

Harmful Algae Report

All data between 7/30/2013 and 8/22/2013

University of Delaware Citizen Monitoring Program

Water Body Tributary Site	Date	Time	Smpl Dpth	Name	Comment if ID uncertain	Abundance	MC/L
Atlantic Ocean							
RWPM14: Tower Rd Ocean, Delaware Seashore State Park							
	8/12/2013	8:15	Surfc	<i>Akashiwo sanguinea</i> (T)		Very Rare	
	8/12/2013	8:15	Surfc	<i>Chaetoceros</i> spp. (T)		Present	0.081
	8/12/2013	8:15	Surfc	<i>Dinophysis acuminata</i> (T)		Very Rare	
	8/12/2013	8:15	Surfc	<i>Eutreptiella</i> sp. (B)		Present	0.023
	8/12/2013	8:15	Surfc	<i>Heterocapsa rotundata</i> (B)		Rare	0.006
	8/12/2013	8:15	Surfc	<i>Heterocapsa</i> sp. (B)		Rare	0.004
	8/12/2013	8:15	Surfc	<i>Heterocapsa triquetra</i> (B)		Rare	0.001
	8/12/2013	8:15	Surfc	<i>Heterosigma akashiwo</i> (T)		Rare	0.004
	8/12/2013	8:15	Surfc	<i>Karenia papilionacea</i> (T)		Rare	0.003
	8/12/2013	8:15	Surfc	<i>Karodinium veneficum</i> (T)		Rare	0.003
	8/12/2013	8:15	Surfc	<i>Prorocentrum micans</i> (B)		Rare	0.004
	8/12/2013	8:15	Surfc	<i>Prorocentrum minimum</i> (T)		Very Rare	
	8/12/2013	8:15	Surfc	<i>Prorocentrum scutellum</i> (B)		Rare	0.001
	8/12/2013	8:15	Surfc	<i>Prorocentrum triestinum</i> (B)		Rare	0.008
	8/12/2013	8:15	Surfc	<i>Rhizosolenia</i> spp. (T)		Very Rare	
	8/12/2013	8:15	Surfc	<i>Scrippsiella</i> sp. (B)		Present	0.012
RWPM8: Cape Henlopen State Park Beach (2)							
	8/7/2013	11:50	Surfc	<i>Karenia papilionacea</i> (T)		Rare	0.002
	8/7/2013	11:50	Surfc	<i>Prorocentrum micans</i> (B)		Very Rare	
	8/7/2013	11:50	Surfc	<i>Prorocentrum triestinum</i> (B)		Very Rare	
	8/7/2013	11:50	Surfc	<i>Rhizosolenia</i> spp. (T)		Very Rare	
	8/7/2013	11:50	Surfc	<i>Scrippsiella</i> sp. (B)		Rare	0.003
	8/8/2013	8:30	Surfc	<i>Ceratium pentagonum</i> (B)		Very Rare	
	8/8/2013	8:30	Surfc	<i>Chaetoceros</i> spp. (T)		Very Rare	
	8/8/2013	8:30	Surfc	<i>Karenia papilionacea</i> (T)		Rare	0.005
	8/8/2013	8:30	Surfc	<i>Prorocentrum scutellum</i> (B)		Very Rare	
	8/8/2013	8:30	Surfc	<i>Prorocentrum triestinum</i> (B)		Rare	0.001
	8/8/2013	8:30	Surfc	<i>Rhizosolenia</i> spp. (T)		Very Rare	
	8/8/2013	8:30	Surfc	<i>Scrippsiella</i> sp. (B)		Rare	0.001
RWPMVIII: Town of Fenwick							
	7/30/2013	8:23	Surfc	<i>Ceratium pentagonum</i> (B)		Very Rare	
	7/30/2013	8:23	Surfc	<i>Dinophysis norvegica</i> (T)		Very Rare	
	7/30/2013	8:23	Surfc	<i>Heterocapsa rotundata</i> (B)		Rare	0.001
	7/30/2013	8:23	Surfc	<i>Karenia papilionacea</i> (T)		Rare	0.003
	7/30/2013	8:23	Surfc	<i>Prorocentrum scutellum</i> (B)		Very Rare	
	7/30/2013	8:23	Surfc	<i>Prorocentrum triestinum</i> (B)		Rare	0.002
	7/30/2013	8:23	Surfc	<i>Rhizosolenia</i> spp. (T)		Very Rare	

Name subsripts: (B) - nontoxic bloom former; (B*) - nontoxic bloom former reported only at levels > 10 MC/L; (S) - cell similar to a known toxic cell; (T) - potentially toxic cell. MC/L - Million Cells per Liter.

Abundance Levels: Not Found: Looked for, but no cells found; Very Rare: < 0.001 MC/L; Rare 0.001 - 0.01 MC/L; Present: 0.01 - 0.1 MC/L; Common: 0.1 - 1 MC/L; Many: 1 - 10 MC/L; Abundant: 10 - 100 MC/L; Very Abundant: > 100 MC/L.

