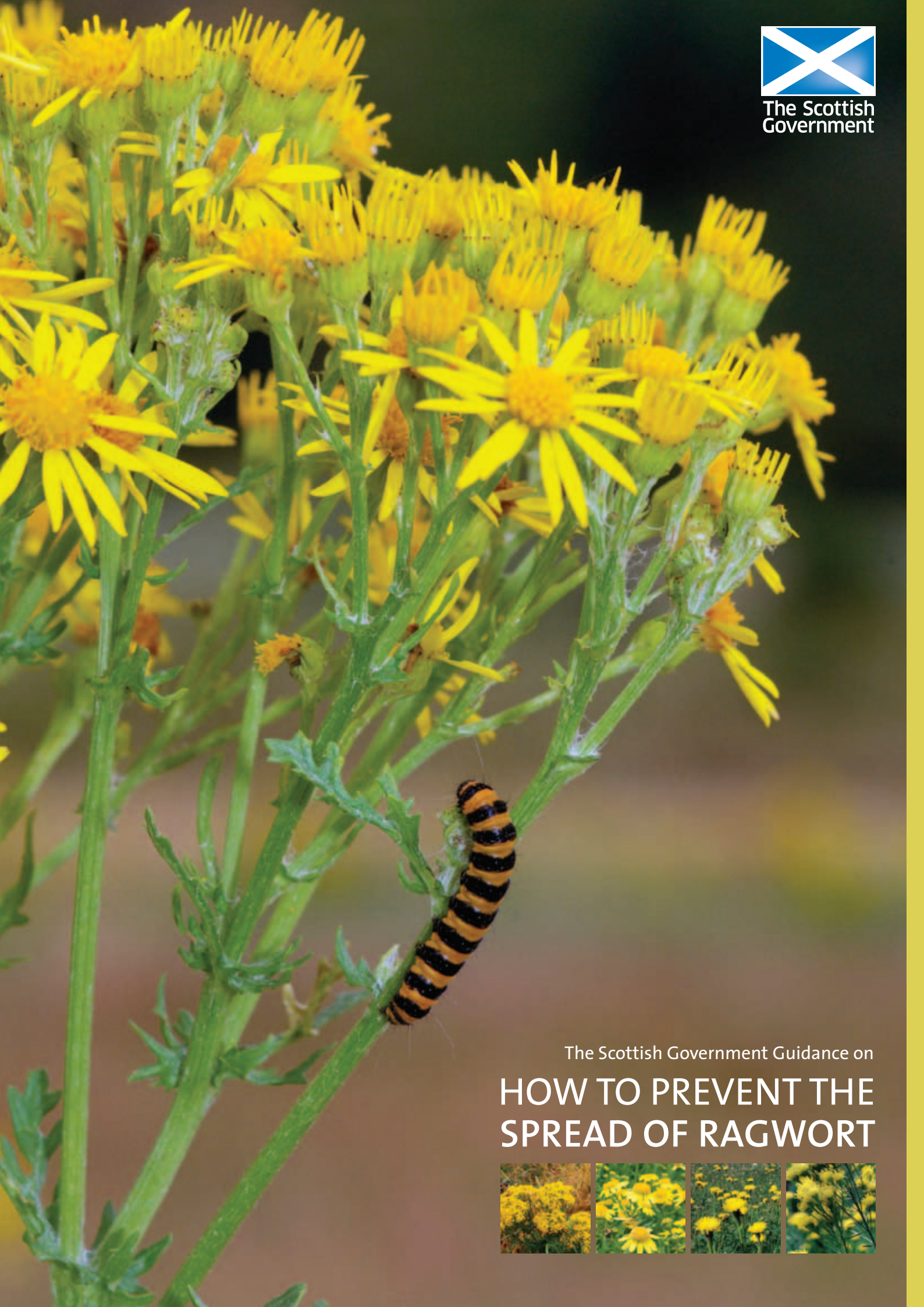
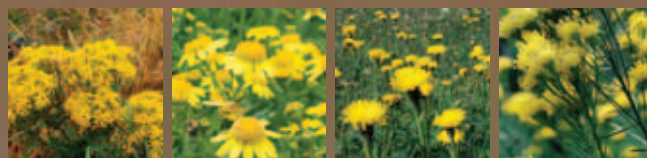




The Scottish
Government



The Scottish Government Guidance on
**HOW TO PREVENT THE
SPREAD OF RAGWORT**





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Edinburgh 2008

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Contents

	Page	Para
Introduction	1	
How to Prevent the Spread of Ragwort	3	
Scope	3	1
Aim	3	2
Introduction	3	3 - 5
Legal framework	4	6 - 8
Responsibility to control the spread of ragwort	5	9 - 11
Assessing the risk posed by ragwort	5	12 - 13
Action to be taken by owners of livestock	6	14
Action to be taken by producers of conserved forage	6	15
Action to be taken by owners/occupiers of land	6	16
Control methods	7	17
Control policies	7	18 - 21
Local control strategies	9	22
Advice	9	23 - 24
Enforcement	9	25 - 26
Appendix 1 – Grassland Management	11	
Pastures	11	1 – 5
Semi-natural and uncultivated areas	12	6 – 7
Appendix 2 – Biology and Identification	13	
Introduction	13	1
Biology	13	2 - 3
Distribution	13	4
Habitat	13	5
Other species of ragwort and similar plants	14	6
Appendix 3 – Control Techniques	17	
Introduction	17	1 - 4
Cultural control techniques	17	5
Avoiding bare ground	20	6
Pulling and levering	20	7 - 9
Cutting	20	10 - 11
Burners	20	12 - 13
Chemical control techniques	21	
Use of herbicides	21	14 - 19



Legal restrictions	21	20 – 21
Training and certification of spray operators	22	22
Restrictions on use of pesticides in or near water	22	23
Livestock	22	24 - 25
Environmental restrictions	22	26
Methods of application	23	27 - 29
Environmental safety	23	30 - 32
Biological control techniques	25	33 - 34

Appendix 4 – Particular Categories of Land **26**

Introduction	26	1
Set-aside	26	2
Organic farming	26	3
Agri-environment schemes	26	4
National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and other statutorily designated wildlife sites	26	5
Non-statutorily designated wildlife site/sites with nature conservation interest	27	6
Scheduled monuments	27	7
Common land and common grazing	27	8
Other Land used for grazing	27	9 - 10
Forage production	27	11 - 12
Amenity grassland	28	13
Roadways	28	14 - 16
Railways	28	17 - 19
Aquatic areas	28	20
Woodland and forestry	29	21
Development, waste, derelict land, land used for mineral extraction	29	22
Defence land	30	23

Appendix 5 – Disposal **31**

Introduction	31	1
Disposal options	31	2
Legal framework	31	3 - 5
Transporting ragwort	31	6
Rotting down (biodegrading) using a composting bin	33	7
Controlled burning and small scale incineration	34	8
Domestic refuse collection	35	9
Composting using a fully contained system	35	10
Biomass facility or permitted incinerator	36	11
Waste management company	36	12

Appendix 6 – Safety Guidelines

Handling ragwort plants	39	1 - 2
General operator safety	39	3 - 9
Prior authority	40	10
Use of herbicides	40	11

Appendix 7

Government Departments, Agencies and Statutory Authorities	41
--	----

Appendix 8

Useful publications	48
---------------------	----

Appendix 9

Sources of technical advice on ragwort control	50
--	----

Introduction

The aim of this guidance is to prevent and control the spread of ragwort where there is a threat to the health and welfare of animals. Particular emphasis has been placed on protecting horses whose digestive system makes them particularly vulnerable. The Guidance provides comprehensive information 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 Guidance 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.

Ragwort poisoning can be fatal in horses, as well as being damaging to other livestock. 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. Signs that a horse has been poisoned by ragwort are distressing and include haemorrhage, weight loss, loss of co-ordination, depression, seizures and coma. A horse suffering from ragwort poisoning will be very sick and may be blind and disoriented. Common 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 environment, and where there is no risk to animal welfare, ragwort contributes to the biodiversity of the flora and fauna in our countryside. A detailed study of vegetation change published in 2006 shows that the distribution of ragwort has not significantly changed over the last 20 years.

Section 38 of the Animal Health and Welfare (Scotland) Act 2006 (the Act) gives the Scottish Ministers the power to issue such guidance as they consider appropriate, with a view to securing the welfare of protected animals. An animal is a protected animal if it is of a kind which is commonly domesticated in the British Islands, under the control of man on a permanent or temporary basis, or not living in a wild state. This Guidance has been prepared to promote good practice and good neighbourliness, and aims to reduce significantly the risk of horses and livestock being poisoned. It is intended for use by all owners of horses and livestock; landowners and occupiers. It will be particularly relevant for large scale organisations managing significant land areas, including local authorities and public bodies.

