

Conservation objectives for the Dogger Bank SCI (DE 1003-301) in the German North Sea EEZ

Federal Agency for Nature Conservation, June 2010

1. General

Site name: 'Doggerbank' (Dogger Bank), EU Code DE 1003-301

Type of site: Site of Community Importance (SCI), included in the European Commission's list of Sites of Community importance for the Atlantic biogeographical region (Decision 2008/23/EC, OJ L 12, 15 January 2008, p. 1-117)

Area: 169,895 ha

Site centre location: 4°10'00" E 55°35'00" N

1.1 Site characteristics

Covering almost 17,000 km², Dogger Bank is the largest sandbank in the North Sea and separates the ecologically distinct northern and southern parts of the sea. Dogger Bank is most likely a moraine formed in the Ice Age and is located in British, Dutch, German and Danish waters. The shallowest parts of Dogger Bank are in British waters, at depths of between 14 and 20 metres.

Situated in the central North Sea at a meeting point of different water masses, Dogger Bank is a biogeographical divide with cold-adapted species to the north and species preferring more temperate waters to the south. The sediments mostly consist of fine sands containing many shell fragments merging into silty sands and silt in zones deeper than 40 m at the end of the sandbank. The sandbank causes eddies that transport warm water from the sea surface to zones close to the surface of the sandbank, with the result that primary production periodically takes place near to the seabed.

The site solely comprises the relatively small portion of Dogger Bank – known as the tail end – that lies inside the German North Sea Exclusive Economic Zone (EEZ). The tail end ranges in depth from 29 m to 40 m and is the largest sandbank in German waters. It is representative of the open offshore sublittoral zone of the Central North Sea and is a characteristic sandbank within the meaning of Annex I of the Habitats Directive (Directive 92/43/EEC; habitat type ‘Sandbanks which are slightly covered by sea water all the time’, code 1110).

The area of Dogger Bank in the Central North Sea is of general importance for an endofauna adapted to shifting substrates, as a stepping stone for the spread of fauna elements throughout the North Sea, as a feeding ground for seabirds and marine mammals, and as a feeding and spawning area for fish.

Further information and specifics on the site are provided in the standard data form (SDF).

2. List of Habitats Directive species and habitat types in the Dogger Bank site

Set out below are the habitat types listed in Annex I of the Habitats Directive and the species listed in Annex II of the Habitats Directive that according to current scientific knowledge are found at the Dogger Bank site.

2.1 Annex I habitat types

'Sandbanks which are slightly covered by sea water all the time' ¹

EU code	Area (ha)	Cover ² (%)	Representativity	Relative surface	Conservation status	Global evaluation
1110	approx. 162,370	approx. 96	A	A	B	B

2.2 Annex II species

Mammals

Harbour porpoise (*Phocoena phocoena*), additionally in Annex IV of the Habitats Directive¹

EU code	Abundance (individuals)	Population	Conservation	Isolation	Total
1351	501-1000	B	B	C	B

Common seal (*Phoca vitulina*), additionally in Annex V of the Habitats Directive¹

EU code	Abundance (individuals)	Population	Conservation	Isolation	Total
1365	p	C	B	C	C

Note: Data on fish stocks currently insufficient; species listed in Annex II, IV and V may be expected.

¹ Codes in accordance with Official Journal L 107, 24/04/1997 P. 0001 – 0156: 97/266/EC: Commission Decision of 18 December 1996 concerning a site information format for proposed Natura 2000 sites.

² Area relative to the total site area.

3. General conservation objectives

The site is part of a unique sandbank in the North Sea where the site's hydrological characteristics periodically allow primary production close to the seabed at depths of up to 40 m. As a sandbank with shallow sand habitats, Dogger Bank serves an important function for the entire North Sea as a stepping stone for coastal, sandy shallow water habitats.

General conservation objectives for the Dogger Bank site:

- Maintain and restore the site's specific ecological functions, biodiversity and natural hydrodynamics and morphodynamics;
- Maintain at and restore to favourable conservation status habitat type 1110 (sandbanks which are slightly covered by sea water all the time) together with its typical and endangered species and ecological communities;
- Maintain at and restore to favourable conservation status the following Habitats Directive species and their natural habitats: harbour porpoise and common seal.

