

Eel recovery measures according to EC-Council Regulation No. 1100/2007	Belgium	Danemark	France
Monitoring	<p>Glass eel monitoring at the river 'Yser' (since 1964).</p> <p>Yellow eel monitoring in selected inland waters.</p> <p>Glass eel monitoring and silver eel monitoring at the polder water 'Grote Beverdijkvaart' (since 2015).</p>	<p>Focus on recruitment, abundance and escapement</p>	<p>Various monitoring tools have been developed:</p> <ul style="list-style-type: none"> - index rivers allowing to estimate the eel recruitment, stock and escapement (9 rivers and 1 Mediterranean "lagune") - electric fishing allowing to describe the fishes, - eel Density Analysis model.

<p style="text-align: center;">Fisheries</p>	<p>There are no more commercial fisheries on eel in Belgium. In 2013 the minimum size for eel went up from 250mm up to 300 mm in Flanders (only rods are allowed, no other gear). In Wallonia there is a release obligation for eel for recreational anglers since 2006 and a capture prohibition since 2017.</p>	<p>Focus on both commercial and recreational fisheries. Risk based control; closed seasons, restriction on type and number of gears allowed, eel passes, increased minimum legal size for yellow eel. Reduction of more than 50 % in commercial and recreational effort.</p>	<p>Various measures such as:</p> <ul style="list-style-type: none"> - temporary closure of fishing (up to 7 monthes for glass eel), - compulsory fishing authorizations, - quota for glass eel (60% of it is reserved for restocking purposes), - geographical closure (ex: fishing is forbidden outside of the EMU), - recreational glass and silver eel fishing are forbidden, - recreational yellow eel fishing is forbidden by night (authorized during the day time only).
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<p>Migration barriers / Eel habitats</p>	<p>In Flanders the total number of fish passes which were installed on the waterways identified as important for eel in our EMP was 71 in 2008. This number increased tot 132 in by the end of 2011 (+61); from 2012 till the end of 2014 the number of fish passes increased to 142 (+10); from 2015 till the end of 2017 the number of fish passed increased from 142 to 198 (+ 56). The fish passes in Flanders are designed as general fish passes for different (cyprinid) species and are considered as passable for eel. In Wallonia, the total number of obstacles considered as "important", "major" or "impassable" for fish (in general) is about 3000. This makes a total number of fish passes installed in Wallonia between 2007 and 2017 of 145.</p>	<p>Yes</p>	<p>The management of migrating pathes for eel through the rivers is in progress. 20% of the structures are compliant. Around 40% of the structures are either being assessed (analysis of the best project scenario) or being appraised by the administration or under work in progress. Many barriers to migrations remain to manage since there are 18 007 structures on rivers listed on "list 2".</p>
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Restocking	Restocking is an important measure in the Belgian EMP, both in Flanders and Wallonia	Restocking according to the Danish Eel Management Plan. Programme to monitor the effect by stocking tagged eels in selected areas. Shorttime experiments in ponds to evaluate fitness of stocked eel compared to wild eel.	60% of the French glass eel quota is reserved for restocking purposes in France or in other EU Member States. In France, 21 756 kg of glass eel have been used in France for restocking since 2011-2012 (74 restocking operations in 6 EMU).
Predation	No measures	National Management plan for Great Cormorants - implemented	The cormorant, predator of eel, is a protected species (Birds Directive 2009/147/CE of November 30th 2009). France supported the implementation, at the EU level, of regulation measures for cormorant. Catfish (<i>Silurus glanis</i>) is another predator of eel but there is no scientific study proving a major role of catfish in the diminution of the eel population. The results of a recent scientific study of France Agrimer are expected on the subject.

