

**Cruise Prospectus
OSNAP "East" Cruise
R/V Neil Armstrong (July 18 - Aug. 9, 2022)**

Description of Project: Nature and Objectives

The specific objectives of this cruise are as follows:

- 1. To perform mooring operations along the OSNAP East line between the Iceland and Irminger basins, including servicing (recovery and redeployment) of 12 current meter moorings.**
- 2. To conduct standard CTD (Conductivity-Temperature-Depth) and Lowered ADCP (Acoustic Doppler Current Profiler) stations at approximately 42 sites along the same mooring line.**
- 3. To acquire continuous underway data (vessel-mounted ADCP data, meteorological data, and surface temperature and salinity data) along the cruise track, and to perform selected additional CTD stations along the cruise track.**

This research is part of the U.S.-led Overturning in the Subpolar North Atlantic Program (OSNAP), an effort to determine the strength of the meridional overturning circulation and associated heat and freshwater fluxes in the subpolar North Atlantic. It is a collaborative program with scientists from several nations, including the U.K., the Netherlands, Germany, France, Canada, and China. Scientists from the U.S. and the Netherlands will participate in this cruise.

The moorings to be deployed on this cruise are listed in Table 1, and the planned CTD/LADCP stations are listed in Table 2. The mooring locations and planned CTD/LADCP stations are also shown in the attached maps (Figs. 1 and 2). The cruise will depart from, and return to, Reykjavik, Iceland. The order of operations and exact cruise track will depend on weather conditions and other considerations at the time of the cruise.

All of the moorings to be serviced or deployed are taut-wire subsurface moorings. Most of them have multiple instruments, including internally-recording current meters and temperature/salinity/pressure recorders. The CTD stations will include collection of salinity samples from Niskin bottles in order to calibrate the electronic conductivity sensors on the CTD package.

Table 1. Moorings to be serviced (recovered and deployed)

Name Latitude Longitude Depth(m)

U.S. Mooring positions in the Iceland Basin:

M1	58° 52.330' N	30° 31.765' W	1710
D1	58° 44.810' N	30° 07.040' W	1740
D2	58° 32.010' N	29° 27.580' W	2513
D3	58° 18.320' N	28° 49.060' W	2180
M2	58° 02.210' N	28° 01.130' W	2370
D4	58° 00.600' N	26° 58.120' W	2680
D5	58° 00.350' N	25° 40.560' W	2705

Dutch Mooring positions in the eastern Irminger Basin:

IC0	59° 13.02' N	35° 07.51' W	2930
IC1	59° 06.26' N	33° 41.20' W	2494
IC2	59° 01.29' N	32° 43.56' W	1873
IC3	58° 57.40' N	31° 57.08' W	1633
IC4	58° 53.38' N	31° 17.90' W	1471

Table 2. Proposed CTD/LADCP Stations

<u>Sta.</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Depth (m)</u>
1	57° 57.60' N	24° 29.35' W	2850
2	57° 57.60' N	25° 07.14' W	2800
3	57° 57.60' N	25° 44.94' W	2700
4	57° 57.60' N	26° 04.45' W	2700
5	57° 57.60' N	26° 22.74' W	2500
6	57° 57.60' N	26° 42.49' W	2600
7	57° 57.60' N	27° 00.62' W	2680
8	57° 58.04' N	27° 17.90' W	2680
9	57° 58.59' N	27° 33.97' W	2520
10	57° 59.25' N	27° 50.44' W	2520
11	57° 59.70' N	28° 04.41' W	2370
12	58° 05.04' N	28° 20.56' W	2500
13	58° 10.42' N	28° 36.96' W	2300
14	58° 15.70' N	28° 53.06' W	2175
15	58° 20.09' N	29° 05.51' W	2300
16	58° 24.67' N	29° 18.86' W	2100
17	58° 29.40' N	29° 32.10' W	2510
18	58° 33.42' N	29° 44.10' W	2000
19	58° 37.60' N	29° 56.87' W	1850
20	58° 42.03' N	30° 10.31' W	1740
21	58° 45.73' N	30° 22.08' W	1570
22	58° 49.85' N	30° 34.76' W	1710
23	58° 50.19' N	30° 48.27' W	1400
24	58° 50.52' N	31° 02.26' W	1480
25	58° 50.92' N	31° 15.99' W	1470
26	58° 52.31' N	31° 29.68' W	1500
27	58° 53.69' N	31° 43.38' W	1570
28	58° 55.09' N	31° 57.08' W	1670
29	58° 56.65' N	32° 12.52' W	1800
30	58° 58.21' N	32° 27.95' W	1900
31	58° 59.68' N	32° 42.28' W	2040
32	59° 01.34' N	32° 58.85' W	2080
33	59° 02.90' N	33° 14.31' W	2140
34	59° 04.48' N	33° 29.78' W	2260
35	59° 06.04' N	33° 45.26' W	2390
36	59° 07.70' N	34° 01.12' W	2450
37	59° 09.35' N	34° 17.65' W	2600
38	59° 11.00' N	34° 33.85' W	2680
39	59° 12.66' N	34° 50.04' W	2760
40	59° 14.62' N	35° 06.91' W	2860
41	59° 15.97' N	35° 22.43' W	2950
42	59° 17.63' N	35° 38.63' W	3000

