Massachusetts Water Resources Authority

Over-enrichment and the Lower Mystic River Basin

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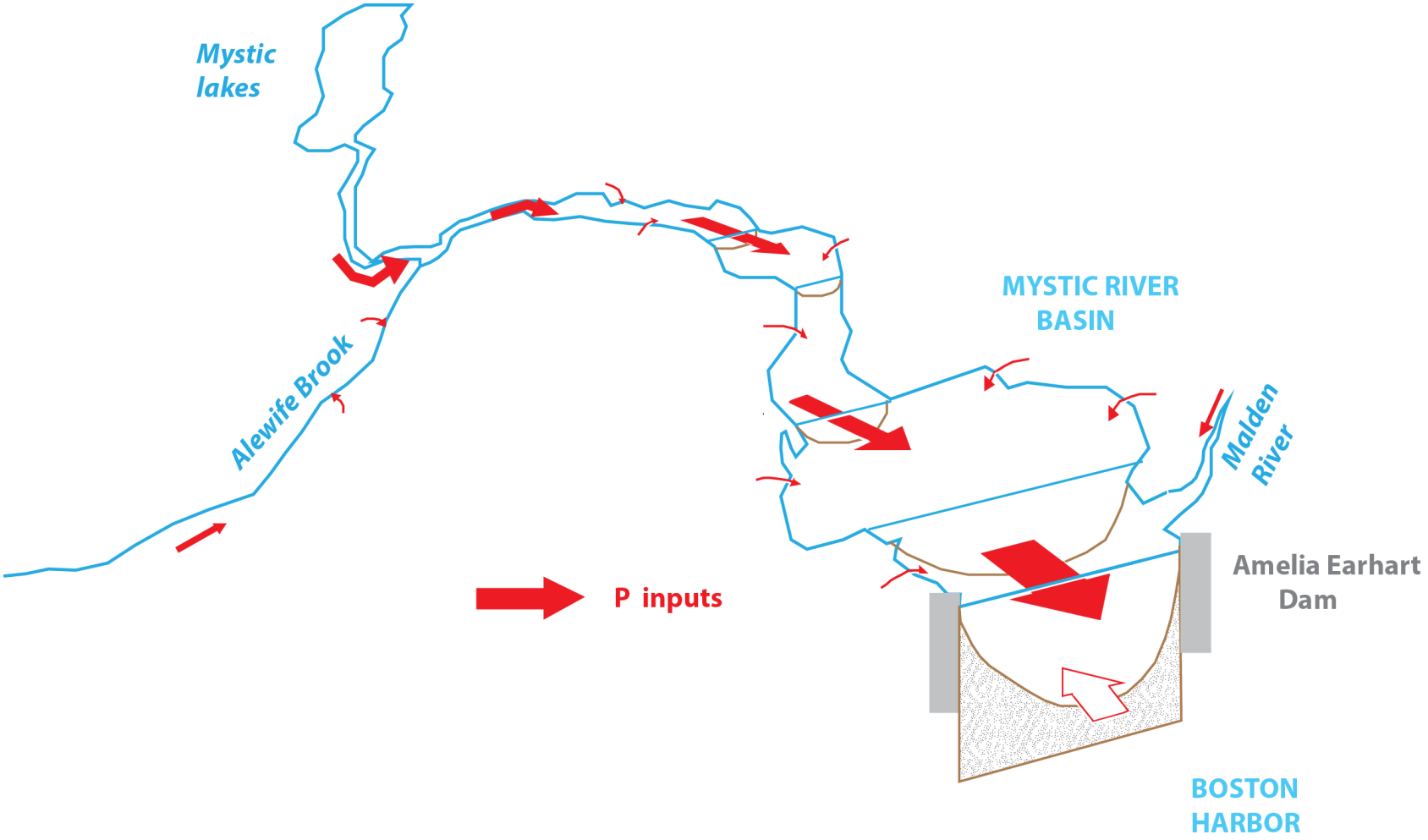