University of Delaware Citizen Monitoring Program

Water Body Tributary Site	Date	Time	Smpl Dpth	Name	Comment if ID uncertain	Abundance	MC/L
Atlantic Ocean							
RWPMVIII: Town of Fenwick							
	7/30/2013	8:23	Surfc	<i>Scrippsiella sp. (B)</i>		Rare	0.002
	8/13/2013	8:40	Surfc	<i>Chaetoceros spp. (T)</i>		Rare	0.003
	8/13/2013	8:40	Surfc	<i>Fibrocapsa japonica (T)</i>		Rare	0.001
	8/13/2013	8:40	Surfc	<i>Heterocapsa rotundata (B)</i>		Rare	0.005
	8/13/2013	8:40	Surfc	<i>Heterosigma akashiwo (T)</i>		Rare	0.001
	8/13/2013	8:40	Surfc	<i>Karenia papilionacea (T)</i>		Very Rare	
	8/13/2013	8:40	Surfc	<i>Karlodinium veneficum (T)</i>		Rare	0.001
	8/13/2013	8:40	Surfc	<i>Kryptoperidinium foliaceum (B)</i>		Rare	0.001
	8/13/2013	8:40	Surfc	<i>Prorocentrum micans (B)</i>		Rare	0.001
	8/13/2013	8:40	Surfc	<i>Prorocentrum scutellum (B)</i>		Rare	0.003
	8/13/2013	8:40	Surfc	<i>Prorocentrum triestinum (B)</i>		Present	0.020
	8/13/2013	8:40	Surfc	<i>Scrippsiella sp. (B)</i>		Rare	0.008

Broadkill River

BR01: Broadkill river @ PEL dock.

	7/31/2013	8:52	Net	<i>Anabaena spp. (T)</i>			
	7/31/2013	8:52	Net	<i>Chaetoceros spp. (T)</i>			
	7/31/2013	8:52	Net	<i>Chattonella cf. verruculosa (T)</i>			
	7/31/2013	8:52	Net	<i>Heterocapsa rotundata (B)</i>			
	7/31/2013	8:52	Net	<i>Heterosigma akashiwo (T)</i>			
	7/31/2013	8:52	Net	<i>Rhizosolenia spp. (T)</i>			
	7/31/2013	8:52	Surfc	<i>Chaetoceros spp. (T)</i>		Present	
	7/31/2013	8:52	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	7/31/2013	8:52	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
	7/31/2013	17:15	Net	<i>Ceratium pentagonum (B)</i>			
	7/31/2013	17:15	Net	<i>Chaetoceros spp. (T)</i>			
	7/31/2013	17:15	Net	<i>Prorocentrum minimum (T)</i>			
	7/31/2013	17:15	Net	<i>Prorocentrum triestinum (B)</i>			
	7/31/2013	17:15	Net	<i>Pseudo-nitzschia spp. (T)</i>			
	8/7/2013	8:53	Net	<i>Ceratium pentagonum (B)</i>			
	8/7/2013	8:53	Net	<i>Chaetoceros spp. (T)</i>			
	8/7/2013	8:53	Net	<i>Dinophysis acuminata (T)</i>			
	8/7/2013	8:53	Net	<i>Heterosigma akashiwo (T)</i>			
	8/7/2013	8:53	Net	<i>Kryptoperidinium foliaceum (B)</i>			
	8/7/2013	8:53	Net	<i>Prorocentrum scutellum (B)</i>			
	8/7/2013	8:53	Net	<i>Prorocentrum triestinum (B)</i>			
	8/7/2013	8:53	Net	<i>Scrippsiella sp. (B)</i>			
	8/7/2013	8:53	Surfc	<i>Chaetoceros spp. (T)</i>		Present	
	8/7/2013	8:53	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/7/2013	8:53	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
	8/7/2013	8:53	Surfc	<i>Karlodinium veneficum (T)</i>		Present	
	8/14/2013	8:55	Net	<i>Anabaena spp. (T)</i>			
	8/14/2013	8:55	Net	<i>Chaetoceros spp. (T)</i>			

Name subsripts: (B) - nontoxic bloom former; (B*) - nontoxic bloom former reported only at levels > 10 MC/L; (S) - cell similar to a known toxic cell; (T) - potentially toxic cell. MC/L - Million Cells per Liter.

Abundance Levels: Not Found: Looked for, but no cells found; Very Rare: < 0.001 MC/L; Rare 0.001 - 0.01 MC/L; Present: 0.01 - 0.1 MC/L; Common: 0.1 - 1 MC/L; Many: 1 - 10 MC/L; Abundant: 10 - 100 MC/L; Very Abundant: > 100 MC/L.

