NOTIFICATION OF PROPOSED RESEARCH CRUISE

Part A: GENERAL

1. Name of research ship: **RV Pelagia** **Cruise number: 64PE**

2. Cruise dates: June 22 – July 1, 2018

3a. Operating authority:
NIOZ Royal Netherlands Institute for Sea Research
Telephone: (+31) (0)222-369300
Telefax: (+31) (0)222-319674

3b. Operating agent:
NIOZ Royal Netherlands Institute for Sea Research
Telephone: (+31) (0)222-369300
Telefax: (+31) (0)222-319674

4. Owner: NIOZ Royal Netherlands Institute for Sea Research

5. Particulars of ship:

name:	Pelagia
nationality:	Dutch
overall length:	66.00 meters
maximum draught:	4.00 meters
nett tonnage:	1553 NRT
propulsion:	2 diesel electric Elliot White Gill Bow Truster
call sign:	PGRQ
IMO nr:	9001461

6. Crew:

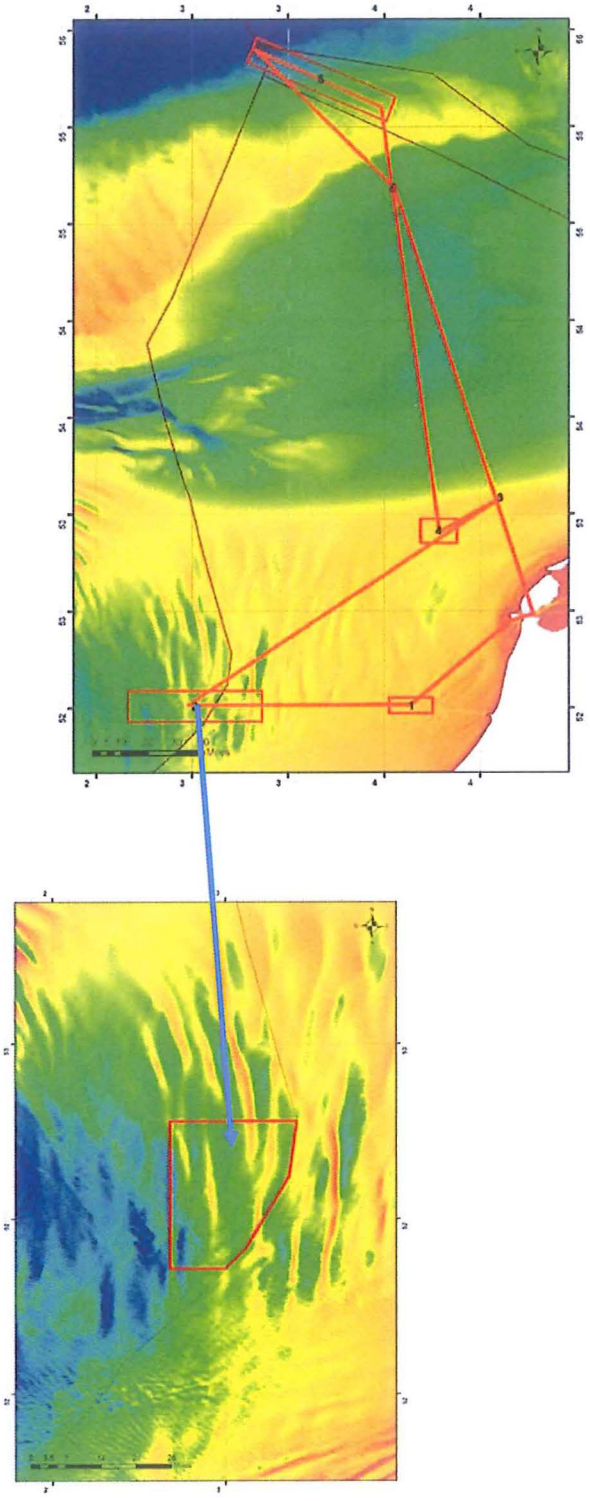
name of master:	J.C. Ellen / P. Kuijt
number of crew:	11

7. Chief scientist:

name:	dr. Helge Niemann
addresses:	NIOZ, PO Box 59, 1790 AB Den Burg (Texel)
telephone:	+31 (0)222 369 463
e-mail address:	helge.niemann@nioz.nl

8. Geographical area in which the ship will operate: (with reference in latitude and longitude)

Area bounded by:
LAT: 52.359 – 52.780 (dec. degr.)
LON: 2.840 – 3.205 (dec. degr.)



