

Code of Practice on How to Prevent the Spread of Ragwort



Common Ragwort look-alike plants



Marsh Ragwort *Senecio aquaticus*
Photo: Dr Chris Gibson/
Natural England



Hoary Ragwort *Senecio erucifolius*
Photo: Dr Chris Gibson/
Natural England



Oxford Ragwort *Senecio squalidus*
Photo: Dr Chris Gibson/
Natural England



Fen Ragwort *Senecio paludosus*
Photo: Dr Chris Gibson/
Natural England



Field Fleawort *Tephrosieris integrifolia* Photo: Ron Porley/
Natural England



Tansy *Tanacetum vulgare*
Photo: Dr Chris Gibson/
Natural England



Common Fleabane *Pulicaria dysenterica* Photo:
Dr Jonathan Cox/Natural England



Common Fleabane *Pulicaria dysenterica* Photo: Dr Chris Gibson/
Natural England (Close-up of flowers)



Square-stalked St. John's Wort
Hypericum tetrapterum Photo:
Dr Chris Gibson/Natural England



Perforate St. John's Wort
Hypericum perforatum
(Close-up of flowers)
Photo: Dr Chris Gibson/Natural
England



Yellow Loosestrife *Lysimachia vulgaris* Photo: Dr Chris Gibson/
Natural England



Goldenrod *Solidago virgaurea*
Photo: Dr Chris Gibson/Natural
England

Code of Practice on How to Prevent the Spread of Ragwort

As Minister for the Horse, I am delighted to endorse this “Code of Practice on How to Prevent the Spread of Ragwort”. Ragwort poisoning can have a devastating effect on horses in particular, as well as being damaging to cattle and other animals. Ingestion of Common Ragwort *Senecio jacobaea* either in its green or dried state, can cause serious liver damage, which can have tragic consequences for both animals and owners. Ragwort is the only one of the five weeds covered by the Weeds Act 1959, which is harmful to equines and other animals. However, in the right place, and where there is no risk to animal welfare, ragwort contributes to the biodiversity of the flora and fauna in our countryside.

At the end of 2002, The British Horse Society supported John Greenway MP in initiating a Private Member’s Bill, with my full support and that of the Government, to amend the Weeds Act 1959. This resulted in The Ragwort Control Act 2003. The Act provides for a code of practice to be prepared to give guidance on how to prevent the spread of ragwort. Last July, I launched a draft code of practice at the Royal International Horse Show at Hickstead. Many landowners and occupiers used this as a guide for their ragwort control activity last summer. As required by the Ragwort Control Act, a formal consultation on the code was carried out earlier this year amongst stakeholders representing a wide variety of interests. I now welcome the publication of the final code.

By promoting good practice and good neighbourliness, the Code aims to reduce significantly the risk that horses and other livestock might be poisoned. It is intended for use by all landowners and occupiers. It will be particularly relevant for large scale organisations managing significant land areas, including local authorities and public bodies.

The Code provides comprehensive guidance on how to develop a strategic and more cost-effective approach to weed control. It gives advice on:

- Identification of Common Ragwort
- Risk assessment and priorities for ragwort control
- Control methods – their suitability and efficacy
- Environmental considerations
- Health and safety issues

The Code does not seek to eradicate ragwort, but only seeks to control it where there is a threat to the health and welfare of animals. We place a particular emphasis on protecting horses whose digestive system makes them particularly vulnerable. The Code provides comprehensive guidance on when, where and how to control ragwort, but pays specific attention to the needs of the environment and the countryside as part of the process. The Code should benefit the environment by ensuring there is less damage to non-target species, by setting out clear parameters on when it is necessary to control ragwort and by recommending the use of non-chemical options for control where feasible.

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Publication will make it easier to prosecute those who disregard the need to control ragwort since the Code will be admissible in evidence in enforcement proceedings under the Weeds Act 1959. The Act empowers the Secretary of State for Environment, Food and Rural Affairs to serve notice requiring an occupier of land on which Common Ragwort (or four other injurious weeds) is growing to take action to prevent it from spreading. The Code should provide a yardstick against which compliance with an enforcement notice served under the Act can be measured. This will ensure that all parties know in advance what is considered reasonable action to comply with an enforcement notice.

The Code is very much a combined effort, reflecting upon the importance of balancing the variety of interests involved. It has been drawn up in consultation with a Steering Group comprising The British Horse Society, Network Rail, English Nature, Wildlife and Countryside Link, the British Beekeepers Association, ADAS and representatives of Local Government. I should like to thank the Group for its efforts. It has not been an easy task to reconcile the different interests and I am grateful for the co-operative spirit shown by the members of the Group. The result is a balanced, but effective and useable Code of Practice, which is a major step forward in protecting horses and animal welfare against the threat of Ragwort poisoning. I urge all landowners and land managers to work with horse and animal owners to adopt the recommendations of the code.

Rt Hon Alun Michael MP
Minister of State for Rural Affairs and Local Environment Quality
and Minister for the Horse
July 2004

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Scope

- 1 This code applies to Common Ragwort (*Senecio jacobaea*) and all subsequent references to "ragwort" in this code refer to "Common Ragwort". This code applies to England only (although a separate code applies in Wales).

Aim

- 2 The Code aims to define the situations in which there is a likelihood of ragwort spreading to neighbouring land where it will then present an identifiable risk of ingestions by vulnerable animals, and to provide guidance on the most appropriate means of control, taking into account both animal welfare and environmental considerations.

Introduction

- 3 Ragwort is a native species of the British Isles. It is a specified weed under the Weeds Act 1959. It contains toxins which can have debilitating or fatal consequences, if eaten by horses and other grazing animals. Ragwort is less likely to be rejected by stock if dried and contamination of forage (hay, haylage and silage) is a particular problem. Humans may be at risk from ragwort poisoning through direct contact (e.g. hand pulling) or the consumption of contaminated food. Research undertaken for the Government in the 1990s suggested that the risk to human health in the UK through the contamination of staple foods i.e. grain, milk, eggs and honey is likely to be insignificant.
- 4 This code does not seek to eradicate ragwort. Ragwort, as a native plant, is very important for wildlife in the UK. It supports a wide variety of invertebrates and is a major nectar source for many insects. In many situations ragwort poses no threat to horses and other livestock. It is a natural component of many types of unimproved grassland and is used by some invertebrate species that have conservation needs. However it is necessary to prevent its spread where this presents a high risk of poisoning horses and livestock or spreading to fields used for the production of forage. A control policy should be put in place where a high and medium risk is identified.
- 5 Ragwort is a highly successful species and in certain situations it can be difficult to control particularly where it has not been effectively managed for a number of years. As a result it might be necessary to use a variety of control methods over an extended period to reduce populations if, on the basis of the risk assessment, they have been found to be problematic.

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Legal framework

6 Under the Weeds Act 1959 the Secretary of State for the Environment, Food and Rural Affairs can, if satisfied that injurious weeds are growing upon any land, serve a notice requiring the occupier to take action to prevent the spread of those weeds. An unreasonable failure to comply with a notice is an offence. The Weeds Act applies to:¹

- Common Ragwort (*Senecio jacobaea*)
- Spear Thistle (*Cirsium vulgare*)
- Creeping or Field Thistle (*Cirsium arvense*)
- Curled Dock (*Rumex crispus*)
- Broad-Leaved Dock (*Rumex obtusifolius*)

The Natural Environment and Rural Communities Act 2006 delegates the functions available to the Secretary of State under the Weeds Act to Natural England, a Defra agency. This delegation of functions enables Natural England to investigate complaints where there is a risk that injurious weeds might spread to neighbouring land. Natural England gives priority to investigating complaints where there is a risk of weeds spreading to land used for grazing horses or livestock, land used for forage production and other agricultural activities.

7 The Ragwort Control Act 2003 gives this Code evidential status in any proceedings taken under the Weeds Act 1959. This means that a failure to follow this Code is not an offence but non-compliance may be used as evidence in any legal action. Equally, owners/occupiers should be able to establish a defence if they can demonstrate that they have adopted control measures that comply with this Code's guidance.

8 The provisions of the Weeds Act only apply to Common Ragwort and do not apply to other ragwort species. Other species of ragwort may be equally toxic to horses or other livestock, but are less common or relatively rare. In some situations they may need to be controlled. Some species, such as Fen Ragwort (see picture on inside front cover), are protected. It is important to make correct identification of Common Ragwort before considering any control measures. Obligations and restrictions under SSSI designations or other land management agreements must also be considered and discussed with the appropriate authorities (see Appendix 4) before control action is initiated.

Responsibilities to Control the Spread of Ragwort

9 Responsibility for control rests with the occupier of the land on which ragwort is growing. This responsibility applies to ragwort and the other weeds specified under the Weeds Act. When seeking to prevent the spread of ragwort it is expected that all landowners, occupiers and managers will co-operate and, where necessary, take a collective responsibility for ensuring that effective control of the spread of ragwort is achieved.

¹ The Secretary of State is empowered to add to this list if necessary.

- 10 The most effective way to prevent the spread of ragwort is to preclude its establishment through strategic management rather than last minute control. In managed grasslands, good agricultural management will minimise the chance of Common Ragwort establishing itself. In amenity areas, highway verges, railway land and woodland, any activities which cause disturbance to the soil and the loss of ground cover may increase the risk of ragwort becoming established.
- 11 Occupiers of all land, including uncultivated land, derelict and waste areas, should be vigilant for the presence of ragwort. Action to prevent its spread should be taken where ragwort poses a high risk to land used for grazing, or forage production. Detection at an early stage will enable any potential problems to be more easily, safely and economically dealt with. The implementation of a control strategy will ensure that persistent problems are dealt with in a timely manner.

Assessing the Risk Posed by Ragwort

- 12 Where land is affected by ragwort the owner/occupier should make an assessment to determine whether action should be taken to prevent the spread of ragwort to neighbouring land by establishing the risk posed to grazing animals or forage production.
- 13 The following three risk categories are provided as *guidelines* for assessing risk:

High Risk:

- Ragwort is present and flowering/seeding within 50m of land used for grazing by horses and other animals or land used for feed/forage production

Medium Risk:

- Ragwort is present within 50m to 100m of land used for grazing by horses and other animals or land used for feed/forage production

Low Risk:

- Ragwort or the land on which it is present is more than 100m from land used for grazing by horses and other animals or land used for feed/forage production.

The distances given above are guidelines *only* and when assessing risk, account should also be taken of particular local circumstances and other relevant factors such as prevailing winds, topography, shelter belts, natural barriers, soil type and vegetation cover of receiving land. Whether or not the density of ragwort is high or low, the risk factor will be determined by the likelihood of it spreading to land used for grazing and/or feed/forage production.

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Action to be taken by Owners of Livestock

- 14** Livestock owners are responsible for the welfare of their animals and they should satisfy themselves that their stock is not exposed to the risk of ragwort poisoning. In particular they should:
- ensure pastures are maintained in good condition and are not under or overgrazed (see Appendix 1)
 - inspect grazing land regularly for ragwort (see Appendix 2) when animals are present
 - move stock to ragwort free land where practicable taking into account the experience of stockmen on the likelihood that particular animals will ingest ragwort (see paragraph 6, Appendix 4)
 - remove ragwort plants where necessary using an appropriate control technique (see Appendix 3) taking account of the status of the land (see Appendix 4)
 - dispose of ragwort plants in an approved manner (see Appendix 5)
 - follow safety guidelines (see Appendix 6)

Action to be taken by Producers of Conserved Forage

- 15** Producers of conserved forage should:
- ensure managed grassland is maintained in good condition (see Appendix 1)
 - inspect land regularly for ragwort (see Appendix 2) in the growing season
 - remove ragwort plants using an appropriate control technique (see Appendix 3) taking account of the status of the land (see Appendix 4)
 - dispose of ragwort plants in an approved manner (see Appendix 5)
 - follow safety guidelines (see Appendix 6)

Action to be taken by other Owners/Occupiers of Land

- 16** Owners/Occupiers should:
- identify land on which ragwort (see Appendix 2) is present
 - review the risk of spread to land used for grazing or conserved forage production (see paragraph 11) on a six-monthly basis
 - ensure managed grassland is maintained in a good condition (see Appendix 1)
 - where appropriate and safe to do so avoid removing ground cover in amenity areas, roadside verges and on railway land unless provisions are made for the appearance of ragwort
 - pay particular attention to areas of bare/disturbed land

- where a **high risk** is identified
 - take **immediate** action to control the spread of ragwort using an appropriate control technique (see Appendix 3) taking account of the status of the land (see Appendix 4)
- where a **medium risk** is identified
 - establish a control policy to ensure that where a change from a medium to a high risk of spread can be anticipated, it is identified and dealt with in a timely and effective manner using appropriate control techniques (see Appendix 3) taking account of the status of the land (see Appendix 4)
- where a **low risk** is identified
 - no immediate action is required (see paragraph 21)
- dispose of ragwort plants in an approved manner (see Appendix 5)
- follow safety guidelines (see Appendix 6)
- monitor the impact of clearance action to ensure its effectiveness for up to six months or to the end of the growing season if sooner

Control Methods

17 A summary of possible control methods are shown at Table 1 (overleaf). In many cases a single control method or single application will not be completely effective and consideration should therefore be given to combining more than one control/management technique. Effective control might not be achieved in one season, particularly where it is a dense infestation, which has been inappropriately managed in the past. The cost categories shown in the table do not provide a reliable guide to costs where linear land such as roads and highways is concerned. Control techniques are considered in more detail at Appendix 3.

