

Draft: Hamster Protection Plan 2005-2010

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ABSTRACT

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Province of Limburg
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Foreword

Raising the profile of the hamster

The hamster is under great threat in the most westerly part of its habitat, which includes the Netherlands. Over recent decades that habitat has been disappearing, become fragmented and isolated and its quality has deteriorated. The chief causes of this deterioration are the intensification of agriculture and the expansion of the traffic infrastructure.

In the Netherlands, the hamster has traditionally occurred naturally only in the southern and central regions of the Province of Limburg, in the southeast of the country. This region also offers the best opportunities for reintroducing the hamster. Since 2000 the Ministry of Agriculture, Nature and Food Quality (LNV) has therefore been working together with the Province of Limburg, nature conservation organisations and species protection organisations in pursuing an active species policy aimed at increasing and strengthening the hamster population.

Over the last five years we have implemented the first Hamster Protection Plan. This has resulted in the purchase and management of land which is suitable for this animal, a breeding programme for reintroduction, the release of hamsters in four core areas, and increased knowledge of and support for the protection of the hamster in the region.

An interim evaluation suggests that we are on the right track, but also that the hamster is not yet in a strong enough position to survive unaided. It is for this reason that, together with the Province of Limburg, I have decided to launch this second Protection Plan, which will continue our successful work using an improved formula. We are determined to ensure that the hamster will be a prominent feature of the agricultural landscape in Limburg before this decade is out.

This Protection Plan comprises a series of carefully thought-out measures designed to ensure that the species is able to reproduce and sustain itself in a growing number of locations. The Plan is once again the result of fruitful cooperation between several organisations and government agencies. Together with these partners, the Province will ensure that the Plan is carried out in the coming years.

I call on everyone to support this Protection Plan, so that we will once again see the hamster running free in the area where it feels at home, the rich loess and loam soils of southern and central Limburg..

The Minister of Agriculture, Nature and Food Quality,

Dr. C.P. Veerman

Summary

The hamster is under threat in the most westerly fringe of its European distribution range, and hamster populations are also in crisis in other parts of Europe. National legislation and international obligations demand the protection of the hamster and its habitat. At the end of the 1990s only a few hamster burrows were found in the Netherlands, in the Heer region; in all other areas it was no longer possible to establish the presence of hamsters. However, the species survived in the Netherlands thanks to a breeding programme set up in 1999 with a small number of hamsters captured in the wild. The offspring of these animals were released into various habitats between 2002 and 2005, in the areas around Sibbe, Amby and Heer, and to the southeast of the town of Sittard. Thanks to the combined efforts of all concerned, four core habitats have been created in the last few years, offering enough suitable sites to enable hamsters to be reintroduced. A vital element in creating these core habitats is the signing of management agreements with farmers as part of the Management Programme. A modified land management programme is employed which takes into account the demands placed by the hamster on its habitat. Based on the supporting study in the reintroduction areas, it has quickly become clear in recent years that the management arrangements operating under the subsidy scheme for agricultural nature management (*Subsidieregeling Agrarische Natuur*, SAN) were not ideal for the hamster. Moreover, the terms of the hamster programme did not fit easily into the normal farm management regime, and the financial compensation was too low for many farmers. An 'experimental hamster programme' was therefore introduced in 2004, which was geared more closely to the ecology of the hamster and was easier to marry with farmers' management practice. The creation of a hamster habitat through modified land management also led to a sharp increase in other natural assets at local level, in particular typical field birds.

The knowledge that has been built up over recent years on the hamster and the measures taken in the field, form the basis for this second Hamster Protection Plan 2005-2010. The goals of this Protection Plan are still the achievement of a stable hamster population in the Province of Limburg. During the term of the Plan (2005-2010) efforts will remain focused on the ambitions of the first Protection Plan. Combined with new insights obtained in the first phase of reintroduction, management, land purchase and research, it is believed that the opportunities and possibilities have improved for the period 2005-2010 and can be better exploited by those concerned. The intention of the Ministry of Agriculture, Nature and Food Quality (LNV) and the Province of Limburg, to develop habitat plans in the near future to protect endangered species in their mutual interrelationships and to improve the rural habitat for these species as a whole, improves the prospects for the hamster.

The measures in this Protection Plan are focused on the following ambitions for the period 2005–2010:

- creation of 500 hectares of hamster habitat;
- interlinking of the hamster habitats;

- purchase of land for the creation of hamster reserves;
- signing of management agreements with farmers;
- refining of experimental management programmes for the hamster, leading to a management programme approved by Brussels under the SAN banner;
- optimisation of the cooperation between the organisations involved;
- sharing of knowledge and forging collaborative links with Germany and Belgium on this issue.

In order to achieve this, the Province of Limburg has been asked by the Ministry of Agriculture, Nature and Food Quality to appoint a hamster habitats committee, to be charged with the creation and configuration of the hamster habitats, including the necessary interconnections. At the end of 2009 an evaluation will be carried out to assess whether the central objective, namely the establishment of a sustainable hamster population in the Netherlands, has been or can be achieved.

1 Introduction

The hamster, *Cricetus cricetus*, is under threat in the most westerly fringe of its European distribution range, and hamster populations are also in crisis in other parts of Europe. National legislation and international obligations demand the protection of the hamster and its habitat. In the light of this the Netherlands, based on the Convention on Biological Diversity, the Bern Convention and the EU Habitats Directive, is taking measures aimed at the conservation of species occurring in the wild, such as the hamster, and their natural distribution range. The government policy document on nature, woodland and the landscape in the 21st century (*Natuur voor mensen, mensen voor natuur*; LNV 2000) provides the tools for this in the form of the habitats policy (creation of a Network of Protected Areas (EHS¹)), supplemented by the species policy.