University of Delaware Citizen Monitoring Program

Water Body Tributary Site	Date	Time	Smpl Dpth	Name	Comment if ID uncertain	Abundance	MC/L
Broadkill River							
BR01: Broadkill river @ PEL dock.							
	8/14/2013	8:55	Net	<i>Chattonella cf. verruculosa (T)</i>			
	8/14/2013	8:55	Net	<i>Gyrodinium instriatum (B)</i>			
	8/14/2013	8:55	Net	<i>Heterosigma akashiwo (T)</i>			
	8/14/2013	8:55	Net	<i>Protoperidinium quinquecorne (B)</i>			
	8/14/2013	8:55	Net	<i>Scrippsiella sp. (B)</i>			
	8/14/2013	8:55	Surfc	<i>Chaetoceros spp. (T)</i>		Present	
	8/14/2013	8:55	Surfc	<i>Chattonella cf. verruculosa (T)</i>		Present	
	8/14/2013	8:55	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/14/2013	8:55	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
	8/21/2013	8:55	Net	<i>Chaetoceros spp. (T)</i>			
	8/21/2013	8:55	Net	<i>Prorocentrum triestinum (B)</i>			
	8/21/2013	8:55	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/21/2013	8:55	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
BR20: Broadkill River at Milton tidal pond							
	8/7/2013	7:40	Surfc		No HABs found		
	8/21/2013	7:10	Surfc		No HABs found		
<u>Diamond Pond</u>							
BR48: Diamond Pond							
	8/7/2013	11:05	Surfc		No HABs found		
	8/21/2013	10:42	Surfc		No HABs found		
<u>Old Mill Creek</u>							
BR21: Old Mill Creek downstream from Red Mill Pond							
	8/21/2013	12:15	Surfc	<i>Microcystis spp. (T)</i>		Common	0.310
<u>Prime Hook Creek</u>							
BR03: Prime Hook Creek at Boat Ramp at Refuge Headquarters							
	8/7/2013	12:25	Surfc	<i>Anabaena spp. (T)</i>		Many	2.500
	8/7/2013	12:25	Surfc	<i>Chattonella cf. verruculosa (T)</i>		Abundant	94.000
	8/7/2013	12:25	Surfc	<i>Chattonella subsalsa (T)</i>		Present	
	8/7/2013	12:25	Surfc	<i>Gyrodinium instriatum (B)</i>		Common	0.630
	8/7/2013	12:25	Surfc	<i>Heterosigma akashiwo (T)</i>		Very Abundant	129.000
	8/7/2013	12:25	Surfc	<i>Kryptoperidinium foliaceum (B)</i>		Common	0.290
	8/7/2013	12:25	Surfc	<i>Microcystis spp. (T)</i>		Many	1.800
	8/7/2013	12:25	Surfc	<i>Protoperidinium quinquecorne (B)</i>		Common	0.150
	8/7/2013	12:25	Surfc	<i>Scrippsiella sp. (B)</i>		Present	
	8/21/2013	11:46	Surfc	<i>Anabaena 2 spp. (T)</i>		Common	0.500
	8/21/2013	11:46	Surfc	<i>Anabaena spp. (T)</i>		Abundant	18.500
	8/21/2013	11:46	Surfc	<i>Chaetoceros spp. (T)</i>		Common	0.300
	8/21/2013	11:46	Surfc	<i>Gyrodinium instriatum (B)</i>		Present	
	8/21/2013	11:46	Surfc	<i>Heterosigma akashiwo (T)</i>		Common	0.200
	8/21/2013	11:46	Surfc	<i>Kryptoperidinium foliaceum (B)</i>		Many	1.600
	8/21/2013	11:46	Surfc	<i>Microcystis spp. (T)</i>		Abundant	20.600

Name subsripts: (B) - nontoxic bloom former; (B*) - nontoxic bloom former reported only at levels > 10 MC/L; (S) - cell similar to a known toxic cell; (T) - potentially toxic cell. MC/L - Million Cells per Liter.

Abundance Levels: Not Found: Looked for, but no cells found; Very Rare: < 0.001 MC/L; Rare 0.001 - 0.01 MC/L; Present: 0.01 - 0.1 MC/L; Common: 0.1 - 1 MC/L; Many: 1 - 10 MC/L; Abundant: 10 - 100 MC/L; Very Abundant: > 100 MC/L.

