Appendix H

Comprehensive Tidal Wetland Survey Results

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The Tidal Wetland Work Group polled wetland experts on the relative vulnerability of different types of Wetlands to five climate change parameters that are expected to change in the Delaware Estuary watershed. See Section 3.4 in Chapter 3 for an explanation of the survey method and Section 3.5 for interpretation of survey results. This appendix includes all major survey data collected, which are organized as follows:

H.1 Vulnerability Examined by Tidal Wetland Group. Relative levels of vulnerability concern and response confidence are shown in bar plots for how five climate change drivers (x-axis) could affect aspects of wetland fitness, and for two different wetland groupings (Freshwater Tidal Wetlands, Salt/Brackish Tidal Wetland). For all plots, the y-axis is the average score derived from the survey on relative risks and confidence. The plots depict relative vulnerability and relative confidence in the projections. The five climate drivers are shown on the x-axes. Relative levels of vulnerability and confidence were integrated (multiplied together) to derive a composite weighted vulnerability index, a unitless metric. In figure H.1.4 wetland fitness, is compared for two climate drivers (sea level rise & salinity).

List of Figures:

Table H.1. The wetland survey was started by twenty wetland experts, but only ten finished the survey. The following respondents agreed to be listed

Richard G. Lathrop	Rutgers
Evans, Brenda Q.	PSEG
Dorina Frizzera	NJ Coastal Management Office
David Bushek	Rutgers Haskins Shellfish Lab
Mike Haberland	Environmental and Resource Management Agent Rutgers Cooperative Extension of Burlington and Camden Counties
William Shadel	American Littoral Society
Gregory Breese	US Fish and Wildlife Service
Christopher Bason	Center for the Inland Bays

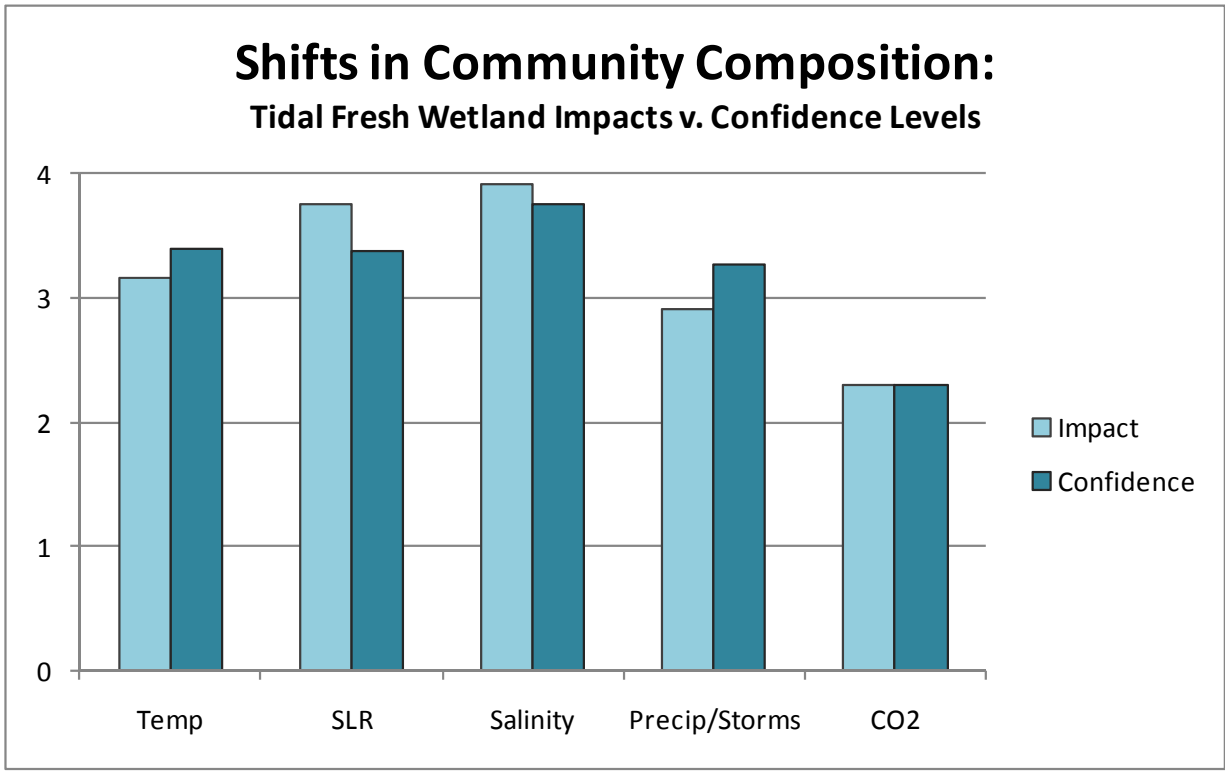

Figure H.1.1 Freshwater Tidal Wetland – Impacts v. Confidence of Species Composition Shifts