Additional protection measures are needed for the hamster if the species is to be preserved in its natural distribution area. Its habitat lies primarily in agricultural areas, and is therefore does not form part of the natural and woodland areas covered by the EHS. It is important for this species that the quality of the rural landscape as a whole is improved. For this reason, the species policy is used here as an instrument, and the implementation programme for this policy therefore includes the setting up and implementation of a national multiyear species protection plan (*Meerjarenprogramma Uitvoering Soortenbeleid 2000-2005*; LNV 2000).

In the period 2000-2005 the Ministry of Agriculture, Nature and Food Quality, together with the Province of Limburg, nature conservation organisations and species protection organisations, carried out the first Hamster Protection Plan. Among other things this resulted in the purchase and management of land which was made suitable for the hamster, a breeding programme for the successful reintroduction of the hamster, the release of hamsters in four core habitats, expansion of the knowledge about the species and of support in the region for the protection of the species.

The knowledge built up in this period about hamster and the measures taken in the field form the basis of this second Hamster Protection Plan 2005-2010. The goals of the Protection Plan are still to create a stable hamster population in the Province of Limburg. In the period covered by the Plan (2005-2010), further efforts will be made to achieve the ambitions of the species protection plan. Combined with new insights obtained in the first phase of reintroduction, management, land purchase and research, it is believed that the opportunities and possibilities have improved for the period 2005-2010 and can be better exploited by those concerned. The intention of the Ministry of Agriculture, Nature and Food Quality (LNV) and the Province of Limburg, to develop habitat plans in the near future to protect endangered species in their mutual interrelationships and to improve the rural habitat for these species as a whole, improves the prospects for the hamster.

¹ See also Appendix 5: Glossary

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- signing of management agreements with farmers;
- refining of experimental management programmes for the hamster, leading to a management programme approved by Brussels under the SAN banner;
- optimisation of the cooperation between the organisations involved;
- sharing of knowledge and forging collaborative links with Germany and Belgium.

This Protection Plan provides a step-by-step description of the Plan objectives, the measures taken to achieve those objectives, the organisations involved and the way in which they will work together.

1.1 Results of Hamster Protection Plan 2000-2004

At the end of the 1990s only a few hamster burrows were found in the Netherlands, in the region of Heer; in all other areas it was no longer possible to establish the presence of hamsters. However, the species survived in the Netherlands thanks to a breeding programme set up in 1999 with a small number of hamsters captured in the wild. The offspring of these animals were released into various habitats in the areas around Sibbe, Amby and Heer and to the southeast of the town of Sittard, in 2002, 2003, 2004 and 2005, respectively.

The hamster breeding programme is being managed by Rotterdam Zoo. Approximately 80-120 hamsters are bred each year, more than 80% of which are introduced into suitable habitats in the subsequent year. Genetic research has led to the discovery in recent years that the hamsters in the most westerly part of their European distribution range (Belgium, the Netherlands and neighbouring parts of Germany) are not a subspecies, but are genetically distinct from populations in Eastern Germany, Eastern Europe and, to a lesser extent, in the Alsace and Rhineland-Palatinate. A number of animals from Belgium and neighbouring parts of Germany have been successfully added to the breeding programme recently, giving the programme an international dimension and responsibility.

Thanks to the joint efforts of all partner organisations, sufficient habitat has been created in recent years in four of the eleven originally planned core habitats to enable hamsters to be reintroduced. A vital element in creating these core habitats is the signing of management agreements with farmers as part of the Management Programme ¹. A modified land management programme is employed which takes into account the demands placed by the hamster on its habitat. Based on the supporting study in the reintroduction areas, it has quickly become clear in recent

¹ See also Appendix 5: Glossary

years that the management arrangements operating under the subsidy scheme for agricultural nature management (SAN¹) (28a) were not ideal for the hamster. Moreover, the terms of the hamster programme did not fit easily into the normal farm management regime, and the financial compensation was too low for many farmers. An ‘experimental hamster programme’¹ was therefore introduced in 2004, which was geared more closely to the ecology of the hamster and was easier to marry with farmers’ management practice. 82 hectares of land was purchased for reserves (out of the total planned area of 150 hectares),. Experimental management agreements were signed for 59 hectares in addition to 42 hectares of SAN agreements (of the total of 350 hectares of planned management agreements).

Recent research in core habitats¹ where hamsters have been reintroduced has led to changed insights into the kind of management needed. It has also produced greater clarity regarding the required spatial interrelationship between hamster habitats in order to facilitate migrations between them. The creation of a hamster habitat in the form of farmland under modified management has also led to a sharp increase in other natural assets at local level, in particular typical field birds.

Appendices 1 and 2 contain an evaluation of the process and ecology of the Hamster Protection Plan 2000-2004.



Hamster ready for release (photo: Gerard Müskens)

¹ See also Appendix 5: Glossary

Goals for the period 2005-2010

The hamster is a characteristic species of our loess and loam agricultural landscapes, and deserves our protection. In addition, national agreements and international treaties such as the Bern Convention (Appendix 2) and the EU Habitats Directive (Annex IV) impose obligations on the Netherlands relating to the sustainable conservation of the hamster in its natural habitat. To achieve this it is necessary to improve further the quality of the farmland for the hamster in southern and central Limburg in the period 2005-2010. The objective for the long term (2018, realisation of EHS) is to create sustainable hamster populations which are distributed throughout the previous distribution range in Limburg. The setting up of small, isolated habitats in the centre of otherwise unsuitable farmland leads to a fairly unsustainable situation for the hamster. For the period 2005-2010, therefore, the aim is to create ideal core habitats in a natural configuration where suitable plots and strips of land are also present in the surrounding farmland. The hamsters can then spread over a large area in the spring and summer, thus spreading the risk to the hamster population and reducing the risk of (renewed) extension (network approach, see also Appendix 2). This approach will enable a landscape to be created in which the hamster can survive in a sustainable way and from which other threatened species can also benefit. In order to achieve this in practice, the planned 500 hectares of hamster-friendly landscape for the Plan period will not be split between eleven isolated core habitats, but will be concentrated in seven core habitats with interconnecting zones¹.

