



# Coastal Groundwater – Lewes BPW Briefing

Feb. 2021

Scott Andres, Delaware Geological Survey

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State of Delaware  
 DELAWARE GEOLOGICAL SURVEY  
 John H. Talley, State Geologist



REPORT OF INVESTIGATIONS NO. 65



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 John H. Talley, State Geologist



REPORT OF INVESTIGATIONS NO. 66



State of Delaware  
 DELAWARE GEOLOGICAL SURVEY  
 David R. Wunsch, State Geologist



BULLETIN NO. 21C

**GROUNDWATER QUALITY AND MONITORING OF  
 RAPID INFILTRATION BASIN SYSTEMS (RIBS), THEORY  
 AND FIELD EXPERIMENTS AT  
 CAPE HENLOPEN STATE PARK, DELAWARE**

By

Scott Andres<sup>1</sup>, Edward Walther<sup>2</sup>,  
 Müserref Türkmen<sup>3</sup>, Changing He<sup>4</sup>,  
 Anastasia E. M. Chirnside<sup>4</sup>, William Ritter<sup>4</sup>



Delaware Geological Survey  
 University of Delaware  
 Newark, Delaware  
 2015

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<sup>3</sup> Izmir Water and Sewerage Administration, Izmir, Turkey  
<sup>4</sup> College of Agriculture and Natural Resources, University of Delaware

