

Capercaillie *Tetrao urogallus*

Birds Directive – Annex I, II & III



Tetrao urogallus is confined to the Palearctic region of Eurasia east to c 125°E*

	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 capercaillie is a huge bird of the grouse family which is easily distinguished by its very large size, dark colouring, scarlet skin over the eye and ample fanlike tail;
- Sexual dimorphism is highly pronounced, males weigh 4-5 kg whilst females are no more than 2kg;
- Capercaillie are mainly resident and both sexes show lifelong fidelity to individual home ranges;
- Most young males settle close by, but young females tend to disperse distances of 5-10 km ;
- In autumn and winter, females and young males form small groups of usually less than 10 and not more than 20 individuals;
- Starting in late winter, males display collectively in traditional 'lek' sites to attract the females; once a male has selected a lek site it will return to that site throughout its life;
- There is no pair bonding, instead the males tend to form temporary harems before the females withdraw to nest alone;
- The nest is a shallow depression on the ground, sparsely lined with vegetation, and usually placed in thick cover, often at the foot of a tree;
- In Scotland and Central Europe egg laying occurs from mid-April to early May, becoming later with increasing altitude. In northern Scandinavia, laying takes place from mid-May to early June;
- Usually only one brood is produced a year, each clutch contains 6-8 eggs. Incubation is ca 26 days with hatching occurring from late May to early June, depending on latitude, altitude and climate;
- Young are precocious and eat mainly insects and spiders, but they are very sensitive to cold and require brooding until 3 week olds. They become independent after their 4th month;
- Adults eat predominantly plants. In winter they feed almost exclusively on conifer needles in crowns of trees. From May to October, the birds feed mainly on the ground on leaves, buds, flowers and fruits. Important summer shrubs include bilberry, crowberry, horsetails, mosses and woodrush.

* Drawing courtesy of RSPB

HABITAT REQUIREMENTS

- Capercaillie inhabits boreal and temperate, predominantly coniferous, forests;
- The species occupies several ecologically distinct coniferous and conifer-dominated mixed forest types from tall, dense, dark forests of *Picea* and *Abies* through to lighter, often more open, taiga forests with *Pinus* and *Larix* and mixed forests with an understory of *Betula* and *Populus*;
- Habitat requirements vary over the year. In winter good supplies of conifer shoots and needles are essential. Mature stands of *Pinus* and *Abies spp* are thus preferred;
- On the other hand semi-open areas are also required within the forest for lek sites;
- In early spring, females eat the shoots of cotton grass *Eriophorum sp* and so bogs and mires should also be present. Such areas are also used by chicks for feeding;
- During the summer and autumn, open coniferous or mixed stands with a moderate canopy cover and a rich ground vegetation dominated by bilberry, *Vaccinium spp* is essential. These habitats not only provide an abundant source of food for the chicks but also warmth and cover;
- In boreal and montane zones, climax forests are sufficiently open to suit capercaillie, but in parts of the central European range, mature forest stands are often too closed and dark for the species;
- Preferred habitats contain coniferous trees, open structure with moderate canopy cover of 50-60% and a rich ground vegetation dominated by bilberry *Vaccinium myrtillus* and other ericaceous shrubs;
- Capercaillie also need extensive contiguous forests intermixed with bogs and younger patches of trees in clearings. That is why it is now largely restricted to remoter areas such as the upper slopes of forested mountain ranges away from human disturbance and altered habitat structures;
- Model assessments of minimum viable population size have suggested that the minimum area required to sustain a viable isolated population of ca 450 individual is 250km². Ideally suitable capercaillie habitat should be contiguous across this area, if it is not, smaller patches (50-100km²) of suitable habitat should be sufficiently interconnected to allow dispersal and exchange between sub-populations.