The central objective is the sustainable conservation of the hamster population and its habitat, with a view to the sustaining of the agricultural landscape and the functioning of interconnecting zones. This has given rise to the following objectives for the period 2005-2010:

- 1: Creation of three new core habitats¹ in addition to the four core habitats already created, plus the creation of interconnecting zones¹ and stepping stones¹ to facilitate exchanges between subpopulations.
- 2: Creation of cross-border links in order to restore the relationship with German hamster habitats and to safeguard these for the long term.
- 3: Population of the new hamster habitats through breeding and reintroduction.
- 4: Research-based optimisation of farm management in relation to the ecological requirements of the hamster, leading to a management programme approved by Brussels within the framework of SAN.
- 5: Creation of sufficient public support for the protection of the hamster.

¹ Zie ook Bijlage 5: Verklarende woordenlijst

2 Measures

1: Creation of three new core habitats in addition to the four core habitats already created, plus the creation of interconnecting zones and stepping stones to facilitate adequate exchanges between subpopulations

The Province of Limburg has appointed a hamster habitats committee (see also 3.2) to implement the above measures. This committee will coordinate the purchase of land and signing of management agreements. Within the policy area of 500 hectares, the committee will be responsible for the creation of 200 hectares of reserves (of which 82 hectares have already been created). In addition management agreements will be signed for a total of 300 hectares; if possible and desirable, new management agreements will be signed to replace expiring agreements (Appendix 3). Approximately 100 hectares of land covered by management agreements will relate to interconnecting zones.

The Province of Limburg will develop and put into practice an adequate geographical protection regime for the hamster habitats in central and southern Limburg. The land acquired will then be fenced off to form reserves. Habitat management also includes fauna management if research shows that predators are jeopardising the reintroduction of the hamster, the hamster habitats committee will put forward proposals for appropriate measures to the fauna management unit. The starting point will be the expert advice contained in Appendix 4 with regard to the management of fox populations in core hamster habitats.

The exact size and location of the reserves and their distribution across potential habitats is not fixed in advance, but the sites must be clustered in southern and central Limburg. This means that when purchasing land for reserves and entering into management agreements, those areas will be considered which appear most suitable for strengthening the existing hamster populations based on current insights, as well as areas which make possible the sustainable survival of the hamster population in the longer term. If necessary, for example due to developments in the land market, it will be possible to deviate from the above ratio between reserve areas and management agreements; amending it on the basis of supplementary agreements between central and provincial government.

The acquisition of land for reserves and the signing of management agreements will focus in the Plan period on seven habitats and the necessary interconnecting links. Land acquisition is possible in existing or potential habitats, provided the land contributes to strengthening the hamster populations in central and southern Limburg. The search for new sites should be concentrated primarily within areas already designated as new natural landscape. The acquired land will then be fenced off to form reserves. The management agreements on hamster habitats run for six years in principle (see also 3.4). An exception applies for refuge strips,² for which the agreements run for a maximum of one year. Interconnecting zones also need to be

¹ See Appendix 5: Glossary

created between the hamster habitats in southern Limburg and the German habitats around Aachen (see objective 2).

Management agreements will take the form of an experimental management programme and will comply with the 'Community framework for state aid for research and development' (96/C 45/06). This will enable the management of hamster habitats to be optimised as more experience is gained. The six-year agreements can be entered into at any time during the term of this Protection Plan, within the scope provided by the policy.

Based on the experience gained, a new hamster management programme will be formulated which will have to meet the following criteria:

- ecologically effective
- fitting within European regulations
- limited administrative burden for applicants
- limited implementation costs

The hamster management programme will be developed in close collaboration with the Department of Nature (Nature and Landscape Management Team) at the Ministry of Agriculture, Nature and Food Quality.



Figure 1: Graphic representation of the concepts of habitat, core hamster habitat, interconnecting zone and refuge strip.

2: Creation of cross-border links in order to restore the relationship with German hamster habitats and to safeguard these for the long term

The Netherlands forms a link between the hamster populations in Belgium and neighbouring parts of Germany (North Rhine-Westphalia). In these regions, as in the Netherlands, the hamster is threatened with extinction. The sustainable conservation of the hamster in the most westerly fringe of its European distribution range can only be achieved in close cooperation and consultation with these countries. Knowledge and experience gained in the Netherlands can be applied more widely through cross-border cooperation on the protection of the hamster and its habitat. It is desirable in this connection that the Netherlands contributes to the creation of a (Western) European protection plan for the hamster and its habitat. Belgium (Flanders) is to submit a joint European collaborative project under the EU-LIFE programme together with Dutch and German partners..

During the term of this Protection Plan an interconnecting zone will be created between the hamster habitats in southern Limburg and the German habitats around Aachen.

3: Population of the new hamster habitats through breeding and reintroduction

Hamsters will be released in habitats where a sufficient area is managed in a hamster-friendly way (rule of thumb: 30 hectares initially, rising to 45 hectares in the medium term). If necessary, the population can be reinforced later through subsequent introduction of animals (table 1). Up to and including 2007, Rotterdam Zoo will lead a project to breed approximately 100-150 hamsters annually from preselected combinations of parent animals.

The genetic diversity of the hamsters in the breeding programme is very low. Further expansion through the addition of individuals from the equally seriously threatened populations in Belgium and neighbouring parts of Germany appears urgently necessary in order to sustain a genetically healthy hamster population in Western Europe.

