

# Harmful Algae Report

All data between 7/2/2015 and 7/23/2015

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>							
RWPM14: Tower Rd Ocean, Delaware Seashore State Park							
	7/8/2015	8:45	Surfc	<i>Chaetoceros</i> spp. (B)		Rare	0.002
				<i>Ditylum</i> spp. (T)		Very Rare	
				<i>Karlodinium veneficum</i> (T)		Very Rare	
				<i>Rhizosolenia</i> spp. (T)		Very Rare	
				<i>Scrippsiella</i> sp. (B)		Very Rare	
	7/22/2015	8:10		"Gymnodinoid" sp. (S)	25-40 um Grn	Common	0.138
				<i>Chaetoceros</i> spp. (B)		Present	
				<i>Dinophysis acuminata</i> (T)		Very Rare	
				<i>Dinophysis norvegica</i> (T)		Very Rare	
				<i>Eutreptiella</i> sp. (B)		Common	0.488
				<i>Fibrocapsa japonica</i> (T)		Present	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Heterosigma akashiwo</i> (T)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Prorocentrum triestinum</i> (B)		Present	
				<i>Rhizosolenia</i> spp. (T)		Very Rare	
				<i>Scrippsiella</i> sp. (B)		Present	
RWPM8: Cape Henlopen State Park Beach (2)							
	7/15/2015	10:20	Surfc	<i>Dinophysis norvegica</i> (T)		Very Rare	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Prorocentrum scutellum</i> (B)		Very Rare	
RWPMVIII: Town of Fenwick							
	7/8/2015	8:00	Surfc	<i>Ceratium pentagonum</i> (B)		Very Rare	
				<i>Chaetoceros</i> spp. (B)		Rare	0.002
				<i>Dinophysis acuminata</i> (T)		Very Rare	
				<i>Ditylum</i> spp. (T)		Very Rare	
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Prorocentrum scutellum</i> (B)		Very Rare	
				<i>Prorocentrum triestinum</i> (B)		Very Rare	
				<i>Pseudo-nitzschia</i> spp. (T)		Very Rare	
				<i>Scrippsiella</i> sp. (B)		Very Rare	
	7/22/2015	8:30		"Gymnodinoid" sp. (S)	25-40 um Grn	Rare	
				<i>Chaetoceros</i> spp. (B)		Common	
				<i>Dinophysis acuminata</i> (T)		Very Rare	
				<i>Eutreptiella</i> sp. (B)		Common	0.138
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Prorocentrum scutellum</i> (B)		Rare	
				<i>Prorocentrum triestinum</i> (B)		Present	
				<i>Pseudo-nitzschia</i> spp. (T)		Very Rare	
				<i>Scrippsiella</i> sp. (B)		Rare	
<b>Broadkill River</b>							
<u>Broadkill River</u>							
BR01: Broadkill river @ PEL dock.							
	7/2/2015	8:50	Net	<i>Ceratium pentagonum</i> (B)			
				<i>Chaetoceros</i> spp. (B)			
				<i>Dinophysis acuminata</i> (T)			