**WELLHEAD PROTECTION AREA DELINEATIONS  
 FOR THE LEWES-REHOBOTH BEACH AREA, DELAWARE**

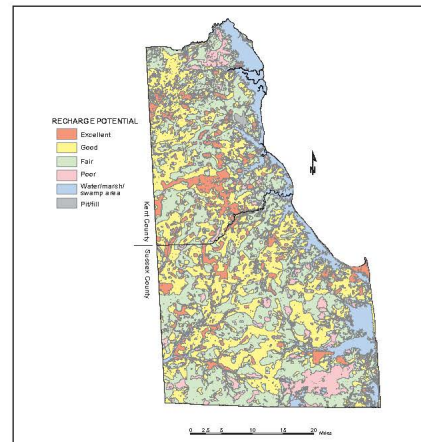


Newark, Delaware

2003

**GROUND-WATER RECHARGE POTENTIAL MAPPING  
 IN KENT AND SUSSEX COUNTIES, DELAWARE**

by  
 A. Scott Andres

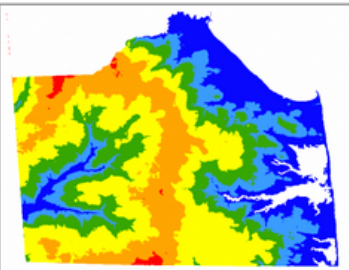


University of Delaware  
 Newark, Delaware

2004

# Water table mapping products

## Digital Water-Table Data for Sussex County, Delaware (Digital Data Product No. 05-01)



Digital Water-Table Data for Sussex County, Delaware

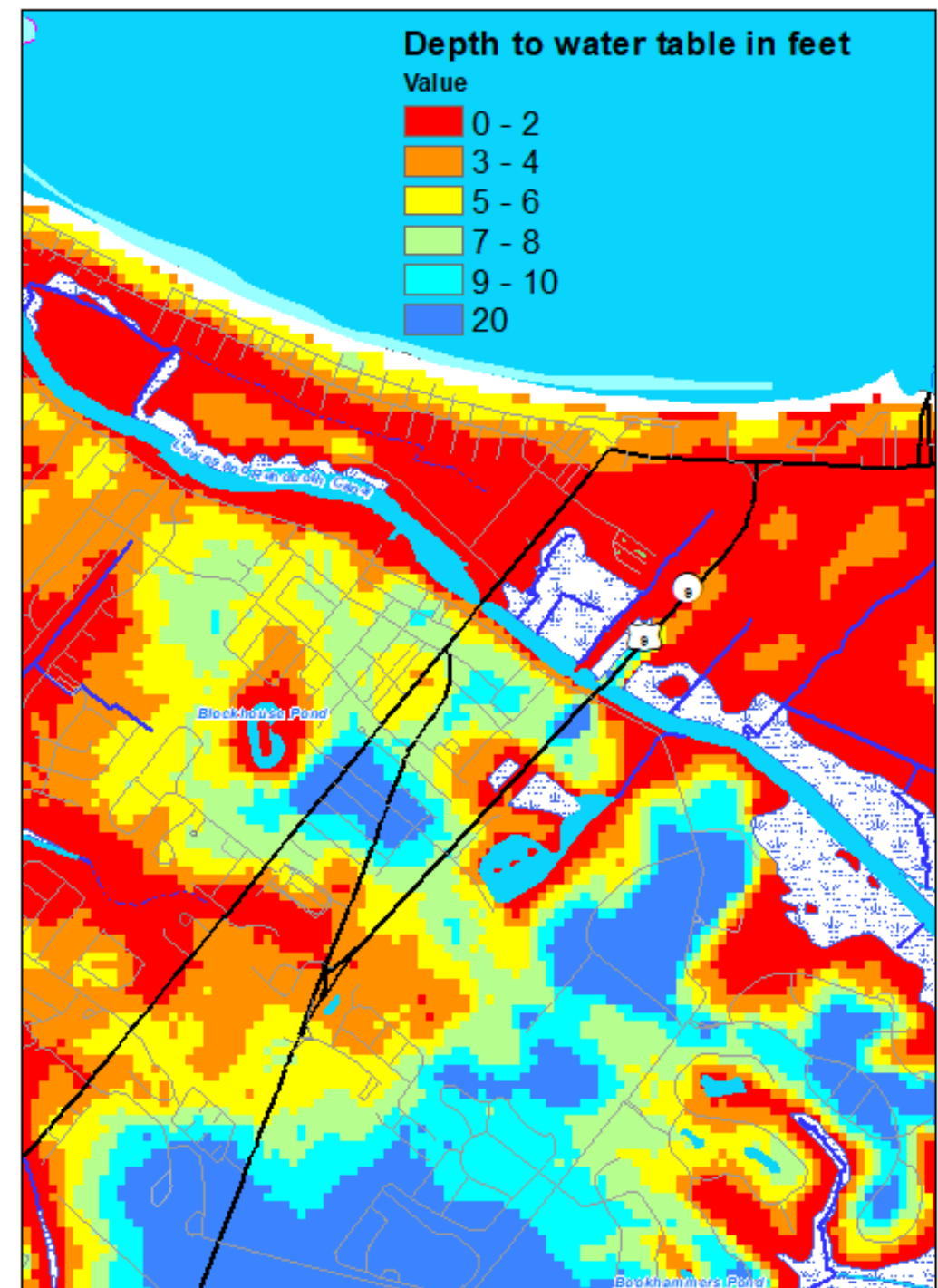