An evaluation will be carried out in 2007 to determine whether, and if so how, the breeding programme should be continued. Ways will be sought of reintroducing hamsters caught in the wild, as these animals appear better adapted to predators. Examples of innovative new methods to make the breeding programme superfluous include the capturing of hamsters in harvested cereal fields, which are then held through the autumn and winter before being released again in the following spring. Temporary screen fences can also be used to reduce the local pressure from predators, so that hamsters can be caught in these areas and released or added elsewhere.

Based on the population of seven core habitats in the period up to and including 2010, the last reintroduction of animals from the breeding programme will begin in 2008. In 2010, the last animals from the breeding programme will be released if necessary, following which the breeding programme can be ended.

Table 1: Global release schedule per core habitat per year

Released (n hamsters)	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sibbe	60	20	20	0	0	0	0	0	0
Amby	-	60	20	20	0	0	0	0	0
Heer	-	-	60	20	20	0	0	0	0
Sittard	-	-	-	60	20	20	0	0	0
Habitat 5	-	-	-	-	60	20	20	0	0
Habitat 6	-	-	-	-	-	60	20	20	0
Habitat 7	-	-	-	-	-	-	60	20	20

The above schedule is merely an example to give an indication of the numbers of animals needed for new and ongoing reintroductions. The actual numbers of hamsters needed for release and/or addition to existing populations will largely depend on developments in the field. It has been assumed in the above schedule that all hamsters to be released or added will come from the breeding programme.

4: Research-based optimisation of farm management in relation to the ecological requirements of the hamster

During the term of the Plan, a farm management regime will be sought which is the most ideal for the hamster whilst being practically and financially feasible for farmers. The same goals will apply for the reserves, with the emphasis being on a management regime from which farmland flora and fauna can also benefit.

Research will be carried out during the Plan term to provide an answer to the question of which agricultural management regime should be pursued to adequately eliminate the main population-limiting factors for the hamster. The conclusion of flexible management agreements based on the cultivation of a combination of (winter) cereals and alfalfa will form part of the 'Hamster Experiment' study to be carried out. It is hoped that the research will also make clear the criteria that must be met by interconnecting zones if these are to be effective in allowing the migration of hamsters between the existing core habitats (area, mutual distances, crop choice, weed control). The management of the reserves will also be based on the experimental management. The research will ultimately result in the development of a new hamster management programme, which will fit in well with the regular farm management regimes and which will also comply with European standards.

In addition to the protection of the hamster and the agricultural feasibility of the measures, protection of threatened farmland flora and fauna will also be taken into account. In addition the research will focus on the need for further clarification of the ecology of the hamster. It will also look at whether the low genetic variation of the present hamster population imposes constraints on the vitality of the species (see also Appendix 2).

5: Creation of sufficient public support for the protection of the hamster

Following the negative publicity surrounding the hamster in relation to economic developments, public support for the protection of the animal is low. In addition, the hamster is seen as a threat to farm management methods. The creation of new habitats and the reintroduction of hamsters will therefore need to be undertaken in combination with local information meetings. It is recommended that farmers and other managers of rural land be informed of the potential economic benefits of agricultural nature management (including hamster management).

A website is being developed to provide general information and education on the hamster, aimed at a broad public. The site contains information on government policy, regulations relating to the hamster, international agreements and treaties, policy proposals, planned and ongoing protection measures, the ecology of the species, research results and the effects of the Protection Plan.



Refuge strip in winter cereal (photo: Gerard Müskens)

3 Organisation

3.1 Responsibilities

The Hamster Protection Plan 2005-2010 will be implemented under the joint responsibility of the Ministry of Agriculture, Nature and Food Quality and the Province of Limburg.

The Ministry will be responsible for the following aspects:

- coordination with European regulations;
- other international issues;
- the breeding programme;
- funding of management agreements and purchase of land;
- funding of the research by Alterra via the Department of Knowledge (LNV-DK);
- funding of activities by the Government Service for Land and Water Management (DLG).

The Province of Limburg will be responsible for the following:

- the area-specific parts of the Hamster Protection Plan 2005-2010, comprising the sustainable creation of habitats, interconnecting zones and refuge strip management;
- geographical protection of hamster core habitats and managed land in the interconnecting zones;
- leading the hamster habitats committee;
- liaising with the relevant parties at regional level;
- substantive management of the Government Service for Land and Water Management (DLG);
- compiling an inventory of hamster burrows within and outside the purchased or managed hamster habitats, in so far as no hamsters have been released there;
- granting exemptions to facilitate adequate fauna management;
- information management.

3.2 Hamster habitats committee

The Province of Limburg will appoint a hamster habitats committee to coordinate the habitat-specific implementation of the Plan. The committee will contain administrative representatives of farmers (LLTB, the Limburg agricultural and horticultural union) and land-management organisations (Society for the Preservation of Nature in the Netherlands (*Vereniging Natuurmonumenten*), the Limburg landscape foundation (*Stichting Limburgs Landschap*), the Limburg water company (*Watermaatschappij Limburg*), the Government Service for Land and Water Management (DLG) and experts in the field of fauna management, hamster

protection and research (Alterra). The committee will replace the 'Limburg hamster forum' (*Hamster Overleg Limburg*, HOI). It will put forward proposals for plots of land that are or become available for hamster-friendly management, and for the identification of such plots, and will coordinate the acquisition of land based on existing procedures and the measures as laid down in this Plan. Alterra will provide expert advice on the choice of land and plots as regards its suitability for the hamster.

Grants for hamster-friendly management will be paid to farmers and the land-management organisations. The secretary of the hamster habitats committee will be responsible for the day-to-day running of the entire process from acquisition to financial settlement. A third party may be brought in for this if required.

