

ROUNDTABLE SESSION 2A

NATIONAL LEGISLATION, EU DIRECTIVES AND CONSERVATION.

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INTRODUCTION

In many countries in the European Community, the situation has become extremely difficult for crayfish. In addition to pressures from human activities resulting in the physical destruction of habitats and water pollution, they are subjected to the competition from exotic species introduced by accident or deliberately in certain countries.

These species are more prolific and less affected by habitat degradation, and they may also be carrying pathogenic agents. These are all the more virulent because their presence is also very recent on the biological evolution time scale. Because they are handicapped by habitat degradation and sensitive to exogenous pathogenic agents - to which they were not in contact long enough to develop proper resistance - the plight of native species is a matter of concern for the future, while their distribution is shrinking. In this daunting context, it seems that, if one is to avoid the propagation of unwanted species or contaminating agents, the last hope lies in the harmonisation of initiatives on the European scale.

This roundtable was aimed at giving a preliminary comparative analysis of the situation in each country, so as to appreciate the basic differences, and the advantages or disadvantages of the solutions suggested by lawmakers. The time for choosing between liberal or constraining solutions has passed, and we are simply left with the pragmatic option of trying to break the current deadlock of regulations that can be justified on principle but remain ineffective or unenforceable when faced with the facts in the field.

EUROPEAN LEGISLATION CONCERNING THE CONSERVATION OF NATIVE CRAYFISHES AND PROTECTION FROM THE INTRODUCTION OF EXOTIC SPECIES

Native crayfishes

Austropotamobius pallipes, *Austropotamobius torrentium* and *Astacus astacus* are included in Appendix III of the Bern Convention (Convention on the Conservation of European Wildlife and Natural Habitats - JO August 28, 1990 and August 20, 1996) as protected species. As for Appendix IV, it prohibits the use of some rather expeditious exploitation methods such as explosives or poison for fish and crayfish.

The constant decline of natural populations of *A. pallipes* over the past 30 years encouraged the IUCN International Union for the Conservation of Nature and Natural Resources (GROOMBRIDGE, 1993) to include the species in the Red Data List of endangered species. In response to the Convention on Biological Diversity, signed at the Earth Summit in Rio de Janeiro in 1992, the species was also included in Annex II of the Habitat Directive 92/43/CEE of the European Community (22/07/1992 article L 206, p. 7-38) relating to the Conservation of Natural Habitats of Wild Fauna and Flora whose

objective are identical. This annex is devoted to animal and plant species of European interest as a result of which several Special Areas of Conservation (SAC) were designated. This Directive (JOCE July 22, 1992) advocates conservation rules in relation to the level of the threats and has included in Annex V the three native crayfish species (*Austropotamobius pallipes*, *Austropotamobius torrentium* and *Astacus astacus*) under the title « animal and plant species of European interest whose capture and trade are to be submitted to management measures ». Consequently, heritage management is strongly recommended through integrating the protection of endangered species and their habitats.

Exotic crayfishes

Non indigenous species (NIS) bear the greatest share of the responsibility for the sudden loss of many native European populations. Crayfish plague reduced the production of native species by up to 90% in some countries, particularly in Scandinavia, Germany and Spain (LODGE *et al.*, 2000). Under the « Habitats Directive », EU countries are now compelled to prevent deliberate introduction of exotic species. Some National regulations prohibit the importation of live crayfish from foreign countries and transport of live animals through the country.

COUNTRY PER COUNTRY OVERVIEW OF NATIONAL LEGISLATION PROTECTING FRESHWATER CRAYFISH

In order to limit the decline of native crayfishes, various European nations have adopted some regulations to protect them independent of actions of other countries. Some participants at the roundtable agreed to summarise the types of regulations in force in their country in order to examine the level of diversity among these and to initiate development of a common European view underlining the main recommendations of new and common regulations to be undertaken in the future.

Austria (from L. Füreder)

These comments follow PÖCKL (1999).

