



▲ View of Strathmore towards Loch Broom • © SNH

The Countryside Survey is a periodic assessment of the state of the countryside throughout the UK. Results for Scotland from 1990, 1998 and the latest survey undertaken in 2007 were launched by the Minister for Environment at the Royal Highland Show in Edinburgh on 25 June 2009.

The Scottish assessment is based on a survey of around 200 sample squares each measuring 1km by 1km, which represent the diversity of geology, topography and climate. The survey quantifies the extent and change in area of habitats, such as heather moorland; their ecological condition, assessed by botanical characteristics; the length and condition of structural features in the landscape, such as hedges and walls; the acidity, carbon content and density of topsoil (to a depth of 15cm); and the ecological characteristics of streams and ponds.

Results from Countryside Survey help underpin the assessment of government targets, such as halting biodiversity loss by 2010, as well as keeping track of the changing state of the countryside through indicators of botanical diversity and habitat fragmentation.

Changes in the Scottish countryside can be attributed to factors operating across three broad timescales: a) the short-term, such as annual changes in market conditions leading to changes in farming systems; b) the medium-term, such as woodland planting and harvesting; and c) the longer-term cultural history and environmental influences of pollution and climate change.

### Key findings from the Countryside Survey between 1998 and 2007 are as follows:

- **A switch from arable to improved grassland: the extent of arable/horticulture decreased by 14% and improved grassland increased by 9%.**
- **The area of broadleaved/mixed woodland increased by 9%, reflecting new planting and the diversification of felled plantation forest. A decrease of 7% in the extent of coniferous woodland is partly accounted for by the felling cycle: in the Countryside Survey, vegetation cover is not categorised as woodland until the canopy cover reaches 25% and the trees are more than a metre high. Results are not directly comparable with forestry statistics due to methodological differences.**
- **The area of acid grassland increased by 8% replacing a range of habitats including moorland and coniferous woodland.**
- **The length of hedges decreased by 7%. A third of actively managed hedges were judged to be in good structural condition in 2007. Species richness in hedgerow margins decreased by 22%, which included declines in food plants of birds (22%) and butterflies (21%).**
- **Surface soils (0-15cm depth) became less acidic (pH increased from 5.02 to 5.09), pointing to gradual recovery from acid deposition in the past.**

- Carbon in the topsoil decreased between 1998 and 2007 but showed no overall change between 1978 and 2007. Carbon content ranged from 47 t/ha in arable to 82 t/ha in moorland.
- Competitive perennial species (such as nettle and bramble) increased in abundance by 2%. These findings partly reflect stream bank protection and woodland establishment. Competitive plant species increased by 1% along stream banks; overall species richness declined by 12%. In woodland, the number of competitive plant species increased by 5%; overall species richness declined by 18%. Further analysis is required to establish causes of this decline, such as changes in the proportions of young and mature woodlands sampled.
- Botanical diversity (species richness condition index) throughout the countryside declined by 10% (14% in linear plots, such as road verges, and 12% in places selected for their botanical interest). In open habitats tall perennials tended to displace a variety of low growing, uncompetitive herb-like species which depend on a short sward maintained by grazing. The abundance of bird and butterfly food plants declined by 8%. Open ground colonisers declined by 3%. Species of fertile conditions declined by 2%.
- The physical and biological characteristics of headwater streams improved. Plant species richness within headwater streams, including plants sensitive to nutrient enrichment, increased by 9%. The condition of headwater streams based on observed plant communities (trophic rank) increased by 6%, indicative of reduced nutrient enrichment.
- The number of ponds increased by 6%, mainly in the lowlands. Some 10% of ponds had high botanical diversity.

The general picture across the past decade is of improved ecological condition of streams, recovery from acidification in soils and restoration of broadleaved woodland. Less active management of the countryside appears evident from more overgrown conditions in hedgerows and in some areas of the open countryside, resulting in reduced botanical diversity.

The Countryside Survey consortium is led by the Natural Environment Research Council and Defra. The Scottish Government and Scottish Natural Heritage contribute funding and represent Scottish interests on the Board, Steering Group and Topic Groups. The survey is implemented by the Centre for Ecology & Hydrology.

Further information and results can be found on the Countryside Survey web site ([www.countrysidesurvey.org.uk](http://www.countrysidesurvey.org.uk)).