The hamster habitats committee will be responsible for communication surrounding the protection of hamsters in the region and will draw up a communication plan for this. The design and management of the website will also be the responsibility of the committee.

3.3 Coordination

Regular progress meetings will be held four times a year between the Department of Regional Affairs at the Ministry of Agriculture, Nature and Food Quality (LNV-DRZ) and the Province. The hamster project will be on the agenda at these meetings. Where required, but in any event at least twice a year, these regular meetings will be preceded by a progress meeting between the Ministry of Agriculture, Nature and Food Quality, the Province of Limburg, Alterra and the Government Service for Land and Water Management (DLG). The Department of Regional Affairs for the southern region (LNV-DRZ Zuid) will take the initiative to call these meetings.

The Province of Limburg will lead the hamster habitats committee. Each year the Province will submit a written report to the Ministry, reporting on the progress in achieving the agreements reached. If necessary, agreement may be amended in joint consultation on the basis of the findings.

3.4 Finance

The Ministry of Agriculture, Nature and Food Quality will make available up to EUR 75,000 per annum to the Province of Limburg to cover things such as the coordination of the habitat-specific activities, the hamster habitats committee, incidental measures and the deployment of AREA.

The costs of the (annual) provincial hamster inventory on plots of land without management agreements will also come within this budget. The results will be made available for the national nature data management programme (*Gegevensvoorziening Natuur*). The funds will be made available via the implementation contract between central government and the Province. From 2007 onwards, the funding will form part of the new national multiyear species protection plan (*Rijksmeerjarenprogramma*

Soortenbescherming). Funding will then be based on the Rural Investment Budget (ILG).

The Ministry is making available a capacity of 1.0 FTE in 2005 for the purchase of land and conclusion of management agreements, process and results monitoring, communication and secretarial activities for the hamster habitats committee. The Government Service for Land and Water Management (DLG) will formulate a working plan for this, which will require approval by the Province. For the period 2006-2010 it is estimated that these activities will require a capacity of 0.5 FTE per year.

The Ministry will provide the necessary resources under the implementation contract for 2005-2006 (*Uitvoeringscontract 2005-/2006*) and, from 2007 onwards, via the ILG. As the management agreements run beyond 2010, the Ministry will make resources available for this entire period. The rate at which the resources are released will match the rate at which land purchase and management contracts are concluded as indicated by the hamster habitats committee. The intention is that the management contracts concluded as part of the experiment and which continue until after 2010, will fall within the regular management programme regime after 2010 both for funding and as regards the measures to be taken.

The Province of Limburg and Ministry of Agriculture, Nature and Food Quality will actively seek matched European funding. This could lead to the partial replacement of the funding by the government and Province by European funding.



Caught hamster (photo: Hugh Jansman)

3.5 Action plan

Table 2. Action plan

	Measure	Responsible	Implementation	Budget
1a	Appointment of hamster habitats committee (HGC)	Province of Limburg	Province of Limburg/DLG	LNV
1b	Support of HGC	Province of Limburg	DLG	LNV*
1c	Purchase of land for reserves	Province of Limburg	Hamster habitats committee / DLG	EHS-budget
1d	Management of habitats	Province of Limburg	DLG	Management programme
1e	Signing of management agreements	Province of Limburg	DLG/AREA	LNV
1f	Protection measures in the field	Province of Limburg	DLG	*
2	Development of Heerlen interconnecting zone	Province of Limburg/LNV	AREA	LNV & Province of Limburg*
3a	Breeding programme	LNV	Rotterdam Zoo	LNV
3b	Reintroduction	LNV	Alterra	LNV-DK
4a	Research on hamster management	LNV	Alterra	LNV-DK
4b	Inventory of plots within release areas	LNV	Alterra	LNV-DK
4c	Inventory of plots outside release areas	Province of Limburg	Province of Limburg	LNV*
5a	International cooperation	LNV	Province of Limburg & LNV	Province of Limburg & LNV
5b	Information and education	Province of Limburg	tbc	LNV*
5c	Website	Province of Limburg	tbc	LNV*
6	Periodic consultation	LNV-DRZ Zuid	Province of Limburg, Alterra, DLG & LNV	LNV & Province of Limburg
7	Final evaluation	Province of Limburg/LNV	tbc	LNV

* from the annual budget of EUR 75,000 provided by the Ministry to the Province of Limburg



Hen harrier hunting among a flock of yellow bunting (photo: Hugh Jansman)

3.6 Final evaluation

Comprises a series of action points and measures which will be developed or implemented over a period of five years. In 2009 the Protection Plan will be evaluated. The evaluation will focus on four aspects: the Plan itself, the measures, the impact of the measures on the species and the investment (in time and money) by and cooperation between the various parties involved.

The evaluation will concentrate on the degree to which the action points/measures had been taken up or implemented and their effects. This should provide an insight into the extent to which the objectives set out in the Protection Plan have been achieved. The evaluation will be a separate report based on four years of implementation of the Protection Plan. It will conclude with recommendations for the final year 2010 and for a possible follow-up in terms of plan formulation and/or implementation.



Hamster burrow in winter cereal (photo: Hugh Jansman)

Appendix 1 Summary of survey on implementation of Hamster Protection Plan 2000-2004

On the initiative of the Department of Regional Affairs at the Ministry of Agriculture, Nature and Food Quality (LNV-DRZ), the Ministry's Department of Knowledge (LNV-DK) (known at the time as EC-LNV) carried out an evaluation of the Hamster Protection Plan 2000-2004. Its task was to evaluate the objective, design and implementation of the Plan by establishing the qualities and problem areas and indicating possible points for improvement and solution pathways. This was done on the basis of a survey sent to Provinces, nature conservation societies, local government development cooperation societies, the State Forest Service (*Staatsbosbeheer*) Society for the Preservation of Nature in the Netherlands (*Vereniging Natuurmonumenten*) and other current and former members of the 'species advisory group' (*Klankbordgroep Soorten*). Of the 29 surveys sent out, 12 completed questionnaires were returned and processed. The general impression of the Protection Plan among respondents was that it was clear and agreeable to operate.

