

Achieving a balance – the key to sustainably managing native oyster stocks

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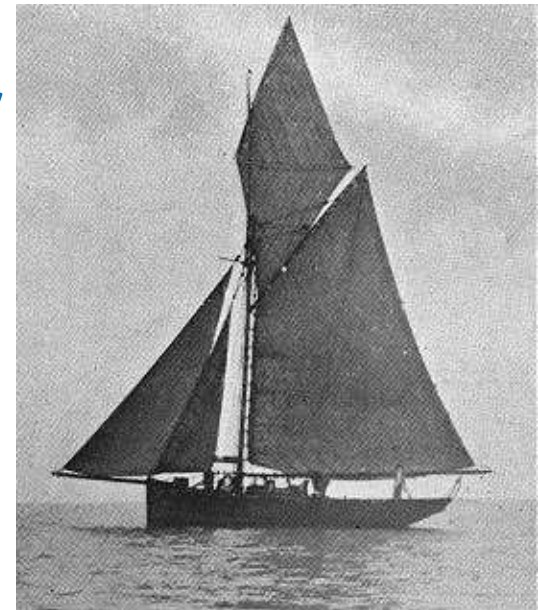
INTRODUCTION

- **Over 150 years' literature, field and laboratory analyses, work in Lough Foyle fishery, and information from fishers and producers**
- **Lessons = relevant to other types of animal production**
- **Important to communities – often little other employment**
- **Artisanal to large scale**
- **Increasing environmental legislation**
- **Need to protect for future**

80mm

BACKGROUND

- Sustainable harvesting for millennia
- From 18th Century:-
Overexploitation driven by:
 - market demand
 - vessel/ gear developments
 - faster transport
 - poor management
- French turned to aquaculture to save industry



A Whitstable Yawl.

European native oyster (*Ostrea edulis*): major declines over past 150 years

Commissioners of the Irish Fishery Inquiry, 1837:

“At Arklow, there is an inexhaustible supply of small oysters ...”

