

Strasbourg, 3 mai 2011
[Inf05e_2011.doc]

T-PVS/Inf (2011) 5

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

31st meeting
Strasbourg, 29 November – 2 December 2011

**EUROPEAN CODE OF CONDUCT
ON HUNTING AND IAS**

FIRST DRAFT VERSION

May 2011

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1. INTRODUCTION

1.1 Hunters and hunting in Europe

Hunting has always been an integrant part of the cultures and traditions of European rural society, with great differences from country to country. Reasons for hunting have changed through the centuries, ranging from food research to recreational purposes.

At present, in Europe there are more than 7,300,000 hunters (FACE, 2010), that means a density of about 1.3 hunters/km² and a proportion of 1 hunter/76 inhabitants.

No comprehensive and updated information on total harvest are available. In fact, data on hunting bags are available only for a few European countries; data on harvest of ungulates and lagomorphs are very fragmented, and only for hunted birds there are more comprehensive information, although not collected with harmonized methods. Several alien species have great importance as game, for example in UK annual pheasant bag was estimated in 12 million (Tapper, 1999) and in France 13.5 million of wild rabbits were shot in 1975 and 3.2 million in 1999 (Letty et al., 2006).

Hunting is not only an important recreational activity but also a relevant industry with direct and indirect benefits mainly on local economies. In 1995 an annual productivity of about 10 billion euros and an accounts of about 1 job every 65 hunters has been estimated for Europe (Pinet, 1995). More recent data estimate at least 120,000 jobs in hunting industry (PACE, Recommendation 1689, 2004). Hunting for pheasant generates annually in the UK over £ 300 million and sustains 26,550 jobs (Tapper, 1999).

1.2 Hunting as pathway of introduction of alien species

Hunting is generally considered one of the most common motivation for the introduction of mammals (in particular *artiodactyla* and *lagomorpha*) and birds (in particular *galliformes* and *anseriformes*) (Nentwig, 2003). To create new hunting opportunities, for meat or recreation, humans have introduced alien species as quarry for a thousand of years. For instance, wild rabbit *Oryctolagus cuniculus* since the Middle Ages (Long, 2003) and common pheasants *Phasianus colchicus* since 17th century (Lever, 2005) were introduced as game species in many parts in many parts of Europe.

Analysis of data coming from DAISIE database showed that hunting has been the main pathway for deliberated introduction of birds (Kark et al., 2009); moreover the hunting purpose has been at the origin of 21% of introduction of mammals in Europe (Genovesi et al., 2009). Another recent review of European data pointed out “food/game” as a primary introduction pathways for birds (61 species) and mammals (31 species) (Hulme et al., 2008).

It must be stressed that the pathways of introduction have significantly changed in the last decades, and nowadays the intentional introduction of new alien game species is very uncommon. Several reasons explain this decreased importance: increased awareness of hunters on the problem of biological invasions, changes of national and international regulations, achievement of more sustainable hunting management principles, increase of natural populations of game species.

At present, the most common introduction of alien species for hunting is limited to the restocking of small game (mainly pheasant, wild rabbit, hare, partridges). Massive releases of often captive-reproduced game stocks (e.g. 20 million of pheasant are released annually in the UK, Tapper 1999; half a million wild rabbits are restocked annually in France, Letty et al., 2006) are made by hunter's associations and public agencies.

1.3 Impacts of alien species introduced for hunting

The introduction of non-native game species may have a range of negative consequences on indigenous species and ecosystems:

