V. SUMMARY

In conclusion, I can hypothesise that the Gulf of Corryvreckan is the centre of an entire ecosystem, given the significant temporal and spatial distribution of seabird and cetacean species. Odum (1977 in Barber & Smith 1981) best sums up this theory in a statement:

"An ecosystem is a functional unit of physical and biological organisation with characteristic trophic structure and material cycles, some degree of internal homogeneity and recognisable boundaries."

The Gulf of Corryvreckan exhibits all the key elements of this citation. The steep channel walls and rising pinnacle define the 'physical organisation'. These create the 'degree of homogeneity' under the effect of a diurnal tidal cycle, that produces specific hydrographic characteristics or 'recognisable boundaries'. The west-going tide forces whirlpools and violent 'standing waves', and drives mixed waters far out into the deeper regions of the Firth of Lorn. The east-going tide is less dramatic with sustained upwellings that raise nutrients and prey, to within the foraging range of predatory fish, seabirds and marine mammals. These are the basis of the 'biological organisation', and are significant evidence of the higher levels of a 'characteristic trophic structure'. Past research suggests significant abundances of kittiwakes, guillemots, gannet and porpoise feed on sandeels, herring and mackerel. Further research is required to confirm the highly important producers and lower trophic level consumers (or 'material cycles'), that are aggregated by the tidal currents and upwellings.

The Gulf of Corryvreckan is the southern boundary of the Firth of Lorn marine Special Area of Conservation (mSAC). The area has been given its designation in accordance with the recognition of unique rocky reef habitats in the shallower waters of the region. However, it should be acknowledged that the Corryvreckan is not only an area of interest for its exciting tidal movements; but more importantly, its essential biological activity, that supports an entire ecosystem.

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