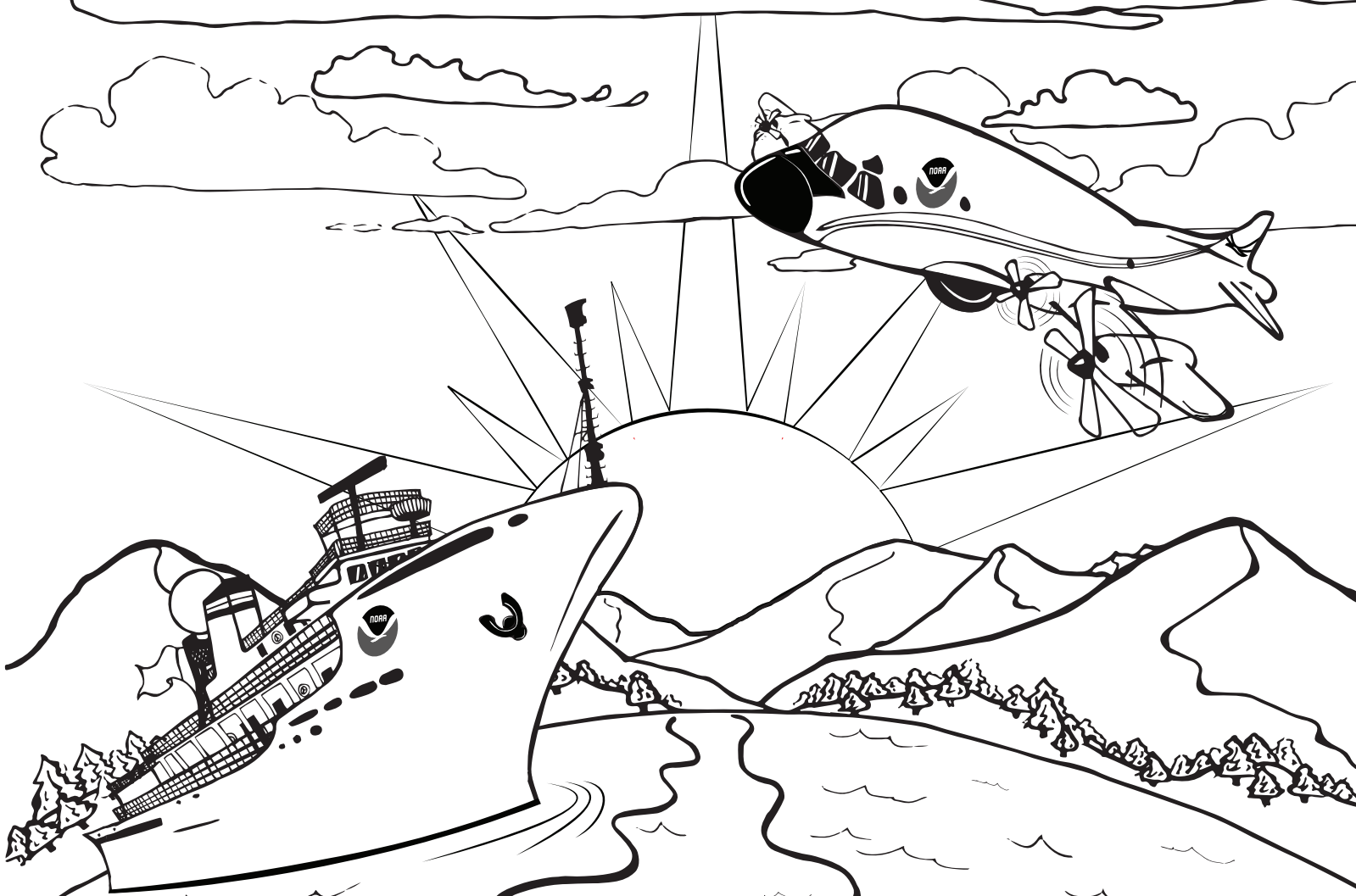


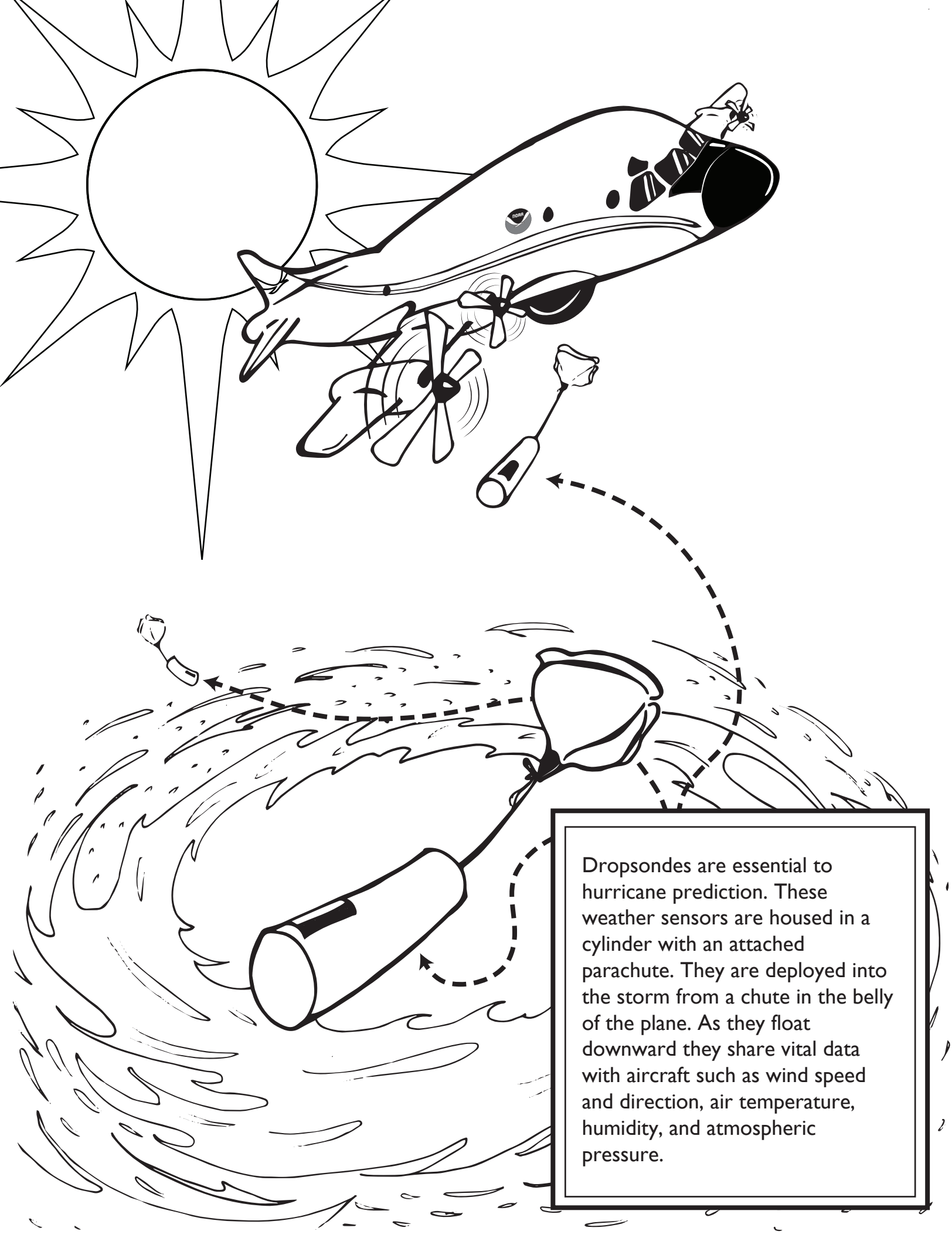
COLORING BOOK



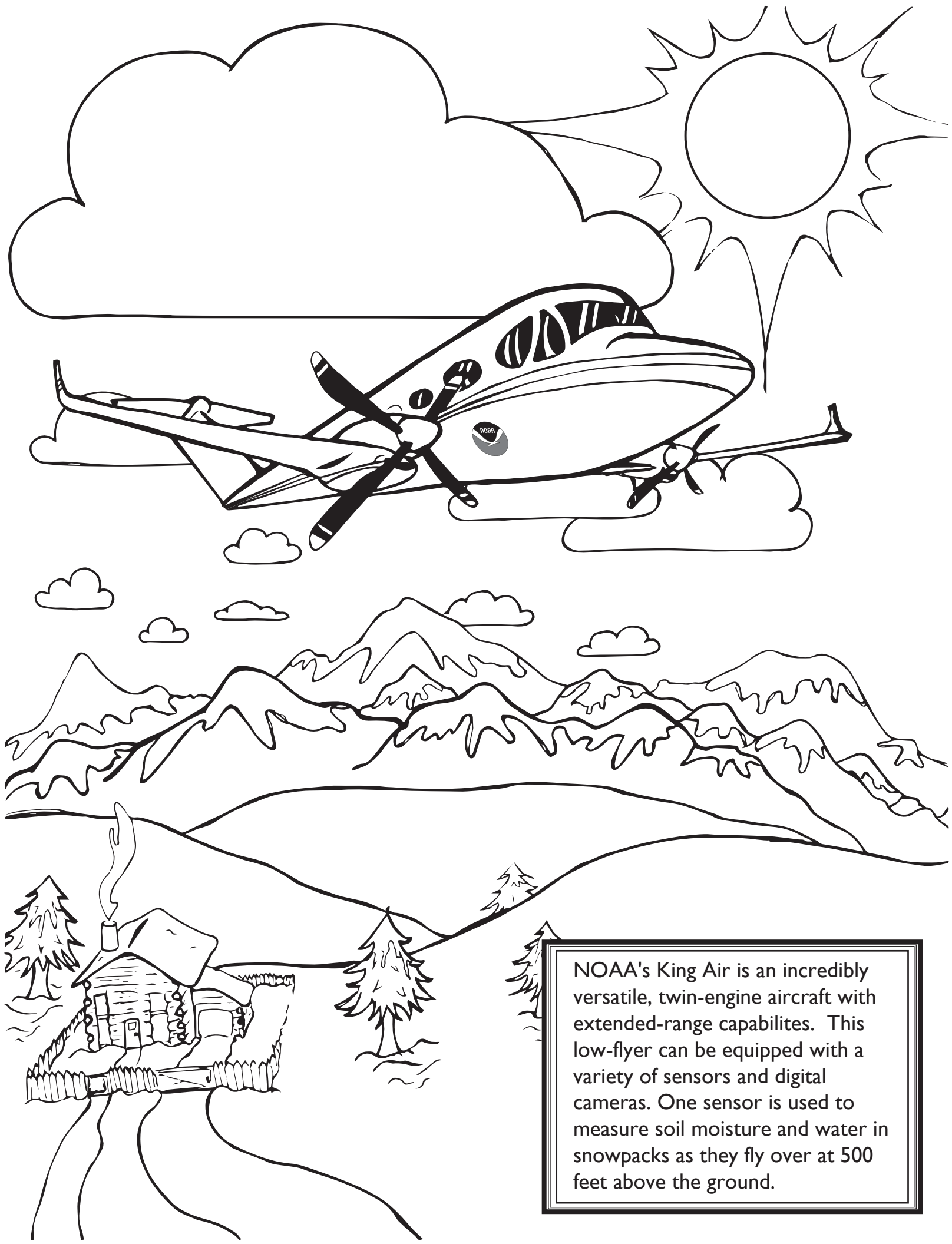
Illustrations by Maideline Sanchez



NOAA
MARINE &
AVIATION
OPERATIONS

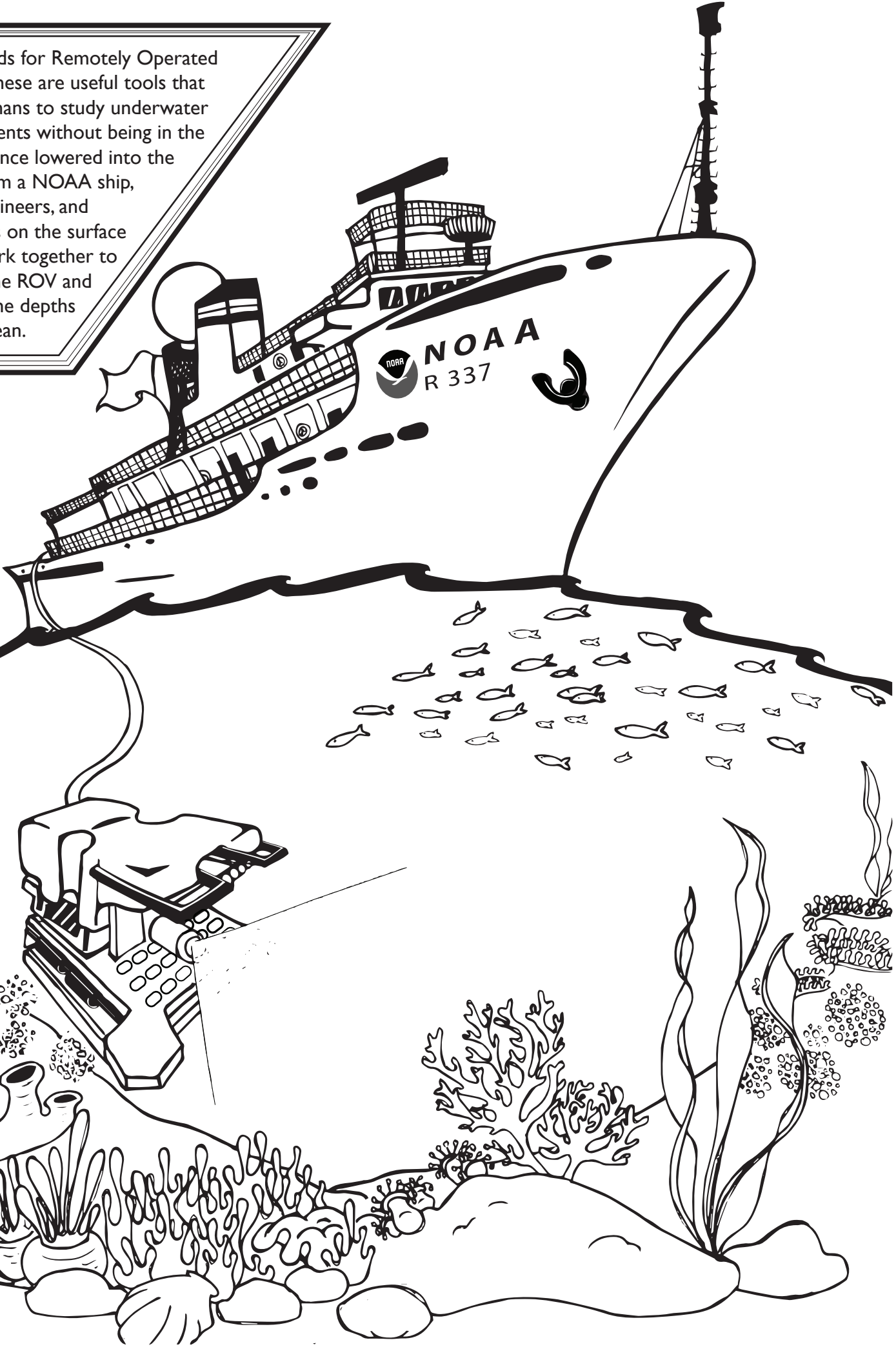


Dropsondes are essential to hurricane prediction. These weather sensors are housed in a cylinder with an attached parachute. They are deployed into the storm from a chute in the belly of the plane. As they float downward they share vital data with aircraft such as wind speed and direction, air temperature, humidity, and atmospheric pressure.

