

Common Hamster *Cricetus cricetus*

Habitats Directive – Annex IV¹



Cricetus cricetus has a wide range that extends from Western Europe to Russia and Kazaskstan and beyond.

	AT	BE	BU	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IR
Present														
	IT	LV	LT	LU	MA	NL	PL	PT	RO	SL	SV	SE	UK	
Present														

SPECIES INFORMATION

ECOLOGY

- The common hamster is a small mammal that lives for 1-2 years; because it is so short-lived it needs to produce 2 litters a year just to maintain its population levels;
- The hamster lives in underground burrows. A typical burrow is usually several meters long and 0.5 – 2 m below the surface. It consists of a dwelling chamber, food stores, and toilet pits;
- Hamsters are very territorial and one burrow is used by one individual only (except for when the mother has young);
- Males occupy a larger territory (0,5-2ha) than females (0,1-0,6ha). The male is polygamous and will have several females within its territory;
- Main period of reproduction is from early June to end of August. Each female usually produces two litters a year, the gestation period is 17-21 days and litter size can vary from 2-8 young depending on local conditions and food availability. The young become independent after 4-5 weeks;
- Hamsters have occasional population explosions. In outbreak years, populations can increase 100 fold. The causes are not well known. Within the EU such population explosions have not occurred for many years, probably because of the species' poor conservation status;
- Hamsters often hibernate in their burrows during the winter; hibernation usually lasts from September/October to April but hibernation periods can alternate with wakeful phases during which the animal feeds on its winter stores;
- The hamster's diet consists of wheat and other cereals, clover, alfalfa, bean, rape, beet, potato tubers... which are collected from the ground. Invertebrates and small vertebrates make up 10-15% of the diet. Hamsters also store food in their burrows to see them through the winter.

¹ Except for Hungary where it is listed in annex V

HABITAT REQUIREMENTS

- The hamster's original habitat is fertile lowland steppic grassland. But most of this habitat type has been converted to agricultural land in western parts of the species range. As a result, in the EU, the hamster is mostly found in agricultural fields;
- Optimal habitat usually coincides with the most productive agricultural areas;
- Hamsters occur in most annual crops, but cereals and perennial fodder crops are preferred. Perennial crops and mixtures of grasses and legumes are particularly important as they offer more continuous food availability, shelter and lower disturbance than cereal crops; they also act as refuges when other habitats have been ploughed up;
- Winter cereals offer more suitable habitats than summer cereals;
- Field edges, roadsides and ditches are sometimes occupied in times of need, and offer an important source of cover, invertebrates and wild plants;
- Hamsters also occur in meadows and fallow land, but densities are much lower than in arable land.

THREATS

The hamster now has a very low population and highly fragmented distribution in countries like the Netherlands, Belgium, France and Germany. Further east, in Hungary, the Czech Republic, Slovakia and Romania the species is still relatively widespread (sometimes even considered an agricultural pest) but here too it has suffered a severe decline and could be on the verge of collapse.

Threats therefore vary in intensity from east to west, the most critical include:

