Electronic Supplementary Material

Multilayer Feedforward Artificial Neural Network Model to Forecast Florida Bay Salinity with Climate Change

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In this manuscript we have provided the following supplementary materials:

Datasets used for baseline and forecasted salinities

Table S1 Classifications for Coastal Salinity Index values

Coastal Salinity Classification	**Description**	**CSI Values**
CD4	Exceptional salinity conditions	-2.00 or less
CD3	Extreme salinity conditions	-1.99 to -1.60
CD2	Severe salinity conditions	-1.59 to -1.30
CD1	Moderate salinity conditions	-1.29 to -0.80
CD0	Abnormal salinity conditions	-0.79 to -0.50
Normal	Normal salinity conditions	-0.49 to 0.50
CW0	Abnormal freshwater conditions	0.51 to 0.80
CW1	Moderate freshwater conditions	0.81 to 1.30
CW2	Severe freshwater conditions	1.31 to 1.60
CW3	Extreme freshwater conditions	1.61 to 2.00
CW4	Exceptional freshwater conditions	2.01 or more

The index represents changes in monthly salinity conditions with respect to average conditions in a site. Negative values are the number of standard deviations below the mean and represent increasing saline conditions (coastal drought CD). Positive values are the number of standard deviations above the mean and represent increasing freshwater conditions.

Table S2 Model performance evaluation for training and validation stages for every site

Site	Parameter	Training	Validation
MK	R^2	0.85	0.701
	RMSE	1.33	1.89
JK	R^2	0.83	0.72
	RMSE	1.59	2.06
GB	R^2	0.85	0.72
	RMSE	4.03	5.69
BK	R^2	0.78	0.7
	RMSE	2.52	3.03
TB	R^2	0.83	0.71
	RMSE	4.35	5.88
WB	R^2	0.82	0.71

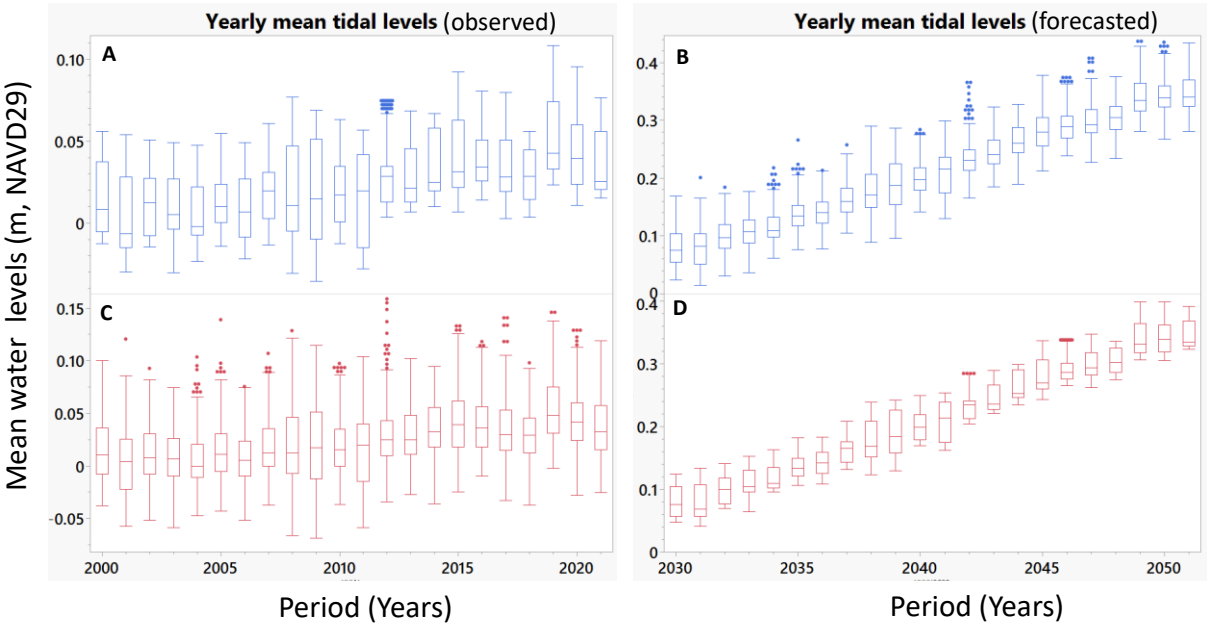

Figure S1. Annual observed sea level data (A), Annual forecasted sea level data (B), Low pass, smoothed observed sea level data (C), Low pass, smoothed forecasted sea level data

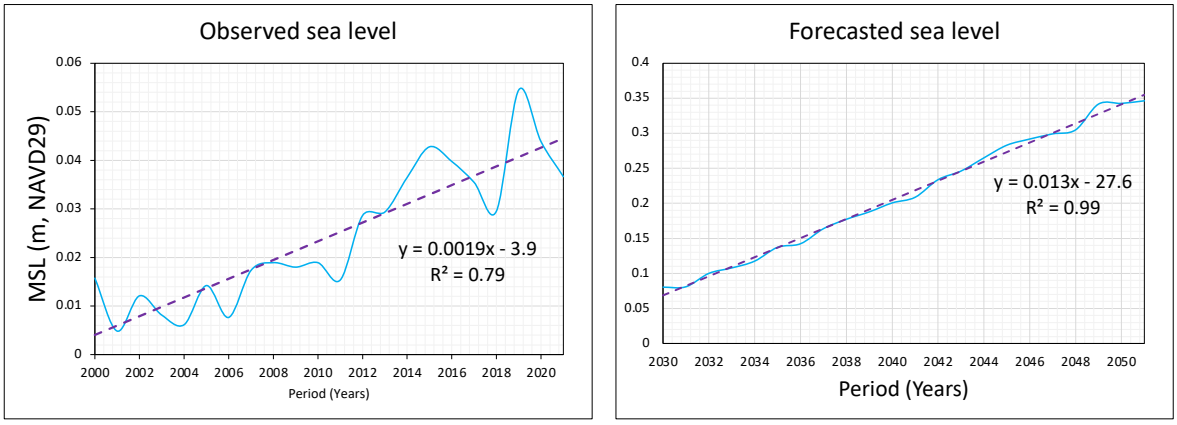

Figure S2. Observed and forecasted sea level with the regression trend line (dashed purple line), mean water levels (light blue line), regression equations, and R-squared values.