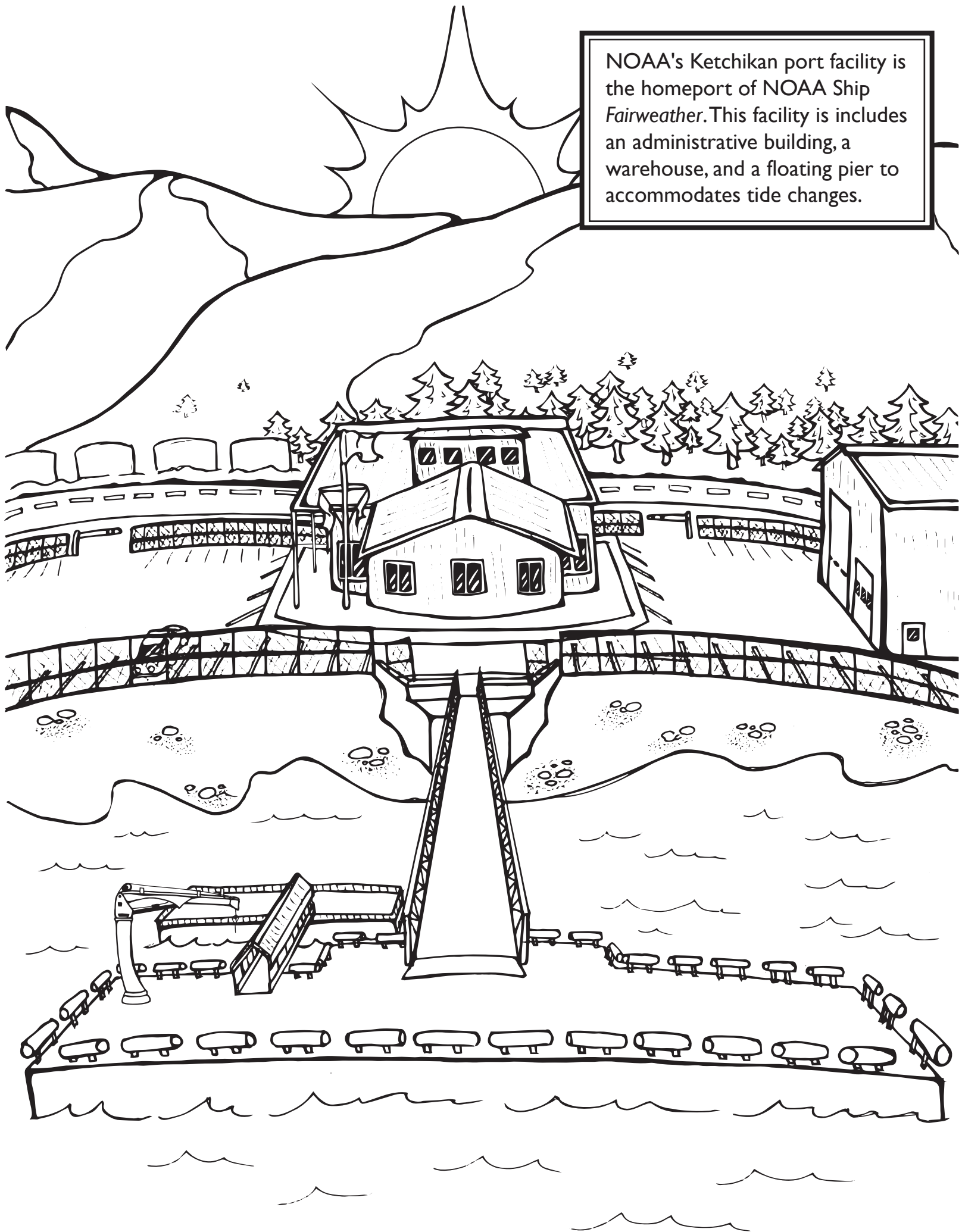


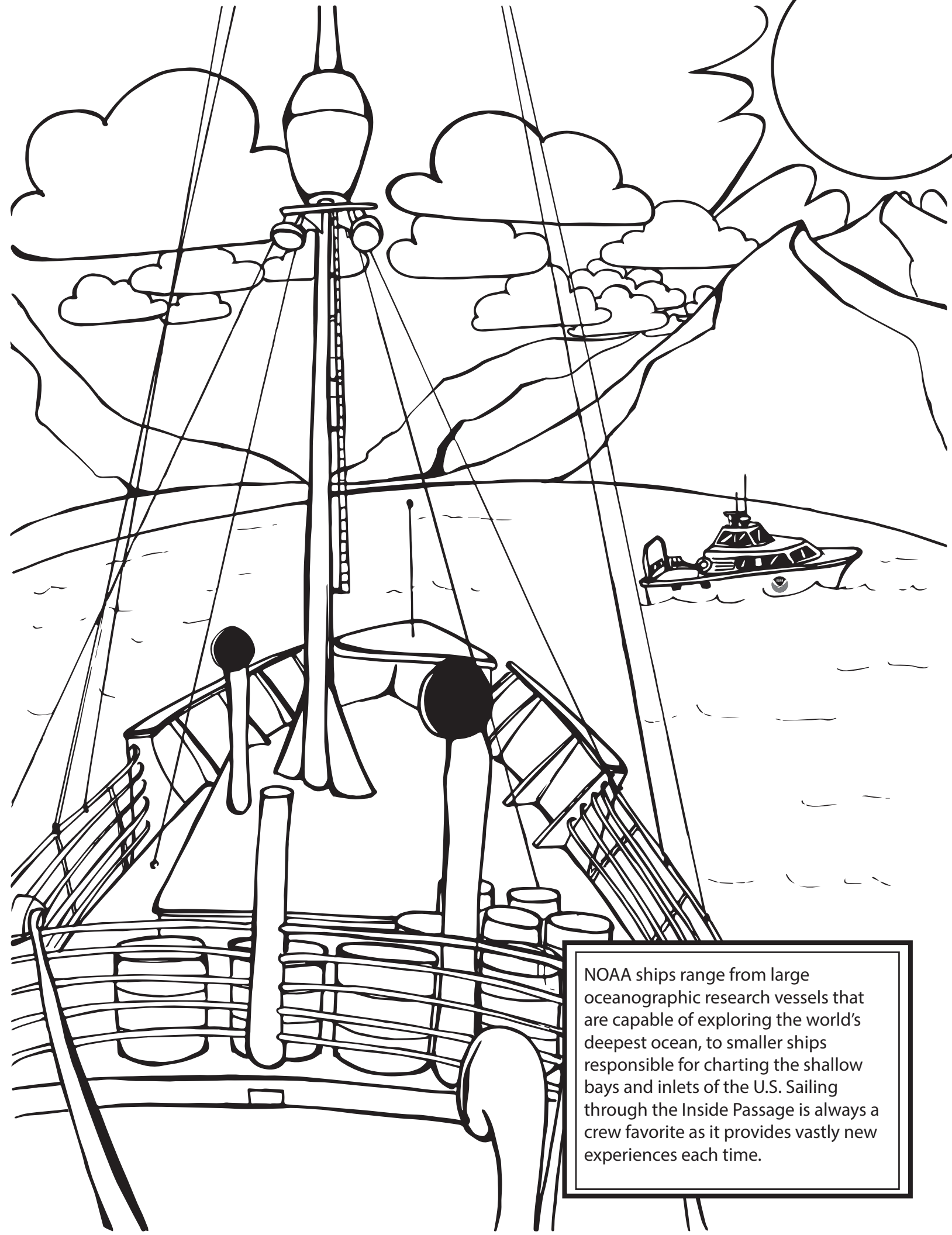
NOAA's King Air is an incredibly versatile, twin-engine aircraft with extended-range capabilities. This low-flyer can be equipped with a variety of sensors and digital cameras. One sensor is used to measure soil moisture and water in snowpacks as they fly over at 500 feet above the ground.