The objectives set out in the Plan are important but proved not to be attainable. The measures proposed were broadly supported. Getting the Plan off the ground was a laborious process. Cooperation, instruments, commitment and investment were not well organised from the start. The parties involved found themselves in a new situation which demanded rapid results. The whole thing still had to be fleshed out and the parties involved had still to get used to the idea. The interests and input of the various parties therefore diverged in the initial phase. Since the responsibilities and rules were insufficiently open to discussion, the Plan lacked the necessary obligatory force.

Opinions were divided on the Limburg hamster forum (HOL). Progress was slow due to the nature of hamster protection, lack of familiarity with the available instruments, and lack of the uniform commitment and time needed to generate support.

After the initial successes had been achieved (establishment of measures, breeding, land purchase, release), the process improved and implementation of the Protection Plan was seen in a more positive light. The deployment of people and resources and the objectives listed in the Plan remained sources of discussion, however. The organisations did not always take a positive view of each other's input. Too little attention was devoted to the welfare of those involved.

Generally speaking, there is a consensus that a good deal was achieved through the implementation of different parts of the Plan with the various parties. Over the term of the Plan as a whole, it is generally felt that a good deal was achieved under the circumstances and that the hamster still occurs in the Netherlands thanks to the Plan. A great deal was achieved in the five years that the Plan was being implemented. Although not all objectives were achieved, a good start was made. There is general support for a follow-up which, with broader commitment for longer periods than five years, will help the hamster to gradually prosper. This does however require that

the organisations involved see the protection of the hamster in southern Limburg as a natural objective.

Appendix 2 Ecological review of Protection Plan 2000-2004

The measures to protect the hamster were formulated along various policy lines. Measures for both the short and long term were started in the period 2000-2004. The results of the measures are summarised and discussed briefly below.

The objectives of the Protection Plan 2000-2004 were as follows:

- 1) to protect hamsters and their burrows and prevent extinction.
 - protection of any residual populations in southern and central Limburg;
 - breeding and release of hamsters.
- 2) to create the conditions for the development of hamster (network) populations.
 - creating 500 hectares of interconnected habitat, comprising at least 11 core habitats.
- 3) to provide an additional impulse for sustainable farm landscapes in southern and central Limburg, in which the hamster is able to survive.

Ecology and management

Before the Protection Plan 2000-2004, the distribution of the hamster population in the Province of Limburg was not well known. An overall inventory made clear that the Dutch hamster population was virtually extinct in 2000 and was limited to the area around Heer. Only a few other burrows were found in that year, at Mesch (two burrows) and Jabeek (one burrow). The last wild hamsters were found in 2002 in Heer, despite local protection measures.

In the same year a start was made on reintroducing hamsters into the habitats created. The results of these reintroductions are promising, with small but growing populations of wild hamsters developing.

Very little was known at the time about the ecology of the hamster. However, the reintroductions offered an opportunity to gather relevant ecological information in the field. In the last few years, more than 100 hamsters have been fitted with radio transmitters on release and monitored over an extended period. This has enabled a large amount of knowledge to be gathered on burrow use, dispersion, reproduction, causes of death and the effects of modified farmland management.

Based on current insights it is assumed that predation is the key factor in the development of the hamster population in the habitats that have been created. The modified farmland management has led to a high density of quarry animals, including the hamster, in a (relatively) small area. The hamster reserves, especially outside the summer season, have created a sort of oasis in a relatively bare desert, and this has acted as a magnet for predators. As a result, predators such as foxes and martens (beech martens, weasels, ermine) are able to prey on much of the hamster population.

The (high) predation of hamsters need not be a problem, however, if the population is of sufficient size and enough hamsters are therefore able to reproduce. The high reproductive capacity means a hamster population of sufficient size is at least able to compensate for the losses each year. The present hamster management programme, however, offers hamsters insufficient protection at crucial times of the year, and the

current refuge strip management makes it easy for predators to catch hamsters. The reintroduced hamster populations are therefore too small, which means that they remain vulnerable and susceptible to (renewed) extinction.

The reproduction of the reintroduced hamsters in the wild is excellent. Under good (field) conditions, the hamsters have two to three litters within a single reproductive season. It is also highly likely that the young from the first litter can take part in reproductive process during that same season. Given the present predatory pressure, it would seem that at least two litters per year are needed in order to sustain the hamster population. It is however highly unlikely that Limburg will see 'hamster plagues' in the near future, because for a 'plague' to occur, the reproduction rate would have to be very high across a large area and for an extended period.

The living conditions of hamsters in regular fields (without modified management) are not favourable. Cereal fields offer the only really good habitat, up till the harvest. Normally cultivated winter cereal provides good cover in early spring, making this a very attractive habitat for hamsters. Once the grain has been harvested, however, the shelter and food for the winter store largely disappears. In order to survive, hamsters remaining after the harvest are forced to move to suitable plots of land (possibly reserves) nearby or to other locations offering food and shelter. Providing refuge strips (broad strips at the edge of fields with unharvested grain, or possibly planted with alfalfa) could play a key role in the survival of hamsters in a normal farmland landscape.

Creating broad buffer zones or refuge strips for hamsters could supplement the (agricultural) hamster management on entire areas plots of land or the reserve management. A great deal still has to be learned, however, about the effectiveness, configuration, location, management and optimum crops for such zones or strips.

