The code includes sections on stockmanship, health, feed and water, accommodation, equipment, management, fire and other emergency precautions, pregnancy and calving, calfrearing, breeding animals, and dairy cows. There are appendices listing DEFRA publications that provide further information relating to cattle welfare and relevant legislation (incidentally, these total 18 acts, regulations and orders, half of which have been produced in the last eight years) as well as DEFRA information on cattle identification and movements. In each section, relevant legal provisions are presented alongside the paragraphs of advice and recommendations. The document is well-drafted and clearly laid out to provide a user-friendly and, as far as possible, single source of key information for stockpersons.

One of the new recommendations since the earlier edition is that the stock keeper should draw up, with the herd's veterinary surgeon and, where necessary, other technical advisors, a written health and welfare plan and that this should be reviewed and updated each year to include strategies to deal with disease problems. It is specified that this plan should "look at" a number of issues in particular, and that these are to include biosecurity arrangements on farm and in transport, purchased stock procedures, various disease control protocols, and isolation procedures.

By law, all cattle stockmen in England are required to be familiar with and have access to this code, but it will be of interest and relevance also to many others associated with the cattle farming industry.

Code of Recommendations for the Welfare of Livestock: Cattle (April 2003) Published by the Department for the Environment, Food and Rural Affairs. 39 pp A4. Available, free of charge, from DEFRA Publications, Admail 6000, London SW1A 2XX, UK and via the DEFRA website: http://www.defra.gov.uk.

## Development of policy on dealing with invasive non-native species in the UK

"When non-native species become invasive they can transform ecosystems and threaten native and endangered species ... Invasive non-native species also damage economic interests such as agriculture, forestry and infrastructure, and can threaten public health. Thus the problems caused by invasive non-native species are serious: so serious that the introduction of non-native species is identified as one of the main causes of biodiversity loss worldwide ... With increasing global trade and world travel these problems are likely to continue to grow." (Excerpts from the introduction to the Executive Summary of the review of policy on non-native species — see details below).

In response to growing concern that current arrangements for addressing these threats were not sufficient and that further action was needed, a review of policy on non-native species relevant to terrestrial, freshwater and marine environments in Great Britain was commissioned by Ministers in March 2001. The Review Group set up by DEFRA has now published its extensive report. This covers many aspects of the issues concerning both non-native plants and animals, including prevention measures, public awareness and education, monitoring and surveillance, and legislation. The range of problems caused by non-native invasive species in Great Britain is illustrated throughout the report by case studies about, for example, grey squirrels (major damage to forestry and displacement of red squirrels), mink (serious impact on water vole populations), hedgehogs on the Uists (serious impact on wader productivity), Chinese mitten crabs (serious impact on native white-clawed crayfish through spread of disease) and Zebra mussels (smother native bivalves).

The Report makes eight key recommendations, and these follow a three-stage hierarchical approach: the first is to give priority to measures to prevent introductions; the second concerns detection of newly introduced invasive non-natives and rapid action to prevent their establishment; and the third stage concerns longer-term mitigation measures such as containment or control of those that have already become established.

The Review Group found that responsibility for this issue is spread across several Government Departments and agencies and considered that this was the greatest constraint to drawing up effective, coherent policies. The first of the key recommendations is that: "The Government should designate or create a single lead co-ordinating organisation to undertake the role of co-ordinating and ensuring consistency of application of non-native species policy across Government."

The second key recommendation is to: "Develop comprehensive, accepted risk assessment procedures to assess the risks posed by non-native species and identifying and prioritising prevention action." The report indicates that the assessment should include cost estimation and cost–benefit analyses to agreed criteria, including economic, biodiversity, social, animal welfare, and animal and human health considerations.

The other recommendations concern development of codes of conduct to prevent introductions, to raise awareness of the issues, to revise relevant legislation, to establish monitoring and surveillance arrangements, to establish policies for control of new or existing problem species, and to engage stakeholders in development of policies.

The remit of the review did not extend to "micro-organisms and other pathogens that cause disease in farmed animals and birds". The reason for this was that "there is a large body of separate legislation to cover these issues". It is unfortunate, however, that infectious agents that cause disease in non-farmed species appear to have received little consideration in this review. These represent no less significant threats to biodiversity and to the welfare of indigenous fauna than those posed by the macroscopic members of the animal kingdom, but there is no large body of separate legislation that covers these threats. The case for there being a single coordinating body with responsibility for tackling invasive non-native species is strong, and there may be a good case for it being concerned with invasive non-native micro-organisms also.

**Review of non-native species policy: Report of the working group** (March 2003) Published by the Department for the Environment, Food and Rural Affairs. 136 pp A4 (ISBN 0 85521 027 3). Available from DEFRA Publications, Admail 6000, London SW1A 2XX, UK (price £37.00) or free of charge at the DEFRA website: http://www.defra.gov.uk.

## National Animal Ethics Advisory Committee of New Zealand's guidance on good practice for the use of animals in research, testing and teaching

New Zealand's Animal Welfare Act 1999 requires that all reasonable steps are taken to ensure the physical health and behavioural needs of animals used in research, testing and teaching. To help promote a humane and responsible approach to animal use in these fields, New Zealand's National Animal Ethics Advisory Council (NAEAC) has recently published a document which aims to set guidelines on 'good practice' in the management of the animals used. The Report covers acquisition of animals, facilities, management of animals in breeding and holding areas, responsibilities of investigators, responsibilities of teachers, and sources of further information.

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