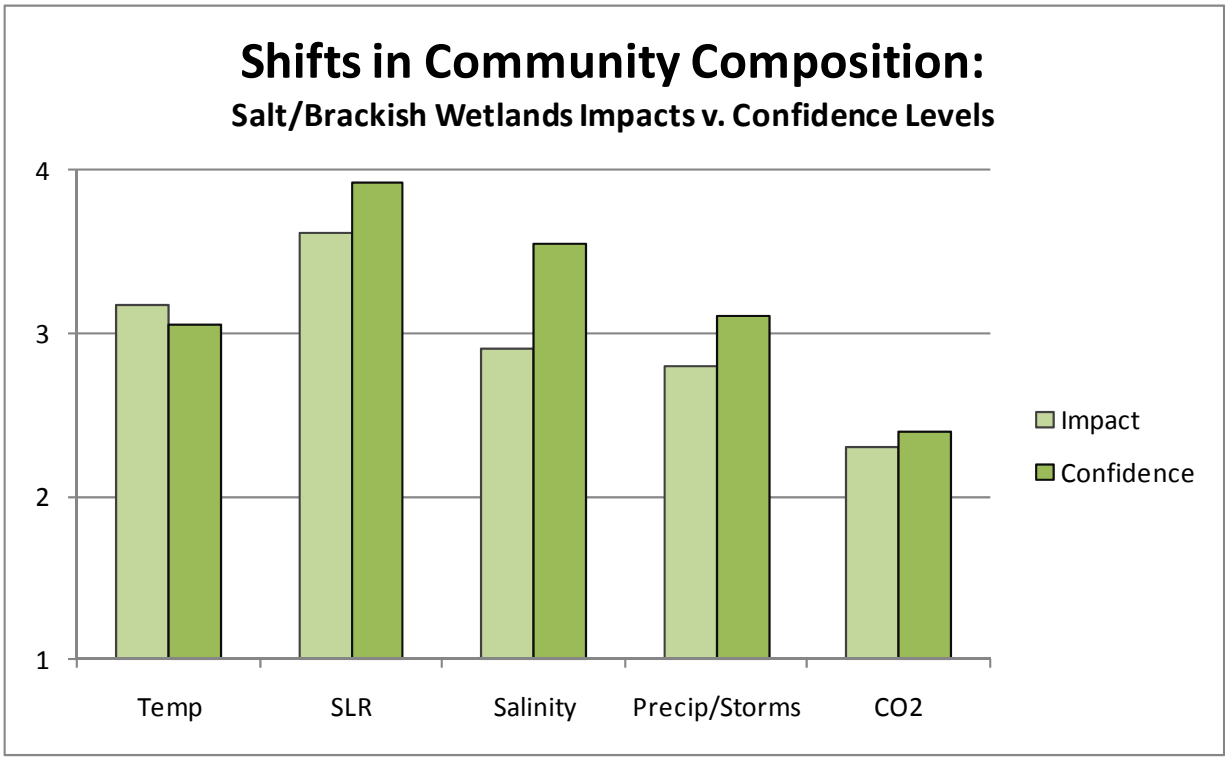

Figure H.1.2 Salt/Brackish Tidal Wetland – Impacts v. Confidence of Species Composition Shifts

