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# EUROPEAN CODE OF CONDUCT ON RECREATIONAL FISHING AND INVASIVE ALIEN SPECIES

## - FINAL -

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## PRESENTATION

The Council of Europe has been particularly active in the last 20 years in the field of invasive alien species, one of the main world threats to native biological diversity. The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) created in 1993 a Group of Experts devoted to the analysis of the impacts of invasive alien species on European biodiversity. The Group was asked to propose measures that governments may take to avoid new introductions and control the spread of invasive alien species. These are complex tasks that cannot be just trusted to a few experts, but that need the collaboration of the many different actors dealing on a daily base with organisms or living material, be it in the horticultural industry, in the pet trade, recreational fishing or in institutions, such as botanical gardens, zoos or aquaria which hold collections of non-native animals or plants.

The Council of Europe is preparing, for their attention, a number of "codes of conduct" aimed at making those industries and institutions more aware of the risks for native biodiversity of the non-native species they handle or encounter. Recreational fishermen are becoming increasingly concerned as to the impact of invasive alien species on habitats, water quality and native fish species and a mixed response from Member States governments in taking actions to prevent, contain and eradicate these species where found.

These code aims to offer some guidance to all angling bodies, recreational fishers, businesses that rely on recreational fishers as well as the fishing tackle industry in general in the hope that, knowing their commitment to biodiversity and conservation, they will use it in their everyday fishing activities and thus contribute to the noble task of preserving our ecosystems free as far as possible from the impacts of invasive alien species as committed to in the European Charter on Recreational Fishing and Biodiversity (2010).

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# 1. INTRODUCTION

The *Millennium Ecosystem Assessment* (WRI 2005) regards invasive alien species (IAS) as, globally, one of the most important direct drivers of biodiversity loss and ecosystem service changes alongside overexploitation, pollution, habitat destruction and climate change. Even apart from the biodiversity loss they can cause serious economic loss and impact on human health, as Europe moves to value ecosystem services and indeed look to bring in ecosystem services accounting as part of decision making in, for example the European Water Framework Directive 2000, the effects of the impacts of IAS will become more prominent and to a wider audience than is the case today.

Evaluations of the financial cost of the impacts of IAS have been attempted in the past but these tend to be direct cost in relation to control management and economic loss rather than evaluating loss to ecosystem service. At a global level Pimentel *et al* (2005) estimated the cost at 5% of global GDP whilst at a European level Kettunen *et al* (2009) calculates a cost of 12 billion Euros a year.

The difference between invasive alien species and alien species is also important as there are benefits to some introductions to certain groups whereas the cost if the risks are not correctly assessed are born by society as a whole (Pimentel *et al* 2000). In past times little thought was given to introductions of species now defined as IAS and recreational fishing, through its contact with and use of aquatic and riparian species, has been identified as a potential, actual primary and secondary pathway for the spread of invasive alien species. Savini *et al* (2010) in reviewing the top 27 animal alien species introduced in Europe for aquaculture and related activities considered information extracted from IMPASSE, Daisie, Fish-Base and FAO-DIAS inventories to list 27 of the most common animal species used in aquaculture, stocking, sport fishing and for ornamental purposes considered their environmental impact together with their ability to act as vectors for other alien species and pathogens; in conclusion they found that of sport fish those of a predatory nature (e.g. catfish and salmonids) "cause major environmental impacts in Europe by outcompeting native species and altering habitat structure". Tricarico (2012) concluded that in a review on pathways and drivers of use regarding non-native freshwater fish introductions in the Mediterranean region that as well as improved legal controls being required to protect native fish species from introductions of non-native Perciformes and Cypriniformes through aquaculture and angling purposes there needs to be a greater dive to improve public awareness of the risks involved in such introductions.

By formatting this Code of Conduct it is anticipated that through education and awareness recreational fishing will form part of the solution in tackling invasive alien species by acting as the "eyes and ears" of the rivers, lakes and seas of Europe in spotting and reporting the spread of these species as well as being active in control and eradication. The recreational fisheries sector identified the threat of invasive alien species in the early 2000's as part of a review of all practices, upon the request of the European Inland Fisheries Advisory Commission (EIFAC) a code of practice was prepared by R. Arlinghaus (Leibniz-Institute of Freshwater Ecology and Inland Fisheries and Humboldt-University of Berlin, Germany) with the assistance of I. Cowx (International Fisheries Institute, University of Hull, United Kingdom) and R. van Anrooy (Food and Agriculture Organisation of the United Nations). This EIFAC Code of Practice for Recreational Fisheries (EIFAC Occasional Paper No. 42) forms the basis of this Code of Conduct highlighting the articles and codes that relate to Invasive Alien Species and the report forms an integral appendix to this Code. These issues were also raised and addressed in the European Charter on Recreational Fishing and Biodiversity (2010) prepared by Mr. Scott Brainerd and in particular Principle 4 states the necessity of maintaining populations of native species with adaptive gene pools and this document also forms an integral appendix to this code.

In addition this Code of Conduct incorporates detailed biosecurity guidance for recreational fishing as it is fully recognised that preventing the arrival of IAS by recreational fishers as a vector is more effective than control and eradication once they have arrived.

This Code of Conduct is one of a number of voluntary instruments that are being drawn up or completed and adopted by the Bern Convention in sectors identified as possible pathways and they

include “Hunting and IAS”, “Pets and IAS”, “Botanic Gardens and IAS” against a back drop of a European Union Regulation on IAS that has been adopted in October 2014. This process also fulfils commitments made by the European Commission in Communication “Our life insurance, our natural capital: a EU biodiversity strategy to 2020” (COM 2011 244) together with commitments made in Aichi Target 9 of the “Strategic Plan for biodiversity” (CBD OP10 Nagoya, Japan 2010).

### 1.1 Socio-Economic value of recreational fishing

As stated in the European Charter on Recreational Fishing and Biodiversity [ECRFB] (Council of Europe 2010): “Fishing is an age-old activity throughout Europe and the world. Originally a form of subsistence and sustenance for early Europeans, it has evolved over time into an important consumptive activity with both commercial and recreational aspects.” In this Code of Conduct we are only concerned with recreational fishing but it should be recognised that there are many businesses in Europe that rely and work with recreational fisheries from charter boats that take fishers fishing in the marine environment, farmers and land owners that rent waters to fishers to commercial units that build specialist facilities to fish farms that supply fish to be stocked and this list is not exhaustive. Across Europe a number of techniques and equipment are used in recreational fishing. The most common is the use of rod, hook and line but also hand lines, long lines, nets, pots, traps and projectile or spear fishing. However in using the term “recreational fishing” this implies and is accepted as either taking fish for home consumption or releasing the fish once caught in a manner that does not cause harm. Angling is a term used to describe the use of hook and line.

A number of organisations across Europe have attempted to quantify the socio-economic benefits of angling and the numbers of people that take part in this activity. The European Anglers Alliance (the umbrella organisation for anglers in Europe) estimated that in 2003 there were at least 25 million recreational anglers (EAA 2003) taking part in both freshwater and saltwater, an updated study by the European Anglers Alliance is currently being finalised (EAA 2013). ERFB reports Kenward R. & Sharp, S. (2008) as estimating that in 2006 19 billion Euros was spent by anglers on fishing equipment, fees to fish, lodging and travel. The European Fishing Tackle Trade Association (EFTA) estimates that 99,000 jobs depend on local tackle shops, manufacture and the trade of fishing tackle (EFTA 2009). These figures are likely to be an underestimate as a more recent survey in England and Wales conducted by the UK Government in 2010 concluded that sea, coarse and game angling contributed £3.5 Billion per annum to the economy, supported 37,000 jobs and 4 million people had gone fishing in the last 2 years (Public attitudes to angling, Environment Agency 2010 & Economic Evaluation of Inland Fisheries, Environment Agency 2010).

The ECRFB goes on to state that “most European countries have instituted freshwater license programs and about half of coastal countries have also introduced saltwater fishing licenses.” In England and Wales licensing from freshwater raised £24.7 million in the financial year 2012-2013 (Environment Agency 2013), revenues from licensing are used with varying amounts of transparency and accountability to mainly support the funding of activities relating to recreational fishing (pers. comm.).

In Article 5.6 of the ECRFB it states that “Each stakeholder within the recreational fishing sector should: accept that environmental stewardship is the overriding ethical principle to which recreational fishing practice and its management will be judged by others.” This principle underscores the potential of recreational fishing playing a key role in prevention, control and eradication of IAS. In 2012 the Angling Trust (the representative body for angling in England), the Environment Agency and the Substance social research cooperative conducted a survey of anglers in England to which there were nearly 30,000 responses. 26% of respondents stated that they would like to get involved in environmental improvement volunteering (NAS 2012) and respondents categorised IAS in the top 6 most severe threats to angling (NAS 2012). There is therefore a largely untapped volunteering resource available in recreational fishing which could be utilised for work on IAS.

## 1.2 European and Member States legislation and initiatives

The European Commission in Communication "Our life insurance, our natural capital: a EU biodiversity strategy to 2020" (COM 2011 244) has been referred to before in this report, it contains a commitment that "By 2020, Invasive Alien Species (IAS) and their pathways are identified and prioritised, priority species are controlled or eradicated and pathways are managed to prevent the introduction and establishment of new IAS". The Communication also recognised the need for the introduction of legislation at a European level in order that targets were met. Whilst there was a commitment for this to be completed by 2012, at the time of this report in 2013 details have still not emerged of how this will be taken forward or whether this will take the form of a new Directive or Regulation.

At Member State level legislation tends to be mixed and spread between different legislation and enforcement authorities. In England and Wales for example there is the Live Fish (England & Wales) Act 1980 which is enforced by the Environment Agency and relates to the movement of fish into and around England & Wales including IAS and there is also the Wildlife & Countryside Act 1981(WACA) which also contains provisions relating to IAS enforcement of this being split between various authorities including the Police Service but it contains no powers to enter property or enforce destruction of IAS on private property if the owner refuses consent. This mixed approach appears to be prevalent across Europe and this author's contact with angling representative bodies across Europe also indicates a mixed response by authorities in taking action on IAS when reported.