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>Broadkill River</b>							
<u>Broadkill River</u>							
BR01: Broadkill river @ PEL dock.							
	7/2/2015	8:50	Net	<i>Heterocapsa rotundata</i> (B)			
				<i>Heterosigma akashiwo</i> (T)			
				<i>Karlodinium veneficum</i> (T)			
				<i>Prorocentrum scutellum</i> (B)			
				<i>Rhizosolenia</i> spp. (T)			
				<i>Scrippsiella</i> sp. (B)			
			Surfc	<i>Heterosigma akashiwo</i> (T)		Present	
	7/8/2015		Net	<i>Chaetoceros</i> spp. (B)			
				<i>Heterocapsa rotundata</i> (B)			
				<i>Heterosigma akashiwo</i> (T)			
				<i>Prorocentrum scutellum</i> (B)			
				<i>Scrippsiella</i> sp. (B)			
			Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Prorocentrum scutellum</i> (B)		Present	
	7/15/2015		Net	<i>Chaetoceros</i> spp. (B)			
				<i>Heterocapsa rotundata</i> (B)			
				<i>Prorocentrum scutellum</i> (B)			
				<i>Rhizosolenia</i> spp. (T)			
				<i>Scrippsiella</i> sp. (B)			
			Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Scrippsiella</i> sp. (B)		Present	
	7/22/2015		Net	<i>Anabaena</i> spp. (T)			
				<i>Chattonella subsalsa</i> (T)			
				<i>Kryptoperidinium foliaceum</i> (B)			
				<i>Peridinium</i> sp. (B)	40 um olive green		
				<i>Prorocentrum scutellum</i> (B)			
				<i>Scrippsiella</i> sp. (B)			
	BR20: Broadkill River at Milton tidal pond						
	7/15/2015	6:10	Surfc		No HABs found		
<u>Diamond Pond</u>							
BR48: Diamond Pond at Spillway							
	7/15/2015	7:05	Surfc		No HABs found		
<u>Old Mill Creek</u>							
BR21: Old Mill Creek downstream from Red Mill Pond							
	7/15/2015	11:46	Surfc	<i>Cylindrospermopsis</i> (T)		Common	0.375
				<i>Heterosigma akashiwo</i> (T)		Present	
<u>Prime Hook Creek</u>							
BR03: Prime Hook Creek at Boat Ramp at Refuge Headquarters							
	7/15/2015	11:17	Surfc	<i>Anabaena</i> spp. (T)		Common	0.875
				<i>Chaetoceros</i> spp. (B)		Many	8.800
				<i>Kryptoperidinium foliaceum</i> (B)		Many	8.800
				<i>Peridinium</i> sp. (B)	40 um olive green	Abundant	11.000
				<i>Protoperidinium quinquecorne</i> (B)		Present	
<u>Red Mill Pond</u>							
BR54: Red Mill Pond outlet at Rt 1							
	7/16/2015	9:00	Surfc	(Unknown) (B*)	Thin cyano straight	Abundant	72.600
				<i>Anabaena</i> spp. (T)		Common	
				<i>Aphanizomenon</i> spp. (T)		Abundant	81.400

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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>Broadkill River</b>							
<u>Red Mill Pond</u>							
BR54: Red Mill Pond outlet at Rt 1							
	7/16/2015	9:00	Surfc	<i>Cylindrospermopsis (T)</i>		Abundant	13.200
				<i>Microcystis spp. (T)</i>		Many	7.700
				<i>Planktolyngbya sp. (B*)</i>		Abundant	26.400
				<i>Snowella spp. (T)</i>		Common	
<u>Wagamon's Pond</u>							
BR44: Wagamon's Pond on Northern Shoreline, Milton							
	7/15/2015	9:15	Surfc	<i>Aphanizomenon spp. (T)</i>		Present	
				<i>Lyngbya (T)</i>		Present	
<b>Delaware Bay</b>							
<u>Canary Creek</u>							
BR40: Canary Creek at Pilottown Rd							
	7/15/2015	9:08	Surfc	"Gymnodinioid" sp. (S)	25-40 um Grn	Present	
				<i>Chaetoceros spp. (B)</i>		Present	
				<i>Heterocapsa rotundata (B)</i>		Present	
				<i>Karlodinium veneficum (T)</i>		Present	
				<i>Kryptoperidinium foliaceum (B)</i>		Present	
				<i>Prorocentrum scutellum (B)</i>		Present	
<u>Delaware Bay</u>							
DB01: End of Cape Shores pier							
	7/7/2015	9:00	Surfc	<i>Chaetoceros spp. (B)</i>		Present	
				<i>Heterocapsa rotundata (B)</i>		Common	0.425
				<i>Karlodinium veneficum (T)</i>		Present	
	7/14/2015	8:46		<i>Heterocapsa rotundata (B)</i>		Common	0.150
				<i>Karlodinium veneficum (T)</i>		Present	
				<i>Prorocentrum scutellum (B)</i>		Present	
				<i>Protoperidinium quinquecorne (B)</i>		Present	
	7/22/2015	9:05		<i>Heterocapsa rotundata (B)</i>		Present	
				<i>Heterosigma akashiwo (T)</i>		Present	
				<i>Prorocentrum scutellum (B)</i>		Present	
<b>Indian River</b>							
<u>Indian River</u>							
IR04: Warwick Cove							
	7/13/2015	9:40	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
				<i>Karlodinium veneficum (T)</i>		Present	
IR11: Pot Nets Seaside Pier							
	7/13/2015	10:12	Surfc	<i>Heterocapsa rotundata (B)</i>		Present	
				<i>Karlodinium veneficum (T)</i>		Present	
				<i>Prorocentrum triestinum (B)</i>		Present	
IR24: Iron Branch - County road 331 at bridge							
	7/13/2015	9:15	Surfc	<i>Gyrodinium instriatum (B)</i>		Many	5.500
				<i>Heterosigma akashiwo (T)</i>		Common	0.138
				<i>Karlodinium veneficum (T)</i>		Present	
				<i>Kryptoperidinium foliaceum (B)</i>		Present	
IR36: James Farm, base of Pasture Point Knee deep 150 yds from shore							
	7/14/2015	7:35	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.							
	7/15/2015	8:35	Surfc	<i>Ceratium pentagonum (B)</i>		Very Rare	
				<i>Heterocapsa rotundata (B)</i>		Present	
				<i>Karenia papilionacea (T)</i>		Very Rare	