The Guidance provides comprehensive information on how to develop a strategic and 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 Scottish Government would urge all landowners and land managers to work with horse and livestock owners to adopt the recommendations of this Guidance.

How to Prevent the Spread of Ragwort

Scope

- 1 This guidance applies to Common Ragwort (*Senecio jacobaea*) and all subsequent references to “ragwort” in this guidance refer to “Common Ragwort” unless otherwise specified. This guidance applies to Scotland only (although separate guidance/codes are available in England and Wales).

Aim

- 2 The guidance 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 Pyrrolizidine Alkaloids (PAs) which are highly toxic to a range of animals including horses and cattle. It can contain nine or ten different PAs which are metabolised in the liver of animals consuming ragwort, leading to severe liver damage and often death. Chronic ragwort poisoning is most common as the effects of the PAs build up in the liver over time and can often take weeks or even months for symptoms to become visible. However, poisoning can also be acute. This occurs when an animal consumes a large quantity of ragwort in a short space of time, causing death in a matter of days. Once withered as in hay or in silage, horses and cattle cannot distinguish ragwort as it loses its bitter taste, although it retains its toxicity. In silage bales PAs can diffuse out of ragwort and affect the entire mass of silage; thus a single plant in a bale of silage can be enough to poison several animals (SAC, 2005). Ragwort may also be harmful to humans, particularly where toxic plant juices on hands can contaminate food and snacks; or through direct contact via hand pulling (research on this is however, limited therefore the risk is theoretical). Research undertaken for the UK 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 guidance does not seek to eradicate ragwort. Ragwort, as a native plant is very important for wildlife in the UK. It supports many species of wildlife, including Common Broomrape (*Orobancha minor*), 14 species of fungi and many different invertebrates, such as moth caterpillars, thrips, plant bugs, flies, beetles and mites. With the decline in flowering plant diversity in the countryside, ragwort has assumed an increasing importance as a source of food for generalist nectar feeding insects in the late summer. Ragwort is the food plant of at 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 jacobaea*). At least 30 species of insects are confined to ragwort, 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. 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 it 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 (**see paragraph 13**).

- 5 Ragwort is normally a biennial plant, present as a rosette close to the ground in Spring of its first year then growing upwards and flowering during Summer of its second year. However, cutting or topping ragwort may alter the plant's lifecycle and result in it being present as a perennial. It 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.

Legal framework

- 6 Under the Weeds Act 1959 the Scottish Ministers, 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 to¹:

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

The Rural Payments and Inspections Directorate of The Scottish Government 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 provisions of the Weeds Act 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, are protected. It is important to make correct identification of ragwort before considering any control measures. Where ragwort is identified on land protected through environmental or ecological designation or by means of other land management agreements, the required obligations and restrictions must also be fully considered and discussed with the appropriate authorities (**see appendix 4**) before control action is initiated.
- 8 Section 38 of the Act gives the Scottish Ministers the powers to issue such guidance as they consider appropriate, with a view to securing the welfare of protected animals.

¹ The Scottish Ministers are empowered to add to this list if necessary

Responsibility 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 in any particular area it is expected that all adjacent 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. Where it is impossible to obtain co-operation the issue should be referred to the local Scottish Government Rural Payments and Inspections Directorate Area Office.
- 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 ragwort establishing itself. In amenity areas, road 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 areas and waste ground, should be vigilant for the presence of ragwort. A notice under the Weeds Act 1959 can be served on landowners or land occupiers requiring them to control infestations of ragwort to prevent them spreading. Particular vigilance is required 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 or 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 or 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 or 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, shelter belts and natural barriers. 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.

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 over grazed (**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
- notify neighbouring land occupiers where there is risk of ragwort poisoning
- 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**)
- cleared ragwort plants should be disposed of in an approved manner (**see appendix 5**)
- follow safety guidelines (**see appendix 6**)
- regularly monitor the impact of control 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 most 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 there is a dense infestation that 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 railways is concerned. Control techniques are considered in more detail at Appendix 3.

Control policies

18 Where a medium or high risk has been identified, owners/occupiers and managers of land (including private and public land, roads, 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, the size and nature of the estate makes frequent inspections difficult. However, the relevant area managers should be encouraged to build up records of ragwort outbreaks using information gathered from site inspections, ad-hoc visits and public observations; to help formulate a strategy for targeted action with the initial focus on ragwort 'hot-spots' where the potential risk posed to grazing animals or forage production is assessed as being high. Where ragwort is present in areas that will cause a high risk (**see paragraph 13**) 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

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 & 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	*	**	**	**	21(2)	1-2	1	F	***	***	Only tall ragwort plants will be effected.
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 & 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 paragraph 24 and 25 of Appendix 3.

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

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**) 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 native fauna which feed on the plant and which may assist in the control process. Such groups could agree a way forward on ragwort control which would be endorsed by all parties.

Advice

- 23 The Scottish Government and UK Government have produced a range of guidance on the Weeds Act, which is listed in 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, e.g. Transport Scotland, Local Authorities, Network Rail, British Waterways Scotland, Scottish Natural Heritage, the National Trust for Scotland, Forestry Commission Scotland and Ministry of Defence etc. (**see appendix 7**).

Enforcement

- 25 The Rural Payments and Inspections Directorate can take enforcement action under the Weeds Act where ragwort poses a high risk to horses, 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 the Rural Payments and Inspections Directorate. Organisations that control or own land are listed in Table 2.

Table 2 - Organisations that own and/or control land

Location	Owner/Occupier
Private & commercial property & land & private roads	Owner/Occupier
Agricultural land & land used for livestock other than animals kept for non-agricultural business or recreational purposes	Owner/Occupier
Motorways & trunk roads	Transport Scotland
All other public roads	Local Roads Authority
Railway land	Network Rail
Canals & Towpaths	British Waterways Scotland
Site of Special Scientific Interest (SSSI)	Scottish Natural Heritage/Owner/Occupier
National Nature Reserves/Natura 2000	Scottish Natural Heritage/Owner/Occupier
Local Nature Reserves	Local Authority/Occupier
Common Areas/Common land	Local Authority/Owner
Ministry of Defence land	MoD
Development land	Owner/Occupier
Local Authority land	Local Authority
Private Woodland/Forestry	Owner/Occupier
Forestry (Forestry Commission Scotland)	Forestry Commission Scotland

- 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 Guidance, the Rural Payments and Inspections Directorate should be notified (**see appendix 7**).

Pastures

- 1 Pasture management plays a crucial role in preventing the establishment and spread of ragwort. It is not possible in guidance of this nature to provide comprehensive information on pasture management. Best practice varies according to specific circumstances, e.g. in relation to managed grassland or unimproved semi-natural grassland.
- 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.

Semi-natural and uncultivated 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 intending to use uncultivated or semi-natural land² for intensive farming purposes³ must first obtain a screening decision on the proposal from the Scottish Ministers under provisions of the Environmental Impact Assessment (Agriculture) (Scotland) Regulations 2006. Similarly, you must obtain a screening decision for projects involving the restructuring of rural land holdings on agricultural land⁴ to be carried out in a sensitive area (as defined by the Regulations), or which exceeds the threshold applicable to the project determined by the regulations. The screening decision determines whether the project is likely to be one that has significant effect on the environment and, if so, the requirement for the applicant to include an environmental statement in the application to the Scottish Ministers for consent for the project. Information, guidance and other documents can be found at The Scottish Government web-site <http://www.scotland.gov.uk/topics/agriculture/environment/16808/7217>. Further information and technical advice can be obtained from the local Rural Payments and Inspections Directorate Area or Sub-Area Offices (**see appendix 7**).

2 For example: unimproved grassland, heath and moorland, or scrubland and wetlands

3 This includes cultivation, drainage works. Increased applications of fertilisers, etc.

4 Examples of restructuring projects may include amalgamating or splitting of field boundaries, drainage works, land reclamation, modification of watercourses, re-contouring etc.

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. Once in the soil seeds can lie dormant for several years before germinating.

Biology

- 2 Common Ragwort is normally 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. Poor quality and poorly managed horse pastures are particularly susceptible to high densities of ragwort.

Habitat

- 5 Common Ragwort can be found over a large range of soil types and climatic conditions, it 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 Whilst only the more frequently found Common Ragwort is subject to the provisions of the Weeds Act, there are other members of the same native species family which can cause some identification problems. 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.



Marsh Ragwort
Senecio aquaticus



Oxford Ragwort
Senecio squalidus



Hoary Ragwort
Senecio erucifolius

Common Ragwort



Common Ragwort look-alike Plants



Field fleawort
Tephrosia integrifolia



Yellow Loosestrife
Lysimachia vulgaris



Tansy
Tanacetum vulgare



Goldenrod
Solidago virgaurea



Fleabane
Pulicaria vulgaris



Agrimonies
Agrimonia spp.