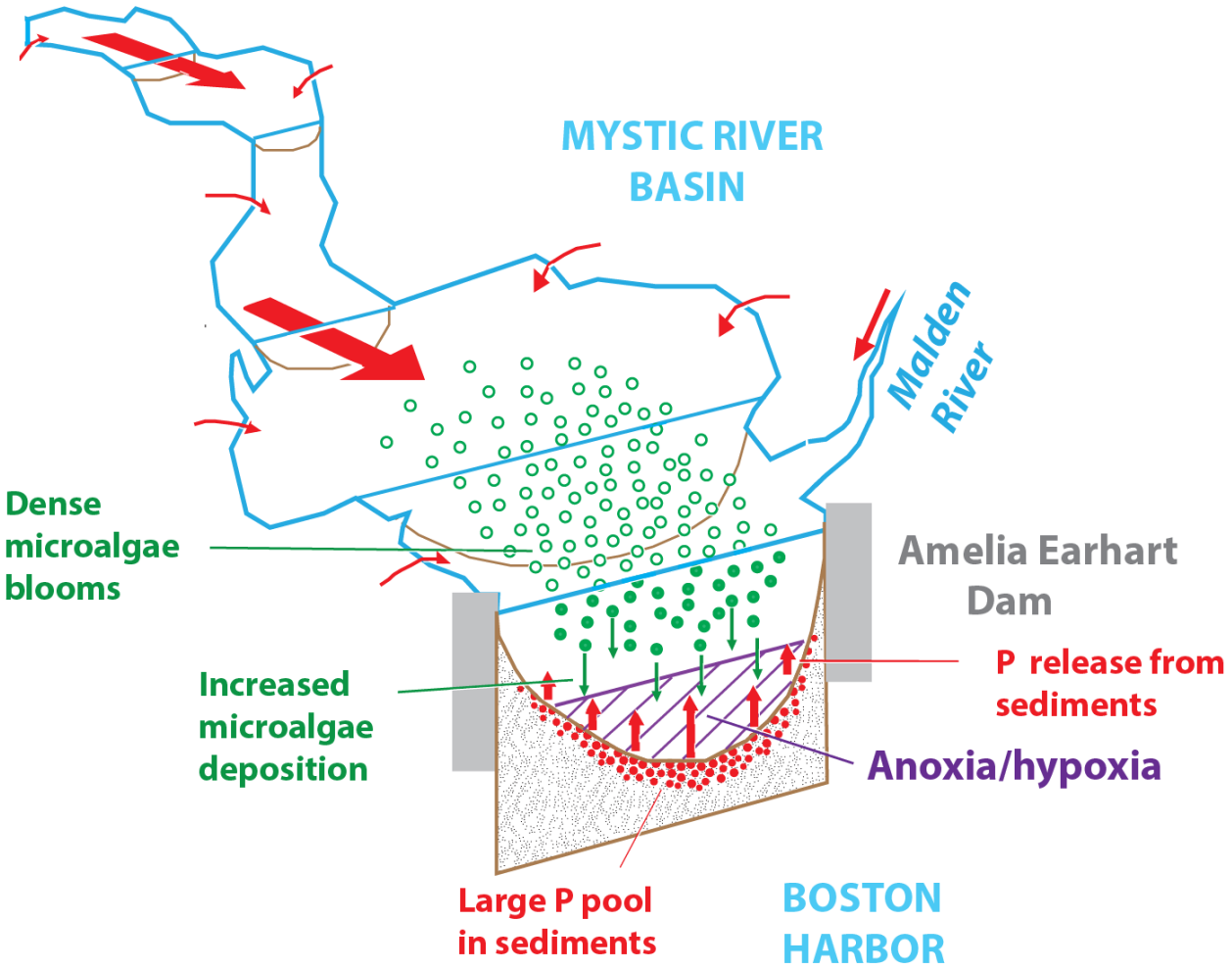
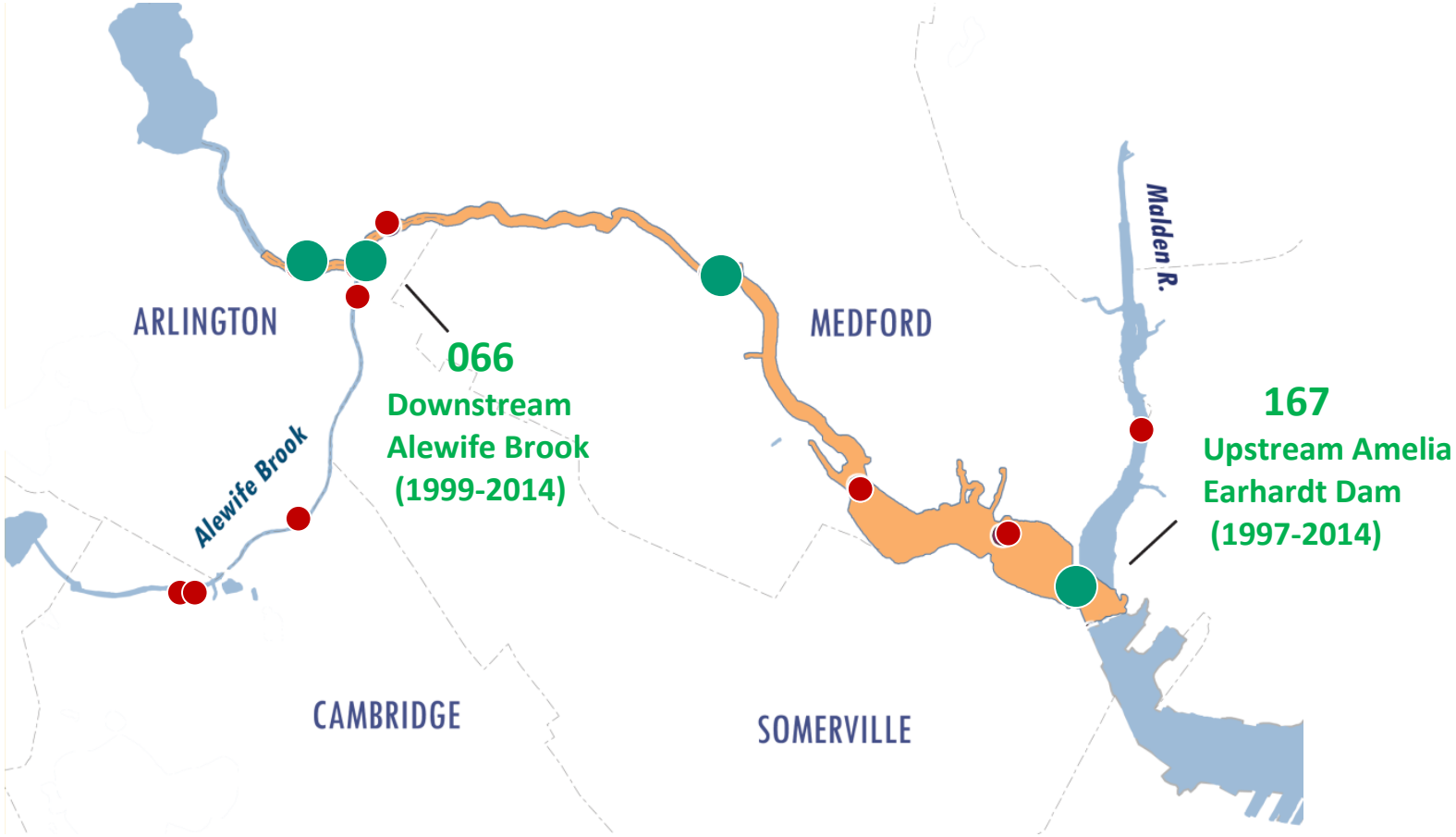
SCHEMATIC OF PHOSPHORUS INPUTS