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Table 1. Summary of control methods

Method	Labour requirement	Cost	Prevention of flowering	Success of control – long term	Grazing removal period (days)	Number of treatments required per year	Repeat time scale (years)	Optimum time of treatment	Suitable for large areas	Suitable for dense ragwort colonisations	Remarks
Cutting	*	*	**	*	0(1)	1/2	1	F	***	***	Emergency treatment to prevent seeding. It is essential to cut before seed heads are mature and must be followed with a control technique
Levering out	***	*	***	**	0(1)	1/2	1	F	*	*	Tools available for digging up plants. Best results when soil is wet. Very dependent on spotting plants, some may be missed requiring further treatment.
Herbicide citronella oil derived product (3)	***	***	***	***	7(2)	1-2	1	R and F	*	*	Very dependent on spotting plants, resulting in some being missed. Large plants may need respraying two weeks later. Will control broad-leaved plants.
Herbicide selective spraying (3)	*	**	***	***	21(2)	1-2	1	R	***	***	Most products will kill other broad-leaved plants sprayed.
Herbicide spot treatment (3)	***	**	***	***	21(2)	1-2	1	R or F	***	*	Very dependent on spotting plants, some may be missed requiring further treatment.
Herbicide weed wipes (3)	*	**	**	**	21(2)	1-2	1	F	***	***	Only tall ragwort plants will be affected.
Pulling by hand	***	*	***	**	0(1)	1/2	1	F	**	*	Gloves must be worn. Best results when soil is wet. Very dependent on spotting plants, some may be missed requiring further treatment.
Pulling by machine	*	**	***	**	0(1)	1	1	F	***	***	Selects plants for pulling on height difference and leaves shorter plants.
Biological	*	***	*	?	N.B. Not suitable as a method of control on grazing land	1	1	R or F	***	***	Biological control using the cinnabar moth is at the early stages of development in the UK.

Key: * Low ** Medium *** High: R – When rosettes start growing; F – early summer before flower heads mature;

(1) – Provided ragwort cuttings are removed; (2) These timings are only a guide – follow the manufacturer's guidelines; (3) Always follow the manufacturer's guidelines.

For further advice on grazing removal periods, refer to paragraphs 23 and 24 of Appendix 3.

For a list of suitably qualified spray contractors, contact the National Association of Agricultural Contractors (NAAC). See Appendix 9 for details.

Control Policies

- 18** Where a medium or high risk has been identified, owners/occupiers and managers of land, including private and public land, highways, waterways, railways, conservation and amenity areas and land awaiting development, should put in place and implement a ragwort control policy. Such policies should take account of the need for vegetation management, including weed control and identify ragwort as a specific weed that should be controlled. The nature conservation status and biodiversity attributes of the land, and the contribution to them made by the ragwort, must also be considered when determining a policy.
- 19** When considering what is practical owners/occupiers/managers should balance the risk against the time and cost of taking the action, and consider whether the cost of control is proportionate to that risk. For some categories of land e.g. railway land and trunk roads this might make regular inspections of all land holdings impractical. In such situations complaints should be used to accumulate information on ragwort “hotspots”. Where ragwort is present in areas that will cause a high risk (see paragraph 13 above) during the flowering/seeding season, or a medium risk anticipated to become a high risk, there should be a presumption that action to manage the spread of ragwort will be necessary, even where the cost of control is potentially high.
- 20** A control policy should encourage collaboration and co-operation with neighbours to achieve effective control of the spread of ragwort. Wherever practicable control action should be taken at early stages of growth in order to reduce the risk of seed dispersal and thereby achieve more effective long-term control.
- 21** Where a low risk is identified (see paragraph 13 above), but the presence of ragwort is likely to present a risk in the future, contingency plans should be prepared for its control. Where there is no immediate risk the presence of ragwort should be recorded and the situation should be monitored six monthly to ensure that the risk is reassessed should circumstances change.

Local Control Strategies

- 22** At local levels, it may be useful for those responsible for the management of the land or adjacent land and those with a statutory or advisory remit for nature conservation and animal welfare to get together to form a Local Ragwort Strategy Group. These groups may be particularly effective in areas where there is a conservation and wildlife interest and where ragwort management is a difficult issue. As well as considering the wider biodiversity interests being sustained by the ragwort, attention will need to be given to maintaining populations of the plant’s natural predators to assist in the control process. Such groups could agree a way forward on ragwort control which would be endorsed by all parties.

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Advice

- 23** Defra and Natural England produce a range of guidance on the Weeds Act, which is listed at Appendix 8. Technical advice and advice on ragwort control is also available from the organisations listed at Appendix 9.
- 24** Advice may also be available from organisations which are responsible for the management of land in their ownership and/or control i.e. Highways Agency, Local Highway Authority, Network Rail, British Waterways, Natural England, Forest Enterprise, Ministry of Defence and Local Authorities (Appendix 7).

Enforcement

- 25** Natural England will take enforcement action under the Weeds Act where ragwort poses a high risk to horses, other livestock, the production of conserved forage or other agricultural activities. Where a potential problem is identified contact should first be made with the owner/occupier or relevant body responsible for the land on which the ragwort is growing to attempt to resolve the matter informally, before contacting Natural England. Organisations that control or own land are listed in Table 2.

Table 2 – Organisations that own and/or control land

Location	Owner/Occupier
Private and commercial property and land and private roads	Owner/Occupier
Agricultural land and land used for livestock other than animals kept for non-agricultural business or recreational purposes	Owner/Occupier
Motorways and trunk roads	Highways Agency
All other public roads	Local Highway Authority
Railway Land	Network Rail
Canals and Towpaths	British Waterways
Site of Special Scientific Interest (SSSI)	Owner/Occupier
National Nature Reserves	Natural England/Owner/Occupier
Local Nature Reserves	Owner/Occupier
Common Areas/Common Land	Local Authority/Owner
Ministry of Defence Land	MoD
Development Land	Owner/Occupier
Parish/Town/Community Council Land	Parish/Town/Community Council
Private Woodland/Forestry	Owner/Occupier
Forestry (Forest Enterprise)	Forest Enterprise

- 26** Where, having been requested to do so, the owner/occupier/relevant body fails to take any action to prevent the spread of ragwort or fails to demonstrate compliance with this Code, Natural England should be notified (Appendix 7).

Pastures

- 1** Pasture management plays a crucial role in preventing the establishment and spread of ragwort. It is not possible in a Code of this nature to provide comprehensive guidance on pasture management. Best practice varies according to specific circumstances and a different approach would be appropriate in different circumstances e.g. in relation to managed grassland or unimproved semi natural grassland. Comprehensive guidance is available from a variety of sources and key references are provided at the end of this appendix.
- 2** Horses are very selective grazers and will eat down some areas until they are almost bare. Coarser grasses can dominate, particularly in those areas where horses dung or urinate, and the grass is left to seed creating a very uneven sward. Bare patches can develop resulting in ideal conditions for the establishment of ragwort. Horse pastures in particular must be very carefully managed to prevent this. Leaving horses out in wet winter conditions can exacerbate the situation causing the ground to become poached (i.e. churning up of land by animals) damaging the grass sward and providing an opportunity for ragwort to establish in the bare ground.
- 3** To maintain horse pasture in good condition:
 - stocking densities should be appropriate to the size of grazing area and available herbage
 - dung should be collected and removed or spread regularly
 - plants poisonous to livestock should not be allowed to proliferate
 - prevent poaching by keeping horses off fields in wet conditions, wherever practicable and maintain drainage
 - remove any stale, dry fodder such as hay
- 4** Agriculturally improved grassland should be managed to achieve a dense ground cover of grasses.
 - Nutrient and pH levels should be maintained through the appropriate application of fertilisers and lime (application rates should be determined by a soil analysis)
 - Appropriate stocking levels should be maintained to avoid under and overgrazing
 - Where pastures deteriorate to such an extent that other methods do little to improve the sward cover renovation through reseeding may be necessary
 - Poaching should be minimised to prevent sward damage
- 5** Where grassland is being managed for its ecological value, but is also being used for grazing, different constraints will apply. Here it will be necessary to keep the population of weeds designated under the Weeds Act to a minimum level consistent with the ecological requirements of the site, the species of conservation significance living there, and the welfare of the grazing animals.

Uncultivated or semi-natural areas

- 6 Wherever possible uncultivated land with low levels of ragwort should remain undisturbed. Where an open sward is maintained and ragwort can be expected to be a natural component of grassland, other control methods might be necessary to prevent ragwort becoming a problem.
- 7 Anyone planning to change uncultivated or semi-natural areas to intensive agricultural use should find out whether they need to make an application under the *Environmental Impact Assessment (uncultivated land and semi-natural areas) Regulations 2006*. Land types covered includes unimproved grassland, heathland, moorland, scrubland and wetlands. Agricultural intensification may include cultivation, soil spreading, drainage, reclamation, increased application of fertilisers or pesticides, and increased grazing by livestock. Anyone planning such work should contact the EIA helpline (0800 028 2140) and read the guidance on the Defra website at www.defra.gov.uk/farm/environment/land-use/eia.

Where to go for more information?

- ADAS
- The British Horse Society
- Buglife – Management of Priority Habitats for Invertebrates 2003
- English Nature – Ragwort Information Note 2003
- English Nature – The Herbicide Handbook – guidance on the use of herbicides on nature conservation sites, 2003
- English Nature – The Lowland Grassland Management Handbook 1999
- English Nature – The Upland Management Handbook 2001
- Farming and Wildlife Advisory Group
- National Association of Agricultural Contractors
- Royal Society for Protection of Birds – A practical guide to the restoration and management of lowland heathland 2003
- Surrey Horse Pasture Management Project

Introduction

- 1 Common Ragwort (*Senecio jacobaea*) is an erect plant usually 30-90cm high, but may exceed 100cm. The stems are tough and often tinged red near the base, but brighter green and branched above the middle. A basal rosette of leaves usually dies before flowering but the stem leaves persist. They are deeply dissected, with irregular, jagged-edged lobes. All the leaves are dark green and rather tough and may be sparsely hairy on the lower side. The inflorescence is a conspicuous, large, flat-topped head of densely packed yellow flowers with ray florets and disc florets, all of which are bright yellow. The seeds are borne singly and have a downy appendage making them readily dispersible.

Biology

- 2 Common Ragwort is normally a biennial (rosette 1st year and flowering 2nd year). During its first year of growth it establishes a rosette of basal leaves and over winters in this way. During the second year the rosette sends up one or more leafy stem, up to one metre in height, which is unbranched and produces numerous flower heads at the top. The flower heads are carried in a large flat-topped cluster. Flowering usually occurs from June until late October after which the plant dies.
- 3 Common Ragwort can also behave as perennial (flowering every year) after damage to the crown such as cutting, grazing, hoof damage, damage by machinery and following incomplete/ineffective hand pulling in dry weather. It can also remain in the rosette stage for several years under intensive cutting regimes such as may be practised on amenity grassland.