University of Delaware Citizen Monitoring Program

Water Body Tributary Site	Date	Time	Smpl Dpth	Name	Comment if ID uncertain	Abundance	MC/L
Broadkill River							
<u>Wagamon's Pond</u>							
BR44: Wagamon's Pond, Milton							
	8/7/2013	11:00	Surfc	<i>Lyngbya (T)</i>		Present	
	8/21/2013	11:45	Surfc	<i>Oscillatoria spp. (B)</i>		Present	
Delaware Bay							
DB01: End of Cape Shores pier							
	8/6/2013	8:24	Surfc	<i>Chaetoceros spp. (T)</i>		Present	
	8/6/2013	8:24	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
<u>Canary Creek</u>							
BR40: Canary Creek at Pilottown Rd							
	8/22/2013	9:00	Surfc	<i>Heterocapsa rotundata (B)</i>		Common	0.138
	8/22/2013	9:00	Surfc	<i>Heterocapsa triquetra (B)</i>		Present	
Indian River							
<u>Assawoman Canal</u>							
IR50: Assawoman Canal at N end, Ocean View Marina							
	8/6/2013	7:25	Surfc	<i>Akashiwo sanguinea (T)</i>		Present	
	8/6/2013	7:25	Surfc	<i>Amphidinium spp. (T)</i>		Present	
	8/6/2013	7:25	Surfc	<i>Chaetoceros spp. (T)</i>		Present	
	8/6/2013	7:25	Surfc	<i>Chattonella cf. verruculosa (T)</i>		Common	0.140
	8/6/2013	7:25	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/6/2013	7:25	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
	8/6/2013	7:25	Surfc	<i>Karlodinium veneficum (T)</i>		Common	0.120
	8/20/2013	7:25	Surfc	<i>Chattonella subsalsa (T)</i>		Present	
	8/20/2013	7:25	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/20/2013	7:25	Surfc	<i>Scripsiella sp. (B)</i>		Present	
<u>Bethany Loop Canal</u>							
IR62: Loop Canal, Pa Ave terminus, Bethany Beach							
	8/5/2013	7:40	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/5/2013	7:40	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
	8/5/2013	7:40	Surfc	<i>Protoperidinium quinquecorne (B)</i>		Present	
	8/19/2013	7:30	Surfc	<i>Chattonella subsalsa (T)</i>		Present	
	8/19/2013	7:30	Surfc	<i>Protoperidinium quinquecorne (B)</i>		Common	0.420
<u>Indian River</u>							
IR04: Warwick Cove							
	8/5/2013	11:17	Surfc	<i>Akashiwo sanguinea (T)</i>		Present	
	8/5/2013	11:17	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/5/2013	11:17	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
	8/5/2013	11:17	Surfc	<i>Karlodinium veneficum (T)</i>		Present	
	8/5/2013	11:17	Surfc	<i>Prorocentrum minimum (T)</i>		Common	0.330
	8/5/2013	11:17	Surfc	<i>Prorocentrum triestinum (B)</i>		Present	
	8/19/2013	9:48	Surfc	<i>Chaetoceros spp. (T)</i>		Common	0.125
	8/19/2013	9:48	Surfc	<i>Heterocapsa rotundata (B)</i>		Common	0.375

Name subsripts: (B) - nontoxic bloom former; (B*) - nontoxic bloom former reported only at levels > 10 MC/L; (S) - cell similar to a known toxic cell; (T) - potentially toxic cell. MC/L - Million Cells per Liter.

Abundance Levels: Not Found: Looked for, but no cells found; Very Rare: < 0.001 MC/L; Rare 0.001 - 0.01 MC/L; Present: 0.01 - 0.1 MC/L; Common: 0.1 - 1 MC/L; Many: 1 - 10 MC/L; Abundant: 10 - 100 MC/L; Very Abundant: > 100 MC/L.