## 1.3 European Inland Fisheries Advisory Commission (EIFAC) Code of Practice for Recreational Fisheries

In recognising the need for a voluntary code of practice for all matters pertaining to recreational fisheries the Food and Agricultural Organisation of the United Nations commissioned this guide in partnership with the angling community and endorsed by the European Anglers Alliance and member bodies. Its aim is to "establish best practice principles amongst nations for responsible management and fishing practices, taking into account all relevant biological, technological, economic, social, cultural and environmental aspects. This EIFAC agreed voluntary policy document has to fit alongside national legislation and regional best practice guidelines and is designed to be the minimum standards for environmentally friendly, ethically appropriate and socially acceptable recreational fishing". It contains a number of Articles which are relevant to IAS:

Article 2.7: "to improve communication and mutual understanding among recreational fisheries stakeholders and with other parties".

Article 2.8: "to promote research into recreational fisheries as well as on aquatic ecosystems and the relevant environmental factors which influence recreational fisheries".

Article 3.3: "In its region, EIFAC, in collaboration with government agencies and recreational fisheries associations, will monitor the application and implementation of the CoP and its effects on recreational fisheries amongst its member countries."

Article 3.4: "In its region, EIFAC, as appropriate, will revise the CoP periodically, taking into account new developments in recreational fisheries, with full consultation of relevant stakeholders."

Article 8.10: "immediately report pollution incidents, distressed or dead fish, the presence of unusual species, non-native species and other environmental impacts/observations to the relevant authorities."

Article 8.11: "not stock, introduce or transfer live fish or other aquatic organisms within or between catchments without permission from the authorities. This particularly applies to non-native organisms."

Article 8.19: "use bait, particularly live bait, only in agreement with local or national regulation, and use aquatic organisms only in the water body from which these are collected; never transfer aquatic live

bait from one water body to another." N.B Live bait is defined as the "use of live invertebrates, (e.g. crayfish), vertebrates, (typically teleost fish) and worms and maggots in recreational fishing".

Article 11.27: "Introduction of non-native species to create fisheries should be avoided. Where proposed, they must comply with the EIFAC Code of Practice on Species Introductions and be reviewed by qualified, independent experts".

### 1.4 European Charter on Recreational Fishing and Biodiversity, prepared by Mr. Scott Brainerd in 2010, on behalf of the Bern Convention

This Charter also considers the role of recreational fisheries in the conservation of biodiversity by the use of sustainably managed fisheries. It highlights the considerable number of recreational fishers across Europe and their contributions to habitat, fish conservation and national policy decision making. The Charter contains 10 Principles and a sub set of guidelines, Principle 4 is titled "Maintain populations of native species with adaptive gene pools" and considers that conservation will be enhanced if regulators and managers of recreational fisheries:

- "Prevent the release, spreading and translocation of invasive alien species that can have significant impacts on native fish populations or the environment";
- "Engage recreational fishers in programmes to remove invasive alien species";
- Facilitate the reestablishment of originally indigenous fish species in accordance with IUCN guidelines and have clear management plans that define their recovery".

## 2. BIOSECURITY FOR RECREATIONAL FISHERIES

The Ponto-Caspian species; *Dikerogammarus villosis* was first found in England & Wales in September 2011at a public water supply reservoir at Grafham Water in England which is used by both anglers and boaters (GBNNSS 2011) The emergency biosecurity response was to require water users to use disinfectants to kill the shrimp to prevent spreading to other water bodies, however in laboratory conditions the Environment Agency found that this was not an adequate control that they could survive in damp conditions for up to 15 days or 2 days in dry conditions (GBNNSS 2011).

United Kingdom (UK) Government Departments and its Agencies together with environmental Non-Government Organisations and representative bodies from all water users in the UK adopted similar practices to that found in New Zealand by launching a public initiative for all water users to adopt the principles of "Check, Clean, Dry" in January 2012 (*pers. comm.*). This relies on Public participation, education, awareness raising and training to ensure that these procedures are followed, namely:

**Check** – All clothing and equipment should be thoroughly inspected and any visible debris (mud, plant or animal matter) should be removed and left at the water body where it was found. Particular attention must be paid to the seams of boots and waders. Any pockets of pooled water should be emptied. (GBNNS 2013).

**Clean** – Equipment should be hosed down or pressure-washed on site. If facilities are not available equipment should be carefully contained e.g. in plastic bags, until they can be found. Washings should be left at the water body where the equipment was used or contained and not allowed to enter any other water course or drainage system (i.e. do not put them down the drain or sink). Where possible, clean equipment should be dipped in disinfectant solution (e.g. Virkon) to kill diseases, but note this is unlikely to kill non-native species. (GBNNSS 2013).

**Dry** – Thoroughly drying is the best method for disinfecting clothing and equipment. Boots and nets should be hung up to dry. Equipment should be thoroughly dry for 48 hours before it is used elsewhere. Some non-native species can survive for as many as 15 days in damp conditions and up to 2 days in dry conditions, so the drying process must be thorough. (GBNNSS 2013).

Whilst 2 other, localised sites, were found to contain *Dikerogammarus villosis* in Wales, to date this species have been contained at these 3 sites since the launch of the campaign. This report therefore

recommends that this good practice should become the norm for biosecurity control for Recreational Fisheries and other water uses in Europe.

# 3. THE CODE OF CONDUCT

## Audience and aims

This code of conduct is aimed at all those that engage in recreational fishing and fisheries whether anglers, voluntary bodies like clubs or affiliated angling groups, angling governing bodies or those that are commercially engaged with recreational fishing and fisheries for example charter boats or those that run fisheries as a business. It is also intended for those Member States and their agencies that regulate recreational fisheries. However this code is voluntary only, not a legally binding instrument nor is it the intention that this code be used as the basis for future legislation.

Its aim is also to be compatible with the Convention on the Conservation of European Wildlife and Natural Habitats European Charter for Recreational Fishing and Biodiversity (2010), the European Inland Fisheries Advisory Commission's EIFAC Code of Practice for Recreational Fisheries (2008) and the Food and Agriculture Organisation of the United Nations' Code of Conduct for Responsible Fisheries (adopted 1995). These three documents all contain mention of good practice for invasive alien species and this code draws these together in one document but further brings in the concept of biosecurity following the approach taken in the United Kingdom and in this case the Check, Clean, Dry protocols developed by the GB Non Native Species Secretariat in collaboration with other United Kingdom Government Departments and Non-Governmental Organisations are followed. Many of the codes in these documents are repeated verbatim here or slightly altered to highlight the issues around invasive alien species.

## 3.1 Awareness, education, research, training and monitoring

The recreational fishing sector should:

- Promote awareness of the code to encourage responsible recreational fisheries through targeted information, education and training of recreational fishers, managers, policy-makers and other stakeholders. Particular emphasis should be placed on identification and reporting procedures together with biosecurity.
- Collaborate with relevant experts in developing awareness and education programmes aimed at informing recreational fisheries on invasive alien species.
- Government agencies and authorities should engage with recreational fishers in programmes to remove invasive alien species.
- Promote research into recreational fisheries as well as on associated aquatic ecosystems and the relevant environmental factors which influence recreational fisheries.
- In collaboration with government agencies and recreational fisheries associations, monitor the application and implementation of the Code of Conduct and its effects on recreational fisheries among Member States.
- This Code of Conduct should be reviewed periodically, and as appropriate, taking into account new developments in IAS as it impacts recreational fishing.

## 3.2 Fisheries management

The EIFAC code states in Article 11.1 that "the over-arching goal of recreational fisheries management is to ensure the long term sustainability of fisheries resources thereby safeguarding the availability of these resources for future generations. Sustainability of fisheries resources includes conservation biodiversity at all levels, including genetic diversity, as well as supporting terrestrial and aquatic ecosystems." Invasive alien species are a threat to this principle. Recreational Fisheries should therefore:

- Prevent the release, spread and translocation of invasive alien species that have impacts on native fish populations or the environment.
- Authorities should engage recreational fishers in programmes to remove invasive alien species to increase educational and practical awareness as well as using them as a resource.
- Recreational fishers should engage with authorities or others in management planning for biosecurity and control and eradication of invasive alien species.
- Stocking and re-stocking should only be in accordance with Member State regulation and guidance which should also be in accordance with IUCN guidelines.
- Immediately report the presence of invasive alien species in accordance with Member State guidelines.
- Not stock, introduce or transfer live fish or other aquatic organisms within or between catchments without permission from the authorities.
- Use bait, particularly live bait, only in agreement with local or national regulations and use aquatic organisms only in the water body from which these were collected; never transfer aquatic live bait from one water body to another.
- Introduction of any non-native species to create fisheries should be avoided. Where proposed, they must comply with the EIFAC Code of Practice on Species Introductions, local or national regulations and be reviewed by qualified, independent experts.

### 3.3 Biosecurity for Recreational Fishing

In some places in Europe this will be a new concept but builds on the practices in Australia, New Zealand and most recently in the United Kingdom following the recent discovery of Ponto-Caspian species in that country. The overriding principle is that prevention is better than cure and the key to success in this approach is the awareness, education and training principles noted previously and recognises that recreational fishers contact with water via equipment or clothing can result in their inadvertently becoming a vector for the transfer of invasive alien species. Equipment includes fishing tackle but also boats and engines used during fishing.

***General***

- Anglers should make themselves aware of invasive alien species and partake in education programmes designed for this.
- Adequate signage or guidance should be in place, making all anglers aware of the risk and providing advice on how to prevent spread.
- Ideally all cleaning and inspection operations should be supervised by a volunteer or member of staff.
- Where practical, access and egress for anglers should be limited, preferably to a single spot, preferably to a single point. Anglers should log in and out, confirming that they have cleaned and inspected their equipment. Where a new invasive alien species has been identified this procedure should always be followed to allow containment.
- Any site may have invasive alien species and diseases that can be spread.
- Risk can be reduced by reducing the contact time in which equipment is exposed to water.
- If possible nets, drogues, boats and boat equipment should be provided at the site and used in preference to personal equipment brought in from off site.
- De-hooking mats and bass bags should not be allowed in the water and should be thoroughly cleaned after use and dried.