ROV stands for Remotely Operated Vehicle. These are useful tools that allow humans to study underwater environments without being in the vehicle. Once lowered into the water from a NOAA ship, pilots, engineers, and navigators on the surface vessel work together to control the ROV and explore the depths of the ocean.



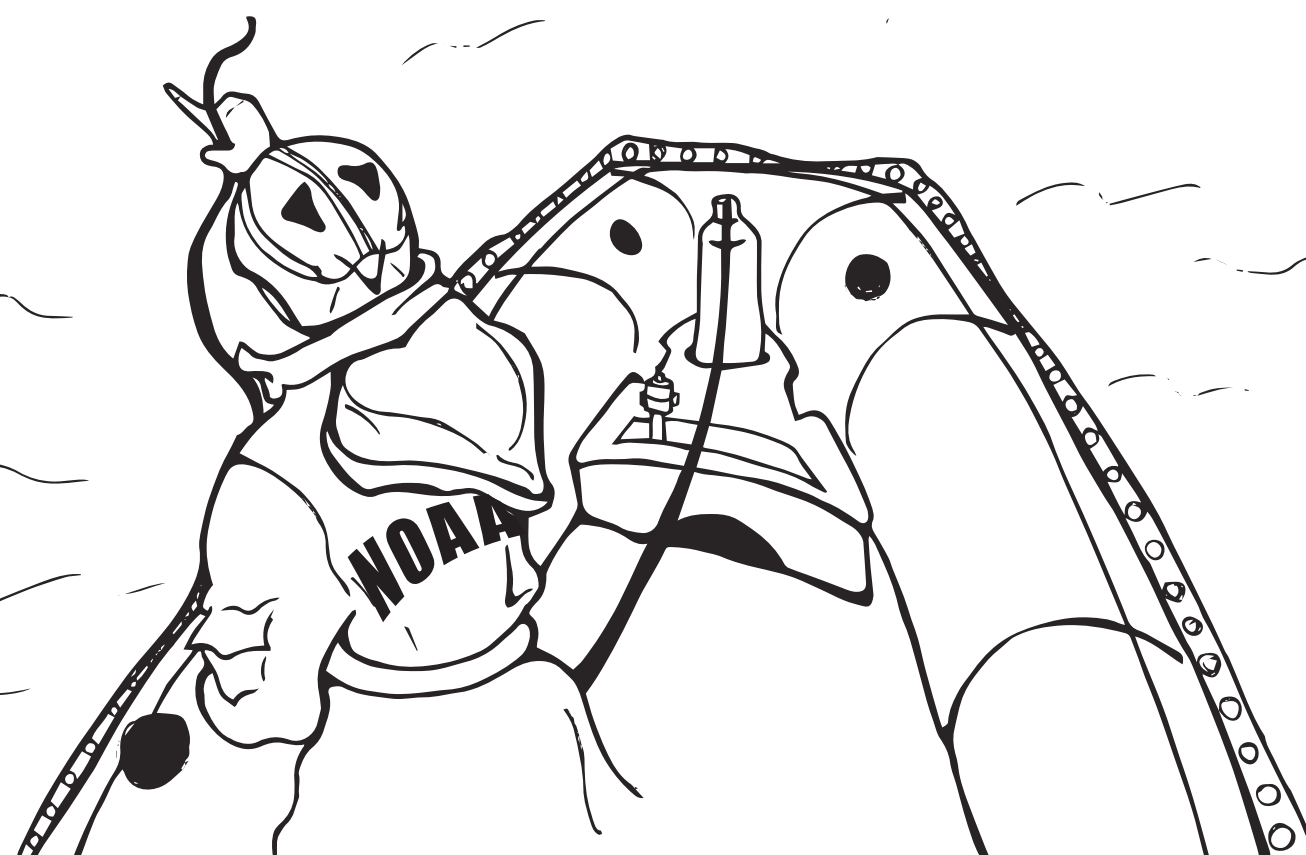
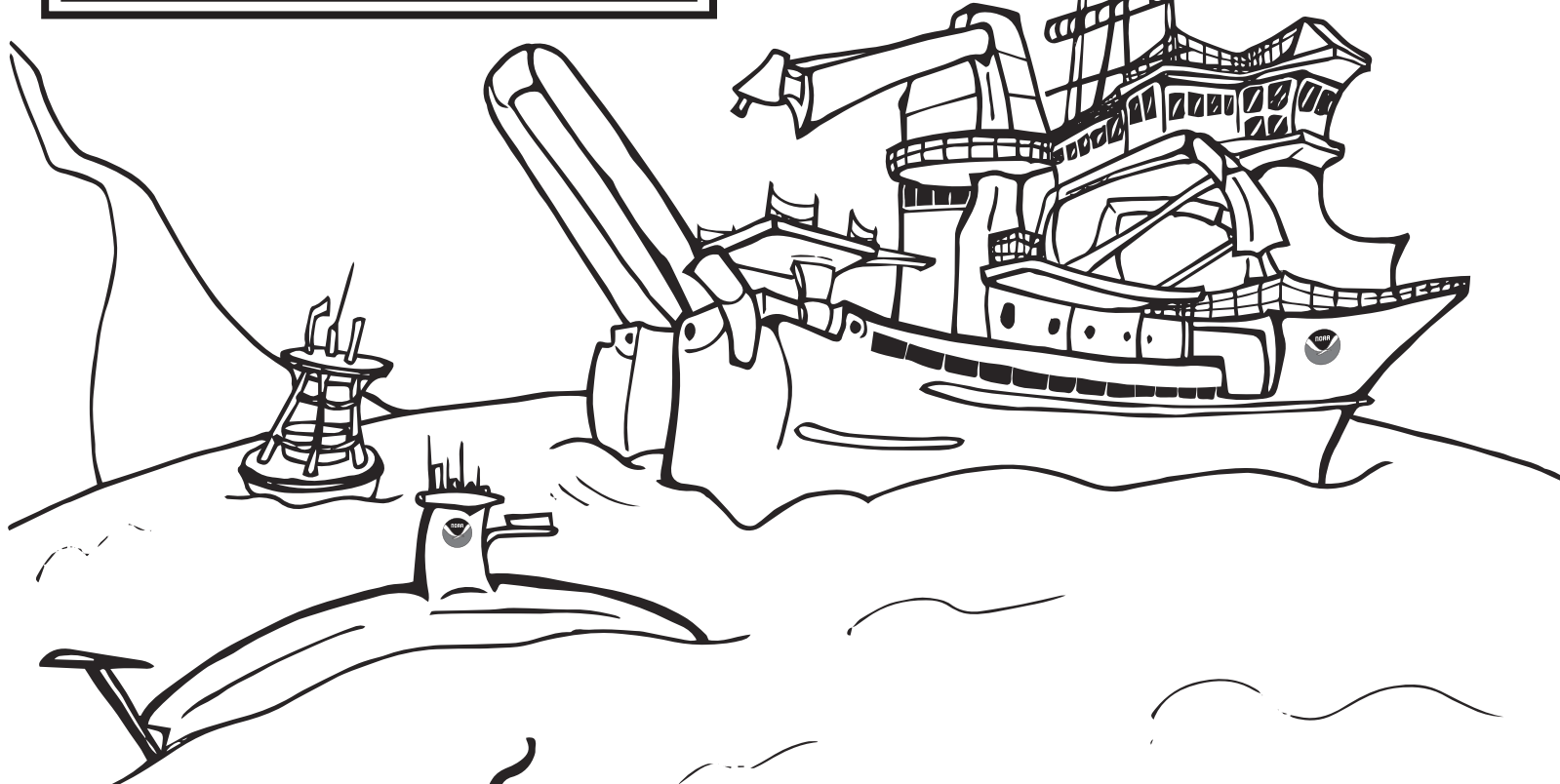
NOAA's Ketchikan port facility is the homeport of NOAA Ship *Fairweather*. This facility includes an administrative building, a warehouse, and a floating pier to accommodate tide changes.