University of Delaware Citizen Monitoring Program

Water Body Tributary Site	Date	Time	Smpl Dpth	Name	Comment if ID uncertain	Abundance	MC/L
Indian River							
<u>Indian River</u>							
IR04: Warwick Cove							
	8/19/2013	9:48	Surfc	<i>Karlodinium veneficum</i> (T)		Present	
	8/19/2013	9:48	Surfc	<i>Kryptoperidinium foliaceum</i> (B)		Present	
IR11: Pot Nets Seaside Pier							
	8/19/2013	11:02	Surfc	<i>Chaetoceros</i> spp. (T)		Present	
	8/19/2013	11:02	Surfc	<i>Gyrodinium spirale</i> (B)		Present	
	8/19/2013	11:02	Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
	8/19/2013	11:02	Surfc	<i>Heterosigma akashiwo</i> (T)		Present	
IR20: Bay Colony							
	8/5/2013	8:00	Surfc	<i>Akashiwo sanguinea</i> (T)		Present	
	8/5/2013	8:00	Surfc	<i>Chaetoceros</i> spp. (T)		Common	0.100
	8/5/2013	8:00	Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
	8/5/2013	8:00	Surfc	<i>Heterosigma akashiwo</i> (T)		Present	
	8/5/2013	8:00	Surfc	<i>Kryptoperidinium foliaceum</i> (B)		Present	
	8/19/2013	8:00	Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
	8/19/2013	8:00	Surfc	<i>Karlodinium veneficum</i> (T)		Present	
IR36: James Farm, base of Pasture Point Knee deep 150 yds from shore							
	8/5/2013	7:40	Surfc	<i>Chattonella cf. verruculosa</i> (T)		Present	
	8/5/2013	7:40	Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
	8/5/2013	7:40	Surfc	<i>Heterosigma akashiwo</i> (T)		Present	
	8/19/2013	7:30	Surfc		No HABs found		
IR39: North side of Inlet at Wheelchair fishing platform under new bridge.							
	8/7/2013	8:52	Surfc	<i>Ceratium pentagonum</i> (B)		Rare	0.008
	8/7/2013	8:52	Surfc	<i>Chaetoceros</i> spp. (T)		Present	0.048
	8/7/2013	8:52	Surfc	<i>Dinophysis acuminata</i> (T)		Very Rare	
	8/7/2013	8:52	Surfc	<i>Heterocapsa rotundata</i> (B)		Rare	0.001
	8/7/2013	8:52	Surfc	<i>Karenia papilionacea</i> (T)		Present	0.080
	8/7/2013	8:52	Surfc	<i>Prorocentrum minimum</i> (T)		Very Rare	
	8/7/2013	8:52	Surfc	<i>Prorocentrum scutellum</i> (B)		Rare	0.001
	8/7/2013	8:52	Surfc	<i>Prorocentrum</i> sp. (T)		Very Rare	
	8/7/2013	8:52	Surfc	<i>Prorocentrum triestinum</i> (B)		Rare	0.005
	8/7/2013	8:52	Surfc	<i>Pseudo-nitzschia</i> spp. (T)		Rare	0.006
	8/7/2013	8:52	Surfc	<i>Rhizosolenia</i> spp. (T)		Very Rare	
	8/7/2013	8:52	Surfc	<i>Scrippsiella</i> sp. (B)		Rare	0.009
	8/21/2013	8:48	Surfc	<i>Akashiwo sanguinea</i> (T)		Very Rare	
	8/21/2013	8:48	Surfc	<i>Ceratium pentagonum</i> (B)		Very Rare	
	8/21/2013	8:48	Surfc	<i>Chaetoceros</i> spp. (T)		Present	0.025
	8/21/2013	8:48	Surfc	<i>Dinophysis norvegica</i> (T)		Very Rare	
	8/21/2013	8:48	Surfc	<i>Karenia papilionacea</i> (T)		Very Rare	
	8/21/2013	8:48	Surfc	<i>Prorocentrum scutellum</i> (B)		Very Rare	
	8/21/2013	8:48	Surfc	<i>Prorocentrum triestinum</i> (B)		Very Rare	
	8/21/2013	8:48	Surfc	<i>Pseudo-nitzschia</i> spp. (T)		Rare	0.003

Name subsripts: (B) - nontoxic bloom former; (B*) - nontoxic bloom former reported only at levels > 10 MC/L; (S) - cell similar to a known toxic cell; (T) - potentially toxic cell. MC/L - Million Cells per Liter.

Abundance Levels: Not Found: Looked for, but no cells found; Very Rare: < 0.001 MC/L; Rare 0.001 - 0.01 MC/L; Present: 0.01 - 0.1 MC/L; Common: 0.1 - 1 MC/L; Many: 1 - 10 MC/L; Abundant: 10 - 100 MC/L; Very Abundant: > 100 MC/L.

University of Delaware Citizen Monitoring Program

Water Body Tributary Site	Date	Time	Smpl Dpth	Name	Comment if ID uncertain	Abundance	MC/L
Indian River							
<u>Indian River</u>							
IR39: North side of Inlet at Wheelchair fishing platform under new bridge.							
	8/21/2013	8:48	Surfc	<i>Scrippsiella sp. (B)</i>		Very Rare	
<u>Vines Creek</u>							
IR38: Vines Lane							
	8/6/2013	7:15	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/6/2013	7:15	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
	8/6/2013	7:15	Surfc	<i>Prorocentrum minimum (T)</i>		Common	0.180
	8/20/2013	7:00	Surfc	<i>Chaetoceros spp. (T)</i>		Present	
	8/20/2013	7:00	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/20/2013	7:00	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
<u>White Creek</u>							
IR32: Holly Terrace Acres Canal Dead End, White Creek							
	8/5/2013	9:00	Surfc	<i>Akashiwo sanguinea (T)</i>		Present	
	8/5/2013	9:00	Surfc	<i>Chattonella cf. verruculosa (T)</i>		Present	
	8/5/2013	9:00	Surfc	<i>Chattonella subsalsa (T)</i>		Present	
	8/5/2013	9:00	Surfc	<i>Gyrodinium instriatum (B)</i>		Present	
	8/5/2013	9:00	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/5/2013	9:00	Surfc	<i>Karlodinium veneficum (T)</i>		Present	
	8/5/2013	9:00	Surfc	<i>Kryptoperidinium foliaceum (B)</i>		Present	
	8/5/2013	9:00	Surfc	<i>Prorocentrum minimum (T)</i>		Present	
	8/5/2013	9:00	Surfc	<i>Prorocentrum triestinum (B)</i>		Present	
	8/5/2013	9:00	Surfc	<i>Protoperidinium quinquecorne (B)</i>		Present	
	8/19/2013	9:05	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/19/2013	9:05	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
	8/19/2013	9:05	Surfc	<i>Prorocentrum triestinum (B)</i>		Present	
	8/19/2013	9:05	Surfc	<i>Scrippsiella sp. (B)</i>		Common	0.440
Little Assawoman Bay							
LA45: Fenwick Island Bayside							
	8/6/2013	9:13	Surfc	<i>Gyrodinium instriatum (B)</i>		Present	
	8/6/2013	9:13	Surfc	<i>Karlodinium veneficum (T)</i>		Present	
	8/6/2013	9:13	Surfc	<i>Prorocentrum minimum (T)</i>		Present	
	8/20/2013	9:59	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/20/2013	9:59	Surfc	<i>Karlodinium veneficum (T)</i>		Present	
	8/20/2013	9:59	Surfc	<i>Scrippsiella sp. (B)</i>		Present	
<u>Assawoman Canal</u>							
LA10: Assawoman Canal S end, Kent Ave Bridge							
	8/5/2013	7:20	Surfc	<i>Akashiwo sanguinea (T)</i>		Present	
	8/5/2013	7:20	Surfc	<i>Chattonella cf. verruculosa (T)</i>		Common	0.190
	8/5/2013	7:20	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/5/2013	7:20	Surfc	<i>Kryptoperidinium foliaceum (B)</i>		Present	
	8/5/2013	7:20	Surfc	<i>Prorocentrum minimum (T)</i>		Present	

