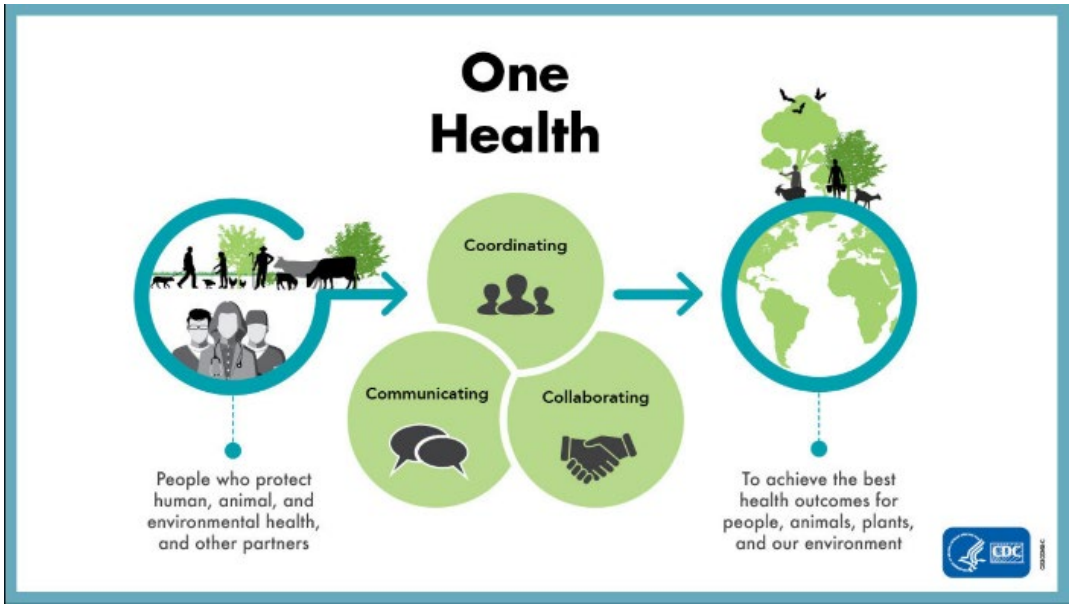
New Jersey's One Health Approach to Harmful Algal Blooms

What is One Health?

The One Health approach recognizes that human health is connected to animal health and the health of our shared environment. Our world's interconnectedness also comes with shared exposures, such as ingesting contaminated food or water, consuming contaminated meat or fish, or being exposed to contaminants directly through the air or other elements of the environment. Thus, it's crucial for multiple partners in different areas of expertise to coordinate public health interventions that aim to protect humans, animals, and the physical environment.

To better understand how state agencies incorporate the One Health approach, ASTHO interviewed staff from the New Jersey Department of Health (NJDOH) and the New Jersey Department of Environmental Protection (NJDEP) on their collaborative work around harmful algal blooms (HABs).



Source: CDC

Harmful Algal Blooms in New Jersey

In warmer months, freshwater lakes and ponds can experience cyanobacteria blooms, sometimes called blue-green algae. Similarly, coastal waters often see harmful algae blooms, commonly referred to as red tide. When these blooms occur, the cyanobacteria and algae release toxins that can harm human and animal health by contaminating drinking water and supplies of fish and shellfish. New Jersey has seen an increase in HABs over recent years, resulting in the governor supporting a statewide initiative to reduce the negative impacts of harmful algal blooms by promoting collaboration between state agencies.

NJDOH and NJDEP work together using a One Health approach to protect humans, pets, and wildlife from these toxins. NJDEP focuses on testing samples from water bodies and developing guidance for when to notify the public and recommend closures. Based on these testing results, NJDOH informs the public about regulated bathing beaches and works with municipalities to implement bathing beach closures if the levels of cyanobacteria or harmful algae are too high. NJDEP issues alerts for human and animal health related to public recreational water bodies and fishing in affected water bodies. Local health department partners usually implement closures by posting signage at water bodies.

Partnerships

As a result of a governor's mandate, NJDOH and NJDEP established a formal partnership to promote awareness of HABs and protect public recreational water bodies in the state. Grant funding from this mandate also supports upgrades to septic and sub-service disposal systems to reduce the level of nutrients that enter water bodies and contribute to algal blooms.

In addition to collaborating on HABs, NJDOH and NJDEP also support a statewide One Health task force led by the New Jersey Department of Agriculture. In 2020, New Jersey was the first state to establish a One Health Task Force through state legislation, which seeks to define how agencies can collaborate using a One Health approach. The task force includes representatives from state agencies and subject matter experts, who contribute their interdisciplinary expertise and perspectives to promote a One Health approach in support of HABs awareness.

New Jersey One Health Task Force Members	
New Jersey State Agency Representatives	Subject Matter Experts Appointed by the Governor
• New Jersey Department of Agriculture • New Jersey Department of Environmental Protection • New Jersey Department of Health	• Medical practitioner • Veterinarian • Medical researcher • Zoonotic disease specialist • Epidemiologist or biomedical scientist • Academic researcher in health, ecology, natural resources, or environmental and biological sciences

Challenges

One of the remaining challenges facing New Jersey and other states is that it's not feasible to frequently test every water body in the state. While routine testing for bacteria at public recreational bathing beaches is required, regular testing for HABs is not. In more remote areas, tips from the public help identify potential blooms at beaches with suspected HABs.

Risk communication can also be a challenge when it comes to HABs and bathing beach closures in any jurisdiction. Some individuals may ignore warnings and put themselves or their pets in danger by swimming in water with toxic blooms, despite clear signage and messaging from state officials. In addition to working together to develop unified communications, NJDOH and NJDEP also collaborate with local municipalities to get buy-in on messaging to promote compliance with closures.

Future Opportunities

NJDEP currently manages three beach-related programs: the Cooperative Coastal Monitoring Program (CCMP) for coastal marine waters, Environmental Coastal Monitoring (ECM) for environmental stations located along the coast, and the Lake Beaches Program (LBP) for beaches located in freshwaters. CCMP and ECM have two distinct data management systems, while the LBP network does not yet have a system to manage its information. The goal is to build one cohesive data management system to handle all three beach programs. To do this, NJDEP will work with NJDOH and Rutgers University to design and develop a beach data management system to handle the existing coastal beaches, freshwater lake beaches, and environmental coastal stations. This will build upon the foundation of the existing coastal monitoring system so that CCMP, ECM, and LBP will be integrated into a single system.

This new system will significantly benefit NJDEP and NJDOH by providing both agencies with a needed centralized repository for freshwater beach data. This system will be used to create alerts when a recreational bathing beach closes due to elevated bacteria concentrations, the presence of a HAB or other floating algae, or any other reason. These alerts will notify environmental officials, health authorities, and the public when water quality is unsafe for public recreation.

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