

Estuarine workshop 7<sup>th</sup> April 2011

## **SOLWAY ESTUARY**

Sub-group members: Steve Colclough, Georgina Fellowes, Adel Heenan, Keith Kendal, Brian Shields, Steve Manning, Sarah Pete.

### **Summary of draft recommendations based on the discussed outlined below**

A MCZ located upstream of Sandfields would benefit smelt which are known to spawn in this area and eel for which there is little data but are likely to occur here. The saltmarsh habitat is known to provide important nursery ground functions. Existing management initiatives in the Solway include the SAC which is believed to adequately protect the saltmarsh habitat. Eels will be protected through existing regulations. The upstream area is not protected by the SAC or the SSSI, therefore placement of an MCZ could provide protection for smelt. The existing IFAC bylaws (focussed on salmon and lamprey) are likely to already give incidental protection to smelt, however if the MCZ were designated when IFACs undergo the 5 yearly review, smelt specific management measures would need to be considered.

### **Discussion of evidence base for the Solway Estuary**

#### **Smelt**

Smelt are caught in the Environment Agency FRAC sampling regime, a method which is not designed to specifically target this species. It was therefore inferred that smelt abundance is probably underestimated from this data.

Historical abundance: smelt were highly abundant and there used to be large smelt fisheries in the Solway. The reason for the decrease in smelt population is not known, and the difficulty in measuring recruitment was noted. It is, however, clear that the Solway estuary is an area where spawning takes place as a number of juveniles of varying sizes have been caught. The spawning habitat for this species is believed to be very specific to grass roots around the intertidal zone, and the area upstream of Old Sandfields was identified as a crucial area for spawning, although how important this area is in national context was not clear. Spawning takes place in brackish water, just ahead of where salt water ends. Where the smelt stock originates from is unknown, however because this species is not tolerant of salty water, within the complex of estuaries within the Solway the stock is isolated and has, due to historical fishing pressure been almost wiped out. Smaller tributaries can hold small isolated populations, which can act as seed populations and aid future recovery.

#### **Eel**

Very little is known about the distribution or abundance of eel in the Solway Estuary, however, they are present and there is believed to be an elver run up the estuary. Historically, fyke nets were used to catch here. Within the estuary, elvers here await the conditions which triggers their seaward migration. The main issue for eels in this area is access upstream on their migratory route, in particular slow skates

prevent access to the lesser tributaries upstream and their movements are restricted to the main body of the estuary.

### **Marine ecosystem functions**

More generally, the Solway Estuary is important as a nursery area. The potential importance of this area as a bass nursery was noted as although this species is believed to be fished at a sustainable level (ref: ICES reports), it is believed to be one of the species more sensitive to sea temperature increases. Currently Solway is the most northerly of the bass nursery grounds, however given the likelihood that their northern distribution may change this places emphasis on the importance of this estuary as a nursery area.

### **Current management measures / protection and is this adequate to fully protect the relevant FOCI?**

The SAC designation in the Solway is specifically focussed on lamprey and salmon, no other fish species. There is the potential that the conservation measures for the lamprey would provide incidental protection for smelt and eel, however, it was borne in mind that should IFCA bylaws change in the future, then smelts and eels would be exposed. There is no current As a result, it is important that if MCZs are designated then FOCI species specific management measures would have to follow.

With regard to the subtidal habitat, from the GAP analysis we know that saltmarshes are adequately covered in the region by the SAC and the SSSI designation, this was also believed to provide sufficient protection for the marine nursery functions of this habitat type.

Eels are covered under the newly launched eel regulations, for example, there are no elver fisheries operating or licensed in this area and any new installation needs to include a passage way for eels to enable their upstream access.

It was noted that the areas upstream, where salt and freshwater meet are important for smelt spawning and it is these areas that are currently not protected by the existing SAC and SSSI, therefore this upstream area is somewhere where an MCZ could benefit smelt as a foci, particularly because MCZs have the remit to extend up beyond the highest tidal point.

### **General comments**

An estuary wide approach that incorporates Scottish MCZ plans would be beneficial and discussions with the Scottish Environment Agency would be needed.

The intertidal habitat types are inaccurate as they have misclassified large areas where coastal saltmarsh is present.

Should the plans for a Solway tidal barrage go ahead, this would prevent access for both smelt and eel.

## **RIBBLE ESTUARY**

Sub-group members: Steve Colclough, Georgina Fellowes, Adel Heenan, Keith Kendal, Brian Shields, Steve Manning, Sarah Pete.