St. John's worts
Hypericum spp.



Mulleins
Verbascum spp.



Heath Groundsel
Senecio sylvaticus



Sow Thistles
Sonchus spp.



Hawkweeds
Hieracium spp.



Elecampane
Inula helenium



Hawk's beards
Crepis spp.



Ox's tongues
Picris spp.

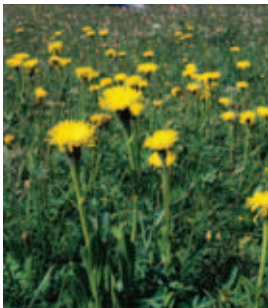
Common Ragwort look-alike Plants (continued)



Hawkbits
Leontodon spp.



Goatsbeard
Tragopogon pratensis



Cat's ears
Hypochaeris spp.



Goldilocks aster
Aster linosyris

Rare Ragwort Species



Fen Ragwort
Senecio paludosus

Welsh Groundsel
Senecio cambrensis

York Groundsel
Senecio eboracensis

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**).
- 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 must not be undertaken.

CULTURAL CONTROL TECHNIQUES

- 5 Several cultural methods can be used to prevent the spread of ragwort including the general avoidance of bare ground areas, pulling/levering, cutting, and the use of burners. Figure 2 will assist with selecting the most appropriate method of cultural control.



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

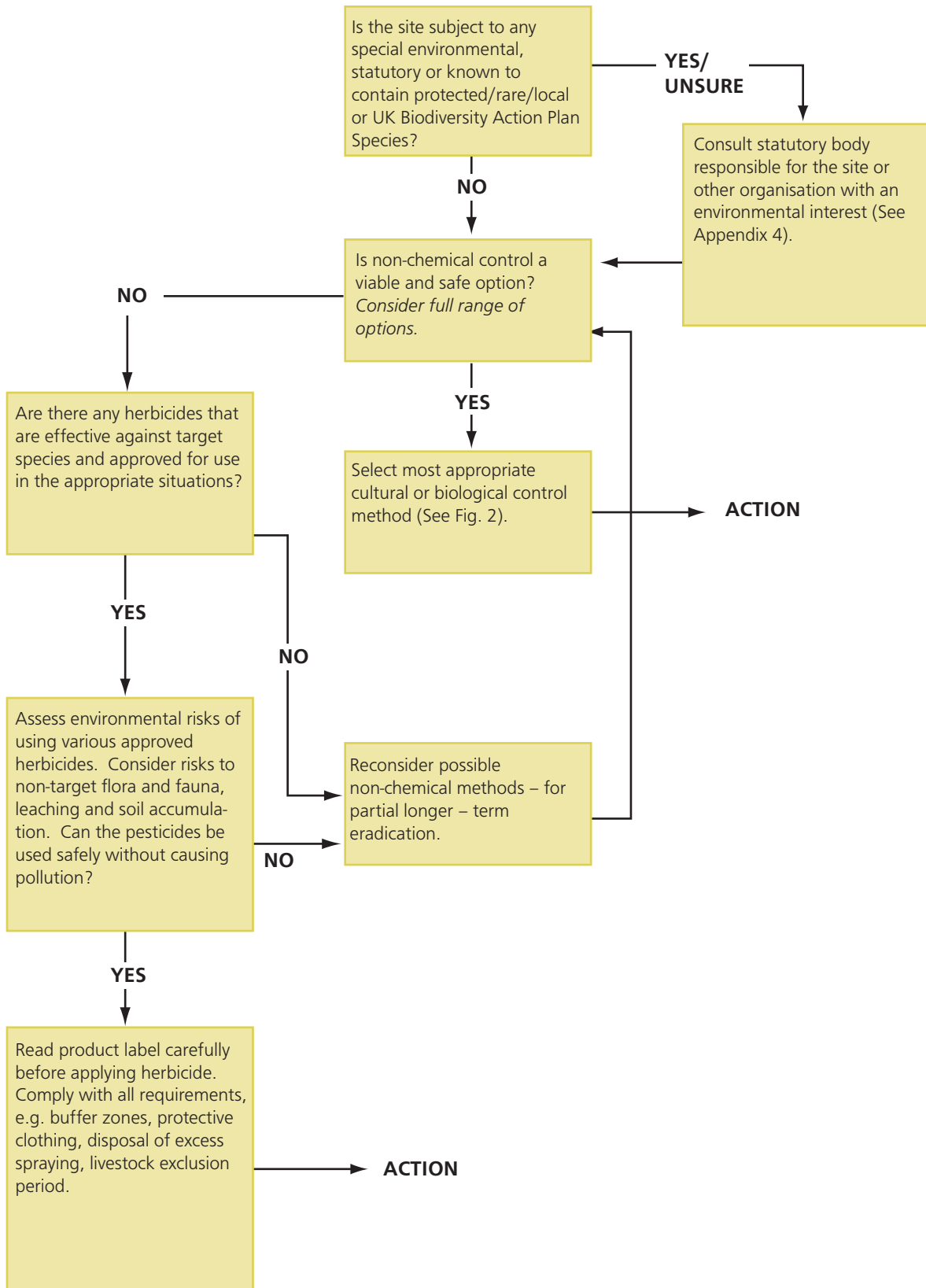
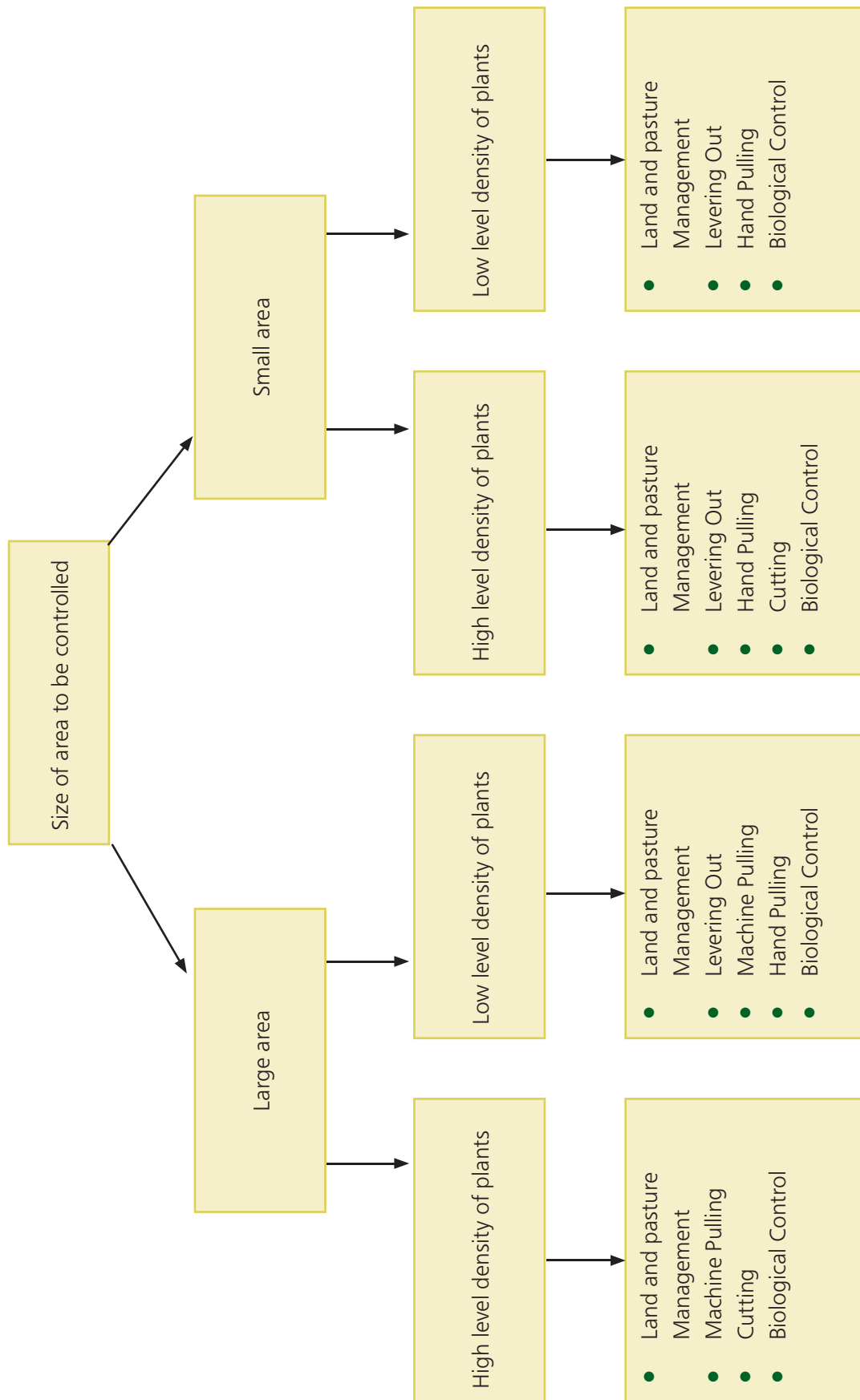


Figure 2. Selecting the Most Appropriate Cultural and Biological Control According to Size of Area and Level of Density of Plants



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.