Name subsripts: (B) - nontoxic bloom former; (B*) - nontoxic bloom former reported only at levels > 10 MC/L; (S) - cell similar to a known toxic cell; (T) - potentially toxic cell. MC/L - Million Cells per Liter.

Abundance Levels: Not Found: Looked for, but no cells found; Very Rare: < 0.001 MC/L; Rare 0.001 - 0.01 MC/L; Present: 0.01 - 0.1 MC/L; Common: 0.1 - 1 MC/L; Many: 1 - 10 MC/L; Abundant: 10 - 100 MC/L; Very Abundant: > 100 MC/L.

University of Delaware Citizen Monitoring Program

Water Body Tributary Site	Date	Time	Smpl Dpth	Name	Comment if ID uncertain	Abundance	MC/L
Little Assawoman Bay							
<u>Assawoman Canal</u>							
LA10: Assawoman Canal S end, Kent Ave Bridge							
	8/19/2013	7:15	Surfc	<i>Akashiwo sanguinea</i> (T)		Present	
	8/19/2013	7:15	Surfc	<i>Chattonella cf. verruculosa</i> (T)		Present	
	8/19/2013	7:15	Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
	8/19/2013	7:15	Surfc	<i>Heterosigma akashiwo</i> (T)		Present	
<u>Dirickson Creek</u>							
LA03: Mulberry Landing							
	8/6/2013	8:15	Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
	8/6/2013	8:15	Surfc	<i>Karlodinium veneficum</i> (T)		Common	0.100
	8/19/2013	7:50	Surfc	<i>Heterosigma akashiwo</i> (T)		Present	
LA09: Dirickson Creek at Road 381 bridge.							
	8/5/2013	8:20	Surfc	<i>Heterosigma akashiwo</i> (T)		Common	0.160
	8/19/2013	8:19	Surfc	<i>Gyrodinium instriatum</i> (B)		Present	
	8/19/2013	8:19	Surfc	<i>Heterocapsa rotundata</i> (B)		Common	0.200
	8/19/2013	8:19	Surfc	<i>Heterosigma akashiwo</i> (T)		Common	0.300
	8/19/2013	8:19	Surfc	<i>Karlodinium veneficum</i> (T)		Present	
	8/19/2013	8:19	Surfc	<i>Kryptoperidinium foliaceum</i> (B)		Common	0.200
<u>Jefferson Creek</u>							
SB10E: Russell Canal east dead end							
	7/30/2013	8:00	Surfc	<i>Akashiwo sanguinea</i> (T)		Present	
	7/30/2013	8:00	Surfc	<i>Ceratium pentagonum</i> (B)		Present	
	7/30/2013	8:00	Surfc	<i>Chattonella cf. verruculosa</i> (T)		Many	2.000
	7/30/2013	8:00	Surfc	<i>Gyrodinium instriatum</i> (B)		Common	0.200
	7/30/2013	8:00	Surfc	<i>Heterosigma akashiwo</i> (T)		Present	
	7/30/2013	8:00	Surfc	<i>Karlodinium veneficum</i> (T)		Common	0.140
	7/30/2013	8:00	Surfc	<i>Kryptoperidinium foliaceum</i> (B)		Common	0.140
	7/30/2013	8:00	Surfc	<i>Prorocentrum minimum</i> (T)		Present	
	7/30/2013	8:00	Surfc	<i>Protooperidinium quinquecorne</i> (B)		Present	
	8/6/2013	8:05	Surfc	<i>Chattonella cf. verruculosa</i> (T)		Common	0.800
	8/6/2013	8:05	Surfc	<i>Gyrodinium instriatum</i> (B)		Present	
	8/6/2013	8:05	Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
	8/6/2013	8:05	Surfc	<i>Heterosigma akashiwo</i> (T)		Present	
	8/6/2013	8:05	Surfc	<i>Karlodinium veneficum</i> (T)		Present	
	8/6/2013	8:05	Surfc	<i>Kryptoperidinium foliaceum</i> (B)		Present	
	8/6/2013	8:05	Surfc	<i>Scrippsiella sp.</i> (B)		Present	
	8/13/2013	7:05	Surfc	<i>Chattonella cf. verruculosa</i> (T)		Present	
	8/13/2013	7:05	Surfc	<i>Gyrodinium instriatum</i> (B)		Common	0.150
	8/13/2013	7:05	Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
	8/13/2013	7:05	Surfc	<i>Heterosigma akashiwo</i> (T)		Present	
	8/13/2013	7:05	Surfc	<i>Karlodinium veneficum</i> (T)		Present	
	8/13/2013	7:05	Surfc	<i>Prorocentrum minimum</i> (T)		Present	