### **Summary of draft recommendations based on the discussed outlined below**

There is a small self recruiting smelt population present in the Ribble which is believed to have a strong potential for recovery. There was no eel specific issues or data for the Ribble and therefore given the ubiquitous distribution of this species, there is not a strong case for designating an MCZ based on this highly mobile species. With regard to habitat FOCI, the Ribble contains ungrazed saltmarsh in good condition. This habitat provides important nursery grounds for a variety of commercially important species and although the Ribble is protected through SPA, Ramsar and SSSI designations, these are bird rather than benthic habitat focussed. The group therefore recommends an estuary based approach to include an MCZ that could benefit this saltmarsh habitat FOCI and smelt. Again, the existing IFAC bylaws (focussed on salmon and lamprey) are likely to already give incidental protection to smelt, however if the MCZ were designated when IFACs undergo the 5 yearly review, smelt specific management measures would need to be considered.

### **Discussion of evidence base for the Ribble Estuary**

#### **Smelt**

There is a small self recruiting population and historically there was a substantial smelt fishery on the Ribble. The Thames River provides a strong example of the ability of smelt populations to recover when given sufficient protection. Therefore, it was of the opinion of the group that despite there being only a small population in the Ribble, this does not undermine the potential for recovery. The evidence for this population may be less strong, however due the gaps in the management measures in place for the estuary then this renders smelt more vulnerable.

#### **Eel**

There is no eel fishery in place, and this was attributed to the difficulty of fishing there due to the shape of the channel. It was also noted that this species is of national and European wide interest due to the new legislation. It was noted that because of the ubiquitous distribution of this species through UK estuaries it would be difficult to put forward to case for the additional protection of this species here unless there as a site specific issues or local case of interest.

### **Marine ecosystem functions**

The Ribble Estuary contains areas of ungrazed saltmarshes which are in good condition. The area has been subject to previous dredging activity and fish production has been impacted by channel modification, which highlights the importance of these saltmarshes are nursery areas. However now that the Sefton Dock is no longer a shipping route, dredging has ceased and now the seabed will probably be quite stable, allowing for the potential recovery of fish populations and this as a nursery

area. The Ribble is of national importance with regard to providing nursery grounds for commercially important species, for example, it ranks in the top five for sea trout catch.

Under the Water Framework Directive (for which the Ribble is a pilot site), this estuary is in recovery condition with respect to water quality which is generally a good indicator of habitat quality and health. The chemical condition is good while the ecological condition is moderate.

#### **Current management measures / protection and is this adequate to fully protect the relevant FOCI?**

The Ribble estuary are included under a SPA, RAMSAR and a SSSI, however these designations are all bird population focussed and so will not provide protection for the benthic communities. Therefore the saltmarsh and mudflats do not receive direct protection, however, given that it is the benthic communities which provide the feeding grounds for these bird species, it is logical to assume that negative impacts on the bird populations will impinge on the associated communities for which the areas were designated. Given this information, an whole estuary based approach was highlighted as most appropriate.

The well established dialogue between the Environment Agency and the IFCA's should help to evaluate by laws relevant to these species and habitat FOCI (with specific reference whether trawling is allowed which could catch eels as bycatch). It was noted that as IFCA bylaws have to be reviewed every 5 years there is the potential to include management measures or restrictions specific to the FOCI, particularly in light of new data that will become available over that time.

### **MORECAMBE BAY ESTUARY COMPLEX**

Sub-group members: Kieran Bell, Steve Coldough, Georgina Fellowes, Adel Heenan, Keith Kendal, Dick Langley, Brian Shields, Steve Manning, Sarah Pete.

**Summary** The Wyre and the Lune should be considered for the placement of an MCZ. This is based on there being sufficient evidence to support the importance of the Wyre with respect to smelt and general marine nursery functions. The Lune would add additional connectivity within the system.

#### **Discussion of evidence base for the Morecambe Bay Estuary complex**

### **DUDDON ESTUARY**

#### **Smelt and eel**

Elver fishermen who operate around the Duddon estuary were contacted by Dick Langley for information, however he is still waiting for a response. Dick Langley's personal opinion was that the elver stock status is so low that a complete ban on elver fishing should be enforced, however this applies to elver stocks generally, not specifically to the Duddon Estuary as it was noted that historically there has been no known eel fishing beyond the River Crake, and therefore not in the Duddon Estuary. There was general consensus that little is known about the Duddon Estuary specifically.

#### **Marine ecosystem functions**

The saltmarsh in the Duddon Estuary provides important nursery grounds for the following species: juvenile bass, pollock, small flat fish (flounders). Within the Duddon these saltmarshes are overgrazed and dominated by one species and the evidence suggests that overgrazing on saltmarshes leads to decreased fisheries production.

**Current management measures / protection and is this adequate to fully protect the relevant FOCI?**

The Morecambe Bay SAC includes the Duddon Estuary, and under the Water Framework Directive, there is also the SPA and SSSI.