- competition: in Italy, interspecific competition with the introduced fallow deer *Dama dama* has been identified as the principal cause of the population crash of the endemic subspecies of Roe deer *Capreolus capreolus italicus*, forced into low quality habitats in a Mediterranean woodland, (Focardi et al., 2006);
- predation: evidences of substantial predation of threatened reptile and amphibian populations by wild pigs *Sus scrofa* were pointed out analysing the stomach content of shot ungulates in Georgia, USA (Buck Jolley et al., 2010);
- disease transmission: introduction of wapiti deer *Cervus elaphus canadensis* from North America to the Mandria Hunting Preserve in 1865 (Northern Italy) caused the first introduction of the giant liver fluke *Fasciolodes magna* now spread across central Europe (Kralova-Hromadova et al., 2010); the alien Sika deer *Cervus nippon* transmitted the Asiatic blood-sucking nematode *Asworthius sidemi* to the 100% of the Polish population of the endangered European bison *Bison bonasus* (Drodz et al., 2003);
- genetic effects: hybridization and genetic homogenization of red-legged partridge *Alectoris rufa* and rock partridge *Alectoris greca* caused by massive introduction of captive-bred stock, often with hybrid from interbreeding with the congeneric chukar partridge *Alectoris chukar* has been documented several times (Barbanera et al., 2009 and 2010);
- impacts on ecosystem function through habitat alteration: in Great Britain there is concern for the impacts of the increasing deer populations, in particular non native Reeves' Muntjac *Muntiacus reevesi* and Fallow Deer *Dama dama*, on the vegetation structures (Fuller and Gill, 2010); experimental evidences demonstrate the effect of deer browsing on the Common nightingale *Luscinia megarhynchos* and potentially on other birds dependent on dense understory vegetation (Holt et al., 2010).

The introduction of non-native game species can also have serious economic impact to agriculture and forestry: in Germany damages on cereal crops, vegetable fields, vineyards and orchards caused by wild rabbits amounted to more than € 5 million per annum (Gebhart, 1996).

Furthermore, hunting has been identified as an indirect pathway of introduction of alien plants used for shelter (Hulme et al., 2008).

1.4 The role of hunters in IAS surveillance and control

Hunters can carry with them a deep, traditional knowledge of species and natural environment. Across Europe hunters contribute to the conservation of biodiversity working with scientists through monitoring and research. This role played by hunters can be easily referred to the concept of "citizen science" (http://en.wikipedia.org/wiki/Citizen_science), term used for programs employing volunteer

monitoring for natural resource management and research, often allowing scientists to accomplish research otherwise hardly feasible. The use of the “citizen science” approach is also aimed to promote public engagement, information, education, exchange. Similarly hunters could be effectively involved in monitoring programmes of IAS distribution and could play a fundamental role in terms of surveillance on new IAS arrival or introduction in a early warning and rapid response system (Genovesi et al., 2010).

A good example of the central role that hunters can play in contrasting IAS is the developing early warning system for the Raccoon dog within the Life Project “Management of the invasive Raccoon Dog *Nyctereutes procyonoides* in the north-European countries” (LIFE09 NAT/SE/000344), headed by The Swedish Association for Hunting and wildlife Management (Dahl et al., 2010).

Opinions about the involvement of recreational hunters in control programmes of non-native species are controversial (Wittenberg and Cock, 2001). On the one hand hunters can be effective in reducing the density of populations, but on the other hand in some cases recreational hunting has been shown to not effectively reduce the target populations. Reasons are manifold: hunters may be interested in managing only some game invasive species, hunters may select only preferred targets (e.g. mature trophy males), hunting can create a shy target population, etc. Moreover, a proportion of the hunters may be reluctant to undertake eradication programs.

2. CONTEXT

2.1 The International context

Convention on Biological Diversity (CBD).

Sustainable use of biological diversity is one of the three objectives set out in the Convention’s first article (<http://www.cbd.int/sustainable/>). The CBD recognise the importance of IAS impacts also at the Article 8.h when ask to the Parties to “*prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats and species*”.

At the 4th CBD-COP in Malawi during 1998, twelve principles (*The Malawi Principles*) of the ecosystem approach to biodiversity management were identified (<http://www.cbd.int/doc/meetings/cop/cop-04/information/cop-04-inf-09-en.pdf>). The 7th CBD-COP in Malaysia during 2004, adopted the *Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity* (<http://www.cbd.int/sustainable/addis-principles.shtml>). The Malawi and Addis Ababa principles provide a fundament for conserving biodiversity through the sustainable use (hunting included) of its components, recognising that humans cultures are an integral part of ecosystems.

The CBD has identified IAS as a major cross-cutting theme and at the 6th CBD-COP in 2002 adopted the decision VI/23 (<http://www.cbd.int/decision/cop/?id=7197>) “Alien species that threaten ecosystems, habitats or species” and his annex “Guiding principles for the prevention, introduction and mitigation of impacts of alien species that threaten ecosystems, habitats or species”; hunting was not cited as pathway for introduction of alien species.

A technical note (UNEP/CBD/SBSTTA/9/INF/32 5 November 2003, <http://www.cbd.int/doc/meetings/sbstta/sbstta-09/information/sbstta-09-inf-32-en.pdf>) was prepared an Ad Hoc Technical Expert Group (AHTEG) pursuant to paragraph 9 of decision VI/23 which requested to identify and explore from a technical perspective specific gaps and inconsistencies in the international regulatory framework of the threats of invasive alien species (IAS) to biological diversity, including consideration of various pathways. The technical note state that “*hunting (release of reared game) [...] provide other pathways for introductions*” and suggest that “*soft’ policy tools (codes of conduct, guidance, certification etc.) can play an important role in building awareness and best IAS prevention and management practices. Their development is often quicker than for binding measures and can be led or supported by stakeholders in the private sector*”. The outcome of the AHTEG was adopted by CBD Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) at its 11th Meeting, in November 2005, as a Recommendation XI/12.

Lastly, at the 10th CBD-COP in Nagoya, 2010, into the Decision X/38 (<http://www.cbd.int/decision/cop/?id=12304>) hunting was specifically highlighted as introduction pathways of invasive alien species and genotypes, in addition to pathways highlighted in the decision VI/23 and his annex. An AHTEG was created to further explore issues on invasive alien species and *“to suggest ways and means, including, inter alia, providing scientific and technical information, advice and guidance, on the possible development of standards by appropriate bodies that can be used at an international level to avoid spread of invasive alien species that current international standards do not cover, to address the identified gaps and to prevent the impacts and minimize the risks associated with the introduction of invasive alien species as pets, aquarium and terrarium species, as live bait and live food with the present terms of reference”*.

International Union for Conservation of Nature (IUCN) – Species Survival Commission (SSC)

The 51st Meeting of IUCN, in Gland, 2000, approved the Guidelines for the prevention of biodiversity loss caused by alien invasive species (http://intranet.iucn.org/webfiles/doc/SSC/SSCwebsite/Policy_statements/IUCN_Guidelines_for_the_Prevention_of_Biodiversity_Loss_caused_by_Alien_Invasive_Species.pdf), prepared by the SSC Invasive Species Specialist Group (ISSG). The goal of these guidelines is to prevent further losses of biological diversity due to the deleterious effects of alien invasive species, according to Article 8 (h) of the Convention on Biological Diversity. As recommended action the guidelines suggest *“to develop collaborative industry guidelines and codes of conduct, which minimise or eliminate unintentional introductions”*.

The final report of the workshop “Recreational Hunting: Standards and Certification” (http://www.conservationforce.org/pdf/SUSG_Workshop_Summary_Report_final.pdf) held in London, 2006 by the members of the SSC Sustainable Use Specialist Group (SUSG) state that *“a range of possible mechanisms exist for enhancing the sustainability, conservation contribution and public acceptance of hunting, including: certification, assisting in government cooperation and improved governance, development of standards, best-practice guidelines, codes of conduct, and model systems”*. Among the major problems that need to be addressed, specialists pointed out the presence of practices that undermine potential conservation benefits of hunting such as introduction of alien species to hunt and breeding genetic “freaks” or hybrids to hunt. The development of standards, codes of conduct, voluntary guidelines and other “benchmark of good practice” are indicated as an appropriate answers to address this problems.

In 2006 the Wild Species Resources Working Group (WISPER) of the SSC European Sustainable Use Specialist Group (ESUSG) produced the “Guidelines on Sustainable Hunting in Europe” (http://www.ruralnaturaleza.com/files/sostenible_europa.pdf). The aim of the document is to provide a (non-binding) set of guidelines for the sustainable hunting of wild bird and mammal species, but also applicable in other context such as hunting with falcons. The document define principles, targets and guidelines. One of the two main ecological principles is that *“hunting should not adversely affect the long-term conservation status of the biological community to which the hunted species belongs”*. Among targets should be mentioned the mantainment of a genetic diversity compatible with the game species conservation (A.b) and the improvement of biological community species diversity (B.a). Alien game species are directly mentioned in two guidelines: *“only reintroduce game species belonging to the list of native species in accordance with the IUCN guidelines on reintroduction of species”* (A.7) and *“not introduce or encourage non-native (alien) species”* (A.8).

The IUCN Position Statement on Translocation of Living Organisms – Introductions, Re-Introductions and Re-stocking were prepared by the SSC Re-introductions Specialist Group (RSG) and approved at Gland in 1987 (<http://www.iucnsscrsg.org/download/IUCNPositionStatement.pdf>). This statement is an initial attempt to describe translocation and provide a comprehensive (terminology, principles and guidelines) aimed *“to reduce the damaging impact of introduction on the balance of natural systems”*. Hunting is recognized as a pathway for the introduction of non-native species

The IUCN Guidelines for Re-Introductions were prepared by the SSC Re-introductions Specialist Group (RSG) and approved at Gland, 1995 (<http://www.iucnsscrsg.org/download/english.pdf>). These guidelines are intended to act as a guide for procedures useful to re-introduction programmes aimed to biological conservation and restoration and not to hunting purposes.

2.2 The European context

The Birds Directive

Article 11 of the Directive 79/409/EEC on the conservation of wild birds (“The Birds Directive”) relates to the prevention of damage to local flora and fauna by the introduction of bird species which not occur naturally in the wild state in the European territory of the Member States.

Nevertheless the Guidance document on hunting under “The Birds Directive” (http://ec.europa.eu/environment/nature/conservation/wildbirds/hunting/docs/hunting_guide_en.pdf) does not address hunting as a pathway in its own right for introductions of alien species (e.g. stock replenishment).

The Bern Convention

Article 11.2.b of the Convention of Conservation of European Wildlife and Natural Habitats (“Bern convention”, 1979) requires Parties to promote the reintroduction of native species and strictly control the introduction of non-native species.

In 2003 the Bern Convention adopted a European Strategy on Invasive Alien Species (<http://www.cbd.int/doc/external/cop-09/bern-01-en.pdf>). The strategy identifies priorities and key actions in order to prevent or minimise adverse impact of IAS, and proposes measures required to recover species and natural habitats affected by IAS.

Hunting and falconry are addressed as pathways for alien species and as best practices are suggested to “*work with the Federation des associations de chasseurs de l’UE (FACE) and national hunting and shooting organisation to assess risks associated with introduction of alien game species for restocking. As appropriate, cooperate in the elaboration, adoption and implementation of a European Code of Conduct on Hunting to regulate and manage such introductions*” and to “*work with the International Association for Falconry and Conservation of Bird of Prey to prevent escapes into the wild of alien birds of prey used for falconry and hybridisation with native species. As appropriate, cooperate in the elaboration, adoption and implementation of a European Code of Conduct on Falconry*”.

The European Strategy moreover pointed out the need of an active involvement of hunters in surveillance, monitoring and mitigation of impact of invasive species.

The Standing Committee of the Bern Convention in Strasbourg on November 2007 in Warsaw, adopted the European Charter on Hunting and Biodiversity, carried out by a Working Group with experts, representatives from Bern Convention Parties and non-governmental Organisations pursuant to the Recommendation 1689 (2004) from the Parliamentary Assembly of the Council of Europe (<http://assembly.coe.int/Main.asp?link=/Documents/AdoptedText/ta04/EREC1689.htm>). This recommendation advocated for a European charter on hunting, as a guide setting out common principles and good practices for hunting.

The Charter is rooted on CDB Malawi and Addis Ababa Principles and his production was aided by the IUCN/SSC-ESUSG, the Federation of Associations for Hunting and Conservation of the European Union (FACE), and the International Council for Game and Wildlife Conservation (CIC).

The goal of the Charter is to promote principles and guidelines aimed to ensure that hunting in Europe is practiced in a sustainable manner, while avoiding negative impacts on biodiversity and making a positive contribution to the conservation of species and habitats and the needs of society (http://ec.europa.eu/environment/nature/conservation/wildbirds/hunting/index_en.htm).

The principles 4 of the Charter focus on hunting and alien species (“Maintain wild populations of indigenous species with adaptive gene pools”) and define the following guidelines to regulators and managers:

- deter the release of new alien species that could become invasive and/or negatively effect native fauna or flora;
- engage hunters in programmes to remove invasive alien species;
- facilitate the reestablishment of originally indigenous species of fauna and flora in accordance
- with IUCN guidelines and have clear management plans that define their recovery;
- incorporate genetic considerations into management plans;
- seek transboundary cooperation to ensure genetic adaptability of populations;
- monitor the genetic characteristics of species populations of special concern to hunters and hunting tour operators:
- accept the return through natural recolonisation of wild species that were once indigenous to
- an area, taking into account the socio-economic context;
- favour re-stocking from appropriate sources but only introduce or reintroduce species in accordance with IUCN guidelines;
- avoid exclusive selection for specific phenotypic or behavioural traits of individuals which are not representative of the wild species population and can consequently be detrimental;
- aid scientists and managers in monitoring genetic characteristics of populations.

Other guidelines in the Charter suggest to hunters and mangers to:

- encourage the creation of policies and structures that reduce conflicts and create synergies between hunting and other conservation interests, reward best practices (e.g. with subsidies or privileges), and regulate against malpractice (3.1.2.1.b);
- account for possible negative impacts of hunting on other ecosystem services and minimise and mitigate these (3.5.2.1.c);
- actively contribute to the conservation and restoration of habitats at appropriate scales where feasible (3.5.2.2.a);
- use only native flora for habitat restoration (3.5.2.2.c);
- have knowledge regarding wildlife ecology and conservation practices (3.8.2.2.a);
- have sufficient knowledge on the identification, habits and ecology of game-species as well as non-game species (3.9.2.2.b);

2.3 National initiatives

Only few countries in Europe adopted specific regulations relevant to prevent introductions of non-native species for hunting purposes. For instance, since 1997, Denmark regulate the release of non-native game species, by means of the Hunting Act: (<http://www.retsinfo.dk/DELFIN/HTML/A1997/0011429.htm>). Likewise Finland adopted his Hunting Act in 1993 (<http://www.finlex.fi/fi/laki/kaannokset/1993/en19930615.pdf>), forbidding importation or release into the wild of game species of foreign origin without the permission of the Ministry of Agriculture and Forestry.

Some national hunter's organisations have adopted voluntary codes of ethical conduct (e.g. French Federation of Hunters – <http://chasseaubroc.free.fr/chartechasseenfrance.htm>) aimed to encourage hunting ethics. This self-regulation rules emphasize on hunter responsibility towards wildlife and nature and on his role in conservation of biodiversity, but none of them refer to hunting as pathways for non-native species.

2.4 The European Hunter's position statement

Europe's hunters, represented by FACE and its Members, actively contributed to the production of the European Charter on Hunting and Biodiversity. Moreover FACE is directly involved in the ongoing development of the EU strategy on IAS and have recently produced a Manifesto for Biodiversity (<http://www.face.eu/biodiversity/index.html>) with key themes reflecting their ambition to take measurable actions to contribute to the debate on biodiversity and the post-2010 targets. The Manifesto was reviewed and revised after the 10th CBD-COP in Nagoya, 2010, to ensure that was in line with the decisions taken by the global community.

The Manifesto deal with IAS, stating that they may need certain measures of regulation and control, and make two specific commitments:

- FACE and its Members will communicate to hunters the necessity to identify, control and avoid the introduction of alien animal and plant species.
- FACE and its Members will contribute to policy formulation for issues such as the control of Invasive Alien Species (IAS) and large carnivore conservation.

Other commitments on sustainability of hunting and the maintenance of ecosystem services in the Manifesto are:

- FACE and its Members will create better understanding of sustainable use principles and their implementation, as promoted by the Addis Ababa Principles of the CBD and the European Charter on Hunting and Biodiversity of the Council of Europe.
- FACE and its Members will lead efforts for a new sustainable wildlife use initiative, complementary to the Sustainable Hunting Initiative that has a credible representation and support from wildlife users.
- FACE and its Members will endeavour to improve information on ecosystems and the services that they provide by continuing to be involved in collaborative research and monitoring that contributes to the placing of a true value on biodiversity assets.