***Check, Clean, Dry disinfection procedures***

- **Check** – all clothing and equipment should be thoroughly inspected and any visible debris (mud, plant or animal matter) should be removed and left at the water body where it was found. Particular attention must be paid to the seams and seals of boots and waders. Any pockets of pooled water should be emptied.
- **Clean** – Equipment should be hosed down or pressure washed on site. If facilities are not available equipment should be carefully contained, e.g. in plastic bags, until they can be found. Washings should be left at the water body where the equipment was used, or contained and not allowed to enter any other watercourse or drainage system (i.e. do not put them down the drain or sink). Where possible clean equipment should be dipped in disinfectant solution (e.g. Virkon) to kill diseases but note that this is unlikely to kill alien species.
- **Dry**- Thoroughly drying is the best method for disinfecting clothing and equipment. Boots and nets should be hung up to dry. Equipment should be thoroughly dry for 48 hours before it is used elsewhere. Some alien species can survive for as many as 15 days in damp conditions and up to 2 days in dry conditions so the drying process must be thorough.

***Boats***

Where recreational fishers and fisheries use boats or float tubes for angling purposes then in addition to the above:

- Biofouling must be thoroughly removed from all hulls and other submerged surfaces before transfer to another site.
- Care should be taken with trailers which have cavities that may retain water and be hard to inspect. If possible trailers and launching trolleys should be provided at the site and used in preference to personal equipment.
- Any water that collects in bilges or inside boats and float tubes must be completely emptied before leaving the site.
- Water cooled engines must be washed through with tap water to ensure the system does not harbor invasive alien species.

## REFERENCES:

Angling Trust, Environment Agency, Substance social research cooperative (2012) National Angling Survey [on-line] Available from: www.resources.anglingresearch.org.uk [Accessed 3 February 2013]

Convention on Biodiversity (2010) Strategic Plan for Biodiversity Nagoya, Japan

Environment Agency (2010) Public Attitudes to Angling HMSO

Environment Agency (2010) Economic Evaluation of Inland Fisheries HMSO

European Anglers Alliance (2003) [on-line] Available from: www.eaa.org/ [Accessed 12 March 2013]

European Anglers Alliance (2013) [on-line] Available from: www.eaa.org/ [Accessed 3 May 2013]

European Commission (2011) Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions 244 final

Great Britain Non-Native Species Secretariat (2013) Available from: www.nonnativespecies.org/ [Accessed various 2013]

Kenward, R. And Sharp, S. (2008) Use Nationally of Wildlife Resources across Europe (UNWIRE)

Kettunen, M., Genovesi, P., Gollasch, S., Pagad, S., Starfinger, U. ten Brink, P. &

Shine, C. 2008. Technical support to EU strategy on invasive species (IAS) -

Assessment of the impacts of IAS in Europe and the EU (final module report for the

European Commission). Institute for European Environmental Policy (IEEP),

Brussels, Belgium. 44 pp. + Annexes

Pimentel, D,. R. Zuniga and D. Morrison (2005) Update on the environmental and economic costs associated with alien-invasive species in the United States. Ecological Economics 52, pp273-288

Pimentel, D,. Lach, L., Zuniga, R. And Morrison D. (2000) Environmental and economic costs of non-indigenous species in the United States. Bioscience 50 pp53

Savini, D, Occhipinti-Ambrogi, A, Marchini, A, Tricario, E, Gherardi, F, Olenin, S and Grollasch (2010) The top 27 animal alien species introduced into Europe for aquaculture and related activities. Applied Ichthyology 26 (Suppl. 2) 1-7

Tricarico, E (2012) A review on pathways and drivers of use regarding non-native freshwater fish introductions in the Mediterranean region. Fisheries Management and Ecology

World Resources Institute (2005) Ecosystems and Human Well-being: Biodiversity Synthesis Washington DC.

**Annex 1**

# EUROPEAN CHARTER ON RECREATIONAL FISHING AND BIODIVERSITY

***Document prepared by Mr Scott Brainerd***

***on behalf of the Bern Convention***

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## 1. INTRODUCTION

### 1.1 Recreational fishing in Europe

Fishing is an age-old activity throughout Europe and the world. Originally a form of subsistence and sustenance for early Europeans, it has evolved over time into an important consumptive activity with both commercial and recreational aspects. For the purposes of this document, we will focus only on recreational fishing, which precludes any form of commercial marketing of the catch (see Appendix 3.1 for definition[1]). A variety of gear and methods are used in recreational fishing including hook and line (i.e. angling), long-lines, nets, pots, traps, spear fishing, hand fishing and "*pêche à pied*". [2]

Recreational fishing (and particularly angling) is an important activity in Europe, with positive societal, economic and environmental effects. Angling is the best documented form of recreational fishing, and it was estimated in 2003, that there were at least 25 million recreational anglers in Europe[3,4]. It was estimated that 8-10 million went saltwater fishing and more than 20 million went fresh-water fishing.[5]. In 2006 it was estimated that spending on equipment, fees, lodging and travel amounted to 19 billion Euros[6] in the EU27. The total number of recreational fishers in the expanded EU and European Economic Area and their spending are likely to exceed these estimates appreciably. The European Fishing Tackle Trade Association (EFTTA) estimated that over 5 billion Euros were expended on tackle trade and manufacturing in Europe alone, with ~52,000 jobs directly or indirectly benefited by this expenditure[7]. With the inclusion of local tackle shops EFTTA estimates that ca. 99,000 jobs depend on tackle manufacturing and sales in Europe[8].

It should be noted, however, that while the economic potential of recreational fisheries is considerable, this aspect is not always appreciated or understood by political decision makers. There is a therefore a pressing need for more socio-economic data on the recreational fishing sector in Europe to enable Member States to fulfill their obligations with regard to the Common Fisheries Policy[9]. Data are

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[1] See Appendix 3.1 for definition of terms used in this document.

[2] It should be noted that some national and EU legislation does not clearly distinguish between recreational and other kinds of fishing. One example is the EU's revised Control Regulation COUNCIL REGULATION (EC) No 1224/2009 of 20 November 2009 (Art 55), "recreational fisheries" and the definitions in Art 4(28). Some countries allow sales of fish from certain non-licensed fisheries. This is arguably a violation of EU legislation, which equates recreational fisheries with non-commercial fisheries (Art 4(8)). The "marketing" of catches from these fisheries is prohibited (Art 55(2)). Demarcation between recreational and commercial fishing gear is likewise unclear.

[3] http://www.eaa-europe.org/fileadmin/templates/eaa/docs/Nautilus-paper_Jan2003_EN.PDF

[4] http://www.eaa-europe.org/index.php?id=14

[5] http://ec.europa.eu/maritimeaffairs/pdf/greenpaper_brochure_en.pdf

[6] Kenward, R. and Sharp, S. 2008. Use Nationally of Wildlife Resources across Europe (UNWIRE). Pp. 117-123 in Manos, B. & Papathanasiou, J. GEMCONBIO: Governance and Ecosystem Management for Conservation of Biodiversity. Aristotle University of Thessaloniki, Greece (EC FP6 Contract #028827).

[7] Cowx, I. G. & Arlinghaus, R. 2008 Recreational fisheries in the 21st century: towards a Code of Conduct. Pp. 338-351 *In* Aas, O. (ed) Global Challenges in Recreational Fisheries. Wiley-Blackwell. 376 pp.

[8] http://www.facenatura2000.net/conference%202009/2.10.Kappel.pdf

[9] http://ec.europa.eu/fisheries/cfp_en.htm

also needed as part of the valuing of ecosystems and ecosystem services, which was made a key component of the post-2010 strategy. It is believed that monetary figures will help increase popular recognition of the value of biodiversity and healthy ecosystems, which is crucial to create the political will for action [10].

In 2000, Austria successfully tested a design by European Anglers Alliance (EAA) for socio-economic survey across all Europe's sea and freshwater recreational fisheries, RECFISH [11]. More recently, "Methodologies for assessing socio-economic benefits of European inland recreational fisheries", were endorsed by the European Inland Fisheries and Aquaculture Commission (EIFAC) at its 26th session in Zagreb, Croatia, in May 2010[12]. However, funding is currently lacking for a pan-European series of surveys necessary to monitor trends over time and regions.

Most European countries have instituted freshwater license programs and about half of coastal countries have also introduced saltwater fishing licenses. Freshwater fishing in particular is regulated extensively in most European countries[13]. License fees are used, to varying degrees, by government agencies to fund management and conservation activities related to recreational fishing. However, some of these fees are sometimes used for other purposes to which recreational fishers generally object[14]. License schemes vary from one country to another; in many countries recreational fishing organisations are represented on special boards that decide how these funds should be allocated. In the Netherlands, the government has delegated the authority to sell freshwater fishing licenses to the national angling association[15]. Such schemes arguably provide greater incentive for recreational fishers to buy licenses that directly benefit their organisations and activities.

## 1.2 The Bern Convention and its relevance to recreational fishing

The Convention on the Conservation of European Wildlife and Natural Habitats (hereafter referred to as the Bern Convention[16]) was signed in Bern, Switzerland in 1979 and came into force on 1 June 1982. It aims to conserve wild flora and fauna species (including fish) within States, and emphasises the need for cooperation in the conservation of species and habitats across national borders, with emphasis on endangered and vulnerable species (including migrants) and their habitats. Its 50 Contracting Parties have committed themselves to enact appropriate legislation and administrative measures for the conservation of the indigenous species of fauna and flora and their habitats. The Bern Convention is the primary international treaty governing biodiversity conservation and management in Europe, and provides the foundations for this *Charter*. Articles 7 and 8 of the Bern Convention even allow for the exploitation of protected species listed in Annex III after taking into consideration some specific requirements. It is also notable that banned killing methods mentioned in Annex IV under "freshwater fish" and "crayfish" apply to commercial as well as recreational fishing.

The Birds[17] and Habitats[18] Directives of the EU provide a legal framework within which many provisions of the Bern Convention are enshrined[19]. These Directives fully recognise the legitimacy of the consumptive and recreational use of fish and other wildlife species, while regulating these activities to certain species. They provide a legal framework for the protection and sustainable use of wildlife to be

[10] http://www.eea.europa.eu/pressroom/speeches/trends-and-future-outlook-for-europe2019s-biodiversity
[11] RECFISH presentation on the EAA website: http://www.eaa-europe.eu/index.php?id=20
Pioneer survey for Austria in year 2000 (sample size: 5.492): See slide 14 onwards: http://www.ebcd.org/Maritime%20Affairs/MARINE%20TOURISM/presentations/EAA.pdf
[12] Parkkila, K. Arlinghaus, R. Artell, J. Gentner, B.; Haider, W. Aas, Ø. Barton, D.; Roth, E. & Sipponen, M. Methodologies for assessing socio-economic benefits of European inland recreational fisheries. EIFAC Occasional Paper No. 46. Ankara, Turkey, FAO. 2010. 108p.
[13] Pers. Comm.. Jan Kappel, European Angler's Alliance.
[14] e.g. Portuguese saltwater fishing license funds that are used to supplement the pensions of commercial fishers.
[15] http://www.sportvisserijnederland.nl/vispas/english /
[16] http://conventions.coe.int/Treaty/en/Treaties/Html/104.htm
[17] http://europa.eu/legislation_summaries/environment/nature_and_biodiversity/l28046_en.htm
[18] http://europa.eu/legislation_summaries/environment/nature_and_biodiversity/l28076_en.htm
[19] http://conventions.coe.int/Treaty/FR/Treaties/Word/104-4.doc

implemented through Member States legislation. Use of fish stocks and wildlife resources, if conducted in a sustainable manner, can positively contribute to the conservation of wild populations and their habitats.

### 1.3 The need to protect aquatic ecosystems

Protection of ecosystems, habitats and species is essential to ensure the future of sustainable recreational fishing in Europe. Anthropogenic activities can negatively impact aquatic systems and their biodiversity in a variety of ways. These include 1) dramatic changes in water regime; 2) heavy man-made modifications (dams, weirs, canalisation, etc.) which cause habitat loss, fragment waterways or adversely regulate flow; 3) invasions of exotic species[20] (including parasites and diseases); 4) climate change; 5) industrial and agricultural pollution including pesticides and herbicides, acid rain, and radioactivity; 6) certain "unsustainable" fishing gear and practices including discard of non-target bycatch of recreational value, as well as dredging and other forms of substrate disturbance; and 7) navigation effects (traffic, pollution, disturbance).

The Water Framework Directive or WFD (*Directive 2000/60/EC*) [21] together with the Habitat and Bird Directives, including NATURA 2000 are legislative primary drivers for the protection and restoration of aquatic biological diversity in Europe. The WFD sets ambitious goals to be met by year 2015. Annex 5 of the WFD sets criteria for achieving 'Good ecological status' and specifies monitoring requirements for habitat and species protection areas in all water bodies. River basin management plans and related programmes or measures are the main tools for achieving the objectives of the WFD.

### 1.4 Sustainability principles

The definition of sustainable development was formulated by the World Commission on Environment and Development Conference in 1987. It was endorsed under Agenda 21 at the World Summit on Sustainable Development in Rio in 1992, which also launched the Convention on Biological Diversity (CBD). The overall aim of the EU Sustainable Development Strategy, as renewed in 2006[22], is "*to identify and develop actions to enable the EU to achieve continuous improvement of quality of life both for current and for future generations, through the creation of sustainable communities able to manage and use resources efficiently and to tap the ecological and social innovation potential of the economy, ensuring prosperity, environmental protection and social cohesion*".

Recreational fishing trends are increasing or stable in most European countries[4,6]. Thus, well managed European recreational fisheries qualify as a sustainable development, an overarching objective of the Treaty of the EU. Nevertheless, although recreational fishing can use ecosystem services less intensively and more diversely than e.g. fish-farming[23] and commercial fishing, there is a need to ensure that all forms of recreational fishing, both by local residents and by tourists, are sustainable relative to ecological, economic, and socio-cultural considerations.

Progress in Europe towards sustainable development must also be viewed in a global context. The Council of Europe member states and EU member states are all Contracting Parties of the Convention on Biological Diversity (CBD). The CBD's overall objective is to encourage actions which will lead to a sustainable future.[24] It has three main goals: conservation of biodiversity; sustainable use of biodiversity; fair and equitable sharing of the benefits arising from the use of genetic resources. Sustainable use of the components of biological diversity is included in 13 of 19 substantive articles. In Articles 1 and 10 of the CBD, the conservation and sustainable use of biological diversity are clearly emphasized as central objectives.

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[20] DAISIE, 2009. Handbook of Alien Species in Europe. Invading nature – DAISIE — Springer Series in Invasion Ecology, Vol.3. Springer, Dordrecht, 2009.
[21] http://ec.europa.eu/environment/water/water-framework/index_en.html
[22] http://register.consilium.europa.eu/pdf/en/06/st10/st10117.en06.pdf
[23] Kenward, R. E., & Garcia-Cidad, V. 2005. Innovative approaches to sustainable use of biodiversity and landscape in the farmed countryside. Pp 565-589 in UNEP High-Level Pan-European Conference on Agriculture and Biodiversity, Council of Europe, Strasbourg, France.
[24] CBD fact sheet http://www.cbd.int/iyb/doc/prints/factsheets/iyb-cbd-factsheet-cbd-en.pdf

The IUCN developed a Sustainable Use Initiative to help implement the CBD. Following a Policy Statement in 2000: "*The use of wild living resources, if sustainable, is an important conservation tool because the social and economic benefits derived from such use provide incentives for people to conserve them*", which was adopted at its 2nd World Conservation Congress in 2000, IUCN arranged regional workshops in Mozambique, Vietnam and Ecuador. These led to a synthesis workshop in Addis Ababa, Ethiopia, after which the 7th CBD Conference of the Parties (COP) in 2004 adopted the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity (AAPG)[25]. AAPG were also formally recognised by CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora[26]) in 2004, at its 13th COP, and in 2006 adopted by the 3rd Meeting of Parties to the African-Eurasian Waterbird Agreement (AEWA).

The AAPG are based on the assumption that it is possible to use biodiversity in a manner in which ecological processes, species and genetic variability remain above the thresholds needed for long-term viability, and that all resource managers and users have the responsibility to ensure that such use does not exceed these capacities. The AAPG emphasise the crucial need for the maintenance and/or recovery of biodiversity in ecosystems to ensure the long-term sustainability of ecological services upon which both biodiversity and people depend. Users and managers at all geographical and institutional levels are encouraged in AAPG to adapt the cross-cutting principles and guidelines pragmatically to best fit local circumstances.

In a parallel process, a Workshop on the Ecosystem Approach held in Malawi during 1998 identified twelve principles/characteristics for managing biodiversity at an ecosystem level, seeking to achieve a satisfactory balance between conservation and development. These "*Malawi Principles for the Ecosystem Approach* (MPEA) [27]" were also confirmed at the CBD 7th COP, noting their strong cross-linkage to AAPG. They advocate integrated management of land, water and living resources for promoting the conservation and sustainable use in an equitable way, recognising that humans and their diverse cultures are an integral part of ecosystems.

The AAPG and MPEA can be summarised together as recommendations for:

*1. Supportive and linked governance at all levels with harmonised regulations that promote societal benefits from conservation and avoid perverse effects.*

*2. Avoidance of adverse impacts within or between ecosystems and of short-termism, especially when faced with inevitable change.*

*3. Transparent and adaptive management along a use-protection continuum, based on interdisciplinary science, monitoring and timely feedbacks.*

*4. Encouragement of economic/cultural incentives with sharing of benefits (and costs) especially at the local level, while avoiding waste.*

*5. Decentralisation of management to an appropriate bio-economic scale, especially to empower, hold accountable and access knowledge of local people.*

*6. Education, awareness and inclusion of managers, resource users, and society at large.*

As will be seen, the AAPG and MPEA form the basis of the Principles and Guidelines in section 2 of this document.

[25] http://www.biodiv.org/doc/publications/addis-gdl-en.pdf (see Appendix 3.2)
[26] http://www.cites.org/
[27] http://www.biodiv.org/doc/meetings/cop/cop-04/information/cop-04-inf-09-en.pdf (see Appendix 3.3)

## 1.5 Recreational fishing as a tool for biodiversity conservation

Clearly, the recreational fisheries sector in Europe benefits people as a resource for food, and through providing many cultural ecosystem services, including recreation, education, social and aesthetic pleasures, as well as contributing to provisioning services and motivating maintenance of the supporting and regulating services of ecosystems[28]. Sustainably managed recreational fishing also can contribute to the conservation of biodiversity, the preservation of rural lifestyles and local economies. In this context recreational fishing can provide strong incentives for conservation through use of biodiversity *sensu* CBD[29].

Aquatic biodiversity is threatened by a wide array of factors. In particular for freshwater and some coastal waters anthropogenic disturbance seems to be the main cause for the decline and extirpation of many aquatic species. In freshwater recreational fisheries non-fishing influences have had, and continue to have, the most dramatic impact on the quality of the recreational fishing experience and fish stocks[30] [31].

In June 2010 the CBD secretariat released the third *Global Biodiversity Outlook*. The report shows that the nations of the world have individually and collectively failed to meet the 2010 biodiversity target. The five main global drivers of biodiversity loss have not only remained more or less constant over the last decade, but are in some cases intensifying. These drivers include habitat loss, the unsustainable use and overexploitation of resources, climate change, invasive alien species, and point source and diffuse pollution.

The loss of biodiversity continues, as illustrated, by the fact that the nations of the world have individually and collectively failed to meet the 2010 biodiversity target. The COP to the CBD met in Nagoya, Japan in October and adopted a "post-2010" Strategic Plan of the Convention for the period 2011-2020. The plan includes a 2050 biodiversity vision as well as a 2020 biodiversity target and sub-targets. Recently the European Environmental Agency (EEA) emphasized the need for individual Europeans to become engaged in halting the loss of biodiversity[32]. Communities and individuals must act if nations are to succeed in meeting the 2020 deadline and sub-targets.

Recreational fishers directly contribute to the conservation, enhancement and protection of biodiversity (i.e. fish stocks) and their habitats locally and regionally. They have been at the forefront of many conservation and management efforts regarding fish and aquatic systems in Europe and elsewhere for decades[33]. More than 6 million Europeans belong to local angling club and/or a national angling organisation. At the European level, there are ca. 3 million anglers affiliated with the EAA[34]. Together, these organisations and individuals do much to promote the conservation of fish and their habitats, as well as to develop and promote best practices. These local organisations provide a huge force of volunteers that actively engage in the conservation and restoration of fish stocks and aquatic habitats every year. For example, in 2004 volunteers contributed 900,000 volunteer-days to conservation measures related to fishing in Sweden[35].

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[28] Millennium Ecosystem Assessment, 2005. Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC.
[29] http://www.cbd.int; http://www.fao.org/docrep/005/v9878e/v9878e00.HTM

[31] Cowx, I. G. & Arlinghaus, R. 2008 Recreational fisheries in the 21st century: towards a Code of Conduct. Pp. 338-351 *In* Aas, O. (ed) Global Challenges in Recreational Fisheries. Wiley-Blackwell. 376 pp.
[32] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/646&format=HTML&aged=0&language=EN&guiLanguage=en
[33] Kearney R.E. 1999. Evaluating recreational fishing: Managing perceptions and/or reality. In T.J. Pitcher ed. Evaluating the benefits of recreational fisheries. Vancouver, Canada, The Fisheries Centre. pp. 9-14. Arlinghaus, R., & Cooke, S. J. 2009. Recreational fishing: socio-economic importance, conservation and management. Dickson, B., Hutton, J. and Adams, W, M. (eds) 2009: Recreational Hunting, Conservation and Rural Livelihoods: Science and Practice. Blackwell Publishing, 39-58.
[34] http://www.eaa-europe.eu/
[35] https://www.fiskeriverket.se/sidorutanformenyn/fritidsfiske/fritidsfiske/faktaomfritidsfiske.4.323810fc116f29ea95a80002924.html

Recreational fishers have also been instrumental, through their representative organisations, in influencing national legislation pertaining to freshwater conservation in some countries, or fought legal actions against environmental pollution [36], [37]. Since recreational fishers are numerous in most countries, they provide an important societal sensitivity to issues regarding the health of freshwater ecosystems which is essential for an ecosystem approach to fisheries management and sustainability [38].

In rare cases, recreational fishing practices (such as long-lining and gill netting) often in combination with commercial and subsistence fisheries, may be unsustainable when unregulated or improperly regulated, with notable negative consequences for biodiversity[39] [40] [41]. Stocking and/or translocations of non-native fish species (or in some cases hatchery reared native fish species) can directly and negatively affect native fish stocks and aquatic systems through introduction of exotic competitors, predators, diseases and/or parasites. Likewise, removal of fish can adversely influence age and size structure and/or reduce genetic diversity. High fishing mortality can contribute to the collapse of recreational fisheries, and indirectly impact other species, terrestrial and aquatic, through changes in trophic cascades. Human activities in the aquatic environment (including but not restricted to recreational fishing) may adversely impact ecosystems or their components through habitat modifications, nutrient inputs, pollution and trash.

Development in the recreational sector and its interaction with non-fishery-related nature conservation objectives for aquatic biodiversity has the potential to generate conflict. However, a SWOT analysis (2010) [42] concluded that reconciliation of recreational fisheries and modern conservation perspectives is both possible and desirable as the fisheries quality most often benefits from the address of many conservation problems. To this end sound proposals are needed that will maintain and enhance recreational fisheries while fulfilling important functions for conservation of aquatic biodiversity.

### 1.6 Ensuring best practises

Over time, management of recreational fisheries in Europe has evolved from that of merely maximizing user benefits to that of conserving fish stocks, addressing user conflicts, as well as incorporating biodiversity, protection and fish welfare issues. There is increasing recognition that recreational fishing constitutes a significant use of inland fisheries in Europe[43], and as such, needs to be practiced in a sustainable manner.

The European Inland Fisheries and Aquaculture Commission (EIFAC) of the United Nations Food and Agriculture Organisation (FAO) was established in 1957 with a core mandate of providing advice on recreational fisheries management and sustainable development in Europe. Currently, EIFAC is comprised of 34 member countries. Due to the magnitude of recreational fishing in Europe, and its perceived ecological and socio-economic value, EIFAC produced a Code of Practice for Recreational

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[36] Bate, R. 2001. Saving our streams: the role of the Angler's Conservation Association in Protecting English and Welsh Rivers. The Institute of Economic Affairs and Profile Books, London.

[37] Kirchhofer, A. 2002. The role of legislation, institutions and policy making in fish conservation in Switzerland: past, present and future challenges. In Conservation of Freshwater Fish: Options for the Future, eds. Collare-Pereira, M. J., Cowx, I. G., & Coehlho, M. M., pp 389-401. Blackwell Science, Oxford.

[38] Arlinghaus, R. 2006. Overcoming human obstacles to conservation of recreational fishery resources, with emphasis on Europe. Environmental Conservation 33:46-59.

[39] Lewin, W.-C., Arlinghaus, R., & Mehner, T. 2006. Documented and Potential Biological Impacts of Recreational Fishing: Insights for Management and Conservation. Reviews in Fisheries Science 14:305–367.

[40] Lewin, W.-C., McPhee, D., Arlinghaus, R. 2008. Biological impacts of recreational fishing resulting from exploitation, stocking and introduction. In. Aas, Ø., Arlinghaus, R., Ditton, R. B., Policansky, D.,Schramm, H.L., Jr., eds., Global Challenges in Recreational Fisheries. Blackwell Science, Oxford, 75-92.

[41] Arlinghaus, R., I.G. Cowx. 2008. Meaning and relevance of the ecosystem approach to recreational fisheries management: emphasis on the human dimension. In. Aas, Ø., Arlinghaus, R., Ditton, R. B., Policansky, D.,Schramm, H.L., Jr., eds., Global Challenges in Recreational Fisheries. Blackwell Science, Oxford, 56-74.

[42] "Harmonizing recreational fisheries and conservation objectives for aquatic biodiversity in inland waters"; I.G. Cowx, R. Arlinghaus and S. J. Cooke (in press)

[43] Arlinghaus, R., and Cooke, S. J. 2009. Recreational fishing: socio-economic importance, conservation and management. Dickson, B., Hutton, J. and Adams, W, M. (eds) 2009: Recreational Hunting, Conservation and Rural Livelihoods: Science and Practice. Blackwell Publishing, 39-58.

Fisheries (*CoP*)[44]. The *EIFAC CoP* was created with the participation of all key recreational fisheries stakeholders in the European region. This was deemed necessary to address the growing demand for an international agreement on good practice in recreational fisheries.

The *EIFAC CoP* describes the minimum standards of environmentally-friendly, ethically-appropriate and – depending on local situations – socially-acceptable recreational fishing and its management. In addition to General Principles (Article 4), the *CoP* contains detailed framework of guidelines pertaining to environmental stewardship and ethics (Article 5), Policy and Institutional Frameworks (Article 6), Compliance and Enforcement (Article 7), Recreational Fishing Practices (Article 8), Fish Welfare (Article 9), Stakeholder Interactions (Article 10), Management (Article 11), Research (Article 12), and Awareness, Education and Training (Article 13).

In 2008, the *CoP* was endorsed by the 25th session of the EIFAC in Turkey, and is currently being promoted and disseminated by the EIFAC member countries. The *CoP* is based, in part, upon the Code of Conduct for Responsible Fisheries adopted by the FAO Conference on 31 October 1995[45]. This FAO Code of Conduct established non-binding principles and standards applicable to conservation, management and development of fisheries worldwide.

Sustainable use is internationally recognised as a significant tool for the management and conservation of biodiversity[46]. Recreational fishing must therefore be sustainable not only in terms of the ecological environment, but also from the standpoints of economics and socio-cultural acceptance. The long-term viability of recreational fishing as an activity is, indeed, dependent upon it being sustainable in all ways.

### 1.7 The need for a *Charter on Recreational Fishing and Biodiversity*

This document follows on the 2007 *European Charter on Hunting and Biodiversity*[47] adopted by the Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern, 1979) in November 2007. Through Recommendation No. 128 (2007) "on the *European Charter on Hunting and Biodiversity*"[48], States Party to the Bern Convention were asked to take into consideration the *European Charter on Hunting and Biodiversity* "and apply its principles in the elaboration and implementation of their hunting policies so as to ensure that hunting is carried out in a sustainable way". In 2009 they agreed to complement it with a similar instrument to cover recreational fishing activities. The Programme of Activities of the Bern Convention for 2010 therefore included the "Preparation of a Charter complementary to the 2007 *European Charter on Hunting and Biodiversity*, providing Parties with principles and guidelines for sustainable angling activities".

To this end, the Standing Committee of the Bern Convention decided to create an 'Ad Hoc Working Group for the Elaboration of a European Charter on Angling and Biodiversity', with the participation of representatives of Parties to the Convention as well as observer organisations (and including the FAO's European Inland Fisheries Advisory Commission; the European Angler's Alliance; the European Angler's Forum; the European Fishing Tackle Trade Association; the Federation of Associations for Hunting and Conservation of the EU; the International Union for Conservation of Nature; and the French National Fishing Association). The Working Group met at the Council of Europe headquarters in Strasbourg, on 9 April 2010[49], to review a first draft of the new European Charter. The mandate of the Working Group was to prepare a draft Charter on Angling and Biodiversity for submission to the next meeting of the Standing Committee to be held on 6-10 December 2010. During these discussions it was decided to expand the scope to include all forms of recreational fishing, recognizing that angling is the most widespread form.