Distribution

- 4 Common Ragwort is widespread throughout the UK and can be found on wasteland, development land, roadside verges, railway land, amenity land, conservation areas, set-aside, woodland and grazing land. Common Ragwort may also be found on land used for grazing horses and other stock. Poor quality and poorly managed horse pastures are particularly susceptible to high densities of ragwort and every effort should be made to control ragwort and improve pasture management in these situations.

Habitat

- 5 Common Ragwort can be found over a large range of soil types and climatic conditions and can be characteristic of badly managed grasslands, where trampling breaks the sward, where patches of turf have died in drought or where there is over or under grazing. However, well-managed acid/calcareous grasslands may naturally contain ragwort. Disturbance to grass verges, embankments and woodland areas which leads to open soil are also favourable conditions for seedling establishment.

Other species of Ragwort

- 6 Marsh Ragwort (*Senecio aquaticus*) is locally abundant in wet areas of fields, ditch banks and marshes. Hoary Ragwort (*Senecio erucifolius*) occurs mainly on roadsides, semi-natural meadows and field boundaries. Oxford Ragwort (*Senecio squalidus*) grows widely on roadsides, railway land, old walls and unmanaged land. Fen Ragwort (*Senecio paludosus*) grows on fens and stream sides, and the native site is currently (June 2004) restricted to one ditch and six further (ungrazed) sites.

Identification

Species which may be confused with Common Ragwort (*Senecio jacobaea*)

Other widespread Ragwort species

Marsh Ragwort *Senecio aquaticus*

Hoary Ragwort *Senecio erucifolius*

Oxford ragwort *Senecio squalidus*

Rare Ragwort Species

Fen Ragwort *Senecio paludosus*

Welsh Groundsel *Senecio cambrensis*

York Groundsel *Senecio eboracensis*

Other similar species

Field fleawort *Tephrosia integrifolia*

Tansy *Tanacetum vulgare*

Fleabane *Pulicaria vulgaris*

St. John's worts *Hypericum spp.*

Yellow Loosestrife *Lysimachis vulgaris*

Goldenrod *Solidago virgaurea*

Agrimonies *Agrimonia spp.*

Mulleins *Verbascum spp.*

Appendix 2 – Biology and Identification

Other tall yellow composites

Heath Groundsel *Sencio sylvaticus*

Hawkweeds *Hieracium spp.*

Hawk's beards *Crepis spp.*

Hawkbits *Leontodon spp.*

Cat's ears *Hypochaeris spp.*

Sow Thistles *Sonchus spp.*

Elecampane *Inula helenium*

Ox's tongues *Picris spp.*

Goatsbeard *Tragopogon pratensis*

Goldilocks aster *Aster linosyris*

Photographs of the above listed species can be found on the inside of the back and front covers of the Code.

Introduction

- 1 Where the risk that ragwort will spread is such that control action is required or where ragwort is present on grazing land/land used for the preparation of conserved forage, three primary control methods are available:
 - cultural
 - chemical
 - biological

Each method can be employed in a number of ways depending on the location, the population density and the extent of control required. In many cases effective control will only be possible if a combination of methods is employed. Repeat treatment over several seasons might also be required to deal with long established populations of ragwort.

- 2 The decision tree in Figure 1 will assist with selecting the most appropriate method of control.
- 3 On managed grassland or other pasture land management techniques have an important role to play in controlling the spread of ragwort by preventing its establishment (see Appendix 1).

Grazing

- 4 All grazing animals are susceptible to the toxic effects of ragwort and therefore the deliberate control of ragwort by grazing horses, sheep, goats or other livestock should *not* be undertaken on animal welfare grounds.

Cultural

- 5 Several cultural methods can be used to prevent the spread of ragwort. These include pulling and avoidance of bare ground areas. Figure 2 will assist with selecting the most appropriate method of cultural control.

Avoiding bare ground

- 6 Bare ground areas resulting from heavy poaching and/or overstocking are to be avoided where at all possible. This can be achieved by removing animals from ground to prevent poaching (i.e. churning up of land by animals) of land in wet weather conditions, particularly December to March, and by avoiding over grazing of land at other times. Control of rabbit populations may also be necessary to maintain ground cover.

Figure 1. Decision Tree to Assist Selecting the Most Appropriate Control Method

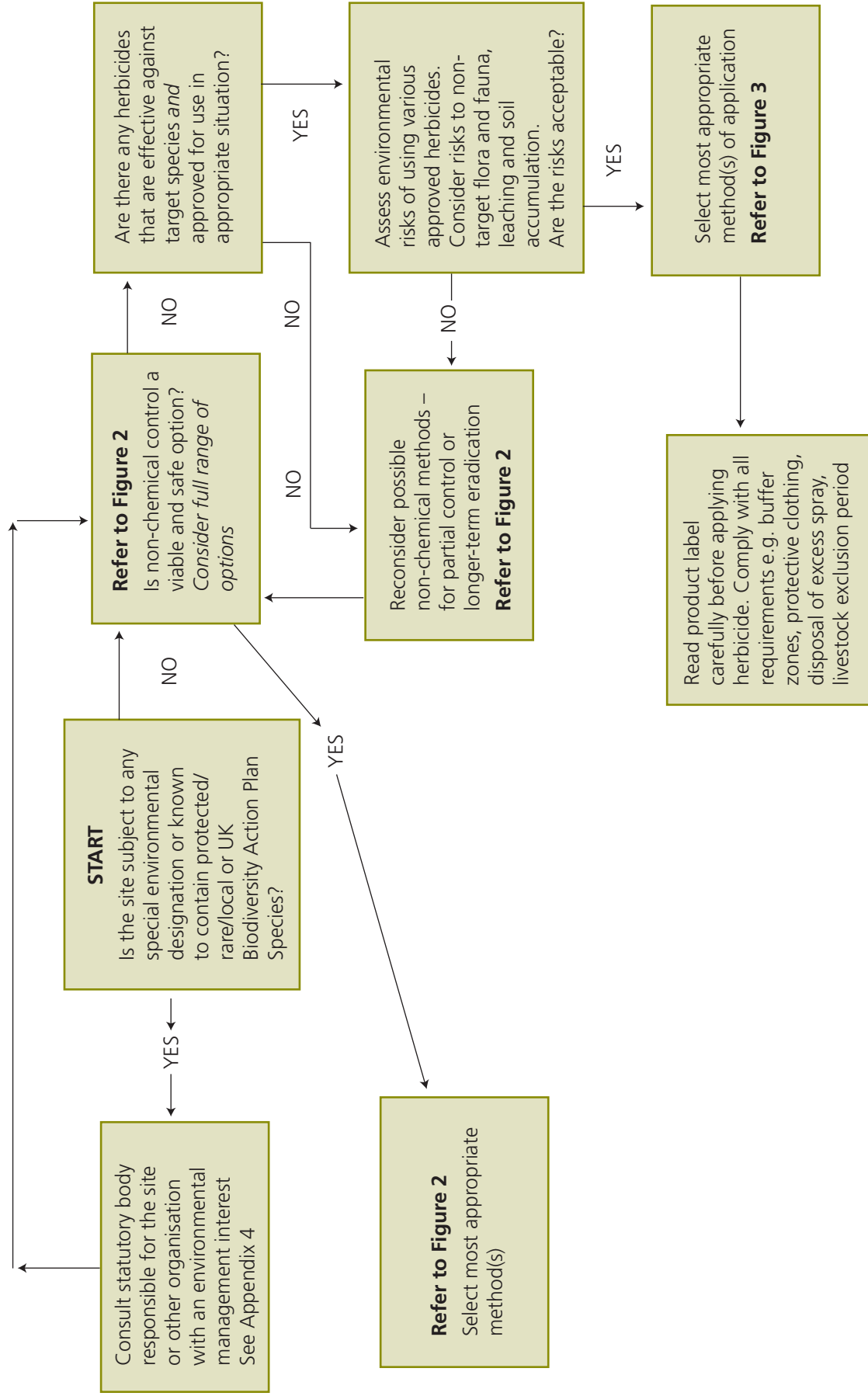
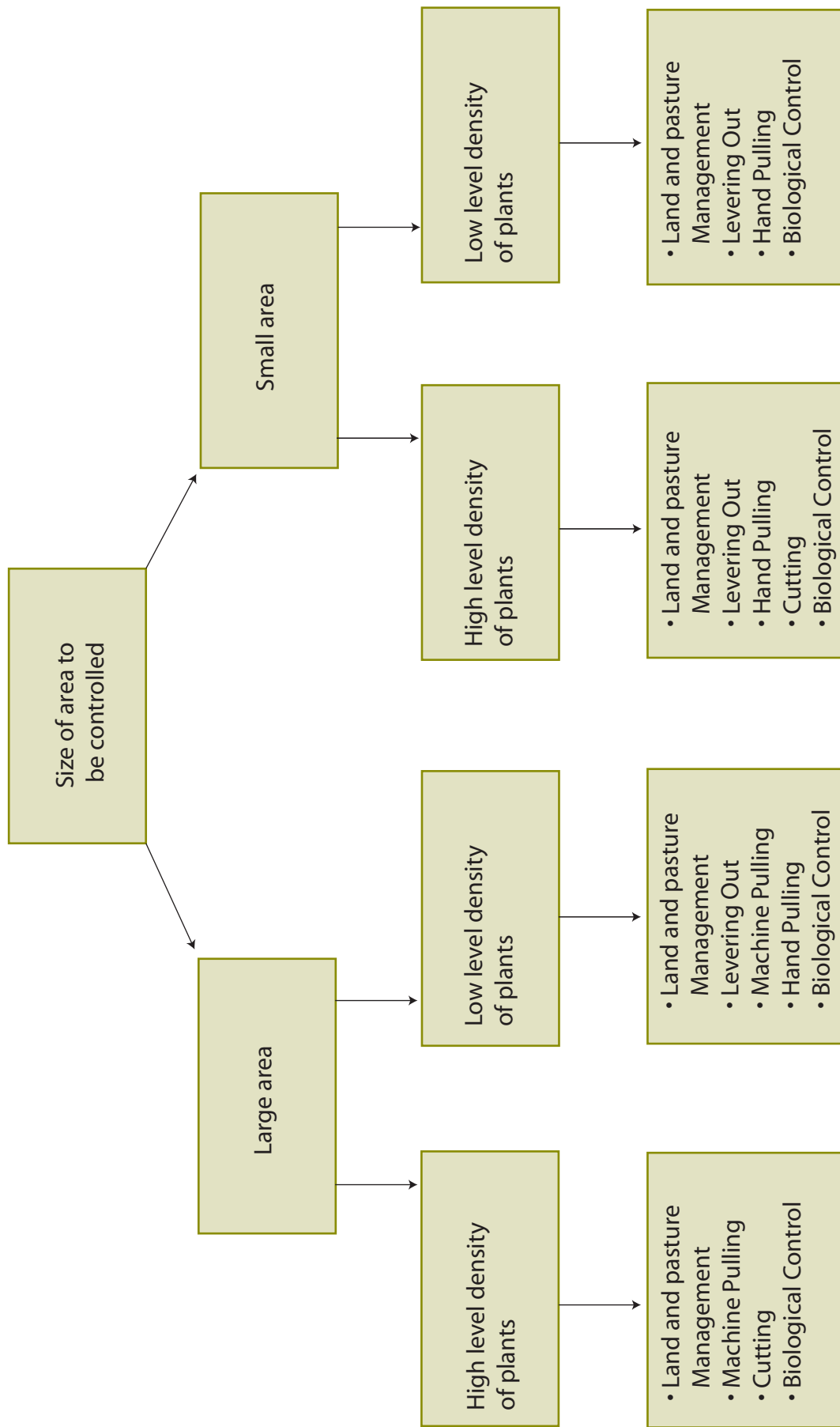


Figure 2. Selecting the Most Appropriate Cultural and Biological Control According to Size of Area and Level of Density of Plants



Pulling and levering

- 7** Pulling or levering up plants can prevent seed spread and can give long-term control although any root fragments not removed can produce weak growth. Hand pulling is appropriate for smaller areas but for larger areas the use of machine pulling should be considered. Machine pulling requires a height difference between the ragwort and other plants and is only suitable on certain soil types and topographies. Various hand tools are available for levering. Best results are achieved when the soil is damp and before ragwort has seeded.
- 8** A combination of manual/mechanical pulling or levering and reducing disturbance to soil can be effective against ragwort, if repeated over a number of years, without having to resort to herbicide use. Ragwort which has been either manually or mechanically pulled or levered should be disposed of safely (see Appendix 5) to prevent re-seeding.