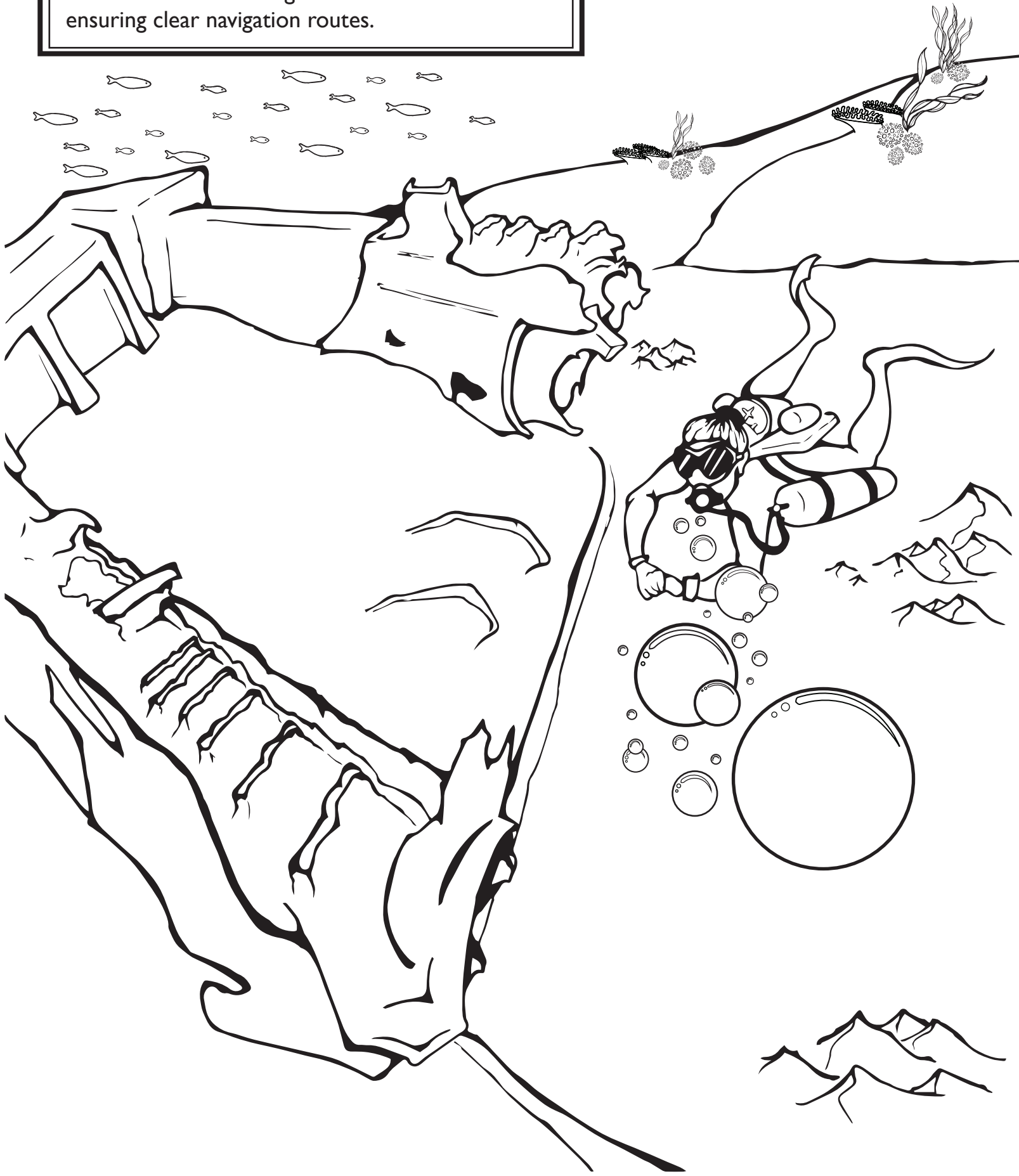


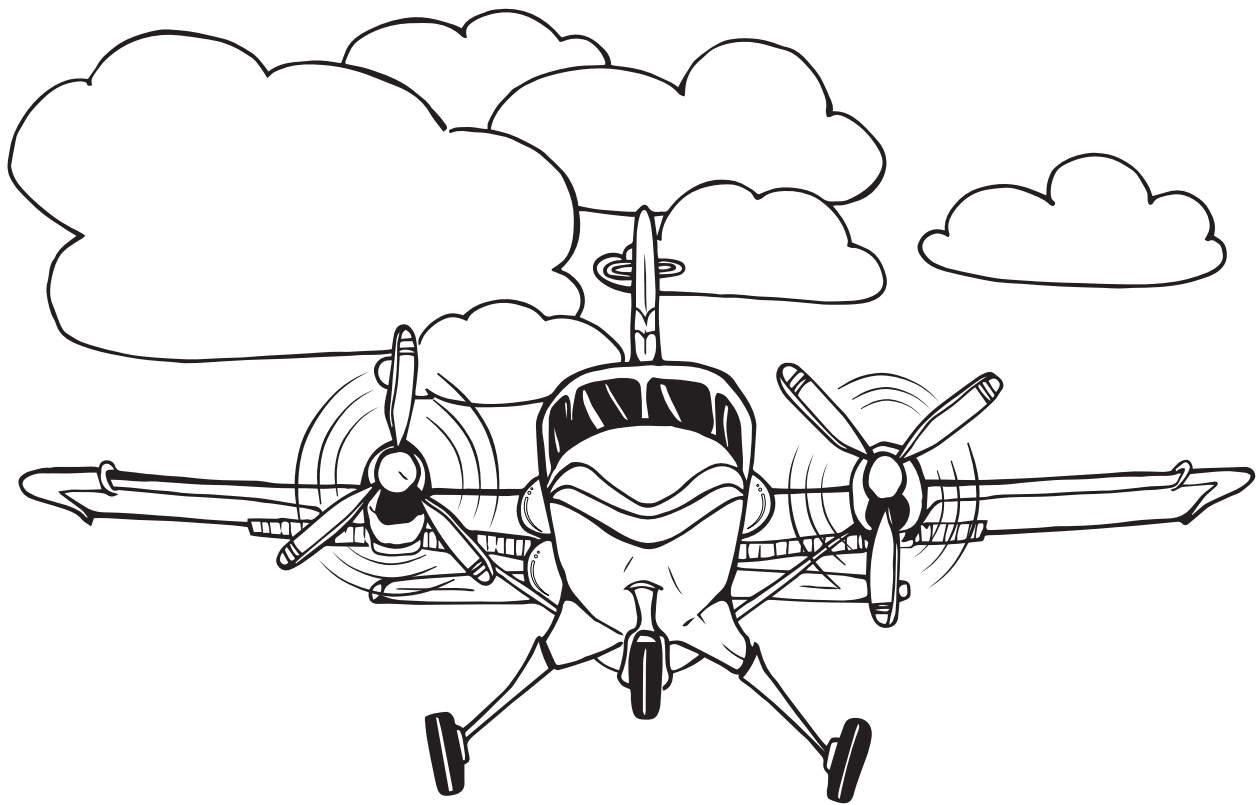
NOAA ships range from large oceanographic research vessels that are capable of exploring the world's deepest ocean, to smaller ships responsible for charting the shallow bays and inlets of the U.S. Sailing through the Inside Passage is always a crew favorite as it provides vastly new experiences each time.