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 Ragwort is an injurious weed and consequently all operatives involved in handling the plant must have received the appropriate instruction for the task and must be supplied with the appropriate type of personal protective equipment (**see appendix 6**).
- 9 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

- 10 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.
- 11 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

- 12 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.
- 13 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 CONTROL TECHNIQUES

Use of herbicides

- 14 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. Where a herbicide cannot be used safely an alternative control method should be used. Risk assessments should also consider the likely ecological impacts of taking no action, which can sometimes outweigh any negative effects of a herbicide treatment. Widespread spraying with herbicide is not recommended. Use of herbicide should be a last resort and carefully targeted.
- 15 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.
- 16 Only herbicides and uses approved under the Control of Pesticides Regulations 1986 (as amended) or the Plant Protection Products (Scotland) Regulations 2005 (as amended) 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. It is important to keep records of any herbicide used.
- 17 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.
- 18 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.
- 19 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

- 20 The advertisement, sale, supply and use of agricultural pesticides are regulated by Part III of the Food and Environment Protection Act 1985, the Control of Pesticides Regulations 1986 (as amended), the Plant Protection Products (Basic Conditions) Regulations 1997,

and the Health and Safety at Work Etc Act 1974. These are supplemented by two statutory codes: the Code of Practice for using Plant Protection Products in Scotland (available on The Scottish Government website: www.scotland.gov.uk) and the Code of Practice for Suppliers of Pesticides to Agriculture, Horticulture and Forestry (available on the Pesticides Safety Directorate website at www.pesticides.gov.uk).

- 21 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. (Further information on COSHH is available on the Health and Safety Executive website at www.hse.gov.uk)

Training and certification of spray operators

- 22 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 using Plant Protection Products and the legislation in force in Scotland.

Restrictions on use of pesticides in or near water

- 23 Regulations made under the Food and Environment Protection Act 1985 control the use of herbicides/pesticides where pollution of water might occur. Further guidance on preventing contamination of surface water and groundwater can be found in the Code of Practice for using Plant Protection Products in Scotland.

Livestock

- 24 Any period of time when animals need to be kept away from the treated area will be specified on the product label. Make sure you follow this instruction.
- 25 Some poisonous weeds, such as ragwort, can become more attractive to grazing animals after they have been treated with herbicides. It is important to keep horses and livestock out of treated areas until the weeds have died and completely disappeared, whether or not the product label of the herbicide used says that livestock have to be kept off the land for a set period.

Environmental restrictions

- 26 The use of herbicides to control ragwort will affect other plant species within the treated area. Areas protected by legislation, e.g. SSSIs, Natura 2000 sites and agri-environment schemes, also restrict the use of certain chemicals and the relevant authority should be consulted prior to operations (**see appendix 4**).

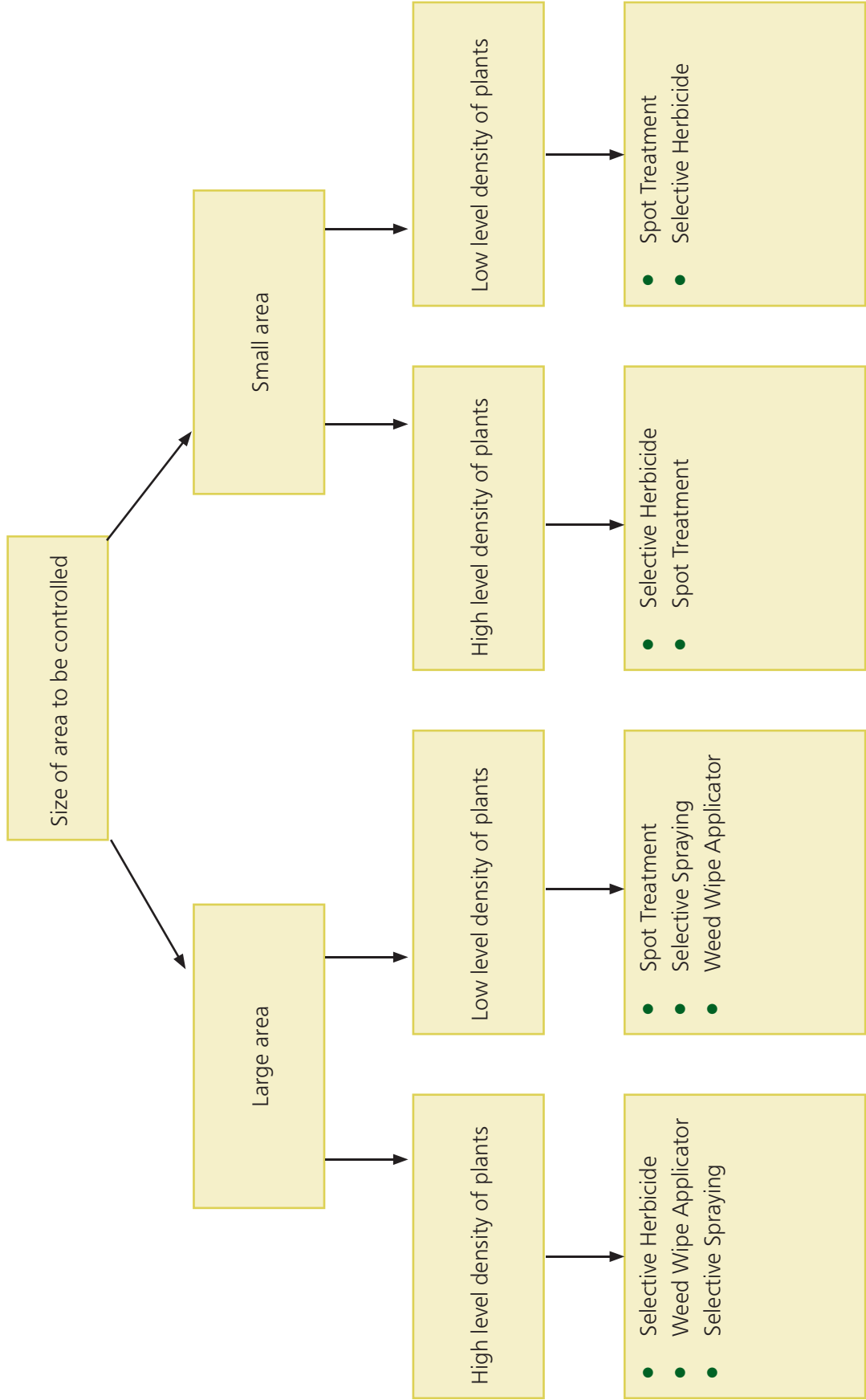
Methods of application

- 27 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 type of herbicide used and the method of application will be influenced by:
- the extent, distribution and location 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
- 28 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.
- 29 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 may be more suitable for larger areas of relatively even ground but are, by their nature, more indiscriminate in coverage than hand-held sprayers and may not be appropriate for all situations.

Environmental safety

- 30 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.)
- 31 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
- 32 Figure 3 will assist with selecting the most appropriate method of chemical control.

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



BIOLOGICAL CONTROL TECHNIQUES

- 33 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. Many species feed on ragwort including; cinnabar moth (*Tyria jacobaea*), ragwort flea beetle (*Longitarsus jacobaea*) and ragwort seedfly (*Pegohylemia seneciella*). High densities or "plague levels" of cinnabar moths in particular, can destroy complete ragwort populations. However the natural spread of these species might not always be as wide-ranging as that of ragwort. Other potential biological control agents include several fungal pathogens (rust diseases) but none of these significantly reduce ragwort populations.
- 34 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 Scottish Natural Heritage (SNH) before this technique is used within SSSIs, Natura 2000 sites and other areas protected by environmental or ecological designation. For SSSI's, Natura 2000 Sites and other areas protected by environmental or ecological designation the local SNH Area office should be contacted for further information before this technique is used.

Introduction

- 1 Where land has a special designation and 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 relevant authority. In the case where an area of land falls within more than one category, broad liaison will be necessary and 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 Farm Payment Scheme Information Leaflet 6 on Set-Aside land issued by us in late 2004.

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 include the Environmentally Sensitive Areas Scheme, Countryside Premium Schemes, Habitat Scheme, Scotland Rural Development Programme and the Rural Stewardship Scheme. Participants in the Rural Stewardship Scheme must ensure that any injurious weeds to which the Weeds Act 1959 applies are controlled to prevent their spread and to avoid risk of damage to the conservation interest of any habitat or feature on the unit. Injurious weeds are not only considered to be a potentially serious threat to agricultural production but, if allowed to spread into areas of conservation interest, may reduce the diversity of species within these sites and cause a deterioration in the value of the landscape.