Cutting

- 9** Cutting is a control method of last resort and should only be used to reduce seed production and dispersal where other more effective control methods cannot be used. Cutting stimulates growth and plants subsequently re-flower later in the season. Cutting and stem removal at the early flowering stage reduces seed production but does not destroy the plant, turning it from a biennial into a perennial habit and therefore repeat treatments will be required to prevent the ragwort from seeding.
- 10** Cut plants left lying in the field are a serious risk to grazing animals, as they remain toxic, are more likely to be eaten and may still set seed. Plants must be removed and safely disposed of (see Appendix 5) before returning grazing animals to the field.

Burners

- 11** Spot burners (hand held flame guns) can be used at rosette stage. Success can be variable ranging from 93% kill of ragwort seeding plants to rapid re-growth occurring. Consideration will need to be given to the potential damage that might be done to surrounding vegetation and the risks of fire. Operator safety will also need to be considered carefully. In most circumstances the use of spot burners is unlikely to be suitable except on hard surfaces and paved areas.
- 12** Where the use of spot burners is a preferred method of control a suitable and sufficient risk assessment must be undertaken prior to use.

Chemical

Use of Herbicides

- 13** Herbicides must only be used after a risk assessment has been completed. This must include consideration of any potential effects on the environment and on human and animal health. Risk assessments should also consider the likely ecological impacts of taking no action, which can sometimes outweigh any negative effects of a herbicide treatment.
- 14** Herbicides can be a time efficient and effective method of preventing the spread of ragwort. Total control cannot be guaranteed with one application. However, an annual chemical control programme will generally prevent the spread of ragwort.
- 15** Only herbicides and uses approved under the Control of Pesticides Regulations 1986 (as amended) or the Plant Protection Products Regulation can legally be sold, supplied, stored, advertised and used. Current lists of approved products can be found on the Pesticide Safety Directorate (PSD) website at www.pesticides.gov.uk. All herbicides must have an appropriate standard or 'off-label' approval for use in a relevant situation.
- 16** Always read the product label before using a herbicide and comply with all statutory conditions. Where a herbicide is to be applied under the terms of an off-label approval, users must obtain and read the relevant Notice of Approval (published by the Pesticides Safety Directorate). Users should be aware that pesticides used under an off label approval are done so at the user's own risk and may not be as effective.
- 17** Because herbicides are not equally effective at all stages of plant growth, repeated treatments at different times of year are recommended for optimum control. However, the time of year that a herbicide is applied might be constrained by legal requirements stipulated on the product label. Decisions should take into account the efficacy of the herbicide against the target species (e.g. many herbicides are more effective when applied to actively growing weeds) and any probable impacts of different timings on other non-target species at that site.
- 18** In deciding which chemical to use, it will be helpful to refer to the Environmental Information sheets that are being produced for all pesticide products under the Voluntary Initiative, a programme of measures agreed by the pesticide industry with Government to minimise the environmental impact of pesticides. Further details can be found on the Voluntary Initiative website: www.voluntaryinitiative.org.uk

Legal Restrictions

- 19** The advertisement, sale supply and use of agrochemicals are regulated by Part III of the Food and Environment Protection Act 1985, Control of Pesticides Regulations 1986 as amended by the Plant Protection Products (Basic Conditions) Regulations 1997, and the Health and Safety at Work Act 1974. These are supplemented by two statutory codes: the Code of Practice for the Safe Use

of Pesticides on Farms and Holdings (The Green Code) and the Code of Practice for Suppliers of Pesticides to Agriculture, Horticulture and Forestry (The Yellow Code). Following public consultation, in 2004, the Green Code was revised and issued as the Code of practice for using plant protection products (PB 11090) in 2006. Further details are available on the Pesticides Safety Directorate website at: www.pesticides.gov.uk

- 20** The Control of Substances Hazardous to Health (COSHH) Regulations 2002 require that pesticides (including herbicides) should only be used where necessary, and where the benefits significantly outweigh the risks to human health and the environment. Non-chemical control options must, therefore, be considered and herbicides should only be used in situations where alternatives do not exist, or are impractical or likely to be inadequate.

Training and Certification of Spray Operators

- 21** Spraying should only be carried out by a competent person who is suitably trained and qualified and in accordance with the pesticides and health and safety legislation. No person who was born later than 31 December 1964 can use a pesticide approved for agricultural use unless that person has obtained a recognised Certificate of Competence. Irrespective of their age, all persons who use pesticides as part of a commercial service (i.e. as a contractor on land not in the ownership or occupation of the contractor) must hold a Certificate of Competence, or work under the direct personal supervision of a person who holds such a certificate. Surplus chemicals must be disposed of according to the Code of Practice for the Safe Use of Pesticides on Farms and Holdings.

Restrictions on Use of Pesticides in or Near Water

- 22** Regulations made under the Food and Environment Protection Act 1985 control the use of herbicides/pesticides where pollution of water might occur.

Grazing Restrictions

- 23** The application of herbicides to grazing land will result in grazing restrictions. Each product has a specified grazing interval i.e. the period between treatment and grazing. The grazing interval provides sufficient time for the applied product to work on the growing plants and does **not** indicate that it is safe to graze.
- 24** It is only safe to graze fields once any ragwort and other toxic weeds present have disintegrated and are **not** accessible to grazing animals. The same principle also applies to grassland treated which is intended to be conserved for hay and haylage.

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Environmental Restrictions

- 25** The use of herbicides to control ragwort will affect other plant species within the treated area. Areas protected by legislation, e.g. SSSIs and agri-environment schemes, also restrict the use of certain chemicals and the relevant authority should be consulted prior to operations (see Appendix 4).

Methods of Application

- 26** Efficacy and environmental safety are directly affected by the method of application, which must comply with statutory requirements and the specific conditions of approval set for the pesticide concerned. Effective targeting of herbicides is important, particularly when non-selective herbicides are used. Non-selective, translocated herbicides present the highest risk to non-target plants. The method used to apply a herbicide will be influenced by:
- the extent and distribution of the target species
 - height and structure of the target species
 - height, structure and sensitivity of surrounding/adjacent non-target species
 - approval and label requirements
- 27** Weed-wipers provide a method for the targeted treatment of weeds that are taller (at least 10 cm taller) than the associated non-target vegetation. Weed-wipers are available for different scales of operation – from small hand held wipers to large tractor-mounted equipment.
- 28** The most widely used type of hand-held sprayer is the knapsack sprayer, which is suitable for spot-treatment of ragwort on small areas and on very rough or steep terrain. Sprayers mounted on tractors or ATVs are more suitable for larger areas of relatively even ground.

Environmental Safety

- 29** An evaluation of environmental risks is essential wherever herbicides/pesticides are used and should always consider both short and long-term, local and remote effects, impacts on animals as well as plants and possible indirect effects (e.g. through destruction of nesting sites, deoxygenation of ponds caused by organisms decomposing dead vegetation etc.)
- 30** To minimise the effects of herbicides on non-target species:
- use a weed wiper or spot treatment wherever practicable
 - spot treat, if possible, and use a guard on the sprayer lance to more effectively target sprays and reduce drift
 - use a selective herbicide that is less damaging to non-target species
 - leave an unsprayed buffer zone between treated and vulnerable species/habitats

- avoid fine sprays – use medium-coarse droplet nozzles
- keep spray nozzles as close as possible to target plants
- consider use of low drift nozzles
- avoid spraying in unsuitable weather e.g. when wind speed is greater than Beaufort Force 2 or on very calm, warm days

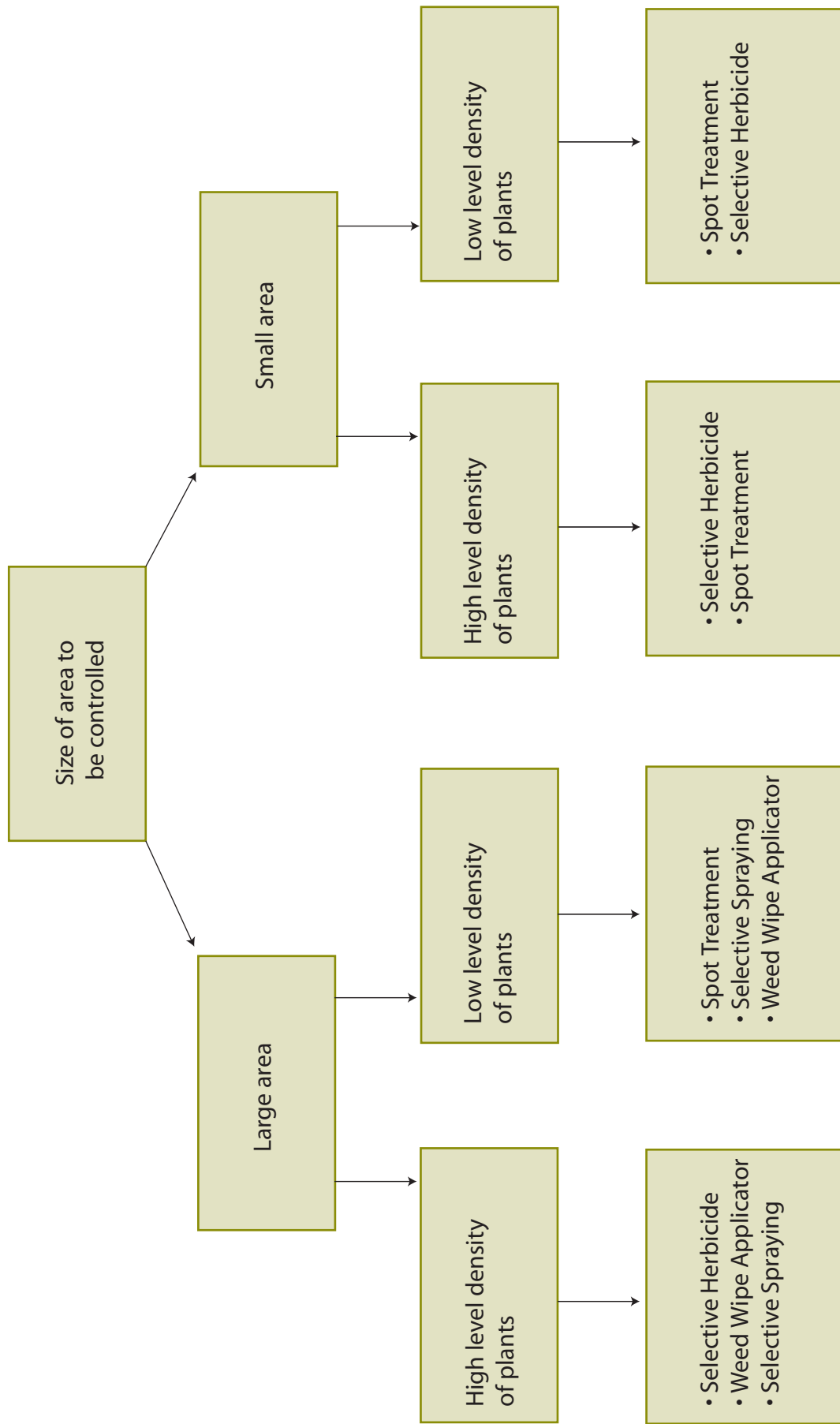
31 Figure 3 (overleaf) will assist with selecting the most appropriate method of chemical control.

Biological

32 Biological control is aimed at controlling ragwort by using the plant's natural enemies to lower its density, thereby suppressing ragwort populations and allowing other plants to re-establish. High densities or "plague levels" of cinnabar moths can destroy complete ragwort populations. Many species feed on ragwort including; cinnabar moth (*Tyria jacobaea*), ragwort flea beetle (*Longitarsus jacobaea*) and ragwort seedfly (*Pegohylemia seneciella*). However their natural spread might not always be as wide-ranging as that of ragwort. Other potential biological control agents include several fungal pathogens (rust diseases). None of these significantly reduce ragwort populations.

33 The introduction of a biological control agent has a potential advantage in areas where chemical/mechanical control is unachievable or undesirable. However, it can be difficult to maintain sufficient predator populations to provide adequate control and may only result in a reduction rather than a control of spread. Biological control is therefore best used as part of a long-term strategy. **Biological control by cinnabar moths is not suitable for the control of ragwort on grazing land or land used for forage production.** Approval is required from the local Natural England Area Team before this technique is used on SSSIs.

