MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Recreational Use of Waterbodies Near Joint Base Cape Cod (JBCC)

Community Fact Sheet 2024

This community fact sheet discusses environmental health concerns related to recreational use of selected Upper Cape Cod fresh waterbodies and the results of recent chemical testing. **Based on the available data, waterbodies tested near JBCC are safe for swimming, wading, boating, and recreational fishing.**

The Massachusetts Department of Public Health (MDPH) has issued fish consumption advisories primarily due to raised mercury levels in many waterbodies across Massachusetts, including several waterbodies near JBCC.

This fact sheet does not address potential health risks posed by microbes such as cyanobacteria (algae) and fecal indicator bacteria, both of which are sampled at many of the waterbodies near JBCC during the summer months. For specific information about microbial water quality measurements, contact your local health department or visit: www.mass.gov/dph/beaches

Can I safely swim, wade, or boat in the surface waterbodies near JBCC?

Yes, all of the surface waterbodies (including marine beaches, lakes, ponds, and rivers) in Table 1 are safe for swimming, wading, and boating. Table 1 summarizes safe recreational use for 35 surface waterbodies near JBCC (JBCC waterbodies) where environmental sampling data are available.

Chemicals associated with JBCC have been detected in the surface water. However, levels detected in the water do not pose a health concern for recreational activities, including for potentially susceptible or vulnerable populations (e.g., pregnant or nursing mothers, infants, and the elderly). However, individuals should avoid contact with foam on the water, if present, because foam may contain much higher levels of some chemicals, as well as bacteria. If individuals contact foam, they should rinse if off as soon as possible.

Can I safely fish in waters near JBCC?

Yes, fishing for recreation is safe for all waterbodies near JBCC as long as you release the fish once caught, and don't eat the fish.

However, contaminants such as mercury and PFAS have been detected in fish throughout Massachusetts at levels that, for certain people, may be unsafe to eat, including in several waterbodies near JBCC. Nine ponds (Ashumet, Flax, Grews, Jenkins, Johns, Mashpee-Wakeby, Peters, Shubael, and Snake) each have public health fish consumption advisories. Table 2 has more information about the fish advisories for waterbodies near JBCC.

What is the MDPH statewide fish consumption advisory for mercury?

The MDPH has issued a statewide advisory for mercury recommending that certain people should not eat fish that are recreationally caught in Massachusetts until new information shows it is specifically safe to eat fish from a particular waterbody or waterbodies.

People who are pregnant, of childbearing age who may become pregnant, or nursing; and children under 12 years old, should not eat fish caught from a local waterbody that hasn't been evaluated by MDPH. Please be aware that fish advisories for mercury, including the statewide advisory, do not apply to fish stocked in freshwater lakes and ponds or the retail sale of fresh fish. MDPH has issued other important recommendations for eating locally caught fish. These can be viewed at the fish advisories web page listed below.

For more information on fish consumption advisories, please contact the MDPH Bureau of Environmental Health's Environmental Toxicology Program: 617-624-5757 DPHToxicology@state.ma.us or visit: www.mass.gov/dph/fishadvisories

Where do mercury and PFAS come from? How can the ponds be safe to swim in but contain fish that are not safe to eat?

Mercury enters the environment naturally when rocks are worn down, and through industrial incineration and power generation. Mercury travels through the air and settles onto waterbodies. PFAS are present in JBCC waterbodies primarily due to historical use of firefighting foam, which contaminated groundwater near the JBCC waterbodies. Fish ingest the mercury and PFAS in the water and sediment, which then builds up inside the fish over time.

While there are warnings about eating fish, there are no health concerns related to activities such as swimming, boating, or recreational fishing (release fish once caught) in these ponds. This is because the health advisories are based on chemical levels in the fish. Some chemicals, such as mercury and certain PFAS, accumulate in fish at levels that are much greater than the surrounding waters. Only by eating the fish will someone be exposed to these chemicals. Recreational activities like swimming, wading, boating, and touching fish are not likely to expose individuals to high levels of mercury, PFAS, or other chemicals.

In the past, ethylene dibromide (EDB) was detected in the groundwater below Snake Pond and in the Coonamessett River surface water. Snake Pond surface water has also been tested for compounds found in explosives. Are there possible health impacts from recreational use of either Snake Pond or the Coonamessett River?