National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI), Natura 2000 sites and other statutorily designated natural heritage 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 natural heritage sites such as Natura sites, National Nature Reserves and SSSI. Some species of ragwort are rare. Where management of plant life is crucial to the ecology of designated sites, weed control, including the control of Common Ragwort, may be potentially damaging to the nature conservation interests of the site. For SSSI or Natura 2000 Sites the local SNH Area office should be contacted for further information before proceeding.

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)

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

Scheduled monuments

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

Common land and common grazing

- 8 Common land and common grazing 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 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, Grazing Committee and/or the person entitled to the occupation of the 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 and common grazing may also be subject to environmental designation, it may be helpful to refer to paragraph 5.

Other land used for grazing

- 9 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.
- 10 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

- 11 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.
- 12 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 that is

found, or discovered as a result of analysis, to be unwholesome for or dangerous to any farmed animal, companion 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

- 13 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.

Roadways

- 14 Ragwort is frequently found growing by the side of roads; whether motorways, trunk roads, other public roads or 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 adjacent grazing animals and/or feed/forage production, it must be controlled. The nature of a road corridor is such that it can often act as a conduit for the spread of ragwort, regardless of whether the seed source originated within or outwith the road boundary.
- 15 The control of roadside vegetation including Common Ragwort is the responsibility of Transport Scotland in the case of motorways and other trunk roads, and the Local Authority in respect of all other public roads. Private roads are the responsibility of whoever owns them. Control of ragwort within the boundary of public roads should only be undertaken by appropriately trained and qualified persons. Such persons must 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.
- 16 Particular problems may arise where road improvements or other disturbances of the road verge have occurred and bare ground is exposed. Where practicable, the existing grass sward can be removed and properly stored as turves before being replaced when the works have been completed, resulting in much less bare ground for ragwort to colonise. Seeding measures should be followed up by several mowings during the first year which would promote growth of the desired vegetative sward and reduce growth of ragwort.

Railways

- 17 Ragwort can be found growing by the side of railway lines and, due to the size and broad spread of the railway network, can pose a risk of contaminating adjacent 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.

- 18 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.
- 19 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. The work is often co-ordinated with other activities in order to avoid excessive costs and inconvenience to passengers. Due to the potential high risk to personnel working adjacent to railway lines Network Rail have very strict Health and Safety procedures in place to which all operatives must conform, to ensure their own safety as well as the safe running of the railway. This may require temporary track closures or other forms of phased working linked with reduced services. Personnel involved must also ensure they do not contravene environmental legislation in the course of undertaking weed clearance works. If there are concerns about ragwort on railway land the first action should be for discussions to be held with Network Rail in order to determine what would be a reasonable period of time for clearance work to be carried out, before making a complaint to the Rural Payments and Inspections Directorate.

Aquatic areas

- 20 Land immediately adjacent to water (this includes rivers, streams, canals, side ponds/ side canals, ponds, reservoirs and lochs) can be a source of ragwort, in particular the rarer species, such as Fen Ragwort, which flourishes in damp conditions. Where ragwort is present on land adjacent to waterways and where its spread poses a high risk to grazing animals including the spread of seeds downstream, and/or feed/forage production, it must be controlled. However, care must be taken to distinguish 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 Scottish Environment Protection Agency must be notified prior to use of approved herbicides/ pesticides in or near water. Downstream and other adjacent riparian owners should also be consulted when pesticides are applied near water.

Woodland and forestry

- 21 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 areas, waste ground, derelict land, and land used for mineral extraction

- 22 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

- 23 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 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 to animal welfare has been assessed (**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.

Introduction

- 1 The safe and effective disposal of ragwort is an important part of ragwort control. Disposing of ragwort responsibly reduces the risk of further spread by seed dispersal and regrowth from root sections. **Early and effective control of ragwort will minimise the problems of disposal.**

Disposal options

- 2 The options for disposal will depend on the amount of ragwort to be disposed of, the type of site, and local resources available. Whenever practicable, ragwort should be disposed of on site. This will reduce the inadvertent spreading of seeds during transport. Options for disposal include: composting; incineration; controlled burning and landfill.

Legal framework

- 3 Regulations for agricultural waste⁵ mean that unwanted agricultural waste (this includes ragwort from all farmland, or from land used for keeping horses and ponies) now comes within the definition of commercial waste. This means that it must comply with Waste Management Regulations⁶.
- 4 Waste Management Regulations can require waste disposal sites to apply for a Waste Management Licence (WML). With on-site disposal of ragwort plant matter, it is likely that an exemption to having a WML can be gained. Advice should be sought from the Scottish Environment Protection Agency (SEPA) on the requirement for licensing and registering an exemption from licensing. On-site disposal facilities for large quantities of plant matter may require planning permission; check with your Local Authority.
- 5 It is unlikely that the incineration of the plant will fall within the terms of the Pollution Prevention and Control (PPC) Regulations⁷ and require a permit to operate. Contact SEPA for advice and permitting. A plant that has a PPC permit may not require a WML. **Note:** Waste Management Regulations do not apply to waste from domestic properties.

6 TRANSPORTING RAGWORT

Ragwort is able to set seed even after being pulled, dug or cut and therefore there is a high risk of seed dispersal to neighbouring land during transportation. To avoid seed dispersal ragwort **should only** be transported in sealed bags or enclosed containers. Where the plants are bulky, they can be cut up to assist packing. To avoid unnecessary seed dispersal, seed heads should be cut off first and packed.

5 Waste (Scotland) Regulations 2005

6 Waste Management Licensing Regulations 1994 (as amended)

7 Pollution Prevention & Control (Scotland) Regulations 2000 (as amended).

Ragwort

- Remains toxic when sprayed, cut, dug or pulled
- Once cut, the flower can set seed
- Seeds remain viable and can be easily dispersed
- In its fresh state (un-wilted) is difficult to burn
- Is bulky to transport
- Can only be composted in controlled conditions
- Should only be transported in sealed bags/containers

Key Pointers

Do

- Think through the options for disposal at the same time as planning the control system
- Select on-site disposal where possible
- Select the most appropriate disposal option
- Always use gloves and clothing that covers exposed skin, e.g. arms and legs
- Minimise the risks of exposure to pollen and other airborne particles by wearing a suitable facemask
- Wash exposed skin thoroughly after handling material and before eating
- Ensure that any contractors hired for the disposal are properly registered and/or licensed (check with SEPA)

Don't

- Bury in manure heaps
- Use as animal bedding
- Dig, bury or plough into the ground
- Attempt to dry ragwort where animals may gain access to it
- Allow the liquid from decomposing ragwort to drain directly to any ditch, drain or watercourse
- Cause dark smoke by attempting to burn wet ragwort, or by using other flammable materials that may directly cause dark smoke, (e.g. rubber or plastics)⁸
- Allow seed dispersal from plant residues that are awaiting disposal
- Transport ragwort unnecessarily
- Transport ragwort unless it is in sealed bags or containers

⁸ Prevention of Environmental Pollution From Agricultural Activity (PEPFAA) Code of Good Practice

7 Rotting down (biodegrading) using a compost bin

NB: This does not constitute composting.

When to use this option

- For disposing of small quantities where ragwort can be safely rotted down on-site.

The capacity of standard compost bins is limited and they are only suitable for small-scale disposal. In compost bins the ragwort material is biodegraded by the combined process of rotting down and composting.

What is required

A proprietary, rigid-type plastic compost bin or similar, with lid, such as available from a garden centre.

Where to site it

The compost bin should be located away from any ditch, watercourse, or area where animals may have access to it.

How to go about it

The ground should be levelled where the compost bin is sited. The earth should be loosened so that earthworms, insects and micro-organisms can move into material and any liquid can drain and disperse to the soil.

If the material is collected in plastic sacks, these must be emptied into the compost bin directly. If paper sacks are used, these could be loaded into the compost bin and should be sliced and consolidated to increase the rate of biodegradation. The residues should be covered with a layer of grass clippings to help start the biodegradation process and help prevent the material drying out. If the process dries out, then there is the risk that some seeds or root material may not be destroyed and may lie dormant. Sufficient water should be added to keep the residues moist. However, there is still a risk of spreading viable material when the compost bin is emptied. The risks can be reduced by allowing the rotting down to continue for up to 12 months retention in the compost bin, during which time no fresh material should be added. If there are any concerns about the residues they should be transported to landfill. For advice please check with your Local Authority.

8 Controlled burning and small scale incineration

When to use this option

For disposing of small quantities where ragwort can be safely wilted prior to burning/incineration.