1863 41 million oysters

1899 107,000 oysters

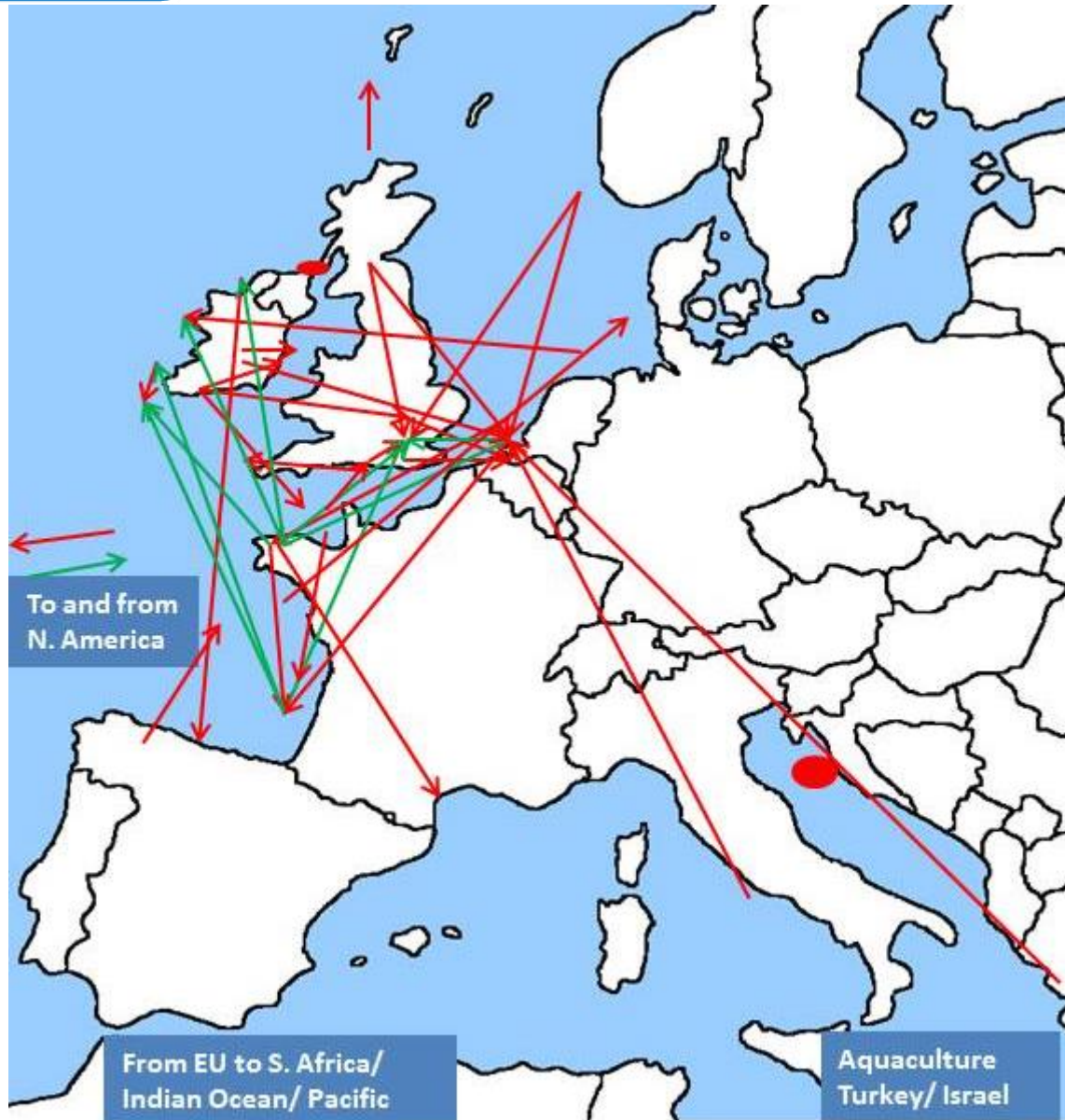
1903 few oysters in surveys

(Holt, 1903)

- Repeated in fisheries around Europe
- Extinction or series of “boom & bust” cycles

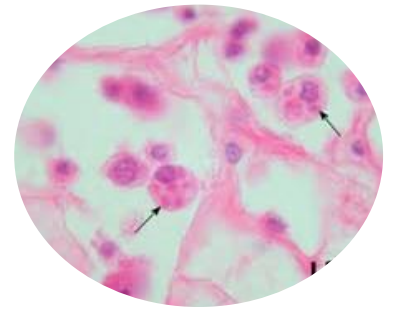
MOVEMENTS

Documented movements of *Ostrea edulis* within Europe and to rest of the world



OTHER FACTORS:-

- Continued exploitation (Smyth & Roberts, 2006)
- Disease outbreaks – 1920s/ *Marteilia* (1960s)/ *Bonamia* (since 1979)
- Habitat Loss/ Degradation
- Pollution
- Switch to other species (*C. virginica*/ *angulata*/ *gigas*)
- Introduction of pests: slipper limpets/ oyster drills
- Unpredictable reproduction/ recruitment



21st Century...?

... ACHIEVING A BALANCE?