**Primary Data Category:** Hydrogeology  
**Publication Date:** Sep 2005  
**Update Status:** Completed

### Summary

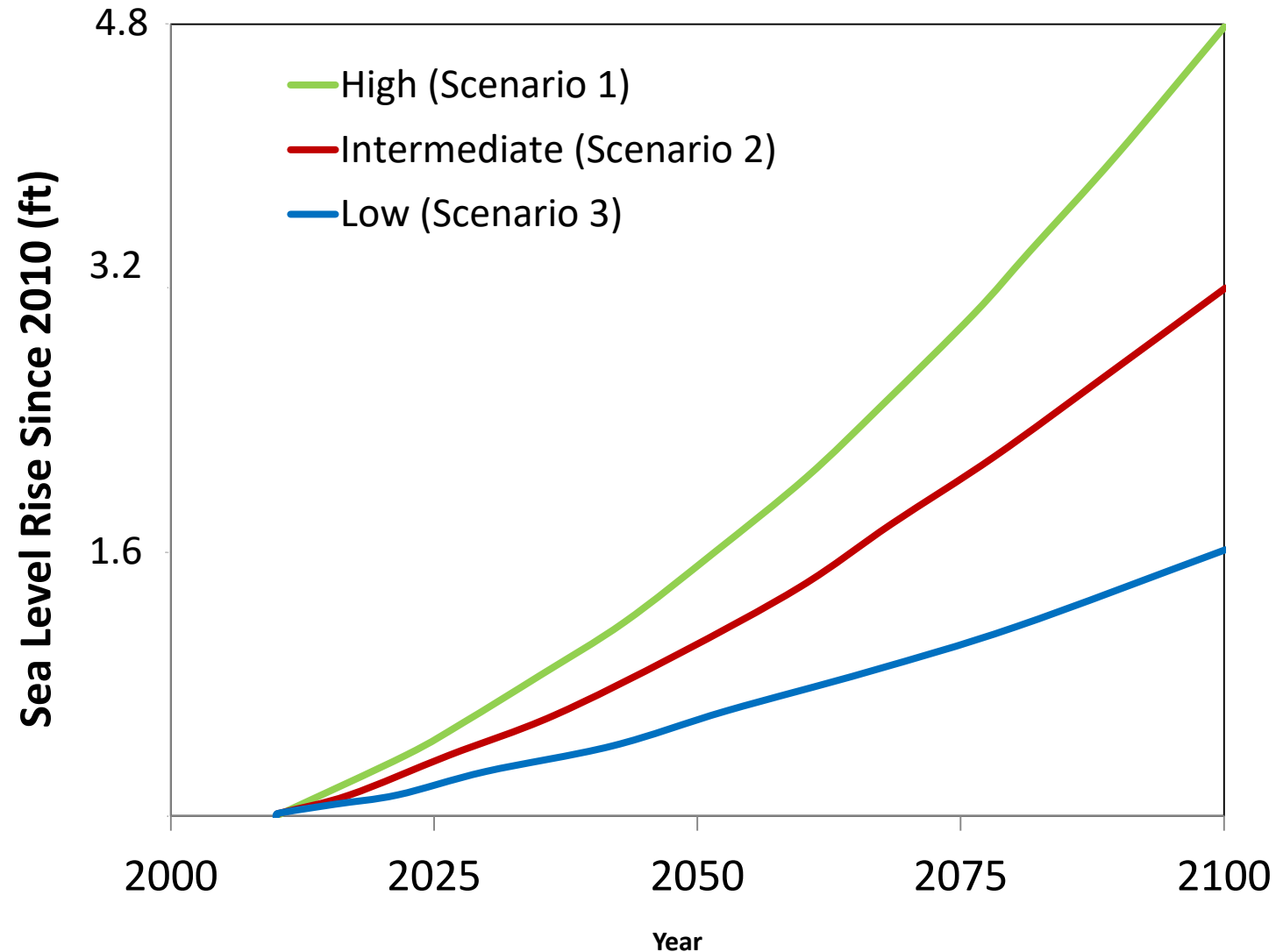
This digital product contains gridded estimates of water-table (wt) elevation and depth to water (dtw) under dry, normal, and wet conditions for Sussex County, Delaware. Files containing the point data used to create the grids are also included. This work is the final component of a larger effort to provide estimates of water-table elevations and depths to water for the Coastal Plain portion of Delaware. Mapping was supported by the Delaware Department of Natural Resources and Environmental Control and the Delaware Geological Survey. These grids were produced with the