Figure 3. Decision Tree to Assist Selecting the Most Appropriate Herbicide Treatment According to Size of Area and Level of Density of Plants



Introduction

- 1 Where land has a special designation, attracts support payments which place conditions on the way the land is managed or has a specific biodiversity/wildlife interest no action to prevent the spread of ragwort should be taken without the approval of the competent authority. In the case where an area of land falls within more than one category, all the relevant considerations need to be taken into account.

Set-aside

- 2 Land set-aside from agricultural production is a potential source of ragwort and is subject to the provisions of the Weeds Act in the same way as other land. Action may be taken to control ragwort at any time by means of pulling, cutting, spot burning or herbicide. Full details of the rules for weed control on set aside land are included in the Single Payment Scheme Handbook and Guidance for England: 2006 Edition (SP 5) and Cross Compliance Handbook for England: 2006 Edition (PB 11035) available from Defra.

Organic farming

- 3 Where land is farmed organically there will be limitations on the control options that can be used. If in any doubt about the standards covering this area farmers should contact their Certification Body. Further advice on practical measures should be obtained from suitably experienced organic consultants.

Agri-Environment Schemes

- 4 Agri-environment schemes cover Environmentally Sensitive Areas (ESAs) and land subject to Countryside Stewardship and from 2005 Environmental Stewardship Entry Level and Higher Level Schemes. The control of weeds, including Common Ragwort on land covered by an ESA or other agreement is included in the terms of individual agreements. Where ragwort is present on land within an ESA or other agreement and poses a high risk to the health and welfare of grazing animals and/or the production of feed or forage it should be adequately controlled. Although individual agreements may limit the options for control, it should not rule out control. Guidance is available from Natural England (Appendix 7).

National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and other statutorily designated wildlife sites (including sites that support Red Data Book Listed, Nationally Scarce or Biodiversity Action Plan Priority species)

- 5 Several species of ragwort and closely related species occur as native plants on many statutorily designated wildlife sites such as NNRs and SSSIs. Some species of ragwort are rare. Management of plant life is crucial to the ecology of NNRs and

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SSSIs and in such situations weed control, including the control of Common Ragwort, may be potentially damaging to the nature conservation interests of the site. With regard to NNRs and other SSSIs, the local Natural England Area Team must be consulted in advance of action and consent sought as to the most appropriate control method (Appendix 7).

- 6** On sites where grazing management is required and there is a wildlife interest associated with the ragwort then a risk assessment should be undertaken. If ragwort poisoning becomes a risk then grazing animals should be excluded from the areas for the period of risk, or the ragwort removed. However, the risk assessment may take into account the susceptibility of the particular grazing animals (species, breed, age, experience, foraging behaviour), the presence of abundant alternative palatable herbage and prevailing weather conditions.
- 7** Where sites do not require grassland management for grazing, ragwort may be acceptable providing the presence of such ragwort is not a threat to horses and stock grazing land neighbouring the site, or adjoining land used for feed/forage production. The key factor will be the level of ragwort present relative to the risk of seeds spreading to land used for grazing and/or forage production.
- 8** Emphasis should be placed on 'preventing' the establishment of ragwort by management, rather than 'controlling' populations of ragwort once they have occurred. Where control of the ragwort population is necessary, cultural control methods are the preferred option.

Non-statutorily designated wildlife sites/sites with nature conservation interests (including sites that support Red Data Book Listed, Nationally Scarce or Biodiversity Action Plan Priority species)

- 9** It is recommended that the approach adopted in paragraphs 5 to 8 above should generally apply to non-statutorily designated wildlife sites.

Scheduled Monuments

- 10** Control on or removal from land which is protected as a Scheduled Monument under the Ancient Monuments and Archaeological Areas Act 1979 may also require Scheduled Monument Consent (SMC). English Heritage must be consulted and advice sought as to the most appropriate method of control (Appendix 7).

Common Land

- 11** Common land can sometimes be populated by a number of species including Common Ragwort. Where ragwort is identified as putting at risk animals grazing on the common, or to neighbouring land used for grazing and/or feed/forage production, it must be controlled. Responsibility for control lies with the registered owner of the land and/or the person entitled to the occupation of the land

Appendix 4 – Particular categories of land

(normally the landowner but not exclusively so), the common right holders are not normally deemed to be the owners or occupiers. As common land may often be designated SSSIs, it may be helpful to refer to paragraphs 5 to 8 above.

Other Land used for Grazing

- 12 On land used for grazing horses and other animals control of ragwort is the responsibility of the occupier (owner or tenant) of the land. The presence of ragwort within a grazing area can pose a high risk to grazing stock, particularly horses, which are highly susceptible to the toxic effects of ingested ragwort
- 13 Particular attention must be given to the presence of ragwort seedlings which are less visible than the rosette stage and more likely to be eaten. Where ragwort is identified as posing a high risk to animals, suitable control measures should be taken or animals removed from the source of risk.

Forage Production

- 14 Grassland conserved for forage production including: hay, haylage, silage and crops grown for dried grass can contain ragwort. Ragwort cannot easily or readily be detected once dried. It remains highly toxic and cannot be easily discarded. In its dried form it is more likely to be eaten and poses a higher risk of poisoning to the animal than in the grazing situation. Where ragwort is identified in fields used for feed/forage production suitable control measures must be taken.
- 15 Any feed or forage that contains ragwort is unsafe to feed to horses and other animals and must be declared 'unfit' as animal feed and be disposed of safely. The Agriculture Act 1970 and the Feeding Stuffs Regulations 2000 govern the sale of animal feed and forage. Regulation 14 makes it an offence to sell any material for use as a feeding stuff which is found, or discovered as a result of analysis, to be unwholesome for or dangerous to any farmed animal, pet animal or human being. Trading Standards should be notified if feedstuffs are found to contain ragwort as an offence may have been committed.

Amenity Grassland

- 16 Amenity grassland which includes sports grounds, playing fields, village greens and grassed areas around buildings and gardens, are usually intensively managed and would normally pose a low risk of ragwort spreading to grazing land and land used for feed/forage production. However, where land is less intensively managed it can pose a risk if ragwort is allowed to proliferate in areas not frequently cut and/or on the perimeter of the amenity area. In such situations where ragwort poses a high risk of contaminating neighbouring land used for grazing and/or feed/forage production then effective control measures must be taken to prevent the spread of ragwort. Control methods should take into account public access and safety and a suitably sufficient risk assessment must be undertaken prior to control.

Code of Practice on How to Prevent the Spread of Ragwort

Highways

- 17** Ragwort is frequently found growing by the side of highways including motorways and other trunk roads, other public roads and private roads. It can pose a serious risk of spreading to grazing land and land used for feed/forage production within the locality. Where ragwort is present on roadside verges and the spread of ragwort poses a high risk to grazing animals and/or feed/forage production it must be controlled. The vast extent of the road network and the land surrounding it means that ragwort will be likely to spread on to highway verges.
- 18** The control of roadside vegetation including Common Ragwort is the responsibility of the Highways Agency in the case of motorways and other trunk roads, and the Local Highway Authority in respect of all other public roads. Private roads are the responsibility of whoever owns them. Control of ragwort on highway land should only be undertaken by appropriately trained and qualified persons who have had access to the relevant safety and environmental information to ensure that their specialist work does not compromise the safety of road users or contravene environmental legislation.
- 19** Particular problems arise where road improvements or other disturbances of the highway verge have occurred. If turf is removed, properly stored and replaced when the works have been completed, there should be much less bare ground for ragwort to colonise. Post works special measures should be avoided or minimised. Seeding measures should be followed up by several mowings during the first year which would promote growth of grass/clover etc, and reduce growth of ragwort.

Railways

- 20** Ragwort can be found growing by the side of railway lines and, due to the size of the railway network, can pose a risk of contaminating grazing land and land used for feed/forage production within the locality. Similarly, the number of neighbours surrounding the 30,000 hectare network means that ragwort will undoubtedly spread on to railway property.
- 21** The control of vegetation on railway land, including the control of ragwort, is the responsibility of Network Rail and is undertaken to ensure the risks posed to trains, railway personnel and the travelling public are reduced to as low as is reasonably practicable. Ragwort is controlled on a reactive basis, dealing with incidents on a site-specific basis. Weed control on private railway land is the responsibility of whoever owns the land.
- 22** Where ragwort is present on railway land and the spread of ragwort poses a high risk to grazing animals and/or feed/forage production it must be controlled. Control of ragwort on surfaces belonging to statutory undertakers operating railways may require the carrying out of special safety procedures, including temporary track closures. The work may fall to be co-ordinated with other activities in order to avoid excessive costs and inconvenience to passengers. Personnel involved have access to safety and environmental information

Appendix 4 – Particular categories of land

to ensure that the control activities do not compromise the safe running of the railway or contravene environmental legislation. Accordingly, where someone is concerned about ragwort on railway land it would be helpful to discuss with statutory undertakers what would be a reasonable period of time for clearance work to be carried out, before making a complaint to Natural England at Bristol.

Aquatic Areas

- 23** Land immediately adjacent to water (this includes rivers, streams, brooks, canals, side ponds/side canals, ponds and reservoirs) can be a source of ragwort, in particular the rarer species, such as Fen Ragwort, which flourishes in damp conditions. Where Common Ragwort is present on land adjacent to waterways and the spread of Common Ragwort poses a high risk to grazing animals and/or feed/forage production it must be controlled. However care must be taken to distinguish Common Ragwort from Fen Ragwort, which is protected and should not be controlled. The Food and Environment Protection Act 1985 places a special obligation on all pesticide users to prevent pollution of water. The Environment Agency must be notified prior to use of herbicides/pesticides in or near water. Downstream and opposite riparian owners should also be consulted when pesticides are applied near water.

Woodland and Forestry

- 24** Ragwort in woodland and forestry generally represents a low risk to grazing animals and to feed and forage production. Where ragwort is present and the spread of ragwort poses a high risk to grazing animals and/or feed/forage production then it must be controlled.

Development, Waste, Derelict Land, Land Used for Mineral Extraction

- 25** This category includes brown field sites awaiting development, abandoned land, and land not utilised or managed surrounding development areas. Land within the urban environment generally represents a low risk to grazing animals and to feed and forage production. Where ragwort is present on development, waste and neglected land and the spread of ragwort poses a high risk to grazing animals and/or feed/forage production, then it must be controlled. It is expected that owners, occupiers and managers of such land will have in place policies for the identification, monitoring and control of ragwort on land for which they are responsible. In some circumstances, this type of land can have benefits for biodiversity and this should be borne in mind when developing a control policy.

Defence Land

- 26** The Defence Estates (an Executive Agency of the Ministry of Defence) administer the defence estate and are responsible for ensuring that the appropriate standards of weed control are maintained on defence land under its jurisdiction. Where

Code of Practice on How to Prevent the Spread of Ragwort

ragwort is present on defence land and there is a high risk that it may spread to neighbouring land used for grazing and/or feed/forage production the Ministry of Defence will take measures to control the ragwort and reduce the risk of it spreading. Some Ministry of Defence land has conservation status and requires grazing. In these circumstances, where a low risk has been assessed to animal welfare (see paragraph 6 of this Appendix), animals may graze defence land where ragwort is present. The Ministry of Defence will take action to reduce this risk if it becomes medium or high risk. The Ministry of Defence will not control ragwort where there is unexploded ordnance present.

Bridleways

- 27** Ragwort should be controlled on bridleways where the bridleway runs across grazing land or land used for forage production and where grazing animals may be at risk. Where there is no risk, it should not be necessary to control ragwort simply because horses will be ridden along the bridleway. It is the rider's responsibility to ensure that a horse when ridden or led on a bridleway does not ingest ragwort.

