**Title:** *The title should indicate in 15 words or less: what are these data, taxonomic (if applicable), where, and when. Include NES-LTER in the title if applicable.*

Dissolved inorganic nutrients from NES-LTER Transect cruises, including 4 macro-nutrients from water column bottle samples, ongoing since 2017.

**Abstract:** *The abstract should provide a description of the dataset, summarizing what are these data, where, when (is the dataset complete or ongoing?), and an overview of why and how collected (put details how in the Methods). Mention the taxonomic standard that you used (if applicable). Please do not use special characters, symbols, or formatting.*

Dissolved inorganic nutrients are measured from water column bottle samples taken on NES-LTER Transect cruises (ongoing since 2017) and include nitrate + nitrite, ammonium, silicate, and phosphate. This version of the data package is specific to NES-LTER Transect cruises on R/V Endeavor; sampling frequency is approximately 6 months (summer and winter). Samples were filtered, frozen, then processed at the Woods Hole Oceanographic Institution’s Nutrient Analytical Facility. Each sample may have up to 2 replicates, indicated by a or b in the data table. These macro-nutrients are analyzed in seawater using a colorimetric assay in which light absorbance is measured versus known standards, and final concentrations are calculated in micromole per liter.

**Keywords:**

See keywords.txt

**Methods:** *Separate your methods into steps (e.g., sample collection, data processing). Be specific, include instrument descriptions, provide a citation to a paper or protocol if applicable. Please do not use special characters, symbols, or formatting.*

**CTD and Rosette Bottle Sampling on NES-LTER cruises**

Samples were collected from the water column at multiple depths using Niskin bottles on a CTD-rosette system.

## Nutrient Filtering Protocol

Wearing nitrile gloves, prior to 2018: Fill a B-D 60 ml LUER-LOKTM syringe with approximately 10 ml of water and partially insert plunger. Shake vigorously to cleanse the inside of the syringe and discard water. Repeat 3 times. Completely fill syringe with sample. Insert the plunger and remove any air in the syringe. Attach a EMD Millipore sterile Sterivex 0.22 µm filter to the syringe. Advance the plunger and force 60 ml of water through the filter to rinse the filter of any previous sample; 2018 to present: connect AcroPak 200 Capsule with Super Membrane 0.2 µm filter with barb and tubing to Niskin spigot and fill with water. Rinse filter with 3 times the volume of the filter.  
  
After rinsing the filter, refill the filter (prior to 2018: syringe). Then, without touching filter to sample vial (acid-washed scintillation vial 20 ml), triple rinse sample vial with 5 ml of filtered water. For each rinse, replace the cap and shake vigorously. Filter 17 ml of sample directly into the sample vial and replace the cap and proceed to the next sample. Store samples in a -20 deg C freezer and keep frozen until analysis. If applicable, flush AcroPak filter with milli-Q water and air dry for using on next cast (AcroPak filter may process up to 20 liters).

## WHOI Nutrient Facility Nutrient Analysis

## Samples are stored at -20 deg C until submitted to the Woods Hole Oceanographic Institution's Nutrient Analytical Facility (https://web.whoi.edu/nutrient/) which operates a four-channel segmented flow SEAL AA3 HR Autoanalyzer. Duplicates and spiked additions are run for quality control. Standards are made daily and Certified Reference material is run daily to ensure the standards and/or reagents are good. If the samples fall outside of the duplicate or spike addition quality control they are rerun until they fall within quality control parameters. Precision is 1e-03 microMolePerLiter. Please refer to the Facility's website for current detection limits which are different depending on the nutrient.

## Nutrient Data Cleaning

## The data table was made by concatenating cruises called from the REST API of the NES-LTER data system. All Below Detection Limit values are set to zero. Nearest station is based on a cruise-specific station list. NES-LTER standard stations L1 to L13 are the same for cruises starting with EN617 in August 2018. Prior to this: On AR22 and AR24 the NES-LTER transect was on longitude 70.83 W (to the east of present transect). AR22 LTER stations 1, 2, 3 corresponded to AR24 LTER stations 1, 3, 5. On EN608 the NES-LTER transect was established on the present longitude 70.8833 W with standard stations L1 to L13; however, on EN608 and AR28 the position for standard station L5 was at a different latitude (1 naut. mile north of present station).The data cleaning and metadata template assembly was performed in R Markdown. Further documentation can be found on GitHub, at <https://github.com/WHOIGit/nes-lter-nutrient-transect>.

## Quality Assurance

We assured that the geographic and temporal coverage of the clean data table were within expected ranges. For each nutrient we checked differences between replicates, visually inspected plotted values, and performed a range check.