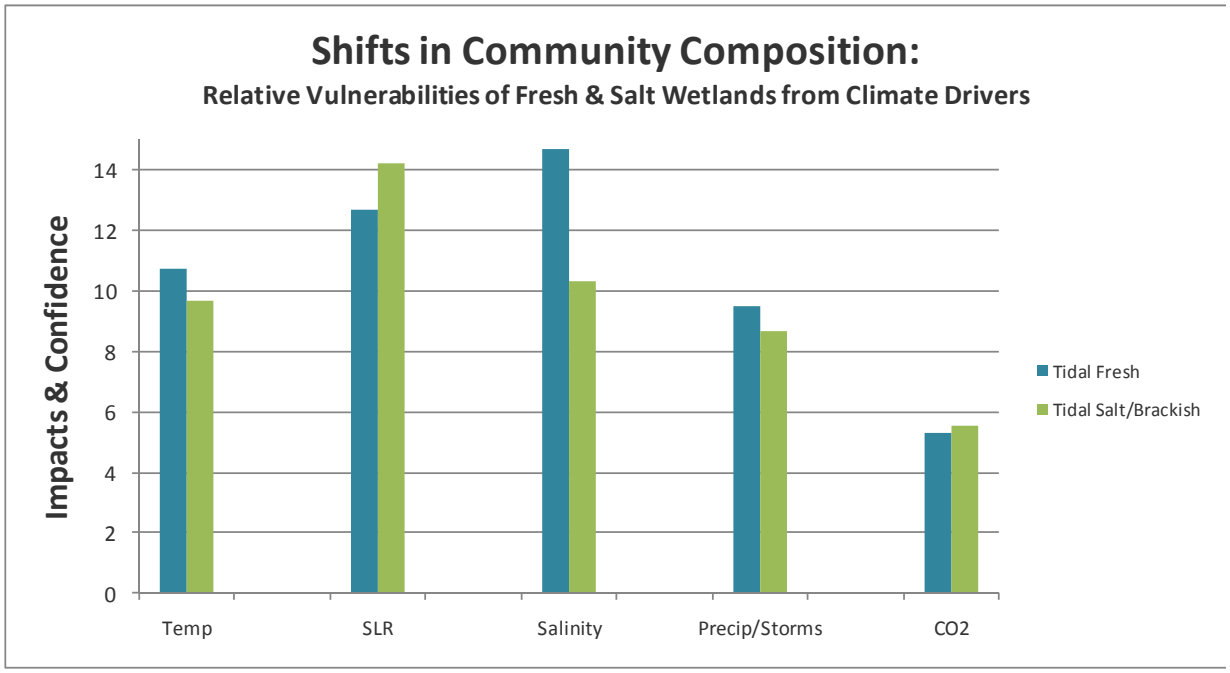

Figure H.1.3 Freshwater & Salt/Brackish Tidal Wetland – Combined Impacts and Confidence for Species Composition Shifts

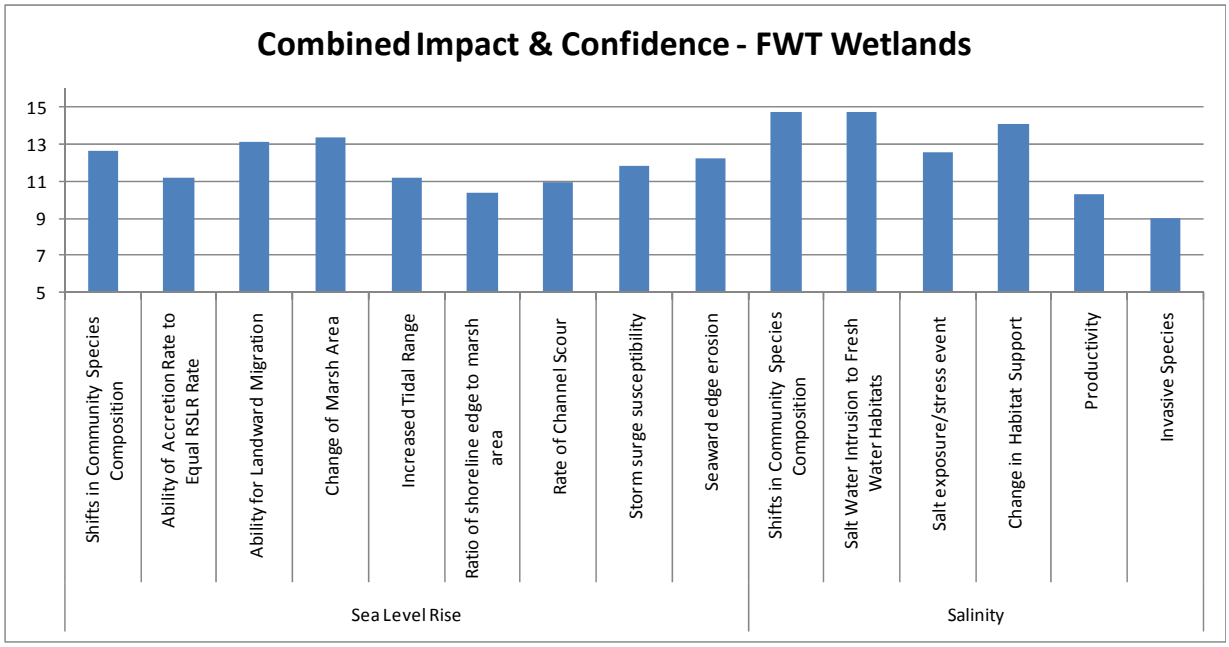

Figure H.1.4 Freshwater Tidal Wetland – Combined Impacts and Confidence for Vulnerabilities to Sea Level Rise and Salinity

H.2 Comparison of Effectiveness of Adaptation Options. For each of the five climate drivers, the projected feasibility and effectiveness of various adaptation tactics was evaluated for alleviating expected impacts. The three different groups of Wetlands were compared in the three columns in each table. The following tables were provided in the main text for Chapter 3.

List of Tables:

H.3 Comparison of Effectiveness Ecosystem Service Change. For each of the five climate drivers, survey respondents were asked to consider net ecosystem service changes in each of the wetland fitness categories. This was completed for both Tidal Fresh Wetlands and Salt/Brackish Wetlands as showing in the figures below.