- Changes in agricultural crops: Hamsters prefer two kinds of crops (wheat, rye, barley and oats) and perennial legumes (alfalfa, clover, grass-legume mix). The increase in maize cultivation at the expense of these crops is detrimental to the species. Also maize (and sugar beet) provide no cover in spring when animals move around to mate, leaving them highly vulnerable to predation;
- Simplification of rotations: Harvesting or ploughing that affects large areas simultaneously leaves no suitable habitat for the species. A diverse crop structure and staggering of harvesting is important;
- Improved harvesting techniques: Modern machinery leaves less food on the ground. Hamsters, especially young ones, are therefore more prone to starvation. Shorter stubbles also increases exposure to predators.
- Early tillage: Stubble fields are important feeding places for hamsters and the retention of stubble after harvesting enables the animals, particularly the young and females to gather enough food for the winter. The practice of ploughing shortly after harvest removes both cover and food;
- Deep ploughing: Burrows are usually only 50cm – 2m below the surface. Deep ploughing can destroy the burrows and any animals within them, particularly the young who start out with simple relatively shallow burrows. Modern machinery can also kill animals on the surface;
- Irrigation and application of liquid manure: may cause flooding or fouling of burrows;
- Abandonment of cultivation: causes the loss of suitable habitat and food sources. Although the species can also survive in meadows and habitats that develop early on following the abandonment of cultivation, the carrying capacity is significantly lower (probably due to food shortages);
- Persecution: Until recently the hamster was relatively common and in some countries was considered to be an agricultural pest. Consequently large numbers have been trapped, poisoned or killed to prevent damage to crops and grain stores. This deliberate killing has had a very significant impact on the species and is a major cause of its decline;
- Predation: is a key cause of mortality especially in areas with small vulnerable populations combined with an increase in density of generalist predators such as foxes and corvids;

- Changes in land use and infrastructure development: Small fragmented populations, particularly in western Europe are especially vulnerable to changing land uses and the replacement of agricultural land with other forms of land use such as urbanisation or transport infrastructure.

A secure population is considered to contain around 1500 animals occupying a territory of 300-600ha, corresponding to 2-4 burrows per ha. Densities lower than 2 burrows per ha are generally considered unsustainable if no action is taken to actively increase the population and range of the species. It is therefore much more efficient and cost-effective from a conservation perspective to maintain a secure population than to try to bring a species back from the brink of extinction once the population has collapsed.

FARMING PRACTICES FAVOURABLE TO HAMSTERS

To ensure the continued survival of the common hamster in the EU, it is necessary to take measures to safeguard both the species in its own right, and its habitats. Generally, conservation measures are less onerous and should therefore be easier to integrate into existing farming practices in Eastern European countries where the population has not yet crashed. The following farming practices will help:

- Maintain existing crops: which are favoured by hamsters such as wheat, rye, barley and oats and/or perennial legumes such as alfalfa, clover, grass-legume mix;
- Maintain crop diversity: Although hamsters can survive in monocultures, a certain diversity of crops is beneficial as it ensures a continuous food supply and minimises the risk of large areas being harvested or ploughed over in one go. A mixture of cereals and perennial legumes is particularly useful because the latter acts as a refuge after ploughing, harvesting and other farm activities. Such perennial crops should cover at least 10% of the area;
- Use late varieties of cereals: Late varieties remain longer in the fields before harvest, providing cover and feeding opportunities for hamsters over a prolonged period;
- Adapt existing farming techniques: to make them hamster friendly e.g. staggering harvesting times within a field over several weeks, leaving high stubble on all, or large parts of, the field until the following spring, delaying tillage until hamsters have stopped hibernating, ploughing not deeper than 25-30 cm;
- Maintain field edges and unharvested strips of cereal: to provide cover and additional food sources;
- Promote the re-introduction of suitable crops: in areas where the population is highly fragmented and at risk of extinction in order to expand its range and reduce the risk of catastrophic events that could wipe out small isolated populations. This could involve the planting of a suitable mix of crops and using farming techniques that are tailored to the requirements of the hamster;
- Stop deliberate killing and trapping for fur: in countries where the species is listed in Annex IV of the Habitats Directive (Austria, Belgium, Bulgaria, Czech Republic, Germany, France, Netherlands, Poland, Romania, Slovakia and Slovenia) hamster should be strictly protected but derogations can be granted to prevent significant damages to crops. In the case of Hungary (where the species is listed on Annex V of the Habitats Directive), the killing of hamsters must be sufficiently regulated to ensure that their exploitation is compatible with their being maintained in a favourable conservation status;
- Regulate population controls: if derogations are applied to the strict protection regime – for instance because there is a sudden population explosion that leads to serious damage to crops – it must be done in full compliance with the provisions of Article 16 of the Habitats Directive;
- Ban use of rodenticides in areas with existing hamster populations and restrict use of pesticides;
- Avoid irrigation and application of liquid manure: which may cause flooding or fouling of burrows;
- Control infrastructure development: such as urbanisation or transport infrastructure in areas where the species lives in small fragmented populations, particularly in Western Europe to ensure that such activities do not cause a further decline or fragmentation of the species.