9. **Brief description of purpose of cruise:**
Reconstructing relative sea-level rise and shoreline change for the northern part of the Dutch North Sea and adjacent areas. The current reconstruction of relative sea-level rise for the northern part of the Dutch North Sea (north of the Dutch Wadden Islands) is based on only a handful of time-depth index points. It shows an early Holocene rise of about 25 m over some 3500 years, at an average rate of more than 70 cm per century. The few available index points do not form a continuous time series. A new series of high-quality time-depth index points will shed light on Greenland and Antarctic ice melt following the Late Glacial, and on rapid and large-scale submergence of regional topographic highs under conditions of rapid sea-level rise.

10. **Names and dates of intended ports of call:**
June 22 and July 2, 2018
NIOZ harbour
Zuiderhaaks 18
1797 SH 't Horntje (Texel)

11. **Any special logistic requirements at ports of call:**
None.

Part B: DETAIL

1. **Name of research ship:** **RV Pelagia**

2. **Cruise dates:** June 22 – July 2, 2018

3. **Purpose of research and general operational methods:**
   Mapping and dating an early Holocene peat layer for the construction of sea-level rise, using seismics and vibrocoring.

4. **Attach chart showing (on an appropriate scale) the geographical area of the intended work, positions of intended stations/hydrographic sections:**
   See above.

5a. Type of samples required: core samples of seabed subsurface (upper 5 m)

5b. Methods by which samples will be obtained (including dredge/core/drill techniques): vibrocoring, following high-resolution seismics (chirp sub-bottom profiling and sparker multi-channel profiling) to determine most suitable coring locations

6. **Details of moored equipment:** none

7. **Explosives:** none

8. **Detail and reference of:**
   a. Any relevant previous/future cruises: NIOZ 2017 North Sea Expedition 'Sea level rise'

   b. Any previous published research data relating to the proposed cruise:

Gaffney, V., Allaby, R., Bates, R., Bates, M., Ch'ng, E., Fitch, S., Garwood, P., Momber, G., Murgatroyd, P., Palle, M., Ramsey, E., Smith, D., Smith, O. (2017). Doggerland and the Lost Frontiers Project (2015–2020). In *Under the Sea: Archaeology and Palaeolandscapes of the Continental Shelf* (pp. 305-319). Springer, Cham.

van Heteren, S., Meekes, J.A.C., Bakker, M.A.J., Gaffney, V., Fitch, S., Gearey, B., Paap, B.F. (2014). Reconstructing North Sea Palaeolandscapes from 3D and high-density 2D seismic data: An overview. Netherlands Journal of Geosciences 93, 1-12

9. **Names and addresses of scientists of the coastal state in whose waters the proposed cruise takes place with whom previous contact has been made:** Prof. dr. Vincent Gaffney, School of Archaeological and Forensic Sciences, University of Bradford, Bradford, West Yorkshire BD7 1DP, +44 1274 234235, V.Gaffney@bradford.ac.uk.

10. State:

a. Whether visits to the ship in port by scientist of the coastal state concerned will be acceptable: not applicable

b. Whether it will be acceptable to carry on board an observer from the coastal state for any part of the cruise and dates and ports of embarkation/-disembarkation: yes
Embarkation: June 22 from NIOZ harbour Zuiderhaaks 18, 1797 SH 't Horntje (Texel).
Disembarkation: July 2nd from NIOZ harbour Zuiderhaaks 18, 1797 SH 't Horntje (Texel).

c. When research data from intended cruise is likely to be made available to the coastal state and if so, by what means: upon return to port, the research consortium (which include prof. Gaffney as well as Natasha Barlow from U Leeds) will meet to share and discuss data and plan subsequent research.

COASTAL STATE:

SCIENTIFIC EQUIPMENT

11. Complete the following table - include a separate copy for each coastal state (indicate "Yes" or "No" if applicable)

Marine scientific equipment used	**water depth (m)**	**fisheries research**	**distance of research to coast in nautical miles**			
			< 3	**3-12**	**12-50**	**50-200**
Chirp sub-bottom profiler	20-55	no				X
Sparker multi-channel seismic system	20-55	no				X
Vibrocorer	20-55	no				X

List of intended sampling stations during Pelagia cruise

Will be determined on site on the basis of seismic data, which will be collected in shore-perpendicular profiles across the Brown Bank.

References

https://www.nioz.nl/en/blog/north-sea-expedition-sea-level-rise.