No, adverse health effects are not expected from recreational use of either Snake Pond or the Coonamessett River. EDB was found in surface water of the Coonamessett River in 1996 and in the groundwater below Snake Pond in 2001. The surface waters of Snake Pond (both the public and private beach areas) and multiple locations on the Coonamessett River are regularly tested for EDB. EDB has not been detected in either waterbody since 2011. Also, in Snake Pond, explosives have not been detected above risk-based cleanup standards and perchlorate has not been detected above the Massachusetts Drinking Water Standard since 2010.

Should I be concerned about trichloroethylene (TCE) or tetrachloroethylene (PCE) in groundwater associated with JBCC activities?

No, the surface waters of Ashumet Pond, Johns Pond, Deep Pond, Backus River, Red Brook Harbor, and Squeteague Harbor have been regularly checked for these chemicals since the early 2000s. Neither TCE nor PCE have been detected above the drinking water standard since 2009. Using any of these waterbodies for recreation is not expected to have any effects on your health.

Should I be concerned about detections of 1,4-dioxane?

1,4-Dioxane is an industrial chemical found in solvents, paints, and waxes, which has been detected at low levels in the Backus River, Pond 14, Coonamessett River, Deep Pond, and Johns Pond. All detections are below the MassDEP drinking water guideline. Adverse health effects from exposure to 1,4-dioxane associated with recreational activity in these waterbodies are not a concern.

Should I be concerned about per- and polyfluoroalkyl substances (PFAS) that have been detected in surface water at JBCC waterbodies?

These contaminants have not been detected in waterbodies near JBCC at levels that present a health risk to people using them for recreational activities, such as swimming, wading or boating.

PFAS are a group of fluorinated organic chemicals that have been used to make carpets, clothing, fabrics for furniture, paper packaging for food, and other materials (e.g., cookware) that are resistant to water, grease, and stains. They are also used in some firefighting foams and industrial processes. Because PFAS have been used in a range of consumer products, most people have been exposed to them. Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) have been the most extensively produced and studied of these chemicals. Research on these and other PFAS is ongoing.

In October 2020, MassDEP issued a maximum contaminant level (MCL) that is applicable to six PFAS, including PFOA, PFOS, perfluorohexane sulfonate (PFHxS), perfluoroheptanoic acid (PFHpA), perfluorononanoic acid (PFNA), and perfluorodecanoic acid (PFDA). In April 2024, the United States Environmental Protection Agency (US EPA) issued MCLs applicable to PFOA, PFOS; PFHxS, PFNA, perfluorobutane sulfonic acid, and hexafluoropropylene oxide dimer acid and its ammonium salt (referred to as GenX chemicals). Accordingly, MassDEP will be updating the Massachusetts MCL to be at least as stringent as US EPA's MCLs.

PFAS have been detected at concentrations greater than the MassDEP MCL at: Ashumet Pond, Backus River, Childs River, Hen Cove, Grassy Pond, Johns Pond, Moody Pond, Quashnet River, Red Brook Pond, and Wilson Bog Pond. However, potential exposure to PFAS associated with swimming, wading, boating or recreational fishing would be less than potential exposure from drinking water containing PFAS. This is because the amount of water typically ingested during recreational activities is less than the amount ingested as drinking water, and because very little PFAS are absorbed through the skin. As such, exposure to PFAS from swimming, wading, boating, or fishing in JBCC waterbodies is not expected to result in adverse health effects.

Table 1
Recreational waterbodies near JBCC evaluated as safe for swimming, wading, or boating.
Note: numbers refer to fish consumption advisories for specific water bodies, described in Table 2.

COMMUNITY	WATERBODY*
Barnstable	Shubael Pond*[7]
Bourne	Cuffs Pond Flax Pond (Picture Lake)*[2] Hen Cove* Lily Pond Long Pond Red Brook Pond Red Brook Harbor Squeteague Harbor* Wilson Bog Pond
Falmouth	Backus River (Bogs) Bournes Pond River (Bogs) Childs River Collins Bog Coonamessett River (Bogs) Crooked Pond* Deep Pond Flax Pond* Fresh Pond Frog Pond Grassy Pond Jenkins Pond*[4] Mares Pond* Round Pond* Pond 14
Mashpee	Algonquin (Cataquin) Pond Ashumet Pond[1] Flashy Pond Johns Pond*[5] Lakeside Estates Pond Martha Pond Mashpee-Wakeby Pond*[6] Moody Pond Quashnet River (Bogs) Santuit Pond*
Sandwich	Peters Pond*[7] Pimlico Pond Snake Pond*[8] Triangle Pond* Weeks Pond