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Water Body Tributary Site	Date	Time	Sample Depth	Name	Comment if ID uncertain	Abundance	MC/L
<b>Indian River</b>							
<u>Indian River</u>							
IR39: North side of Inlet at Wheelchair fishing platform under new bridge.							
	7/15/2015	8:35	Surfc	<i>Karlodinium veneficum</i> (T)		Present	
				<i>Scrippsiella sp.</i> (B)		Very Rare	
<u>Vines Creek</u>							
IR38: Vines Lane							
	7/14/2015	7:15	Surfc	<i>Akashiwo sanguinea</i> (T)		Present	
				<i>Chloromorom toxicum</i> (T)		Present	
				<i>Gyrodinium instriatum</i> (B)		Common	0.200
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
<u>White Creek</u>							
IR32: Holly Terrace Acres Canal Dead End, White Creek							
	7/6/2015	8:35	Surfc	<i>Chattonella subsalsa</i> (T)		Present	
				<i>Chloromorom toxicum</i> (T)		Present	
				<i>Gyrodinium instriatum</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Common	0.292
				<i>Heterosigma akashiwo</i> (T)		Common	0.108
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Common	0.242
				<i>Peridinium sp.</i> (B)	25um flat green	Common	0.350
				<i>Prorocentrum triestinum</i> (B)		Present	
				<i>Protoperidinium quinquecorne</i> (B)		Present	
				<i>Scrippsiella sp.</i> (B)		Present	
	7/13/2015	6:58		<i>Chattonella subsalsa</i> (T)		Present	
				<i>Chloromorom toxicum</i> (T)		Common	0.350
				<i>Gyrodinium instriatum</i> (B)		Present	
				<i>Heterosigma akashiwo</i> (T)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Common	0.750
				<i>Prorocentrum triestinum</i> (B)		Present	
				<i>Protoperidinium quinquecorne</i> (B)		Present	
				<i>Scrippsiella sp.</i> (B)		Present	
	7/20/2015	7:00		<i>Chattonella subsalsa</i> (T)		Many	1.760
				<i>Chloromorom toxicum</i> (T)		Many	3.300
				<i>Gyrodinium instriatum</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Many	3.080
				<i>Heterosigma akashiwo</i> (T)		Common	0.150
				<i>Karlodinium veneficum</i> (T)		Many	2.420
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
				<i>Prorocentrum triestinum</i> (B)		Present	
				<i>Protoperidinium quinquecorne</i> (B)		Present	
<b>Little Assawoman Bay</b>							
<u>Dirickson Creek</u>							
LA03: Mulberry Landing							
	7/13/2015	6:34	Surfc	<i>Heterocapsa rotundata</i> (B)		Common	0.255
				<i>Karlodinium veneficum</i> (T)		Common	0.100
LA09: Dirickson Creek at Road 381 bridge.							
	7/13/2015	7:14	Surfc	<i>Chattonella subsalsa</i> (T)		Present	
				<i>Chloromorom toxicum</i> (T)		Present	
				<i>Gyrodinium instriatum</i> (B)		Common	0.263