THREATS

The capercaillie is still relatively widespread in the boreal region but its presence is much reduced in other parts of Europe. The threats affecting the species in Western Europe include the following:

- Habitat loss, fragmentation and degradation: are assumed to be the major cause of capercaillie decline. Habitat changes occur at various scales: the species is not only sensitive to changes in habitat structure within a forest but also to changes at a landscape level since it requires extensive contiguous forest areas for its survival;
- Intensification of forestry practices: linked to the above intensive forestry practices destroy and fragment the capercaillie's habitats, causing loss, degradation and fragmentation of habitats. Detrimental changes in forestry practices include clear felling, afforestation with dense monocultures with all trees of similar size and age which provide no structural diversity;
- Abandonment of forestry practices: Some forestry practices, particularly in central Europe, are however beneficial for the species since they encourage a more open and diverse forest structure. Such practices include collection of forest litter, cattle grazing and selective felling of small groups or individual trees which creates an open clearing;
- Pollution: Increased levels of airborne nitrogen have led to soil eutrophication over large areas of western and central Europe. Associated changes in vegetation are disadvantageous for ericaceous shrubs preferred by capercaillie. Airborne pollution with heavy metals especially cadmium, may also be a problem for the birds as they seem to accumulate cadmium strongly;
- Overgrazing: of woodland plants and shrubs by livestock and/or deer reduces the availability of brood habitat vegetation and the associated insect fauna that is vital for early chick development;
- Predation: Land use changes and declining persecution of predators has resulted in an increase in generalist predators such as crows and foxes as well as alien species like the American mink and racoon dog;

- Over-exploitation: The lekking system makes the species susceptible to over-exploitation, because displaying males are an easy target. Trophy hunters usually prefer to shoot high ranking males. Capercaillie hunting is legal in several EU countries but may sometimes be unsustainable if not properly controlled and regulated. Illegal hunting and poaching is also a problem;
- Collisions: In Fennoscandia, significant numbers of capercaillie are killed by collision with powerlines. Collisions with deer fences may also cause high rates of mortality;
- Human disturbance: by forestry activities as well as tourism and leisure activities such as hiking, skiing, mountain biking etc can cause serious problems in areas where the population is restricted to small fragmented sites. Birds may be permanently or temporarily excluded from suitable habitats which depresses breeding success;
- Climate change: fluctuation over both the short and long term could have a significant impact as chick survival is highly dependent on weather conditions. A succession of years with wet and cold conditions can lead to serious population declines. The habitat of the species may also be affected in the longer term by climate change.

FOREST MANAGEMENT PRACTICES FAVOURABLE TO CAPERCAILLIE

The capercaillie has a contiguous distribution in the northern boreal forest where it is still relatively abundant. By contrast, the south-central and western populations in Europe are much reduced and highly fragmented. In both cases capercaillie is very dependent on the way a forest is managed:

- Appropriate forest management activities: should ensure that the forest habitat has a suitable mix of coniferous trees, a varied structure with moderate canopy cover of 50-60%, open areas and rich ground vegetation dominated by bilberry and other ericaceous shrubs. Timber harvesting can be compatible provided it is done selectively and on a rotational basis in function of the capercaillie's needs. Taking heavily managed forests out of active management altogether is not always appropriate as it may prevent the development of a varied forest structure;
- Maintaining undisturbed refuges: in areas where human disturbance is a problem, patches of undisturbed habitat with no roads or tracks, tourist infrastructures or settlements should be maintained. The total area of undisturbed forest patches should be large enough to support the local population and should be interconnected with other refuges;
- Controlling grazing by cattle and deer: Some grazing is beneficial as it helps to maintain open patches within forests but this should avoid the overgrazing of woodland plants that are used by capercaillie;
- Removal of fences: used for excluding deer in areas used by capercaillie. If complete removal is not an option then the fences should be made as visible as possible for the capercaillie;
- Control exploitation: Hunting should be carefully regulated to ensure that it does not affect the species conservation. Poaching should be controlled and the existing laws effectively enforced;
- Control of human disturbance: Forestry work between February and July should be reduced to a minimum; especially where the remaining distribution area is highly fragmented. Careful visitor channelling away from capercaillie areas and restrictions to access to areas at certain times of the year should also be introduced in areas used for recreation. This is best done in dialogue with stakeholders and should be accompanied by awareness raising campaigns.

OTHER SPECIES BENEFITING FROM THESE CONSERVATION MEASURES

Like every species, the capercaillie has particular habitat requirements that are unique to its ecology and lifecycle. However, several of the measures mentioned above would also benefit other species, some of which are listed in the Habitats and Birds Directives, e.g.:

Brown bear, <i>Ursus arctos</i>	Lynx, <i>Lynx lynx</i>
Hazel grouse, <i>Bonasia bonasia</i>	Pygmy owl, <i>Glaucidium passerinum</i>
Great grey owl, <i>Strix nebulosa</i>	Ural owl, <i>Strix uralensis</i>
Tengmalm's owl, <i>Aegolius funereus</i>	Black Woodpecker, <i>Dryocopus martius</i>
Three-toed woodpecker, <i>Picoides tridactylus</i>	Scottish crossbill, <i>Loxia scotica</i>
Wolf, <i>Canis lupus</i>	

OBLIGATIONS ARISING FROM THE BIRDS DIRECTIVE

The capercaillie is protected under the EU Birds Directive 79/409/EEC. Member States must take the following measures to ensure its conservation.

General requirements

Member States are required to take the requisite measures to maintain the population of the capercaillie at a level which corresponds in particular to its ecological, scientific and cultural requirements, or to adapt the population of the species to that level (cf Article 2).

To achieve this, Member States are required to preserve, maintain or re-establish a sufficient diversity and area of habitats for the capercaillie which should include primarily the following (cf Article 3):

- creation of protected areas;
- upkeep and management in accordance with the ecological needs of habitats both *inside* and *outside* protected area;
- re-establishment of destroyed habitats;
- creation of habitats.

Protecting the species

Member States should take the requisite measures to establish a general system of protection for the capercaillie throughout its natural range within Europe, and in particular to prohibit the following (Art 5):

- deliberate killing or capture by any method;
- deliberate destruction of, or damage to, their nests and eggs or removal of their nests;
- taking their eggs in the wild and keeping these eggs;
- deliberate disturbance of these birds particularly during the period of breeding and rearing, in so far as this would have a significant negative effect on the birds;
- keeping the birds, the hunting and capture of which is prohibited

Member States must also make provisions to regulate the sale, transport for sale, keeping for sale and the offering for sale of live or dead birds and of any readily recognizable parts or derivatives of these birds (cf Article 6).

Exploitation (Articles 7& 8)

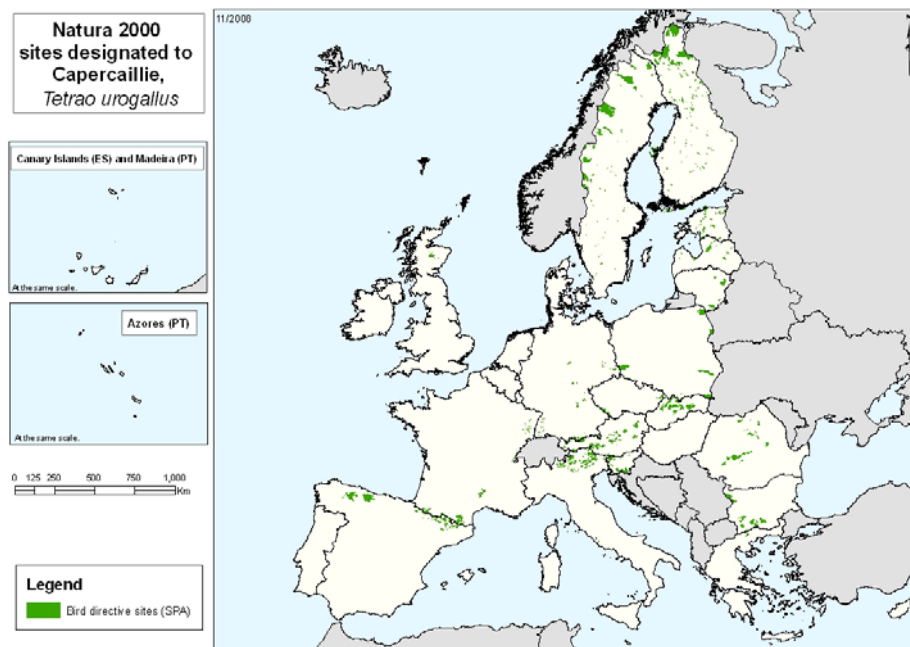
The capercaillie is listed under Annex II/2 of the Birds Directive, which means that the species may be hunted under national legislation in those Member States (Finland, Sweden, Latvia, UK, France, Germany, Austria, Italy and Romania) which have specifically indicated that hunting of capercaillie can be allowed on their territory. These Member States must ensure that the practice of hunting complies with the principle of wise use and that hunting is compatible with the measures taken according to Article 2 (cf above). They shall see in particular that capercaillie is not hunted during its period of reproduction or during their return from migration in late winter and spring.