List of Tables:

H.3 Ecosystem Service Changes Examined by Tidal Wetland Group

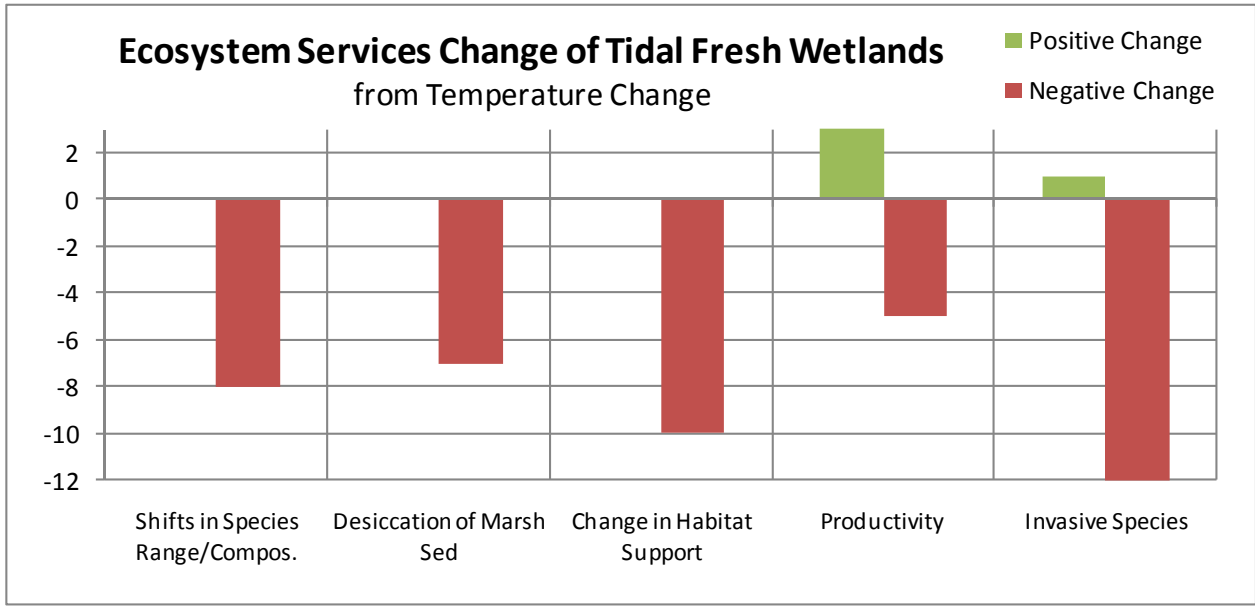

Figure H.3.1 Tidal Fresh Wetlands – Ecosystem Services Changes from Temperature Changes

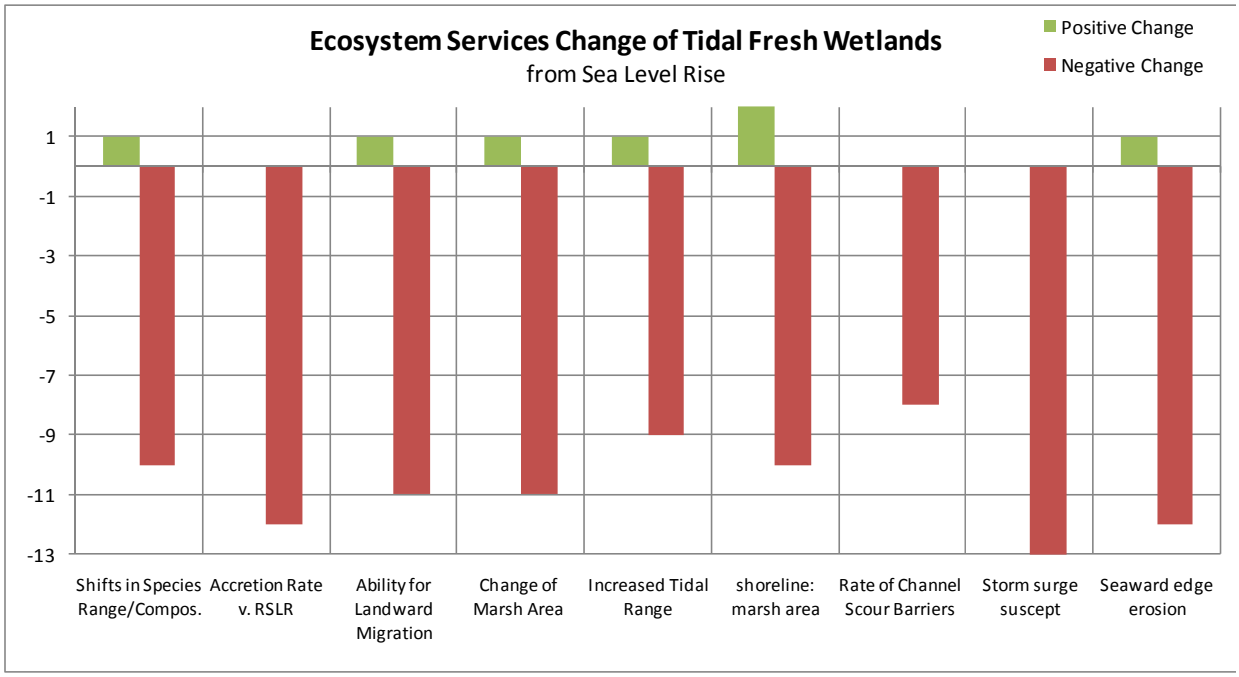

Figure H.3.2 Tidal Fresh Wetlands – Ecosystem Services Changes from Sea Level Rise