The secure storage and controlled burning of less than 10 tonnes per day of plant matter may be allowed under an exemption from SEPA under the Waste Management Licensing Regulations. **An exemption is not required for domestic sites.**

An exemption is allowed under the Regulations above provided waste disposal is undertaken by the owner at the site where it was generated and is from agricultural premises or other relevant land including railway land, forest, woodland and recreational land.

Small scale incineration using a recognised device is preferable to open burning as it provides a greater degree of control and is less likely to cause dark smoke or a public nuisance. It is suitable where ragwort is collected in paper sacks and can be directed sufficiently so that it will burn. It is also suitable for ragwort that has been deflowered and wilted.

Weather conditions (especially wind direction) must be taken into account with due consideration for neighbouring ground cover, combustible vegetation, buildings and housing. Causing nuisance from smoke and deposits from bonfires is an offence⁹.

Who can do this

Domestic

You should check with your Local Authority as some Local Authorities have bylaws prohibiting the burning of garden waste.

Non-Domestic

You should contact SEPA to register an exemption to use this option where the disposal rate is less than 10 tonnes per day¹⁰.

When burning or incinerating, various precautions need to be taken to reduce fire risks especially in regard to siting and supervision.

What is required

A proprietary small-scale incinerator; with a lid complete with chimney or flue and a secure area where the risks of the fire, smoke, or residues from the fire will have minimal impact on the environment and neighbours.

Where to site it

The incinerator should be located away from any ditch, watercourse or area where animals are kept. It must be well away from any fuel tanks, gas storage cylinders, buildings, domestic property or road.

Due consideration must be taken to avoid nuisance and risk to others.

⁹ Environmental Protection Act 1990 Part III – section 79

¹⁰ The Waste Management Licensing Regulations 1994 (as amended)

How to go about it

The aim is to provide a two stage process: firstly, the storage and drying of the sacks of ragwort, and secondly, to burn the material within the heart of the fire or incinerator. Using paper sacks will allow some wilting to take place. Plastic sacks should not be used for wilting and should not be burnt.

For small quantities, bags can be stored in the incinerator and when dried could then be burnt. For larger quantities the ragwort will need to be wilted under cover before burning. Steps should be taken to minimise the risk that seed will set and disperse during drying. This can be achieved by deflowering the ragwort plants prior to wilting, and sealing the seed heads in bags prior to incineration or landfill.

The addition of straw, dry brushwood or hedge trimmings will help the fire to burn. Where an incinerator is used the sacks of plant residue should be loaded into the incinerator only one at a time, and the flue/lid replaced each time. This will draw the exhaust smoke and gases and help maintain the temperature. From time to time, more dry brushwood or hedge clippings should be added to maintain the heat of the fire.

9 Domestic refuse collection

When to use this option

On domestic premises, for small amounts of ragwort which can be disposed of in domestic refuse subject to Local Authority approval.

How to go about it

For a small amount of ragwort arising on domestic premises, sealing the ragwort plant in a double layer plastic sack for collection, or placing it into a refuse wheelie-bin for collection as domestic refuse, may be acceptable. Check with your Local Authority¹¹. To avoid bulk, plants can be cut up to assist packing. To avoid seed dispersal, seed heads should be cut off first and packed.

Where the Local Authority provides a 'Green Waste Collection', ragwort should not be mixed with the 'Green Waste', unless the Local Authority permits its inclusion. This is because some composting facilities may not have the necessary resources and procedures in place for handling ragwort. Check with your Local Authority.

10 Composting using a fully contained system

When to use this option

For disposing of ragwort where on-site or off-site facilities and expertise is available to compost ragwort or green waste containing ragwort to the British Standard PAS 100:2005¹². Composting of ragwort should only be carried out where British Standard PAS 100:2005 or equivalent can be met. This will ensure that all material is composted effectively. Where there are any concerns that this standard cannot be met, then the residues should be disposed to landfill. Composting sites need to be registered with SEPA for an exemption from the need to hold a Waste Management Licence¹³. Please contact SEPA for advice.

11 <http://www.direct.gov.uk>

12 PAS 100:2005 Specification for composted materials (BSI)

13 The Waste Management Licensing Regulations 1994 (as amended)

What is required

A fenced off area, goods-yard, compound, or enclosed building and a structure that enables the containment of any liquids that may drain from being affected by rain or by wind. The combination of enclosure and containment should provide security to prevent unauthorised access.

Where to site it

Such a system should be sited at least 10 metres from any watercourse, including rivers, streams, canals, side ponds/side canals, ponds, reservoirs or lochs and it should be away from animals.

How to go about it

Please see British Standard PAS 100: 2005 specification for composted materials which can be obtained from the WRAP organisation; email: helpline@wrap.org.uk or telephone: 0808 1002040.

11 Biomass facility or permitted incinerator

When to use this option

Some farms, nurseries and rural estates may have their own solid fuel-fired boiler. Such systems are commonly fuelled by straw bales, woodchip, coppiced wood, and other forms of biomass, e.g. Miscanthus (elephant grass). Such solid fuel burners may be utilised for ragwort disposal where residues are the property of the boiler owner and is located on the same land. Those wishing to dispose of ragwort via a biomass facility should contact SEPA to establish whether a waste exemption or licence is required.

Where ragwort disposal is for a third party, a waste transfer note would be needed.

Where the ragwort material has been dried and then baled after cutting as part of a pasture topping exercise, then such biomass fuelled boilers may be ideal. The size of the combustion chamber and means of loading should be carefully considered. The risks and precautions required during the storage of the baled material should also be thought through.

Incinerators are purely for the disposal of specified waste materials, e.g. proprietary designed and permitted farm-type small scale carcass cremators.

12 Waste management company

For large scale disposal where on-site disposal is not possible.

Using a waste management company is ideal when there is a large quantity of ragwort to be disposed of or where other options are not available. Disposing of material this way means that it is removed professionally and disposed of legally.

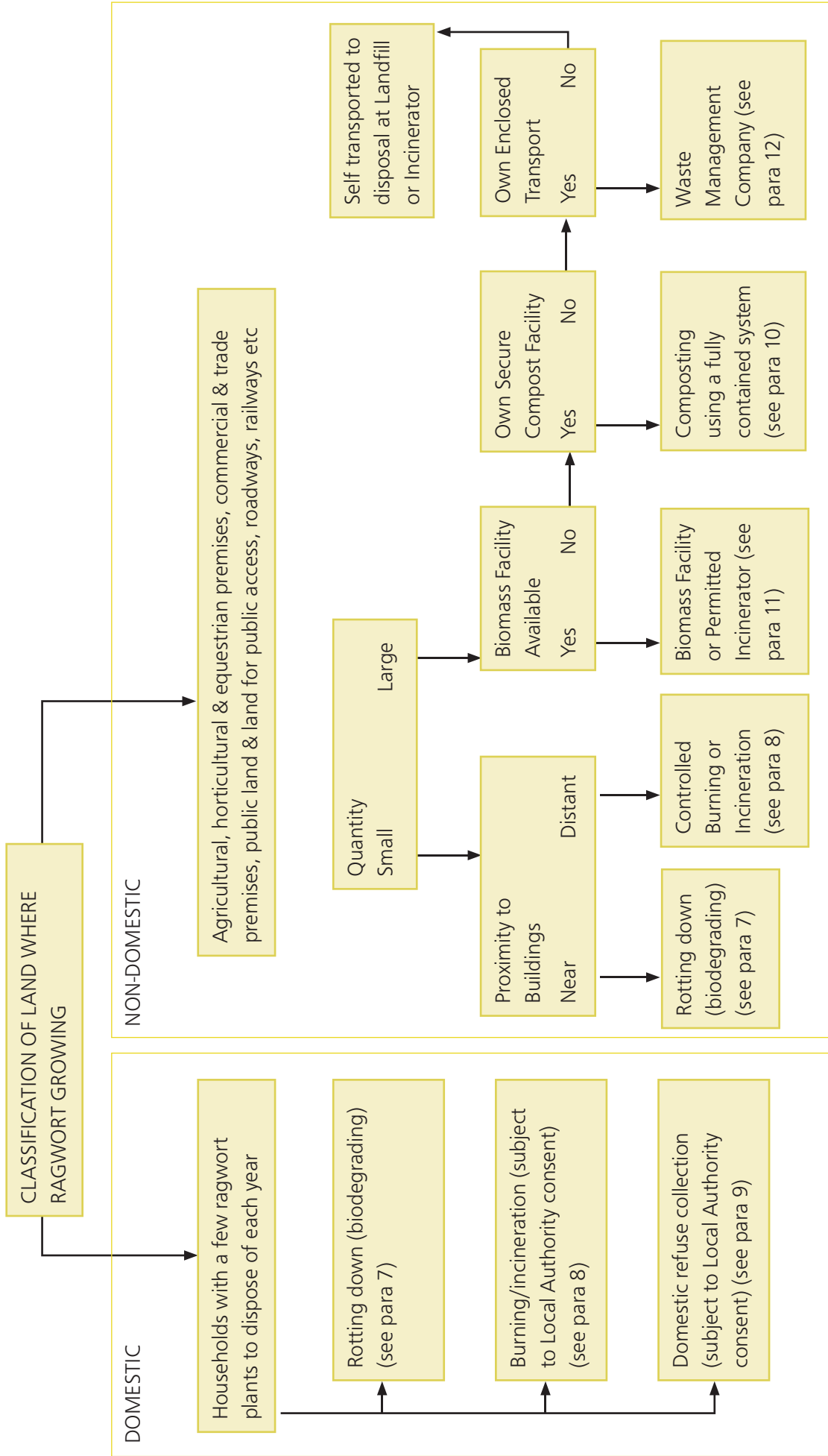
The waste management company removing the ragwort should provide either a wheeled or bulk container (a lidded skip or roll-on hook lift container) or otherwise a refuse collection vehicle with containment or enclosed compactor mechanism. Open skips **should not** be used.