Sea level rise will decrease depth to water table and water table will flood land surface more frequently during storms and high tides

Saltwater intrusion will occur – both laterally and top down. Maintain freshwater head to delay intrusion.



# Delaware Sea Level Rise Planning Scenarios

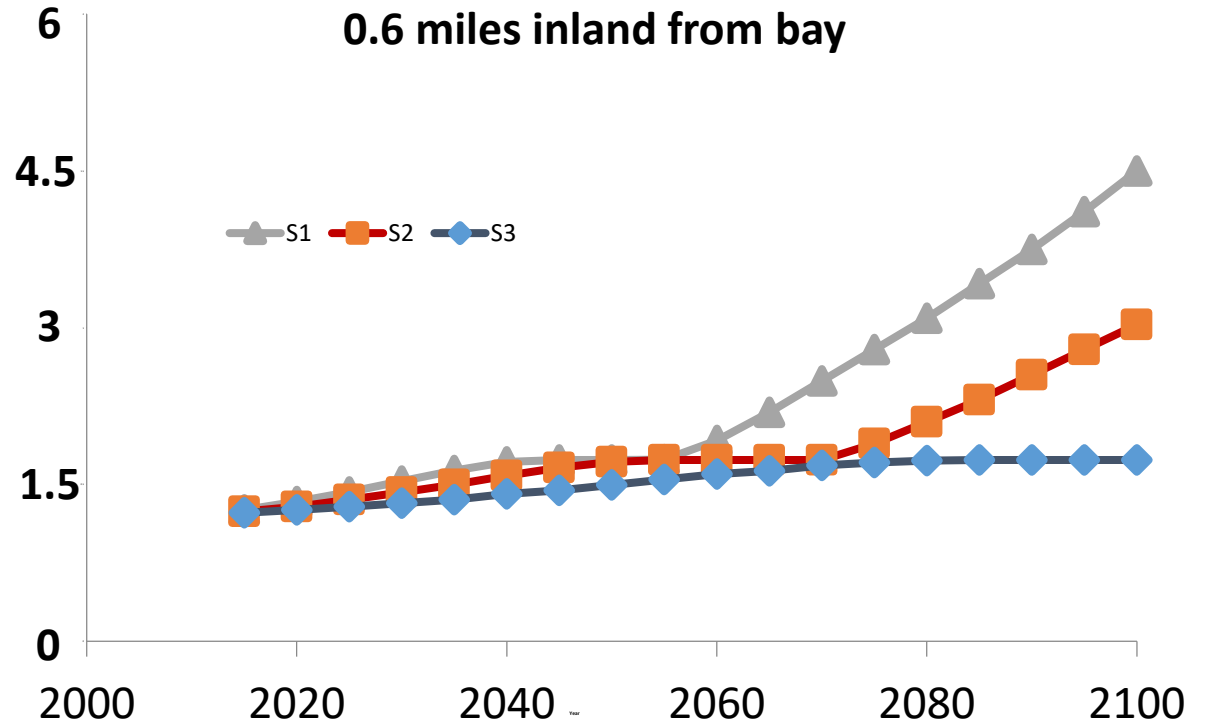
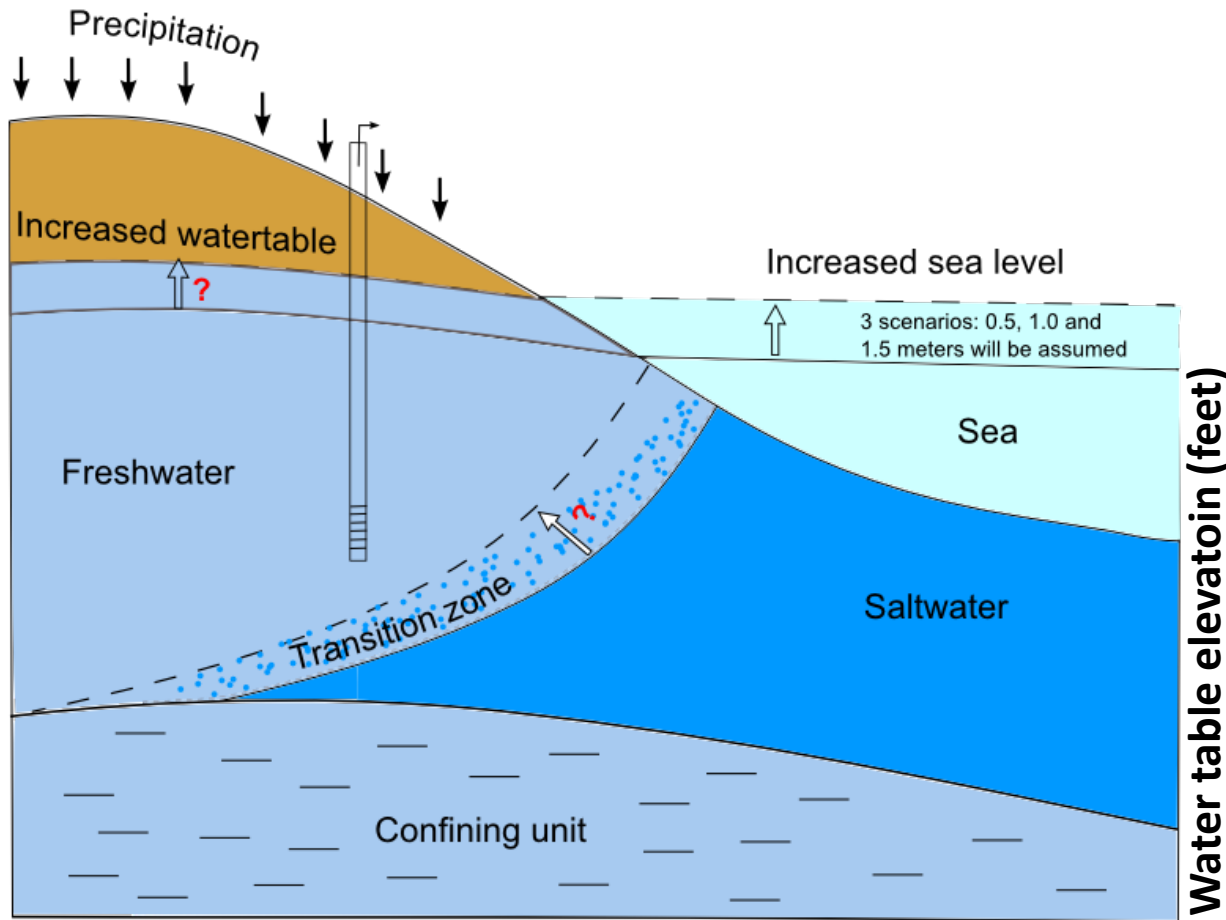