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[44] http://www.fao.org/docrep/012/i0363e/i0363e00.htm
[45] http://www.fao.org/fishery/ccrf/en
[46] http://intranet.iucn.org/webfiles/doc/SSC/SSCwebsite/Policy_statements/The_IUCN_Policy_Statement_on_Sustainable_Use_of_Wild_Living_Resources.pdf
[47] Published in the "Nature and Environment" series of the Council of Europe, No. 150, Strasbourg, July 2008.
[48] See at: http://www.coe.int/t/dg4/cultureheritage/nature/WCD/Rec2007_en.asp#
[49] See the report of the meeting: doc T-PVS (2010)4, of 13 April 2010.

The present document is the result of the discussions and contributions from the members of the Working Group, as well as from Parties that could not be present at that meeting.

The principles and the approach of the *European Charter on Hunting and Biodiversity* and this document are equally applicable to the governance of other consumptive and non-consumptive uses of biodiversity. The IUCN recognized this at the *World Conservation Congress* at its 4th Session in Barcelona, Spain in October 2008. In its resolution (WWC RES 4.032: *Trust Building for Biodiversity Conservation and Sustainable Use in line with the European Charter on Hunting and Biodiversity*), the IUCN encourages further cooperation between the COE, governments and other stakeholders to prepare guidelines under the same principles for new European charters to promote conservation through sustainable use of other components of biodiversity. Existing global and European policies and rules address many central tenets with relevance to recreational fishing in Europe.

### 1.8 Scope

This *European Charter on Recreational Fishing and Biodiversity* (hereafter referred to as the *Charter*) addresses fishing as a recreational form of utilisation and management of freshwater and diadromous fish species in Europe, in accordance with the provisions of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern, 1979).

### 1.9 Purpose

The main aim of the Bern Convention is the conservation of wild fauna associated natural habitats. Fishers can contribute to the fulfilment of this aim through regulating fish populations and caring for their habitats, assisting in monitoring and research, and raising public awareness for conservation issues. Thus, recreational fishers and their activities have an important role to play in the conservation of biodiversity.

This *Charter* provides a non-binding set of guidelines for recreational fishers, fishing tour operators, regulators and managers which address common principles and good practices for sustainable recreational fishing in Europe. These principles and guidelines also aim to help fulfil the commitments of European States on conservation through use of components of biodiversity as laid down in the CBD, as advised by the *AAPG*[50] (see Appendix 3.2) and the *Malawi Principles for the Ecosystem Approach* [51] (see Appendix 3.3).

The principles and guidelines contained herein are meant to compliment and supplement those laid down in the *EIFAC CoP* with an emphasis on biodiversity conservation. There is considerable intentional overlap between the *EIFAC CoP* and the Principles and Guidelines in this *Charter*.

By adopting this *Charter*, the Bern Convention formally recognizes and promotes sustainable recreational fishing as a legitimate use of fish resources and as an important tool in biodiversity conservation.

### 1.10 Goals

The *Charter* promotes principles and guidelines intended to ensure that recreational fishing in Europe is practiced in a sustainable manner, with a positive contribution to the conservation of biodiversity and the needs of society, including life quality.

### 1.11 Objectives

*The Charter:*

- Provides a set of non-binding principles and guidelines for sustainable recreational fishing (including recreational fishing tourism) within the context of conservation of biodiversity;
- Encourages recreational fisher involvement in monitoring, management, and research efforts directed towards stewardship and the conservation of fish and their habitats;

[50] http://www.biodiv.org/doc/publications/addis-gdl-en.pdf
[51] http://www.biodiv.org/doc/meetings/cop/cop-04/information/cop-04-inf-09-en.pdf

- Promotes forms of recreational fishing tourism that are sustainable and non-detrimental to biodiversity, while providing local communities with socio-economic incentives to conserve and manage native fish and their habitats;
- Promotes cooperation between recreational fishers and other stakeholders in the conservation and management of biodiversity.
- Encourages recreational fisher education, awareness and information measures;
- Promotes best practices to ensure the socio-cultural, economic and ecological sustainability of recreational fishing in the long term.

## 2. PRINCIPLES AND GUIDELINES

The principles and guidelines in this Charter address the role of recreational fishing in the management and conservation of biodiversity. These broad principles include all 12 principles from MPEA (M1-12) and 14 from AAPG (A1-14) grouped into social, ecological and economic focal areas and combinations of these (see Appendix 3.4). These recommendations, which contain the essence of the MPEA and the AAPG, provide a fundament for conserving biodiversity through fishing and other uses of wild resources. They are based upon the internationally accepted standards of sustainability, as well as the EIFAC CoP, and are to be treated as advisory and non-binding in nature.

### 2.1 Principle 1: Favour multi-level governance that maximises benefit for conservation and society.

#### *2.1.1 Rationale:*

Decisions of importance to habitats and species are influenced by regulatory and financial incentives at several levels, as well as by cultural and social factors. Policies affecting these factors need to be established at the most appropriate geographical level and to remain flexible, in order to accommodate different biological, economic and social conditions and to accommodate adaptive management. Regulations that tend to impose uniformity on culture and leisure create special challenges for those who seek to guide local use of water and wild living resources in order to retain diverse ecological conditions.

#### *2.1.2 Guidelines:*

Conservation of biodiversity will be enhanced if

*2.1.2.1 Regulators and managers:*

a) Take into consideration the international, national, regional and local – as appropriate - conservation status of fish populations and their habitats;

b) For maximum flexibility, encourage the creation of policies and structures that reduce conflicts and create synergies between fishing and other conservation interests, reward best practices (e.g. with subsidies or privileges) and regulate against malpractice;

c) Ensure that the policies and structures accommodate local cultural demands (i.e. multiple use) and ecological conditions as well as higher-level policy;

d) Audit for regulatory or other incentives that are detrimental for conservation of biodiversity and remove, neutralise or compensate for them.

- and -

*2.1.2.2 Recreational fishers*

a) Assist authorities at all levels to develop and to promote incentives for conserving biodiversity through sustainable use;

b) Strive to attain maximum conservation benefit through fishing at all levels

## 2.2 Principle 2: Ensure that regulations are understandable and respected

### *2.2.1 Rationale:*

Regulations can have costs for conservation as well as for stakeholders. Costs are least when minimal administration is combined with maximum motivation to comply, through easy compliance and reliable detection of non-compliance. Inappropriate (including incomprehensive or non-applicable) regulation may induce negative effects if non-compliance is simple and rewarding, or if the rationale behind these is not understood.

### *2.2.2 Guidelines:*

Conservation will be enhanced if

*2.2.2.1 Regulators and managers:*

a) Formulate regulations such that these are simple, cost effective, flexible, logical and address biological principles, (inter)national policy and the socio-economic context, as well as reasonable stakeholder concerns and expectations

b) Impose only those restrictions on fishing methods and means which can be justified from the standpoint of conservation and that will be easily understood by recreational fishers and accepted as fair and equitable by other legitimate users of publically-owned fish stocks.

c) Have transparent regulatory processes which allow for the active participation of recreational fishers and other stakeholders;

d) Favour targeted law enforcement methods that motivate minimal-effort compliance;

e) Promote subsidiarity and self-regulation by creating regulations that can be adapted to local governance and enforcement needs;

f) Facilitate access for recreational fishing as a motivation and tool for conservation

- and -

*2.2.2.2 Recreational fishers:*

a) Assist in development and acceptance of effective regulations;

b) Follow and encourage respect for all rules and regulations pertaining to recreational fishing, conservation measures (including protected areas), and private property;

c) Embrace self-regulation where possible;

d) Assist in preventing and reporting illegal fishing.

## 2.3 Principle 3: Ensure that recreational fishing is ecologically sustainable

### *2.3.1 Rationale:*

It is important to ensure that any catch from wild populations is sustainable. The conservation status of species needs to be maintained at levels which are robust enough to sustain [use]. In some cases, limited and sustainable fishing of small populations may also serve to enhance conservation efforts on their behalf. Sustainable use requires information garnered from research and monitoring, and to be regulated through the active use of reliable science and local knowledge.

### *2.3.2 Guidelines:*

Conservation will be enhanced if

*2.3.2.1 Regulators and managers:*

a) Implement adaptive management strategies at sustainable levels relative to ecological limitations and objectives;

b) Develop management plans with clear objectives that take into account species behaviour and ecology (including predation and seasonal effects), their long-term conservation status and possible effects of recreational fishing strategies and other measures on ecosystems, species populations and society; management plans need provisions to ensure proper implementation, monitoring and updating.

c) Work to minimise and mitigate negative impacts on fish stocks and/or habitats where possible, and optimise management of ecosystem components to the benefit of biodiversity, recreational fishing and society at large;

d) Ensure that recreational fishing by residents and tourists is addressed in management plans;

e) Be aware of compulsory and voluntary release as an alternative or complement to consumptive use;

f) Cooperate with recreational fishers to develop and apply methods for simple and effective monitoring and management of populations, habitats and ecosystem services;

g) Cooperate with neighbouring administrative authorities to properly manage and conserve transboundary fish populations where appropriate;

h) Develop and implement standardised systems for collecting catch data for use in adaptive management of fish populations at all appropriate scales;

i) Resolve conflicts between recreational, commercial and subsistence fishers and manage public fisheries to ensure sustainable use by all sectors.

j) Recognise that adaptation to human natural and human-induced change is necessary.

