



The Cape Cod Chronicle

By Emma Blankenship



From left: Dr. Hilary Sandler, Marty Burke, Susan Bridges, and Bryan Horsley pose following their talks at BPC Annual Summit
EMMA BLANKENSHIP PHOTO

BREWSTER – The Brewster Ponds Coalition hosted its 10th annual Pond Summit at the Brewster Baptist Church last Saturday. Sponsored by Agway of Cape Cod, the group assembled a collection of three speakers to discuss issues faced by local ponds and solutions townspeople can employ in their own lives to preserve these crucial ecosystems.

Following an introduction by BPC President Susan Bridges, Bryan Horsley led a highly informative discussion on one of the most damaging sources of pollutant, waste processing and disposal. With a background in environmental science and ecological preservation, Horsley is a project assistant at the Massachusetts Alternative Septic System Test Center. Horsley began by highlighting the nutrient loading issue when algal blooms in freshwater are fed and

exacerbated by nutrients such as phosphorus and nitrogen, two elements found in abundance in human urine and fecal matter.

He went on to explain how traditional waste disposal methods, such as septic systems and sewage networks, fail to contain the waste we deposit into them. “Anything we put into the ground will find its way into the surface water,” he said.

Given that groundwater moves at about a foot a day, it is easy to imagine how quickly this waste can travel through a given watershed. This is not to say that the aquatic biosphere is without hope, as Horsley went on to explain the potential approaches to restoration: An in-environment approach, in which efforts are made to reverse pollution; municipal sewer systems with a central nutrient processing facility; or even innovative nutrient-removing septic systems. All are good alternatives, yet Horsley said a fourth option, the use of eco toilets, is the “best approach from an efficiency standpoint.”

By adopting a composting, urine-diverting or incinerating toilet, it is possible to prevent harmful compounds from entering the watersheds and eliminate up to 80 percent of water pollution while simultaneously conserving water and energy. Some of these toilets even offer additional benefits, with composting toilets providing fertilizing compost which can be used in gardens, and urine-diverting toilets providing an opportunity for urine collection and repurposing. These urine-diverting toilets are also relatively affordable, costing about \$2,500 for a complete system installation with certain models.

Horsley reports that MASSTC is aiming to eliminate water flush in their facilities, installing a collection of eco-toilets soon. There is an upcoming urine diversion research project in Falmouth, in which researchers will install formal UD systems in 50-plus households throughout the town. After three years, data will be collected from these UD systems and compared with data gathered from local septic systems, comparing and contrasting the levels of certain nutrients present. This research, paired with the other studies conducted by Horsley and his colleagues, should help propel us into a future of eco-friendly waste management, he said.

Dr. Hilary Sandler, a specialist in integrated pest management and weed science working at the University of Massachusetts Amherst Cranberry Station, began by providing an informative overview of bogs, describing their origins as shallow kettle holes filled with sediment, perfect for supporting the growth of cranberries. It is because of its glacial origins that Cape Cod is one of the few places to observe both wild and domesticated cranberries in the same place.

All bogs are characterized as wetlands and play a significant role in upholding not only local aesthetics and recreational activities but supporting a diverse ecosystem. Bogs share a significant link with their neighboring ponds. The glaciers that formed the shallow bog holes created deeper divots in the same areas, which filled with water and became kettle ponds. Ponds and bogs don't exist independently of one another, Sandler emphasized. "There is a very intimate relationship between these bogs and freshwater bodies," she said.

From flooding to irrigation, water plays a key role in cranberry growth and harvest. One major use of water in this process is frost protection. Thanks to the development of automated intermittent cycling, frost protection has become a relatively hands-off process in which pumps are activated and deactivated based on the outdoor temperature. "[Automated intermittent cycling] is a win-win-win," says Sandler. "You save water, you save money, and the cranberries don't get their feet wet." Seasonal flooding routines help eliminate pests and decrease the need for harmful pesticides, and the water used in these floods is typically reintegrated into the local water supply as good as new.

Additionally, the state has implemented a nutrient management plan, which aims to reduce the use of phosphorus in the farming process. It is this management plan that Sandler and her team, in collaboration with local farmers, work to apply and maintain in the cranberry industry. This reduced use of phosphorus doesn't negatively impact fruit yield, and, in some instances, even seems to increase a bog's productivity.

Marty Burke, a BPC board member, delivered an informative and moving speech on what conservation is, calling it first and foremost "a people issue, not a biological one." He fears that people will get too bogged down in the complex science of professional conservation efforts and lose sight of the things they can do to contribute to ecological preservation efforts. He warned listeners to be wary of "greenwashing," a phenomenon in which a company may portray a product as eco-friendly when it is not.

Burke echoed much of what Horsley discussed in his talk, emphasizing the damage caused by poor waste management and bringing home the point that everything we put down a drain ends up in our water supply. He concluded his talk by encouraging people to start a Pond Protection Pledge for their community. Those interested can contact the BPC, which will draw up a plan for a neighborhood, assist

in some of the more technical aspects required in such a campaign, and provide educational materials highlighting what each resident can do to contribute to the pond conservation effort.

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