**LEVEN AND KENT ESTUARIES**

**Smelt and eel**

The Leven Estuary was highlighted as being important for smelt and eel. The only fisheries that might affect these species are the shrimp and whitebait fisheries which tend not to operate past Wadhead Scar. Upstream of Wadhead Scar there are not believed to be any fishing activity which would affect these FOCI species. The biggest threat to smelt was considered to be the siltation due to the railway. It was also noted that the tide does not extend as far upstream as it did previously and this would prevent smelt and eel from travelling upstream, the access to brackish water (where spawning may take place) is restricted to the spring tides only once or twice a month. Because of the nature of the bay it is likely that smelt and eel move between the different river systems. It was noted that a massive decline in elver numbers has taken place, with an anecdotal estimated abundance of less than 1% of previous records. Data on eel numbers will become available in the future as the Bela River is one of the nationally monitored river sites. From a flood risk management study, the data indicate suggest a strong presence of eels and elvers, which would suggest a strong current stock.

The main threat to eels in the Leven and Kent estuaries are flood defences, weirs, sluice gates, pumps, bridges, dams and tidal flaps which prevent the movement of eel upstream. Mitigation of the effect these structures have on the migration of eel are part of the national eel management plan.

**Marine ecosystem functions**

The WFD data indicate that there is a permanent sprat nursery ground present at Wadhead Scar.

**Current management measures / protection and is this adequate to fully protect the relevant FOCI?**

The Morecambe Bay SAC includes these two estuaries, and under the Water Framework Directive, there is also the SPA and SSSI. The Level and Kent Estuaries both fall within the IFAC restricted areas which has well regulated seasonal closures on fishing activity, including the implementation of a minimum mesh size which would prevent / minimise smelt and eel capture.

**General comments**

The mapped pink areas around Morecambe Bay which are currently classified as intertidal mud are more likely to be coastal saltmarsh.

## **LUNE ESTUARY**

### **Smelt and eel**

There is only one formal record of smelt in this estuary, where the specimen was caught at Abbey Light. The fact that white bait fisheries sometimes capture smelt as bycatch provides anecdotal evidence to support the presence of smelt within this estuary.

There was an elver fishery which operated on the Lune by the Skerton Weir, however a local bylaw has put a stop to this fishery. From the one or two fishermen who still catch eel in this area, it seems that they are not caught in any large quantity.

### **Marine ecosystem functions**

The potential nursery areas in the Lune extend up to the Skerton weir. These nursery grounds are important for herring, sprat and flounder.

### **Current management measures / protection and is this adequate to fully protect the relevant FOCI?**

Saltmarsh habitats in the Lune Estuary are covered by the Morecambe Bay SAC and the SSSI which actually relates to habitat rather than being focussed on the protection of birds.

Whitebait fisheries which catch smelt as a bycatch are regulated under the IFCA bylaws. Incidental protection is therefore afforded to smelt, however in the 5 year review of this bylaws, smelt specific management measures ought to be considered in collaboration with the Environment Agency who implement the legislation for this freshwater fish.

## **WYRE ESTUARY**

### **Smelt**

There is an actively recruiting smelt population in the Wyre Estuary. The Maitland (2003) report indicates that smelt within the Morecambe Bay estuary complex are part of an interconnected population, therefore the importance of this spawning stock in the Wyre Estuary was emphasized.

### **Eel**

There was no specific eel information or data relating to the Wyre estuary, however, as with these estuaries more generally, the inability for eels to migrate upstream will be an issue for any eels present.

### **Marine ecosystem functions**

The ungrazed saltmarsh present in the Wyre was highlighted as being a very representative area of this habitat and one with high floristic diversity. The fact that this is ungrazed is important, as when grazed this reduces the shelter habitat available for fish and can in turn reduce fish utilization by 50%.

### **Threats**

Dredging takes place in the creeks of the Wyre and up to the Lune in order to encourage water flow. Previously dredging took place for the Fleetwood ferry however as this has been decommissioned marine fish are expected to recovery given that the substrate will now be more stable. Gas storage at Fleetwood may effect salinity of the estuary and development of the Wyre tidal barrage is currently being discussed, which if put in place would impact the ability of smelt and eel to move upstream. More generally the effect that the Haysham Power Station has had on local fish populations was highlighted, however new regulations on the monitoring and public reporting on fish captured in the intake pipes are in place. This will serve as an important source of background monitoring data to assess the effect of climate change on fish populations and monitoring of invasive species.

**Current management measures / protection and is this adequate to fully protect the relevant FOCI?**

Saltmarsh habitats in the Wyre Estuary are not covered by the Morecambe Bay SAC, they are covered by the SSSI however the level of protected afforded is lower.

Whitebait fisheries which catch smelt as a bycatch are regulated under the IFCA bylaws. Incidental protection is therefore afforded to smelt, however in the 5 year review of this bylaws, smelt specific management measures ought to be considered in collaboration with the Environment Agency who implement the legislation for this freshwater fish.