- and -

*2.3.2.2 Recreational fishers:*

a) Assist in population monitoring and research;

b) Work to integrate their activities into the adaptive management of populations and habitats of target fish species;

c) Recognise and understand the biological role and impact of indigenous predators on fish species and take this into account when participating in their conservation and management;

d) Ensure that populations of target fish species are kept at optimal levels relative to their habitats and species communities;

e) Ensure that recreational fishing is sustainable and non-detrimental to aquatic ecosystems.

### 2.4 Principle 4: Maintain populations of native species with adaptive gene pools

#### *2.4.1 Rationale:*

Native species and their habitats (and human livelihoods derived from them) can be adversely impacted by either the 1) introduction of invasive alien species that can adversely impact native stocks; or 2) human selection for traits which may jeopardise the long-term viability of their populations; and 3) artificial barriers to fish movements that can restrict migration, feeding or reproduction.

#### *2.4.2 Guidelines:*

Conservation will be enhanced if

*2.4.2.1 Regulators and managers:*

a) Prevent the release, spreading and translocation of invasive alien species that can have significant impacts on native fish populations or the environment

b) Engage recreational fishers in programmes to remove invasive alien species;

c) Facilitate the reestablishment of originally indigenous fish species in accordance with IUCN guidelines[52] and have clear management plans that define their recovery;

d) Incorporate genetic considerations into management plans;

e) Seek transboundary cooperation to ensure genetic adaptability of populations;

f) Monitor the genetic characteristics of species populations of special concern.

- and -

*2.4.2.2 Recreational fishers:*

a) Favour re-stocking from appropriate sources but only introduce or reintroduce species in accordance with IUCN guidelines;

b) Avoid exclusively selecting for specific phenotypic or behavioural traits of individuals which are not representative of the wild species population and that can consequently be detrimental;

c) Aid scientists and managers in monitoring genetic characteristics of populations.

### 2.5 Principle 5: Maintain environments that support healthy and robust fish populations

#### *2.5.1 Rationale:*

Fish species are vulnerable to pollutants and human impacts on their populations and habitats. It is therefore in the interest of all who enjoy or benefit from fish to work together to reduce or mitigate the effects of environmental degradation. There is a need for the continued monitoring of the condition of fish populations and their habitats.

#### *2.5.2 Guidelines:*

Conservation will be enhanced if

*2.5.2.1 Regulators and managers:*

a) Develop mutually agreed systems that motivate recreational fishers to help conserve and/or restore habitats and water bodies and their associated fauna, including fish species;

b) Develop and implement standardised systems for monitoring the health and condition of fish populations, habitats and ecosystems;

c) Account for possible negative impacts of recreational fishing on other ecosystem services and minimise and mitigate these.

- and -

*2.5.2.2 Recreational fishers:*

a) Actively contribute to the conservation and restoration of habitats at appropriate scales where feasible;

b) Work to ensure that their activities support and enhance local environments and habitats;

c) Use only native aquatic plants for habitat restoration.

[52] http://www.iucnssc rsg.org/download/English.pdf

## 2.6 Principle 6: Encourage use to provide economic incentives for conservation

### *2.6.1 Rationale:*

Stakeholders can be motivated to conserve wild species and their habitats by recognising their inherent economic value.

### *2.6.2 Guidelines:*

Conservation will be enhanced if

*2.6.2.1 Regulators and managers:*

a) Recognize that private fishing rights holders should be fairly rewarded for providing recreational fishing access.

b) Encourage exploitation models that provide socio-economic benefits to stakeholders and communities:

c) Where official fees or taxes are levied, ensure that these are set at reasonable levels to prevent unneeded barriers to participation;

d) Provide stakeholders and communities with incentives for proper management of biodiversity.

e) Provide access for recreational fishing and accommodate disabled recreational fishers where possible and desired.

- and –

*2.6.2.2 Recreational fishers:*

a) Are willing to make reasonable and fair contributions for access and recreational fishing opportunity, as well as the conservation and management of fish and their habitats;

b) Accept contributory and management structures that favour a fair and appropriate balance for access between resident and non-resident recreational fishers.

- and -

*2.6.2.3 Fishing tour operators:*

a) Acknowledge and accept that their activities should benefit local economies and stakeholders and thereby enhance conservation efforts;

b) Accept that their access can be limited, and/or that they can be subjected to higher fees than local resident recreational fishers.

## 2.7 Principle 7: Empower local stakeholders and hold them accountable

### *2.7.1 Rationale:*

With good local knowledge and monitoring, management at the local level is most rapidly adaptive. It also both empowers stakeholders and holds them immediately accountable for meeting requirements of resource users.

### *2.7.2 Guidelines:*

Conservation will be enhanced if

*2.7.2.1 Regulators and managers:*

a) Promote and facilitate decentralised management of species with healthy populations that are stable or increasing at local or regional levels;

b) Facilitate the empowerment and accountability of local stakeholders, especially fishers, in this decentralised process;

c) Encourage and support local and national recreational fishing organisations that promote best-practises.

- and -

*2.7.2.2 Recreational fishers:*

a) Have knowledge regarding fish ecology and conservation practices;

b) Recognise their role as resource stewards and actively participate in practical management and conservation measures through local or national organisations;

c) Interact with other interests and local authorities to find best solutions.

- and -

*2.7.2.3 Fishing tour operators:*

a) Recognise the cultures, traditions and needs of local people (including fisherfolk);

b) Work closely with local recreational fishers, water and fishery managers and other interests to ensure integration of activities and avoid conflicts

### 2.8 Principle 8: Encourage competence and responsibility among users of wild resources

***2.8.1 Rationale:***

For practices to be ecologically and socially sustainable, those using wild resources are advised to be responsible and proficient regarding methods, equipment and species they utilise.

***2.8.2 Guidelines:***

Conservation will be enhanced if

*2.8.2.1 Regulators and managers:*

a) Encourage and facilitate education, training programmes and awareness raising for fishers;

b) Cooperate with organisations that coordinate fishers to encourage recruitment from both sexes, all ages and backgrounds.

- and -

*2.8.2.2 Recreational fishers:*

a) Have sufficient knowledge on the identification, habits and ecology of targeted fish species as well as protected species that can be confused with these;

b) Know the laws and regulations governing fishing and the conservation of fish where they fish;

c) Teach new fishers the skills and knowledge required to be competent and responsible.

- and -

*2.8.2.3 Fishing tour operators:*

a) Provide their clients with the information and knowledge they need for sustainable and responsible recreational fishing.

## 2.9 Principle 9: Encourage cooperation between all stakeholders in management of fish species and their habitats

### *2.9.1 Rationale:*

All stakeholders, including authorities, state agencies, landowners, fishers, other resource users and other conservation interests, can contribute positively to the proper management of biodiversity through cooperation. Such cooperation promotes a synergistic role for sustainable use in broad conservation efforts whereas conflicts waste human resources.

### *2.9.2 Guideline Conservation will be enhanced if*

*2.9.2.1 Regulators and managers:*

a) Include all stakeholders in institutional structures to ensure input and dialog.

b) Encourage public understanding of conservation and economic as well as cultural benefits that can be derived from responsible and sustainable fishing;

c) Seek opportunities and provide incentives for cooperation between different interests;

d) Use all possible measures to avoid and resolve conflicts.

- and –

*2.9.2.2 Recreational fishers:*

a) Seek opportunities to benefit human and fish populations and their habitats;

b) Actively seek alliances with other local stakeholders.

## 2.10 Principle 10: Encourage acceptance of sustainable use as a conservation tool by the public and other conservation interests

### *2.10.1 Rationale*

In order to ensure acceptance by society, it is important for all users of fish to communicate the positive benefits of their use for biodiversity conservation and for all stakeholders to work together to raise awareness regarding important conservation issues.

### *2.10.2 Guidelines*

Conservation will be enhanced if.

*2.10.2.1 Regulators and managers:*

a) Provide a framework which ensures the long-term acceptance by society of the conservation benefits derived from recreational fishing;

b) Preserve cultural, historical and aesthetic values related to fish and fishing;

c) Establish or encourage institutions that organise fishers in activities that create social, cultural and conservation benefits.

- and –

*2.10.2.2 Recreational fishers:*

a) Are sensitive and respectful to local interests and cultures;

b) Strive to be ambassadors for fishing through good behaviour and practices;

c) Respect private property and local restrictions;

d) Raise awareness regarding the benefits of fishing and conservation;

e) Understand the need for local involvement in all fishing activity, including fishing tourism operations.

# 3. APPENDICES TO THE EUROPEAN CHARTER ON RECREATIONAL FISHING AND BIODIVERSITY

## 3.1 Appendix 1: Terms and concepts

*Aquatic ecosystem* [53]*: a body of water* containing a dynamic complex of plant, animal and micro-organism commu*nities and* their non-living environment that interact as a functional unit.

*Best practice*[54]*:* planning, organisation, managerial and/or operational practices that have proven successful in particular circumstances in one or more regions in the field and which can have both specific and universal applicability.

*Biological diversity (biodiversity)* [55]: The variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. (Article 2 of the CBD).

*Catch-and-release:* the process of capturing a fish, usually by line and hook (angling), and releasing it alive. This ranges from legally required mandatory release of protected sizes and species to voluntary catch-and-release of fish that could have been retained.

*Ecosystem services*: ecosystem services are all services humans derive from aquatic ecosystems and fish stocks. They comprise four categories: supporting (e.g. nutrient cycling), regulating (e.g. water quality), provisioning (e.g. fish yields) and cultural (e.g. existence value, spiritual and education dimension; recreational fishing experience) services[56].

*Fish:* All native fish species for which recreational fishing is legally permitted in countries that have signed the Convention on the Conservation of European Wildlife and Natural Habitats (Bern, 1979).

*Fisheries Management:* The application of science-based and local knowledge in the stewardship of wild fish populations and their habitats in a manner beneficial to the environment and society.

*Fisheries managers:* Private or governmental agents, including landowners, who are responsible for the practical stewardship of wild fish stocks and their habitats.

*Fishing tour operators*: Agents or agencies that directly or indirectly provide services (guiding, outfitting, lodging, fishing opportunity) for fisher tourists.