The nine federal provinces of Austria have their own sovereignty over legislation for numerous affairs, including fishery and nature conservation resulting in nine respective laws and nine regulations. The aim of the nine fishery laws is to produce and conserve a highly diverse and healthy stock of fish, crustaceans, mussels, and other aquatic invertebrates, and to manage and optimise aquatic ecosystems. In almost all of these laws the crustaceans are not called by a specific trivial or scientific name. Most paragraphs even refer just to the term « fish » which includes also crustaceans and molluscs. The right to raise and catch fish and other aquatic animals and use them for consumption is restricted to registered holders and to licensees. In each of the fishery laws of the federal states release of non-native or alien species of fish (crayfish and other aquatic animals) in fishwaters is prohibited and requires special permission by the responsible authorities after an expert's violation of the law and has to be prosecuted. The fine, however, is extremely different between the federal states.

In his review on the legislation of Austria, PÖCKL (1999) presented a table with the closed season and minimum body length of freshwater crayfish according to the fishery regulations of the federal provinces.

Referring the release of non-native or alien species of plants or animals into the wild, laws on nature conservation of the federal provinces are – under the heading of species preservation – stricter than the fishery laws. It is not just prohibited to release specimens

into « fish-waters » but more general into « the open nature ». The release is prohibited and requires special permission by the responsible authorities. Release of non-native species of animals or plants without this special permission is a violation of the law and is prosecuted by rather high fines. In two of the nine Austrian federal states, native crayfish are strictly preserved in the wild: According to the Viennese regulation *A. astacus* and according to the Tyrolean regulation, *A. pallipes*, *A. astacus* and *A. torrentium* are strictly preserved.

In addition to these two federal legislations, pollution of waterbodies, soil and air as well as any endangering of autochthonous or native populations of animals and plants are prosecuted by the Penal Code, which is a national law to be executed equally in each federal province. As an essential process of the ecosystem the « ecological integrity » is quoted in the Austrian Water Quality Act. Hence, the release of alien crayfish can be regarded as disruption of the ecological integrity of freshwater environments.

Czech Republic (from K. Pavel)

Noble crayfish *Astacus astacus*, Stone crayfish *Austropotamobius torrentium*

- native
- critically endangered
- protected by law No. 114/1992

No manipulation of this species is allowed in all age classes without exception through a law from Ministry of Environment.

Protected are not only the animals but also their natural and artificial habitats and biotopes.

It is prohibited to catch, breed in captivity, disturb, injure or kill animals.

It is not allowed to collect, destroy or move their development stages and their residence.

Export is prohibited without exception by Ministry of Environment.

Narrow clawed crayfish *Astacus leptodactylus*

- non-native (but sometimes considered as native)
- endangered
- protected by law No. 114/1992
- protected as above
- exception (permission) can be granted by Regional Environmental Agency

Non-native species (*Pacifastacus leniusculus*, *Orconectes limosus*, *Procambarus clarkii*)

- no protection

France (from E. Vigneux from a synthesis written by B. Hubert CSP)

The legal status of the crayfish is based on the 29 June 1984 Act relating to freshwater fishing and fish management. Implementing decrees and all regulations in this Act were included in the Rural Code; they are now part of the new Environment Code implemented in 2000.

For lawmakers, crayfish as well as frogs are considered as fish (art. L 431-2 Code de l'Env.). Introducing species likely to cause biological unbalance (the list of which is ordered by decree) or introducing without permit any non-represented species (the list of represented species is decided by the minister in charge of freshwater fishing) is punishable by a fine of up to 60 000 F. Species deemed liable to cause unbalance are all species, except *Astacus astacus*, *Austropotamobius torrentium*, *Austropotamobius pallipes*, and *Astacus leptodactylus*. The species legally represented are *Astacus astacus*, *Austropotamobius torrentium*, *Austropotamobius pallipes*, *Astacus leptodactylus*, *Pacifastacus leniusculus*, and *Orconectes limosus*.

The combination of these regulations means that *Pacifastacus leniusculus* and *Orconectes limosus* - the presence of which is acknowledged in the waterways and man-made lakes and ponds affected by fishing regulations, and which are considered liable to provoke biological unbalance - cannot be introduced in the natural environment nor in fish farms or fish enclosures, nor transported live. These measures also apply to a fisherman or crayfish farmer, from the fishing site to the sale or consumption site. *Procambarus clarkii*'s legal status is somewhat different. This species may cause biological unbalance and special measures apply, as part of the legislation on nature conservation: live imports are prohibited throughout the country. It is not listed as present in France - although it is widely represented - and *Procambarus clarkii* can locally reproduce en masse, which poses a real problem for the legislator. The battery of legal texts designed to protect native (or deemed native, as for *Astacus leptodactylus*) crayfish species is too rigid and with limited effectiveness.

