

# **Details of the Public Consultation on the Management of Eel Stocks in Ireland from 2012 to 2015**

## **Background**

The EC Regulation (Council Regulation 1100/2007) for the recovery of the eel stock required Ireland to establish eel management plans for implementation in 2009. Under the EC Regulation, Ireland should monitor the eel stock, evaluate current silver eel escapement and post-evaluate implemented management actions aimed at reducing eel mortality and increasing silver eel escapement.

The Irish Eel Management Plan submitted to the EU on the 9<sup>th</sup> January 2009 and accepted by the EU in June 2009 outlined the main management actions aimed at reducing eel mortality and increasing silver eel escapement to the sea.

Under the EC Regulation (EC No. 1100/2007), each Member State shall report to the Commission initially every third year until 2018 and subsequently every six years. The first report is due by 30<sup>th</sup> June 2012. The Irish Eel Management Plan outlines a national programme for sampling catch and surveys of local eel stocks. Appropriate scientific assessment will monitor the implementation of the plans.

## **Standing Scientific Committee on Eel**

The Scientific Eel Group (SEG) was established by the Department of Energy, Communications and Natural Resources in March 2009 and appointed by the Minister. Consultation with the Department of Culture, Arts and Leisure in Northern Ireland ensures the co-operation with Northern Ireland agencies to cover the specific needs of the trans-boundary North Western International River Basin District eel management plan. In 2010 the SEG was reconstituted as a Standing Scientific Committee for Eel under the Inland Fisheries Ireland (IFI) legislation with a revised Term of Reference. The SSCE comprises scientific advisers drawn from the Marine Institute (MI), Inland Fisheries Ireland (IFI), The Loughs Agency, the Agriculture, Food and Biosciences Institute for Northern Ireland (AFBINI) and the Electricity Supply Board. Although the scientists are drawn from these agencies, the advice from the SSCE is independent of the parent agencies. The SSCE has undertaken a full assessment of the available eel data and other information available to it as outlined in its Terms of Reference and this is available in a full SSCE report. The SSCE report provides the most current scientific advice on the status of the eel stock following the first three years of the implementation of the Irish Eel management Plan (2009-2011).

## Biology

The European eel *Anguilla anguilla* (L.) is found and exploited in fresh, brackish and coastal waters in almost all of Europe and along the Mediterranean coasts of Africa and Asia. The life cycle has still not been fully elucidated but current evidence supports the view that recruiting eel to European continental waters originate from a single spawning stock in the Atlantic Ocean, presumably in the Sargasso Sea area, where the smallest larvae have been found. The newly hatched *leptocephalus* larvae drift with the ocean currents to the continental shelf of Europe and North Africa where they metamorphose into glass eels that enter continental waters. The growth stage, known as yellow eels, may take place in marine, brackish or freshwaters. This stage typically lasts from 2-25 years (even more than 50 years) prior to metamorphosis to the silver eel stage and maturation. Age at maturity varies according to latitude, ecosystem characteristics and density-dependent processes. The European eel life cycle is shorter for populations in the southern part of their range compared to the north. At the end of the continental growing period, the eels mature and return from the coast to the Atlantic Ocean; this stage is known as the silver eel. Female silver eels grow larger and may be twice as old as males. The biology of the returning silver eel in ocean waters is almost completely unknown.

The European eel is a single, panmictic stock distributed from Northern Africa and the Mediterranean in the south to Northern Norway and Iceland in the north, including the Baltic Sea. Recent genetic evidence has confirmed the shared nature of the stock, with slight temporal variation between cohorts but no geographical differentiation (Palm *et al.* 2009).

## **International Eel Stock and the EU Regulation – “Extracted from ICES Advice”**

The eel stock continues to decline in the period 2009 to 2011. In 2011, glass eel recruitment has fallen to 5% of their 1960-1979 level in the Atlantic region and less than 1% in the North Sea area, and showed no sign of recovery. Recruitment of young yellow eel has been declining continuously since the 1950s. Stock indicators in the national eel management plans submitted in 2008 indicated that anthropogenic mortality was above the limit implied by EC Regulation No. 1100/2007 (EC, 2007).