OTHER SPECIES BENEFITING FROM THESE CONSERVATION MEASURES

Like every species, the hamster has particular habitat requirements that are unique to its lifecycle. However, several of the measures mentioned above would also benefit other species, some of which are protected under the Habitats and Birds Directives that are typical of these habitats, such as the:

- Romanian hamster, *Mesocricetus newtoni* Marbled polecat, *Vormela peregusna*
- Steppe polecat, *Mustela eversmanii* Soudanese polecat, *Spermophilus suslicus*

Harvest restrictions benefit field-nesting bird species that often lose their brood because of harvesting:
Montagu's Harrier *Circus pygargus* Quail *Coturnix coturnix*.

Postponement of ploughing and retention of stubble will benefit species like:

- Grey Partridge, *Perdix perdix* Skylark, *Alauda arvensis*
- Yellowhammer, *Emberiza citrinella* Corn Bunting *Miliaria calandra*

Hamsters are a favourite prey of several raptors, which thus indirectly benefit from hamster friendly management measures:

- Imperial Eagle *Aquila heliaca*, Booted eagle *Hieraaetus pennatus*
- Saker falcon *Falco cherrug* Red footed falcon, *Falco vespertinus*

OBLIGATIONS ARISING FROM THE HABITATS DIRECTIVE

The hamster² is protected under annex the EU Habitats Directive 92/72/EC, it is listed in Annex IV of the Directive (except for Hungary where it is listed under Annex V). As a result, Member States must take the following measures to ensure its conservation.

General requirements

Member States must undertake measures that are designed to maintain or restore the hamster at a 'favourable conservation status' in the EU (cf Article 2).

The conservation status of a species is taken as 'favourable' when:

- populations are maintaining themselves over the long term and no longer showing signs of continuing decline;
- their natural range is not being reduced;
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long term basis.

Protecting the species

The hamster is listed in Annex IV of the Habitats Directive for all countries except Hungary. Member States (except Hungary) should therefore take the requisite measures to establish a general system of protection for the hamster, and in particular to prohibit the following (cf Art 12):

- deliberate killing or capture by any method;
- deliberate disturbance, particularly during breeding, rearing, hibernation and migration;
- deliberate destruction or taking of eggs in the wild;
- deterioration or destruction of breeding sites or resting places;
- the keeping, sale and transport of specimens taken from the wild.

Derogations to the above are allowed in some special circumstances (for instance to prevent serious damage to crops) provided that no satisfactory alternatives exist and the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status. (Article 16).

² The Hamster is not listed under Annex II of the Directive which means that Member States are not obligated to designate sites for the species under the Natura 2000 Network.

In such cases, Member States must inform the Commission every two years on:

- the reason for the derogation, including the nature of the risk, and if appropriate reference to alternative rejected and scientific data used;
- the means, devices and methods authorized for the capture or killing of the species and the reasons for their use;
- the circumstances of when and where such derogations are granted;
- the authority empowered to issue such derogations;
- the supervisory measures used and results obtained.

In the case of Hungary, the species has been listed in Annex V of the Habitats Directive. As a consequence, Hungary may, taking account of surveillance done of the species conservation status, allow the exploitation and taking from the wild of hamsters, provided it ensures that such activities are compatible with the hamster being maintained at a favourable conservation status (Article 14).

In this respect, the Member State must continue the surveillance of the species' conservation status and, if deemed necessary, introduce measures to regulate such activities, for instance by regulating the periods and/or methods of taking specimens, establishing a system of licences, assessing the effect of the measures adopted, introducing temporary or local prohibitions (Article 16).

