

# Harmful Algae Report

All data between 6/1/2019 and 6/21/2019

University of Delaware Citizen Monitoring Program

Water Body <u>Tributary</u> Site	Date	Time	Sample Depth	Name	Comment if ID uncertain	Abundance	MC/L
<b>Atlantic Ocean</b>							
RWPM11: Rehoboth Rehoboth Ave (2)	6/5/2019	8:32	Surfc	<i>Prorocentrum minimum</i> (T)		Present	
				<i>Rhizosolenia</i> spp. (T)		Present	
RWPM8: Cape Henlopen State Park Beach (2)	6/5/2019	7:55	Surfc	<i>Prorocentrum minimum</i> (T)		Present	
<b>Broadkill River</b>							
<u>Broadkill River</u>							
BR01: Broadkill river @ PEL dock.	6/5/2019	8:50	Net	<i>Heterocapsa rotundata</i> (B)			
				<i>Karlodinium veneficum</i> (T)			
				<i>Prorocentrum micans</i> (B)			
				<i>Prorocentrum minimum</i> (T)			
				<i>Prorocentrum triestinum</i> (B)			
			Surfc	<i>Amphidinium</i> spp. (T)		Present	
				<i>Chaetoceros</i> spp. (T)		Present	
				<i>Fibrocapsa japonica</i> (T)		Present	
				<i>Heterocapsa lanceolata</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Prorocentrum micans</i> (B)		Present	
				<i>Prorocentrum minimum</i> (T)		Common	0.125
	6/12/2019	8:40	Net	<i>Chaetoceros</i> spp. (T)			
				<i>Heterocapsa lanceolata</i> (B)			
				<i>Prorocentrum micans</i> (B)			
				<i>Rhizosolenia</i> spp. (T)			
			Surfc	<i>Heterocapsa lanceolata</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
	6/19/2019	8:50	Net	<i>Heterocapsa lanceolata</i> (B)			
				<i>Heterocapsa rotundata</i> (B)			
				<i>Heterosigma akashiwo</i> (T)			
				<i>Karlodinium veneficum</i> (T)			
				<i>Prorocentrum minimum</i> (T)			
			Surfc	<i>Heterocapsa lanceolata</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Heterosigma akashiwo</i> (T)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
BR20: Broadkill River at Milton tidal pond	6/12/2019	6:25	Surfc		No HABs found		
<u>Canary Creek</u>							
BR19: Canary Creek at New Road	6/12/2019	11:20	Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
BR40: Canary Creek at Pilottown Rd	6/12/2019	8:28	Surfc	<i>Heterosigma akashiwo</i> (T)		Present	
<u>Diamond Pond</u>							
BR48: Diamond Pond at Spillway							

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	Date	Time	Sample	Name	Comment if	Abundance	MC/L
<u>Tributary</u>			<u>Depth</u>		<u>ID uncertain</u>		
<u>Site</u>							
<b>Broadkill River</b>							
<u>Diamond Pond</u>							
BR48: Diamond Pond at Spillway							
	6/12/2019	10:40	Surfc		No HABs found		
<u>Old Mill Creek</u>							
BR21: Old Mill Creek downstream from Red Mill Pond							
	6/12/2019	10:02	Surfc	<i>Microcystis spp. (T)</i>		Abundant	10.600
<u>Prime Hook Creek</u>							
BR03: Prime Hook Creek at Boat Ramp at Refuge Headquarters							
	6/11/2019	9:10	Surfc	<i>Chaetoceros spp. (T)</i>		Many	9.900
<u>Red Mill Pond</u>							
BR54: Red Mill Pond outlet at Rt 1							
	6/12/2019	11:10	Surfc	<i>Anabaena spp. (T)</i>		Common	
				<i>Microcystis spp. (T)</i>		Abundant	66.000
<b>Delaware Bay</b>							
<u>Delaware Bay</u>							
DB01: End of Cape Shores pier							
	6/4/2019	9:01	Surfc	<i>Amphidinium spp. (T)</i>		Present	
				<i>Chaetoceros spp. (T)</i>		Common	0.313
				<i>Fibrocapsa japonica (T)</i>		Present	
				<i>Karlodinium veneficum (T)</i>		Present	
				<i>Prorocentrum minimum (T)</i>		Common	0.550
	6/19/2019	8:50		<i>Heterocapsa lanceolata (B)</i>		Common	0.163
				<i>Prorocentrum minimum (T)</i>		Present	
<b>Indian River</b>							
<u>Indian River</u>							
IR02a: Rosedale crabbing pier							
	6/10/2019	9:37	Surfc	<i>Heterocapsa lanceolata (B)</i>		Present	
				<i>Heterocapsa rotundata (B)</i>		Present	
				<i>Karlodinium veneficum (T)</i>		Present	
IR11: Pot Nets Seaside Pier							
	6/10/2019	10:15	Surfc	<i>Heterocapsa lanceolata (B)</i>		Present	
				<i>Heterocapsa rotundata (B)</i>		Present	
				<i>Heterosigma akashiwo (T)</i>		Present	
				<i>Karlodinium veneficum (T)</i>		Present	
				<i>Prorocentrum minimum (T)</i>		Present	
IR24: Iron Branch - County road 331 at bridge							
	6/10/2019	8:35	Surfc	<i>Viridilobus marinus (B)</i>		Present	
IR36: James Farm, base of Pasture Point Knee deep 150 yds from shore							
	6/11/2019	7:50	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
				<i>Protoperidinium quinquecorne (B)</i>		Present	
IR39: North side of Inlet at Wheelchair fishing platform under new bridge.							
	6/17/2019	8:35	Surfc	<i>Dinophysis acuminata (T)</i>		Rare	0.001
				<i>Heterocapsa lanceolata (B)</i>		Common	0.100
				<i>Heterocapsa rotundata (B)</i>		Present	
				<i>Heterocapsa sp. (B)</i>		Present	
				<i>Prorocentrum minimum (T)</i>		Rare	0.008
				<i>Prorocentrum scutellum (B)</i>		Rare	0.002
				<i>Prorocentrum triestinum (B)</i>		Rare	0.001

