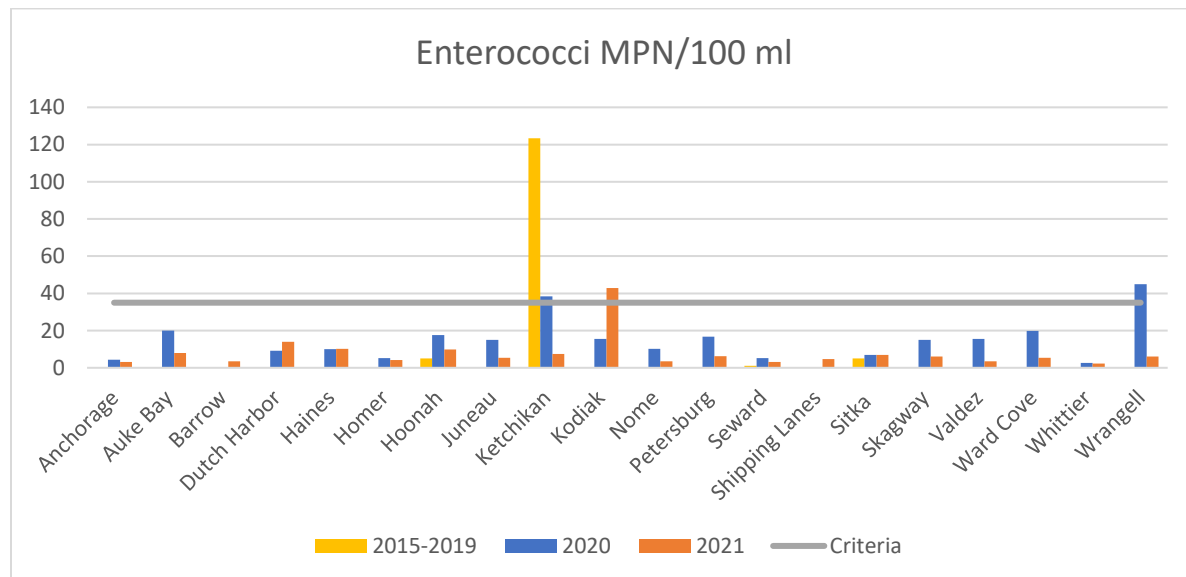


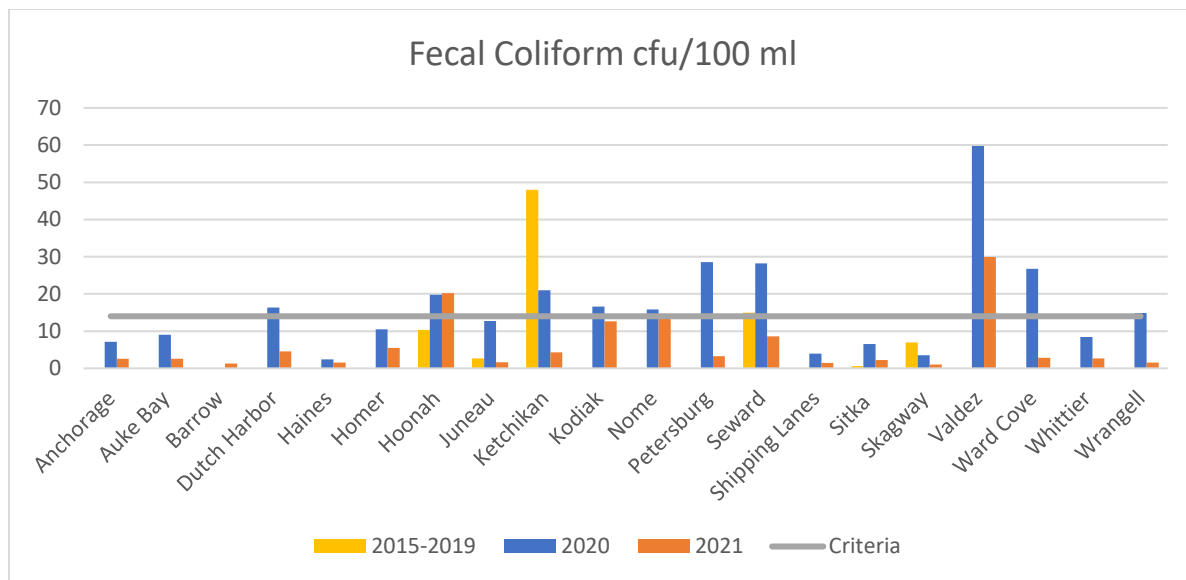
## 2015-2021 Ports and Waterways Results

DEC began sampling ports in 2015, starting with 2-3 ports per year in Southeast Alaska and expanding the effort in 2020 to 19 ports and shipping lanes used by large and small vessels. Plans are underway to repeat sampling in 2022 (and beyond) at all locations to compare years with low cruise ship activity to years with more normal cruise ship activity. The following graphs present the data collected from 2015-2021; the value for each port and shipping lane is the average of the results taken from more than one location. DEC tested for the substances that are routinely regulated in the Department's permits.

