

MISSED OPPORTUNITIES IN LONG-TERM ECOLOGICAL RESEARCH



Unlike Edith Piaf, ecologists have much to regret. Looking back over 60 years as a botanist, with diverse projects variously involving fieldwork, my biggest regret is a failure to initiate long-term experiments (LTEs). I suspect I am not alone. In the present academic environment with large, short-term grants a major driver - not to mention the shortage of botanists with environmental skills and indeed their 'extinction' in many UK universities - opportunities unfortunately continue to be missed. This is why the ECT remains as important as ever in promoting the value of LTEs.

Writ large in my formative years was the building of the Cow Green Reservoir in Upper Teesdale in 1968-71 to supply the Teesside industries. This went ahead despite strong opposition from conservationists whose fight was weakened considerably by the absence of sound data as to how this might affect the unique flora of this landscape. Advocates for the dam pointed out that little had been written about Upper Teesdale flora compared with the Craven Pennines further south. To my knowledge, no LTEs were set up alongside the dam construction to examine questions such as whether/how such unique communities could be recreated, and to this day we have no idea whether the conservationists' fears were justified. At the same time as the Cow Green debacle, the Ainsdale dune slack system on the Lancashire coast was probably one of the best in Europe. Messams slack, over 1 km in length, was flooded every winter and



supported a myriad of orchids, *Pyrola* and *Monotropa*, and tens of thousands of natterjack toads. Extraction of water from the aquifer below the dunes has now transformed this slack into species-poor grassland and the toads are now mainly confined to manmade hollows. Although there is a grazing/non-grazing LTE at Ainsdale, no experiments were set up to unravel the effects of water table fluctuations in this precious natural ecosystem. Today it is the red squirrels in the secondary pine woodland behind the dunes that attract most visitors rather than toads and the original native vegetation. Further south, myxomatosis has had profound effects on chalk grassland but nowhere have there been LTEs, with and without grazing, in relation to the widely fluctuating rabbit populations, since the disease was introduced into the UK 50 years ago.

Looking to the future, a prime candidate for new LTEs must be the UK's temperate rainforests confined to the wettest parts of the UK. Our understanding of the long-term

ecological impacts of different levels of disturbance such as grazing/browsing pressure and human trampling is poor in such landscapes. These rainforests harbour the most diverse and luxuriant bryophyte assemblages in Europe. We now need LTEs to help inform current and future generations about how to maintain these precious habitats.

Fifty years ago, almost every UK Department of Botany had at least one plant ecologist and one other person who knew the British flora. Academics had more freedom and fewer burdens, but they lacked a 'mindset' to think in terms of initiating LTEs. Had ECT been in existence 50 years ago it is almost certain that it would have provided a major impetus for these, and we would now be in a much better position to defend threats to the environment. ECT is here for the future however, helping us all to avoid repeating the environmental mistakes of the past.

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