Data collection	yes, for ICES (working group on eel) and the European Commission (report for the Eel regulation)	Yes	Yes (DCF, CGPM, reinforced follow up of data concerning glass eel fishing)
Implementation of the Water Framework Directive	Measures for the improvement of habitat and water quality which will also benefit for eel.	Measures for obtaining good ecological environmental status - migration barriers, eel habitats	The "SDAGE" ("schémas directeurs d'aménagement et de gestion des eaux" - water management and development road maps) are planification road maps at the EMU level, which corresponds to management plans. They draw guidelines that permit to achieve expected goals in terms of "good water status". They are declined in programs of measures, which are the operationnal measures that must be achieved so as to achieve the SDAGE's goals. The 3rd generation of SDAGE, approved in 2015, are in force for the 2016-2021 period of time.

Influence of measures decided in 2017 on fishermen and recreational anglers	No influence	Practically none	France changed the fishing period of time for some marine water fishermen so as to make it compliant with compulsory EU regulation.
Number of recreational anglers catching eels /level of their catches	In Wallonia there is a release obligation for eel for recreational anglers since 2006 and a capture prohibition since 2017. In Flanders the yearly harvest of eel by recreational anglers is estimated at 29523 kg. Total number of estimated anglers that fish for and harvest eel is 6891 (estimation in 2017).	200.000-300.000 anglers/estimated recreational catches (in 2017): 117.000 kg.	3760 recreational anglers (with nets) authorized in 2014 to fish eel in freshwater (1415 kg in 2017) + 1,3 millions potentially allowed to fish eel (700 tons estimated in 2015)

There are diverse conditions and needs in the EU which require different specific solutions. That diversity should be taken into account in the planning and execution of measures to ensure protection and sustainable use of the population of European eel.

Germany	Netherlands	Sweden
<p>Case studies in selected rivers (glass eel immigration, silver eel escapement).</p>	<p>Retained catches (landings) from commercial fishers. * Market sampling. * Scientific surveys in regionally and nationally managed water bodies. Glass eel en silver eel monitoring *monitoring contaminants</p>	<p>West Coast: Monitoring of recruits (glass eel), yellow eel in monitoring programs including data collection on individual samples (sex ratio, size, age and parasite load, etc.) East Coast: Monitoring of elvers (young yellow eels), tag/recapture surveys on silver eel Inland Waters: no dedicated monitoring of natural recruitment to inland waters, but elver trapping for transporting across barriers (assisted migration) provides information on quantities entering the rivers where traps is placed.</p>

<p>Different measures in the different States (Bundesländer). Main measures are: stocking, closed seasons (but usually in winter), increased minimum size limits (to 45 and 50 cm, depending on region). Outside EMP 50% reduction of fishery. In some regions effort reductions. (Measures for commercial and recreational fishery.)</p>	<p>The establishment of fishery-free zones in areas that are important for eel migration *Release of eel caught (a) at sea and (b) at inland waters by anglers * Ban on recreational fishery in coastal areas using professional gear *Closure eel fishery in contaminated (PCBs, dioxins) areas *Annual closed season from 1 September to 1 December (three months) in inland and marine waters *Stop of the issuing of licences for eel snigglers by the minister of Economic Affairs in state owned waters *stop on use of eel-gears in IJsselmeer in certain months</p>	<p>West Coast: All fishing for eel is prohibited since 2012. General comment: Special permit for commercial fishing for eel is restricted by specific terms regarding fishing area, number of gears, maximum harvest, etc..</p> <p>East Coast: Closed season, only commercial fishing with special permits (147 fishermen in total) is allowed between 1 of May until 15th September or restricted to a continuous period of 90 days, minimum landing size 70 cm, recreational fishing is prohibited since 2007</p> <p>Inland Waters: Commercial fishing with special permits is restricted to a continuous period of 120 days, minimum landing size 70 cm, recreational fishing is only allowed in some exempted areas upstream three or more definitive migration barriers. Selling the catch from recreational fisheries is prohibited.</p> <p>General comment: Special permit for commercial fishing for eel is restricted by special term regarding fishing area, number of gears, total harvest, etc.</p>
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<p>Yes, but mainly in the course of the implementation of the WFD (see below).</p>	<p>Reduction of eel mortality at pumping stations and other water works; of the 1800 most important migration barriers. * Reduction of eel mortality at hydro-electric stations with at least 35%</p>	<p>Yes, but mainly in the course of the implementation of the WFD (see below).</p>
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<p>Restocking is central to the German EMP's, except for one river system. In some cases accompanying scientific studies (e. g. comparing the efficiency of stocking glass eel vs. ongrown eel; efficiency of stocking glass eel in coastal waters etc.).</p>	<p>Restocking of glass eel and pre-grown eel from aquaculture</p>	<p>Waters having a high potential of eel production is prioritised within the restocking programme of glass eels, thus, inland waters having secured routes to the sea and a limited or negligible fishing pressure are chosen. Restockings of eel within the context of this Swedish Eel Management Plan is combined with powerful reductions in the eel fishery and should be fully recognised as an acute conservatory measure to save the particular fish species i.e. provide a strict response in an increasing number of potential spawners</p>
<p>Only by using the derogation system under the article 9 of the Birds Directive. Not directly related to eel protection or management.</p>	<p>No measures have been taken related to predation.</p> <p>assisted migration of silver eel (Paling over de dijk)</p> <p>Research into the artificial propagation of eel</p>	<p>Yes, but not directly related to eel protection or management.</p>