3.42 mm/yr (.011 ft/yr) local rise rate – 1.1 ft since 1919

# Sea level rise (SLR) and water table rise (WTR) will impact many aspects of life along the coast

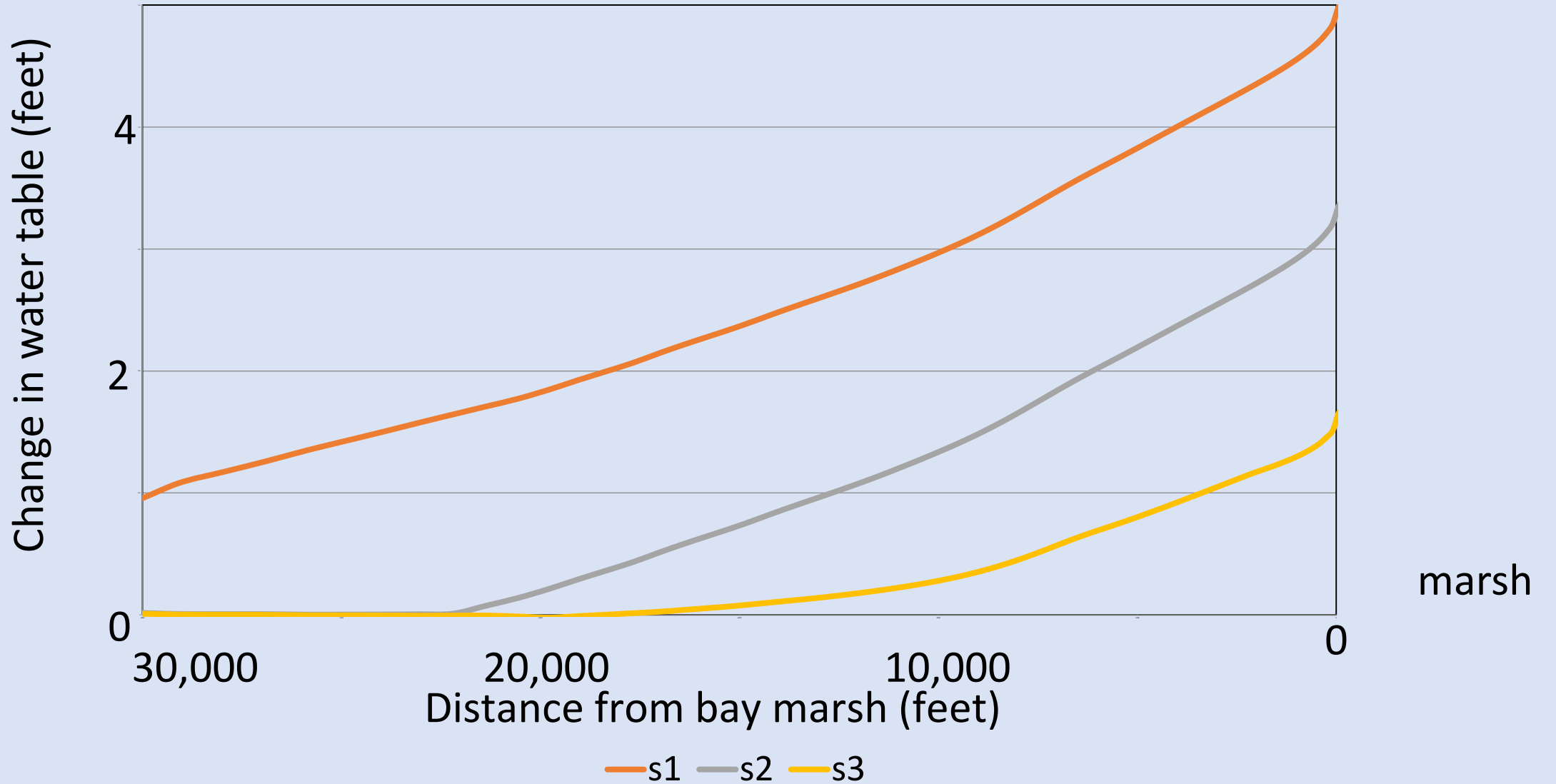
2010 - 2100 Sea Level and Water Table rise in feet