Fishing conditions are determined in the Rural Code, setting fishing periods and methods. Where « autochthonous » crayfish are concerned, fishing is authorised 10 days a year (from the fourth Saturday of July). The minimum capture size is 9 cm from the end of the rostrum to the end of the telson. One can deduct from general regulations that *Orconectes limosus* and *Pacifastacus leniusculus* may be fished throughout the year in waterways of the second category (Cyprinicoles), and during open fishing season in waterways of the first category (Salmonicoles). Meanwhile, the fishing prohibition regulations bearing on *Procambarus clarkii* unintentionally encourage its establishment in the country, with local proliferation due to its very efficient natural reproduction rates and its hardiness.

Administrative offices are working on a solution, which could mean the supervision of fishing/farming by professional fishermen, with personal authorisations delivered for live transport. Crayfish would be transported as dead animals from the fishing site to the processing or packaging site prior to marketing.

Germany (from R. Schulz)

The following legislation deals with crayfish in Germany:

1. German nature conservation law (BNatSchG)
2. German species protection decree (BArtSchV)
3. Fishery laws of the federal states
4. National Fish epidemic decree

The most relevant and important laws are the federal state fishery laws.

According to 1 and 2, all species are generally protected which are able to reproduce and to maintain populations in Germany. This includes aliens such as American crayfish and puts them in the same conservation context as native crayfish!

Each federal state fishery law (3) contains a list of native species. They contain only *A. astacus*, *A. torrentium* and *A. pallipes* as native species and are thus far more exact.

The introduction of crayfish into surface waters is also regulated in 3.

The three above mentioned species can be freely introduced into surface waters in Rhineland palatinate, Baden Wuerttemberg (B-W), Hamburg, Lower Saxony (L Sax), Saxony-Anhalt, Hessen, Saarland, Thuringia and with permit into Saxony, Brandenburg, Mecklenburg-Vorpommern (M-V), Schleswig-Holstein (S-H), Bavaria and North Rhine-Wetfalia.

Non endemic species can be freely introduced in R-P, this is not allowed in Bavaria but it is possible with permit in all the other federal states.

Catching of crayfish is not allowed in 10 federal states, Bremen has no regulation and the following 5 states have minimal length legislations and certain catch periods in the year: B-W, Bav., Berlin, L Sax, S-H.

Some of the federal states fishery legislations contain regulations for the conservation for non-native species such as *O. limosus* (4 fed states) and signal crayfish (1).

Eel stocking is not allowed in surface waters containing native crayfish in Bavaria and B-W.

For the time being, only the European directive 91/67/EWG seems to be an appropriate instrument for prohibiting the trade of infected crayfish. In Germany this European directive is represented by the National Fish epidemic decree.

Ireland (from F. Marnell)

A. pallipes is the only crayfish in Ireland. It is protected under National and EU legislation. Although this species was not included in the original list of protected animals under the 1976 Wildlife Act (the major piece of wildlife legislation in this country), it was added to the protected list in 1990 (by Statutory Instrument 112/1990). The updated act, Wildlife (Amendment) Act, 2000 continues this protection. Under this legislation, it is an offence to capture or kill the animal without a specific licence from the Department of Arts, Heritage, Gaeltacht and the Islands. It is not an offence, however, to unintentionally harm the animal or its habitat in the course of normal agricultural or industrial activities.

Licences are issued annually to allow scientific study of the crayfish, but there is no commercial exploitation of this species in Ireland.

Under the EU's Habitats Directive, 14 Special Areas of Conservation have been proposed for the protection of the crayfish in Ireland. These sites include the best known lake and river populations of the animal. Some sites have also been selected to provide a good geographical spread of the resource around the country. While awaiting the final adoption of these sites into the EU's Natura 2000 network, these SACs are fully protected under domestic legislation. In a number of sites where crayfish plague has eliminated the resident population, steps are being taken to reintroduce the species from neighbouring catchments.