**Indicates waterbody has a permitted swimming beach*

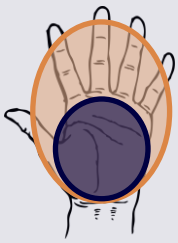
For more information and resources related to PFAS in drinking water, visit:
MassDEP: https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas
US Agency for Toxic Substances and Disease Registry (ATSDR): https://www.atsdr.cdc.gov/pfas/

Table 2. MDPH fish advisories for mercury and PFAS

(Fish consumption recommendations are based on available data or statewide advisory for mercury concentrations in fish tissues)

POND	AMOUNT	SPECIES *(contaminant)*
Ashumet Pond		
Children younger than 12 years, and people who are pregnant, nursing, or who may become pregnant	**Do not eat**	**Any fish *(mercury, PFAS)***
General public	**Do not eat**	
Flax Pond (Picture Lake)		
Children younger than 12 years, and people who are pregnant, nursing, or who may become pregnant	**Do not eat**	**Any fish *(PFAS, mercury*)***
General public	**One meal per week**	
Grews Pond		
Children younger than 12 years, and people who are pregnant, nursing, or who may become pregnant	**Do not eat**	**Any fish *(PFAS, mercury*)***
General public	**Two meals per week**	
Jenkins Pond		
Children younger than 12 years, and people who are pregnant, nursing, or who may become pregnant	**Do not eat**	**Any fish *(PFAS, mercury*)***
General public	**One meal per week**	
Johns Pond		
Children younger than 12 years, and people who are pregnant, nursing, or who may become pregnant	**Do not eat**	**Any fish *(mercury, PFAS)***
General public	**Do not eat**	**Smallmouth bass *(mercury, PFAS)***
	One meal per year	**All other fish *(PFAS)***
Mashpee-Wakeby Pond		
Children younger than 12 years, and people who are pregnant, nursing, or who may become pregnant	**Do not eat**	**Largemouth bass *(mercury, PFAS)*** **Smallmouth bass *(mercury, PFAS)***
	One meal per week	**All other fish *(PFAS)***
General public	**Two meals per month**	**Largemouth bass *(mercury, PFAS)*** **Smallmouth bass *(mercury, PFAS)***
	One meal per week	**All other fish *(PFAS)***
Peters and Shubael Ponds		
Children younger than 12 years, and people who are pregnant, nursing, or who may become pregnant	**Do not eat**	**Any fish *(mercury)***
General public	**Two meals per month**	
Snake Pond		
Children younger than 12 years, and people who are pregnant, nursing, or who may become pregnant	**Do not eat**	**Any fish *(mercury)***
General public	**Do not eat**	**Smallmouth bass *(mercury)***
	Two meals per month	**All other fish *(mercury)***
All other waterbodies near JBCC (no waterbody-specific fish data have been evaluated by DPH)		
Children younger than 12 years, and people who are pregnant, nursing, or who may become pregnant should not eat any fish		

*This waterbody has not been evaluated for mercury. Per DPH's statewide fish consumption advisory for mercury, sensitive populations should not eat fish from this waterbody until more information on mercury levels is available.



Serving Size

8 oz.

4 oz.

An adult's uncooked serving size is about 8 ounces (the size of an adult's hand)

A child's uncooked serving size is about 4 ounces (the size of an adult's palm)

WHERE CAN I GET MORE INFORMATION?

BUREAU OF ENVIRONMENTAL HEALTH
ENVIRONMENTAL TOXICOLOGY PROGRAM
Massachusetts Department of Public Health
250 Washington Street, Boston, MA 02108
Phone: 617-624-5757 | DPHToxicology@state.ma.us
http://www.mass.gov/dph/environmental_health

SOURCES OF ADDITIONAL INFORMATION

Air Force Civil Engineer Center
Douglas Karson
(508) 968-4678, x2
douglas.karson@us.af.mil

MassDEP
Ellie Donovan
(508) 946-2866
ellie.donovan@mass.gov

Environmental Protection Agency – Region 1
Darriel Swatts
(617) 918-1065
swatts.darriel@epa.gov

Impact Area Groundwater Study Program
Pam Richardson
(339) 202-9360
pamela.j.richardson.nfg@mail.mil

Agency for Toxic Substances and Disease Registry – Region 1
Tarah S. Somers
(617) 918-1493
tvs4@cdc.gov