Appendix 5 – Disposal

- 1 Safe disposal is an important part of ragwort control.** Options for disposal will depend on the amount of ragwort to be disposed of and the local resources available for disposal.
- 2** Cut and pulled flowering ragwort plants may still set seed and all parts of the ragwort plant remain toxic when treated or wilted. Cut and pulled plants will therefore continue to pose a risk to horses and other grazing stock and should be removed from areas where they could be ingested by vulnerable animals.
- 3** Options for disposal of ragwort plants include, sealing in plastic bags for incineration or landfill, or by disposing in an environmentally acceptable way, whereby it will not be a risk to grazing animals and the seed will not be spread. When plants are incinerated this must be undertaken in accordance with the Code of Practice for the Protection of Air (Appendix 8) and Local Byelaws. Landfill sites must be an approved Local Authority facility. The Environmental Services Department of your Local Authority will be able to identify the nearest waste reception centre. When transporting pulled ragwort, care should be taken to ensure that it is either in a sealed container or well-covered to prevent the spread of seed.
- 4** Composting in the open is not recommended. If the composting process does not kill the seeds, there will be a risk of spread of ragwort. Composting should therefore not be used for disposal of ragwort, unless the temperatures reached are sufficient to destroy viable seed.
- 5** *Since the Code was published in 2004 Defra has published a more detailed publication on this subject entitled Guidance on the disposal options for common ragwort (PB 11050) available from Defra Publications.*

Handling Ragwort Plants

- 1** Ragwort is a toxic plant and suitable precautions must be taken when handling live and dead plants. Hands must be protected by wearing sturdy waterproof gardening type gloves. Arms and legs should also be covered. A facemask should be used to avoid the inhalation of ragwort pollen.
- 2** If skin comes into contact with ragwort the area should be thoroughly washed in warm soapy water, rinsed and dried.

Operator safety

- 3** Care must also be taken to ensure operator safety when undertaking ragwort clearance. This is particularly important when clearance takes place on road verges and other public areas accessed by motor vehicles.
- 4** If assistance is provided by volunteers they must be competent to undertake the task and have adequate training (including road safety). They should be supervised to ensure that they are not a danger to themselves or to others. This is particularly important when clearing ragwort from roadside verges on the public highway. Volunteers are not permitted to operate on land owned by Network Rail or other railway undertakers.
- 5** Before clearance commences a sufficient and suitable risk assessment should be undertaken which:
 - identifies the hazards
 - decides who may be harmed by them
 - evaluates the risk and decides whether the existing precautions are adequate or whether more should be done
 - records the findings
 - reviews the assessment and revises it if necessary

Further guidance on undertaking risk assessments is available from the Health & Safety Executive (see Appendix 7).

- 6** When digging or pulling ragwort adjacent to a public highway i.e. roadside verge, public footpath, bridleway or byway open to all traffic, it is essential that operators can be seen by other road/highway users. All operators should wear high visibility clothing and generally work facing the traffic. Basic road safety training should be provided to raise the awareness of road safety hazards. No attempt should be made to dig or pull ragwort in poor visibility or during the hours of darkness on roads.
- 7** Any vehicles used to transport operators to the location where ragwort is being controlled must be parked safely and must not be parked in such a way as to obstruct the public highway.
- 8** Standard road works signing should be set up in accordance with standard practice governing the type of road. On trunk roads including motorways different rules apply and traffic signing needs to be approved by the Trunk Road Agent and Police prior to being erected or works beginning.

- 9 On high-speed dual carriageways where the speed limit exceeds 50 mph, special traffic management requirements are called for under the terms of the Highways Agency document “Guidance for Safer Temporary Traffic Management”, published by the Transport Research Laboratory Ltd (Appendix 8).

Prior Authority for Access to Land

- 10 It is essential that prior authority be obtained before clearance of ragwort is undertaken. Access to land without prior authority would amount to trespass and could lead to a charge of criminal damage. Authority should be obtained as follows:
- Private land – authority must be obtained from the owner/occupier of the land
 - Public land – prior authority should be obtained from the relevant public body responsible for the management of that land, i.e. parish council, town council, local authority or other public body
 - The public highway, i.e. road side verges – clearance should only be undertaken with the prior notification and authority of the relevant local highway authority, i.e. normally the Highways Department of the County Council
 - Trunk roads including motorways – these are the responsibility of the Highways Agency
 - Railway land – this is the responsibility of the railway undertaker concerned. Unauthorised persons must not under any circumstances enter nor purport to authorise entry by any other person. Only the railway undertaker concerned is in a position to authorise entry by persons in possession of appropriate railway safety certification meeting the requirements of undertakers’ Railway Safety Cases approved by the Railways (Safety Case) Regulation 2000 (as amended). A failure to comply with this instruction is likely to place the persons concerned in breach of duties under the Health and Safety at Work etc Act 1974. The person(s) authorising entry may in such circumstances also render themselves liable to prosecution in their personal capacity.

Use of herbicides

- 11 All herbicides are potentially hazardous if not used in accordance with their approval, and where appropriate, environmental risk and COSHH assessments. (See Appendix 3). Such products should only be used where absolutely necessary. Unnecessary use is uneconomic, can lead to pesticide resistance and, in some cases may also damage the non-target vegetation. A risk assessment must be carried out before application. The risk assessment should determine the risks to operators and other people (including members of the public) and should specify the measures required to adequately control those risks. Any measures e.g. substitution of the product (by a less hazardous one), engineering controls etc deemed appropriate and necessary by risk assessment should be implemented, and protective equipment required by and stipulated on the product label should be worn. Information relating to first aid and medical treatment in the event of accidental exposure to the chemical is also given on the product label.

Appendix 7 – Government Departments, Agencies and Statutory Authorities

British Waterways

Willow Grange, Church Road, Watford, WD17 4QA Tel: 01923 201120

Website: <http://www.britishwaterways.co.uk>

Department for Environment, Food & Rural Affairs (Defra)

Nobel House, 17 Smith Square, London SW1P 3JR

Defra Helpline (Public Enquiries) Tel: 08459 335577

Website: <http://www.defra.gov.uk>

English Heritage (EH)

1 Waterhouse Square, 138 – 142 Holborn, London, EC1 2ST Tel: 020 7973 3000

Website: <http://www.english-heritage.org.uk>

Environment Agency (EA)

Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol BS32 4UD

Tel: 08708 506506 Website: <http://www.environment-agency.gov.uk>

Forestry Commission (FC)

231 Corstorphine Road, Edinburgh EH12 7AT Tel: 0131 334 0303

Website: <http://www.forestry.gov.uk>

Health & Safety Executive (HSE)

HSE Information Services, Caerphilly Business Park, Caerphilly, CF83 3GG

HSE InfoLine Tel: 0845 345 0055 Website: <http://www.hse.gov.uk>

Highways Agency (HA)

123 Buckingham Palace Road, London, SW1W 9HA Tel: 08457 50 40 30

Website: <http://www.highways.gov.uk>

Natural England – Bristol – Injurious Weeds and Wildlife Licensing Unit

Natural England, Burghill Road, Westbury-on-Trym, Bristol BS10 6NJ

Tel: 0117 959 8622 E-mail enquiries: wildlife@naturalengland.org.uk

Natural England – Public Enquiries

Natural England, Northminster House, Northminster Road, Peterborough PE1 1UA

Tel: 0845 600 3078 E-mail enquiries: enquiries@naturalengland.org.uk

Natural England – Head Office

Natural England, 1 East Parade, Sheffield, S1 2ET Tel: 0114 241 8920

Website: <http://www.naturalengland.org.uk>

Network Rail

40 Melton Street, London NW1 2EE Tel: 08457 11 41 41

Website: <http://www.networkrail.co.uk>

Pesticide Safety Directorate (PSD)

Mallard House, Kings Pool, 3 Peasholme Green, York YO1 7PX Tel: 01904 455775

Website: <http://www.pesticides.gov.uk>

Appendix 7 – Government Departments, Agencies and Statutory Authorities

Scottish Executive Environment and Rural Affairs (SEERAD)

Pentland House, 47 Robb's Loan, Edinburgh EH14 1TY Tel: 0131 556 8400

Website: <http://www.scotland.gov.uk>

Welsh Assembly Government Department for Environment, Planning & Countryside

National Assembly for Wales, Cardiff Bay, Cardiff CF99 1NA Tel: 0845 010 5500

Website: <http://www.wales.gov.uk>

Defra Publications

- The Weeds Act 1959 Preventing the spread of harmful weeds (2002)*
- The Weeds Act 1959 Guidance on the methods that can be used to control harmful weeds (PB 7190) (2002)
- Weed Identification (PB 4192) *Provides guidance on weed identification including ragwort species* (1999)
- Guidance on the disposal options for common ragwort (PB 11050) (2005)
- Code of practice for using plant protection products (PB 11090) *Updated code providing guidance on the safe use of pesticides on farms and holdings* (2006)
- Code of Good Agricultural Practice for the Protection of Air (MAFF, 1998 PB 0618) *Provides guidance on avoiding air pollution from odours, ammonia and smoke*
- Code of Good Agricultural Practice for the Protection of Water (MAFF, 1998 PB 0587) *Provides guidance on pesticide storage, use and disposal*
- Single Payment Scheme Handbook and Guidance for England: 2006 Edition (SP 5) *Guidance on weed control on set-aside land*
- Cross Compliance Handbook for England: 2006 Edition (PB 11035) *Guidance on weed control on set-aside land*

Copies of all numbered Defra publications can be obtained from:

Defra Publications
Admail 6000
London SW1A 2XX
Tel: 08459 556 000

And are also available on the Defra website (www.defra.gov.uk)

*Only available on the Defra website.

Other Publications

- The Safe Use of Pesticides for Non-agricultural Purposes (HSE 1995) (ISBN 0-71760-5426) *An approved code of practice giving practical guidance on the use of non-agricultural pesticides in accordance with the requirements of the COSHH Regulations 1994*
- The UK Pesticide Guide (CAB Publishing) (ISBN 1-84593-2293) *Annual publication of available pesticides and adjuvants in the UK for use in agriculture, horticulture, forestry and amenity situations*
- The Orange Code – Code of Practice for the Use of Approved Pesticides in Amenity and Industrial Areas (National Association of Agricultural Contractors with British Agrochemicals Association) (ISBN 1-871140-12-9) *Voluntary Code of Practice*

Appendix 8 – Useful publications

- English Nature – The Herbicide Handbook: Guidance on the use of herbicides on nature conservation sites, 2003. ISBN 1 85716 746 5. Available on www.english-nature.org.uk
- English Nature Information Note – Towards a Ragwort management strategy 2003 *Information note on the control of common ragwort*
- “A Guide to Animal Welfare in Nature Conservation Grazing” (Grazing Animal Project 2001). Available from GAP Office, The Kiln, Mather Road, Newark, Nottinghamshire NG24 1WT. Tel: 01636 670095. E mail: enquiries@grazinganimalprojects.info *Provides guidance on the management of stock on nature conservation sites.*
- “Guidance for Safer Temporary Traffic Management”, published by the Transport Research Laboratory Ltd ISBN 0 9521860 98 (www.trl.co.uk).

