SITE SYNOPSIS

Site Name: CODLING FAULT ZONE

SAC Site Code: 003015

Codling Fault Zone is a Special Area of Conservation located around 24 km east of Howth Head, Co. Dublin within the Irish Sea. The length of the site is approximately 7 km and 5 km wide at the greatest extent. The water depth at the site ranges from about 80 to 100 m.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1180] Submarine structures made by leaking gases
[1351] Harbour Porpoise (*Phocoena phocoena*)

Structures made by leaking gases in the marine environment can form two described habitat types: Bubbling Reefs and Structures within Pockmarks. The habitat recognised in the Irish Sea conforms to the definition of bubbling reefs. The typical carbonate mounds and accreted slabs have been detected using data generated as a result of seismic and multi-beam bathymetric surveying and by observation using remotely operated vehicles. These mounds are formed by anaerobic bacteria oxidising methane to drive their metabolism. The reduction phase of this chemical reaction within the bacterial cell produces a very small amount of waste carbonate. These processes can only occur in anoxic mud away from the overlying oxygenated sea water where there is a consistent presence of methane. Over a prolonged period these metabolic residues can build-up to the extent that they form what are known as methane-derived authigenic carbonates which can protrude above the mud in the surrounding waters. These hard structures formed by biological processes are generally composed of carbonate cement (mainly calcite (high in Magnesium), dolomite, and aragonite). The Codling Fault Zone has been documented to have in excess of 23 seep mounds generated as a result of currently active gas emissions from deep gas reserves. The specific processes that form these structures mean that this habitat type is not commonly found. At this site, these features tend to form elongated structures, from 60-80 metres in width, raised a couple of metres proud of the surrounding seabed, which trace the movement of the strike/slip fault zone and can extend up to several hundred metres in length.

Drop-down camera surveys have noted the occurrence of a range of fauna. The hard structures associated with Submarine structures made by leaking gases tend to form solid substrates which allow the growth of species not usually found in the surrounding mud and sand. Dense beds of hydroids, including Nemertesia sp.,

Hydrallmania falcata and Tubularia indivisa, are widely recorded, particularly along the edge of features. A wide variety of anemones occur; these include the cerianthid Cerianthus lloydii on soft overlying sediment, and among others, Alcyonium digitatum, Sagartia elegans, Urticina felina, and Actinothoe sphyrodeta on harder ground, principally on pavement areas. In the crevices, overhangs and between rocks the edible crab, Cancer pagurus is very abundant, while squat lobsters, Munida sp. and lobsters Homarus gammarus also occur. A variety of sponges, including the boring- sponge Cliona celata and the lace sponge Clathrina coriacea are present, as is the bryozoan Flustra foliacea. The feather star Antedon bifida is commonly seen in crevices and under overhangs. The fish species recorded included Trisopterus luscus (Bib) and Chiroplophis ascanii (Yarrell's blenny). None of these species would typically occur in the surrounding habitat of mobile sand.

This site is of high conservation importance, due to the presence of the Habitats Directive Annex I habitat Submarine structures made by leaking gases and its associated fauna.