

# *Integrated sea lice management: A Scottish perspective*

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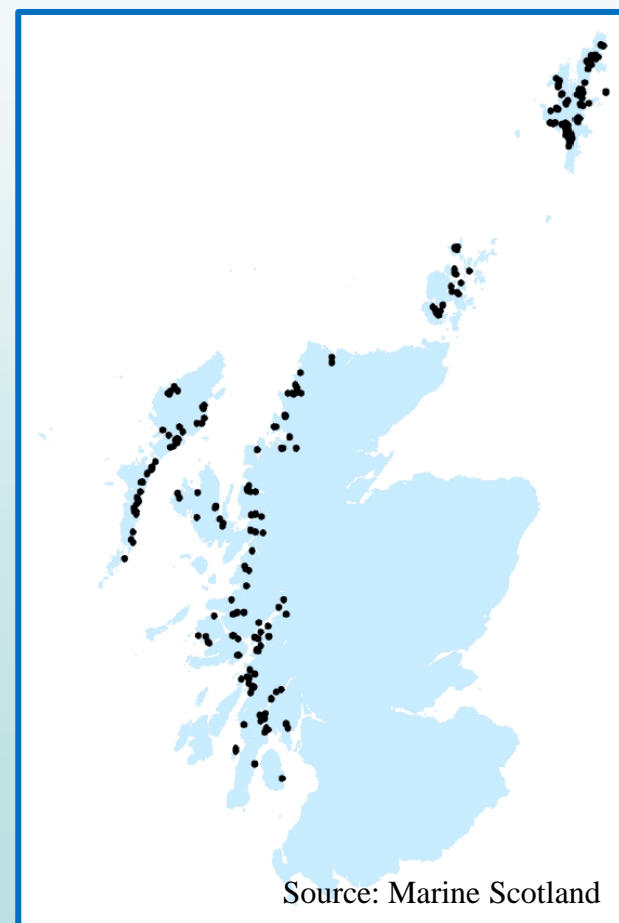
Technical department

Scottish Salmon Producers' Organisation (SSPO)

11<sup>th</sup> November 2013

# Salmon farming in Scotland

- Current production - ca. 160,000t (2012)
- 3<sup>rd</sup> largest globally
- On-growing production
  - ca. 260 “Active” sites
  - 11 Companies
    - Single site → 40+ sites



# SSPO

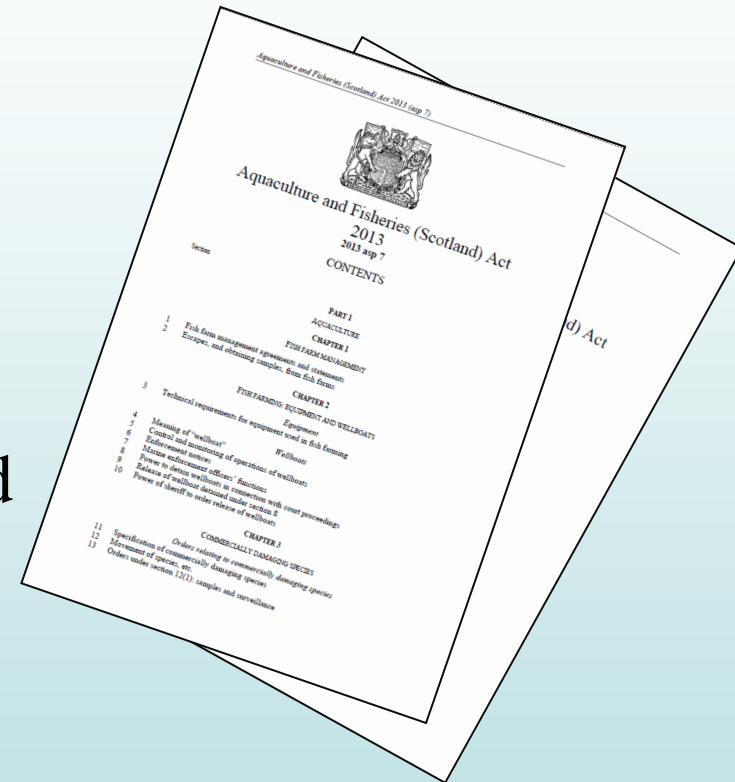
- Industry representation
  - Regulatory/statutory, technical, media....
- Since 2006
- 1987 → 2006 = Scottish Salmon Growers Association (SSGA & SQS)
- 25+ years representing the industry