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	Sample Depth	Name	Comment if ID uncertain	Abundance	MC/L
<b>Indian River</b>							
<u>Pepper Creek</u>							
IR51: Pepper Creek, Creekside							
	6/11/2019	10:18	Surfc	<i>Heterocapsa lanceolata</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Common	0.125
				<i>Karlodinium veneficum</i> (T)		Present	
<u>Vines Creek</u>							
IR38: Vines Lane							
	6/11/2019	8:30	Surfc	(Unknown) (B*)	<5 um spheres	Abundant	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
<u>White Creek</u>							
IR32: Holly Terrace Acres Canal Dead End, White Creek							
	6/3/2019	8:20	Surfc	<i>Alexandrium</i> sp. (T)		Present	
				<i>Chloromorom toxicum</i> (T)		Common	0.100
				<i>Gyrodinium instriatum</i> (B)		Common	0.150
				<i>Heterocapsa lanceolata</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
				<i>Prorocentrum minimum</i> (T)		Common	0.125
				<i>Protoperidinium quinquecorne</i> (B)		Present	
				<i>Scrippsiella</i> sp. (B)		Present	
	6/10/2019	8:25		<i>Akashiwo sanguinea</i> (T)		Present	
				<i>Chattonella subsalsa</i> (T)		Present	
				<i>Chloromorom toxicum</i> (T)		Common	0.100
				<i>Gyrodinium instriatum</i> (B)		Common	0.213
				<i>Heterosigma akashiwo</i> (T)		Present	
				<i>Karlodinium veneficum</i> (T)		Common	0.100
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
				<i>Peridinium</i> sp. (B)	25um flat green	Present	
				<i>Prorocentrum minimum</i> (T)		Present	
				<i>Protoperidinium quinquecorne</i> (B)		Present	
	6/17/2019	8:35		<i>Akashiwo sanguinea</i> (T)		Present	
				<i>Chattonella subsalsa</i> (T)		Common	0.113
				<i>Chloromorom toxicum</i> (T)		Many	1.670
				<i>Gyrodinium instriatum</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Heterosigma akashiwo</i> (T)		Common	0.113
				<i>Karlodinium veneficum</i> (T)		Common	0.350
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
				<i>Prorocentrum minimum</i> (T)		Present	
				<i>Protoperidinium quinquecorne</i> (B)		Present	
				<i>Scrippsiella</i> sp. (B)		Present	
<b>Little Assawoman Bay</b>							
<u>Dirickson Creek</u>							
LA03: Mulberry Landing							
	6/11/2019	7:01	Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Heterosigma akashiwo</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	Sample Depth	Name	Comment if ID uncertain	Abundance	MC/L
<b>Little Assawoman Bay</b>							
<u>Dirickson Creek</u>							
LA03: Mulberry Landing							
	6/11/2019	7:01	Surfc	<i>Karlodinium veneficum</i> (T)		Common	0.213
				<i>Peridinium sp.</i> (B)	25um flat green	Present	
LA09: Dirickson Creek at Road 381 bridge.							
	6/11/2019	8:08	Surfc	<i>Gyrodinium instriatum</i> (B)		Many	3.300
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
				<i>Peridinium sp.</i> (B)	25um flat green	Present	
				<i>Protoperidinium quinquecorne</i> (B)		Present	
				<i>Scrippsiella sp.</i> (B)		Present	
<u>Jefferson Creek</u>							
SB10E: Russell Canal east dead end							
	6/4/2019	6:55	Surfc	<i>Alexandrium sp.</i> (T)		Present	
				<i>Amphidinium spp.</i> (T)		Present	
				<i>Chattonella subsalsa</i> (T)		Present	
				<i>Chloromorun toxicum</i> (T)		Present	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
				<i>Pleurochrysis carterae</i> (B*)		Abundant	15.400
				<i>Protoperidinium quinquecorne</i> (B)		Present	
				<i>Scrippsiella sp.</i> (B)		Present	
	6/11/2019	7:55		<i>Karlodinium veneficum</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
				<i>Prorocentrum minimum</i> (T)		Present	
	6/18/2019	7:57		<i>Chattonella subsalsa</i> (T)		Many	1.625
				<i>Heterosigma akashiwo</i> (T)		Present	
				<i>Karlodinium veneficum</i> (T)		Common	0.188
				<i>Protoperidinium quinquecorne</i> (B)		Present	
SB10W: Russell Canal west dead end							
	6/4/2019	7:15	Surfc	<i>Chattonella subsalsa</i> (T)		Present	
				<i>Chloromorun toxicum</i> (T)		Present	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Heterosigma akashiwo</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
	6/11/2019	8:08			No HABs found		
	6/18/2019	8:13		<i>Akashiwo sanguinea</i> (T)		Present	
				<i>Chattonella subsalsa</i> (T)		Many	1.030
				<i>Karlodinium veneficum</i> (T)		Common	0.113
				<i>Protoperidinium quinquecorne</i> (B)		Present	
<u>Little Assawoman Bay</u>							
LA46: Fenwick Island Tide Gauge							
	6/11/2019	7:30	Surfc	<i>Chloromorun toxicum</i> (T)		Present	
				<i>Gyrodinium instriatum</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Karlodinium veneficum</i> (T)		Common	0.175

