

The Value of 'Omics Technology

Scientists at AOML are leading the way in the implementation of NOAA's Omics Strategy. These tools have revolutionized biological study, benefitting public health, medicine, agriculture, and conservation while providing a more cost-effective, innovative way to advance scientific research.

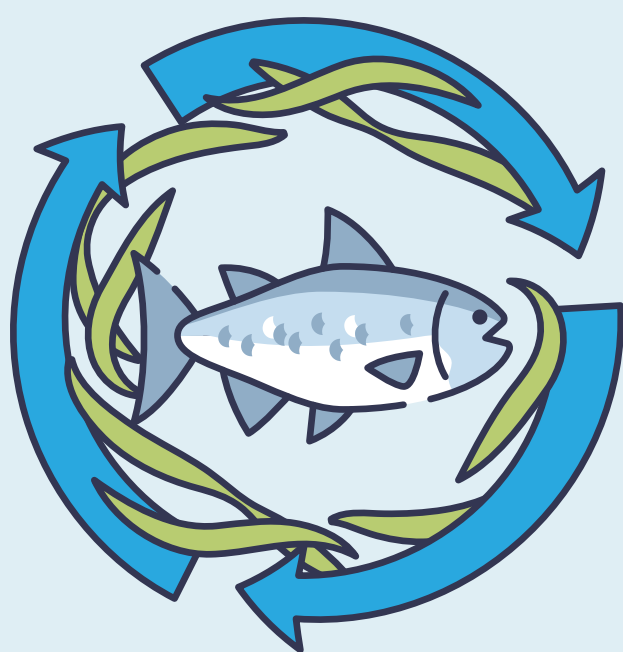


'Omics is the analysis of DNA, RNA, proteins and metabolites within an organism's tissue or shed to the environment (environmental DNA, eDNA).

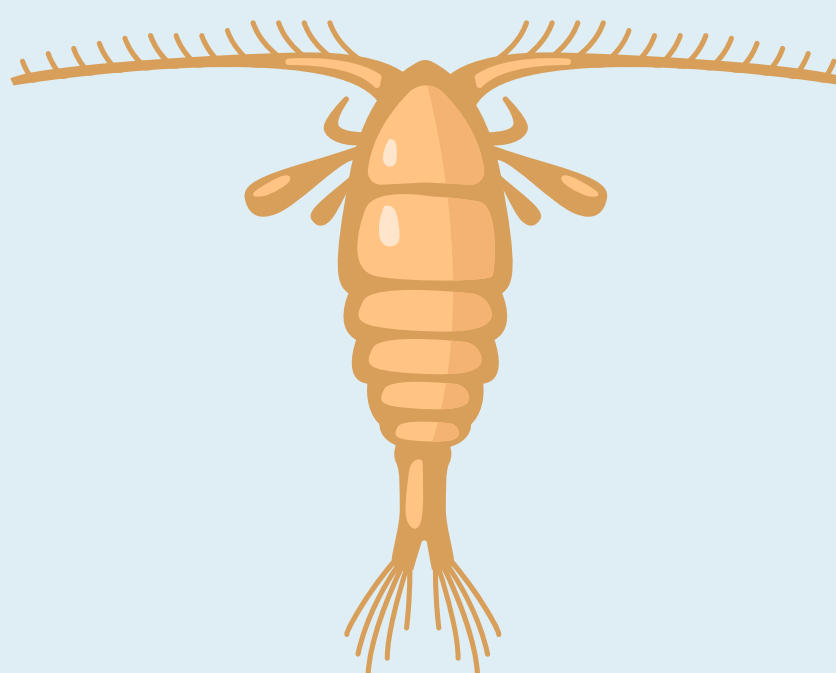
'Omics technology can be used to identify organisms in a community, how they function, and how they might adapt to changing conditions. AOML's Omics group employs this technology to:



Advancing Coral Resilience



Identifying the Status of Essential Fisheries



Investigating microbial life driving key ecosystems



Monitoring water quality to protect public health

Scientists at AOML are also paving the way to make the vast data across all NOAA research using 'Omics technology Findable, Accessible, Interoperable and Reusable (FAIR). With a [guide](#) to managing data and large repositories, we are optimizing research ongoing today for essential projects.

"Transitioning 'Omics data and research to fisheries has shown eDNA enhances Gulf of America video surveys of **valuable reef fish stock assessments** with **5x more fish species detected.**"

*-Katherine Silliman, Ph.D., NGI Assistant Scientist
partnering with AOML's 'Omics Program*

>10,000 'Omics samples processed since 2023

>30 Research Cruises using 'Omics technology

Leading to unprecedented genetic mapping and never-before-seen marine biodiversity globally