It should be noted that where the sole purpose or intent is to dispose of waste, then any such material **should not** be transferred to a third party for disposal unless they are a bona fide registered and licensed waste contractor, and the facility is similarly licensed.

How to do this

Use the Yellow Pages or trade directory to find a waste management company. Alternatively, your local waste management officer at the Local Authority may be able to advise of suitable contractors. The contractor/waste management company must be registered with SEPA. You should contact SEPA to check that the contractor is suitably registered.

Decision tree to help select the most appropriate disposal option



Handling ragwort plants

- 1 Ragwort is a toxic plant and suitable precautions must be taken when handling both live and dead plants. Hands must be protected by wearing sturdy, waterproof, gardening-type gloves. Arms and legs should also be covered. A facemask¹⁴ should be used to avoid the inhalation of ragwort pollen or other airborne particles.
- 2 If skin comes into contact with ragwort the area should be thoroughly washed in warm soapy water, rinsed and dried.

General 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 verges on roads open to the general public. Volunteers are not permitted to operate on land within the trunk road boundary or land managed by Network Rail or other railway operators.
- 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 road, pathway or cycle track, it is essential that operators can be seen by other users. All operators must wear high visibility clothing and generally work facing the traffic as far as practicable. An appropriate level of road safety training must be provided to all operatives 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 road or other public right of way.

¹⁴ Health & Safety Executive recommends using a half face mask particle respirator conforming to BSE EN 149:2001, to a minimum FFP2 (Filter Face Piece) filter classification providing a protection factor of level 10. It could be, of course that an FFP1 filter classification providing a protection factor of level 4, would suffice on some occasions, when high levels of particles are not anticipated (eg background levels), but in case of ragwort eradication, particularly if by mechanical means, such as strimming, then a minimum of FFP2 is recommended.

- 8 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 relevant Trunk Road Operating Company prior to being erected or works beginning.
- 9 On high-speed dual carriageways and motorways where the speed limit exceeds 50 mph, special traffic management requirements may be required as determined by the trunk road authority, Transport Scotland, and the relevant trunk road Operating Company.

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. community council, town council, local authority or other public body
- Public local roads, i.e. roadside verges - clearance should only be undertaken with the prior notification and authority of the relevant road authority, i.e. normally the Roads Department of the Local Authority
- Trunk roads including motorways - these are the responsibility of Transport Scotland
- Railway land – this is the responsibility of the railway undertaker concerned which in Scotland would be Network Rail. 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) Regulations 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 and threaten the local environment. 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 deemed appropriate and necessary by risk assessment, e.g. substitution of the product (by a less hazardous one), engineering controls etc, 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.

GOVERNMENT DEPARTMENTS, AGENCIES AND STATUTORY AUTHORITIES

Appendix 7

British Waterways Scotland

Canal House, Applecross Street, Glasgow, G4 9SP, Tel No: 0131 332 6936

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

Scottish Government Rural Directorate (SGRD)

Victoria Quay

Leith

Edinburgh

EH6 6QQ

Tel No: 0131 556 8400

Website: www.scotland.gov.uk

Scottish Government Rural Payments and Inspections Directorate (RPID)

Pentland House

47 Robb's Loan

Edinburgh

EH14 1TY

Tel No: 0131 556 8400

Fax No: 0131 244 6449

Scottish Government Rural Payments and Inspections Directorate Area and Sub-Offices

Russell House
King Street
Ayr
KA8 0BE
Tel No: 01292 610188

161 Brooms Road
Dumfries
DG1 3ES
Tel No: 01387 274400

Cotgreen Road
Tweedbank
Galashiels
TD1 3SG
Tel No: 01896 892400

Cadzow Court
3 Wellhall Road
Hamilton
ML3 9BG
Tel No: 01698 281166

Longman House
28 Longman Road
Inverness
IV1 1SF
Tel No: 01463 234141

Estates Office
Portree
Isle of Skye
IV51 9DH
Tel No: 01478 612516

Thainstone Court
By Inverurie
Aberdeenshire
AB51 5YA
Tel No: 01467 626222

32 Reidhaven
Street
Elgin
IV30 1QH
Tel No: 01343 569500

Tankerness Lane
Kirkwall
Orkney
KW15 1AQ
Tel No: 01856 875444

Charlotte House
Commercial Road
Lerwick
Shetland
ZE1 0HZ
Tel No: 01595 695054

Cameron House
Albany Street
Oban
PA34 4AE
Tel No: 01631 563071

10 Keith Street
Stornoway
Isle of Lewis
HS1 2QG
Tel No: 01851 702392

Balivanich
Isle of Benbecula
HS7 5LA
Tel No: 01870 602346

Strathearn House
Broxden Business Park
Lamberkine Drive
Perth
PH1 1RX
Tel No: 01738 602000

Strathbeg House
Clarence Street
Thurso
KW14 7JS
Tel No: 01847 893104

Ord Croft
Lairg
Sutherland
IV27 4AZ
Tel No: 01549 402167

Historic Scotland Inspectorate (HS)

Longmore House, Salisbury Place, Edinburgh, EH9 1SH

Tel No: 0131 668 8716

Email: hs.inspectorate@scotland.gsi.gov.uk

Website: www.historic-scotland.gov.uk

Scottish Natural Heritage (SNH)

Great Glen House

Leachkin Road

Inverness

IV3 8NW

Tel No: +44 (0)1463 725000

Fax No: +44 (0)1463 725067

Email: enquiries@snh.gov.uk

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

Designated site information : <http://www.snh.org.uk/snhi/> Go to Sitelink.

The National Trust for Scotland

Wemyss House

28 Charlotte Square

Edinburgh

EH2 4ET

Tel No: 0844 493 2100

Fax No: 0844 493 2102

Email: information@nts.org.uk

Website: www.nts.org.uk

Scottish Environment Protection Agency (SEPA)

Aberdeen Office

Greyhope House
Greyhope Road
Torry
ABERDEEN
AB11 9RD
Tel: 01224 248338
Fax: 01224 248591

Leading Light Building
142 Sinclair Road
Torry
ABERDEEN
AB11 9PR
Tel: 01224 248338
Fax: 01224 248591

Arbroath Office

62 High Street
ARBROATH
DD11 1AW
Tel: 01241 874370
Fax: 01241 430695

Ayr Office

31 Miller Road
AYR
KA7 2AX
Tel: 01292 294000
Fax: 01292 611130

Dingwall Office

Graesser House
Fodderty Way
Dingwall Business Park
DINGWALL
IV15 9XB
Tel: 01349 862021
Fax: 01349 863987

Dumfries Office

Rivers House
Irongray Road
DUMFRIES
DG2 0JE
Tel: 01387 720502
Fax: 01387 721154

East Kilbride Office

5 Redwood Crescent
Peel Park
EAST KILBRIDE
G74 5PP
Tel: 01355 574200
Fax: 01355 574688

Orbital House

3 Redwood Crescent
Peel Park
EAST KILBRIDE
G74 5PR
Tel: 01355 574200
Fax: 01355 574688

Edinburgh Office

Clearwater House
Heriot Watt Research Park
Avenue North
Riccarton
EDINBURGH
EH14 4AP
Tel: 0131 449 7296
Fax: 0131 449 7277

Elgin Office

28 Perimeter Road
Pinefield
ELGIN
IV30 6AF
Tel: 01343 547663
Fax: 01343 540884

Fort William Office

Carr's Corner Industrial Estate
Lochybridge
FORT WILLIAM
PH33 6TL
Tel: 01397 704426
Fax: 01397 705404