Name subsripts: (B) - nontoxic bloom former; (B*) - nontoxic bloom former reported only at levels > 10 MC/L; (S) - cell similar to a known toxic cell; (T) - potentially toxic cell. MC/L - Million Cells per Liter.

Abundance Levels: Not Found: Looked for, but no cells found; Very Rare: < 0.001 MC/L; Rare 0.001 - 0.01 MC/L; Present: 0.01 - 0.1 MC/L; Common: 0.1 - 1 MC/L; Many: 1 - 10 MC/L; Abundant: 10 - 100 MC/L; Very Abundant: > 100 MC/L.

University of Delaware Citizen Monitoring Program

Water Body Tributary Site	Date	Time	Smpl Dpth	Name	Comment if ID uncertain	Abundance	MC/L
Little Assawoman Bay							
<u>Jefferson Creek</u>							
SB10E: Russell Canal east dead end							
	8/13/2013	7:05	Surfc	<i>Scrippsiella sp. (B)</i>		Present	
	8/20/2013	7:53	Surfc	<i>Akashiwo sanguinea (T)</i>		Present	
	8/20/2013	7:53	Surfc	<i>Chattonella cf. verruculosa (T)</i>		Present	
	8/20/2013	7:53	Surfc	<i>Chattonella subsalsa (T)</i>		Present	
	8/20/2013	7:53	Surfc	<i>Gyrodinium instriatum (B)</i>		Common	0.890
	8/20/2013	7:53	Surfc	<i>Heterosigma akashiwo (T)</i>		Common	0.850
	8/20/2013	7:53	Surfc	<i>Protoperidinium quinquecorne (B)</i>		Present	
SB10W: Russell Canal west dead end							
	7/30/2013	8:10	Surfc	<i>Chattonella cf. verruculosa (T)</i>		Very Abundant	163.000
	7/30/2013	8:10	Surfc	<i>Gyrodinium instriatum (B)</i>		Present	
	7/30/2013	8:10	Surfc	<i>Karlodinium veneficum (T)</i>		Present	
	7/30/2013	8:10	Surfc	<i>Kryptoperidinium foliaceum (B)</i>		Present	
	7/30/2013	8:10	Surfc	<i>Protoperidinium quinquecorne (B)</i>		Present	
	8/6/2013	8:22	Surfc	<i>Chattonella cf. verruculosa (T)</i>		Common	0.190
	8/6/2013	8:22	Surfc	<i>Heterosigma akashiwo (T)</i>		Common	0.100
	8/6/2013	8:22	Surfc	<i>Karlodinium veneficum (T)</i>		Present	
	8/6/2013	8:22	Surfc	<i>Prorocentrum minimum (T)</i>		Present	
	8/6/2013	8:22	Surfc	<i>Scrippsiella sp. (B)</i>		Present	
	8/13/2013	7:25	Surfc	<i>Gyrodinium instriatum (B)</i>		Present	
	8/13/2013	7:25	Surfc	<i>Karlodinium veneficum (T)</i>		Present	
	8/13/2013	7:25	Surfc	<i>Kryptoperidinium foliaceum (B)</i>		Present	
	8/20/2013	8:08	Surfc	<i>Akashiwo sanguinea (T)</i>		Present	
	8/20/2013	8:08	Surfc	<i>Gyrodinium instriatum (B)</i>		Common	0.140
	8/20/2013	8:08	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
	8/20/2013	8:08	Surfc	<i>Kryptoperidinium foliaceum (B)</i>		Present	
Rehoboth Bay							
RB07: West Bay Park							
	8/5/2013	8:35	Surfc	<i>Chattonella cf. verruculosa (T)</i>		Present	
	8/5/2013	8:35	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/5/2013	8:35	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
	8/5/2013	8:35	Surfc	<i>Karlodinium veneficum (T)</i>		Present	
	8/5/2013	8:35	Surfc	<i>Prorocentrum minimum (T)</i>		Present	
	8/20/2013	8:55	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
RWPMV: Tower Road Bayside							
	7/31/2013	10:00	Surfc	<i>Prorocentrum minimum (T)</i>		Present	
<u>Bald Eagle Creek</u>							
RB64: Torquay Canal, west side of Land's End near UD Site #1							
	8/5/2013	8:12	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
	8/5/2013	8:12	Surfc	<i>Kryptoperidinium foliaceum (B)</i>		Present	
	8/19/2013	8:00	Surfc	<i>Akashiwo sanguinea (T)</i>		Present	
	8/19/2013	8:00	Surfc	<i>Chattonella cf. verruculosa (T)</i>		Common	0.210