4. Specific conservation objectives

4.1 Habitat types

4.1.1 Habitat type 'Sandbanks which are slightly covered by sea water all the time' (code 1110)

The part of the sandbank designated as an SCI in the German EEZ belongs to the tail end area of the sandbank and has a crest height of 29 to 31 m. This part constitutes a representative and simultaneously unique sandbank in the open, offshore sublittoral zone of the Central North Sea (habitat type 'Sandbanks ...'). It is the largest sandbank in the entire German North Sea. The sediments mainly consist of fine sand containing shell fragments, although medium sands and small stones have also been described in the 'duckbill' section of the German EEZ. At the northern and southern slopes, the sands merge into silty substrates at water depths of more than 40 to 50 m. Eddies periodically transport warm surface water closely to the seabed. Based on measurements mainly by Danish scientists, primary production takes place close to the seabed at least periodically.

Situated in the central North Sea at a meeting point of different water masses, Dogger Bank as a whole is a biogeographical divide with cold-adapted species to the north and species preferring more temperate waters to the south. In the north of the

sandbank, the zoobenthic communities serve as a transition to fauna adapted to colder summer temperatures, the 'coastal étage' of the Northern North Sea (sensu GLÉMAREC, 1973; see also KÜNITZER ET AL., 1992). The shallow depths also allow shallow-water species requiring higher temperatures to live and propagate. With interposed coarse substrates (shell fragments and gravel) and silty areas in trough-shaped depressions, the tail end hosts a relatively large diversity of habitats.

Sandy areas of the site are colonised by a special offshore form of a community of fine sand and sea floor species, the *Bathyporeia-Fabulina* community. Some 38 species on the German Red Lists have so far been recorded in the Dogger Bank site, for example the common whelk (*Buccinum undatum*).

The special circulation patterns and shallow waters at Dogger Bank keep nutrients in the system and quickly replenish losses, ensuring a high level of autochthonous bioproduction. This provides good growth conditions for fish stocks and good living conditions for other consumers such as harbour porpoises and common seals.

Maintenance and restoration

Maintenance

The following conservation objectives can currently be formulated:

- 1) Maintain the current ecological quality, habitat structure and extent of habitat type 1110;
- 2) Maintain the site's characteristic morphodynamics, its specific hydrodynamics with eddy formation and substantial mixing of surface and bottom waters, and with the related typical species and communities with their predominantly natural population dynamics;
- 3) Maintain the typical offshore character of the fine sand benthic community of habitat type 1110 and its typical species within the scope of their natural distribution patterns and population dynamics, for example the *Bathyporeia-Fabulina* community with *Bathyporeia elegans* – together with *B. nana* – and the polychaete species *Spiophanes bombyx* and *Spio decorata*, as well as typical fish species such as *Pomatoschistus minutus*, Soleidae, Pleuronectidae, Rajidae;

Characteristic benthic species of the communities include *Bathyporeia nana*, *Scopelocheirus hopei*, *Dosinia* sp., *Siphonocoetes kroyeranus*, *Anaitides lineata*, *Megaluropus agilis*, *Sigalion mathildae* and *Gari fervensis*.

- 4) Maintain the predominantly natural morphology of the parts of Dogger Bank that lie within the site and of their ecological functions with their special importance to the

German Bight and the North Sea as a whole as a sandbank separating the Northern and Southern North Sea, in particular:

- as an area with a high level of autochthonous bioproduction providing benthic communities, fish populations and other consumers such as harbour porpoises and common seals with good living and growing conditions;
- as a stepping stone allowing benthic organisms to spread throughout the North Sea;
- as a regeneration area and refuge for benthic fauna of the entire North Sea in the event of anomalies such as extremely cold winters;
- as a nucleus and corridor for recolonisation of surrounding areas with benthic species;
- as a particularly diverse boundary region for the ecologically different benthic communities of the Northern and Southern North Sea.

