

THE ROLE OF ELECTRORECEPTION IN THE FEEDING BEHAVIOUR OF ELASMOBRANCHS

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Elasmobranchs are a highly evolved group of cartilaginous fish, with seven senses used in the detection of prey, navigation and mate selection. Here, we examine and map the distribution of ampullary pores, that comprise the electrosensory system, in a range of elasmobranchs from different ecological niches. The precise arrangement of ampullary pores shows a direct relationship with the specific feeding ecology of individual species. For example, *Carcharias carcharodon*, a pelagic shark, has dense aggregations of electroreceptors in the preorbital region on the dorsal surface (Dorsal:530; Ventral:370), facilitating an ambush style of predation, whereas, *Mustelus mustelus*, a benthic shark, displays much denser aggregations of electroreceptors in the preoral region on the ventral surface (Dorsal:467; Ventral:644), facilitating a benthic style feeding strategy. This large study will elucidate the importance of this sensory modality in behaviour and will be achieved by an analysis of receptor distribution and sensitivity, the relative input to the central nervous system and receptor plasticity either during development or during migration from one habitat to another. An understanding of the contribution of passive electroreception in the feeding behaviour of sharks and rays may increase our knowledge of how we can prevent attacks on humans in addition to protecting these important predators from overexploitation.