A flexible approach in which the hamster management (and therefore the suitable habitat) rotates between the plots (or strips) over the years appears to offer some perspective. Hamsters are found to cover bigger distances in the field than had been thought and are therefore more flexible in their selection of site than had been assumed. In the Sibbe and Amby habitats, new inhabited hamster burrows were found as far away as a kilometre after reintroduction. In a few cases they had even crossed 'barriers' such as grasslands, orchards and unpaved roads. Males in particular regularly appear to cover distances of several hundred metres and to pass barriers easily.

The creation and development of interconnecting zones for the hamster could take this into account by not setting fixed boundaries or designating fixed plots, but opting instead for management agreements in a large area which can be used flexibly at suitable locations.

The study of the genetic variation of hamsters in Western Europe revealed that the animals found in the Netherlands, Belgium and neighbouring parts of Germany do not form a separate subspecies. Crossing with hamsters from Eastern Germany or Eastern Europe is definitely not recommended because of the ecological differences

between the populations. A number of hamsters caught in the wild in Belgium and the neighbouring parts of Germany reproduced successfully in the breeding programme in 2004, considerably increasing the genetic variation. The breeding programme was set up in order to conserve the hamster in the Netherlands and, after habitat improvement, to enable animals to be released back into suitable habitats in Limburg. The arrival of a number of Belgian and German hamsters has given the breeding programme an international dimension and has given the Dutch government an international responsibility for maintaining the Western European hamster population.

It is crucial for the preservation of the Western European hamster population that a number of hamsters are obtained from the Belgian and German hamster populations which are not yet represented in the breeding programme. The remaining wild hamster populations in Belgium and North Rhine-Westphalia, like the hamster populations in the Netherlands a few years ago, are however under acute threat of extinction. The small numbers of animals remaining make a natural recovery of these hamster populations extremely unlikely and makes them highly vulnerable. Adding animals from these populations to the hamster breeding programme offers the best prospect of maintaining the specific Western European hamster population and thus conserving the genetic variation as far as possible.

International developments

Internationally there is a great deal of appreciation for the way in which the Netherlands has set about protecting the hamster in recent years. The research and monitoring of the Dutch hamster populations in the various habitats leads the field internationally. The research results are broadly endorsed and are being applied in several countries, including France, Germany and Belgium. The results are presented at the annual meeting of the international hamster working group and published in international scientific journals. In recent years the meetings of the working group have grown into the most important international forum for discussions on the hamster, with attention for ecology, protection, monitoring, politics and policy.

The sustainable conservation of the hamster within the European Union could be given a major boost by the setting up of a European hamster protection plan and a European monitoring programme. The problems relating to the hamster differ widely between Western and Eastern Europe. In Western Europe the survival of the species is under serious threat, while in Eastern Europe the species still occurs generally and in some countries is even hunted commercially.

Sustainable conservation of the hamster in Western Europe would benefit most from closer cooperation between the Netherlands, Belgium, Germany (North Rhine-Westphalia) and France, as the hamster faces comparable problems in these regions.

The European Commission has withdrawn the procedure for serving notice of default with regard to the Avantis industry park, because the Dutch government has established that an interconnecting zone for field organisms will be developed to the south of Heerlen. The development of this interconnecting zone will be coordinated by the Province of Limburg.

Conclusions and recommendations

The hamster has acquired a solid place in the nature and the species policy of the Ministry of Agriculture, Nature and Food Quality and the Province of Limburg since 2000. The problems facing the hamster have served as a driver and catalyst for the development of policy and legislation to protect species and natural areas.

Thanks to the joint efforts of the public authorities and organisations involved in the Hamster Protection Plan 2000-2004, the following has been achieved:

- four of the eleven habitats have been established and hamsters reintroduced into them;
- an improved hamster management programme is being developed;
- as part of the breeding programme, between 80 and 100 young hamsters are bred each year with a broader genetic basis;
- the hamster has been preserved for the Dutch natural environment;
- the research into sustainable protection of the hamster leads the field internationally.

To ensure the successful continuation of the efforts to protect the hamster, it is recommended that more attention be devoted in the years ahead to the feasibility of the objectives set. Setting unrealistic goals does nothing to motivate the organisations involved. The public authorities involved will need it to make available sufficient money, manpower and usable resources to enable the policy objectives to be achieved. The division of roles and tasks between the various public authorities and organisations involved must be made clear in advance. Progress reports on the measures will be needed and the measures will have to be tested for their effectiveness and efficiency and adjusted where necessary. Successful continuation requires administrative support and guarantees of continuity in the implementation of measures..

Appendix 3 Hectares covered by hamster management 2000-2010

Table 3. Hamster management achieved in the period 2000-2004 and target for 2005-2010.

Core habitats	Result of hamster management 2000-2004			Target 2005-2010
	Reserve	Agricultural	Total management	Reserve & Agricultural management
Sibbe (1)	51	0	51	45
Amby (2)	13	13	26 (excl. 4 ha other management ¹)	45
Heer (3)	0	14.5	14.5 (excl. 30 ha other management ¹)	45
Sittard (4)	10	29.5	39.5	45
Core habitat 5	n/a	n/a	n/a	45
Core habitat 6	n/a	n/a	n/a	45
Core habitat 7	n/a	n/a	n/a	45
Interconnecting zones	n/a	24	24	100
Heerlen interconnecting zone	n/a	0	0	35
Refuge strips (1-year)	n/a	25 ²	25 ²	50
Total	74	106	180 (excl. 34 other management ¹)	500 (200 reserve, 300 agricultural management)
Other areas				
	Reserve	Agricultural	Total management	
Koningsbos	4	15.9	19.9	n/a
Munstergeleen-Puth	4	0	7.6	n/a
Linnerveld	0	7.7	7.7	n/a
Nuth	0	1.3	1.3	n/a
Vlodropperveld	0	19.6	19.6	n/a
Total	8	44.5	52.5	

¹ =; does not count towards the target in the Protection Plan 2000-2004 and the Protection Plan 2005-2010.