Name subsripts: (B) - nontoxic bloom former; (B*) - nontoxic bloom former reported only at levels > 10 MC/L; (S) - cell similar to a known toxic cell; (T) - potentially toxic cell. MC/L - Million Cells per Liter.

Abundance Levels: Not Found: Looked for, but no cells found; Very Rare: < 0.001 MC/L; Rare 0.001 - 0.01 MC/L; Present: 0.01 - 0.1 MC/L; Common: 0.1 - 1 MC/L; Many: 1 - 10 MC/L; Abundant: 10 - 100 MC/L; Very Abundant: > 100 MC/L.

University of Delaware Citizen Monitoring Program

Water Body Tributary Site	Date	Time	Smpl Dpth	Name	Comment if ID uncertain	Abundance	MC/L
Rehoboth Bay							
<u>Bald Eagle Creek</u>							
RB64: Torquay Canal, west side of Land's End near UD Site #1							
	8/19/2013	8:00	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
<u>Guinea Creek</u>							
RB05: Mouth of Guinea Creek (Pot Nets Creekside)							
	8/5/2013	10:57	Surfc	<i>Akashiwo sanguinea (T)</i>		Present	
	8/5/2013	10:57	Surfc	<i>Chattonella cf. verruculosa (T)</i>		Present	
	8/5/2013	10:57	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/5/2013	10:57	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
	8/5/2013	10:57	Surfc	<i>Karlodinium veneficum (T)</i>		Present	
	8/5/2013	10:57	Surfc	<i>Scrippsiella sp. (B)</i>		Present	
	8/19/2013	11:24	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
RB06: Guinea Creek (Winding Creek Village)							
	8/5/2013	11:17	Surfc	<i>Akashiwo sanguinea (T)</i>		Present	
	8/5/2013	11:17	Surfc	<i>Gyrodinium instriatum (B)</i>		Common	0.463
	8/5/2013	11:17	Surfc	<i>Kryptoperidinium foliaceum (B)</i>		Present	
	8/5/2013	11:17	Surfc	<i>Prorocentrum minimum (T)</i>		Present	
	8/5/2013	11:17	Surfc	<i>Scrippsiella sp. (B)</i>		Present	
	8/19/2013	8:30	Surfc	<i>Chattonella cf. verruculosa (T)</i>		Present	
	8/19/2013	8:30	Surfc	<i>Gyrodinium instriatum (B)</i>		Present	
<u>Herring Creek</u>							
RB04: Herring Creek, Mid-Section							
	8/13/2013	8:05	Surfc	<i>Gyrodinium instriatum (B)</i>		Present	
	8/13/2013	8:05	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/13/2013	8:05	Surfc	<i>Heterocapsa triquetra (B)</i>		Present	
	8/21/2013	7:32	Surfc	<i>Gyrodinium instriatum (B)</i>		Present	
	8/21/2013	7:32	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
	8/21/2013	7:32	Surfc	<i>Heterosigma akashiwo (T)</i>		Present	
<u>Love Creek</u>							
RB34: Love Creek at Rt 24 Bridge							
	8/5/2013	8:53	Surfc	<i>Gyrodinium instriatum (B)</i>		Common	0.310
	8/5/2013	8:53	Surfc	<i>Prorocentrum minimum (T)</i>		Present	
	8/19/2013	8:25	Surfc	<i>Gyrodinium instriatum (B)</i>		Present	
	8/19/2013	8:25	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	

Name subsripts: (B) - nontoxic bloom former; (B*) - nontoxic bloom former reported only at levels > 10 MC/L; (S) - cell similar to a known toxic cell; (T) - potentially toxic cell. MC/L - Million Cells per Liter.

Abundance Levels: Not Found: Looked for, but no cells found; Very Rare: < 0.001 MC/L; Rare 0.001 - 0.01 MC/L; Present: 0.01 - 0.1 MC/L; Common: 0.1 - 1 MC/L; Many: 1 - 10 MC/L; Abundant: 10 - 100 MC/L; Very Abundant: > 100 MC/L.

University of Delaware Citizen Monitoring Program