

# EXHIBIT 47 (AR H.37)

## Phone Log

**Contact:** Fred Short, UNH

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**Date:** November 14, 2011

**RE:** Light Attenuation/Macro Algae Issues in Great Bay

In a several recent meetings Coalition Communities have informed us that according to Fred Short at UNH the decline in eelgrass in Great Bay is due to macro algae and not to issues associated with light attenuation. I called Fred to see if this characterization is correct either to Great Bay proper or the Great Bay Estuary as a whole.

Fred informed me that the issue with Great Bay proper is mostly macro algae. Because the eelgrass beds in this portion of the estuary are intertidal (i.e. exposed at low tide) the plants are able to receive a significant amount of light during low tides. However, he did say that light attenuation is still an issue in this area because during high tide the plants are not getting enough light due to high light attenuation coefficients in the water column. In other portions of the estuary the eelgrass beds are subtidal (i.e. submerged during all phases of the tide) and light attenuation is a major issue in these areas.

Another issue which Fred has been noticing is that the eelgrass in the estuary is putting significant energy into reproduction. The plants are produces a very high number of seeds. This is a typical survival response. When stressed, the plants will put more energy into reproduction to maintain the population. This takes away energy from plants growing and creating more shoots. Fred noticed there was a bed of eelgrass that appeared in Little Bay this year (his did not indicate the size) where it had disappeared. He said this bed is unlikely to survive because of it is intertidal and the light attenuation is poor.