There are concerns among environmentalists regarding the physiological functions of human and wildlife around the world due to the consequence of endocrine disrupting chemicals in bodies of water. Endocrine disrupting chemicals, known as EDC, can be either natural or synthetic and is able to mimic the role of endogenous hormones that are produced by organisms. EDCs in bodies of water arise from confined animal feeding operations (CAFOs), and wastewater treatment as effluents. Estrogen is one of the EDC’s found in sources of water runoff from these facilities. CAFOs use synthetic estrogens to increase the milk and meat production by cattle, swine and poultry. The manure and urine from feedlots are stored in lagoons for anaerobic degradation of organic compounds. Leaking lagoons may result in pollution of water bodies with estrogen. Sex reversal was observed in rivers in the U.K with sewage effluents. There is a widespread feminization of cyprinid fish, so researchers began to determine the levels of estrogen in bodies of water. Various types of methods were developed to determine the estrogen content in water. The current analytical methods used for analysis of estrogen content in samples of water are bioassays, gas chromatography (GC-MS) and liquid chromatography (LC-DAD, LC-MS).

References: