BEST PRACTICE IN WORLD FISHERIES CONFERENCE

21 November 2017 | Fishmongers’ Hall, London

Hosted by Blue Marine Foundation and The Fishmongers’ Company

#betterbritishfisheries
PROFESSOR
SIR JOHN BEDDINGTON

#betterbritishfisheries
MAGARET SPRING

US National Oceanic and Atmospheric Administration 2009-2013

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U.S. FISHERY MANAGEMENT

A Story of Science, Stakeholders and Recovery

Margaret Spring
CHIEF CONSERVATION OFFICER

BEST PRACTICES IN WORLD FISHERIES
LONDON
NOVEMBER 21, 2017
U.S. Fishery Management

A Journey to Achieve Sustainable Fisheries

MAGNUSON STEVENS ACT

The landmass of the lower 48 states.
Presentation Overview

- State (inshore) fishery management
- Federal (offshore) fishery management
- Federal framework and process
- Lessons learned
- Metrics of success
- Ongoing challenges
- U.K. considerations
State (Inshore) Fishery Management
Federal (Offshore) Fishery Management

• **1976 Law: US Fishery Management Framework**
  • New: U.S. boundaries, **National Standards** and **Regional Councils**

• **1996 Law: New Conservation Requirements**
  • End overfishing; Rebuild stocks in 10 years – Annual Progress Reports
  • “Optimum Yield” cannot exceed MSY (biological yield)
  • Reduce bycatch, Protect habitat, “Transition” to sustainability

• **2006 Law: Science, Accountability, Performance**
  • Enforceable Annual Catch Limits (all plans, within 2 years)
  • Science primacy: catch (and bycatch) limits set by science
  • Council reforms, international accountability, ecosystem science
Critical Elements of Federal Law

- Accountable catch limits defined by science
- End overfishing and rebuild in a time certain
- Regional, transparent decisionmaking
- Performance metrics and reporting
Federal Management System

**U.S. CONGRESS**
- Science-based legal framework
- National standards

**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**
- Approve/disapprove recommendations based on 10 National Standards
- Stock assessments
- Regulations and enforcement

**REGIONAL FISHERY MANAGEMENT COUNCILS**
- Review scientific information
- Design fishery management plan
- Make allocation decisions and catch limits
10 National Standards

1. Prevent overfishing, achieve “OY” (< MSY)
2. Use Best Scientific Information
3. Manage stocks as unit
4. Allocation (fair, no discrimination to states)
5. Efficiency (not sole reason for allocation)
6. Allow for variation in fishery and catches
7. Minimize costs and avoid duplication
8. Socioenonomic considerations (subject to #1)
9. Minimize bycatch and bycatch mortality
10. Safety at sea
Eight Regional Fishery Management Councils

REPRESENTATIVES INCLUDE:

- States
- Commercial fishermen
- Recreational fishermen
- Native communities
- Scientists
- NGOs
- Other stakeholders
Federal Fishery Management Process

BEST AVAILABLE INFORMATION
Scientific advice on catch limits

REGIONAL COUNCILS
Design fishery management plan
Make allocation decision
Recommend catch limit

NOAA
Review for consistency with national standards, law
Approve or send back

NOAA
Implementation/Regulation
Enforcement (with U.S. Coast Guard)
Monitoring

NATIONAL STANDARDS
U.S. Fisheries: Lessons Learned
U.S. Fisheries: Lessons Learned

- Failure to follow scientific advice, control capacity led to collapse/closures
- To avoid “boom and bust”, management must prioritize science over economics
- Crisis clarified need for US law to end overfishing and rebuild stocks
U.S. Fisheries: Lessons Learned

• Overfishing, insufficient data, overcapacity: “Disaster” in 2000

• Council innovates using federal law framework: Recovery in 2014
  • Improve assessments & science
  • Industry-led buyout
  • Science based quota (all species)
  • IFQ with gear switching, communities
  • Full catch monitoring
  • Bycatch reduction; Habitat closures
Before & After

June 2005

Trawling ban off West Coast approved

September 2014

Seafood Watch cites dramatic turnaround in rockfish, other West Coast fish


By Russ Parsons
Seafood Watch Rankings of U.S. Fisheries

1,000 (Total Possible Score)

- **2%** Best choice
- **19%** Good alternative
- **79%** Avoid

Shared Challenges

- **Multispecies**: differing recovery
- **Climate**: managing in a changing environment
- **Accountability**: monitoring, compliance, data
- **Cost of Management**: gov’t, industry roles
- **Enforcement**: legality, traceability, fairness
- **Markets**: shifting demand and price
UK Considerations from US Lessons

- **National**: time-bound science-defined limits (all catch)
- **Regional**: robust, transparent, and accountable decision-making and planning process
- Strong science, monitoring
- Performance metrics that are reported publicly
- A resilient system that can adapt (scale matters)
Looking Forward
Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
Thank you.
Key Points

✓ Magnuson-Stevens originally passed in 1976 but domestic overfishing not seriously controlled until 1996 reauthorization “OY is MSY...as reduced by...”