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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>							
LA09: Dirickson Creek at Road 381 bridge.							
	7/13/2015	7:14	Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Heterosigma akashiwo</i> (T)		Common	0.613
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
<u>Jefferson Creek</u>							
SB10E: Russell Canal east dead end							
	7/7/2015	7:58	Surfc	<i>Akashiwo sanguinea</i> (T)		Present	
				<i>Chattonella subsalsa</i> (T)		Present	
				<i>Chloromorom toxicum</i> (T)		Common	0.425
				<i>Fibrocapsa japonica</i> (T)		Common	0.188
				<i>Gyrodinium instriatum</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Scrippsiella sp.</i> (B)		Present	
	7/14/2015	7:52		<i>Chloromorom toxicum</i> (T)		Common	0.350
				<i>Fibrocapsa japonica</i> (T)		Common	0.213
				<i>Gyrodinium instriatum</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Common	0.100
				<i>Karlodinium veneficum</i> (T)		Present	
	7/21/2015	7:15		<i>Akashiwo sanguinea</i> (T)		Present	
				<i>Chattonella subsalsa</i> (T)		Common	0.200
				<i>Chloromorom toxicum</i> (T)		Common	0.125
				<i>Fibrocapsa japonica</i> (T)		Present	
				<i>Gyrodinium instriatum</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Common	0.788
				<i>Karlodinium veneficum</i> (T)		Common	0.163
				<i>Protoperidinium quinquecorne</i> (B)		Present	
SB10W: Russell Canal west dead end							
	7/7/2015	8:14	Surfc	<i>Fibrocapsa japonica</i> (T)		Present	
				<i>Gyrodinium instriatum</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Common	0.100
				<i>Heterosigma akashiwo</i> (T)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
				<i>Scrippsiella sp.</i> (B)		Present	
	7/14/2015	8:08		<i>Chattonella subsalsa</i> (T)		Present	
				<i>Chloromorom toxicum</i> (T)		Present	
				<i>Heterocapsa rotundata</i> (B)		Common	0.938
	7/21/2015	7:10		<i>Chloromorom toxicum</i> (T)		Present	
				<i>Fibrocapsa japonica</i> (T)		Present	
				<i>Heterocapsa rotundata</i> (B)		Common	0.175
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
<u>Little Assawoman Bay</u>							
LA46: Fenwick Island Tide Gauge							
	7/14/2015	8:54	Surfc	" <i>Gymnodinioid</i> " sp. (S)	25-40 um Grn	Present	
				<i>Akashiwo sanguinea</i> (T)		Present	
				<i>Heterocapsa rotundata</i> (B)		Common	0.813
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Prorocentrum triestinum</i> (B)		Present	

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Water Body Tributary Site	Date	Time	Sample Depth	Name	Comment if ID uncertain	Abundance	MC/L
<b>Rehoboth Bay</b>							
ML: Massey's Landing							
	7/8/2015	8:45	Surfc	<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Prorocentrum triestinum</i> (B)		Present	
	7/15/2015			<i>Chaetoceros</i> spp. (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Scrippsiella</i> sp. (B)		Present	
<b>Bald Eagle Creek</b>							
RB64: Torquay Canal, west side of Land's End near UD Site #1							
	7/6/2015	8:55	Surfc	<i>Chattonella subsalsa</i> (T)		Many	1.125
				<i>Chloromorom toxicum</i> (T)		Common	0.133
				<i>Gyrodinium instriatum</i> (B)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Common	0.108
				<i>Peridinium</i> sp. (B)	25um flat green	Present	
				<i>Prorocentrum minimum</i> (T)		Present	
				<i>Protoperidinium quinquecorne</i> (B)		Present	
	7/13/2015	9:05		<i>Chattonella subsalsa</i> (T)		Present	
				<i>Chloromorom toxicum</i> (T)		Present	
				<i>Gyrodinium instriatum</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Heterosigma akashiwo</i> (T)		Common	0.188
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Kryptoperidinium foliaceum</i> (B)		Present	
				<i>Protoperidinium quinquecorne</i> (B)		Present	
	7/20/2015	9:10		<i>Chloromorom toxicum</i> (T)		Common	0.113
				<i>Heterocapsa rotundata</i> (B)		Present	
				<i>Heterosigma akashiwo</i> (T)		Present	
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Protoperidinium quinquecorne</i> (B)		Present	
<b>Guinea Creek</b>							
RB06: Guinea Creek (Winding Creek Village)							
	7/13/2015	8:30	Surfc	(Unknown) sp. (B*)	5-15 um grn trdrp flag	Abundant	17.600
				<i>Gyrodinium instriatum</i> (B)		Present	
				<i>Heterocapsa rotundata</i> (B)		Common	0.100
				<i>Heterosigma akashiwo</i> (T)		Common	0.178
				<i>Karlodinium veneficum</i> (T)		Present	
				<i>Prorocentrum triestinum</i> (B)		Present	
				<i>Scrippsiella</i> sp. (B)		Present	
<b>Love Creek</b>							
RB34: Love Creek at Rt 24 Bridge							
	7/14/2015	10:52	Surfc	<i>Chloromorom toxicum</i> (T)		Present	
				<i>Gyrodinium instriatum</i> (B)		Common	0.213
				<i>Heterocapsa rotundata</i> (B)		Common	0.213
				<i>Heterosigma akashiwo</i> (T)		Present	
				<i>Karlodinium veneficum</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**