## Rehoboth Bay

### Bald Eagle Creek

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	Date	Time	Sample	Name	Comment if	Abundance	MC/L
<u>Tributary</u>			<u>Depth</u>		<u>ID uncertain</u>		
<u>Site</u>							
<b>Rehoboth Bay</b>							
<u>Bald Eagle Creek</u>							
RB64: Torquay Canal, west side of Land's End near UD Site #1							
	6/3/2019	9:25	Surfc	<i>Alexandrium sp. (T)</i>		Present	
				<i>Amphidinium spp. (T)</i>		Present	
				<i>Chattonella subsalsa (T)</i>		Present	
				<i>Chloromorun toxicum (T)</i>		Present	
				<i>Dinophysis acuminata (T)</i>		Present	
				<i>Gyrodinium instriatum (B)</i>		Present	
				<i>Heterocapsa rotundata (B)</i>		Present	
				<i>Karlodinium veneficum (T)</i>		Common	0.125
				<i>Kryptoperidinium foliaceum (B)</i>		Present	
				<i>Prorocentrum triestinum (B)</i>		Present	
	6/10/2019	9:11		<i>Chattonella subsalsa (T)</i>		Common	0.938
				<i>Chloromorun toxicum (T)</i>		Present	
				<i>Heterocapsa lanceolata (B)</i>		Present	
				<i>Heterocapsa rotundata (B)</i>		Present	
				<i>Karlodinium veneficum (T)</i>		Present	
				<i>Kryptoperidinium foliaceum (B)</i>		Present	
				<i>Peridinium sp. (B)</i>	25um flat green	Present	
				<i>Protoperidinium quinquecorne (B)</i>		Present	
	6/17/2019	9:20		"Gymnodinoid" sp. (S)	10-15 um Grn	Present	
				<i>Akashiwo sanguinea (T)</i>		Present	
				<i>Heterocapsa lanceolata (B)</i>		Present	
				<i>Heterocapsa rotundata (B)</i>		Present	
				<i>Karlodinium veneficum (T)</i>		Present	
				<i>Prorocentrum minimum (T)</i>		Present	
				<i>Prorocentrum triestinum (B)</i>		Present	
<u>Guinea Creek</u>							
RB06: Guinea Creek (Winding Creek Village)							
	6/10/2019	7:58	Surfc	<i>Gyrodinium instriatum (B)</i>		Common	0.225
				<i>Heterosigma akashiwo (T)</i>		Present	
				<i>Karlodinium veneficum (T)</i>		Present	
				<i>Kryptoperidinium foliaceum (B)</i>		Present	
				<i>Protoperidinium quinquecorne (B)</i>		Present	
<u>Love Creek</u>							
RB34: Love Creek at Rt 24 Bridge							
	6/12/2019	8:30	Surfc	<i>Gyrodinium instriatum (B)</i>		Common	0.125
				<i>Heterocapsa rotundata (B)</i>		Common	0.100
				<i>Heterosigma akashiwo (T)</i>		Abundant	12.540
				<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**