3. AIM AND SCOPE OF THE “EUROPEAN CODE OF CONDUCT ON HUNTING AND IAS”

The present Code of Conduct aims to provide a set of voluntary principles for hunters and hunting managers to be adopted in order to improve sustainability of hunting, avoiding negative impacts caused by the introduction and spread of invasive alien species for hunting purposes, and to strengthen the contribution of hunters to the management and conservation of biodiversity.

The Code takes account the existing initiatives and relevant obligations and principles of the Directive 79/409/EEC (the Birds Directive), the Bern Convention and the Convention on Biological Diversity (CBD). Besides the Charter is based on the Malawi and Addis Ababa Principles for a conservation of biodiversity through the sustainable use (hunting included) of its components.

This European Code of Conduct on Hunting and IAS should be considered as an implementation of points (1) *Building awareness and support*, (5) *Prevention*, (6) *Early detection and rapid response* and (7) *Mitigation of impacts* of the European Strategy on Invasive Alien Species.

Furthermore, the Charter represents a contribution of the hunters to the “2020 European Strategy on biodiversity” and to the Strategic Plan 2011-2020 of the CBD (<http://www.cbd.int/cop/cop-10/doc/press/press-briefs-en.pdf>).

Scope of this Code is to deepen some aspects of the issue “hunting and IAS” and to contribute to enhance what already stated mainly in the European Charter on Hunting and Biodiversity.

4. PRINCIPLES

4.1 Principle 1: Intentional releases of new invasive alien game species must be avoided

Invasive alien species are recognised as one of the major threats for biodiversity and also impose considerable impacts on economy and human health. IAS can change ecosystems by altering their intrinsic processes and consequently cause impact on ecosystem services and human well-being. The globalization of trade, travels and transports is greatly increasing the number of IAS. Pathways of introduction are changed in last decades, showing a decrease of deliberate release (e.g. hunting) and an increase of unintentional introductions. Despite this trend is fundamental proactively address the IAS problems encouraging hunters and hunting managers to adopt responsible behaviour.

4.2 Principle 2: Alien species can be used for restocking only if non-invasive or introduced in ancient historic times

Even if the introduction of an alien species should always be considered as an ecosystems disturbance, not all alien species are invasive. Priority needs to be given to tackling new IAS rather than concentrating resources on ancient introductions. Anyway the restocking of species introduced in ancient historic times should be based on a precautionary approach, evaluating on a case by case and considering both the impacts caused (especially on insular ecosystems) and the historical and cultural value.

4.3 Principle 3: Stocks used for restocking must be genetically appropriate and free from disease

Introduction of wildlife for game restocking is one major pathway of genetic homogenization. Game restocking was also recognised as a pathways for introduction of diseases. Some game species (in particular *galliformes* and *lagomorphs*) are constantly supplemented by commercial stocks of captive-bred (and often hybrid) individuals. Management and restocking plans should consider biogeographical and conservation issues. Adequate genetic and health characteristics of source for restocking should be ensured and the release of hybrids or mix from different biogeographical areas must be avoided, especially when pose a threat for conservation of native species.

4.4 Principle 4: Eradication is an essential management tool to tackling IAS

Prevention can reduce new introductions but when an invasive alien species is established could be necessary to activate appropriate management responses as eradication. Hunters should accept and support the possibility that a non-native invasive species, even if introduced and exploited for hunting purposes, could be eradicated if relevant to preserve biodiversity.

4.5 Principle 5: The control of a game invasive alien species, if necessary, should be supported

Control aim to reduce abundance and impact of IAS to an acceptable level in the long-term. Once accepted by hunters that an alien game could be controlled, the extent of support that hunters can give to remove invasive alien species must be evaluated case by case. Evaluation should consider at least biological traits of IAS, natural and social context, methods selected, efficiency and costs targets.

4.6 Principle 6: Hunters collaborate in monitoring and surveillance programmes on IAS

The deep and traditional knowledge of species and natural environment that hunters can bring let them contribute to the conservation of biodiversity, working with scientists through monitoring and

research. According to the concept of “citizen science”, hunters can be trained and effectively involved in a “early warning and rapid response” system, playing a central role in monitoring/surveillance of IAS distribution or new introduction.

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