Opportunities for Undergraduate & Postgraduate Research at Slapton Ley

Benefits of Research at Slapton Ley

- **Staff Support.** Practical advice on locations, field sites and access agreements. Supporting data collection.
- **Safety Systems.** Exemplar risk assessments for field sites and fieldwork. Indirect supervision for lone working field researchers.
- **Environmental Context.** Existing studies provide an environmental context for new research.
- **Meteorological data.** Meteorological records since 1959, collected in line with Met Office standards.
- **Long-Term Data.** Access to 50 years’ data to identify trends.
- **National Nature Reserve.** Nationally important species, biodiversity and geomorphology. Opportunities to influence management policy and practice.
- **Secure Site.** Safe installation of monitoring equipment. Field sites managed to support data collection with long-term tenure.
- **Facilities.** Accommodation, lab and teaching facilities for individual researchers and groups.

Slapton Ley National Nature Reserve

Slapton Ley is a coastal lagoon 10km south west of Dartmouth. The wetland is divided into the Higher Ley (39 ha) is mainly reedbed; the Lower Ley (77ha) is open water, fringed with reed. The freshwater Ley is separated from the sea by a 4km gravel barrier beach and shingle ridge. Together with surrounding woodland it is designated as a Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR). In 2005 the adjacent Loworthy Fields were included within the complex.

Current Areas of Study

A brief review of over 35 of the more recent papers summarised in categories established by Burt & Heathwaite (1996):

**Climate.** Since 1959 meteorological readings are recorded daily and contribute to Met Office records. Burt & Horton (2001) note the favourable mild and moist climate as well as climate change, particularly increasing temperature. These data are very valuable for numerous long and short term ecological, hydrological and coastal studies.

**Hydrology.** Weekly monitoring established in 1969 continues to present, providing a unique record of a small catchment. Burt & Heathwaite (1996) summarise the most significant area of research in the 1980s & 1990s focusing on subsurface


**Limnology.** Weekly measurements of chlorophyll, dissolved oxygen and conductivity continue to be collected. Studies are summarised by Johnes & Wilson (1996). Burt & Heathwaite (1996) call for research into the impact of nutrient enrichment on the water chemistry of the Ley. Slapton Ley is an important area for macrophytes (Stewart 2004). These have been monitored annually since 1998 and the threats identified by Lambert (2007).

**Sediment Yields.** Weekly samples continue to be collected. Sediment dynamics are reviewed by Burt et al. (1996) and lake and floodplain sedimentation in Start valley is reviewed by Foster et al. (1996).

**Vegetation.** Bennett (2010) provides an NVC classification of the wetlands, a baseline survey and identifies the need to control succession in the fens. Strapwort populations (Nationally-rare) are recorded annually since 1978 and the factors affecting it are identified by McHugh (2007). Numerous undergraduate studies of shingle ridge vegetation highlight the impacts of exclusion plots and trampling. There are few studies of woodland flora and tree surveys in Slapton Wood and France Wood. Loworthy fields were surveyed with recommendations for management made by Streeter (2011).

**Fungi.** Dobson & Hawksworth (1996) identify the richest record of fungi in the world. Lichen surveys have been updated by Edwards (2009). However, there is a need for an interpretation of this data (Burt & Heathwaite 1996).

**Fish.** Kennedy (1996) reviews 25 year records of roach, rudd, perch & pike. Scott (2003) investigates the impact of eutrophication on fish health. Bark et al. (2007) indicate the high density eel population and its importance for spawning and escapement in the UK.

**Mammals & Other Animals.** Riley (1996) reviews otters & mink studies including work by Chanin & Linn (1980) as well as numerous records and observations by staff and visitors. Guillem et al. (2012) apply the use of chemo-taxonomy of host ants to help conserve the Large Blue butterfly. Stone et al. (2009) and Goerlitz (2012) have undertaken specific bat behavioural studies. Summer monitoring contributes to national “citizen science” programmes for Lesser Horseshoe & Daubenton’s bats since 1998, Common Dormouse since 2001 and Butterflies since 2006.

**Birds.** BTO ringing (at Slapton Bird Observatory) and WeBS surveys carried out since 1959 are summarised by Elphick (1996). Whitehall (2007a) maps a range of species, notably including Great Crested Grebe (Whitehall 2007b), and Cetti’s Warbler (Whitehall 2009). Few studies have identified factors affecting bird populations, e.g. Cetti’s Warbler (Ward 1998). Slapton Ley is an important staging site for migrating birds including White Wagtails (Elphick 2012) and Swallows (Elphick 2011).

**Education.** Recent studies have started to consider pedagogy at different stages of education. Stokes & Gibson (2008) review student experiences of fieldwork. Welsh & France (2012) consider the use of smartphones for fieldwork. Pether (2012) considers the leadership needed to embed outdoor learning in the curriculum. Increasingly there is consideration of the impact of fieldwork on the wider environment. Weekly energy & water consumption has been recorded since 2002. Ribchester, Hunt & Alexander (2009) compare the carbon footprint of UK fieldwork at Slapton Ley with overseas trips.

**Coastal Landforms.** There is a long history of studies of the South Hams coastal geomorphology, much of it conducted using the field centre as base location. Austin & Masselink (2006) study of morphological landforms and processes affecting the gravel barrier beach provides a much more detailed analysis using more high tech instrumentation that supersedes student data summarised by Job (1993). Scott Wilson (2006) evaluates the wide ranging impacts of losing the A379. Royal Haskoning (2007) model the evolution of the barrier as a result of climate change and the impact of a breach on the wetlands.
Suggestions for undergraduate & postgraduate studies

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Opportunities for Publication

Each year studies at Slapton Ley are published in a range of journals. We support publication of local studies and recommend Geography, Geography Review, Geography in Higher Education, British Wildlife, Devon Birds. Opportunities to present papers at the Slapton Annual Research Seminar.

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