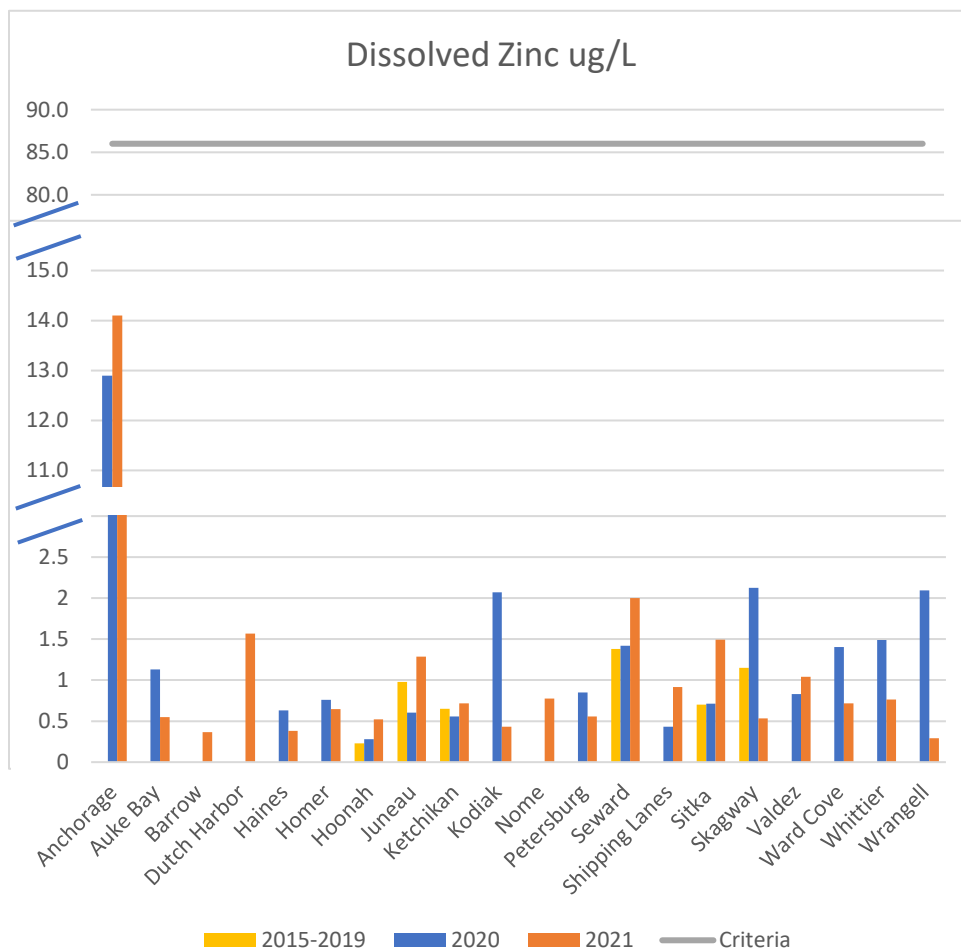
It is important to note that these results are from a limited number of sampling events per summer, and DEC may return to some of these sites to conduct more thorough investigations. It is also important to note that due to local, naturally occurring conditions, some sites show concentrations of substances at levels that exceed state or federal standards. Per 18 AAC 70.010 (a, b) the DEC does not consider natural conditions as an exceedance/impairment of water quality standards.

