bass Genetic

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Samples by Waterbody

- < = 5
- 6 - 15.
- 16 - 25
- 26 - 50
- > = 50

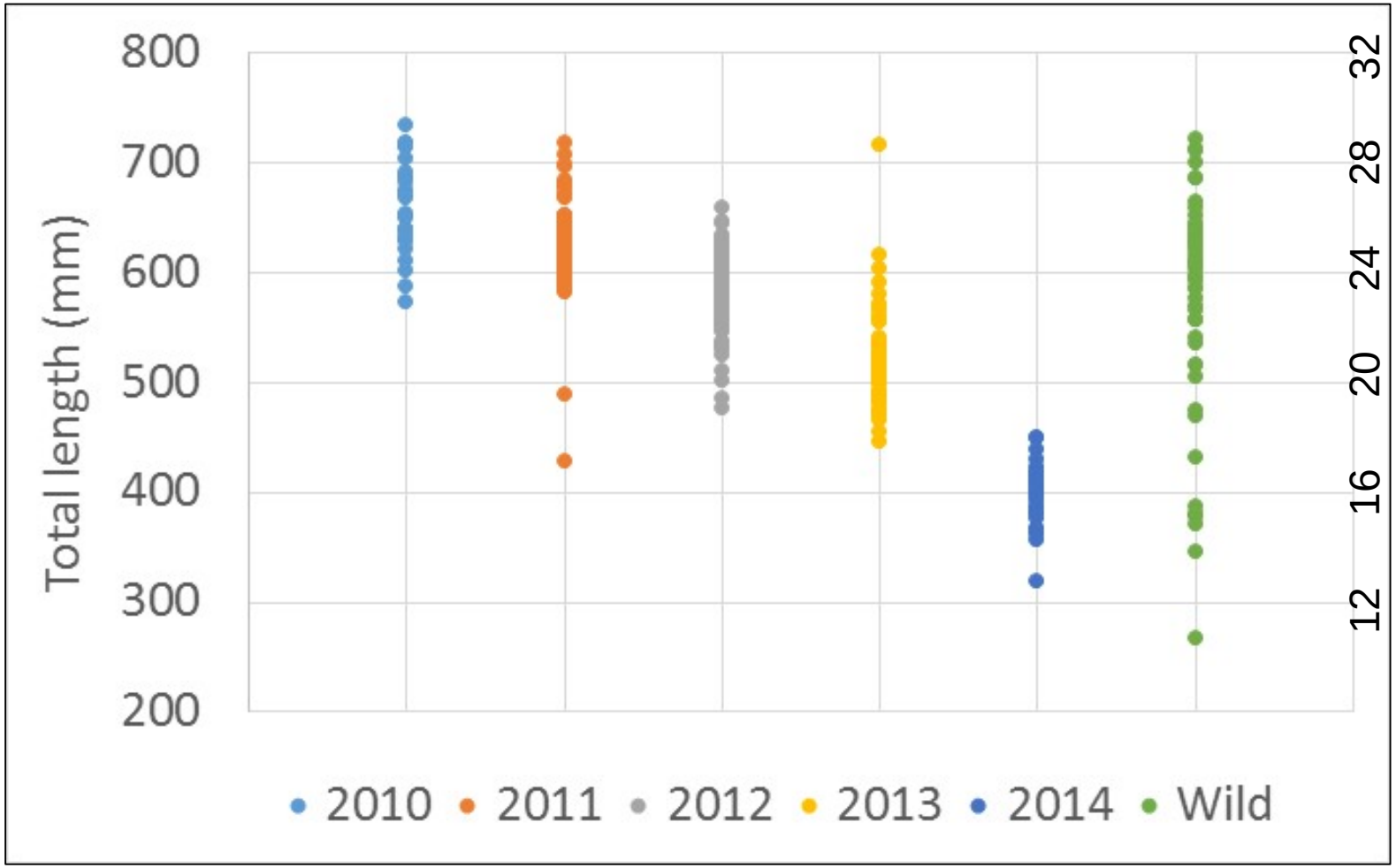
Number of Wild in Waterbody Where Exact Location Unknown

Kilometers: 0 — 12.5 — 25

Miles: 0 — 12.5 — 25

N W E S

UPDATE ON GENETICS RESULTS



Total length (millimeter) of striped bass by hatchery stocked fish and “wild” designated fish.