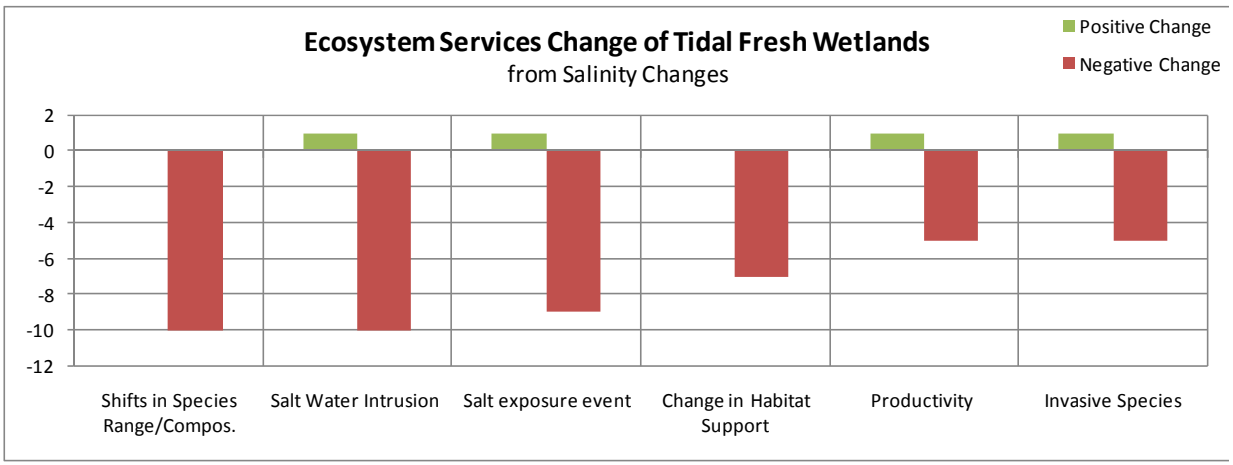

Figure H.3.3 Tidal Fresh Wetlands – Ecosystem Services Changes from Salinity Change

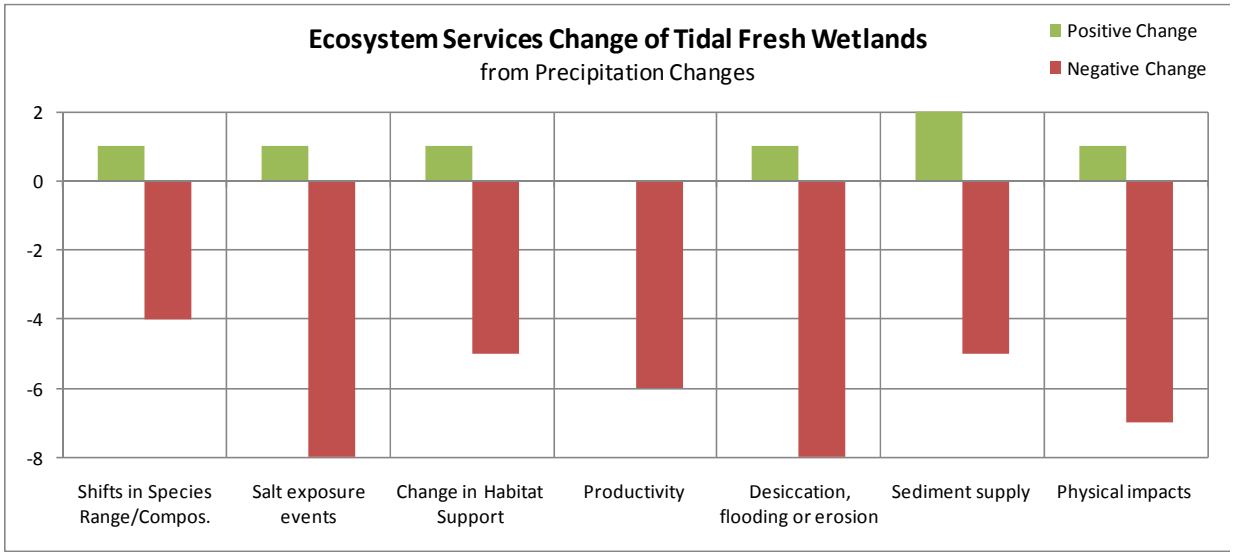

Figure H.3.4 Tidal Fresh Wetlands – Ecosystem Services Changes from Precipitation Changes

