



What is the potential exposure shellfish have to chemicals of emerging concern in the nearshore?



Some pharmaceuticals are CECs known to have lethal and extensive sublethal effects on shellfish populations. POCIS sampling may show the potential exposure shellfish have to CECs in the nearshore.



This POCIS sampler has three discs which are the membranes and sorbent where CECs get trapped. In the field these discs were placed within a protective casing which allowed water to flow freely.

DNR Aquatics is concerned that chemicals of emerging concern (CECs) such as serotonin, epinephrine and dopamine regulating pharmaceuticals are being discharged through waste water outfalls into Puget Sound. These particular pharmaceuticals are CECs known to have lethal and extensive sublethal effects on shellfish populations. AMMT selected sampling locations to deploy POCIS devices and ascertain the potential exposure to these CECs at shellfish resource sites (wild harvest and aquaculture) in the nearshore of Puget Sound.

A POCIS device is a polar organic chemical integrative sampler that mimics shellfish within the water column. The sampler has membranes that allow water and dissolved chemicals to pass through to the sorbent, where chemicals are then trapped. This is similar to how filter feeders, such as shellfish, obtain nutrients from the water column. DNR picked 14 sites; 11 in Puget Sound, 1 in Hood Canal, and 2 in the Straits of Juan de Fuca. At each site, important natural resources were identified, such as aquaculture, for ideal placement and the samplers were deployed four feet above the bedlands, for no more than 28 days.

The University of Washington Tacoma is currently processing POCIS samples to determine where CECs were present at the time of sampling. The results will be available soon and they will be evaluated for the potential exposure shellfish have to chemicals of emerging concern in the nearshore.