SYMPTOMS OF OVER-ENRICHMENT

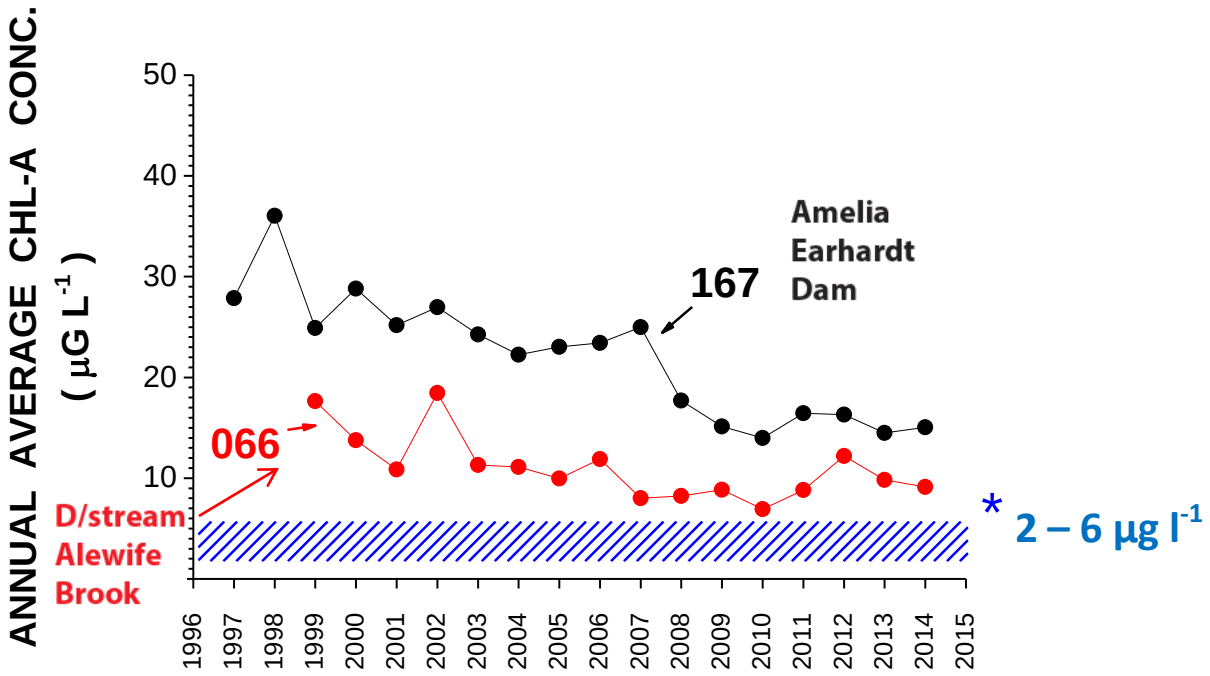


SAMPLING LOCATIONS



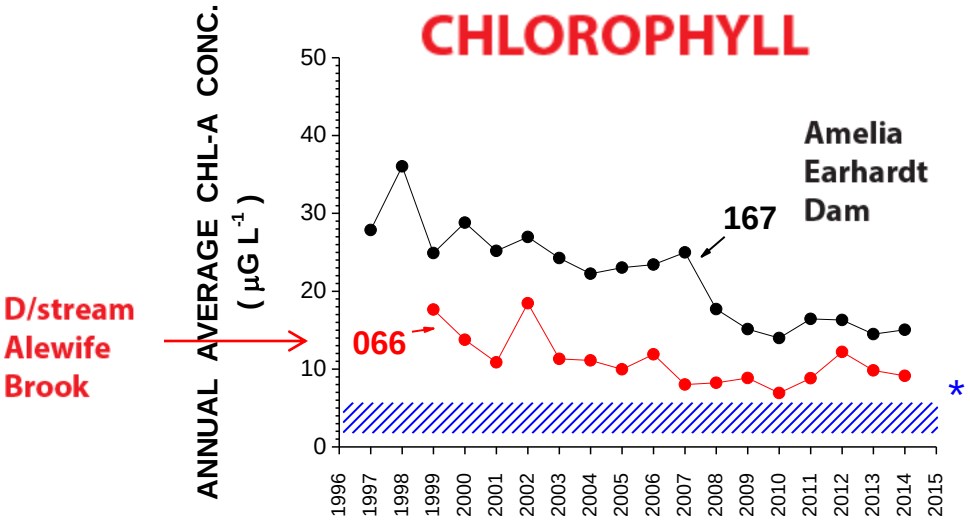
● OVER-ENRICHMENT + PATHOGEN INDICATORS

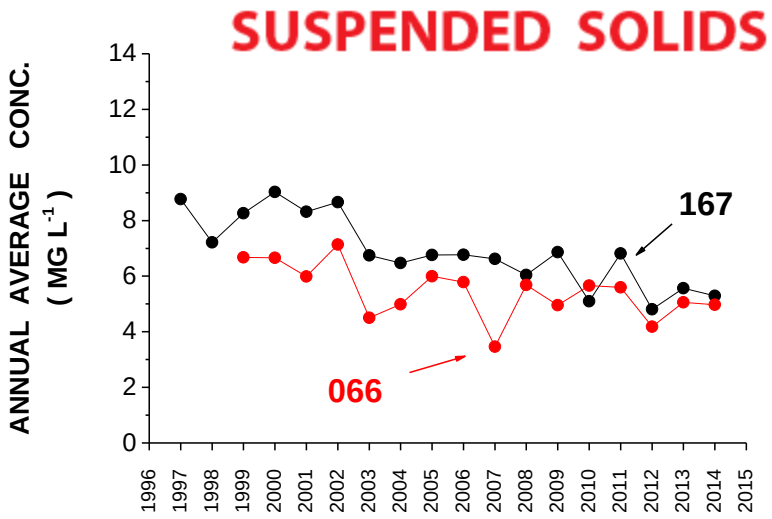
MICROALGAE IN THE WATER



* EPA's reference conditions for lakes and reservoirs in Subecoregion 59 of Nutrient Ecoregion XIV (US EPA Ambient Water Quality Criteria Recommendations, EPA 822-B-01-011)