Italy (from S. Salvidio)*Conservation of native species and their habitats*

In Italy, freshwater crayfish have usually been considered with fishes, under national and regional laws regulating inland fishing activities (GHERARDI *et al.*, 1999). However, the most recent national law regarding fishing in inland waters is a Royal Decree (R.D. 1486/14) dating back to the beginning of the 19th century, in which guidelines concerning fishing periods and minimal legal sizes are given. Regional Administrations and the Autonomous Provinces of Bolzano and Trento are allowed to implement laws on inland fishing activities, delegating Provinces (*i.e.*, subregional administrations) to manage and control fishing and game activities (Table I). Thus non-uniform treatment of fishing may exist among different Regions or Autonomous Provinces. Indeed, there are regions such as Abruzzo, Emilia-Romagna, Lazio, Liguria, Lombardia, and Piemonte in which fishing for native freshwater crayfish is totally prohibited except for scientific purposes, and others such as Toscana in which crayfish exploitation is allowed at least during certain periods (GHERARDI *et al.*, 1999). In these cases, other international or national laws concerning inland water quality (L. 152/1999) or conservation of natural habitats and species (« Habitats » Directive 92/43/ECC; D.P.R. 357/97) should be taken into account, assuring conservation or restoration of habitats and protection of the species (Table I).

Recently, regional legislations protecting non-game animals such as amphibians, reptiles and edible snails have been implemented to protect freshwater crustacean populations too (SOCIETAS HERPETOLOGICA ITALICA, 1997).

Table I**Legislation concerning the conservation of native freshwater crayfish in Italy.****Tableau I****Législation concernant la conservation des écrevisses natives en Italie.**

National laws regulating inland fishing activities	Region and Autonomous Provinces laws regulating inland fishing activities
R.D. 1486/14: fishing periods and legal sizes for both fish and freshwater crayfish	Laws regulating fishing periods, fish species and measures, fishing gears, no-kill and protected waters, etc. (crayfish totally protected or partially exploitable)
Other national legislations	Other regional legislations
L. 152/1999: protection and restoration of inland water quality	Laws protecting amphibians, reptiles and freshwater crustaceans (in these cases totally protected)
L. 394/91: prohibition of the introduction of non-native plant and animals into national parks	
D.P.R. 357/1997: non-native species introduction should be authorised only after a scientific study	

Non native freshwater crayfish species

The ecological implications regarding the introduction of alien crayfish species in Italian inland waters has been discussed in detail by GHERARDI *et al.* (1999). The effects of these invasive species on the whole aquatic ecosystem have been strongly negative, any positive ones being minimal (GHERARDI *et al.*, 1999).

In Italy, only one national law formally forbids the introduction of all non-native species into the wild; this legislation concerns protected areas, and in particular national and regional parks (L. 394/91, article 11.3.a). However, another national law (D.P.R. 357/97, article 12.3) declares that the introduction of alien species should be formally authorized only after a scientific assessment indicating no negative impact. Unfortunately, regional legislations seldom takes into consideration these regulations. The introduction of freshwater non-native crayfish should be formally prohibited by both national and regional laws, even in small artificial fishing reservoirs not connected to the natural hydrological systems, and that are usually not regulated by inland fishing legislation.

Overall, the above regulations are clearly insufficient to prevent or even to slow down the spread of invasive freshwater species (*e.g.*, *Procambarus clarkii* and *Orconectes limosus*) all over Italian inland waters (GHERARDI *et al.*, 1999).

Norway (from T. Taugbol)

Regulations based on the Inland Fishery Act

The catching season for *Astacus astacus* is from August 6 to September 14 and the minimum size is 95 mm total length. There is no differences between sexes in catching season or minimum size. It is desirable that Fishery authorities at the county level can establish stricter regulations (for instance on catching season or the use of fishing gear) and also lower the minimum size as necessary. The stocking of crayfish is forbidden except by permit from the Fishery authorities.

Regulations based on the Fish Diseases Act

It is not allowed to import live or dead, unboiled freshwater crayfish into Norway. This ban also includes crayfish for aquarium purposes. It is forbidden to release or keep crayfish in cages outside the catching locality. Diseased or dead crayfish must not be thrown into waterways. Exemptions from these two bans can be given by the disease authorities. Equipment involved in catching and keeping crayfish must be disinfected or dried between seasons and before use in another watershed. If used abroad it is forbidden into Norway. Boats, angling equipment and other gear used in water must be completely dry or disinfected before being used in another watercourse or brought into Norway. Water-containers must not be emptied directly into another watercourse.

Spain and Portugal (from F. Alonso)

In Spain, white clawed crayfish is considered a non-fishable species in the regions where it is not protected with more specific regulations (see ALONSO *et al.*, 2000, since then it is also considered endangered in Extremadura - although no population has yet been reported there!).

As a rule, red swamp crayfish can be transported and marketed alive (or dead) all over Spain. Nonetheless, marketing and live transport were prohibited in some regions to protect native crayfish (Navarra, Castilla-La Mancha) but only if they come from recreation fisheries (they have to be killed by ripping off the central piece of the telson, a rather primitive method). As crayfish deteriorate very quickly when dead, and as they can readily be purchased live at market stalls (from professional fisheries), fishermen cannot understand this measure (and there is of course no way of implementing it). The incongruity arises from the fact that fishery regulations are, in most cases, within the competence of regional governments, while wildlife commercialisation is regulated by a national basic Act (*i.e.* regional governments are not allowed to regulate these matters) that doesn't place any limitation on live crayfish manipulation.

Fishery regulations are quite variable for red crayfish. It can be fished in all the regions where it is present. Only in the province of Alava (Basque country) are there some areas with limited daily access to the fishery. This generally means paying a quota for the access. In the rest of Spain, there are no limitations placed on the number of fishermen fishing simultaneously. Usually there is no size limit for red crayfish, and the daily catch, when imposed, is very high (> eighty crayfish per fisherman per day, with the exception of Cataluña, where only 15 are allowed). Closed season periods are implemented in some regions but in every case these are linked to wildfowl nesting protection rather than to any aspect of crayfish biology. As a rule, only lift nets are allowed, with traps being used by professional fishermen in specific areas.

Since around 1994, signal crayfish can be fished in Navarra, Basque Country and Castilla-León (all in northern Spain), and more recently Cantabria. In the rest of its current distribution area, fishing is not allowed in Castilla-La Mancha (around 10 populations), Aragón and Andalucía (1 population). In the Comunidad Valenciana (1 population) there is a regulation allowing its capture as an exceptional measure (but as far as I know it hasn't been applied). In Cataluña, where the presence of signal crayfish is not yet known to me, they have put up a new fishery regulation which allows fishing for « the new exotic species of crayfish that could be detected » (that is, most probably, signal crayfish).

Since the signal crayfish is not quoted in the above-mentioned national Act on wildlife commercialisation, it cannot be legally marketed, dead or live. Nevertheless, a private owned hatchery is selling live crayfish to all regional governments currently carrying restocking programs.

It is important to note the impact of fishing regulations implemented in some regions on the rest of the country. Dispersal of signal crayfish can be taken as an example. Although present since 1985 in three different localities in Castilla-La Mancha as a result of experimental restocking programmes, no new populations of the species or dispersal from the original sites were recorded for almost ten years. Then, in 1997 a well-structured population (3-4 year classes) was found. This happened just when signal crayfish was for first time authorised in Spain, in 1994. In the last five years, at least five new populations have been detected in the area, as well as another in nearby Comunidad Valenciana, where it was previously also absent.

Signal crayfish can usually be fished only at specific sites with limited access (paying also a quota), with the exception of Castilla-León, where about 100 km² were recently opened to fishing with free access. The only authorised method is the use of a limited number of lift nets. There is always a size limit (varying between TL 80 mm and 100 mm, in some regions they still use the traditional eye to telson measure, an inheritance of old Spanish crayfish fishing legislation). Daily limits vary as well, and are usually low (under 36 crayfish per fisherman per day).

Cherax destructor is not mentioned in fishery regulations, and so it cannot be legally fished.