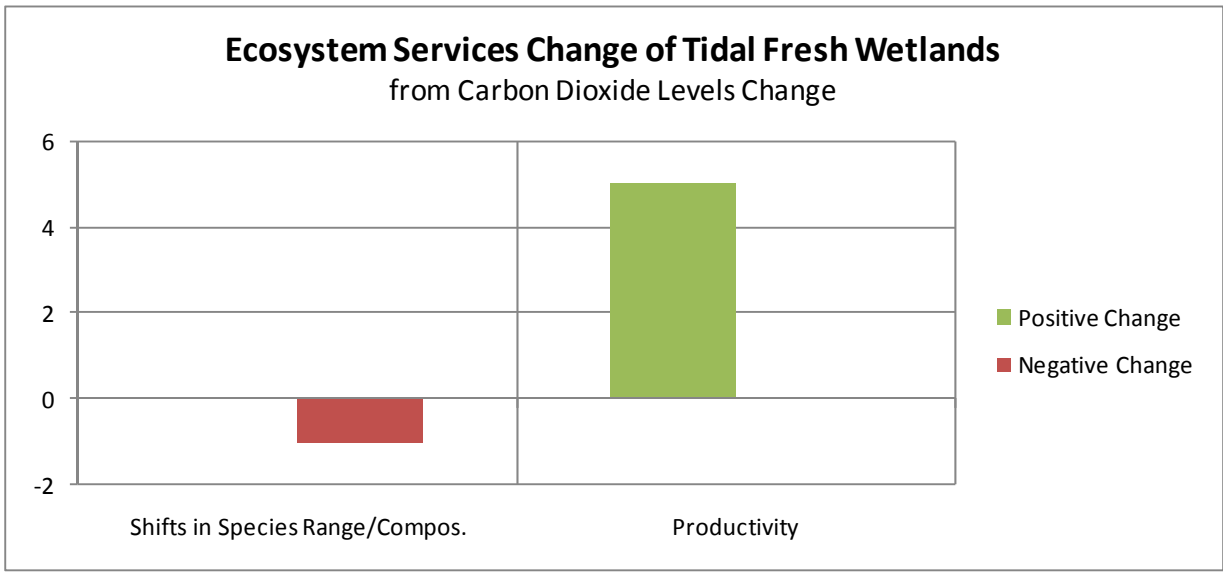

Figure H.3.5 Tidal Fresh Wetlands – Ecosystem Services Changes from Carbon Dioxide Changes

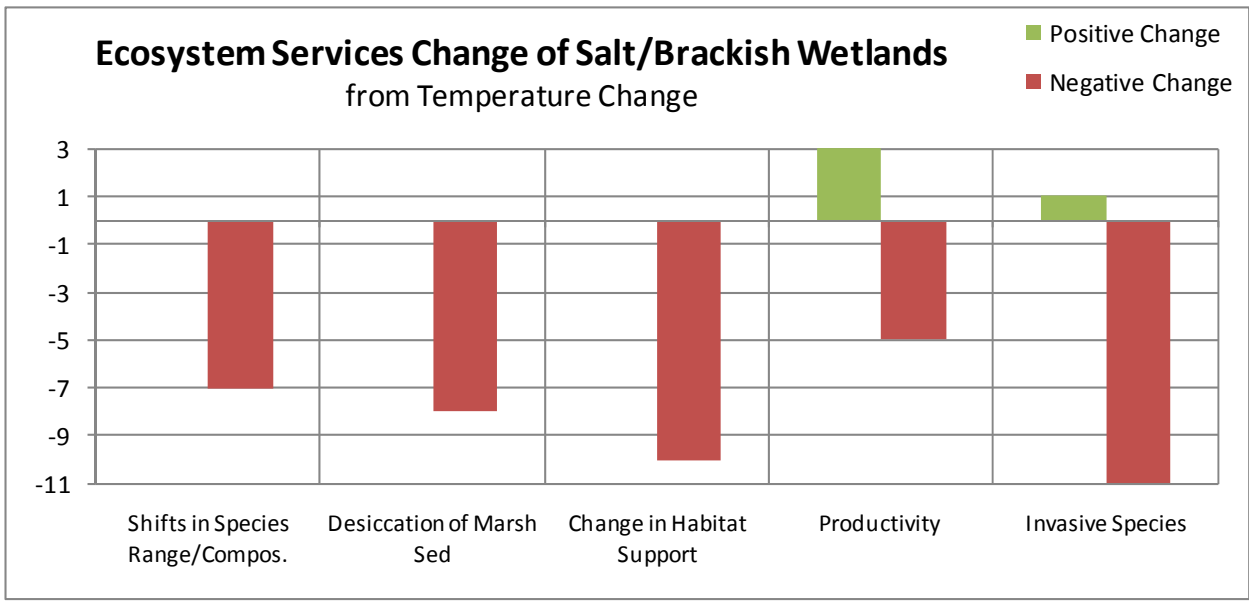

Figure H.3.6 Tidal Salt/Brackish Wetlands – Ecosystem Services Changes from Temperature Changes