SLR	WTR
1.5	0.6
3	1.6
4.5	3.1



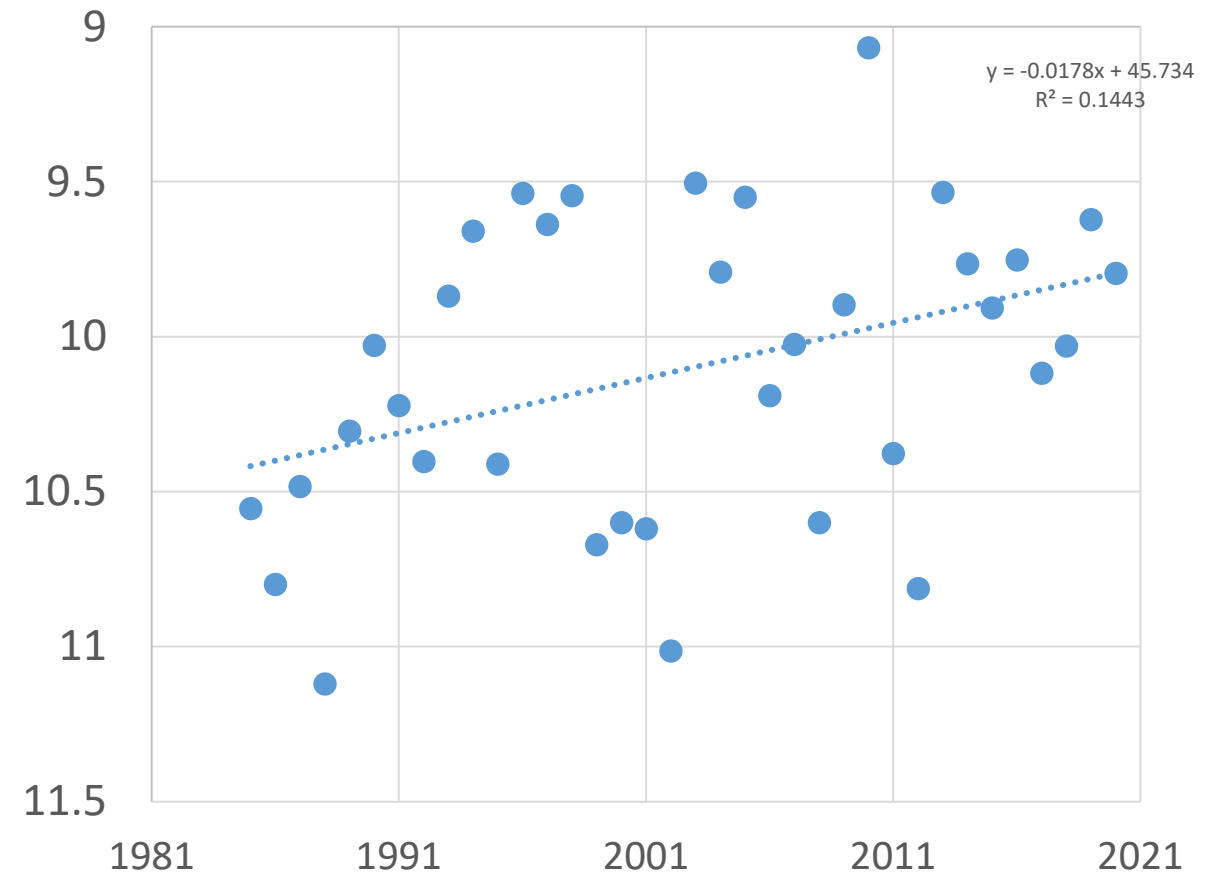
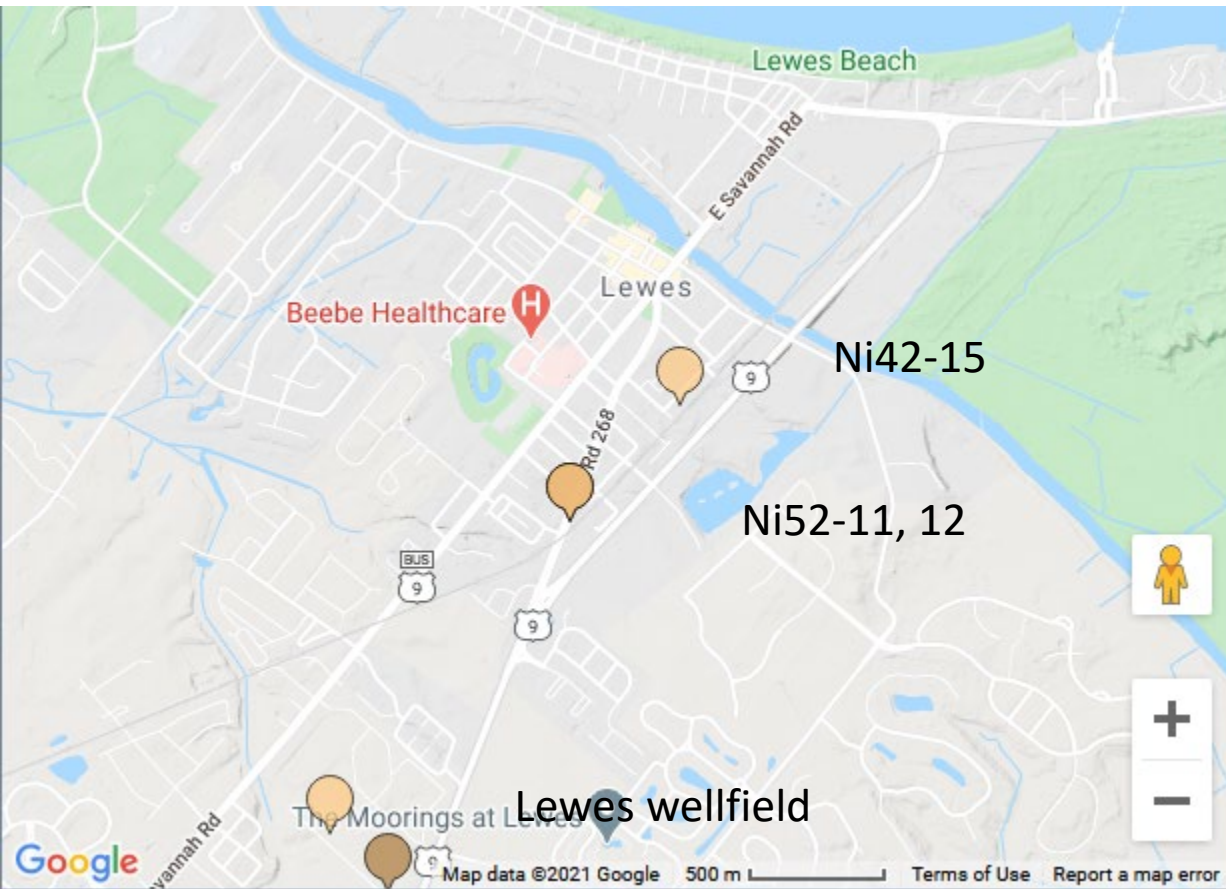
Adapted from He and McKenna (in press)