Abundance of all stages of eel (glass eel, yellow eel, and silver eel) is at an historical minimum. The stock is in a critical state. In 2007, European eel, *A. anguilla*, was included in CITES Appendix II that deals with species not necessarily threatened with extinction, but trade of which must be controlled to avoid utilization incompatible with the survival of the species (see <http://www.cites.org/eng/disc/how.shtml>), implemented in March 2009. Eel was also listed (2008) as critically endangered in the IUCN Red List.

A management framework for eel was established in 2007 through an EC Regulation (EC No. 1100/2007; EC, 2007). The objective of this Regulation is the protection, recovery, and sustainable use of the stock. To achieve the objective, Member States have developed eel management plans (EMPs) for their river basin districts, designed to reduce anthropogenic mortalities and increase silver eel biomass. The objective of the national eel management plans is to provide, with high probability, a long-term 40% escapement to the sea of the biomass of silver eel, relative to the best estimate of the theoretical escapement in pristine conditions (i.e. if the stock had been completely free of anthropogenic influences).

As eel is a long-lived species and anthropogenic mortalities occur over all of its continental lifespan, the effect of management measures on silver eel production and escapement and on their subsequent recruits (glass eel coming back to the coast) is expected to take several years to be detected (ICES, 2009). When these management measures eventually feed through to silver eel escapement and glass eel recruitment, the natural variability of these migrations, local site effects, and sampling variation may prevent the detection of such changes for at least several more years, even a decade or more (ICES, 2011a, 2011b). Therefore, the recovery process and the detection of possible changes due to management actions will be a slow process. The reporting by Member

States to the EC in 2012 is a first step, and, in the short term changes in anthropogenic mortality and local variations in the stock will have to be used to quantify the effect of management measures.

Over the period 2009-2011, there is no change in the scientific perception of the stock status: it remains critical and urgent action is needed. ICES reiterated its previous advice that all anthropogenic mortality (e.g. recreational and commercial fishing, hydropower, pollution) affecting production and escapement of eels should be reduced to as close to zero as possible until there is clear evidence that both recruitment and the adult stock are increasing. Urgent actions are needed to prevent further depletion of the stock.

## **Ireland's Eel Management Plan (2009 – 2012)**

The EC Regulation (Council Regulation 1100/2007) for the recovery of the eel stock required Ireland to establish eel management plans for implementation in 2009. Under the EC Regulation, Ireland should monitor the eel stock, evaluate current silver eel escapement and post-evaluate implemented management actions aimed at reducing eel mortality and increasing silver eel escapement. The Irish Eel Management Plan, submitted to the EU on the 9<sup>th</sup> January 2009 and accepted by the EU in June 2009, outlined the main management actions aimed at reducing eel mortality and increasing silver eel escapement to the sea. The EMP included two cross-border agreements, with the Neagh Bann IRBD rivers flowing into Carlingford Lough from the Republic of Ireland and into Dundalk Bay being reported in a plan for the Eastern RBD (the Eastern Eel Management Unit) and one trans-boundary eel management plan in respect of the North Western IRBD and prepared by the Northern Regional Fisheries Board, the Loughs Agency and DCAL (Figure 1.1). The four main management actions were as follows;

- a cessation of the commercial eel fishery and closure of the market
- mitigation of the impact of hydropower, including a comprehensive trap and transport plan to be funded by the ESB
- ensure upstream migration of juvenile eel at barriers
- improvement of water quality

The Irish Eel Management Plan (EMP) also outlined a national monitoring programme for sampling catch and surveys of local eel stocks. Appropriate scientific assessment will monitor the implementation of the plans.

