

# Cape Fear River

## SUMMARY

Overall there has been little change in the eutrophic state of the Cape Fear River. However, there has been an increasing trend in ammonium concentrations at several locations, possibly from animal operations. There is currently an EPA mandated TMDL for BOD/DO in the estuary. BOD is strongly correlated with chlorophyll-a in the Cape Fear River.

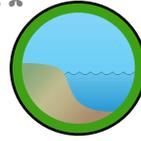
## Influencing Factors

Moderate to high nitrogen input and moderate to high susceptibility (low ability for dilution and flushing of nutrients).



## Eutrophic Conditions \*\*

Primary symptoms beginning to indicate possible problems but still very few secondary symptoms expressed.



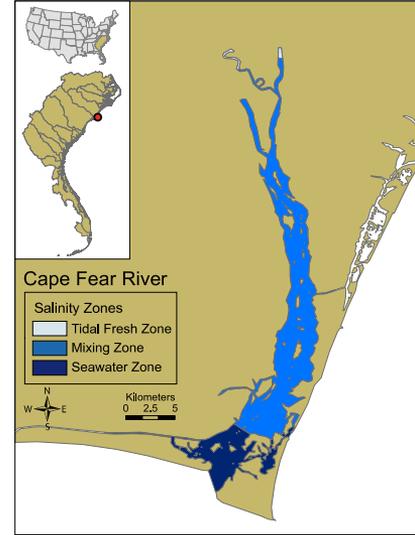
## Future Outlook

Nutrient related symptoms observed in the estuary are likely to substantially worsen.



## ASSETS Rating

Assessment of Estuarine Trophic Status based on the three factors evaluated in NEEA.



Influence/eutro/future

Unknown

Low

Mod Low

Moderate

Mod High

High

Reliability and Confidence

ASSETS

Unknown

High

Good

Moderate

Poor

Bad

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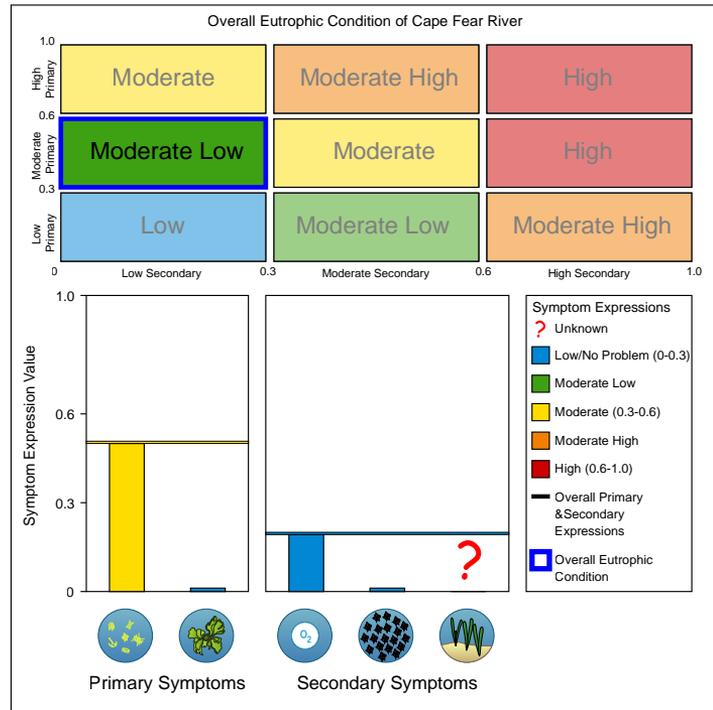
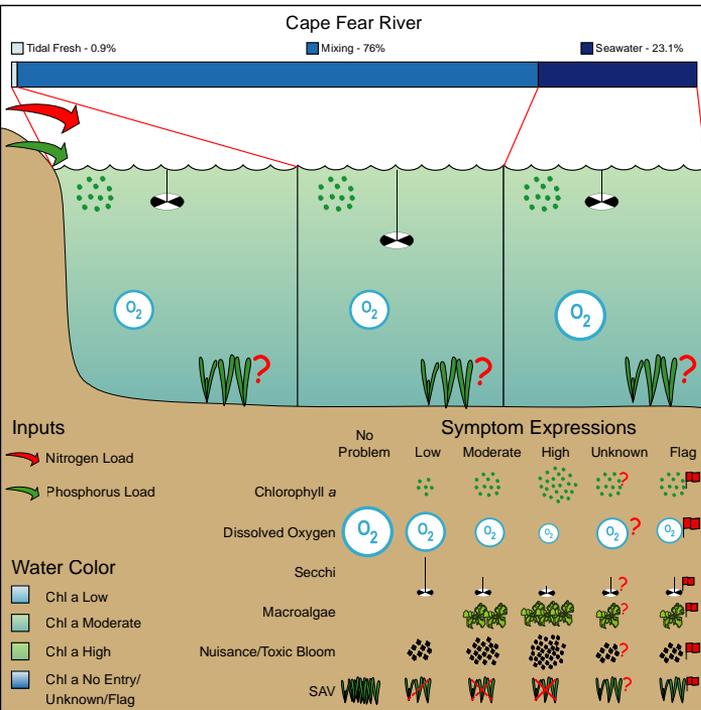
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High

## EUTROPHIC CONDITION



## WATERSHED AND ESTUARY CHARACTERISTICS

Estuary		Landuse / Population		Watershed Details / Input Loads	
Area (km <sup>2</sup> )	100	Urban (km <sup>2</sup> )	2,372 (10.1%)	Area (km <sup>2</sup> )	23,589
Tidal fresh zone area (km <sup>2</sup> )	<1	Agriculture (km <sup>2</sup> )	5,623 (24%)	Mean elevation (m)	88
Mixing zone area (km <sup>2</sup> )	76	Forest (km <sup>2</sup> )	12,344 (52.7%)	Max. elevation (m)	306
Saltwater zone area (km <sup>2</sup> )	23	Wetland (km <sup>2</sup> )	3,067 (13.1%)	Watershed: estuary ratio	235.9
Volume (1,000 x m <sup>3</sup> )	245,000	Range (km <sup>2</sup> )	39 (0.2%)	TSS (tonne y <sup>-1</sup> )	83,900
Depth (m)	2.45	Barren (km <sup>2</sup> )	0 (0%)	TN (kg y <sup>-1</sup> )	7,615,782
Tide Height (m)	1.06	Total (km <sup>2</sup> )	23,445 (0%)	TP (kg y <sup>-1</sup> )	606,051
Residence Time (d)	2	Population	1,364,574	TSS/est. area (tonne km <sup>-2</sup> y <sup>-1</sup> )	839
		Popn: est. area ratio	13,646	TN/est. area (kg km <sup>-2</sup> y <sup>-1</sup> )	76,158
				TP/est. area (kg km <sup>-2</sup> y <sup>-1</sup> )	6,061