

MONITORING THE SOUND ● ● ●



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▲ **THE RESEARCH VESSEL *JOHN DEMPSEY*** at the dock in Old Lyme, CT. Named after Governor John Dempsey who was governor from 1961 to 1971, the research vessel plies the waters of Long Island Sound year round to monitor water quality from its home port at DEP's Marine headquarters in Old Lyme, CT. The 50 foot research vessel is also used by the marine division of DEP to conduct trawl surveys in the spring and fall.



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▲ **BACKING AWAY** from the dock, the *Dempsey* starts the trip down the Connecticut River to Long Island sound.

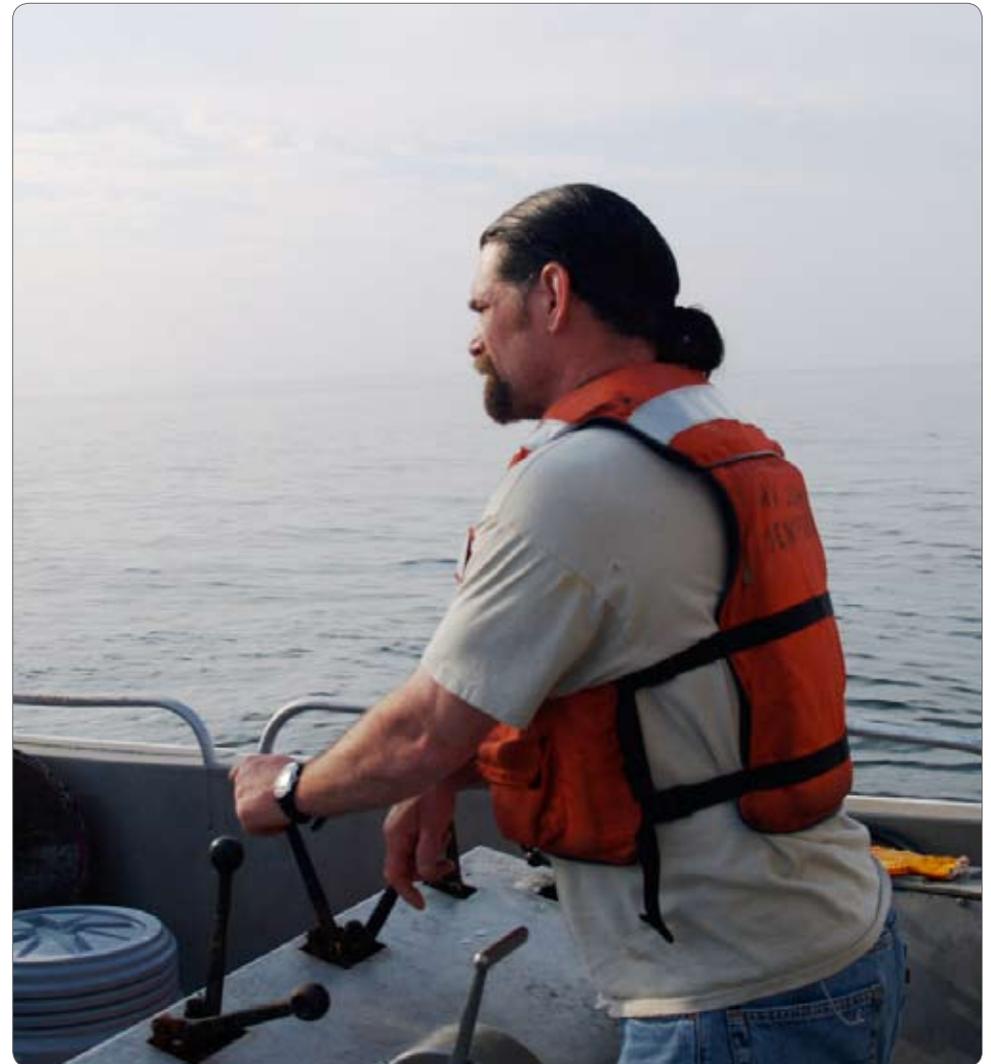


► **SITUATED** between the railroad bridge and I-95 the *Dempsey* must wait for "Old Lyme draw" to open before continuing down river (*top*). With Old Lyme draw open, the crew aboard the *Dempsey* heads out to Long Island Sound to continue the water quality survey (*bottom*).



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▼ **ON BOARD** the research vessel *John Dempsey* a member of the field crew prepares a rosette sample array for deployment. The "rosette" is deployed at each site equipped with a water column profiler and water collection bottles.



▲ **THE CAPTAIN** of the *Dempsey* uses the ship's hydraulics to deploy the rosette.

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▼ **MOUNTED** to the rosette are Niskin sample bottles and a Conductivity Temperature Depth (CTD) water column profiler. The CTD collects data on temperature, salinity, dissolved oxygen, chlorophyll and water clarity at a rate of two samples per second, this gives researchers a snapshot of conditions at each site.



▲ **RIGGING** on the *R/V Dempsey*. The large net reel is used to deploy the rosette. The cable connecting the rosette to the net reel contains electrical conductors which allow the crew to see in real-time the data collected at each site.

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▼ **RESEARCH** assistants deploy the rosette sampler. Bottles mounted to the rosette are sent down open and triggered to close collecting a sample at various depths throughout the water column. The CTD mounted to the rosette is connected to a computer in the lab which displays the data in real-time allowing researchers to select specific depths to sample.



▲ **THE ROSETTE SAMPLER** is deployed off the stern of the *Dempsey* in the Race at the eastern end of Long Island Sound.

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▲ **THE BOTTLE BRIGADE**, the field crew onboard the *Dempsey* passes Niskin bottles preparing the rosette to collect more samples. A total of 10 Niskin bottles can be mounted on the rosette allowing the field crew to collect samples at different depths.



► **WATER SAMPLES** for zooplankton analysis are collected from multiple depths and poured into a large bottle from which smaller sub samples are taken for analysis.

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▼ **RESEARCH ASSISTANTS** process water samples in the onboard laboratory. Each month the crew aboard the *Dempsey* monitors the waters of Long Island Sound collecting samples for nutrient analysis and water quality parameters.



▲ **FILTERS** from the water processing are collected and stored in a freezer before being sent to the lab for analysis. Data from the analysis are used to evaluate trends in water quality and provide managers with information on current conditions.