

(Rough translation from Spanish by EFTTA)

ASPA, S.L. has carried out a technical study based on 4 different but related points.

- 7 semi-structured interviews have been conducted with opinion leaders in order to gather their opinions first hand.
- A socio-economic approach has been taken to the impacts that the Supreme Court's Judgment can have on the different estates, entities and groups affected by it.
- A scientific technical study has been carried out, based on the main bibliography on inland fish and fisheries, at the level of the Autonomous Communities, Spain, the European Union and some international references of interest.
- Finally, an environmental legal analysis of all European, National and National Autonomous Communities regulations has been carried out.

SEMI STRUCTURED INTERVIEWS. 1

- 7 interviews have been conducted with various opinion leaders, understanding as opinion leaders people who are experts within their field of action.
- The interviews have been personal and open, in which the interviewee comments without conditioning on a series of key aspects that the interviewer asks.
- In this sense it has been considered that there are 5 key aspects on which you want to know your opinion:
 - Current state of fish stocks.
 - Stand in which the sentence will be applied to the legislation.
 - Is it feasible to eradicate invasive species?
 - Consequences of its application in ecological, economic, tourist and leisure aspects.
 - Proposals for practical application.

SEMI STRUCTURED INTERVIEWS. 2

Questions included in interviews

- Do you know the Law 42/2007 on Natural Heritage and Biodiversity and Supreme Court decision 637/2016 on invasive fish species?
- In your opinion, what consequences will this sentence have when it is applied to Spanish legislation and the autonomous communities?
- In your view, is it desirable and feasible to eradicate these fish species from the current biotopes they occupy?
- About the fish species involved. How do you think that the Administration will apply this sentence in the regulations, to its final consequences or will it be limited to prohibitions and punitive actions?
- In your opinion, what will be the ecological consequences of this judgment and the new regulations?
- In your opinion, what will be the economic consequences for companies, tourism sector and in general?
- In your opinion, what will be the consequences on sport fishing and leisure?
- How could invasive species be eradicated? Technical, ecological and budgetary feasibility.

**SEMI STRUCTURED INTERVIEWS. 3
INTERVIEWEES**

- Cesar Rodríguez. (CR). Secretary General of Association for the Study and Improvement of Salmonidae - Rivers with Life (AEMS-Rivers with Life)
- Diego García de Jalón. (DGJ). Professor Polytechnic University of Madrid. ETS Forestry Engineers. Coordinator of the research group Hydrobiology Research in rivers.
- Enrique Calíco. (EC). Founder and President of CALICO S.A. President of the Association of Distributors of Fishing Articles (ADAP)
- Fernando Torrent. (FT). Lecturer at the ETS DE Montes de Madrid. Teaching unit of hunting fishery and aquaculture, Specialty in aquaculture.
- Inmaculada Montero. (IM). Head of hunting and fishery resources services in the General Directorate of Environment in the Ministry of the Environment, Rural, Agricultural Policies and Territory of Extremadura.
- José Luís Bruna. (JLB). President of the Spanish Federation of Fishing and Casting.
- Juan Delibes de Castro. (JDC). Doctor in Biology. Director of Trofeo Pesca magazine. Director of the Hunting and Fishing Channel.

**SEMI STRUCTURED INTERVIEWS. 4
CONCLUSIONS 1**

- Rivers are completely transformed by man's action and fully modified freshwater aquaculture ecosystems.
- The physical chemical quality of the water in freshwater ecosystems in almost all Spanish watersheds is good for the native fish species.
- The relationship and effects between exotic and native species is considered to be poorly studied.

- It is recommended that serious studies be conducted on the effect of alien species on our inland aquatic ecosystems, both for assessing interaction with alien species and for different impacts on ecosystems.
- It is widely believed that the release of rainbow trout does not produce significant effects on common trout populations as they are non-breeding individuals.
- Common Trout has full dominance over the rainbow.
- The rainbow trout and its impact is very reversible, simply to stop repopulating [the trout] would disappear almost completely from our rivers.
- One respondent mentions that Rainbow Trout can be a vector of disease transmission to our native species or that it can deplete native autochthonous populations.
- The Carpi is a species that was introduced from a very old time and probably already has character of naturalized and with little impact on native populations since it does not share in almost all cases the same ecosystems.

SEMI STRUCTURED INTERVIEWS. 5

CONCLUSIONS 2

- The Red Crab is said to be enormously widespread and already fulfils an ecological role by being prey to certain valuable species, such as the otter. It also appears that their populations have stabilized.
- Arctic char can be a problem in mountain lakes due to predation on native amphibians.
- On the Black-bass is a situation of population balance with other native species.
- Many of the interviewees say that the Judgment and its application in the regulations is unclear, ambiguous and many indeterminate consequences have been created on its consequences on fishing. They also believe that it cannot be applied because of the difficulty of implementing it and controlling it with the current public resources.
- Some respondents believe that this sentence modifies the management that is being done so far of the natural resources in Spain, and yet it has been done without taking into account the technicians and managers of these resources, which is considered a mistake.
- Several interviewees have pointed out that another problem is that it is intended that the Autonomous Communities should apply the Judgment in the regulations, and that they are expected to take into account the high social and economic impact it can generate.

SEMI STRUCTURED INTERVIEWS. 6

CONCLUSIONS 3

- It is indicated that this sentence can be transient, because it is expected that there will be a legislative amendment that allows the Spanish legislation to adapt to the European one. In addition, there are no species of freshwater fish present in Spain that are a priority for their eradication
- What is meant by invasive species, regarding the invasiveness of species and which species should be included.
- In RD 2011 there were species with invasive potential and then in the RD of 2013 have been suppressed.
- As for the prohibition of fishing for certain species, it is assumed that it is not viable because they are widespread and cannot be eradicated.
- Regarding fishing to kill, there is a common view that it will not be an effective instrument, since it will not be accepted by fishermen and it should not correspond to them that responsibility for population control.
- It is widespread that when it is a question of very widespread species that occupy wide watersheds, eradication is practically impossible.
- However, it is said that this would be feasible in some places, with adequate conditions and spaces with a small extent and in indigenous populations in danger.

SEMI STRUCTURED INTERVIEWS. 7

CONCLUSIONS 4

- Some respondents feel that fishing cannot act as a Regulator of these species, which is a mistake, and less like mechanism of eradication of some species.
- It should be the eradication plans that determine whether elimination of species, and how to do so, and it is also essential to involve all sectors in these plans to make the plan's success more feasible.
- With the Red Crab, the extractive activity could be considered an effective control tool.
- Socioeconomic and leisure impacts are where they are very opinions are numerous, with the majority agreeing that could be very important and even Irreversible to the sectors involved in inland fisheries.

SCIENTIFIC TECHNICAL STUDY.

ECOLOGICAL AND ENVIRONMENTAL DIAGNOSIS

This biological and environmental report has not been intended to be a catalogue or a review of the causes of the decline of the native fish fauna, but has made a diagnosis of what the exotic ichthyofauna is for the native species, the potential risks involved in this regard as invaders - in their case - the convenience of acting on it, and the consequences of the different policies of action.

To this end, the following works have been carried out:

- Characterization of Iberian freshwater ichthyofauna and the pressures it suffers.
- Characterization of the species object for this report according to their taxonomic and phylogenetic position, and their ecological and behavioural characteristics.
- Review of the state of knowledge on the environmental impact of exotic fish species
- Diagnosis of existing problems and the ecological consequences of different and hypothetical strategies of action.

LEGAL DIAGNOSIS.

WORKS CARRIED OUT

- Introduction to the legal situation of inland fisheries in Spain.
- European Norms on Invasive Alien Species.
 - European regulation and comparative law on invasive alien species
 - Transposition of European legislation into Spanish legislation. Situation of the different invasive fish species in Spain.
- Chronology, modification and publication of the current legal body regarding invasive alien species in Spain
 - Legislative analysis of the regulations.
 - Or Law on Heritage and Biodiversity.
 - Spanish Catalogue of Exotic and Invasive Species.
 - Or Law on access to environmental information and public participation.

SOCIOECONOMIC DIAGNOSIS

WORKS CARRIED OUT

The different sectors directly or indirectly related to inland fisheries have been approached to approximate the socio-economic impacts that may be produced by the new regulations.

- Fishing licenses and permits. Studied by autonomous communities.
- Rainbow trout. Fish farms and intensive fishing grounds.
- Economic sectors directly involved.
- Economic sectors indirectly involved.
- Movements, transport of fishermen.
- Other sectors. Press, fairs and exhibitions.
- Estimation of socioeconomic impact

CONCLUSIONS. 1

- The rivers are very transformed by the action of the man and the reservoirs are artificial ecosystems in which the exotic species can especially thrive.
- The species classified as invasive have been introduced, in most cases, by the Public Administration to encourage fishing and, although they were made in another time when no importance was given to the negative effects of such introductions, it is difficult to accept for fishermen and for the sector the change of approach of such Administration, in the very sudden practice.
- A species may or may not be invasive according to the circumstances, as its consequences may be harmful or beneficial depending on the case, although the precautionary principle should prevail in case of uncertainty (Leprieur et al., 2009).
- The criterion of finding a species on the list of most invasive species does not imply that it is to behave in this way everywhere. Rainbow trout is not as invasive in Spain as it occupies a niche where it is dominated by common trout. For example, in the Andean highlands, for example, it is an invader that occupies an ecological niche (cold, well-oxygenated water, ictófago ...) that was free there, becoming a predator of the native species that have evolved without that pressure, is the case in Spain.
- There are cases in which exotic species are occupying bodies of water presumably uninhabitable by indigenous species because of the high degree of physical and chemical deterioration of rivers caused by other human activities.
- Rainbow trout has been established in sparse stretches of river. It does not pose a risk to common trout since it is dominant over the rainbow (see all the abundant literature on this subject in the USA, where common trout is invasive) and hybridization is unlikely and unfeasible.
- It is impossible to eradicate invasive species from most of the bodies of water in which they have been installed.
- The current regulations that are applicable and regulate the practice of sport fishing with invasive alien species do not prohibit this type of fishing; only modify it in relation to what Originally established by Law 42/2007, on Natural Heritage and Biodiversity.

CONCLUSIONS. 2

- The legislation on exotic species will be modified and adapted to the new reality of jurisprudence established by Judgment 6372016 of the Supreme Court. While this legislative change occurs in the terms that are established, the sport fishing group is obliged to respect (as it cannot be otherwise) the current regulations on the exercise of fishing with exotic species Invasive.
- The standard has been forgotten (or deliberately ignored) by the continental sport fishing sector. Economically, it is a sector on which many jobs depend and it has been legal and legitimate until the moment of publication of the current norm. You cannot be blind to a social reality that has a great impact on an economic sector and the large number of fishermen who see overnight the activity they have been doing to date becomes incomprehensibly for them, Illegal if not criminal.
- The Spanish Constitution establishes "... that the public authorities shall encourage sports activity and facilitate the proper use of leisure"
- Sport fishing for inland fishing is an important economic sector, which in turn affects other sectors such as trade and tourism.
- According to data from ADAP Association of Distributors of Fishing Articles there are **about 1,400 small companies that sell fishing articles with an average of between 3 and 8 jobs.** These companies would be the most affected by the new situation generated.
- The key issue is that finally the regulation on alien species will force the killing of the fish caught. Fishing "with death" will mean a rejection of different intensities among fishermen, so two possible scenarios are estimated: A) Alternative 1: fishermen do not accept this and there is a drastic decrease in the number of fishermen / licensees. B) Alternative 2: a percentage of 45% of fishermen accept fishing "with death".
- There is a reduction in the number of licenses and fishing permits between 60% (alternative 1) and 35% (alternative 2).
- An estimated 70% reduction in re-stocking farms and 100% reduction in intensive stocking.

CONCLUSIONS. 3

A decrease of 80% (alternative 1) and 50% (alternative 2) of the volume of turnover of economic sectors directly involved in fishing is estimated.

- A reduction of 85% (alternative 1) and 60% (alternative 2) of the volume of turnover of economic sectors indirectly involved in fishing is estimated.
- A decrease of 75% (alternative 1) and 60% (alternative 2) of turnover due to the displacement of fishermen is estimated.
- A decrease of 80% (alternative 1) and 45% (alternative 2) of the volume of turnover derived from other economic sectors (specialized press, fairs and exhibitions) is estimated.
- Therefore, for alternative 1, socioeconomic impacts are estimated, involving the loss of 1,248 enterprises, 324 M € in turnover, 6,640 direct jobs and 1,136 indirect jobs; And for alternative 2 the loss of 780 companies, € 202.5 million in turnover, 4,150 direct jobs and 710 indirect jobs.
- If the inclusion of rainbow trout in the invasive alien catalogue is maintained, the disappearance of 70% of the companies related to this productive and fishing activity is estimated.
- If the inclusion of rainbow trout in the catalogue of invasive species is maintained, it is estimated that the fish farms dedicated to repopulation of this species will suffer an impact of 5M €, the loss of 35 companies and more than 120 direct or Indirect.
- If the inclusion of rainbow trout in the catalogue of invasive species is maintained, it is estimated that the intensive preserves of this species will suffer an impact of 10.5 M €, and the loss of 350 direct jobs.
- There is no alternative nor a period of adaptation to the new standard or offer alternatives so that both the sector and athletes do not suffer the sudden and hard impact of such a standard.
- It is necessary to transfer to legislation that fishing is a control tool, as long as there are no other options, and regulate it in a clear way.

With the sentence and the poor wording of the decree on invasive species, the continuity of the native species and the fishing activity are at risk.

"The expected forecasts, including the tourism sector, would be 1400 closed companies, 8430 direct jobs lost and 1,102,490 million euros lost"

CONCLUSIONS. 4

Serious studies should be conducted on the impact of exotic species, including the ecological role they hold as valuable prey.

- That there are no tools to enforce existing regulations: it would not be enough to prohibit the use of invasive species; rather, it would be necessary to do something to eradicate them and to facilitate their compliance to the few fishermen remaining after the application of the standard. It is unrealistic.
- A rule is limited to prohibiting and is not proactive in its objectives, it is not consistent with its purpose so that its usefulness to achieve its goals is not only dubious but can be constituted as a counterproductive element.
- Sport fishing is assured its present and future in Spain, however, the development and viability of the sector will involve working hard in the development of techniques and sports modalities based on new fish species,

becoming at the same time a necessary vector for the Conservation of aquatic ecosystems, and a fish fauna complementary to invasive alien fish species.

- The judgment of the Supreme Court has led to a regulatory change that has caught the sport fishing industry by surprise even though the legislation on exotic species dates back to 2001 and the prohibitions associated with invasive alien species were already known throughout the sector. This situation must be reconverted into a productive and constructive approach, to achieve through permanent environmental advice that the problems do not return to find the sector in an offside position.
- The ability to adapt to changes will make it possible for the fishing equipment sales sector to be an agile sector with positive growth figures. The need to establish an R + D + i department or programs is considered as one of the solutions to grow in the new business opportunities that arise in relation to fishing with invasive alien species in particular and other species in general.
- The sport fishing sector has to establish the appropriate measures and programs to be able to adapt and anticipate the legislative changes that periodically occur in the Spanish environmental regulations, both in Relation to invasive alien species in particular as well as the conservation of biodiversity in general.
- In order to prevent fishing from becoming a vector for the spread of invasive alien species, it is necessary to determine clearly which are the fishable water bodies (not the other way round) and in those bodies of water that have been determined to be free of Invasive species will not be allowed in any case the sporting use of the same in case they were colonized by said invaders, it being mandatory for administrations to act in such cases for eradication or, in the event of their impossibility, control.

CONCLUSIONS. 5

- It seems more reasonable and realistic to delve into the problem of the better preserved sections from a more comprehensive (physio-chemical-biological-geomorphological-hydrological) point of view and more sensitive because of the composition of the fish community and act on them to make generic prohibitions that are not capable of being guided to their ultimate goal. Once the means are put in place and the conservation measures are carried out in the most valuable sections, it is possible to expand the list of action segments, fulfilling the ultimate aims of the regulations but without producing the serious socioeconomic impacts of the same.
- Measures should be put in place to prevent the spread of invasive species, especially those considered more dangerous to ecosystems (such as catfish), and this should involve the commitment of all parties, including fishermen. If fishermen are aggrieved, it is very difficult, if not impossible, to carry out any policy of action, and it is possible to foment rebel, irresponsible and even criminal behaviour that give way to the indiscriminate proliferation of loose fish invading at various points of The Spanish geography as "revenge" for the offense. It is not a justification, it is a real risk.
- The management, regulation and repopulations carried out in different fishing areas with species other than invasive alien species can serve as examples of sustainability and innovation that can be replicated in those other areas most affected by the application of legislation and compliance with the Judgment of the Supreme Court, and that until now they were sport fishing based solely on invasive alien species.
- ADAP, as an employer of the fishing equipment sales sector, must become an interest group that can publicly and legally defend its legitimate business interests, as do other institutions and business sectors, actions that should always respect, as a way to achieve their interests, legality and respect for the constitutional and legal order in force in Spain.
- It is essential that the legislation that is designed, addresses all parties involved, not forgetting that the recovery of native species goes beyond the control of exotic species, with priority being given to the recovery of heavily degraded habitat.

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