In respect of the hunting of the species, Member States shall prohibit the use of all means, arrangements or methods used for the large-scale or non-selective capture or killing of birds or capable of causing the local disappearance of capercaillie or other bird species. In particular, the following methods shall be prohibited (Article 8):

- snares, limes, hooks, nets or traps;
- live birds which are blind or mutilated used as decoys;
- tape recorders;
- poisoned or anaesthetic bait;
- artificial light sources, mirrors, devices for illuminating targets etc;
- electrocuting devices or explosives;
- semi-automatic or automatic weapons.

Protecting core habitats for the species under Natura 2000

The capercaillie is listed in Annex I of the Birds Directive in view of its vulnerable conservation state. This means that, in addition to the general provisions referred to above, Member States must also classify the most suitable territories in number and size as Special Protection Areas under Natura 2000 to ensure the survival and reproduction of the species across its entire area of distribution within the EU (cf Article 4). As of November 2008, 671 SPAs have been designated in the EU-27 where the capercaillie is said to be present.



Managing Natura 2000 sites

Within these SPAs, Member States must take appropriate steps to avoid the deterioration of habitats of the capercaillie as well as its disturbance, in so far as such disturbance could be significant.

Measures must also be taken to manage, maintain or, if necessary, restore areas for the capercaillie both within SPAs and outside so that the objectives of the Directive are achieved (cf Art 3). The Birds Directive does not elaborate how this should be done as this is up to each Member State to decide but, in practice, management plans are very often developed for each SPA within Natura 2000.

Management plans are useful documents in that they:

- identify the conservation needs of the habitats and species present in that site so that it is clear to all what is being conserved and why;
- analyse the socio-economic and cultural context of the area and the interactions between different land uses and the species and habitats present;

- provide an open forum for debate amongst all interest groups and help build a consensus view on the long term management of the site;
- help find practical management solutions that are integrated into other land use practices.

Assessment and approval of plans and projects that may significantly affect Natura 2000 sites:

The EU Nature Directives support the principle of sustainable development. Their aim is to set the parameters by which the economic activities can take place whilst safeguarding Europe's biodiversity. Thus, any plans or projects that may affect the species and habitats for which the sites are designated must be first assessed to determine whether the project is likely to have a significant effect on the species and habitat types for which the site has been designated.

If the impact is not considered significant the project can go ahead. If the effect is expected to be significant then alternative less damaging options must be fully explored and selected. In exceptional cases, if no viable alternatives exist, projects with significant negative impact on Natura 2000 sites can still go ahead if they are considered to be of overriding public interest. In such cases, compensation measures will need to be taken in order to ensure that the ecological coherence of the Natura 2000 Network is not compromised (cf Articles 6 (3) & (4) of the Habitats Directive which apply to SPAs classified under the Birds Directive).

