



Channel Manche, refuge for the migratory fish?

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The Game and Wildlife Conservation Trust

Welcome to the SAMARCH project



The Game and Wildlife Conservation Trust (GWCT) - What do we do?

- **GWCT are unique – dedicated to the study of game species**



What do we do?

And their associated species and habitats

Our research feeds into agricultural conservation policy



The Game and Wildlife Conservation Trust (GWCT)

- **Started in 1931**
- Registered Charity, Research and Education in 1980
- Annual budget of £7.5m, £3.2m directly on research
- 130 staff (60 scientists)
- No direct Government funding



GWCT Headquarters in Hampshire

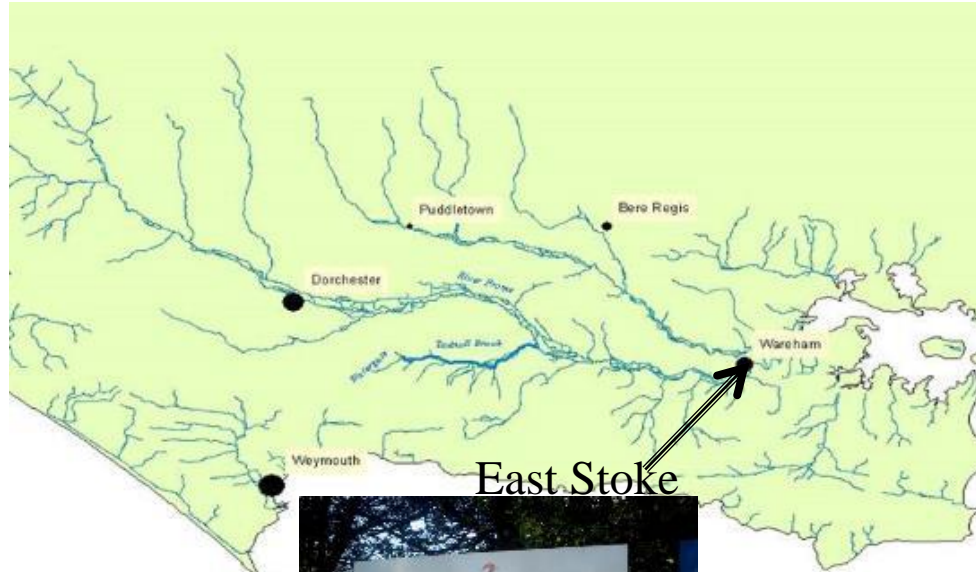
What makes GWCT special?

Research

- Practical, cost effective, designed to solve problems
- Applied
- Collaborative e.g. with universities (14 in England, Scotland, Ireland France and Canada)
- Always for scientific publication in the journals – peer review

(Fisheries dept published 13 papers in journals in the last 2 years)

GWCT Salmon and Trout Research Centre on the river Frome in Dorset



Today's talk

- **Salmon and sea trout lifecycle – freshwater and marine**
- **Rivers of the south of England**
- **Salmon and sea trout fisheries in the south of England**
- **The health of stocks**
- **Migration pathways and the use of the channel by salmon and sea trout**
- **Challenges to salmon and sea trout in the channel**
- **Biological importance of salmon and sea trout in the channel's ecosystem**

Important to understand the life cycle of salmon and sea trout



Life cycle of salmon

Estuary



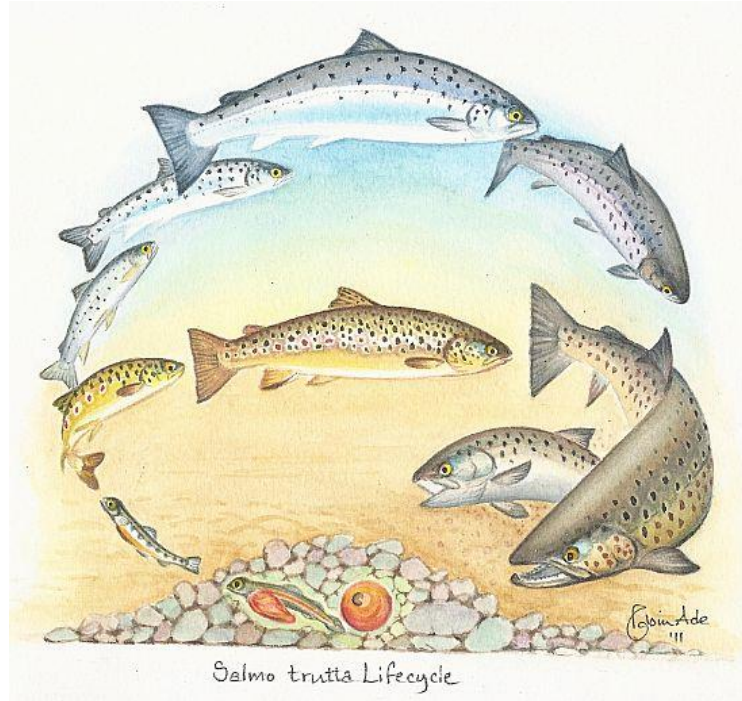
Marine

Freshwater

Courtesy of the Atlantic salmon Trust

Life cycle of trout / sea trout

Estuary



Marine

Freshwater

Courtesy of the Atlantic salmon Trust

Estuaries, coastal waters and the sea are key habitats for these fish



Role of estuaries and coastal habitats in sea trout life cycles

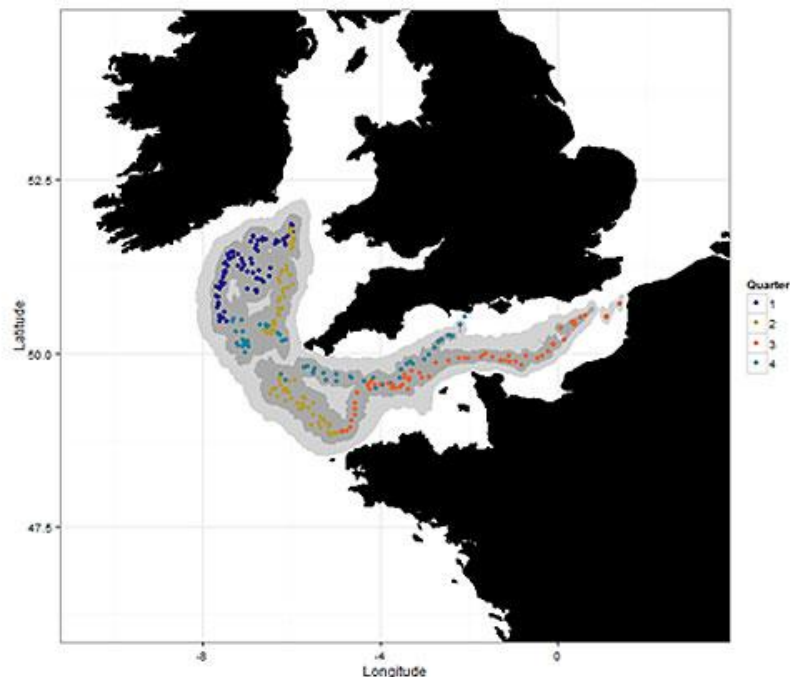
- **Poorly understood**
- **Estuary and coastal habitats are complex and varied, and sea trout will behave differently in different areas**
- **Anecdotal evidence suggests that some sea trout populations remain close to shore and others travel long distances**