LOCAL AND TRIBAL CONTACTS

Town of Bourne
Terri Guarino
(508) 759-0600, x1513
TGuarino@townofbourne.com

Town of Falmouth
Scott McGann
(508) 495-7485
Scott.McGann@falmouthma.gov

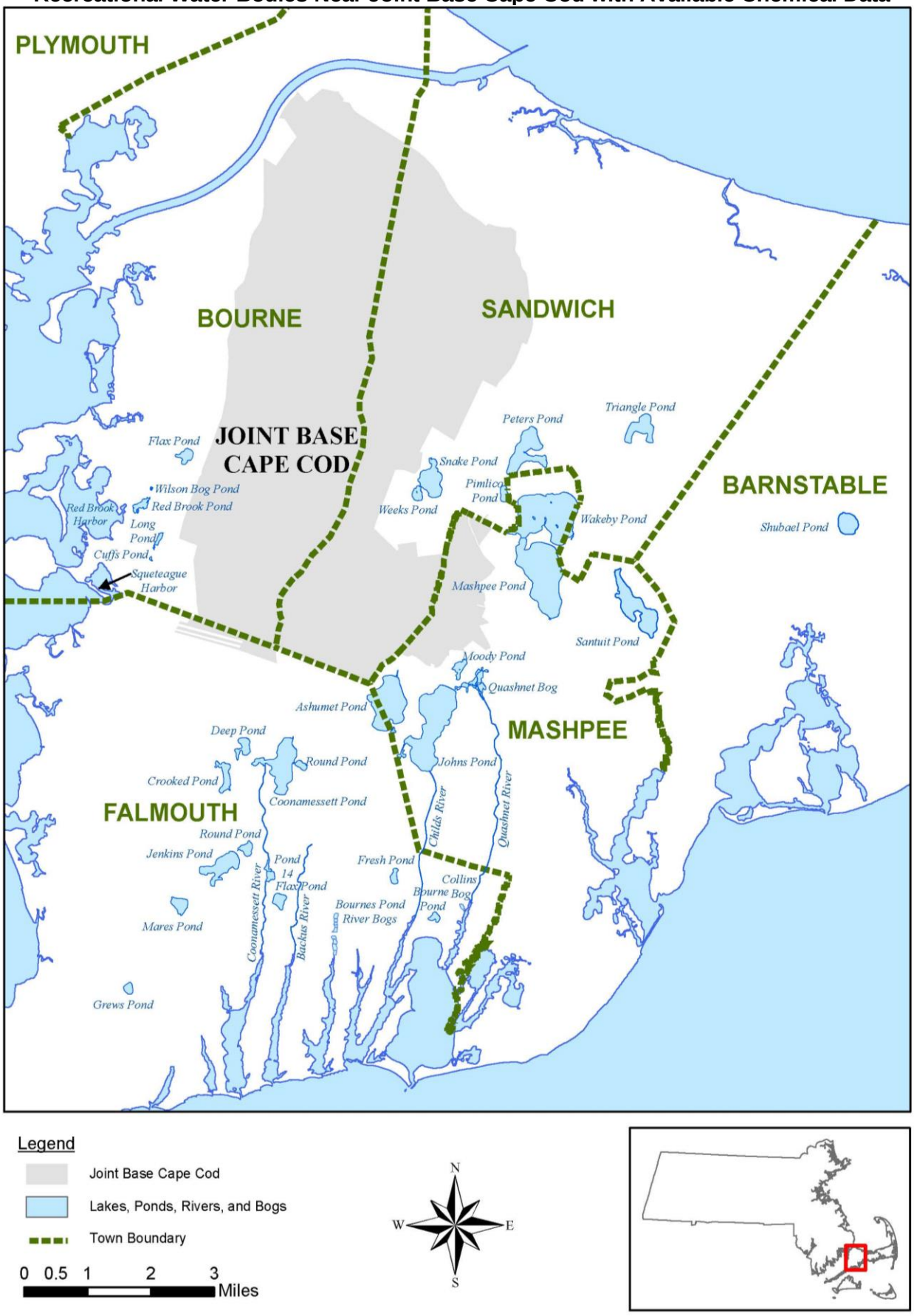
Town of Mashpee
Zackary Seabury
(508) 539-1426
zseabury@mashpeema.gov

Town of Sandwich
Heather L Gallant
(508) 888-4200
hgallant@sandwichmass.org

Barnstable County Dept. of Health and the Environment
Sean O'Brien
(508) 375-6618
sobrien@barnstablecounty.org

Mashpee Wampanoag Tribe
Jason Steiding
(508) 477-0208, x126
jason.steiding@mwtribe-nsn.gov

Recreational Water Bodies Near Joint Base Cape Cod with Available Chemical Data



The following small ponds, which are all near Ashumet Pond and Johns Pond, are not shown on the map: Algonquin (Cataquin), East, Flashy, Frog, Grassy, Lakeside Estates, Martha, and West ponds.