

# Prevent Poo in the Blue

## A Bulletin for Marinas

### What happens...

Boat heads are emptied in waterways or people poop directly in the water. This waste may contain norovirus particles. Infected people can shed the virus even when they are not showing symptoms.



Oysters and clams filter viruses from the contaminated water, concentrating them in their bodies. Noroviruses can remain in the environment for a long period of time without losing the ability to infect people.



The oysters and clams are harvested and served, usually raw or lightly steamed. This light cooking does not inactivate norovirus, and people can become ill. They may then spread the virus to others. People usually recover without problems, but dehydration is a concern, and may rarely result in hospitalization.



### Poop matters.

Just one person's poop is enough to cause an outbreak.

- 1 gram of poop, about the weight of a **fish hook**, can contain millions of virus particles.
- It only takes 10-100 viruses to get sick.
- The waste from **one person** can contaminate an area about the size of **25 football fields**.

**Human sewage** in the ocean & waterways can cause human illnesses such as **norovirus** (the "stomach flu"), which causes nausea, vomiting, diarrhea, stomach pain, and sometimes fever. There are millions of cases each year in the U.S. alone, resulting in 1,000s of hospitalizations and 100s of deaths. It spreads through the fecal-oral route (poop to mouth), by way of food, water, objects, surfaces, and other people.

### Reduce the Risk

- 1) Raise awareness. Post information about these risks where boaters can see it.
- 2) Provide functional facilities for boat waste disposal.
- 3) Post information about proper handwashing practices.
  - Hands should be washed with soap and water, and dried with paper towels.
  - Hands should be washed often, especially after using the bathroom.
  - Do not rely on hand sanitizers alone, they are not completely effective against norovirus. Provide handwashing facilities.

Boaters once contaminated a U.S. Gulf Coast waterway by dumping human waste overboard. Oysters harvested from that area caused a norovirus outbreak that sickened 200 people across 6 states. **It only took this one incident to cause the outbreak.**