Restoration

The following restoration and development objectives can currently be formulated:

- 1) Restoration of structures of habitat type 1110 that are well preserved throughout the area.
- 2) Abiotic and biotic factors in the site are to attain a status that enables existing benthic communities to develop towards good conservation status and maintain that status for the long term.
- 3) Benthic communities should be distinguished by characteristic and in particular long-lived species. Individuals of such species should span all typical size and age classes in accordance with the natural conditions.
- 4) Characteristic fish species should be present in their characteristic population structure and in all typical abundance, size and age classes in accordance with the natural conditions.

4.2. Species

4.2.1 Harbour porpoise (*Phocoena phocoena*) (code 1351)

Harbour porpoises are endangered in the Southern and Central North Sea.

Harbour porpoises were sighted unexpectedly frequently in aerial surveys conducted in 2002 and 2003 by FTZ Büsum under contract to BfN. Due to the large distance from the mainland, however, only three synoptic aerial surveys of the site could be conducted in 2002 and 2003 (SCHEIDAT ET AL. 2003). More recent surveys as part of BfN's marine monitoring programme confirm that harbour porpoises are relatively abundant in the Dogger Bank SCI.

A large proportion of calves have been sighted during various summer surveys. It is currently not possible, however, to draw conclusions about the site's significance as a reproduction area for harbour porpoises. The sighted individuals may be part of a subpopulation whose main distribution range is off the British Isles, as the calves spotted in May were already relatively large and the calving season of the British subpopulation is earlier than that of the German/Danish population (SCHEIDAT ET AL. 2003).

Maintenance and restoration

Maintenance

The following conservation objectives can currently be formulated:

- 1) Maintain at least the qualitative and quantitative status of the harbour porpoise population as of the time of site submission, taking into account natural population dynamics and supporting natural population trends;
- 2) Maintain the ecological quality of feeding habitats, migration and reproduction areas for harbour porpoises in the Southern and Central North Sea;
- 3) Maintain current population structures and dynamics and the reproductive fitness and natural genetic diversity within the population in the site, and maintenance of the scope for genetic exchange with populations outside the site;
- 4) Maintain the contiguous habitat for the species in the site and the connection with British, Danish and German waters;
- 5) Maintain the spatial and temporal distribution patterns and population densities of natural food resources for harbour porpoises (e.g. Ammodytidae, *Clupea harengus*, Soleidae, Gobiidae, *Gadus morhua*, *Merlangius merlangus*, Pleuronectidae).

4.2.3 Common seal (*Phoca vitulina*) (code 1365)

The common seal population in the Dutch, German and Danish Wadden Sea was reduced by about half in the 2002 outbreak – the second in 15 years – of phocine distemper virus, just as numbers had grown back from the first outbreak. Following both outbreaks, the population recovered within a few years. More than 20,000 common seals were counted in the entire area of the trilateral Wadden Sea in 2008 (COMMON WADDEN SEA SECRETARIAT 2009).

Dogger Bank is an area known to be visited by common seals. This was shown by Danish research using satellite telemetry on individual animals (ADELUNG ET AL. 2002).

Maintenance and restoration

Maintenance

The following conservation objectives can currently be formulated:

- 1) Maintain at least the qualitative and quantitative status of the common seal population as of the time of site submission, taking into account natural population dynamics and supporting natural population trends;
- 2) Maintain the ecological quality of feeding habitats and migration areas for animals belonging to the common seal colonies on the North Frisian Islands and Heligoland (Düne);
- 3) Maintain unfragmented habitat for the species in the site and of the connection with British, Danish and German waters. Conservation of the ability for common seals to use the site in accordance with their natural spatial and temporal distribution patterns;
- 4) Maintain the spatial and temporal distribution patterns, age class distribution and population densities of natural food resources for common seals (e.g. Pleuronectidae, *Gadus morhua*, Ammodytidae, Gobiidae).