Fraserburgh Office

Shaw House
Mid Street
FRASERBURGH
AB43 9JN
Tel: 01346 510502
Fax: 01346 515444

Galashiels Office

Burnbrae
Mossilee Road
GALASHIELS
TD1 1NF
Tel: 01896 754797
Fax: 01896 754412

Glasgow Office

Law House
Todd Campus
West of Scotland Science Park
Maryhill Road
GLASGOW
G20 0XA
Tel: 0141 945 6350
Fax: 0141 948 0006

Glenrothes Office

Pentland Court
The Saltire Centre
GLENROTHES
KY6 2DA
Tel: 01592 776910
Fax: 01592 775923

Lochgilphead Office

2 Smithy Lane
LOCHGILPHEAD
PA31 8TA
Tel: 01546 602876
Fax: 01546 602337

Newton Stewart Office

Penkiln Bridge Court
Minnigaff
NEWTON STEWART
DG8 6AA
Tel: 01671 402618
Fax: 01671 404121

Orkney Office

Norlantic House
Scotts Road
Hatston
Kirkwall
ORKNEY
KW15 1RE
Tel: 01856 871080
Fax: 01856 871090

Perth Office

7 Whitefriars Crescent
PERTH
PH2 0PA
Tel: 01738 627989
Fax: 01738 630997

Strathearn House
Broxden Business Park
Lamberkine Drive
PERTH
PH1 1RX
Tel: 01738 627989
Fax: 01738 630997

Shetland Office

The Esplanade
LERWICK
Shetland
ZE1 0LL
Tel: 01595 696926
Fax: 01595 696946

Stirling Office

Bremner House
The Castle Business Park
STIRLING
FK9 4TF
Tel: 01786 452595
Fax: 01786 461425

Thurso Office

Thurso Business Park
THURSO
Caithness
KW14 7XW
Tel: 01847 894422
Fax: 01847 893365

Western Isles Office

2 James Square
James Street
STORNOWAY
Isle of Lewis
HS1 2QN
Tel: 01851 706477
Fax: 01851 703510

Website: www.sepa.org.uk

Forestry Commission Scotland (FCS)

231 Corstorphine Road, Edinburgh EH12 7AT, Tel No: 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 No: 0845 345 0055 Website: <http://www.hse.gov.uk>

Transport Scotland (TS)

Buchanan House, 58 Port Dundas Road, Glasgow, G4 0HF

Tel No: 0141 272 7100

Website: www.transportscotland.gov.uk

Network Rail

40 Melton Street, London NW1 2EE Tel No: 08457 11 41 41

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

The Office of Rail Regulation (ORR)

One Kemble Street, London, WC2B 4AN Tel No: 020 7282 2000

Website: www.orr.gov.uk

Pesticide Safety Directorate (PSD)

Mallard House, Kings Pool, 3 Peasholme Green, York YO1 7PX Tel No: 01904 455775

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

Department for Environment, Food & Rural Affairs (Defra)

Nobel House, 17 Smith Square, London SW1P 3JR

Defra Helpline (Public Enquiries) Tel No: 08459 335577

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

Welsh Assembly Government Department for Environment, Planning & Countryside

National Assembly for Wales, Cardiff Bay, Cardiff CF99 1NA Tel No: 0845 010 5500

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

Scottish Government Publications

- Weeds Guidance – April 2008 website
www.scotland.gov.uk/Publications/2008/06/17121954/WeedsGuidance
- Pesticides: Code of Practice for Using Plant Protection Products in Scotland (ISBN 0-7559-5093-3) website
<http://www.scotland.gov.uk/Publications/2006/12/19110050/0>
- Prevention of Environmental Pollution From Agricultural Activity (PEPFAA) (ISBN 0-7559-4106-3) website
<http://www.scotland.gov.uk/Publications/2005/03/20613/51366>

UK Government 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)
- 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 UK Government publications can be obtained from:

Defra Publications
Admail 6000
London SW1A 2XX
Tel No: 08459 556 000

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

* Only available on the Defra website.

Other Publications

- Scottish Agricultural College Technical Note: Ragwort Poisoning in Livestock: Prevention and Control – TN570
- 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*
- 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. Email: 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).

SOURCES OF TECHNICAL ADVICE ON RAGWORT CONTROL

Appendix 9

ADAS

Provide chargeable consultancy advice

ADAS, Woodthorne, Wergs Road, Wolverhampton WV6 8TQ

Tel No: 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 No: 01733 385230

<http://www.agindustries.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 No: 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 No: 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 No: 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 No: 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 No: 08701 202244 Fax: 01926 707800

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

THE BRITISH HORSE SOCIETY SCOTLAND

Woodburn, Crieff, Perthshire, PH7 3RG
Tel No: 01764 656334

THE INTERNATIONAL LEAGUE FOR THE PROTECTION OF HORSES

Anne Colvin House, Snetterton, Norwich, Norfolk, NR16 2LR
Tel No: 01953 498682
Email: hq@ilhpa.org

BRITISH INSTITUTE OF AGRICULTURAL CONSULTANTS (BIAC)

Provide chargeable consultancy advice
BIAC, The Estate Office, Torry Hill, Milstead, Sittingbourne, Kent ME9 0SP
Tel No: 01795 830100
<http://www.biac.co.uk>

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 No: 01491 838800 Fax No: 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 No: 01733 367213
<http://www.cropprotection.org.uk>

FARMING AND WILDLIFE ADVISORY GROUP (FWAG)

Advice on farming and conservation
Farming and Wildlife Advisory Group, Algo Business Centre, Glenearn Road, Perth, PH2 0NJ
Tel No: 01738 450500
<http://www.fwag.org.uk>

GARDEN ORGANIC

Organic gardening, including weed control
Garden Organic, Ryton Organic Gardens, Coventry, Warwickshire CV8 3LG
Tel No: 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 No: 01751 417351
<http://www.lazydogtoolco.co.uk>

Scottish Machinery Ring Association Members

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 No: 01733 362920
<http://www.naac.co.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 No: 01488 658298
<http://www.efrc.com>

RAG-FORK

Suppliers of ragwort lifting tools

Rag-Fork, 110 Sunderland Street, Tickhill, Doncaster DN11 9ER
Tel No: 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 No: 01406 365180
<http://www.ragwort-uk.com>

BORDERS MACHINERY RING LTD

Galamoore House
Netherdale
Galashiels TD1 3EY

Manager: Michael Bayne

Tel No: 01896 758091
Fax No: 01896 757036
E-mail: bmr@ringleader.co.uk
Web site: www.ringleader.co.uk

CAITHNESS MACHINERY RING LTD

Balbeg
Spittal
Watten
Wick
Caithness, KW1 5XU

Manager/Secretary: Linda Levack

Tel/Fax No: 01847 841310 (Home)
E-mail: caithnessring@btconnect.com

HBS RING LTD

Glaikmore
North Kessock
Inverness, IV1 3UD

Manager: Alan McLean

Tel No: 01463 811603
Fax No: 01463 811084
E-mail: hbs@hbsring.co.uk
Web site: www.hbsring.co.uk

LOTHIAN MACHINERY RING LTD

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Gogarbank
Edinburgh EH12 9DD

Manager: Frank Maxwell

Tel No: 0131 339 8730
Fax No: 0131 317 8148
E-mail: lmr@btclick.com
Web site: www.lothianmachineryring.co.uk

ORKNEY BUSINESS RING

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Grainshore Road
Kirkwall
Orkney, KW15 1FL

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Tel No: 01856 879080

Fax No: 01856 879081

E-mail: obr@orkney.com

Web site: www.orkneybusinessring.co.uk

RINGLINK (SCOTLAND) LTD

Cargill Centre
The Business Park
Aberdeen Road
Laurencekirk
Aberdeenshire, AB30 1EY

Managing Director: Graham Bruce

Tel No: 01561 377790

Fax No: 01561 378231

E-mail: laurencekirk@ringlinkscotland.co.uk

Web site: www.ringlinkscotland.co.uk

RURAL SERVICES SCOTLAND LTD

73 Norwell Drive
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Tel No: 01738 550101

Fax No: 01738 550202

E-mail: info@scotlandfarmer.co.uk

Web site: www.scotlandfarmer.co.uk

SOUTH WEST MACHINERY RING

Tarff Station
Ringford
Castle Douglas DG7 2AN

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Tel No: 01557 820370

Fax No: 01557 820380

E-mail: info@swmr.co.uk

Web site: www.swmr.co.uk

TAY FORTH MACHINERY RING LTD

Newhill Farm
Glenfarg
Perth, PH2 9QN

Manager: Bruce Hamilton

Tel No: 01577 830616

Fax No: 01577 830663

E-mail: bruceh@tayforth.co.uk

Web site: www.tayforth.co.uk

SCOTTISH AGRICULTURAL COLLEGE (SAC)

Farm Business Services
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Ruthvenfield Road
Perth, PH1 3EE

Tel No: 01738 636611

Email: mark.ballingall@sac.co.uk

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