² = refuge strips planned for 2005: 25 ha = 1.,5 km by 20m wide.



Kestrel hunting for mice in Sibbe (photo: Hugh Jansman)

Appendix 4 Predation control

In exceptional situations it may be necessary to restrict the predatory pressure on hamsters in order to speed up the establishment of a viable hamster population. The aim is to establish a sustainable hamster population which has the reproductive capacity to compensate for the predatory pressure, obviating the need for predation control.

The following fox management scenario is taken from:

Mulder, J.L., H.A.H. Jansman & J.W.B. van der Giessen, 2004. Ecologisch onderzoek aan geschoten vossen in Zuid-Limburg, 2002-2003 Alterra.

Regulation is likely to be most effective if foxes are controlled intensively only in the late winter and spring in a limited area, notably the hamster core habitats with a small buffer zone around them, and by trying to kill foxes before they breed. The purpose of such a scenario is to create a zero situation in the spring; there is therefore no point in controlling foxes in the months August to December or even in January, when young foxes are highly mobile in search of a place in the population. January is the breeding season, with high mobility among adult males looking for willing females. The months from February to April inclusive (possibly extending as far as August), when the fox population is at its most 'stable', are then the optimum period for fox control. In order to carry out such a scenario effectively, the hunters must be highly motivated, since in this period it can take a lot of time and trouble to root out the last resident foxes, which will otherwise account for the lion's share of the predation. Shooting lots of foxes in the autumn is generally much more satisfactory for the hunter than shooting the odd fox after days' of work in the early spring; however, the former has little effect. From the standpoint of effectiveness, it is also not wise to observe a close season, especially if reproduction still takes place in undesirable locations despite the late winter cull. If the usual methods of culling/hunting prove not to be effective enough, consideration may be given to permitting the use of dogs in the lairs and/or the use of dazzle lights (though not after March, since after this the hamsters become active and the daylight period is long enough for the usual methods to be used). In fact dazzle lights are by no means as efficient and effective as is sometimes thought (J.L.Mulder, own data). In the above scenario the 'empty' area will fill up again every autumn with new foxes, so that control will have to start again from scratch each year. Only a limited impact can be expected on the resident fox population around the controlled area; in particular the survival chance of young foxes in the vicinity will increase slightly (temporarily!), because they are able to establish themselves more quickly in the 'open' sites within the controlled area.

Appendix 5 Glossary

EHS	Network of Protected Areas: a cohesive network of nationally and internationally important sustainably conserved natural areas with interconnecting zones which will be created by 2018 at the latest through nature conservation and development.
Experimental hamster management	Flexible, hamster-friendly management, in which the management can be adapted over time on the basis of research and progressive insight in order to achieve a management regime that is acceptable for farmers and hamsters.
ILG	Rural Investment Budget Legal basis: the law governing the structuring of the rural landscape (Wet inrichting landelijk gebied - WILG). Government funding for renewing the rural landscape will be combined in 2007. Grant schemes will make way for seven-year agreements between national and provincial authorities stipulating how the money is to be spent. The combining of instruments and resources for the rural landscape will create more freedom and decision-making autonomy at regional and local level. Central government and the provinces each have their own priorities for the rural landscape. Each seven years they will agree covenants setting out what the provincial authorities will implement in their area together with partners. Central government will make available funding, while the provincial authorities will undertake to achieve the agreed results. They will make agreements with local authorities, water boards and other parties on projects. The provincial authorities will make the payments and inform central government annually as to how much of their budget remains. After seven years they will render account: Central government will want to know whether and how the agreements have been met and will discuss the results achieved with the provincial authorities.
Core hamster habitat	Planned and delimited area within a hamster habitat in which a management regime is applied that is geared to the demands of the hamster in the form of reserve management or agricultural management and in which hamsters have been or are being reintroduced.
National nature data management programme	Xxxxx
Hamster habitat	Parts of the agricultural landscape which are suitable for the hamster
Refuge strip	Strip of a crop which is not harvested, around 15-20 m wide, in which hamsters from the harvested crop area can find food and shelter. These strips are designated mid-season in consultation with the farmers concerned. In principle they are retained for a few months and the costs are reimbursed.
Management Programme	Cohesive raft of measures and grants for the management of woodland, natural assets and the landscape in the Netherlands. They are encapsulated in the subsidy scheme for agricultural nature

National multiyear species protection plan SAN	management (SAN) and the subsidy scheme for nature management (SN) 2000. <i>Rijksmeerjarenprogramma Soortenbeleid Xxxxx</i>
SN	<i>Subsidieregeling Agrarische Natuur</i> , a subsidy scheme for agricultural nature management operated by the Ministry of Agriculture, Nature and Food Quality as part of the Management Programme. The scheme covers a number of management and landscape regimes. Grants are awarded on the basis of a combination of input and output targets, for example relating to the management of meadow birds.
Stepping stone	<i>Subsidieregeling Natuurbeheer</i> , a subsidy scheme for nature management operated by the Ministry of Agriculture, Nature and Food Quality for natural areas as part of the Management Programme. The scheme covers a number of management and landscape regimes, as well as a recreation regime and the possibility of permanently converting farmland into natural land. Grants are awarded on the basis of a combination of input and output targets.
Interconnecting zone or strip	A strip of farmland, either purchased or subject to a long-term hamster-friendly management agreement, situated between core habitats, which can be used by hamsters as a safe haven providing shelter, food and/or a breeding partner.
??	See Refuge strip and Stepping stone, but established or acquired for a longer term and with a better connection to core hamster habitats.
??	