Migration routes and feeding areas of sea trout

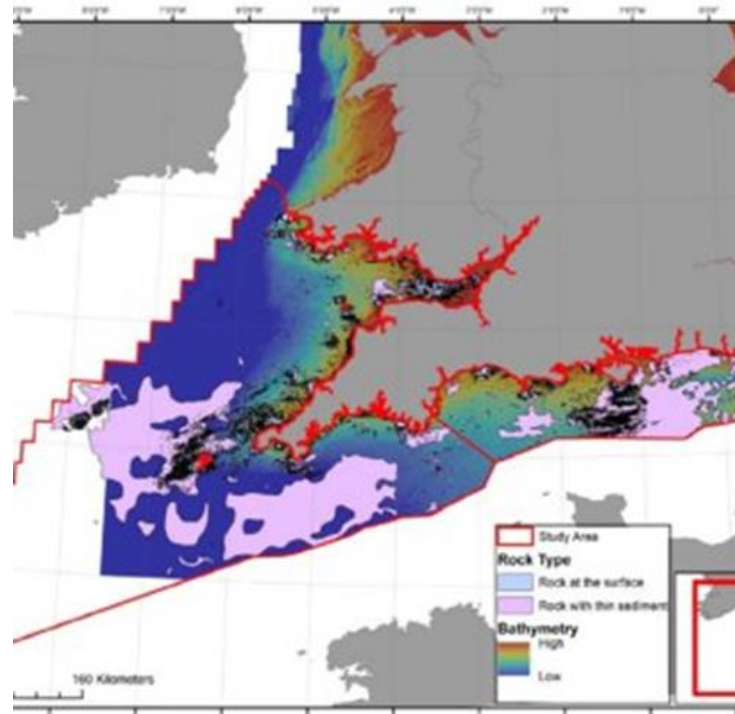
Key aim of the SAMARCH project



Cefas – Data Storage tags in bass, to find out the movements of bass in the channel



Genetics, sea scape, modelling and GIS to map areas important to sea trout in the channel



21 rivers flowing into the Channel with notable populations of salmon and sea trout

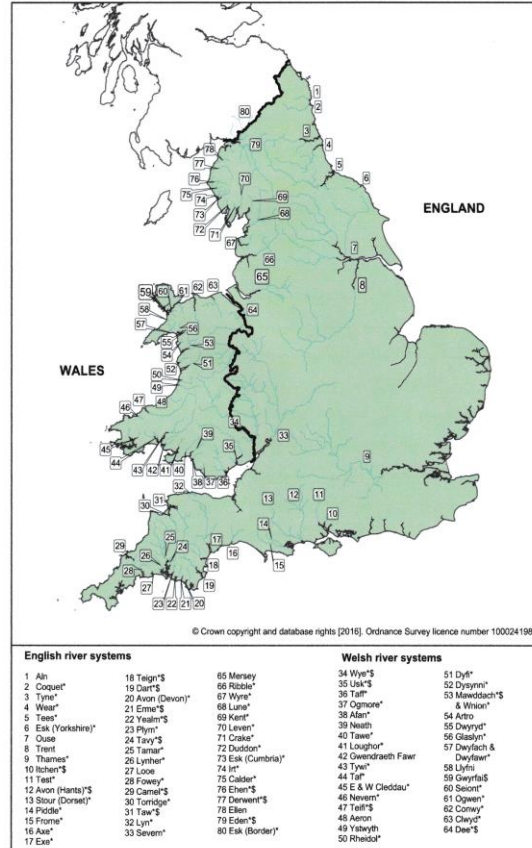


Figure 1. Map of England and Wales showing the main salmon rivers and denoting those with Salmon Action Plans (*) and those designated as Special Areas of Conservation (§) in which salmon must be maintained or restored to favourable conservation status.



These rivers include internationally significant chalk rivers

River Test



River Itchen



Salmon and sea trout net fisheries on the English side of the channel

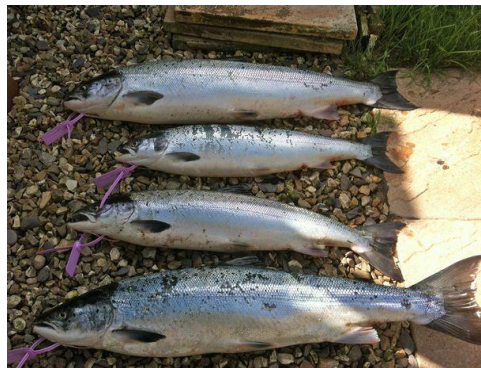
River	Netting type	Number of licences
Frome & Piddle	Seine	1
Exe	Seine	3
Teign	Seine	3
Dart	Seine	3
Camel	Drift	6
Tavy	Seine	1
Tamar	Seine	3
Taw	Seine	3
Total		23



Numbers of declared salmon and sea trout caught by anglers and nets on the English side of the channel 2015