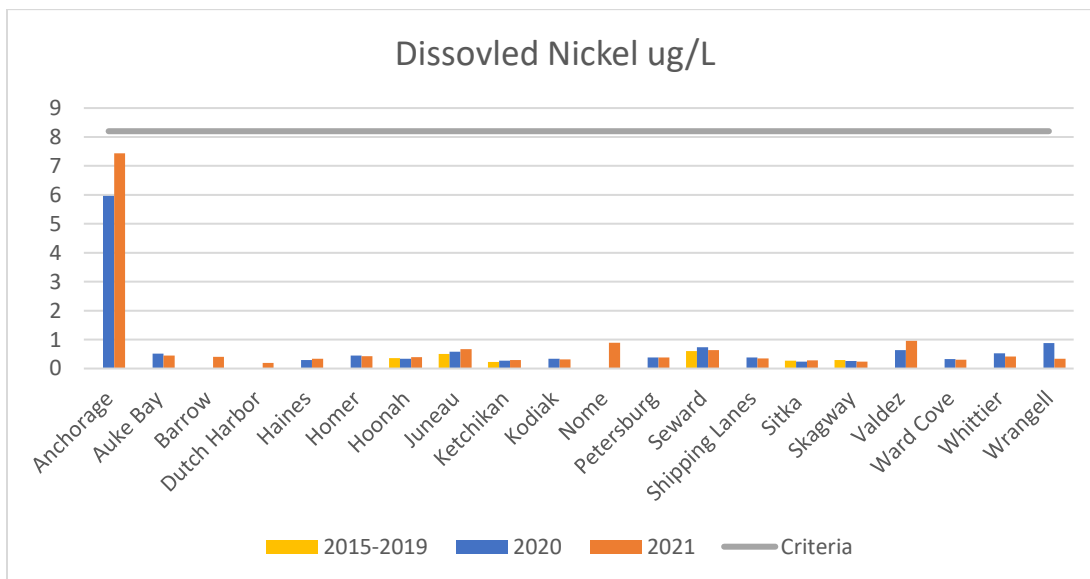
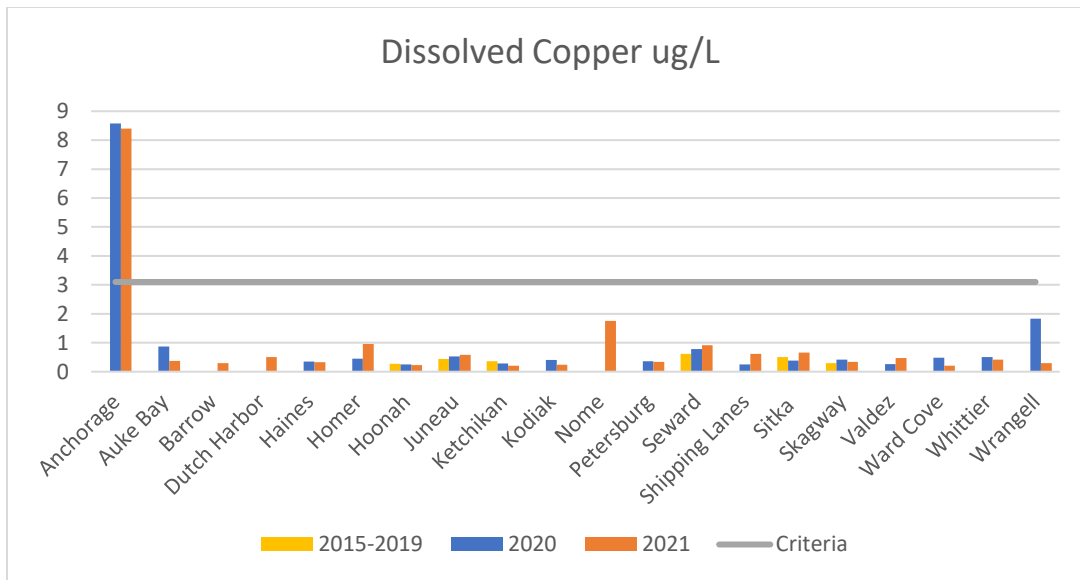
**Bacteria:** Bacteria was sampled infrequently from 2015-2019 and five times over a 30-day period each summer during 2020 and 2021. Bacteria exceedances can be attributed to human activity as well as natural conditions, and DEC is considering further studies into several of these locations. Very few samples were taken in 2015-2017 so individual high result can have an outsized effect. An August 2018 Ketchikan sampling event showed very high results which is skewing the data (enterococci of 1553 MPN/100ml and fecal of 315 CFU/100ml). Without this one event, the results would be similar to 2020.