HAMSTER CONSERVATION THROUGH MEASURES UNDER CAP/RDPs

The obligations arising under the Habitats Directive for the hamster can be integrated into agricultural policy in the following manner:

Cross compliance

Cross compliance is a horizontal CAP tool and applies to all direct payments (Pillar I), Pillar II payments (Less Favoured Area payments, Agri-Environment, Natura 2000 compensatory payments, and certain wine payments). The cross compliance requirements consist of 19 Statutory Management Requirements (SMR), and the requirements set to keep land in good agricultural and environmental conditions (GAEC).

There are no Statutory Management Requirements (SMR) of the CAP that apply to hamster as it is not a species for which site designation under Natura 2000 is required, and the requirements of Article 12 of the Habitats Directive are not part of Statutory Management Requirements.

Nevertheless, farmers must keep farms in good agricultural and environmental conditions (GAEC) which requires a minimum level of maintenance through compulsory standards, for instance, for:

- Retention of landscape features including where appropriate, hedges, ponds, ditches, trees (in line, in group or isolated) and field margins;
- Avoidance of encroachment of unwanted vegetation on agricultural land;
- Protection of permanent pasture.

Member States can also voluntarily set standards which can be beneficial to hamsters, for example, for³:

- Establishment and/or retention of habitats;

Measures under Rural Development Programmes funded from EAFRD:

The following measures could be used to benefit hamsters:

- **Less Favoured Area payments:** (Article 37) linked to existing farming practices where they support upkeep of traditional low-input farming systems;

³ These standards are however compulsory for those Member States who had already set a minimum requirements for these standards before 1 January 2009 or where national rules addressing the standard are applied in the Member State.

- **Agri-environmental schemes:** (Article 39) linked to voluntary measures such as maintaining or re-introducing appropriate mixtures of crops favoured by hamsters, using late varieties of cereals, staggering harvesting times within a large field, leaving high stubble until the following spring, delaying tillage until April, ploughing no deeper than 25-30cm; maintaining field edges and unharvested strips, preventing or regulating the deliberate capture or killing of hamsters, banning use of rodenticides, restricting use of pesticides and seed treatment products, avoiding irrigation and application of liquid manure;
- **Reimbursement of non-productive investments:** (Article 41) can cover a range of investments from on-farm investments linked AE schemes or to measures identified in species action plans such as restoring and reconnecting suitable habitats for the species;
- **Conservation of rural heritage** (Article 57): drawing up of management plans for places of high natural value, environmental awareness actions regarding the conservation needs of the hamster, and investments associated with the maintenance, restoration and upgrading of the natural heritage and with the development of high nature value sites;

In addition the following could also be used:

- **Training and information** (Article 21): e.g. could help make AE schemes more effective and train farmers and experts in the Farm Advisory Services on conservation and management requirements linked to wildlife such as hamsters;
- **LEADER** (Article 61): integration of hamster conservation into area based local development strategies and enhancement of dialogue and collaboration between farmers, conservationists and other rural stakeholders in the area concerned.

EXAMPLES OF HAMSTER FRIENDLY MEASURES UNDER RDP

The following provide some examples of how countries have introduced hamster friendly farming through the Rural Development Regulations for 2000-2006 and 2007-2013. Further details are provided on the Wildlife and Sustainable Farming Initiative website: http://circa.europa.eu/Public/irc/env/swfi/library?!=/species_reports/vm=detailed&sb=Title

FRANCE

In **France**, the first conservation plan for Common Hamster was implemented during 2000-2004. The plan included several measures for promoting hamster friendly management of farmland, based upon voluntary, contract-based agreements with farmers.