NOAA operates a wide variety of uncrewed marine systems to collect environmental data without having a human aboard the vessel. Devices like the DriX can be used in tandem with NOAA ships or independently to study marine life, conduct hurricane research, gather seafloor data, and so much more.

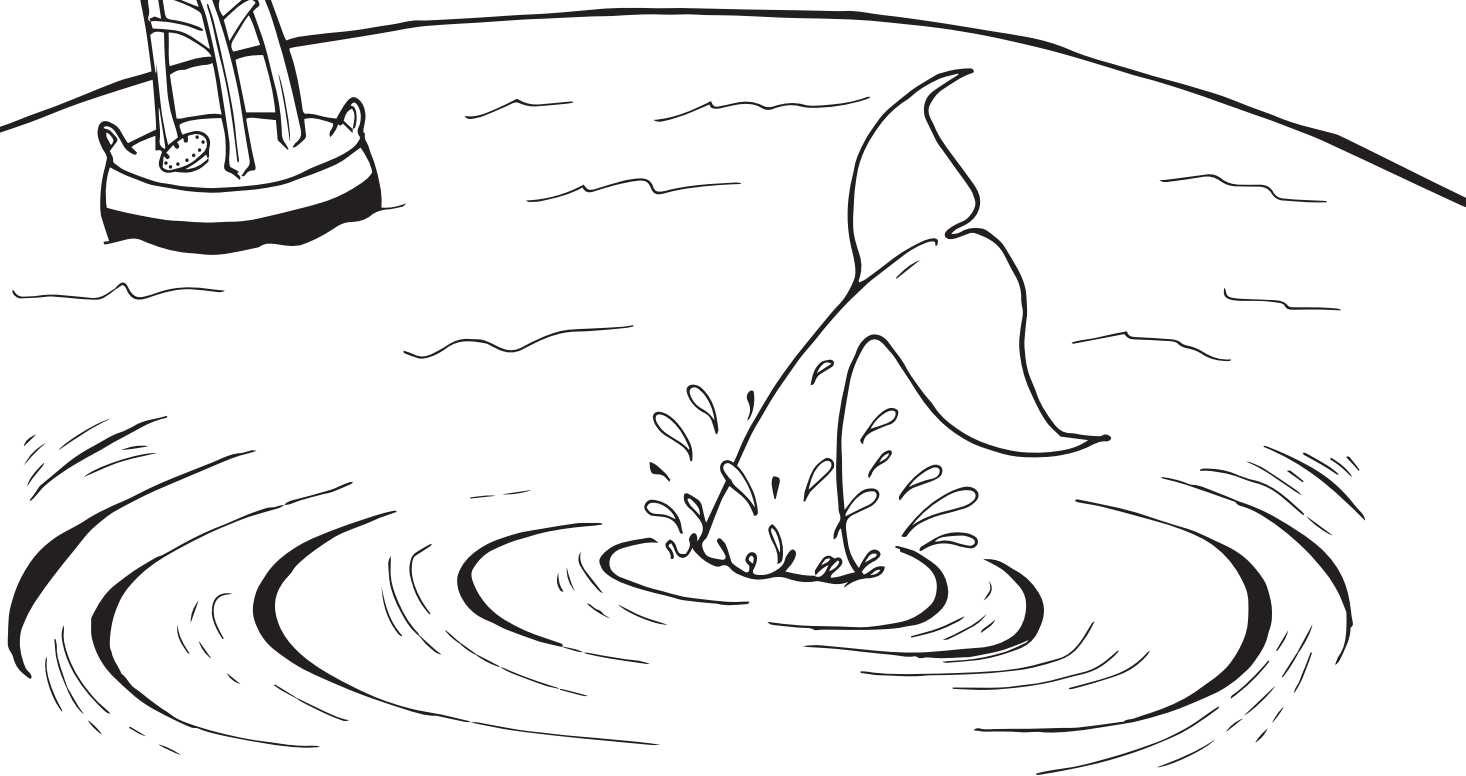
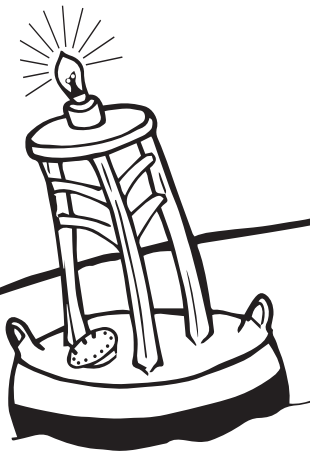


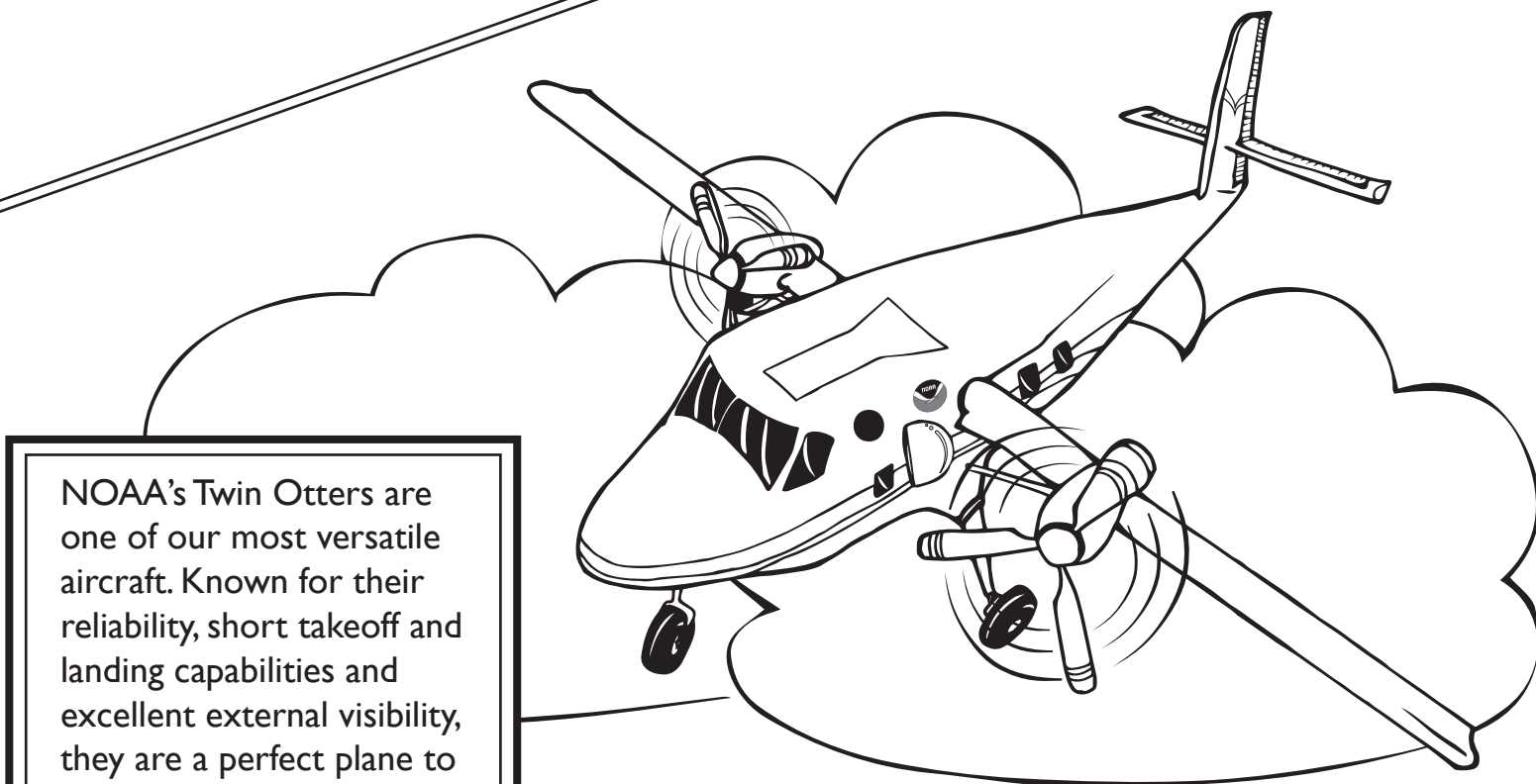
NOAA divers work throughout the ocean and coastal waters of the world in conditions varying from studying shipwrecks and coral reefs in sanctuaries to removing marine debris and ensuring clear navigation routes.