As for Portugal, the red swamp crayfish regulations date back from 1990, and allow its capture with a variety of methods, ranging from hand-catching, to lift nets and traps, depending on the property regimen of the water, without catch limits and, as a rule, without size limits. Signal crayfish is not mentioned in fishery legislation, although there is evidence (Maria Ilheu, pers. comm.) that it has colonised Portuguese waters from the Spanish province of Zamora, where it was stocked by the regional government.

As for white-clawed crayfish, which is probably now extinct (or with very few remaining populations), it appeared as a fishable species in the annual information leaflet on fisheries issued by the Dirección General de Florestas in 2000. Although I asked some relevant researchers, nobody could tell me anything more, and I couldn't find any minor legislation specifically prohibiting its fishing. The only law I found dates back from the early 60's. I don't know if they have changed it.

Switzerland (from G. Périat)

The Swiss Federal legislation is based on the fact that *A. pallipes* and *A. torrentium* are strongly endangered and *A. astacus* only endangered. Catching is restricted by protection periods and minimum size limits fixed in this legislation. However during the round table the problem was mentioned that the crayfish is not a species considered of national importance and cantonal fisheries administrations have very different actions: the divergences of intercantonal status (23 cantons and 3 half a canton in Switzerland) are enormous: e.g. in the Vaud canton, native crayfish fishing is still open when forbidden in neighbouring Jura, Neuchatel, Genève). In the Jura canton, there are a lot of agricultural and anthropogenic pressures, while many actions are undertaken in Genève canton for restoring and preserving native species including crayfishes.

There are no protection measures for the exploitation of alien species but Federal legislation (1991) has decided a restriction by prohibiting transport of living alien crayfish species. No transport is possible nor stocking in aquarium or open waters.

U.K. (from P. Sibley)

Native species

Wildlife & Countryside Act (1981): *Austropotamobius pallipes* is listed on Schedule 5 of this act, making it illegal to kill, injure, take from the wild or sell (without a licence from English Nature, the national nature conservation organisation).

Salmon & Freshwater Fisheries Act (1975): A new national byelaw has just been introduced (2001) making it an offence to use crayfish of any species (whether alive or dead) as bait when fishing for any kind of fresh water fish.

Non-Native species

Wildlife & Countryside Act (1981): It is illegal to release or allow to escape into the wild, any non-native crayfish not ordinarily resident in the country, or listed on Schedule 9

(Schedule 9 lists species that have become established in this country and are therefore technically resident in some areas - the following were listed in 1992 - *Pacifastacus leniusculus*, *Astacus leptodactylus*, *Astacus astacus*).

Import of Live Fish Act (1980), Prohibition of Keeping of Live Fish (Crayfish) Order 1996: this order was introduced in 1996 by governmental department. Under the order it is an offence to keep any non-native crayfish in England and Wales without a licence (except in areas where they are already established as defined by a set of postal codes - mainly in the south of England). Existing farms were allowed to continue, but new farms are not allowed unless they operate indoor, escape proof sites and register with the authorities. It is allowed to keep non-native crayfish where used for direct human consumption, and one species, *Cherax quadricarinatus*, has been identified as a tropical species and may be kept in indoor aquaria.

Table II

Example: U.K: Law page from Environment Agency: « The law - what you need to know ». [http: //www.crayfishtraps.co.uk/lawpage.htm](http://www.crayfishtraps.co.uk/lawpage.htm)

Tableau II

Exemple : U.K. : page de loi de l'Environment Agency : « La loi - ce que vous devez savoir ». [http : //www.crayfishtraps.co.uk/lawpage.htm](http://www.crayfishtraps.co.uk/lawpage.htm)

Before you place a trap in a river or other watercourse you need the permission of the landowner.	If you do not have such permission you are liable to prosecution under the theft act.
You need consent from the Environment Agency to trap crayfish. This consent is free but is only given in the Thames Region.	(The Thames Region covers the basin of the River Thames from its source in Gloucestershire through London to its estuary in Essex. It includes the rural areas of Wiltshire and Oxfordshire, as well as heavily urbanised towns and cities including Guildford, Slough and Luton).
It is now illegal to use crayfish as bait.	This is to try to stop the spread of crayfish plague.
You are not allowed to return signal crayfish to the river once caught.	(Wildlife and Countryside Act) - so you must not throw back the little'uns.
You are not allowed to keep fish or eels which accidentally enter the trap.	Trapping freshwater fish and eels using such traps is illegal under the Salmon and Freshwater Fisheries Act.
You are not permitted to place traps near populations of endangered species - principally native whiteclaw crayfish and water voles.	Consent will not be given if there is even a small chance of this occurring.
It is forbidden to transfer crayfish from one river to another.	Again, to try and limit the spread of both signal crayfish and the crayfish plague.