ADAS

Provide chargeable consultancy advice

ADAS, Woodthorne, Wergs Road, Wolverhampton WV6 8TQ

Tel: 0845 766 0085

<http://www.adas.co.uk>

AGRICULTURAL INDUSTRIES CONFEDERATION

Member companies supply and distribute agrochemicals

Confederation House, East of England Showground, Peterborough, PE2 6XE

Tel: 01733 385230

<http://www.agrindustries.org.uk>

AICC (Association of Independent Crop Consultants)

Provide chargeable consultancy advice

AICC, Agriculture Place, Heath Farm, Heath Road East, Petersfield, Hampshire, GU31 4HT

Tel: 01730 710095

<http://www.aicc.org.uk>

ALVAN BLANCH

Supplier of the 'Eco-Puller' a mechanical tall weed pulling machine (including ragwort)

Chelworth, Malmesbury, Wiltshire SN16 9SG

Tel: 01666 577333

<http://www.alvanblanch.co.uk>

BARRIER ANIMAL HEALTHCARE

Supplier of Citronella Oil derived product

36 Haverscroft Industrial Estate, New Road, Attleborough, Norfolk NR17 1YE

Tel: 01953 456363

<http://www.barrier-biotech.com>

BASIS Registration Ltd

Runs the accreditation scheme for advisors of pesticide use

BASIS, 34 St John Street, Ashbourne, Derbyshire DE6 1GH

Tel: 01335 343945

<http://www.basis-reg.com>

THE BRITISH HORSE SOCIETY

National organisation for horse owners and riders

Stoneleigh Deer Park, Kenilworth, Warwickshire CV8 2XZ

Tel: 08701 202244 Fax: 01926 707800

<http://www.bhs.org.uk>

BRITISH INSTITUTE OF AGRICULTURAL CONSULTANTS (BIAC)

Provide chargeable consultancy advice

BIAC, The Estate Office, Torry Hill, Milstead, Sittingbourne, Kent ME9 0SP

Tel: 01795 830100

<http://www.biac.co.uk>

Appendix 9 – Sources of technical advice on ragwort control

CENTRE FOR ECOLOGY AND HYDROLOGY (CEH)

Control of injurious weeds in or near water

The Centre for Ecology and Hydrology, CEH Wallingford, Maclean Building,
Benson Lane, Crowmarsh Gifford, Wallingford OX10 8BB

Tel: 01491 838800 Fax: 01491 692424

<http://www.ceh.ac.uk>

CROP PROTECTION ASSOCIATION

Member companies can supply technical literature

Crop Protection Association, 20 Culley Court, Orton Southgate,
Peterborough PE2 6WA

Tel: 01733 367213

<http://www.cropprotection.org.uk>

FARMING AND WILDLIFE ADVISORY GROUP (FWAG)

Advice on farming and conservation

Farming and Wildlife Advisory Group, Stoneleigh Park, Kenilworth,
Warwickshire CV8 2RX

Tel: 024 7669 6699

<http://www.fwag.org.uk>

GARDEN ORGANIC

Organic gardening, including weed control

Garden Organic, Ryton Organic Gardens, Coventry, Warwickshire CV8 3LG

Tel: 024 7630 3517

<http://www.gardenorganic.org.uk>

LAZY DOG TOOL LTD

Supplier of ragwort lifting tools and weeding brigades

Hill Top Farm, Spaunton, Appleton-le-Moors North Yorkshire YO62 6TR

Tel: 01751 417351

<http://www.lazydogtoolco.co.uk>

MACHINERY RINGS ASSOCIATION OF ENGLAND AND WALES (MRA)

Co-operative supply of machinery and labour

Association Secretary: Mr Angus Campbell, RAMSAK Ltd, Weald Granary,
Seven Mile Lane, Mereworth, Maidstone, Kent ME18 5PZ

Tel: 01622 815356

<http://www.machineryrings.org.uk>

NATIONAL ASSOCIATION OF AGRICULTURAL CONTRACTORS

*Member companies can provide contracting services in agriculture amenity
and industrial land based areas*

National Association of Agricultural Contractors, Samuelson House, Paxton Road,
Orton Centre, Peterborough PE2 5LT

Tel: 01733 362920

<http://www.naac.co.uk>

Code of Practice on How to Prevent the Spread of Ragwort

NATURAL ENGLAND

Advice on Wildlife Sites

Natural England, Northminster House, Northminster Road, Peterborough PE1 1UA

Tel: 0845 600 3078

<http://www.naturalengland.org.uk>

THE ORGANIC RESEARCH CENTRE

Organic farming including horticulture and weed control

The Organic Research Centre, Elm Farm, Hamstead Marshall, Newbury, Berkshire RG20 0HR

Tel: 01488 658298

<http://www.efrc.com>

RAG-FORK

Suppliers of ragwort lifting tools

Rag-Fork, 110 Sunderland Street, Tickhill, Doncaster DN11 9ER

Tel: 01302 746077

<http://www.rag-fork.co.uk>

RAGWORT-UK LTD

Cinnabar biological control agents

Ragwort-UK Ltd, 74 Roman Bank, Long Sutton, Lincolnshire PE12 9LB

Tel: 01406 365180

<http://www.ragwort-uk.com>

SURREY HORSE PASTURE MANAGEMENT PROJECT

Council supported advice on pasture management within Surrey

Horse Pasture Management Project, Surrey County Council South West Area office, 3rd Floor Grosvenor House, London Square, Cross Lanes, Guildford, Surrey GU1 1FA

Tel: 08456 009 009 and ask for Nicky West

Fax: 01483 517553

E-mail: nicky.west@surreycc.gov.uk

<http://www.surreycc.gov.uk/horsepastureproject>

The list is not exhaustive and the presence of any organisation on this list does not imply that the Code endorses the advice, guidance, information, products or services provided by those organisations.

Objectives of the Code of Practice and what it is seeking to achieve

- 1 The objective of the Code of Practice is to reduce significantly, through good practice, the risk that horses and livestock might be poisoned by ragwort. The Code seeks to achieve this by providing comprehensive guidance to horse owners and land managers on how to prevent the spread of Common Ragwort (*Senecio jacobaea*) where it poses a significant risk to horses, livestock or fields used for the production of feed and forage. The Code does not seek to eradicate or indiscriminately control the growth of Common Ragwort, and recognises the practical and resource difficulties of controlling it. Control is only recommended in those circumstances where there is a specific threat to animal welfare.

Evidence of the need to take control action

- 2 Common Ragwort is one of five injurious weeds specified under the Weeds Act 1959. Under the Act, the Secretary of State for Environment, Food and Rural Affairs has a discretionary power to serve a notice on an occupier of land on which one or more of the injurious weeds is growing requiring the occupier to take action to prevent the spread of those weeds. An unreasonable failure to comply with such a notice is an offence. The vast majority of complaints about injurious weeds, (at least 90%), investigated by Defra concern ragwort, and the numbers have increased steadily year on year. In 2001 there were 105, in 2002 there were 160, and in 2003 there were 318 cases respectively. (The figure for 2003 is estimated) Defra has limited resources to investigate complaints about injurious weeds. The Code of Practice should encourage better land management to prevent the establishment of ragwort, and a greater awareness of when and where it is necessary to take control action, as well as providing guidance on the most appropriate control methods for the particular circumstances.
- 3 Common Ragwort contains pyrrolizidine alkaloids, which are poisonous to horses and other animals, such as sheep and cattle. With the exception of sheep, in most situations, grazing animals do not readily eat growing ragwort. Ingestion of ragwort, either in its green or dried state, causes cumulative liver damage, which can have fatal consequences. In its dried state, particularly in hay or other conserved forage, ragwort is less likely to be rejected by livestock and may present a greater risk than ragwort in its natural state. Horses appear to be more susceptible to ragwort poisoning than other animals. The International League for the Protection of Horses has estimated that the number of horses has doubled during the last 15 years, which is mirrored by an increasing number of horse owners with concerns about the spread of ragwort.
- 4 The scale and extent of illness and death in animals through ragwort poisoning is difficult to determine, as an autopsy would be required in every case to confirm the exact cause of death. There is no current test available to diagnose accurately whether an animal is suffering from ragwort poisoning, and certainly no test to help determine whether any such poisoning relates to ingestion of conserved or live ragwort. Dr Derek Knottenbelt at Liverpool University is carrying out research to establish a blood test to detect ragwort poisoning in horses. He has estimated

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a figure of 500 horse deaths from ragwort poisoning in 2000. This figure is based on the number of confirmed horse deaths from ragwort poisoning seen by the Philip Leverhulme Large Animal Hospital Teaching Hospital at Liverpool University as a percentage of all the horse cases treated during the year, and grossed up to be representative of the total horse population. In 2003 the British Equestrian Veterinary Association (BEVA) carried out a survey on behalf of The British Horse Society in which members were asked to complete a questionnaire recording suspected and proven cases of ragwort poisoning in 2002. There were 84 replies to the survey (4% of the total BEVA membership) and the number of suspected or confirmed cases of ragwort poisoning from these replies totalled 283, with 62 of those responding having dealt with a proven case of ragwort poisoning.

- 5** Most cattle are usually slaughtered before the effects of ragwort poisoning become evident. Figures from the Meat Hygiene Service indicate that around 120 cattle carcasses were rejected in both 2002 and 2003 because of jaundiced livers, which can be a symptom of ragwort poisoning. However it is not possible to determine whether ragwort poisoning was the cause of jaundice in these cases. Very few cattle suffering from ragwort poisoning would be presented to be slaughtered for human consumption since they would be obviously affected with a serious abnormality detectable on veterinary examination. Whilst it is unsatisfactory not to have more accurate data on the number of animal deaths, there is no dispute that ragwort poisoning does present a serious health risk to horses and livestock, in some situations, and may be a common cause of death.
- 6** During recent years public concern about ragwort has increased, particularly in relation to roadside verges and on railway land. Horse owners consider that the threat of poisoning has increased due to reduced control as a result of the movement restrictions imposed during the outbreak of Foot and Mouth Disease in 2001, although there is no current evidence to support this. In future years there is a possibility that ragwort could increase as land management becomes less intensive. Changes in the populations of flora and fauna in the countryside are monitored by the Countryside Survey. Evidence in respect of ragwort populations for 2000 onwards will not be available until the next Countryside Survey in 2006. The most recent evidence from the last Countryside Survey covers the period 1990 to 1998. This found no specific increase in ragwort in fertile or infertile grassland (i.e. grazing land) during the period 1990 to 1998. However there was a significant increase in the frequency of ragwort in lowland woods and on arable land over the same period, though ragwort poses less of a threat to stock in these situations. The Countryside Survey is a national survey and may not detect special localised changes in frequency of ragwort. The concerns about horse and animal health welfare expressed by owners are genuine and properly fall to be dealt with under the legislative framework of the Weeds Act. These justify a need to control ragwort where it presents a threat to animal welfare.
- 7** The Animal Welfare Bill will make it an offence to keep an animal in such a way that suffering will be an inevitable consequence. This will enable prosecution of owners who keep animals on land where harmful weeds or plants, such as Common Ragwort, are growing, and there is a risk of ingestion. This is likely

to increase pressure on landowners and occupiers to ensure that surrounding land is kept free of ragwort, and other harmful weeds or plants, using appropriate control methods.

Options

- 8 The measures in the Weeds Act 1959 to prevent the spread of injurious weeds are applicable to “any” land without qualification. A Code of Practice that operated at this level would result in the blanket control of ragwort, which could have a detrimental effect on the environment and a significant and unsustainable impact on resources. Moreover, it is likely that ragwort populations are less prone to increase in designated areas subject to strict management measures. The aim of the Code is not to eradicate ragwort from the countryside, but to prevent the spread of ragwort to land used for horses, livestock and feed and forage production. In particular, the Code is intended to contain the spread of ragwort from low risk to high-risk areas, and therefore prevent the establishment of ragwort in high-risk areas. Where a heavy density of ragwort plants occur in a high-risk area, the complete removal of ragwort may be justified to ensure animal welfare.
- 9 The Weeds Act makes no distinctions as to the different control methods, which should be taken in respect of different categories of land. The draft Code of Practice provides the opportunity for Government to set out clearly the most appropriate methods of control that should be used depending on specific locations and land use. As a first measure, the draft Code of Practice advocates the need to encourage landowners to take preventative action to avoid the establishment of ragwort and the need for subsequent control actions by ensuring good land/pasture management in the first instance. Where control action is necessary, the draft Code of Practice sets out the different options for control: cultural, chemical and biological and the various methods available under these options. It explains clearly on which categories of land and in which circumstances the different options should be used. In particular, it sets out the circumstances under which chemical methods of control are suitable, and where these should not be permitted. In the circumstances where the use of herbicides is possible, the Code of Practice details the procedures to be followed, including the necessity for carrying out a risk assessment. By providing this information, the Code should help to prevent the inappropriate use of herbicides and encourage methods of control, which minimise any possible risks to the environment. In particular, the Code should ensure that the most appropriate methods of control are used on environmentally sensitive categories of land, and thus prevent damage to non-target species, other wildlife and natural habitats.

Environmental benefits associated with Ragwort

- 10 Common Ragwort (*Senecio jacobaea*) is a native species of the Compositae family found in many natural and semi-natural habitats. It supports many species of wildlife, including Common Broomrape (*Orobanche minor*), 14 species of fungi and many different invertebrates, such as moth caterpillars, thrips, plant bugs,

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flies, beetles and mites. With the decline in flowering plant diversity in the countryside, ragwort has assumed an increased importance as a source of food for generalist nectar feeding insects in the late summer. Ragwort is the food plant of a least 77 species of foliage eating insects, including five “Red Data Book” and eight “nationally scarce” species. The most well known is the cinnabar moth (*Tyria jacobaeae*). At least 30 species of insects are confined to ragworts, the great majority of which are confined to Common Ragwort or the closely related Hoary Ragwort (*Senecio erucifolius*). Many species of insects may be seen on ragwort flowers. Some use them as territory markers or as vantage points to find passing prey or mates. Some species prey on the other insect visitors to the flowers, some are more closely associated with the ragwort flowers, taking ragwort pollen, and more than 170 species have been recorded feeding on ragwort nectar. Such an important source of insects is exploited by birds and mammals.

