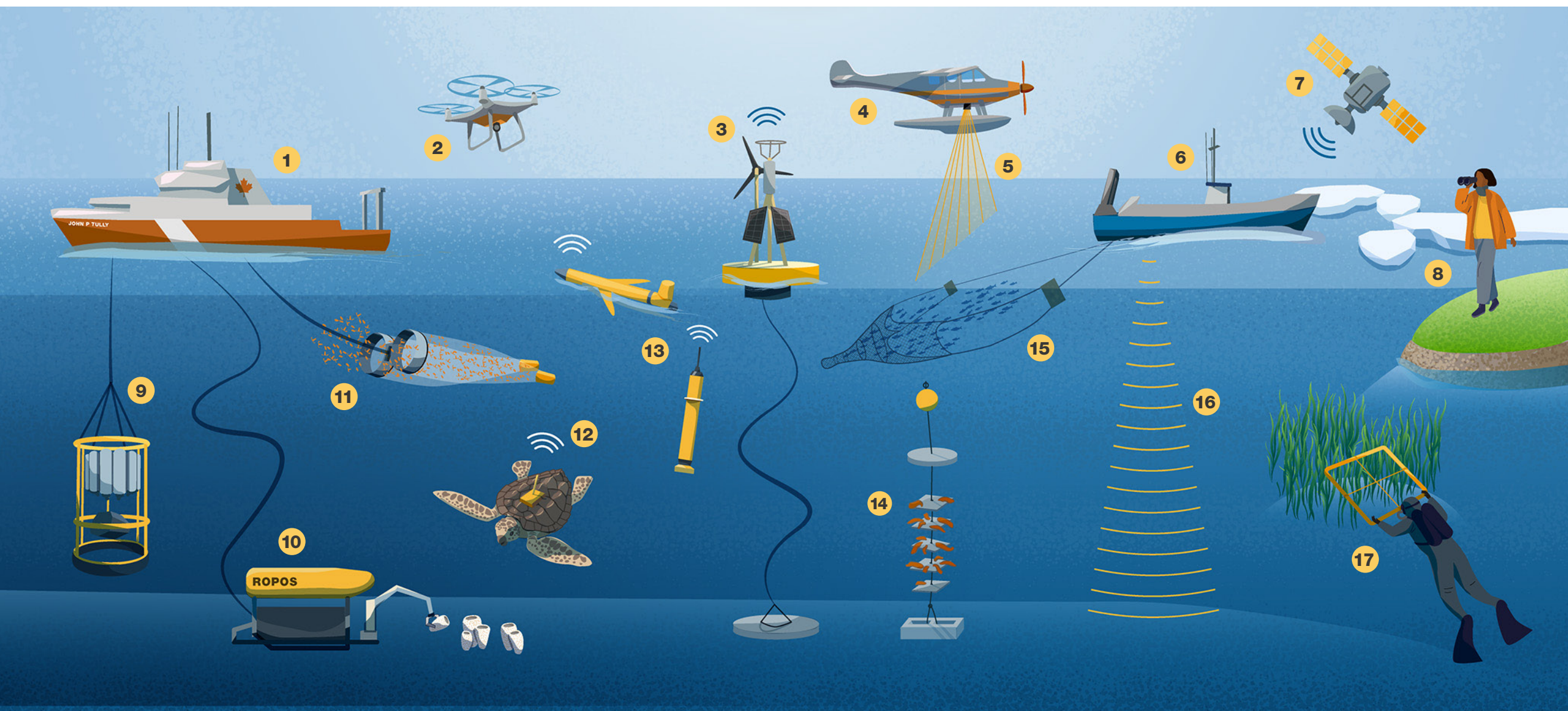


Ocean Sampling Technologies

Technologies—old and new—help to fill gaps in knowledge of Canada’s vast and complex oceans



- 1 Oceanographic missions** support multiple technologies and ocean monitoring
- 2 Small drones** with cameras are used to take aerial photos of habitats and species
- 3 Buoys and other moorings** use sensors to take frequent measurements of ocean conditions at a single location for up to a year
- 4 Aerial surveys** are used to monitor marine mammals, seabirds, and habitats

- 5 LiDAR (light detection and ranging)** is a remote sensing technology used to monitor habitats from the air
- 6 Research vessels** are used to conduct multispecies and acoustic surveys
- 7 Satellites** gather data and images year-round about temperature, sea ice, and phytoplankton
- 8 Observers** document occurrences of seabirds and marine mammals
- 9 Rosettes** collect water samples and carry sensors to measure environmental conditions throughout the water column

- 10 ROVs (remotely operated vehicles)** explore habitats far below the surface
- 11 Plankton nets** collect phytoplankton and zooplankton samples
- 12 Satellite tagging** tracks migratory species such as turtles, fish, sharks, mammals, and seabirds
- 13 Gliders and Argo floats** travel long distances on very little power to gather ocean climate data
- 14 Collector plates** are used to sample invasive tunicate species that attach to them

- 15 Trawl nets** collect samples of invertebrates and fishes
- 16 Sonar** is used to collect data on fishes and zooplankton in the water column and to conduct hydrographic surveys and classify seafloor habitats
- 17 SCUBA divers** collect samples and data in coastal areas