CAPERCAILLIE CONSERVATION THROUGH MEASURES UNDER CAP/RDPs

The obligations arising under the Birds and Habitats Directive can be integrated into rural development policy in the following manner:

Cross compliance

In the case of the **Birds Directive** one of the 19 SMRs concerns the requirements resulting from the following articles that must be respected by farmers, also on mixed farming and forestry holdings:

- Article 3 (1) & (2)(b): preserve and maintain a sufficient diversity of habitats for wild birds; in particular introduce measures for their upkeep and management in accordance with the ecological needs of habitats inside and outside of protected zones;
- Article 4 (1), (2), (4): special conservation measures in Natura 2000 sites and taking appropriate steps to avoid pollution or deterioration of these areas;
- Article 5 (a), (b) & (d): obligations under the general system or protection for all wild birds, and in particular prohibitions of the deliberate killing or capture by any method, the deliberate destruction of, or damage to, their nests and eggs or removal of their nests and/or the deliberate disturbance of these birds particularly during the period of breeding and rearing, in so far as disturbance would be significant.

In the case of SPAs another SMR based on the **Habitats Directive**, must be respected:

- Article 6: within Natura 2000 sites take the necessary conservation measures to restore and maintain the species and habitat types for which the site is designated and prevent their deterioration, destruction or significant disturbance.

The exact requirements of the above mentioned SMRs vary between Member States and depend on the way the requirements of the Birds and Habitats Directives are translated into their laws and administrative measures (e.g. management plans for Natura 2000 sites) applicable to farmers, and consequently cross compliance.

Measures under Rural Development Programmes funded from EAFRD:

The following measures could be used to benefit capercaillie:

- **Natura 2000 payments** (Article 46 of EAFRD) - annual payments per hectare of forest to private forest owners or associations in order to compensate for costs incurred and income foregone resulting from the restrictions on the use of forests due to the implementation of Habitats and Birds Directives in the area concerned;

- **Forest-environment payments** (Article 47 of EAFRD) per hectare of forest to cover forest-environmental commitments going beyond the relevant mandatory requirements. This could include amongst others control of alien species, securing open areas in the forest and along wetlands, increasing the amount of dead wood left in the forest, and non-productive planting of tree species to secure a diverse forest.
- **Support for non-productive investments** (Article 49 of EAFRD) in forests: (a) linked to the achievement of commitments undertaken pursuant to forest-environment payments, or other environmental objectives; (b) which enhance the public amenity value of forest and wooded land of the area concerned.
- **Conservation of rural heritage** (Article 57): for instance to cover the cost of drawing up management or species action plans for capercaillie in protected areas, undertaking habitat restoration measures, launching awareness campaigns on capercaillie conservation requirements amongst farmers.

In addition, the following could also be used:

- **Training and information** (Article 21): e.g. could help make forest-environment schemes more effective and train forest owners/managers and experts in the Advisory Services on conservation and management requirements linked to wildlife such as capercaillie;
- **Farm Advisory Services (FAS)** (Articles 24 and 25): to advise forest owners/managers on how to apply cross compliance rules, e.g. those set for the Habitats and Birds Directives that are beneficial, inter alia, for capercaillie;
- **LEADER** (Article 61): integration of capercaillie conservation into area-based local development strategies and enhancement of dialogue and collaboration between forest owners/managers, conservationists and other rural stakeholders in the area concerned.

EXAMPLES OF CAPERCAILLIE FRIENDLY MEASURES UNDER RDP

The following provide some examples of how different countries have introduced support for capercaillie friendly forestry practice through the Rural Development Regulations for 2000-2006 and 2007-2013. Further details are provided in the outputs of the Wildlife and Sustainable Farming Initiative:

http://circa.europa.eu/Public/irc/env/swfi/library?l=/species_reports&vm=detailed&sb=Title

FRANCE

During 2000-2006 it was possible within the framework of Rural Development Regulation 1257/99 and on the basis of Article 30 to grant one-off investments to improve the economic, ecological or social value of forest or to improve and rationalise the harvesting.

