The macrotidal Severn Estuary (>4m tidal range) represents the point at which the longest river in Britain (220 miles) meets the Bristol Channel and, in turn, the Atlantic. Since the mid-19th century the estuary has been the subject of debate over harnessing its tides to generate electricity. By constructing a barrage (a type of dam), proponents argue that - in the 21st century at least - uses of the Severn’s tides are, however, nothing new. Inhabitants of the lands bordering this liminal environment – a region that can shift from a river to an extension of the sea in minutes (the surfable “Severn Bore” - above) – have interacted with the tidal cycle for millennia; from medieval fish traps, to the Severn Trow (a type of flat-bottomed trading vessel unique to the estuary) and tide mills. And yet, even with such a heritage of human-tidal relations, barrage proposals have stimulated resistance and polarised views on how the estuary should be used and managed. My research seeks to understand how, even with so many proposals, a Severn Barrage has remained elusive, and why, despite such a lack of success, interest in employing the tides shows little sign of abating. This has been achieved through application of analytical tools developed in environmental history – e.g. the notion of envirotechnical systems and Richard White’s “organic machine” - in addition to scalar approaches more commonly employed by geographers. Insights have also been derived from archaeology, while spatial history and GIS have assisted in organising research and visualising proposed pasts and potential futures.

**Before the Barrage**

Efforts to harness the tides as a source of energy have been a feature of the Severn since at least the 1st millennium AD. The remains of intertidal fish weirs have been 14C-dated to that time, and documentary sources attest to the ownership of fishing structures (“fixed engines”) by monasteries and secular lords in the medieval period. Trading vessels navigating between ports and landing places in the Bristol Channel would also have relied on the tidal rise and fall to convey their cargoes up the many creeks (“pills”) to settlements further inland. The majority of these watercourses are now blocked by sluices and tidal flats, rendering formerly coastal settlements effectively land-locked. Additionally, tide mills are likely to have been present in the region from the mid-14th century, if not earlier. These can all be interpreted as small-scale envirotechnical systems: examples of human-built technological features that were successfully constructed and put into operation – a marked contrast to the more ambitious but still unrealised barrage.

*“Blessings of Light, Purity and Power:” Severn Barrage proposals from 1849 to the present*  

Although interest in damming the Severn may have emerged in the 18th century, the earliest known depiction of a barrage dates to 1849. This is a painting of a crenellated dam to impound water upstream for improved navigation, and for railway communication between England and Wales, but not to generate electricity. It wasn’t until 1904 that hydroelectric schemes were first considered, but in so doing they would initiate a process, and a debate, that would persist unbroken down to the present. Throughout this period proposals have been made by independent engineers, private construction firms and university academics, with occasional feasibility studies by government departments. Plans and technical diagrams demonstrate an increase over time in the size and complexity of proposed structures and provide some explanation for the varied opposition that has emerged, including conservation groups, tidal bore surfers, port authorities and coal mining unions. For many of these stakeholders, the scale of the proposals - in terms of area of water impounded, predicted loss of intertidal habitat for migrating waterbirds, length of time taken to build and high capital cost - have all been too great.

**Beyond the Barrage?**

Despite proposals never progressing beyond the design and feasibility stage, the Severn remains central to research into tidal energy technologies. New designs for barrages, and the less obtrusive tidal reef, have been put forward recently. However, it is the devices that encompass smaller scales – temporal (the time they would take to build), spatial (the area they would occupy), and financially (they’re cheaper) - that seem to be achieving greater success. This might be seen as a return to the more modest envirotechnical systems of the deeper past: the tide mills of the 21st century.