Department of Environmental Quality

GENETICS SUMMARY

What this genetics research *CAN* tell us:

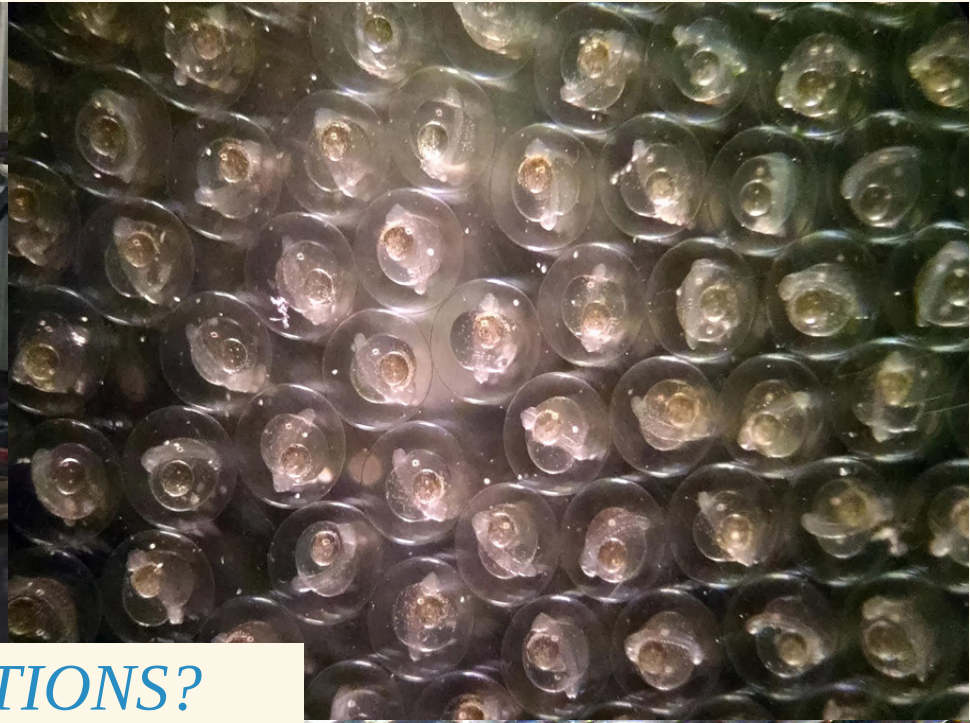
- Overall, 84.5 percent of striped bass collected in 2016 from the Tar/Pamlico and Neuse systems, and Pamlico Sound, were hatchery fish.
- The percent contribution of hatchery fish differs between river systems and areas within each river.

What this genetics research alone *CANNOT* tell us:

- If overfishing is occurring.
- If there are “endemic” strains of genetically unique striped bass populations in the Tar/Pamlico, Neuse, or Cape Fear rivers systems.
- If the origin of the fish designated “wild” are truly wild-spawned striped bass from the Central Southern system, because:
  - They lacked a unique genetic signature; and/or
  - They are possibly Albemarle/Roanoke fish that have migrated in to the Central Southern area.

EXPEDITED PLAN REVIEW

- At this time, the division does not recommend implementing immediate management measures.
- The role of fishing mortality, stock status, reference points, and allocation issues are most appropriately addressed through the upcoming, expedited review of the fishery management plan.
- This work has already begun in close coordination with the Wildlife Resources Commission.



QUESTIONS?

Photographs courtesy Stephen Jackson