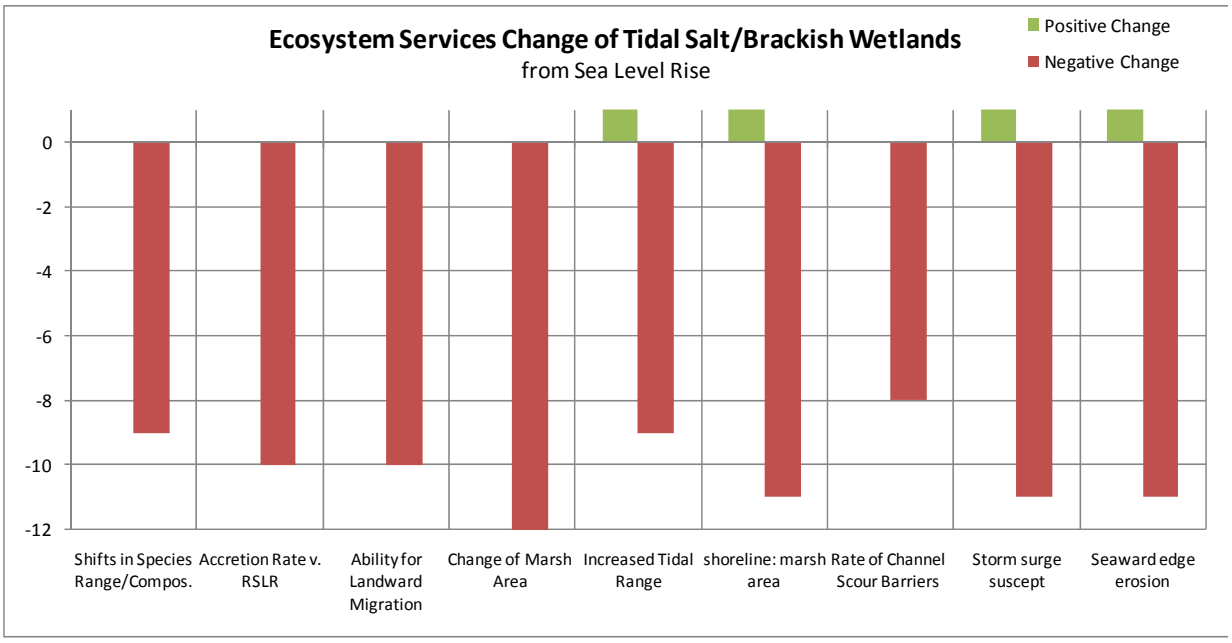

Figure H.3.7 Tidal Salt/Brackish Wetlands – Ecosystem Services Changes from Sea Level Rise

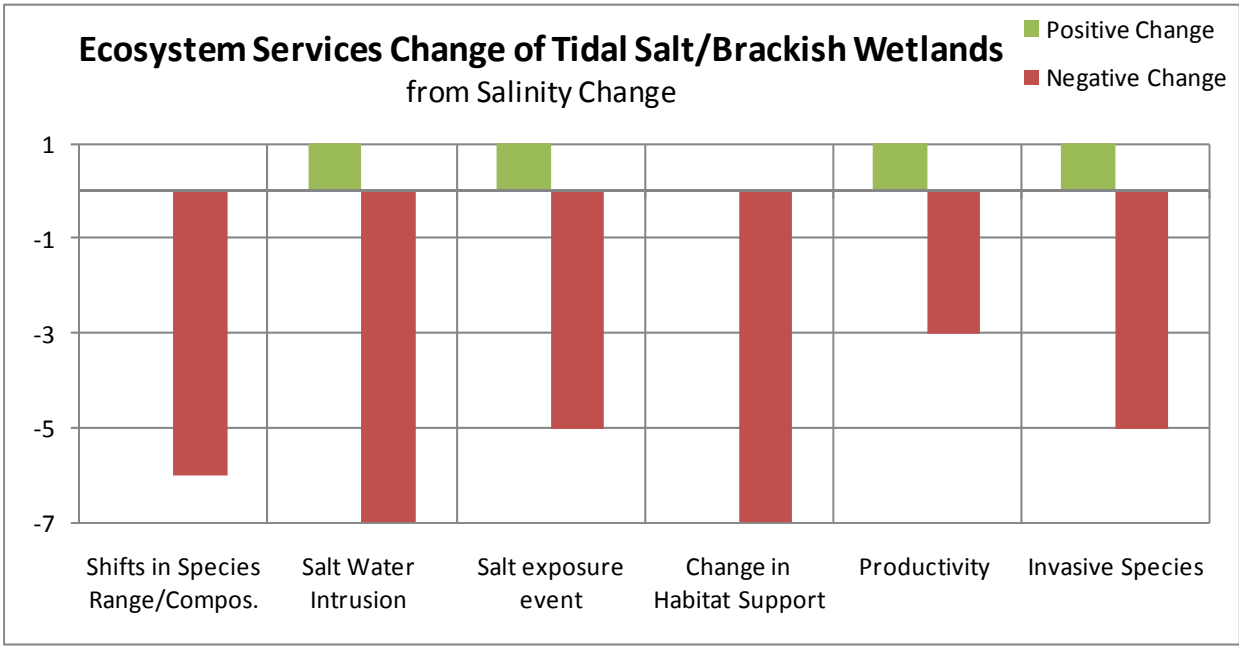

Figure H.3.8 Tidal Salt/Brackish Wetlands – Ecosystem Services Changes from Salinity Change