*Recreational fishing* was defined by the EIFAC CoP as: *"fishing of aquatic animals that do not constitute the individual's primary resource to meet nutritional needs and are not generally sold or otherwise traded on export, domestic or black markets. The unambiguous demarcation between pure recreational fisheries and pure subsistence fisheries is often difficult. However, using fishing activity to generate resources for livelihood marks a clear tipping point between recreational fisheries and subsistence fisheries. Globally, angling is by far the most common recreational fishing technique, which is why recreational fishing is often used synonymously with (recreational) angling."*[57]

The *recreational fishing sector* was defined by the EIFAC CoP: *"the entire network of stakeholders involved in or fully or partly dependent on recreational fisheries including amongst others fisheries ministries and agencies, managers, non-governmental organisations (e.g., umbrella angling associations and clubs), anglers, non-angling recreational fishers, tackle shops and tackle manufacturers, bait suppliers, charter-boating industry, recreational boat builders and chandlery suppliers, marina operators and specialised angling and fishing media, recreational fishing tourism and other related business and*

[53] Derived from Article 2 of the CBD.
[54] Taken from EIFAC Code of Practice: http://www.fao.org/docrep/012/i0363e/i0363e00.htm
[55] Derived from Article 2 of the CBD.
[56] See http://www.millenniumassessmenten.wikipedia.org/documents/document.765.aspx.pdfwiki/Ecosystem_services
[57] EIFAC CoP

*organisations as well as all other enterprises supporting recreational fisheries including aquaculture operations that produce stocking material or commercial fishing enterprises that sell angling tickets on their waters. A range of other stakeholders and managerial regimes are not included in this definition though they may run or advocate activities and developments that have a direct impact on the recreational fishing quality and the recreational fisheries sector, the sector's viability and growth potential (e.g., hydropower generation, water management, irrigation).*"[58]

Recreational fishers do not sell the fish they catch, nor do they generally rely upon them as a primary source of nutrition[59].From a socio-economic perspective, recreational fishing can be subdivided into: "Resident fishing" and "Fishing tourism":

- Resident fishing: Resident fishing is conducted by fishers within their country of residence, and most commonly in the area where they physically reside and have fishing rights. Most resident fishers have strong socio-cultural ties to their recreational fishing grounds, and are therefore highly motivated to apply their knowledge on local conditions and traditions when participating actively in, or contributing directly to, the conservation and management of local fish species and habitats. Emphasis is generally placed upon physical recreation, consumption, traditions, and management aspects of recreational fishing. Local resident fishers may hold exclusive rights to their recreational fishing areas or pay reasonable fees to gain access (permits or leases). They usually do not require the services of guides and/or fishing tour operators. Most fishers fall into this category, although many can also be fishing tourists at some point in their lives.
- Fishing tourism: Fishing tourism is defined as recreational fishing conducted by fishers who may sometimes travel considerable distances from their home and/or own fishing areas, and often abroad, in order to visit other areas to fish. They may be well-acquainted with their destination and be familiar with the species they fish. There is, however, a gradient in the degree to which travelling fishers may have socio-cultural links to their fishing destinations. The more exotic and unfamiliar a fishing destination is, the greater the socio-cultural barriers can be. In addition, motivations for fishing by such tourists may place greater emphasis on adventure and souvenirs (e.g. trophies) than is the case for fishers with closer links to the area in which they angle. This can motivate payment of significant sums of money to intermediaries ("fishing tour operators") that organise and facilitate their fishing experiences.

*Regulators:* Government authorities at all levels with a responsibility for formulating, implementing and enforcing legislation and management policies pertaining to conservation and fishing.

*Stakeholders:* All those with an interest or share in the conservation and sustainable use of fish, habitats and biodiversity. These include fishers, landowners, managers, other, regulators, scientists and other conservationists with an interest in the conservation and use of biodiversity.

*Sustainable use*: the CBD defines sustainable use as "the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining the potential to meet the needs and aspirations of present and future generations" (CBD Article 2).

[58] EIFAC CoP
[59] http://register.consilium.europa.eu/pdf/en/09/st13/st13669.en09.pdf

## 3.2 Appendix 2. Addis Ababa Principles and Guidelines

| | |
|---|---|
| Practical principle 1 | Supportive policies, laws, and institutions are in place at all levels of governance and there are effective linkages between these levels. |
| Practical principle 2 | Recognising the need for a governing framework consistent with international/ national laws, local users of biodiversity components should be sufficiently empowered and supported by rights to be responsible and accountable for use of the resources concerned. |
| Practical principle 3 | International, national policies, laws and regulations that distort markets which contribute to habitat degradation or otherwise generate perverse incentives that undermine conservation and sustainable use of biodiversity, should be identified and removed or mitigated. |
| Practical principle 4 | Adaptive management should be practiced, based on:<br>1. Science and traditional and local knowledge;<br>2. Iterative, timely and transparent feedback derived from monitoring the use, environmental, socio-economic impacts, and the status of the resource being used; and<br>3. Adjusting management based on timely feedback from the monitoring procedures. |
| Practical principle 5 | Sustainable use management goals and practices should avoid or minimise adverse impacts on ecosystem services, structure and functions as well as other components of ecosystems. |
| Practical principle 6 | Interdisciplinary research into all aspects of the use and conservation of biological diversity should be promoted and supported. |
| Practical principle 7 | The spatial and temporal scale of management should be compatible with the ecological and socio-economic scales of the use and its impact. |
| Practical principle 8 | There should be arrangements for international cooperation where multinational decision-making and coordination are needed. |
| Practical principle 9 | An interdisciplinary, participatory approach should be applied at the appropriate levels of management and governance related to the use. |
| Practical principle 10 | International, national policies should take into account:<br>1. Current and potential values derived from the use of biological diversity;<br>2. Intrinsic and other non-economic values of biological diversity and<br>3. Market forces affecting the values and use. |
| Practical principle 11 | Users of biodiversity components should seek to minimise waste and adverse environmental impact and optimise benefits from uses. |
| Practical principle 12 | The needs of indigenous and local communities who live with and are affected by the use and conservation of biological diversity, along with their contributions to its conservation and sustainable use, should be reflected in the equitable distribution of the benefits from the use of those resources. |
| Practical principle 13 | The costs of management and conservation of biological diversity should be internalised within the area of management and reflected in the distribution of the benefits from the use. |
| Practical principle 14 | Education and public awareness programmes on conservation and sustainable use should be implemented and more effective methods of communications should be developed between and among stakeholders and managers. |

### 3.3 Appendix 3. Malawi Principles for the Ecosystem Approach

1. *Management objectives are a matter of societal choice.*
2. *Management should be decentralised to the lowest appropriate level.*
3. *Ecosystem managers should consider the effects of their activities on adjacent and other ecosystems.*
4. *Recognising potential gains from management there is a need to understand the ecosystem in an economic context, considering e.g., mitigating market distortions, aligning incentives to promote sustainable use, and internalising costs and benefits.*
5. *A key feature of the ecosystem approach includes conservation of ecosystem structure and functioning.*
6. *Ecosystems must be managed within the limits to their functioning.*
7. *The ecosystem approach should be undertaken at the appropriate scale.*
8. *Recognising the varying temporal scales and lag effects which characterise ecosystem processes, objectives for ecosystem management should be set for the long term.*
9. *Management must recognise that change is inevitable.*
10. *The ecosystem approach should seek the appropriate balance between conservation and use of biodiversity.*
11. *The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.*
12. *The ecosystem approach should involve all relevant sectors of society and scientific disciplines.*

### 3.4 Appendix 4. Relationship between Recreational fishing Charter and AAPG/Malawi Principles

| Three pillars of sustainability | Addis Ababa/ Malawi | Focus | Number | Principles in this Charter | AAPG/ MALAWI MAP |
|---|---|---|---|---|---|
| Socio-cultural | Supportive & linked governance at all levels with harmonised regulations that promote societal benefits from conservation and avoid perverse effects. | General | 1 | Favour multi-level governance that maximises benefit for conservation and society. | (A1,A3,M2,M4) |
| | | Regulatory and rights | 2 | Ensure that regulations are understandable and respected. | (A1,A8,A13, M10) |
| Ecological | Avoidance of adverse impacts within or between ecosystems, and of short-termism, especially when faced with inevitable change.<br><br>Transparent and adaptive management along a use-protection continuum, based on interdisciplinary science, monitoring and timely feedbacks. | Demographic | 3 | Ensure that recreational fishing is ecologically sustainable | (A4,A6,A9,M7-12) |
| | | Genetics | 4 | Maintain wild populations of indigenous species with adaptive gene pools | (A5,A9, M11-12) |
| | | Ecosystem services | 5 | Maintain environments that support healthy and robust populations of appropriate species. | (A4,A6,A9,M7-12) |
| Economic | Encouragement of economic/cultural incentives with sharing of benefits (and costs) especially at local level, while avoiding waste. | Economic incentives | 6 | Encourage use to provide economic incentives for conservation | (A4,M10) |
| Socio-cultural, Ecological, Economic | Decentralisation of management to an appropriate bio-economic scale, especially to empower, assess and access knowledge of local users.<br>Where possible adopt means that aim toward delegating rights, responsibility, and accountability to those who use and/or manage biological resources. | Local management | 7 | Empower local stakeholders and hold them accountable. | (A2,A4,A9-10,A12-13, M2,M4,M7, M11-12) |
| Socio-cultural | Education, awareness and inclusion of managers, resource users and society at large. | Conduct and proficiency of resources beneficiaries | 8 | Encourage competence and responsibility among users of wild resources | (A11,A14) |
| | | Horizontal trust | 9 | Encourage cooperation between all stakeholders in management of harvested species, associated species and their habitats. | (A2,A9,A14, M1,M12) |
| | | Social acceptance | 10 | Encourage acceptance of sustainable and consumptive use as a conservation tool by the public and other conservation interests. | (A14, M1,M12) |