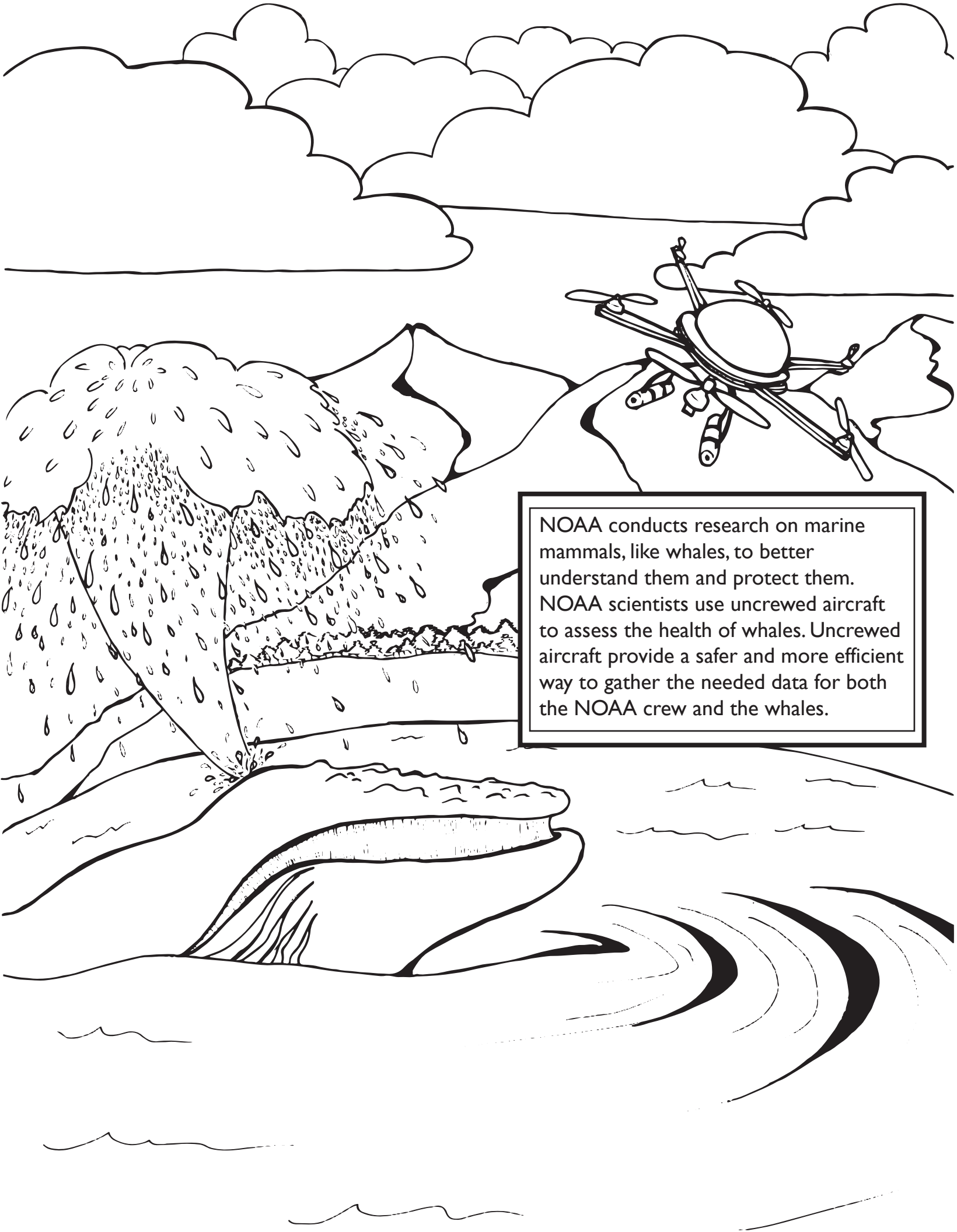


Each winter, some right whales travel to the shallow waters off the coast of South Carolina, Georgia and northeast Florida to give birth and nurse their young. NOAA's Twin Otter aircraft help scientists identify the whales and track their migration and breeding patterns. With an endurance of 4–6 hours at survey speeds and various camera ports to photograph marine mammals, the Twin Otter is ideal for locating and studying these whales.