<p>Yes (DCF, fisheries statistics, data collection especially for implementation reports on EMP)</p>	<p>Yes (DCF, fisheries statistics, data collection especially for implementation reports on EMP)</p>	<p>Yes (including DCF/EUMAP, fisheries statistics, data collection especially for implementation reports on EMP)</p>
<p>Measures for habitat improvement, but not necessarily related to eel management.</p>	<p>improve passability of water barriers for migratory fish</p>	<p>Measures for habitat improvement, but not necessarily related to eel management.</p>

practically none	None, a 3 month closed period (sept-nov) was already implemented since 2009.	Commercial and recreational fishing of eel is prohibited on the Swedish West Coast
1.000.000 anglers having the possibility to catch eel in principle/altogether 200.000 kg	2015: 1.2 million anglers and a retained catch of 70.000kg in 2014. Detailed information: http://dx.doi.org/10.18174/409681	None, see point 9

United Kingdom

Network of yellow eel monitoring sites across England and Wales, using modelling to predict silver eel escapement, supplemented by various other survey techniques (sonar, elver traps). Direct monitoring of silver eel production from racks in Northern Ireland (Lough Neagh fishery)

Measures vary across countries, and depending on economic status of fishery locally. Scotland: complete ban on fishing for eel (recreational or commercial). England & Wales: capped yellow eel fishery with geographic, seasonal and method restrictions. Glass eel fishery dip-net only, and only in historic local fisheries on West coast. Recreational fishing catch and release only. Northern Ireland: specified methods only with limited licences.

Yes, in England and Wales all new in-river structures must provide eel passage through legislative requirement.

Existing structures required to install passage, implemented through phased, prioritised programme, with £70million private investment planned 2015-21 in England through water companies alone.

Only takes place in Neagh Bann RBD, where integral to the maintenance of yellow/silver eel fishery on Lough Neagh. Studies and modelling show that optimal stocking produces net benefit of silver eel escapement after fishery exploitation.

Only by using the derogation system under the article 9 of the Birds Directive. Not directly related to eel protection or management. Specific impacts of predation on eel poorly understood.

Yes (DCF, fisheries statistics,
data collection especially for
implementation reports on
EMP)

Measures for habitat
improvement implemented,
but not necessarily
specifically related to eel
management

Negligible impact, due to almost no eel fisheries in marine waters in UK. Existing close season for yellow & silver eel fishing in place 10 December - 31st March, meaning the 2017 TAC measures only extended this by 4 weeks.

All recreational (rod and line) catch of eel is prohibited in UK. Approx 1million freshwater anglers, and 800,000 recreational sea anglers in England & Wales have possibility to catch eel for sport, but very few target eel specifically, and catch and release is accepted normal practice.