Numbers of salmon caught by nets 402

Numbers of sea trout caught by nets 480



Numbers of salmon caught by anglers 2,043

Numbers of sea trout caught by anglers 5,339



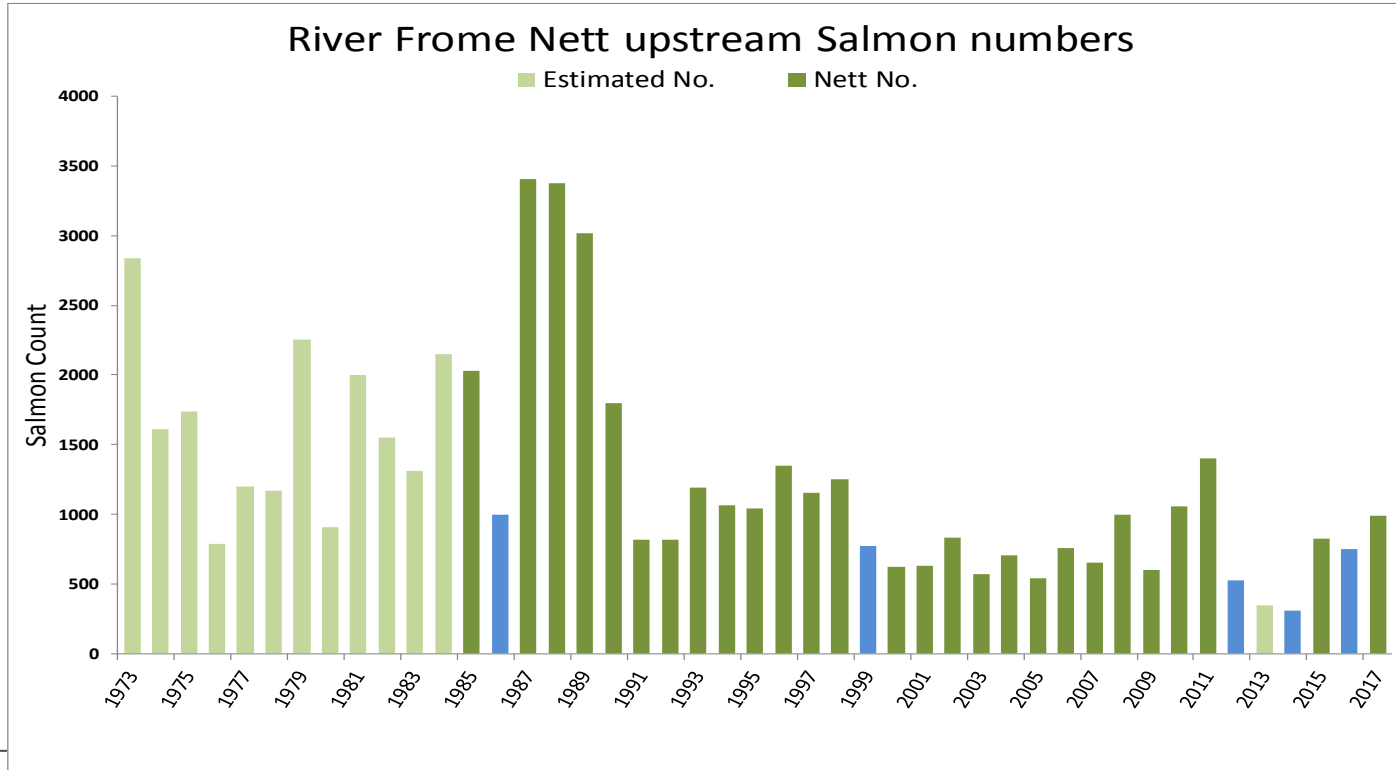
Environment Agency 2015

Economic value of salmon and sea trout angling in the Channel

- Quesne & Selby (2006) estimated the economic value of salmon and sea trout angling in the Channel area is worth €1972 and €564 per fish caught respectively.

