Intern Christen Dillard’s project, sponsored by the DWRC, was titled “Water Quality Bacterial Monitoring at Delaware Inland Bays Oyster Gardening Sites, Delaware.” She was advised by Dr. Gulinhal Ozbay of Delaware State University’s Department of Agriculture and Natural Resources.

**Abstract**

The primary objective of this study was to evaluate the total bacteria and *Vibrionacea* levels in *Crassostrea virginica*. Conditions were monitored at selected oyster gardening sites of the Inland Bays with the majority of sites located within the canals. Delaware's Inland Bays (coastal lagoons) are experiencing many problems impacting other Mid-Atlantic estuaries including high turbidity, sedimentation, eutrophication, periodic hypoxic/anoxic conditions, and high bacterial levels, especially within the man-made, dead-end canal systems. Flushing of the Rehoboth and Indian River Bays may require as much as 80 and 100 days, respectively, while the 495 acres of dead-end, man-made canals within this system have been described as “unflushable.” A simple colony overlay procedure for peptidases (COPP) Assay was used to quantify *Vibrionacea* in oyster tissue (*Crassostrea virginica*). Total bacteria and *Vibrionacea* levels increased during the summer with greater bacteria concentrations in oysters collected from the canal sites, accompanied by poor water quality conditions. Sedimentation and fouling presented more of a maintenance problem at the canal sites. Although oysters raised in the canal sites achieved less growth, most survived, provided their ecological services, and some sites even experienced recruitment. This information can then be utilized by the state agencies and assist in decision making process to identify locations for oyster harvesting and the floating oyster culture technique and its application in highly impacted waters.