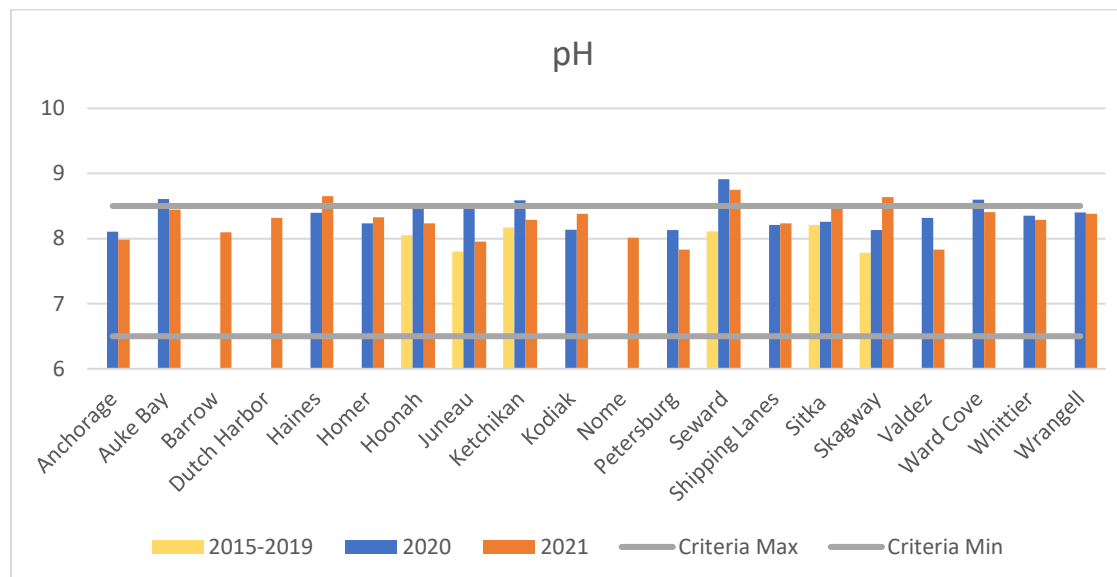
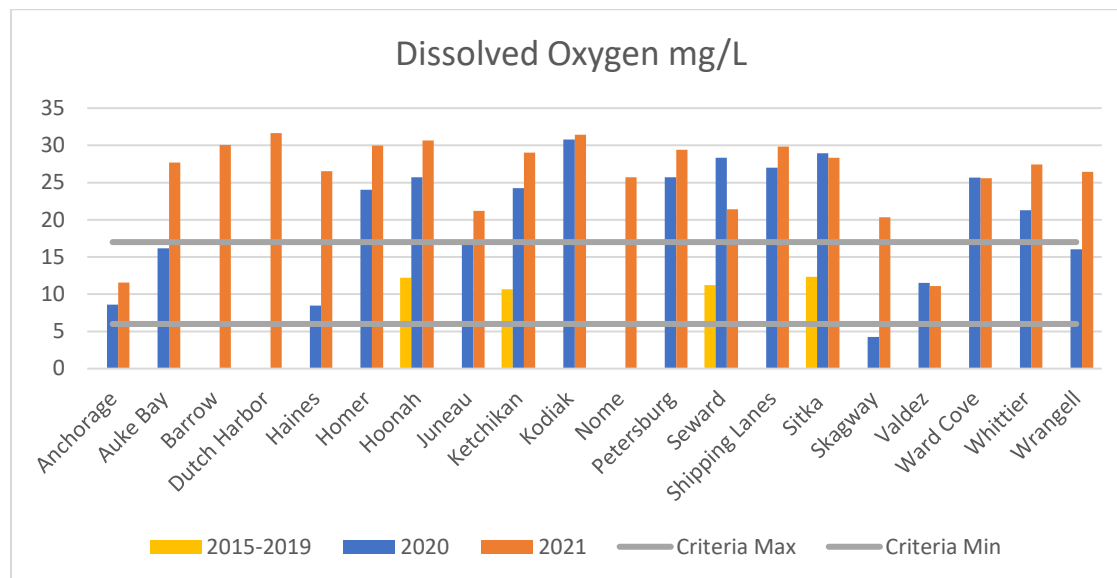


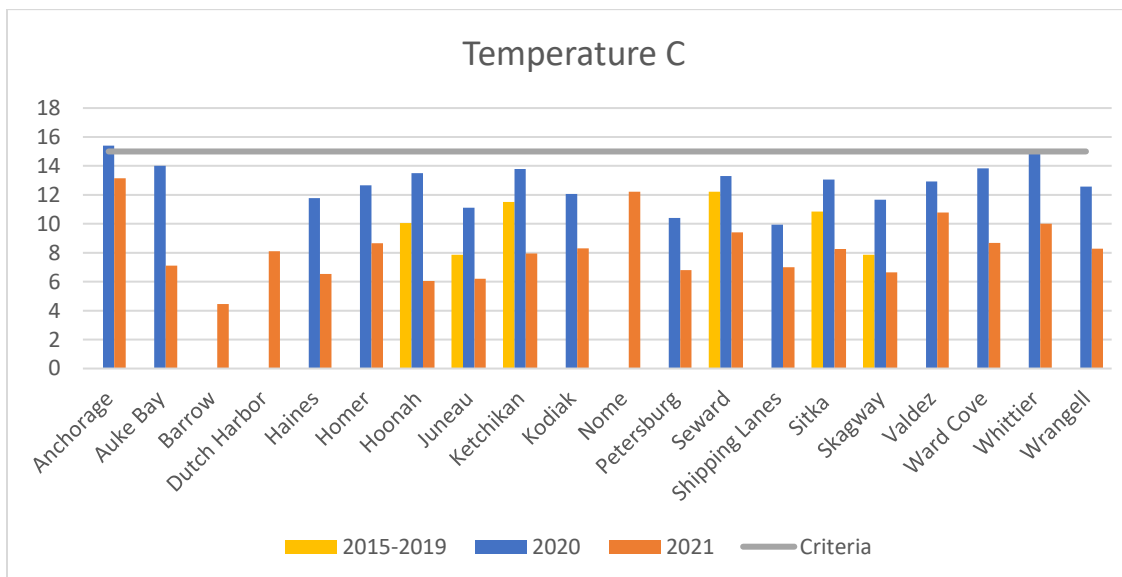
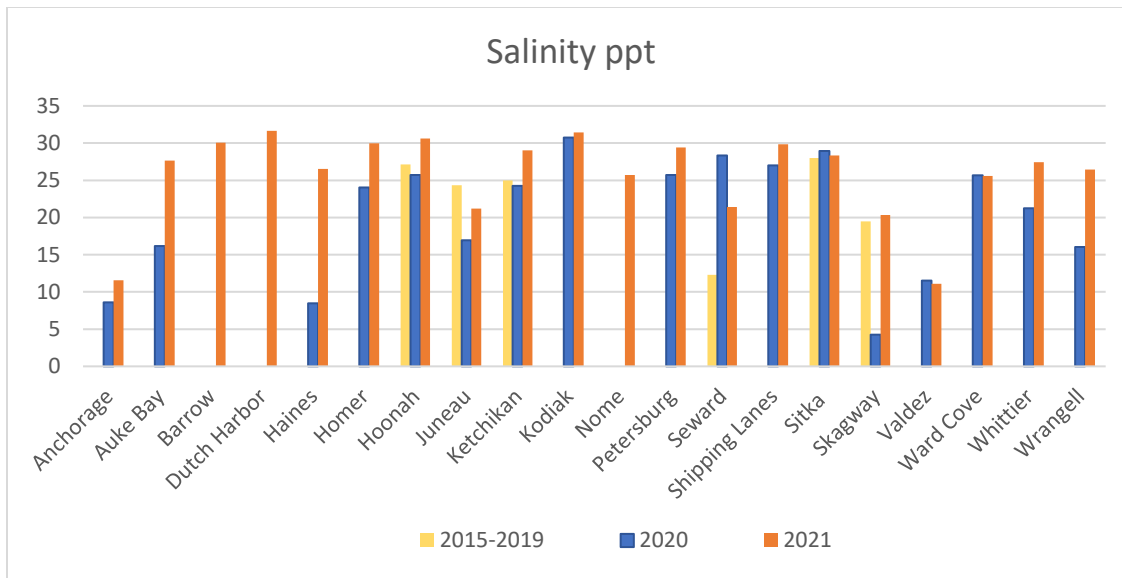
**Metals:** Metals were sampled once per summer. The high values observed in Anchorage are considered to be driven by glacial silt and freshwater influences





**In-Situ:** Results are for samples taken at four different depths near the surface of the water. The variation in readings may be driven by freshwater inputs (snowmelt, river drainage), different climates, and sampling times (spring vs. summer). Results are believed to represent natural conditions.





**Ammonia:** The ammonia standard is based on a 30 ppt salinity; although very few locations reach that level of salinity. All locations are well below the criterion.

