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Appendix F

Statistical Correlation Coefficients Among Selected Indicators

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Table F-1. Pearson Correlation Factors Among Indicated Indicators. Values range from +1 (high linear relationship between data sets) through zero (complete absence of a relationship) to -1 (high inverse linear relationship). Only values in blue are statistically significant, with greater than 95% certainty.

Surface Chlorophyll versus

	Water Depth	Bottom Salinity	Water Stratif	Secchi Depth	Surface Chl *a*	Bottom Diss Oxy	Surface Tot N	Surface Tot P	TN/TP Ratio	Sediment Grainsize	Sediment TOC	Sed Metals ERL/ERM	Sed Org ERL/ERM
Delaware Estuary	**-0.48**	0.07	-0.12	-0.10	N/A	0.41	0.24	0.32	-0.09	0.20	**0.35**	0.15	0.20
Schuylkill River	0.61	N/A	-0.17	0.19	N/A	**-0.86**	-0.54	**-0.91**	**0.90**	0.71	**-0.74**	0.53	-0.58
Salem River	**-0.79**	**-0.64**	-0.16	**-0.72**	N/A	**-0.71**	-0.02	**0.90**	**-0.86**	0.40	**0.71**	0.55	0.51
Chesapeake Bay	**-0.33**	**-0.59**	**-0.35**	**-0.49**	N/A	**0.30**	**0.56**	**0.51**	-0.09	-0.14	0.43	**0.48**	**0.63**
Severn River	-0.09	0.10	-0.09	**-0.51**	N/A	0.20	**0.66**	**0.47**	-0.29	0.15	-0.12	0.12	0.03
South River	0.09	-0.39	0.09	**-0.47**	N/A	0.02	**0.88**	**0.57**	-0.33	0.19	0.20	0.24	0.38
Eastern Bay	0.55	0.58	0.54	-0.02	N/A	-0.61	0.53	-0.06	0.02	0.62	0.44	**0.73**	0.64
Pocomoke River	**0.90**	**1.00**	N/A	-0.87	N/A	0.32	0.58	0.67	0.16	**0.98**	0.78	**1.00**	**1.00**
St. Jerome Creek	-0.23	**-0.65**	N/A	**-0.78**	N/A	**-0.67**	**0.98**	**0.93**	-0.38	0.54	**0.64**	0.55	N/A
Pamunkey River	0.15	**0.75**	0.58	**-0.66**	N/A	0.16	0.23	0.53	-0.60	**0.62**	0.55	0.59	0.16
Mobjack Bay	-0.62	**-0.72**	-0.57	-0.43	N/A	0.24	0.56	0.41	-0.03	-0.60	-0.56	-0.48	-0.46
Cherrystone Inlet	-0.26	-0.29	0.49	**-0.69**	N/A	-0.47	0.06	0.10	-0.12	**0.64**	0.59	0.53	0.10
Coastal Bays	-0.19	**-0.78**	0.10	**-0.47**	N/A	0.34	**0.65**	**0.81**	0.48	**0.43**	**0.37**	0.19	0.11
Sinepuxent Bay	0.38	**-0.97**	N/A	-0.45	N/A	0.46	**0.94**	0.77	0.55	0.38	0.30	N/A	N/A
VA Coastal Bays	-0.09	-0.30	-0.19	-0.07	N/A	-0.46	0.50	0.41	0.14	-0.08	0.03	-0.45	**0.64**
Albemarle Pamlico	-0.20	-0.03	0.23	**-0.61**	N/A	0.25	**0.71**	0.03	**0.53**	**0.39**	0.29	-0.01	0.17