5. Current threats

5.1. Activities and impacts within the SCI³

- Professional fishing (code 210) including trawling (code 212)

Potential negative impacts on the conservation, restoration and development objectives include:

Bycatch of marine mammals, birds and fish due to low-selectivity fishing methods; risk of injury to mammals, seabirds and fish from nets; bottom and beam trawls, shellfish trawling: destruction of bottom fauna/feeding grounds and reduction of predominantly later stages of slow-growing species; overfishing of food fish and endangered fish species.

- Fixed location fishing (code 211)

Potential negative impacts on the conservation, restoration and development objectives include:

Bycatch of marine mammals, birds and fish; risk of injury and possibly death to mammals, seabirds and fish from nets.

- Exploration and extraction of oil or gas (code 320)

Potential negative impacts on the conservation, restoration and development objectives include:

Deterrent and barrier effect (habitat loss) for harbour porpoises and other marine organisms, e.g. due to periodic or episodic noise (from hydroacoustic exploration methods); injury or death of marine mammals due to noise emissions from hydroacoustic exploration methods; pollution and disturbance of sediment from drilling.

- Energy transport (code 510)

The available research findings indicate potential hazards from energy transport, including:

Habitat loss due to electromagnetic fields disturbing the orientation of marine mammals and fish and impairing migration; habitat loss due to disturbance (ma-

³ Codes in accordance with Official Journal L 107, 24/04/1997 P. 0001 – 0156: 97/266/EC: Commission Decision of 18 December 1996 concerning a site information format for proposed Natura 2000 sites.

rine mammals, fish); destruction or harm to benthos during cable-laying; changes to benthic communities due to warming of the sea floor.

- Shipping (code 520)

Potential negative impacts on the conservation, restoration and development objectives include:

Gradual or acute poisoning due to contamination, e.g. with oil from marine accidents, bilge water or waste oil;

Risk of injury to seabirds due to shipping waste;

Disturbance and deterrence of wintering seabirds in their resting sites and of fish in their spawning, feeding and wintering areas;

Marine mammals: Risk of injury from fast-moving ships; habitat loss due to constant, periodic or episodic noise or vibration (impairment of orientation/communication); disturbance/perturbation (increased mortality through disturbance of mother-calf groups);

Introduction of alien species with potential dominance shifts in ecological communities (primarily benthic species and fish), possibly extending to eradication of individual species.

- Other pollution or human impacts/activities (code 790)

5.2. Activities and impacts outside the SCI

- Water pollution (code 701) (discharge of pollutants and nutrients from rivers)

Potential negative impacts on the conservation, restoration and development objectives include:

Gradual or direct poisoning; pollutant accumulation; promotion of fast-growing, opportunistic species and impairment of underwater light availability due to eutrophication and excess phytoplankton production.

- Air pollution (code 702)

Potential negative impacts on the conservation, restoration and development objectives include:

Gradual or direct poisoning; pollutant accumulation; promotion of fast-growing, opportunistic species and impairment of underwater light availability due to eutrophication and excess phytoplankton production.

6. Annex IV species

For species listed in Annex IV of the Habitats Directive (92/43/EEC), Article 12 requires the Member States to take the requisite measures inside and outside of protected areas to establish a system of strict protection for the listed species in their natural range. This relates to all cetaceans (Cetacea) occurring in the area.

Harbour porpoise (*Phocoena phocoena*)

The Dogger Bank SCI protects part of the German harbour porpoise population in the North Sea at various vulnerable life stages and conserves a large proportion of their feeding habitat.

Other cetaceans (Cetacea)

Several aerial surveys carried out under contract to BfN as part of the marine mammal monitoring programme produced regular sightings of various further cetaceans both in the Dogger Bank SCI and its immediate vicinity, e.g. minke whale (*Balaenoptera acutorostrata*), white-beaked dolphin (*Lagenorhynchus albirostris*) and Atlantic White-sided dolphin (*Lagenorhynchus acutus*). These are backed up by irregular sightings, such as from ships or in research accompanying oil and gas exploration.

It is currently assumed that these three species regularly use the Dogger Bank SCI as a feeding habitat or migration corridor.