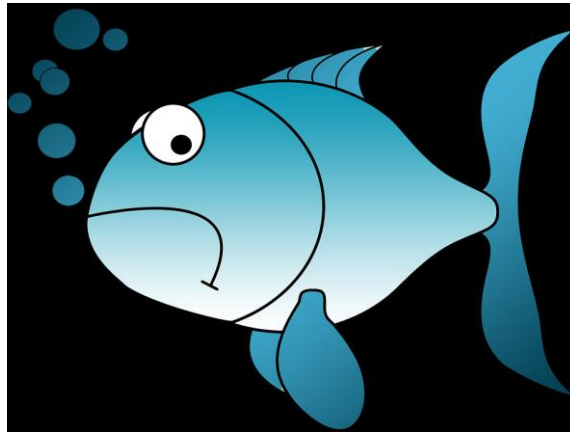
Le Quesne, T. and Selby, A (2006). The economic values of the Atlantic Salmon in Europe: a review. Commissioned Report to Westcountry Rivers Trust (UK).

Annual salmon population estimate, River Frome



Health of salmon populations in south of England rivers – EA salmon conservation limits 2015

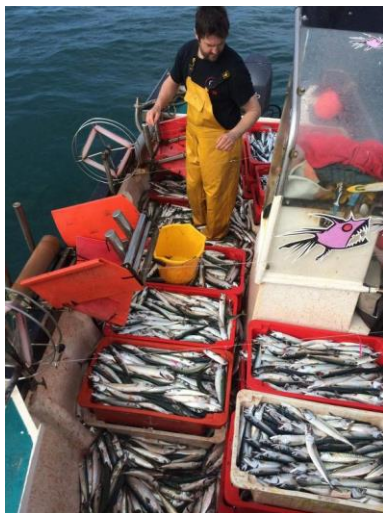
- Salmon population probably not at risk – 3 rivers
- Salmon population probably at risk – 15 rivers
- Salmon population at risk – 3 rivers



Challenges

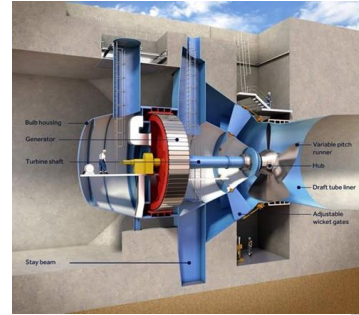
○ Bycatch of salmon and sea trout from commercial fishing

- ✧ Mackerel
- ✧ Herring
- ✧ Bass
- ✧ Mullet



Challenges

- Dredging of the sea bed destroying feeding areas
- Coastal developments



Saumon & Truite de mer
MIEUX CONNAÎTRE
MIEUX COMPRENDRE
MIEUX GÉRER.

What do sea trout feed on?

capelin



amphipods



clupeids



herring



sprat



sand eels



Importance of salmon and sea trout as part of the Channel's ecosystem?

○ Seasonal food source

- ✧ Salmon smolts – April & May
- ✧ Sea trout smolts – March onwards
- ✧ Adult salmon – April – October
- ✧ Adult sea trout – January - July

Juvenile and adult salmon and sea trout are a food source for mammals, birds and fish

- No quantified data
- Cetacean fauna (whales, dolphins and porpoises)
- Eat mainly adult salmon and sea trout
- 7% of the UK's 27 marine mammal species are found regularly in the Channel
 - ✧ Bottlenose dolphin (*Tursiops truncatus*) *
 - ✧ Common dolphin (*Delphinus delphis*)
 - ✧ Harbour porpoise (*Phocoena phocoena*)*
 - ✧ Long-finned pilot whale (*Globicephala melas*)
 - ✧ Minke whale (*Balaenoptera acutorostrata*)
 - ✧ Killer whale or Orca (*Orcinus orca*)

*Annex II of the EU Species & Habitats Directive

Seals

- Not found in high numbers in the channel compared to other areas
- Atlantic grey seal (*Halichoerus grypus*)
- Harbour (Common) seal (*Phoca vitulina*)



Seals will enter a river to eat salmon and sea trout



Sea birds resident in the Channel

- Eat juveniles and small adults
- A food source in March – June each year
- Fish eating birds recorded in the channel, March – June each year

Northern fulmar



Shag



Cormorant



Sea fish in the Channel that eat smolts

Bass, *Dicentrarchus labrax*



Pollack, *Pollachius pollachius*



Atlantic cod, *Gadus morhua*





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