= Key to sustaining production of all species

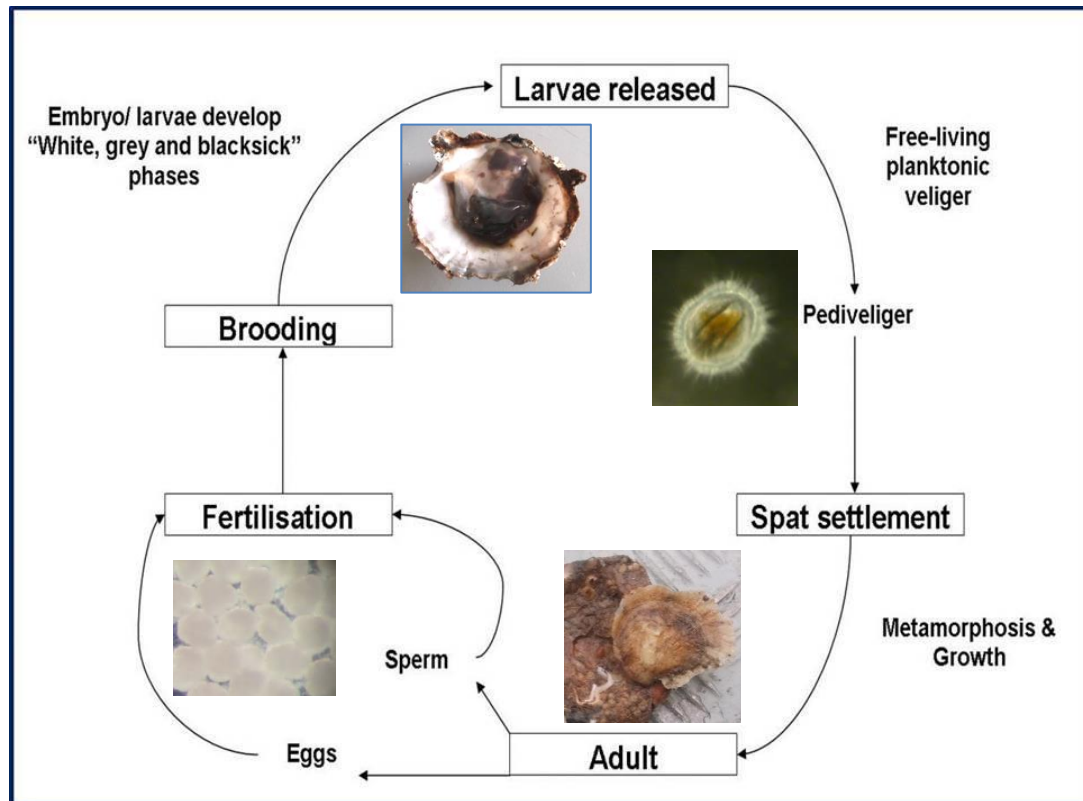
- Production = balancing act (many factors affecting success)
- Smooth out “boom and bust” cycles
- Fishers and growers:-
 - more likely to work sustainably if they can see a good reason

Balancing Act 1: Native versus non-native species

- Pacific oyster - faster growing – shoreline trestle culture - can become invasive
- Native oysters - prized by connoisseurs supply \neq demand
- Both species prone to disease outbreaks
- Native seed supply fluctuates
- Fishers suspicious of effects of trestle culture on wild stocks
- New methods e.g. Ortacs



Balancing Act 2: Native Oyster Reproduction



- **Complex reproduction**
- **Environmentally driven**
- **All stages need optimal conditions for successful production**
- **Identify strategies to “smooth” interannual fluctuations**

Balancing Act 3: Wild v. Aquaculture Production

- Lack of understanding between growers and fishers
- Reluctance to change from traditional ways
- Adopting aquaculture techniques could assist with sustainability
- Oysters grown in farms since Roman times
- French oyster industry collapsed in mid- 1800s
- rescued by aquaculture techniques
- Hatcheries
- Pond culture
- FLUPSY
- Cages or longlines
- Ortacs



Balancing Act 4: Commercial & Environmental Interests

- 85% of native oyster habitat lost worldwide
- EU Habitats and other Directives
Native Oyster Species Action Plan
- Obligations to sustain, regenerate and restore
- Best if fishers and growers carry out schemes
e.g. closed/ broodstock areas
Protected areas can be nursery areas for other target species
Whole Ecosystem Approach to fishery management
- Curved ball for the UK – Brexit?



Balancing Act 5: Stakeholder Interests/ Conflicts

The real key to success = Stakeholder buy-in

Stakeholder: anyone with an interest – fishermen, growers, buyers, processors, government agencies, scientists, conservationists, local businesses and the general public

Often conflicting views but ...

All want the same thing – more oysters now and for future

**Can work e.g. Blackwater, Essex now = Marine Protected Area
Still commercial operation – Natives and Pacifics**

ADDING VALUE

- Highlight local, artisanal origin:-
 - Sell locally
 - Sell direct to consumer (e.g. mail order)
 - Marine Stewardship Council accreditation
 - Appellation d'Origine Contrôlée (AOC)
- Higher value - more impetus for sustainability
- Increases interest in investing and protecting



Conclusions & Recommendations

- **Nothing really new with oysters – knowledge hidden/ forgotten**
- **Retain juveniles and largest adults in fishery**
- **Adopt aquaculture techniques - smooth seed supply**
- **Establish areas closed to fishing**
- **Communication and education – raise interest**
- **Encourage stakeholder involvement**
- **Adopt strategies to add value to the end product**

Thank you for listening
and to everyone involved in
the project

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