N/A: data not available

Bottom Dissolved Oxygen versus

	Water Depth	Bottom Salinity	Water Stratif	Secchi Depth	Surface Chl *a*	Bottom Diss Oxy	Surface Tot N	Surface Tot P	TN/TP Ratio	Sediment Grainsize	Sediment TOC	Sed Metals ERL/ERM	Sed Org ERL/ERM
Delaware Estuary	0.03	**0.67**	0.16	-0.02	0.41	N/A	**-0.60**	-0.30	**-0.53**	-0.07	-0.14	-0.28	**-0.46**
Schuylkill River	-0.32	N/A	0.27	-0.15	**-0.86**	N/A	0.03	0.65	**-0.74**	**-0.80**	**0.85**	-0.52	**0.78**
Salem River	0.46	0.14	0.17	0.46	**-0.71**	N/A	-0.05	-0.56	0.59	-0.15	-0.39	-0.22	**-0.90**
Chesapeake Bay	**-0.63**	**-0.35**	**-0.59**	**-0.26**	**0.30**	N/A	**0.35**	**0.32**	-0.08	**-0.23**	-0.04	**-0.28**	-0.12
Severn River	**-0.87**	**-0.45**	**-0.74**	**-0.47**	0.20	N/A	0.30	-0.02	0.21	**-0.73**	**-0.73**	**-0.81**	**-0.55**
South River	**-0.44**	0.01	**-0.63**	-0.14	0.02	N/A	0.14	-0.37	**0.68**	**-0.43**	**-0.58**	**-0.61**	**-0.47**
Eastern Bay	**-0.95**	**-0.90**	**-0.92**	-0.41	-0.61	N/A	**-0.65**	0.02	-0.48	**-0.84**	**-0.86**	**-0.89**	**-0.78**
Pocomoke River	0.39	0.34	N/A	-0.27	0.32	N/A	-0.01	0.55	-0.67	0.27	0.06	0.34	0.34
St. Jerome Creek	0.15	**0.69**	N/A	0.40	**-0.67**	N/A	-0.58	-0.63	0.44	-0.12	-0.31	-0.18	N/A
Pamunkey River	-0.19	0.02	-0.23	0.22	0.16	N/A	0.10	-0.26	0.62	0.47	0.51	0.31	-0.31
Mobjack Bay	**-0.76**	-0.36	**-0.70**	-0.39	0.24	N/A	0.36	0.32	-0.09	**-0.78**	**-0.80**	**-0.78**	-0.27
Cherrystone Inlet	0.04	0.44	-0.49	0.60	-0.47	N/A	**-0.78**	-0.52	-0.05	-0.54	-0.43	-0.40	-0.24
Coastal Bays	-0.12	**-0.40**	0.01	-0.08	0.34	N/A	0.24	0.26	0.32	0.02	0.20	0.23	0.29
Sinepuxent Bay	-0.30	-0.35	N/A	0.33	0.46	N/A	0.40	-0.20	0.82	-0.17	-0.21	N/A	N/A
VA Coastal Bays	-0.22	-0.36	-0.19	-0.22	-0.46	N/A	0.40	0.40	0.07	0.29	0.26	**0.69**	-0.35
Albemarle Pamlico	**-0.42**	0.09	**-0.26**	-0.16	0.25	N/A	0.02	-0.05	0.07	-0.07	-0.19	-0.19	0.01

N/A: data not available

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Table F-1 (con't). Pearson Correlation Factors Among Indicated Indicators. Values range from +1 (high linear relationship between data sets) through zero (complete absence of a relationship) to -1 (high inverse linear relationship). Only values in blue are statistically significant, with greater than 95% certainty.

Total Organic Carbon versus

	Water Depth	Bottom Salinity	Water Stratif	Secchi Depth	Surface Chl *a*	Bottom Diss Oxy	Surface Tot N	Surface Tot P	TN/TP Ratio	Sediment Grainsize	Sediment TOC	Sed Metals ERL/ERM	Sed Org ERL/ERM
Delaware Estuary	**-0.43**	**-0.44**	-0.22	**-0.26**	**0.35**	-0.14	**0.44**	**0.53**	0.07	**0.66**	N/A	**0.80**	**0.60**
Schuylkill River	**-0.80**	N/A	0.53	-0.01	**-0.74**	**0.85**	0.24	0.57	-0.60	**-0.99**	N/A	**-0.71**	0.36
Salem River	**-0.83**	-0.54	-0.32	**-0.86**	**0.71**	-0.39	0.19	**0.70**	**-0.72**	**0.91**	N/A	**0.89**	0.35
Chesapeake Bay	-0.04	**-0.50**	0.12	0.10	0.43	-0.04	0.41	0.30	-0.18	**0.41**	N/A	**0.47**	**0.51**
Severn River	**0.69**	**0.45**	**0.63**	0.15	-0.12	**-0.73**	-0.28	0.05	-0.30	**0.90**	N/A	**0.90**	**0.48**
South River	**0.64**	0.03	**0.55**	-0.06	0.20	**-0.58**	0.22	**0.43**	-0.38	**0.90**	N/A	**0.93**	**0.68**
Eastern Bay	**0.91**	**0.81**	**0.89**	0.30	0.44	**-0.86**	0.42	-0.09	0.26	**0.97**	N/A	**0.79**	**0.69**
Pocomoke River	0.76	0.71	N/A	**-0.94**	0.78	0.06	0.09	0.09	0.01	**0.88**	N/A	0.73	0.73
St. Jerome Creek	0.51	**-0.65**	N/A	**-0.86**	**0.64**	-0.31	**0.68**	**0.75**	-0.59	**0.97**	N/A	**0.88**	N/A
Pamunkey River	-0.35	0.20	0.06	-0.37	0.55	0.51	0.22	0.18	0.16	**0.91**	N/A	**0.83**	0.25
Mobjack Bay	**0.94**	**0.71**	**0.91**	0.14	-0.56	**-0.80**	-0.45	-0.63	0.41	**0.97**	N/A	**0.98**	0.40
Cherrystone Inlet	-0.11	-0.37	0.37	**-0.77**	0.59	-0.43	0.32	0.28	-0.08	**0.92**	N/A	**0.87**	0.46
Coastal Bays	-0.28	**-0.61**	0.13	-0.29	**0.37**	0.20	**0.59**	**0.54**	0.26	**0.57**	N/A	0.15	**0.74**
Sinepuxent Bay	0.12	-0.37	N/A	-0.29	0.30	-0.21	0.20	0.40	-0.04	**0.99**	N/A	N/A	N/A
VA Coastal Bays	-0.62	-0.17	0.21	**-0.65**	0.03	0.26	0.30	0.45	-0.17	**0.92**	N/A	**0.87**	0.24
Albemarle Pamlico	0.24	**-0.27**	-0.05	-0.12	0.29	-0.19	0.02	-0.18	0.07	**0.86**	N/A	**0.67**	**0.41**