Given the implications of the scientific advice, the consideration of practical management implications and the need to conserve and recover the stock in the shortest possible timeframe (contingent upon equivalent actions across Europe), the precautionary approach was adopted in accordance with the recommendations of the National Eel Working Group and the eel fishery was ceased. The eel fisheries in tidal and transitional waters are managed under the Inland Fisheries legislation and management structures and given the absence of appropriate methods for estimating eel stock densities and silver eel escapement in transitional waters, the precautionary approach was also adopted in accordance with the recommendations of the National Eel Working Group and the eel fishery in transitional and tidal waters was also ceased.

## Public Consultation

As part of the process of developing a management plan for eels for the period 2012 – 2015, Inland Fisheries Ireland (IFI) invited submissions from interested parties on the following reports;

- i) Report of the Status of the Eel Stock in Ireland 2009 – 2011
- ii) Report on the Implementation of Eel Management Plans for Ireland, including the Trans-boundary NWIRBD 2009 – 2011

Furthermore IFI suggested that these reports should be read in conjunction with the original report

- i) National Report for Ireland on Eel Stock Recovery Plan – Including River Basin Districts Eel Management Plans

All of the reports referred above were available for download from the IFI website or were made available on CD-ROM should anyone not be in a position to download a copy. A copy of the letter sent to former licensed eel fishermen and the public consultation document is provided in Appendix I & II at the back of this document.

In addition to putting all of the information on the IFI and a link from the Department of Communication Energy and Natural Resources (DCENR) website three public consultation meetings were held in Clonmel, Athlone, and Carrick on Shannon on the 19<sup>th</sup>, 20<sup>th</sup>, and 21<sup>st</sup> of June 2012 respectively. Approximately 171 of the former licensed eel fishermen and eel dealers were written to directly to inform them of the public consultation process and advertisements notifying the general public of the events were put in national newspapers. 41 people attended the public consultation events, 16 attended the Clonmel meeting, 15 attended the Athlone meeting and 10 attended the Carrick on Shannon meeting. Hard copies of relevant reports were made available at each meeting for anyone who required a copy.

Each of the meetings followed a similar format with an initial powerpoint presentation of approximately a hour by Dr Russell Poole and Dr Paddy Gargan which dealt with all of the pertinent points in relation to the national and international scientific advice, the monitoring and survey programme and a presentation by Dr Greg Forde which dealt with the management elements of the plan. A full question and answer session was held at the end of the presentations and everyone had a chance to raise and discuss any concerns or points they had. On foot of representations raised at

the Athlone meeting by Mr Damian Murray the period for public consultations was extended until July 11<sup>th</sup>.

Copies of the powerpoint presentation can be found at the back of this document (Appendix III).

In addition the public consultation period was extended by a further 10 days for a number of people, as letters submitted by them were only examined at the end of the period and IFI staff realised they were in fact looking for copies of the documentation. The requested documentation was provided to these individuals and they were individually notified that IFI would continue to receive submissions from them for a further period of 10 days. Although a number of submissions were received after the deadline date, no submission was refused and all have been considered.

As many of the points raised were made in multiple submissions this document will not deal with each individual submission in isolation but has grouped the issues together under a number of key themes and these will be discussed in detail. Full details of all the submissions received can be found in Appendix IV.



## Main Issues Raised

### Compensation / Diversification

**i) Compensation for loss of income both past (for the period of closure) and future.**

There is no property right attaching to public eel licences and consequently the issue of compensation does not arise as the closure of the fishery was applied for conservation reasons under the Fisheries Acts. IFI understands that given that context and having regard to National economic circumstances, no provision has been made for compensation payments.

**ii) Compensation for the capital investment in equipment which is currently defunct.**

See point (i) above.

**iii) The cost of tonnage to diversify into other species should be provided as part of a compensation scheme.**

See point (i) above.

**iv) Fishermen should have access to the European Fisheries Fund (EFF) to compensate them for their loss of livelihood.**

Council Regulation (EC) No 1198/2006 of 27 July 2006 established the European Fisheries Fund (EFF) for the period 2007 – 2013. At the time of closure of the eel fishery in 2009 the European Fisheries Fund was examined, and high level discussions were held with other State Agencies in this regard. Unfortunately given the terms and conditions associated with the fund it was not possible to secure any funding. This issue will be re-examined in the context of the new fund the European Maritime and Fisheries Fund (EMFF) which is currently being developed and will likely not come on stream for another year. However, I wish to point out that there is no guarantee that there will be any funding available from this fund.

**v) The diversification measures put in place were unsatisfactory.**

In 2009 the then Central and Regional Fisheries Boards (now Inland Fisheries Ireland – IFI) engaged with the eel fishermen representatives to investigate possible diversification schemes. A number of former eel fishermen were contracted by the ESB to undertake Trap and Transport operations to mitigate the impact of hydropower

schemes as part of the eel management plan,, and another former eel fisherman was contracted to assist in scientific eel surveys on Lough Mask,

**vi) An assessment of the compensation packages put in place in other European countries should be put in place (Holland / Finland).**

See point (i) above. There is no provision for compensation for a public license and the current European Fisheries Fund did not provide for compensation.

**vii) Jobs should be prioritised for eel fishermen.**

IFI are open to working with former commercial eel fishermen on relevant future projects which would require their particular skills.

**viii) Salmon fishermen received compensation so eel fishermen should also receive compensation.**

In the context of the eel fishery the measures introduced were for an initial period of three years, and any current proposals will also be for a similarly short period. In respect of the cessation of the mixed stock salmon fishery this was permanent closure of this fishery.

**ix) A key part of the EU regulation and the judgement in respect of the eel case by Mr Justice Herbert is that the recovery measures are effective and equitable and the full closure of the Irish eel fishery without compensation is not equitable, and the closure of the eel fishery is a disproportionate measure relative to the other three key measures.**

See point (Viii) above.

**x) The lack of provision for compensation is contrary to what the EU intended in carrying out the EC regulations.**

See point (Viii) above. This fishery has not been closed on a permanent basis.

**xi) Failure to provide compensation is in contravention with the Convention of Human Rights and Fundamental Freedom 2002.**

See point (Viii) above. This fishery has not been closed on a permanent basis.

## Implementation of EU Directive

- i) The directive has been misinterpreted in the application of the 40% escapement.**

The objective of the national eel management plans is to provide, with high probability, a long-term 40% escapement to the sea of the biomass of silver eel, relative to the best estimate of the theoretical escapement in pristine conditions (i.e. if the stock had been completely free of anthropogenic influences).
- ii) The Eel Regulation 1100/2007 did not require that the eel fishery should be shut down.**

See point (i) above. Each jurisdiction had to ensure that they were achieving 40% escapement of silver eel biomass relative to pristine conditions and Ireland's case both scientific and management factors were taken into consideration in the decision to temporarily close the fishery.
- iii) No account was taken of culture and heritage in the decision to close the fishery.**

See point (i) above. The decision to close the fishery was to ensure that 40% of silver eel biomass escapement relative to pristine conditions was achieved. There was an embargo for all methods of fishing eels.
- iv) Other countries in Europe have not gone 'as far' as Ireland.**

See point (i) and point (iii) above.
- v) Other countries in Europe are still fishing for elvers so why can't Irish fishermen?**

A very small number of commercial elver fisheries remain in Continental Europe, however any fisheries in these waters must be cognisant of the need to achieve on a long term basis 40% escapement of silver eel stock relative to pristine conditions. Ireland has never been known to have a significant elver fisheries either off the coast or inshore.
- vi) Information on the eel fishing ban was not circulated for tourists until recently.**

Every year there are numerous bye-laws put in place in relation to fisheries and fishery management. The bye-laws in respect of eel management were widely publicised in 2009.

- vii) There is an imbalance as there is full closure in Ireland but other European countries are allowed to harvest eels especially, as it is a single common stock – Ireland’s closure is just enhancing other countries catches.**

See points (i) and (iii) above.

- viii) The sale of elvers to fish farms should be stopped immediately.**

It is IFI’s information that this practice has been stopped.

- ix) The methods of netting elvers should be modified to reduce mortality.**

IFI are of the view that any method for netting elvers should minimise or eliminate mortality.

## Scientific Information

- i) **There is a contradiction between national and international scientific advice in respect of eels.**

The ICES advice is that the eel stock continues to decline in the period 2009 to 2011. In 2011, glass eel recruitment has fallen to 5% of their 1960-1979 level in the Atlantic region and less than 1% in the North Sea area, and showed no sign of recovery. In Ireland, recruitment has been declining at many monitoring sites since the mid 1980s. In the 2000-2011 period, the glass eel catch in the Shannon was at 2% of the pre-1980 average and in 2009-2011 it was <1%. The Feale, Inagh and the Erne show a slower rate of decline but in the 2009-2011 period these have also declined to low levels. For comparison, catches of glass eel in the Bann (NI) for the last five years were at about 3% of the pre-1980 level. While there is some local variation in abundance between sites and between years, often due to seasonal variations in water levels, recruitment remained low during the 2009 to 2011 period both in Ireland and across Europe.

- ii) **The historical data as a basis for statistical usage is too small (ie. calculating the historical base line).**

Historic data on yellow eel abundance was available from a range of Irish lakes including the most productive lakes for eels such as Lough Ree, Lough Derg, upper and lower lough Erne, upper and lower Corrib, Burrishoole, Conn, & Inchiquin.

- iii) **There has been no comparison with the eel harvest statistics between Ireland and other European countries (the context is that the Irish harvest is negligible).**

Regardless of the size of the Irish eel harvest in comparison with other European countries, the EC Regulation (Council Regulation 1100/2007) for the recovery of the eel stock required Ireland to establish eel management plans for implementation in 2009. Under the EC Regulation, Ireland should monitor the eel stock, evaluate current silver eel escapement and post-evaluate implemented management actions aimed at reducing eel mortality and increasing silver eel escapement. The Irish Eel Management Plan, submitted to the EU on the 9th January 2009 and accepted by the EU in June 2009, outlined the main management actions aimed at reducing eel mortality and increasing silver eel escapement to the sea. Given the implications of the scientific advice, the consideration of practical management implications and

the need to conserve and recover the stock in the shortest possible timeframe (contingent upon equivalent actions across Europe), the precautionary approach was adopted in accordance with the recommendations of the National Eel Working Group and the eel fishery was ceased.

**iv) No data has been provided for elver movement along the West Coast of Ireland.**

Data on glass eel monitoring was provided for the Erne, Moy, Shannon, Feale, Maigue Inagh and Shannon estuary. Data on elver monitoring is shown for Corrib, Erriff, and Ballysadare.

**v) Is IFI aware of how far out into the Atlantic ocean elver fishing takes place?**

IFI are not aware of any data on elver fishing taking place off the Irish coast into the Atlantic

## Surveying and Assessment

- i) The scientific assessments are based on unsatisfactory and erroneous surveys.**

The scientific assessments relied on a time series of information on glass eel and elver monitoring at a range of sites to provide information on current levels of elver recruitment. The yellow eel surveys were undertaken in lakes with previous historic information for comparison with current stocks size and population structure. The silver eel assessments were aimed at establishing current silver eel escapement.
- ii) A new survey should be undertaken in the River Slaney which will be supported by fishermen at no cost to IFI.**

A survey was undertaken in the River Slaney in 2010. The River Slaney and South Sloblands had comparatively lower CPUEs. Low mark-recapture rates indicated probable high levels of movement within these waters and made population estimation difficult. Due to the difficulties in obtaining density estimates for eels in large water bodies and the migratory habits of eels moving upstream into the rivers and/or leaving the transitional water as silver eel, it is still not possible to estimate silver eel escapement/production for transitional waters.
- iii) A new comprehensive survey of the River Slaney is required before and decisions can be made on the future of the fishery.**

See point (ii) above.
- iv) Surveys in Waterford Estuary were undertaken in the wrong place at the wrong time with the wrong equipment.**

A survey of the Waterford estuary was carried out in 2009 & 2011. On the Suir, two locations were selected, one upstream of the bridge in Waterford city and one downstream with a catch of 1,888 eels. 1,410 eels were captured in the Barrow transitional waters. The fyke nets were not baited to avoid attracting eels into the study area. Even if a survey was conducted at a different time and place in the estuary, due to the difficulties in obtaining density estimates for eels in large water bodies and the migratory habits of eels moving upstream into the rivers and/or leaving the transitional water as silver eel, it is still not possible to estimate silver eel escapement/production for transitional waters.

**v) It has not been possible to determine the density of eels in transitional waters and what is being done to rectify this situation?**

In the absence of historic eel biomass estimates for estuaries like Waterford to assess achievement of the eel escapement target, telemetry studies were begun in July 2012 which, will give a clearer indication of the movement habits of eels in estuaries and improve population density estimates.

**vi) Experienced fishermen should carry out surveys with IFI staff.**

IFI discussed the possibility of experienced fishermen being involved in eel surveys at the public consultation meeting and are willing to discuss the option for future surveys.

**vii) There is a need for further research into toxins and PCB's.**

The occurrence of persistent chlorinated and brominated organic contaminants in the eel in Irish waters has recently been investigated (McHugh *et al.* 2010). Samples were taken from five Irish catchments (River Suir, Lough Conn, River Corrib, River Farne and Burrishoole) in October and November 2005 and confirmatory sampling also took place in Burrishoole in July 2007. The analysis looked at levels of dioxins, furans, polychlorinated biphenyls (PCBs), brominated flame retardants (BFRs) and chlorinated pesticides in eel muscle tissue. Elevated dioxins (especially octa-chlorinated dioxin (OCDD)) were found in eels from the Burrishoole catchment. The authors propose that this would strongly suggest point source influences at this location. Samples are currently being analysed to follow up on this. With the exception of higher substituted dioxins in three samples from the Burrishoole catchment, persistent organic pollutant (POP) levels in general were low in eels from Irish waters compared to those in other countries. Data from Santilo *et al.* (2005) confirm that bioaccumulation of toxins in Irish eel is not significant.

The EPA carried out surveillance monitoring in 2007-2009 of 180 river sites and 76 lake sites for what are known as dangerous substances i.e. priority substances and priority hazardous substances. Monitoring was undertaken at each site with a frequency of 12 times per year once the programme commenced in mid 2007. Generally, the occurrence of environmentally significant metals was found to be low in Ireland. In addition, the levels of priority pollutants (plant protection products,



biocides, metals and other groups such as combustion byproducts, polyaromatic hydrocarbons (PAHs), and the flame retardants polybrominated diphenyl ethers (PBDEs)) were generally very low with very few exceedances being found (McGarrigle *et al.* 2011). This data confirms that bioaccumulation of toxins of eels in Ireland is likely to be less significant than that observed in many other EU countries.

**viii) There is a need more information on *Anguillicola* and assessment of how many eels actually make it to the Sargasso Sea.**

*Anguillicoloides crassus* was first recorded in 1997. By 2009, it was estimated that at least 70% of Ireland's wetted area contained *A. crassus* (Irish Eel Management Plan, 2009) and it is predicted to continue to spread. IFI are examining the extent of *A. crassus* distribution using the eel monitoring programme together with the Water Framework Directive surveys. The EU EELIAD programme has satellite tagged 76 eels from Irish waters from catchments known to have a high incidence of the parasite and from catchments known to be free in an effort to determine if the parasite impacts on migratory success. Results are being analysed but no clear trends are evident to date.

**ix) Unmarked legal survey netting for eels has caused confusion amongst tourists as they cannot differentiate between legal and illegal nets.**

All IFI surveys will be marked with a standard buoy printed with "IFI Survey" for identification.

## Reopening of Fisheries / Economic Effects / Enforcement

- i) **Fishermen should be permitted to fish every second year from September 1st to December 1<sup>st</sup>**

The scientific evidence is that the International and National stock is in severe decline with no sign of a recovery – permitting fishing in a stock that is under severe pressure will not safeguard the stocks or lead to an improvement in the chances of the stock recovering.

- ii) **Fishermen should be allowed to fish from May to July in line with other European Countries.**

Historically there were several fisheries in Ireland. A brown eel fyke net fishery, a silver eel fyke net fishery as well as a silver eel fishery on designated coghill net fisheries. Fishing in May to July will not help with the recovery of the stock and would also only favour fishermen targeting yellow eels.

- iii) **There should be a heritage fishery for eels in Waterford Estuary.**

The eel stock in Waterford Estuary is difficult to quantify. Eels can come and go and assessment of the standing stock or biomass is difficult. It is currently not possible to estimate the quantity (biomass) of silver eels being produced in estuarine waters. It is not wise to permit a fishery on a stock the size and importance of which cannot be quantified. It is also noted that the traditional woven basket eel fishery has been largely superseded by more modern fishing techniques.

- iv) **The ban on eel fishing on the River Slaney should be lifted as there are sufficient stocks of eels in the river.**

There is no evidence to state that the stock of eels on the Slaney are such that it can support a fishery without affecting the migrating fish from the river and jeopardising the chance of achieving the 40% target.

- v) **There are sufficient stocks of eels in the River Erne and the decline in elvers is similar to that seen in the early 1970's so there should only be a shortened season.**

There is insufficient evidence to suggest that the eel stocks in the river Erne are sufficient to permit fishing. Similar to all other rivers the system on its own and the

rivers in Ireland as a whole need to be releasing 40% of the historical migration in order to achieve a recovery over a long time frame.

**vi) There should be a derogation from the ban for the River Shannon and Inny systems.**

There is no evidence to support the call for the opening of eel fisheries on the Shannon or Inny rivers – again these rivers must achieve the 40% target of historical escapement.

**vii) A system to purchase and restock rivers and lakes with elvers should be put in place.**

If rivers in Ireland are to be stocked a source of wild elvers must be made and secured. Given it is a pan-european stock this would be difficult as purchasing elvers from one country may endanger their chances of achieving the required escapement for that country. Ireland would support this initiative if the necessary finance and elver source can be secured. It may be possible to source glass eels from the Severn and some French rivers and to seek funding from the new European Maritime Fisheries Fund to assist with this work.

**viii) Different lakes should be fished in alternate years.**

Given the current low levels of recruitment and declining stock and the need for Ireland to achieve the target escapement of 40% of silver eel biomass relative to pristine stocks each and every year permitting a fishery at any stage is only compromising the fisheries ability to achieve the escapement target.

**ix) A designated lake should be stocked with elvers and monitored closely to determine growth rates and mortality and migration patterns.**

A lot of work has been done on various lakes over the years monitoring their growth patterns and mortality in freshwater. There is currently a project being undertaken with the Loughs Agency in this regard. There are also a number of similar studies in Europe.

**x) Surveys should be carried out by long line and fyke nets, as fyke net surveys alone do not give the full picture.**

Surveys by longlines is not desirable, this is a destructive sampling method as fish are damaged during capture and often the hook remains in the fish and is frequently ingested. Surveys done using standardised fyke nets give a measure of consistency which can be compared from year to year and between waterbodies.

**xi) There will be significant illegal fishing as a result of the closure.**

There has always been a low level of illegal eel fishing taking place, however policing of the fishery is easier if no legitimate fishery exists under which the sale of illegally caught eels could be undertaken. Regardless of the decision the fishery will still have to be appropriately policed.

**xii) Some fishermen are illegally selling eels**

The sale of eels is illegal anyone undertaking this activity is liable to prosecution and fine on conviction.

## **Northern Ireland**

- i) There is still eel fishing and trading in Northern Ireland but not in the Republic.**

IFI are not in a position to comment on how the authorities in Northern Ireland are going to satisfy their requirement to ensure the escapement of 40% of the Silver Eel biomass relative to pristine conditions.

## ESB Issues

- i) **Why have more technical measures not been developed to protect eels against turbine mortality?**

See answer to (ii)

- ii) **The negative impacts of hydropower have not been addressed.**

Many technical silver eel conservation measures have been addressed by the Electricity Supply Board (ESB) over the past three years. The first step has been to determine the exact level of mortality associated with each large scale catchment utilised for hydropower generation. This has involved a planned and structured approach using acoustic telemetry tags on individual fish released as batches at locations on the Shannon and Erne catchments. The work has also involved mark-recapture estimation of migratory eel population sizes in these rivers and surveys of their migratory behaviour using ultrasound technology. Eel population studies have also been undertaken on the River Lee. The exact determinations have been published as part of the annual Standing Scientific Committee on Eel (SSCE) reports, they have been presented at international conferences in Scotland, Portugal and USA and are also currently being submitted for scientific publication by Dr. TK McCarthy *et al.* from the National University of Ireland, Galway (NUIG).

Whilst the exact determination of silver eel survival (and catchment based silver eel escapement), was being calculated for each river by NUIG research staff, the ESB Trap and Transport (T+T) system has successfully been developed and operated by ESB. This programme originally began in 1992 as an ESB pilot project on the R. Shannon. It is on a scale unparalleled elsewhere in Europe and has been welcomed by international experts involved in eel conservation. Due to its success it will continue to be operated as an effective conservation measure for downstream migrating silver eel in future years. ESB may also in addition to the conservation measure of T+T look at deflection technologies which alongside some controlled spillage may be useful.

However despite the international use of deflection technologies (such as infrasound, gas bubble curtains and the use of lights), it is apparent that these

technologies are still currently being developed. Their variable success rates appear to be very site specific but nevertheless may be useful in future years to ESB.

- iii) **There should be a full re-stocking programme on the River Shannon system, with glass /bootlace eels and elvers and there should be a semi commercial fishery for these to facilitate restocking.**

The present problem is that the returning supply of juvenile eel to the coastline of Ireland has rapidly declined in recent years. Therefore, there is no current 'surplus' of Irish juvenile eel available at present. Furthermore it also looks as if the returning numbers of juvenile eel will continue to decline. ESB has operated and will continue to operate a successful juvenile eel trapping regime at several of its hydropower sites. These catches are used for restocking catchments above these trap sites. No inter-catchment transfer of juvenile eel is permitted due to bio-security hazards associated with the spread of fish disease and non-native invasive species.

A semi-commercial fishery on the coast of Ireland would simply remove migrating glass eel or elver from other non-hydro regulated catchments and place them into hydro-regulated catchments where the dangers of hydropower would be relevant. At present given the rapid rate of decline of eel recruitment, it is more beneficial to let juvenile eel migrate into non-hydro regulated rivers.

- iv) **There should be funding for training / safety for boatmen under the ESB Trap and Transport scheme.**

Applicants for eel fishing contracts are expected to be proficient in eel fishing, including safe boat handling etc, when they apply for contracts. They must be able to provide specified certificates relating to Health and Safety issues. Applicants for all other contracts from State / Semi-State Agencies are expected to satisfy specified criteria such as those required of contract eel fishermen, i.e. work related training. Changing these protocols would impact on the manner in which ESB does its business in other areas and it is therefore not possible to deviate from the arrangements currently in place.

### **Overall Conclusion & Recommendation**

Having considered all of the submissions in detail and the relevant scientific advice. IFI recommend that all eel fisheries are closed on a temporary basis, and the regulatory measures introduced in 2009 should be re-introduced and in addition to this an appropriate traceability system should also be put in place to address the issue of trans boundary shipments. This position should be reviewed in line with the reporting requirement of the EU Eel regulations.



## **Appendices**

- Appendix I – Copies of the letter sent to former licenses eel fishermen
- Appendix II – Copy of the public consultation notice
- Appendix III – Copy of the powerpoint presentations given a the public consultation meetings
- Appendix IV – Copy of the submissions received in the public consultation process