



### Site Name: Southern Canyons SAC

### Site Code: 002278

The Southern Canyons SAC lies approximately 280 kilometres due south of Counties Kerry and Cork. This large site contains a series of branched canyon systems, characterised by extensive areas of hard ground, interspersed with soft sediment. Multi-beam echo-sounder data has revealed the terrain features of the canyons at the target site, in exceptional detail. The recorded fauna is highly diverse, particularly amongst the dead coral framework, and contains a wide range of deep-water species. This site contains the Whittard Canyon system which has been described as comparable in scale and drama to the Grand Canyon in the USA.

The site is a candidate 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):

[1170] Reefs
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An extensive offshore survey of this site was completed in 2019 using the RV Celtic Explorer and the Holland I ROV. This survey was completed by a team of internationally recognised deep sea ecologists. A total of 50 dives were completed during this leg of the survey. The canyon systems cutting into the continental shelf were formed by sediment erosion events that scoured deep canyons with flanking escarpments. The thalwegs of these canyons exit thousands of meters deep into the abyssal plains below. The SAC boundaries have been designed to encompass this unique habitat, which is exceptional in a European context.

The ecology of the Southern Canyons is understandably complex. There are areas of hard rocky substrate and areas of muddy or sandy sediment. Along the top of the canyon systems, sediment is the dominant substrate. In the canyons, depending on slope, it grades away to bedrock. Bottom currents also play a strong role in the type of fauna observed. Marine snow flushes through the canyons providing a rich food resource for various invertebrates and vertebrates. This material forms from degradation and flocculation of phytoplankton and excreta in the productive shelf waters. In areas where muddy sediments dominate, there was evidence of pteropod mollusc burrows and occasional emergent sea fans (*Distichoptilum*) and soft corals (*Anthomastus*). An extensive field of sea pens, including *Pennatula* sp. and *Kophobelemnion* sp., interspersed with bamboo coral *Acanella* (both fir tree and bush-like forms) also occurs. In coarse sand, which can form quite prominent sand ridge features due to the action of bottom currents, the fauna include *Swiftia*, *Desmophyllum*, large barnacles, sea pens, and ophiuroids. Where there was sufficient anchoring, fauna consists of clumps of live *Desmophyllum* and occasionally *Madrepora*. Octocorals or soft corals included a lot of clavulariids and *Acanthogorgia*. The echinoid *Cidaris* is

abundant over sand with some prominent anemones and occasional errant hermit crabs and galatheid crabs. The numerous fish species include elasmobranchs, grenadiers, orange roughy and eels.

The site is of conservation importance for reefs, a habitat that is listed on Annex I of the E.U. Habitats Directive.