A specific grant scheme called "Natura 2000 forest agreements" was also set up and revised in December 2004 for Natura 2000 areas. This remains in place in the new RDP (2007-2013). Within the Natura 2000 forest agreements scheme, capercaillie is one of the key species targeted by the agreements where it occurs in the Natura 2000 areas. It includes at least six measures of relevance to capercaillie conservation:

- (1) Creation and restoration of clearings in closed forest stands, in order to create environments favourable to maintenance and reproduction of habitats or species of Community interest;
- (2) Clearing and thinning of stands for non-productive purposes;
- (3) Additional investments to reduce the impact of forest service tracks and roads. This allows for closing roads and tracks after forestry activity, re-locating tracks to avoid reproduction areas, wetlands etc;
- (4) Specific non-productive forestry works to increase stand heterogeneity to get a more uneven-aged forest community;
- (5) Protection of reproduction habitat with fences to avoid human entry;
- (6) Increasing the development of old stands.

For measure (5) it is important that fences are visible to the birds in order to avoid collisions. Fencing could be with wooden fence, or dense bushes could be used to create a semi-natural barrier.

For all of these measures, specific technical rules are defined at national level and more detailed rules are provided at regional level. Rates of support are also determined at the regional level. As an example, payments range from 42 € to 145 € (per tree) for the development of an old tree with a commitment of 30 years.

SWEDEN

Under the heading of non-productive investments regarding forests, the Swedish RDP 2007-2013 includes two measures for preserving and developing the biological diversity in forests. One of these measures deals with biodiversity in broad-leaved deciduous forest only, but the other measure in coniferous forests – and the one targeting the largest area of land – is of clear relevance to capercaillie conservation.

The overall objective of the measure is to preserve and develop biodiversity and cultural heritage values in Swedish forest land and thus contribute to fulfilling the national environmental quality objective “Sustainable Forests”. The target is to include 65,000 ha of highly valuable forest land in terms of biodiversity and cultural values. Support is given to activities that strengthen the biodiversity and cultural heritage of forest land. The measure is based on a property-level approach, meaning that targeted management is directed to private forest owners who have forest estates with a high share of nature and cultural values. By concentrating support payments on properties with a large proportion of high-value stands, it is expected that the environmental benefits will be maximized.

Eligible forest owners must prepare a goal classification, meaning that forest management plans specify a long term approach to conservation management that strikes a balance between production and environment. Included are an inventory of forest assets and an assessment of the nature value of the different stands. After preparation of the goal classification, the forest owner will set up the management plan for those areas which are considered of particular value for biodiversity and cultural heritage. The management plan must be endorsed by a competent authority. Finally the activities set out in the management plan must be carried out. Support is available for manual and mechanical input that strengthens natural, cultural and social assets in forests. After inspection and verification by the competent authority, support is paid out for eligible costs up to a specified ceiling. Payments only compensate additional costs incurred and are based on actual costs including own work.

A maximum of € 8,3/ha is paid for the goal classification. Manual input such as work with a clearing saw or chain saw, horse driving or burning for nature conservancy purposes qualifies for support up to max. € 333/ha. A maximum of € 444/ha is granted for mechanical inputs such as work involving a harvester, a scooter or a tractor.

Management activities in stands with high nature, culture or social values can be similar to cleaning, thinning and cutting of selected trees. In order not to destroy the values, the activities must be carried out carefully, implying that they are more time-consuming than normal forest management activities. The cost of adapted cleaning is estimated to € 340/ha, or 30 % more than normal cleaning.. Also for machine work, the adapted management measures are more time-consuming than normal harvest, increasing the cost to an estimated € 755/ha but it is assumed that the forest owner can utilize about 20 % of the timber, thus the support level is at € 430/ha.

The total funding available for this measure is € 9.7 million, 53 % of which comes from national public financing and 47 % from the EU.