N/A: data not available

EMAP VA Province Benthic Index versus

	Water Depth	Bottom Salinity	Water Stratif	Secchi Depth	Surface Chl *a*	Bottom Diss Oxy	Surface Tot N	Surface Tot P	TN/TP Ratio	Sediment Grainsize	Sed TOC	Sed Metals ERL/ERM	Sed Org ERL/ERM
Delaware Estuary	-0.06	0.00	0.09	-0.16	**-0.53**	0.01	-0.09	-0.02	-0.05	-0.07	-0.19	**-0.26**	**-0.34**
Schuylkill River	0.41	N/A	-0.20	0.54	-0.09	0.16	-0.53	0.08	-0.12	0.38	-0.41	0.34	-0.62
Salem River	**0.65**	0.09	0.21	0.58	**-0.71**	**0.92**	-0.17	-0.55	0.61	-0.42	-0.60	-0.50	**-0.88**
Chesapeake Bay	-0.12	**-0.15**	**-0.21**	-0.03	-0.24	**0.22**	-0.11	-0.07	0.10	**-0.44**	**-0.20**	**-0.41**	**-0.23**
Severn River	**-0.68**	**-0.46**	**-0.46**	-0.32	0.01	**0.72**	0.06	0.02	0.10	**-0.68**	**-0.68**	**-0.69**	**-0.62**
South River	**-0.51**	-0.22	-0.33	-0.07	0.04	**0.42**	-0.03	-0.22	0.21	**-0.77**	**-0.78**	**-0.68**	-0.33
Eastern Bay	**-0.91**	**-0.81**	**-0.88**	-0.22	-0.52	**0.80**	-0.39	0.29	-0.38	**-0.89**	**-0.89**	**-0.82**	**-0.75**
Pocomoke River	-0.86	**-0.98**	N/A	0.70	**-0.96**	-0.37	-0.67	-0.85	-0.13	**-0.88**	-0.57	**-0.97**	**-0.97**
St. Jerome Creek	-0.35	**0.79**	N/A	**0.85**	**-0.67**	0.56	**-0.71**	**-0.85**	**0.84**	**-0.77**	**-0.84**	**-0.84**	N/A
Pamunkey River	**-0.61**	-0.09	-0.17	0.43	-0.37	0.20	-0.08	-0.28	0.35	0.02	-0.05	-0.01	0.07
Mobjack Bay	**-0.78**	**-0.68**	**-0.77**	0.03	0.51	0.55	0.30	0.61	-0.50	**-0.90**	**-0.84**	**-0.86**	-0.42
Cherrystone Inlet	0.23	0.60	-0.46	**0.83**	-0.47	0.43	-0.34	-0.47	0.29	**-0.95**	**-0.92**	**-0.89**	-0.53
Coastal Bays	0.09	**0.41**	0.08	0.11	-0.12	-0.34	-0.36	-0.32	0.08	-0.20	**-0.82**	-0.19	**-0.70**
Sinepuxent Bay	0.75	0.26	N/A	0.61	-0.07	-0.13	0.27	0.04	0.44	-0.09	0.02	N/A	N/A
VA Coastal Bays	**-0.86**	-0.01	0.31	-0.50	0.03	0.11	0.36	0.53	-0.23	0.47	0.54	0.26	0.26
Albemarle Pamlico	-0.18	0.13	0.08	0.11	-0.22	-0.13	0.07	-0.01	-0.01	**-0.33**	**-0.33**	**-0.37**	-0.05

N/A: data not available