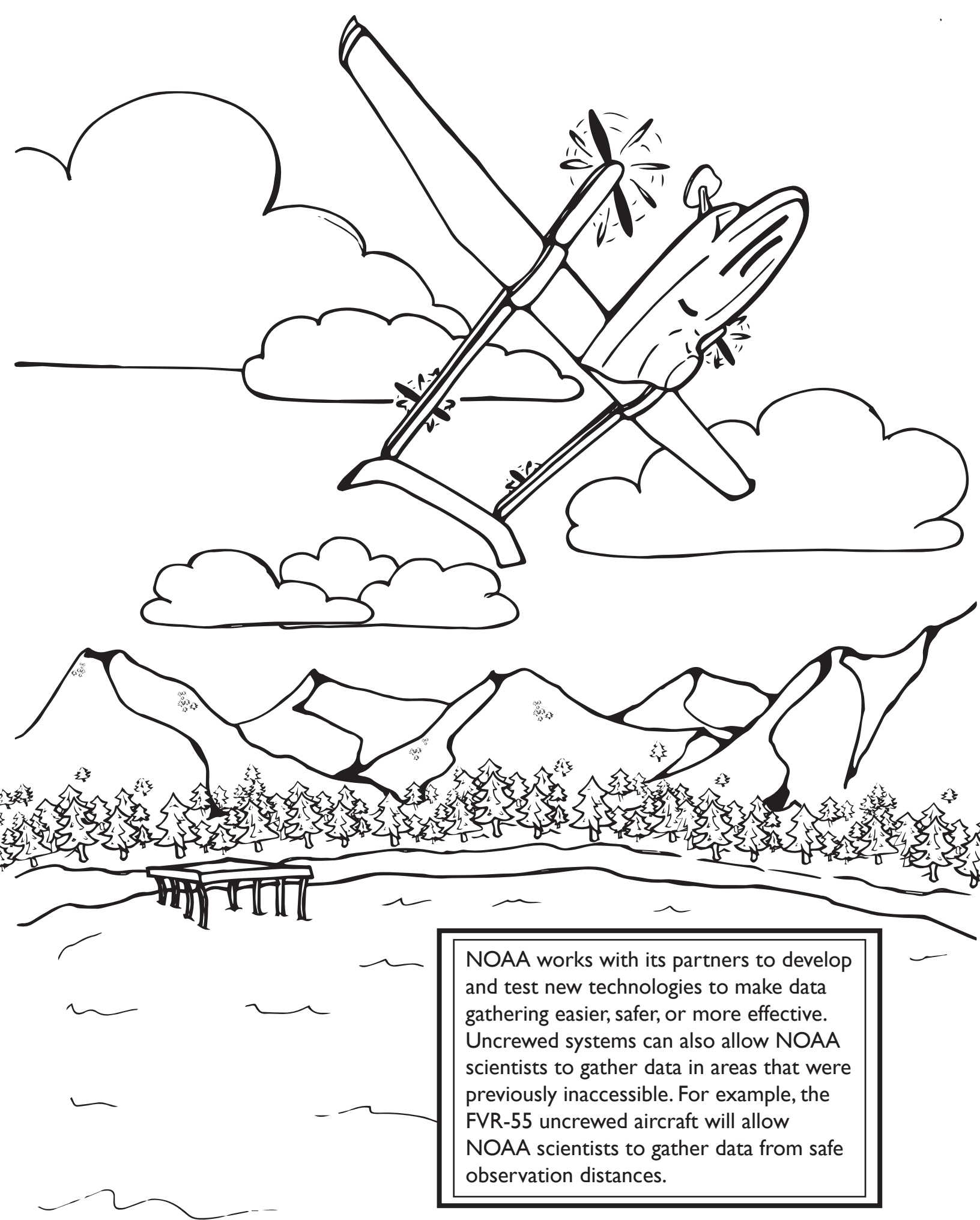




NOAA's Twin Otters are one of our most versatile aircraft. Known for their reliability, short takeoff and landing capabilities and excellent external visibility, they are a perfect plane to survey the coastlines of our country.

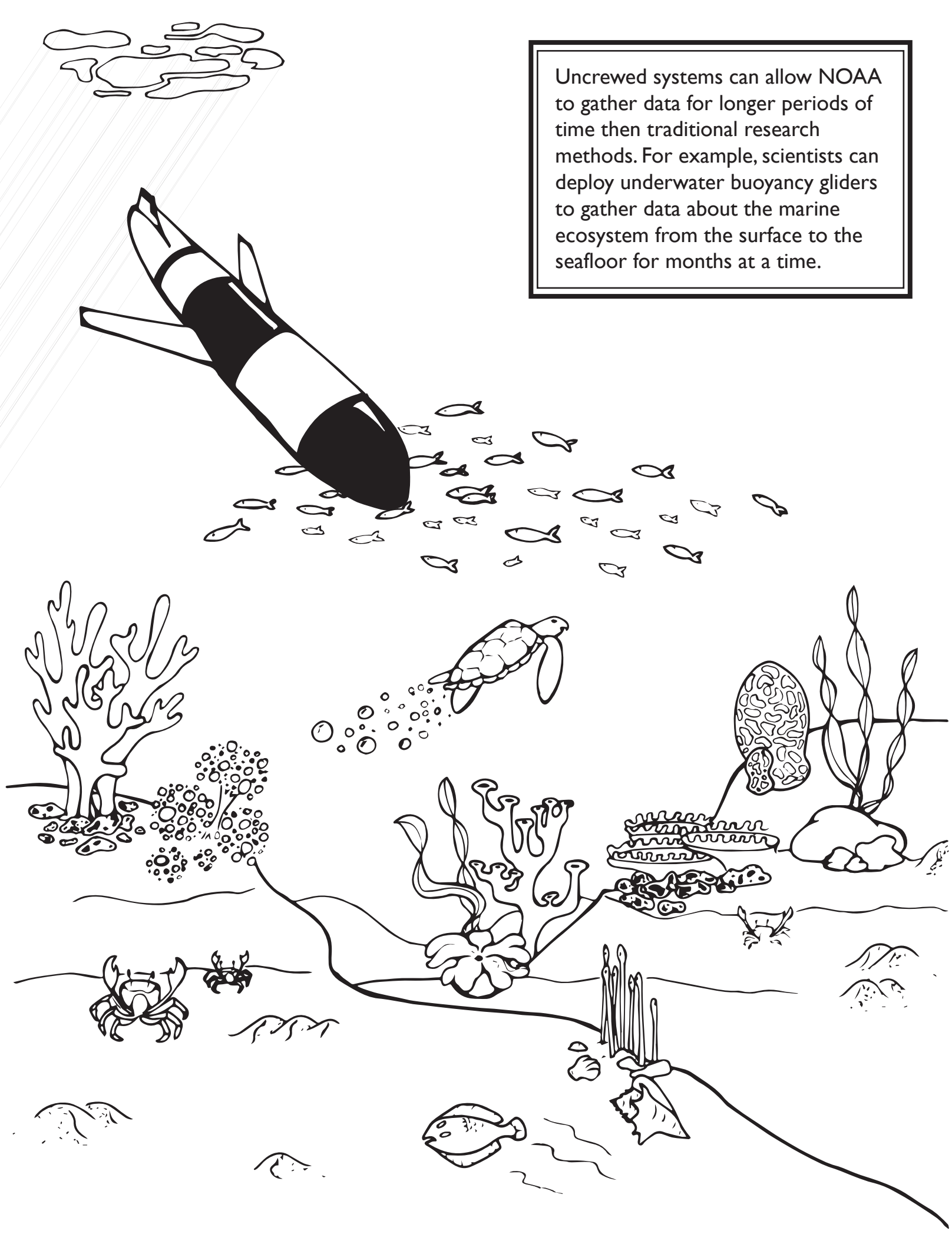


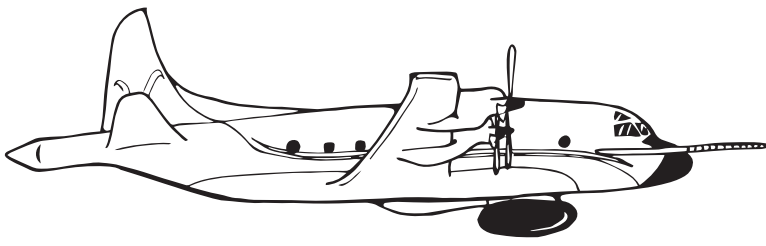
NOAA conducts research on marine mammals, like whales, to better understand them and protect them. NOAA scientists use uncrewed aircraft to assess the health of whales. Uncrewed aircraft provide a safer and more efficient way to gather the needed data for both the NOAA crew and the whales.



NOAA works with its partners to develop and test new technologies to make data gathering easier, safer, or more effective. Uncrewed systems can also allow NOAA scientists to gather data in areas that were previously inaccessible. For example, the FVR-55 uncrewed aircraft will allow NOAA scientists to gather data from safe observation distances.

Uncrewed systems can allow NOAA to gather data for longer periods of time than traditional research methods. For example, scientists can deploy underwater buoyancy gliders to gather data about the marine ecosystem from the surface to the seafloor for months at a time.

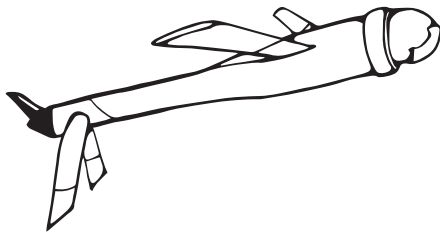




DROPSONDE



DRONE



SAILDRONE



GLIDER



FLOAT



DRIFTER

NOAA deploys scientific equipment and platforms in and around hurricanes to study them. This includes planes, dropsondes, and uncrewed aircraft in the air, uncrewed surface vehicles on the ocean surface, and underwater buoyancy gliders below the ocean surface. NOAA uses all these methods to gather more data to inform hurricane forecasts and save lives.