In 2007, France developed a second action plan for the Common Hamster, directly linked to the French RDP. It is based on the delimitation of three priority areas for conservation of minimum 600 ha each. The objective is to have at least 2% of this area covered by alfalfa (totalling ≥ 36 ha) and 20% by winter cereals (totalling ≥ 360 ha). Under the general measure 212, two new agri-environmental sub-measures directly targeted at hamster conservation have been included in the RDP for 2007-2013:

- Measure 09 « rotation à base de luzerne en faveur du Hamster commun ». This measure is based on the obligation of having at least three years of alfalfa on a field during a five year period; the other years, maize and sunflower may *not* be grown on the area. 10% of the alfalfa field shall be left unharvested, ploughing may not go deeper than 30 cm and must occur after 15 September. Rodenticides are prohibited, and cover (intercropping) must be provided until 1 December. Payment is 309 €/ha/year.
- Measure 10 « rotation à base de céréales d'hiver en faveur du Hamster commun ». This measure is based on the obligation of having at least three years of winter cereals on a field during a five year period; the other years maize and sunflower may *not* be grown on the area. If spring cereals are grown, they must be preceded by an intermediate crop, established before 1 September, and which must remain on the field until 1 December. Ploughing may not be deeper than 30 cm and must occur after 15 September. Rodenticides are prohibited. Payment is 169 €/ha/year.

To add value to the production of alfalfa, cattle farming will also be supported.

In the first year, uptake of these sub-measures was rather low, agreements were entered only on 20 ha for measure 09 and on 80 ha for measure 10. In 2008, a total of 186 ha were covered by the schemes. Between 60 and 70 percent of the hamster population in Alsace was localized in fields not covered by AE measures in 2007. A first evaluation (Balland 2007) permitted an increase of the amount of compensation from 285 to 309 €/ha/year for alfalfa and from 146 to 169 €/ha/year for winter cereals (Préfecture du Bas-Rhin 2007). An increase of payments to 361 €/ha for alfalfa and 205 €/ha for winter cereals has been suggested for 2009. But according to ONCFS, compensation payments should be at least 800-1,000 €/ha/year for alfalfa (the maximum amount foreseen in the RD regulation is 600 €/ha, with exception of cases for which MS provides justification) and 500-700 €/ha/year for winter cereals in order to ensure success.

NETHERLANDS

In **the Netherlands**, there is no AE scheme for the hamster on a national scale, but in the Province of Limburg (which is the only province where the species occurs) a management package with four different schemes for hamster conservation is included in the subsidy regulation for agricultural nature management. The four schemes are all new and have the added advantage of being much closer to normal farming practice in this part of the Netherlands. Maximum payment is as high as 2300 €/ha/year for all schemes.

Hamster package 1, cereal-alfalfa light:

- Crop composition is 1/2 alfalfa, 1/3 cereals and 1/6 black garden radish;
- The management unit is at least 6 ha divided into at least 6 equally sized lots of at least 1 ha;
- Crop rotation is 6 years with crops changing over the 6 sub-units;
- Spring cereal crops on 1/6 of the area are harvested every year; winter cereals remain in the field;
- Alfalfa must be sown with normal maximum densities;
- Alfalfa must be harvested once (but rather twice) before 15 June;
- If an alfalfa strip is broader than 25 m, a 5-6 m wide strip of summer cereals must be sown in it;
- By changing crops the old growth is tolled and ploughed;
- Ploughing must not go deeper than 25 cm;
- Weed control and manure spreading are carried out as in normal cultivation.

Hamster package 2, cereal-alfalfa heavy:

- Crop composition is 1/3 alfalfa and 2/3 cereals and black garden radish; black garden radish is grown every two years on 1/3 of the area;
- The management unit is at least 3 ha divided into at least 3 equally sized lots of at least 1 ha;
- Crop rotation is 6 years with crops changing over the 3 sub-units;
- Crops must be sown with normal maximum densities;
- No cereal crop is harvested; every year the crop of spring or winter cereals remains in the field;
- Alfalfa must be sown with normal maximum densities;
- Alfalfa must be harvested once (but rather twice) before 15 June;
- If an alfalfa strip is broader than 25 m, a 5-6 m wide strip of summer cereals must be sown in it;
- By changing crops the old growth is tolled and ploughed;
- Ploughing must not go deeper than 25 cm;
- Weed control and manure spreading are carried out as in normal cultivation.