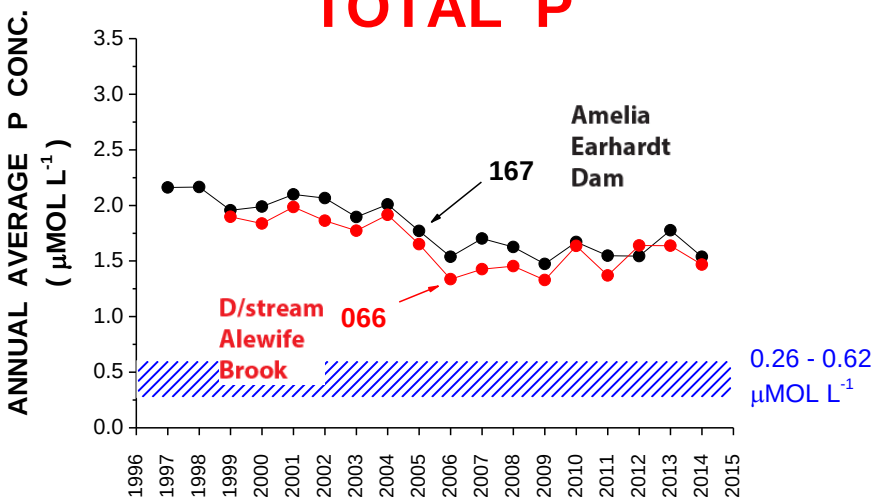
MICROALGAE & SUSPENDED SOLIDS



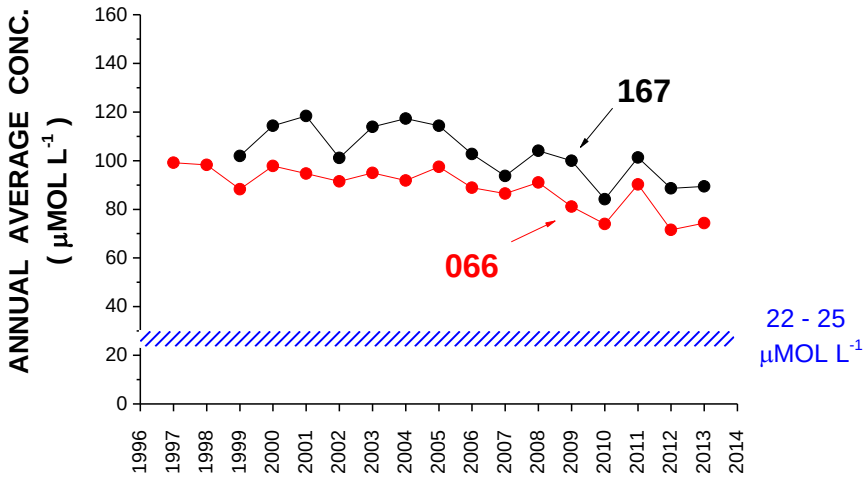


PHOSPHORUS & NITROGEN

TOTAL P



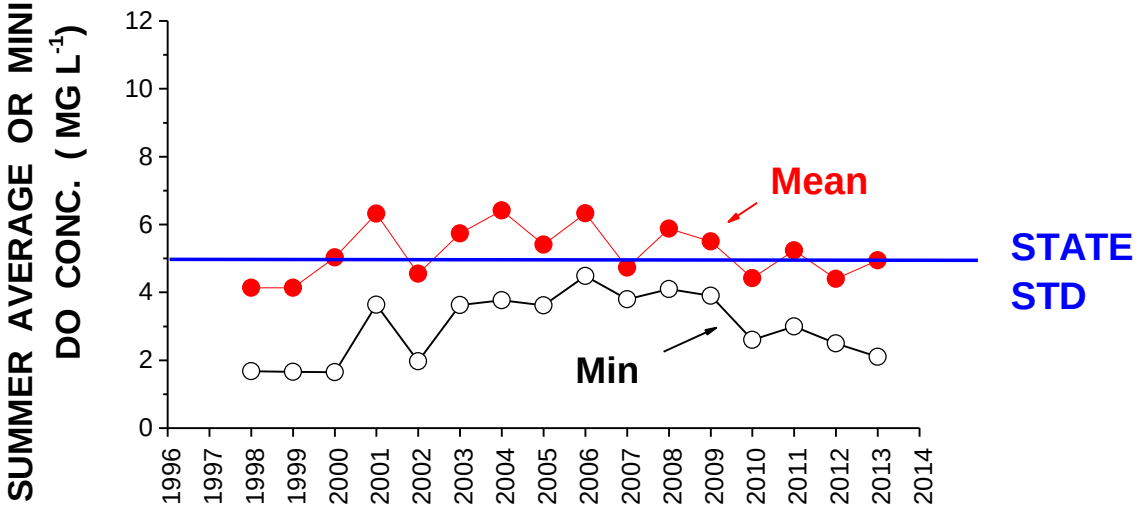
TOTAL N



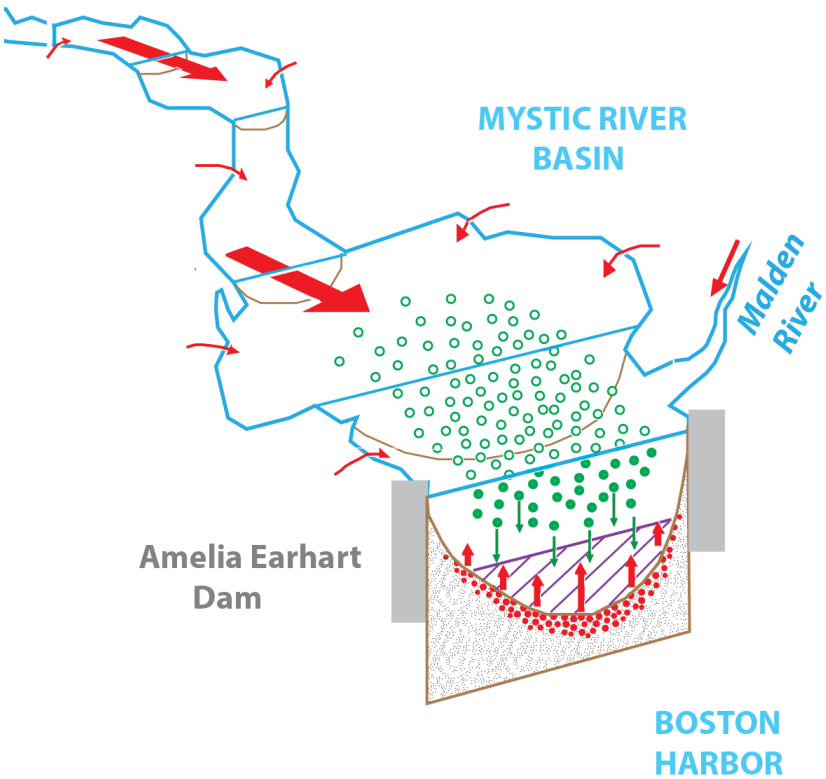
DISSOLVED OXYGEN

BOTTOM DO

(167 only)



SUMMARY



Mystic River basin continues to be over-enriched

- microalgae, P much higher than EPA reference conditions
- DO below state standard
- dense rooted macrophyte populations

During past 20 years enrichment related water quality shown real changes

- a decline in microalgae, P and N, and solids
- no trend in DO.

Possible causes of the changes might include

- decline in P inputs?
- increased 'processing' of P by spreading rooted plants upstream ?
- increased basin flushing (river flows or bay-basin exchanges). ?