Anticipated actual impact on the environment

- 11** Common Ragwort occurs widely. In 1998 it was found in 11% of pastures, 9% of road verges and 4% of field boundaries in England and Wales.¹ The practical advice contained in the Code is designated to lead to greater efficiency in controlling the spread of Common Ragwort, and reduce any risk to grazing animals. There will be a general reduction in the number of unsuccessful attempts at control. Integrated strategic control programmes are likely to develop at landscape scale. However, there is still likely to be variation in the degree of success, with much depending on local conditions (soils, climate and management) at least initially. In particular, it may take several years for significant reduction to be achieved at sites where there is a long history of ragwort where the plant is well established, with new generations appearing from the seed bank. Large populations of Common Ragwort in high-risk areas should become scarcer. Conversely, Common Ragwort could well increase generally as a result of warmer, drier, summers resulting from climate change due to Global Warming.
- 12** It will be difficult to monitor the impact of the Code on the wildlife associated with Common Ragwort, not least because of the small size of many of the associated invertebrates and the shortage of entomologists competent at recording them. Most elements of the Common Ragwort fauna are already poorly recorded. Nonetheless, a reduction in the ragwort population will result in the loss of an important nectar source, food plant and habitat for a large number of wildlife species. Local declines of the invertebrates supported by ragwort are inevitable, and some species that are wholly associated with the plant will decline. The monitoring systems for recording these changes are not in place. There is also likely to be a localised impact on invertebrates that utilise Common Ragwort as a late summer nectar supply, particularly in areas where few other plants are in flower at that time. Many of these invertebrates are mobile and will find other nectar sources if these are available. However, since the Countryside Survey has shown a continuing decline in plant diversity in grasslands including road verges it is possible that ragwort control could have a detrimental effect on invertebrate populations unless successful measures can be put in place to increase other flowering plant diversity in the countryside.

¹ Source: Countryside Survey 2000

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- 13** A reduction in the ragwort population could impact on biological control methods. The ability of the plant's natural predators to help control ragwort will be compromised if there are no populations of the plant to act as habitat reservoirs or refuges and the plants they do utilise do not persist long enough for the insects to complete their life cycles.
- 14** Given that the use of a broad-spectrum herbicide is generally the most effective means of controlling ragwort, it is possible that their use will increase, particularly on agricultural and amenity land. This might be offset to some degree if alternative more selective and cultural control methods are well presented. It is to be hoped that reference to the Code and strict compliance with statutory conditions of approval would result in all herbicides being applied in a responsible manner. However there is a risk that indiscriminate use of herbicides may occur as a result of those who either do not read the Code or label requirements, or have no regard for wider environmental considerations. Monitoring would need to be put in place to obtain data concerning any such changes in herbicide usage.
- 15** It is anticipated that there could be a negative impact on other plants which have some similarities in appearance to ragwort, due to their being misidentified as ragwort. However the prominent inclusion within the Code of suitable identification information, in particular photos and other illustrative material (see inside of front and back covers of the Code), seeks to minimise such misidentifications. We urge all users of this Code to examine these photographs to ensure that it is indeed Common Ragwort that they are considering controlling. Considerable pressure is also likely to develop on conservation organisation to control other species of ragwort as well as Common Ragwort.
- 16** Despite the recommendations in the Code for consultation in respect of control on environmentally sensitive land, it is likely that designated conservation sites and other sites with biodiversity value (e.g. road verges, brownfield sites, field margins and long-term set-aside fields) will come under increasing pressure for more rigorous control. Some of these non-designated sites have features of Site of Importance for Nature Conservation (SINC) or Site of Special Scientific Interest (SSSI) standard, and along with the protected sites may be damaged by inappropriate or ill-informed control measures.

Anticipated actual impact on animal welfare

- 17** The Code should have a major impact on animal welfare by reducing the number of animals exposed to ragwort when grazing and when consuming conserved feed and forage. It is reasonable to assume that a reduction in exposure will have a direct effect on reducing the incidence of poisoning, which should in turn reduce suffering and improve welfare. The Code will encourage horse and livestock owners to take appropriate measures to control ragwort on land within their control and to encourage control measures to be taken on neighbouring land, which poses a risk of spread.

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- 18** There is a danger that if inappropriate control measures are taken then grazing stock may be subject to a higher risk of poisoning, than they otherwise would have been if no control measures were taken: e.g. through the careless use of herbicide to control ragwort, increasing palatability with inadequate exclusion intervals, or by cutting or topping ragwort without proper removal of the cut plant, leading to poisoning through the consumption of discarded plants. The Code will provide advice on these issues and should ensure that these risks are reduced.

Costs and benefits

- 19** With regard to the financial cost of implementing the Code, this has already been discussed in the Regulatory Impact Assessment to the Ragwort Control Bill. There will be no additional Government funds available for the investigation of complaints about ragwort as a result of the draft Code, nor is there intended to be any significant overall increase in costs for land managers, but ragwort will need to be controlled where it represents an identifiable risk to animal welfare. It should be noted that new systems introduced by Defra will lead to better use of the available resources focussing on enforcement, including the issuing of on the spot enforcement notices, where appropriate. The development of strategic control policies may present some initial start up costs, but in the longer term control costs are not expected to increase, particularly as the benefits of strategic control begin to take effect. The specific requirements for different methods of control depending on the category of land and disposal methods may also initially result in an increase in control costs in some cases.
- 20** In their response to the Regulatory Impact Assessment, environmental conservation organisations raised concerns about the costs for the conservation industry in implementing the Code of Practice in as far as compliance will entail an increase in current levels of control. The conservation industry manages 398,000 hectares of land and has a financial turnover in the region of £500 million. It plays an important role in the tourist and leisure industry. Supported by some 7 million members its voluntary organisations make a very significant contribution to the nation's quality of life. The nature conservation industry already devotes considerable resources to the control of ragwort. The effect of the Code is likely to require conservation organisations to devote more time to controlling the spread of ragwort. The Code will generally increase the efficiency of efforts to bring a much higher level of success. However conservation organisations have finite resources of manpower and capital and often limited equipment and technology. Many organisations are dependent on volunteer labour. Butterfly Conservation, for example, has estimated that on a 40-50 hectares dry calcareous grassland site, a heavy emergence of ragwort might require £400–£500 of contractor's labour in one summer, plus from 3 to 10 person days of volunteer help pulling and disposing of plants. However reserve management funds are limited, as is the availability of volunteer labour for the demanding task of hand pulling (this also dwindles rapidly in some years). The knock on effect of having to devote more resources to the control of ragwort will mean that other essential work will not be done.

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- 21** A particular concern amongst conservation groups is that the public pressure surrounding the Code will compel land managers to carry out more extensive control measures than they would otherwise. The provisions of the Animal Welfare Bill could exacerbate this. There are concerns that the risks presented by ragwort on grazed nature conservation grasslands could lead to major changes in grazing regimes. These could conceivably include the abandonment of grazing on grassland and heathland sites, leading to the development of scrub and woodland which may have a consequential significant effect on biodiversity.
- 22** However, as has already been stressed it is not the intention of the Code of Practice to affect the balance of biodiversity. It should be remembered that the control of ragwort has been required long before the introduction of the Weeds Act 1959, which consolidates earlier legislation dating from 1921, without resulting in such drastic consequences.
- 23** Balanced against the concerns for the conservation industry, recent research estimates the horse industry is worth approximately £3.4 billion providing 50,000 jobs directly and up to 200,000 jobs indirectly. The cost of using chemical control to clear ragwort would cost an average horse riding stable around £10 per acre and possible around £100 per 5 acres where a contractor is employed. However, the majority of stables would probably hand pull ragwort, and therefore the true cost is in the person hours spent pulling the weed. In addition, the illness and ultimate death of a horse through ragwort poisoning, including veterinary fees, disposal and staff costs could be expected to cost around £ 1,000, with the replacement cost of the horse an additional £ 3,500 to £ 4,000, although show/competition animals could be valued at anything from £ 10,000 to £ 100,000. These figures do not include the costs of loss of business as a result of the loss or sickness of animals through ragwort poisoning. The Code will not be a statutory requirement and, the nature of the measure, makes it difficult to put a figure on the financial savings to the horse industry as result of the introduction of the Code. Any estimate of financial saving would be entirely speculative, but apart from financial considerations, there is the less tangible (but no less important) benefit of avoiding the trauma of illness and death of animals.
- 24** Aside from the financial costs and benefits, the draft Code provides the opportunity to ensure that land managers are aware of the need to take a balanced approach to the clearance of ragwort, which may have not been emphasised clearly enough in previous advice on ragwort control. The Code sets out both sides of the argument in respect of ragwort – the risks posed to animal welfare by ragwort poisoning and the contribution of ragwort to biodiversity and the environment. It provides comprehensive guidance on when, where and how to control ragwort, but pays specific attention to the needs of the environment and the countryside as part of that process. The Code should benefit the environment by ensuring that there is less damage to non-target species and by setting out clear parameters on when it is necessary to control ragwort. The horse industry should benefit from a more targeted approach to clearance of ragwort and the greater awareness amongst land managers promoted by the Code of Practice. There is also the benefit that organisations will be in a better position to defend undertaking control measures proportionate to the actual risks involved.

Arrangements for effective monitoring and evaluation

- 25** The most effective way to monitor whether the Code is successful in meeting its objective of significantly reducing ragwort poisoning would be by an accurate identification of the number of cases of ragwort poisoning. As has already been indicated above this would be very costly to achieve. The development of reliable blood testing should allow assessment of levels of sub-lethal accumulation in animal populations, but this is still some way off. However, it may be possible to set up a reporting scheme via the British Equine Veterinary Association to record confirmed and suspected cases of ragwort poisoning over a period of years. Defra already records the number of complaints about ragwort. In the immediate term the number of complaints is likely to increase as the Code will promote public awareness about ragwort. However, in the longer term these figures may serve as some indication of the success or otherwise of the Code.
- 26** As well as the effect of the Code on animal welfare, there will need to be an assessment of whether the Code makes any impact on the overall ragwort population. There will also be a need to monitor the environmental impact of the Code, particularly whether the Code results in an increased use of herbicides and avoidable damage to sites of biodiversity importance. The Countryside Survey will provide information on the ragwort population and environmental organisations will need to monitor the effect of the Code on sites of nature conservation interest.
- 27** New information from monitoring or research may justify a review of the information contained in this environmental appraisal.

**Defra,
Farm Focus Division**
June 2004

Common Ragwort look-alike plants



Great Mullein *Verbascum thapsus*
Photo: Dr Chris Gibson/Natural
England



Dark Mullein *Verbascum nigrum*
Photo: Dr Chris Gibson/Natural
England



Dark Mullein *Verbascum nigrum*
Photo: Dr Chris Gibson/Natural
England (Close-up of flowers)



Corn Marigold *Chrysanthemum
segetum* Photo: Dr Chris
Gibson/Natural England



Perennial Sow-thistle *Sonchus
arvensis* Photo: Dr Chris
Gibson/Natural England



Prickly Sow-thistle *Sonchus asper*
Photo: Dr Chris Gibson/Natural
England



Hawkweed *Hieracium* sp
Photo: Dr Chris Gibson/Natural
England



Hawkweed Ox-tongue
Picris hieracioides Photo: Dr Chris
Gibson/Natural England



Bristly Ox-tongue *Picris echioides*
Photo: Dr Chris Gibson/Natural
England (Close-up of flowers)



Beaked Hawk's-beard *Crepis
vesicaria* Photo: Dr Chris
Gibson/Natural England



Elecampane *Inula helenium*
Photo: Dr Chris Gibson/Natural
England



Cat's-ear *Hypochaeris radicata*
Photo: Dr Chris Gibson/Natural
England



Goat's-beard *Tragopogon pratensis*
Photo: Dr Chris Gibson/Natural
England



Agrimony *Agrimonia eupatoria*
Photo: Dr Chris Gibson/Natural
England

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