# Water table rise Year 2100



Adapted from He and McKenna (in press)

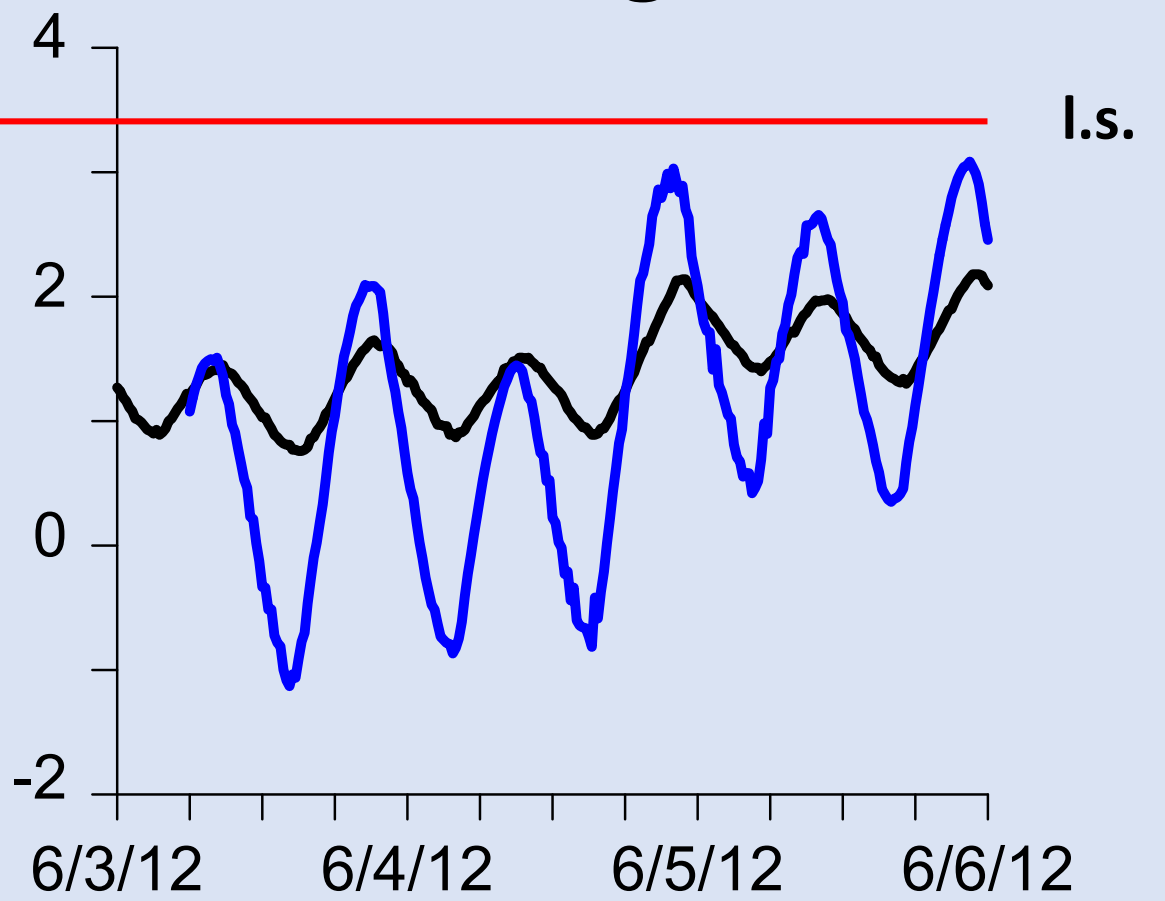
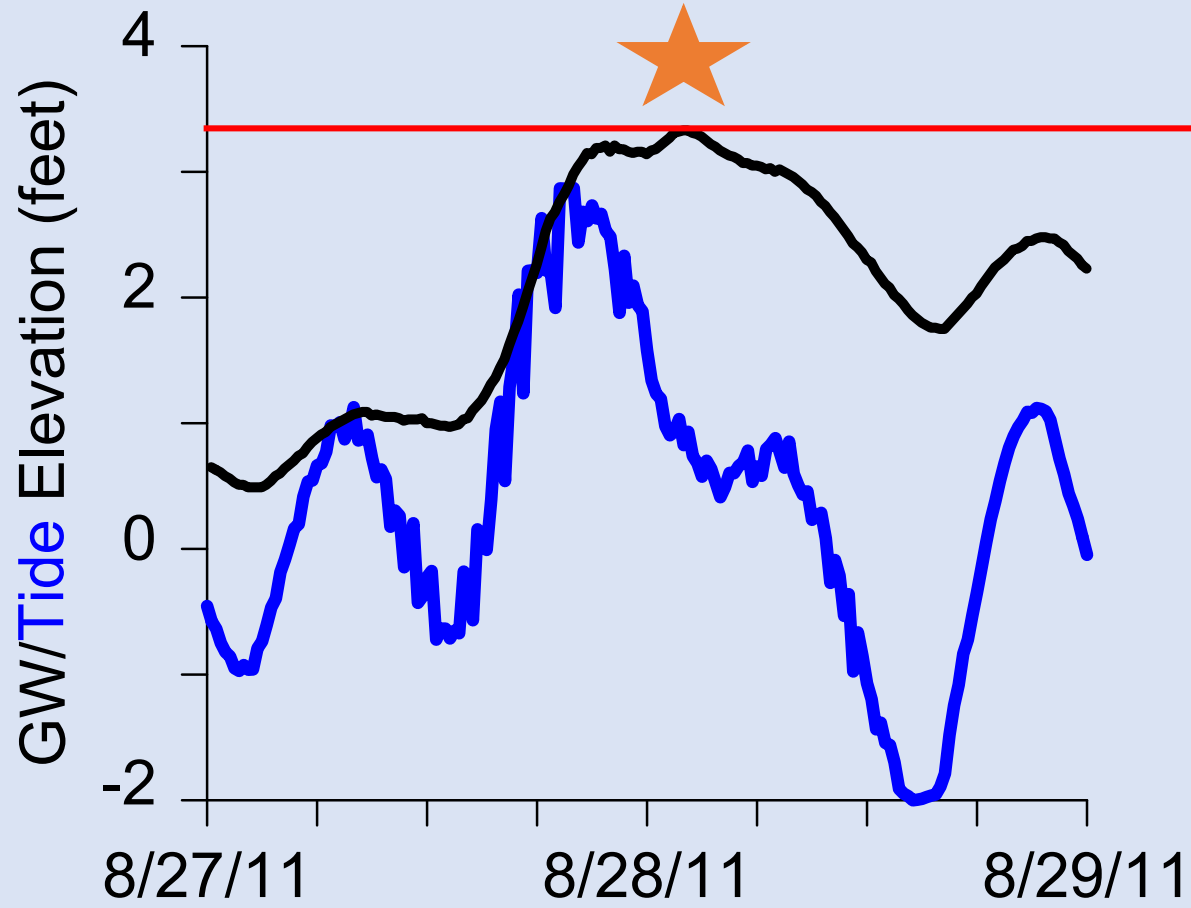
# Monitoring



# Storm & Tidal Flooding Field Data

Irene

lunar high tide





# Coastal Groundwater – Status and Trends