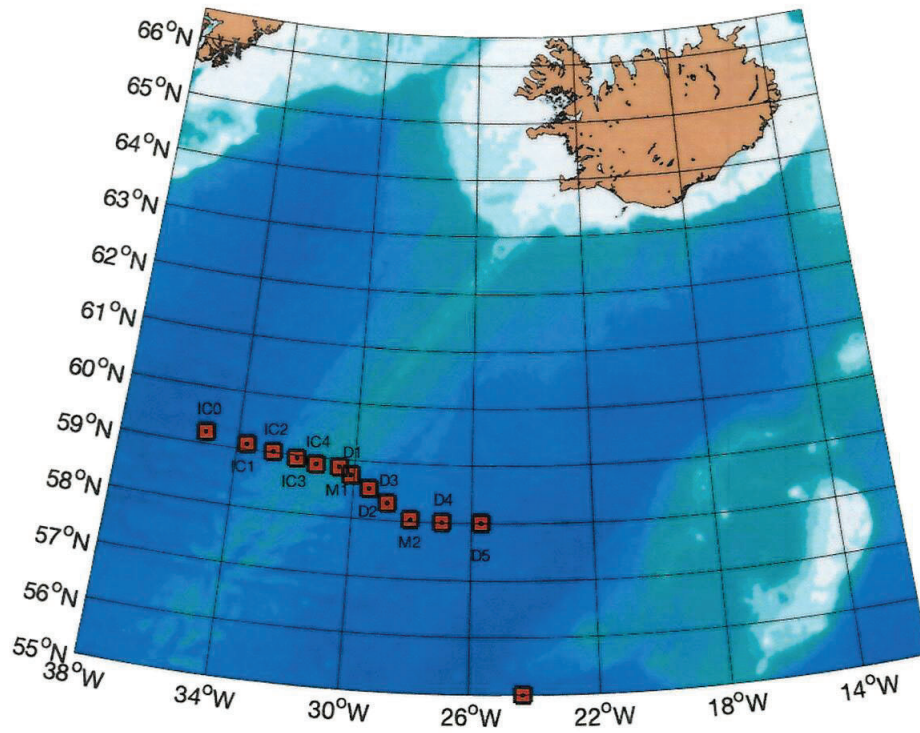


Figure 1. Mooring sites to be serviced (recovered and/or deployed) on the cruise.

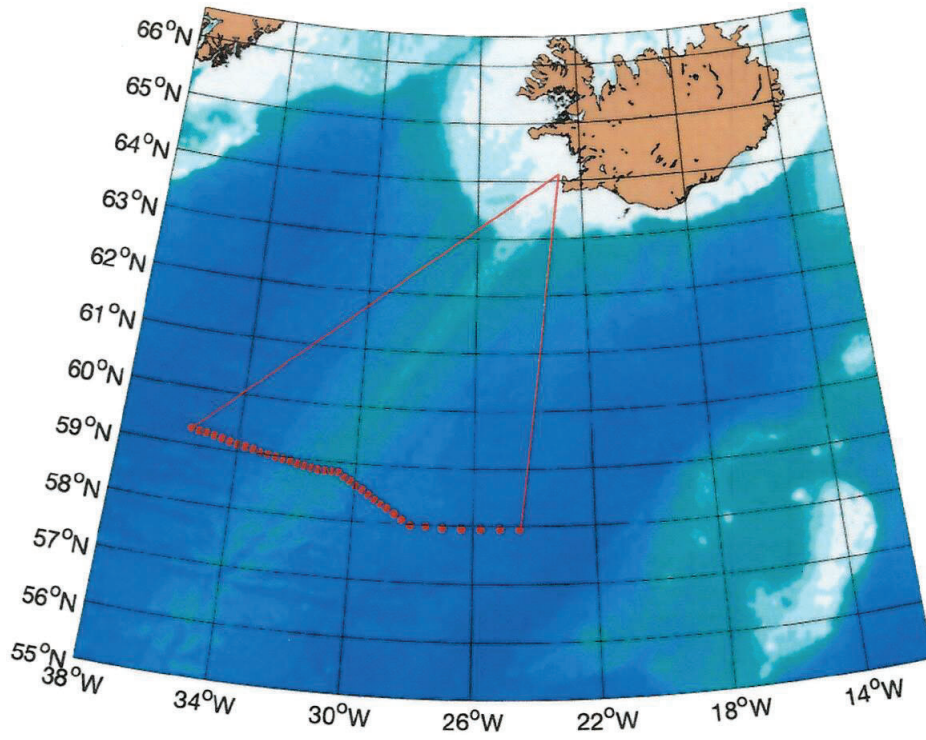


Figure 2. Planned CTD/LADCP stations to be performed during the cruise, and proposed cruise track to and from Reykjavik, Iceland.