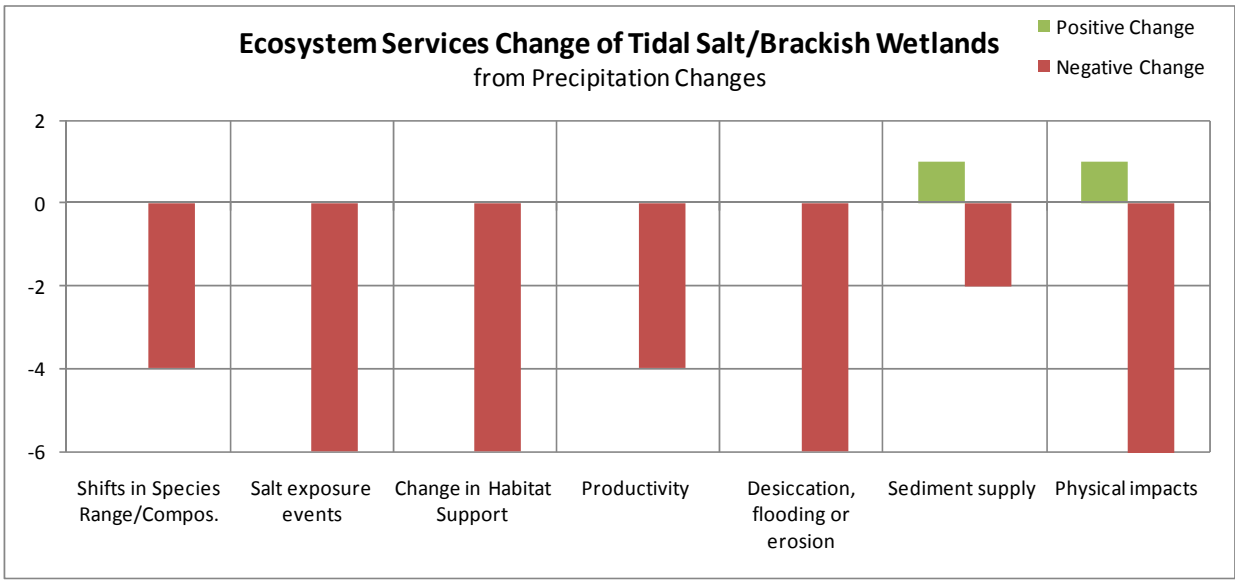

Figure H.3.9 Tidal Salt/Brackish Wetlands – Ecosystem Services Changes from Precipitation Changes

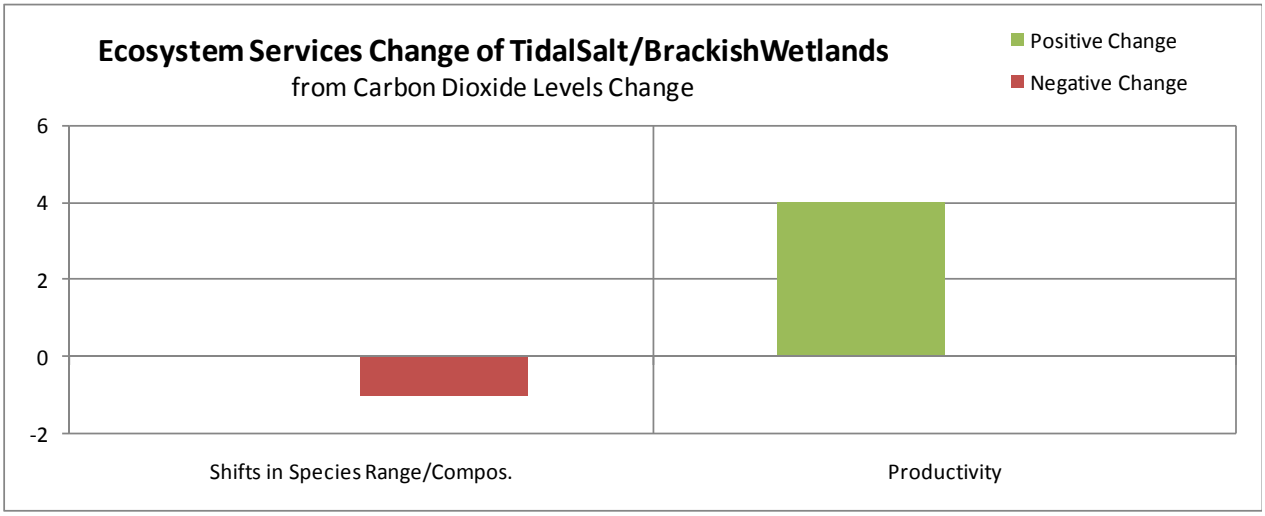

Figure H.3.10 Tidal Salt/Brackish Wetlands – Ecosystem Services Changes from Carbon Dioxide Changes