- Code of Good Practice
  - Industry best practice standard
  - Risk-based approaches
  - Lice management
  - Prerequisite of SSPO membership
    - 98% SSPO
    - 99% CoGP

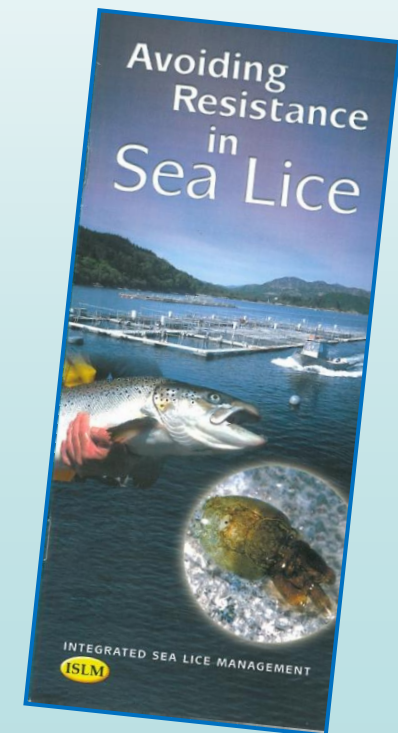
# Regulatory framework

- EC Directive 2006/88/EC
  - The Aquatic Animal Health (Scotland) Regulations 2009
- Aquaculture and Fisheries Act 2007
  - Fish Farming Businesses (Record Keeping) (Scotland) Order 2008
- Aquaculture and Fisheries Act 2013



# Development of integrated lice management in Scotland

- Industry/Academia/Pharma etc collaboration
- “*A national treatment strategy .....*” (1998)
- Integrated Sea Lice Management Group (1999)
- Early experiences built on through various working groups
- Code of Good Practice (2006 to date)



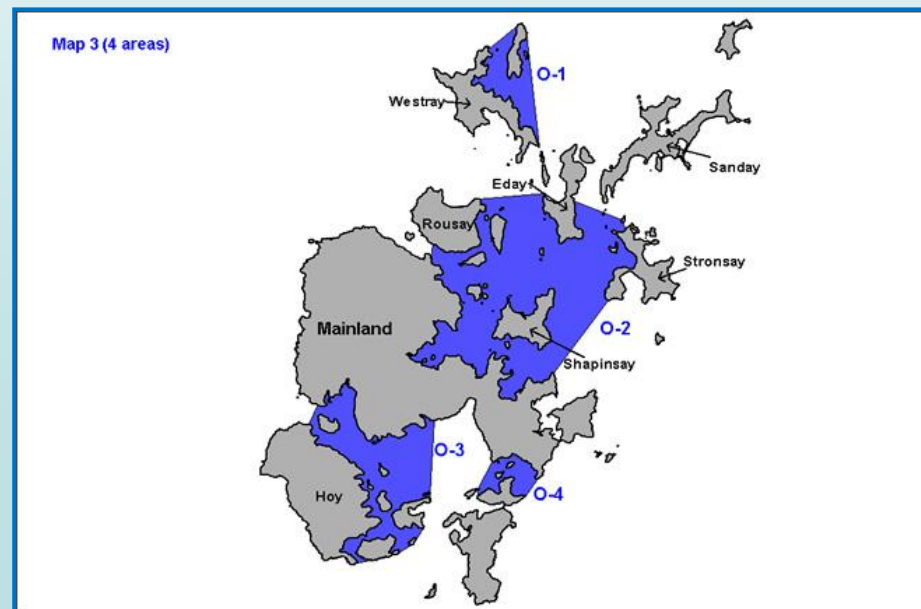
# Lice monitoring

- Defined within NTS / CoGP
  - Audited through CoGP
- Legislative basis (record keeping)
  - FHI inspections
- Weekly monitoring
- Randomly sampled fish and pens
- Minimum of 5 pens, 5 fish
- 4 categories of lice
- Routinely exceeded
  - 2x weekly, fish, pens, lice categories



