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Analysis of Electricity Production's Impact to Water Health in Delaware Waters

This presentation is Regina's master's thesis proposal. The subject is electricity production's impact to water health in the Delaware estuary. Traditional electricity production causes several externalities, especially when considering the operation of cooling water intake structures. These structures cause several environmental changes that can impact fish and other organisms: impingement and entrainment, higher water temperatures, and lower dissolved oxygen. Impingement and entrainment happens when cooling water intake structures draw in fish as the water is withdrawn as well. Fish are trapped or fatally wounded. Used water is returned to the water body, causing unnaturally higher temperatures and lower dissolved oxygen content. Both can create an unsuitable environment for fish development. This research will illuminate these externalities for the Delaware estuary. The result of replacing some of the electricity produced from these thermoelectric plants with a wind farm will be investigated. Wind can provide savings regarding this specific externality.