Hamster package 3, cereal-alfalfa-root crop light:

- Crop composition is 1/4 alfalfa, 1/2 cereals and 1/4 root crops; root crops must be potatoes or beets with a preference for beets;
- The management unit is at least 4 ha divided into at least 4 equally sized lots of at least 1 ha;
- Crop rotation is 8 years with crops changing over the 4 sub-units;
- Crops must be sown with normal maximum densities;
- Summer cereal and root crops are harvested every year; winter cereal crops shall remain in the field;
- Alfalfa must be harvested once (but rather twice) before 15 June;
- If an alfalfa strip is broader than 25 m, a 5-6 m wide strip of summer cereals must be sown in it;
- By changing crops the old growth is tolled and ploughed;

- Ploughing must not go deeper than 25 cm;
- Weed control and manure spreading are carried out as in normal cultivation.

Hamster package 4, cereal-alfalfa-root crop heavy:

- Crop composition consists in one year of 1/4 alfalfa, 1/2 cereals and 1/4 black garden radish and the other year of 1/4 alfalfa, 1/4 black garden radish, 1/4 root crops and 1/4 winter cereals; root crops must be potatoes or beets with a preference for beets;
- The management unit is at least 4 ha divided into at least 4 equally sized lots of at least 1 ha;
- Crop rotation is 8 years with crops changing over the 4 sub-units;
- Crops must be sown with normal maximum densities;
- Every 2nd year summer cereals or root crops are harvested; every year winter cereal crop remains in the field;
- Alfalfa must be harvested once (but rather twice) before 15 June;
- If an alfalfa strip is broader than 25 m, a 5-6 m wide strip of summer cereals must be sown in it;
- By changing crops the old growth is tolled and ploughed;
- Ploughing must not go deeper than 25 cm;
- Weed control and manure spreading are carried out as in normal cultivation.

FLANDERS, BELGIUM

In the region of **Flanders**, an AE scheme specifically targeted at the hamster exists. Farmers living in the designated core areas may be granted a subsidy for carrying out specific hamster friendly management measures if they sign a 5 year agreement on a voluntary basis. In 2008 farmers were very interested in signing these agreements. There is a choice between two kinds of measures: creating buffer strips with alfalfa (600 €/ha/year) or creating unharvested buffer strips with cereals (415 €/ha/year).

A number of practical measures are common to both options:

- The land must be an arable field (not a grassland);
- In at least 3 of the 5 years of agreement, a cereal crop must be sown;
- Maize or grass may not be grown on the field;
- No pesticides may be used except for local thistle control;
- If there are too many rodents or invasive plants, pesticides may be used as an exception if agreed upon by the Agency for Nature and Forest;
- Ploughing may not go deeper than 30 cm;
- During the whole agreement, a buffer strip with vegetation as described below must be maintained; a strip may only be removed if another one is available.

Specific measures for alfalfa strips:

- The alfalfa strips must cover at least 20 % of the field surface and must be at least 12 m wide;
- The strip must be sown with alfalfa, red clover or a mixture of alfalfa and indigenous weeds;
- The strip may be mown up to 3 times a year but this must be organized in phases, implying that only half of the strip may be mown at a time;
- The strip may be fertilised with manure before sowing;
- 5% of the cereal crop shall be left unharvested; this part should be tilled between 20 October - 15 November;
- Directly after harvest, a crop usable for green manure or ground cover shall be sown.

Specific measures for unharvested cereal strips:

- The buffer strips must cover at least 25 % of the field surface and must be at least 12 m wide;
- The buffer strip may be sown with any cereal crop except maize;
- The buffer strip shall be left unharvested;
- After 1 November the cereal crop may be tolled.