# Area management

- Co-ordination of activities
  - ALL salmon farms are within a FMA (see CoGP)
  - Areas defined based on currents, tides, local experience
  - Multi-operator areas – FMAg
  - All other areas – FMS
  
- CoGP requirement
- Legislative basis (2013)



# Area management

- Co-ordination:
  - Stocking
    - Time
    - Year class / generation
    - All in, all out stocking
  - Following
  - Use of wrasse
  - Fish movements
  - Treatments (area and national)





# National strategic treatment

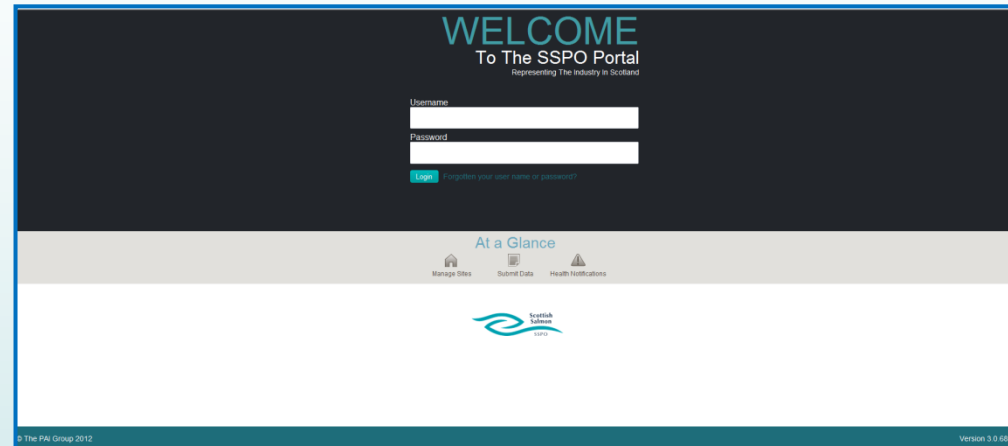
- *National Treatment Strategy*
  - Scotland wide treatment strategy (since 1998)
  - Reproductive capacity of female lice compromised in spring
  - Co-ordinated treatment - late winter/spring
  
- 2013
  - Strategic / co-ordinated “parasite” treatment
    - AGD & lice
    - All Scotland
    - Lice – significant benefits seen
    - AGD – Situation much improved from last year

# Information exchange

- Key aspect of lice/health management
  - Key component of FMAgs
- Network of regular area meetings
  - Health teams/farm managers/site personnel
- SSPO provides support in this area
  - SSPO Fish Health Management System

# SSPO Fish Health Management System

- Developed 2010
- In collaboration with industry
  - Industry buy-in – all SSPO members
- Web-based “database” system
- Range of health information
- Real-time exchange of information
  - Operators within FMAgs & beyond
- Historical information
- Future plans - Messaging



# SSPO / industry structure



- Allows for industry wide decision making
- Identification of challenges and goals
- Allocation of resources and effort
- Examples
  - Development of treatment strategies (local and national)
  - Drive industry relevant research

# Wrasse / lumpsuckers

- Industry wide interest
- Implementation
  - Site basis
  - Area basis



- Initial results highly encouraging
- Base of understanding from 1990s
- Significant advances in R&D and innovation

# Other relevant activities



- Ministerial group on Sustainable Aquaculture
  - Previously Ministerial Group on Aquaculture
  - Relevant working groups
    - Well boats
    - Health and welfare
    - Interactions
    - Research
    - Capacity
    - .....