CONCLUSIONS

Crayfish Legislation is very different from country to country, involving different administrative levels (many examples) depending on history, culture, importance of recreational fishing, etc.; emphases may be gastronomic, patrimonial (heritage), economic or ecological; political and financial power may affect or distort planning decisions.

Recommendations from the workshop:

- integrate *Astacus astacus* and *Austropotamobius torrentium* into the Habitats Directive, Annex 2. This may be a complex process.
- highlight the sanitary risks from live importations of crayfish.
- need more awareness training for a wide range of people, children to adults.

Many countries have introduced regulations about the transport of live alien crayfishes, but only Ireland and Norway have banned importation. In other countries, free trade regulations make it impossible to restrict the import because the Court of Justice of the European Communities (1994) does not forbid the import of living crayfishes, included alien ones, due to the principle of Free Trade. Thus it is possible to argue that the national measures taken are in fact illegal! On 18 May 1994, The European Court of Justice (ECJ) delivered case C-131/93 in which the European Commission sued the Federal Republic of Germany for initiating a ban on live crayfish imports. The ban of 1 August 1989 was a response to the crayfish plague, spread mainly by the incorporation of alien species of crayfish. The German law required an import license to be obtained before live crayfish could be imported into Germany. Even with such a license, crayfish could be imported only for research and teaching purposes. This adversely affected eight to ten German firms engaged in the importation and distribution of live crayfish. A conditional exemption was, therefore, provided allowing the importation of crayfish for a limited time. The exemption required that the precise quantity, the country of origin and species name be specified. The Commission argued that such restrictions were in violation with the EC Treaty because it established import bans against member states. The ECJ agreed with the Commission and found the ban meant that Germany was not fulfilling its obligations of the EC treaty.

In Sweden, there is a regulation 1994: 1716 on fishing, aquaculture and the fishing industry, *i.e.* regulation on the transplantation and stocking of fish, consideration of environmental values and the prevention of the spread of crayfish plague.

Concerning the Office International des Epizooties (O.I.E.: World Organization for Animal Health, Paris), Crayfish plague is on the list « other diseases » (not normally notifiable by the OIE but for which guidelines or other information are available. List B diseases includes transmissible diseases that are considered to be of socio-economic and/or public health importance within countries and that are significant in the international trade of animals and animal products: only White Spot Disease, Taura syndrome and Yellowhead disease are listed in Crustacean diseases...

Now Fish disease Act are also related to the problem of crayfish plague transported by fishes: crayfish plague was introduced in Ireland where no exotic crayfish were present: foreign anglers are believed to have introduced *Aphanomyces astaci* with gear (REYNOLDS, 1988). Proof was recently given about the transportation of the disease by fishes: during the Poitiers meeting, Rogers and Oidtmann presented an oral communication concerning crayfish plague issues arising during fish transfer, indicating that it is now necessary to address the problem of fish transport offering the opportunity for the disease to spread in a variety of ways. Because the disease is so virulent when it reaches a susceptible crayfish population measures taken to prevent this must have a sound scientific basis and will have to be followed assiduously by environmental managers to be effective.

Finally, it was again spoken about the important necessity of establishing Species - specific regulations: this aspect was already mentioned by HOLDICH *et al* (1999): The aim of this roundtable was to initiate a common European action in order to define the main recommendations for new and common regulations to be undertaken in the future. CRAYNET (European network proposed after the congress) must provide the opportunity to really elaborate recommendations on harmonising national and regional regulations and for improving EU legislation, because exchanges will be intensified with Managers and stakeholders (crayfish farmers, fisherman, scientists monitoring and licensing fisheries, those responsible for environmental quality or conservation at local, regional or national level).

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