✓ Since the 2006 reauthorization, the number of stocks experiencing overfishing has dropped dramatically, and the number of fully rebuilt stocks have increased

✓ One of the biggest remaining challenges is sustainable management of recreational fisheries & accountability

✓ Since 2010 the funding for NMFS and MSA implementation has declined significantly in real $$$s
Managing USA Fisheries in “Layers”

- **30 individual marine coastal states** in the USA + territories such as PR, VI, American Samoa, Guam, N. Mariana Islands – all control their territorial seas (ex. NMI) – usually 3 miles, TX, FL have 9 mi seas

- **Three state commissions:** Atlantic States Marine Fisheries Commission (ASMFC), Gulf of Mexico Marine Fisheries Commission; Pacific States Marine Fisheries Commission

- Federal government used to control 12 n.mi. Federal territorial sea and the continental shelves

- In 1983 President Reagan issues a Proclamation claiming a 200 mile “exclusive economic zone” around the USA

- Beyond the USA national Jurisdiction there 11 international “Regional Fishery Management Organizations” or RFMOs that the US is a signatory to.
Sequential Depletion
Atlantic Halibut

Year

Landings (Metric Tons)

USA
Canada
Others
10 USA National Standards for Fishery Management Plans

#1 – Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry (optimum yield is “…maximum sustainable yield as reduced by any relevant economic, social or ecological factor…”)

this standard has primacy over all others

#2 – Conservation and management measures shall be based upon the best scientific information available

#3 – To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination
#4 – Conservation and management measures shall not discriminate between residents of different states. … allocations shall be (A) fair and equitable to all such fishermen, (B) reasonably calculated to promote conservation, and (C) carried out so no entity acquires and excessive share…”

#5 Conservation and management actions shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose

#6 – Conservation and management measures shall take into account and allow for variations in, fisheries, fishery resources and catches.
National Standards for Fishery Management Plans

#7 – Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

#8 – Conservation and management measures shall, consistent with the conservation requirements of this act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data and meet the requirements of (#2) in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.
#9 – Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch

#10 – Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.
Successful Rebuilding of Georges Bank Haddock

Spring survey

Fall survey

Canadian survey
41 Stocks Rebuilt as of March 31, 2017

**North Pacific:**
- Southern tanner crab - Bering Sea - 2007 & 2012
- Blue king crab - St. Matthew Is. - 2009
- Snow crab - Bering Sea - 2011

**Pacific:**
- Canary Rockfish - Pac Coast - 2015
- Petrale Sole - Pac Coast - 2015
- Pacific whiting - Pac Coast - 2004
- Lingcod - Pac Coast - 2005
- Chinook salmon - N. CA Coast: Klamath (fall) - 2011
- Widow rockfish - Pac Coast - 2011
- Coho salmon - WA Coast: Queets - 2011
- Coho salmon - WA Coast: W. Straight of Juan de Fuca - 2012
- Chinook salmon - CA Central Valley: Sacramento (fall) - 2013

**Highly Migratory Species:**
- Blacktip shark - Atlantic/Gulf of Mexico - 2003
- Swordfish - N. Atlantic - 2009
- Albacore Tuna - N. Atlantic - 2016

**New England:**
- Sea scallop - NW Atl. Coast - 2001
- Silver hake - Gulf of Maine/N. Georges Bank - 2002
- Silver hake - S. Georges Bank/Mid-Atlantic - 2007
- Winter flounder - Georges Bank - 2003
- Haddock - Georges Bank - 2010
- Pollock - Gulf of Maine/Georges Bank - 2010
- Haddock - Gulf of Maine - 2011
- Acadian redfish - Gulf of Maine/Georges Bank - 2012
- Windowpane - S. New England/Mid-Atlantic - 2012
- Yellowtail flounder - S. New England/Mid-Atlantic - 2012
- Barn door skate - Georges Bank/S. New England - 2016

**New England & Mid-Atlantic:**
- Goosefish (Monkfish) - Gulf of ME/N. Georges Bank - 2008
- Goosefish (Monkfish) - S. Georges Bank/Mid-Atlantic - 2008
- Spiny dogfish - Atlantic Coast - 2010

**Mid-Atlantic:**
- Bluefish - Atlantic Coast - 2008
- Scup - Atlantic Coast - 2009
- Black sea bass - Mid-Atlantic Coast - 2009
- Summer flounder - Mid-Atlantic Coast - 2011
- Tilefish - Mid-Atlantic Coast - 2014
- Butterfish - Gulf of ME to Cape Hatteras - 2014

**Gulf of Mexico:**
- Red grouper - Gulf of Mexico - 2007
- King mackerel - Gulf of Mexico - 2008
- Gag - Gulf of Mexico - 2014

1. Blacktip shark is now two separate stocks, but was previously assessed as one combined Atlantic/Gulf of Mexico stock.
Thank you.
BREAK

Please reconvene at 11:20am

Wifi: WorldFisheriesConference
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LUNCH

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PROFESSOR GEORGE KAILIS
University of Notre Dame Australia

#betterbritishfisheries
All Rowing Together?

Western Australian and Australian Practice in Legislation and Management

George Kailis

London, 2017
Overview

- Australian Fisheries background
- Legislative framework
  - Key attributes of the System
  - Dealing with Multiple Jurisdictions
- Management Performance
- What if we could start over again?
The Australian Fishing Zone

- Federal (Commonwealth) beyond 3nm.
- State from low water to 3nm, or as agreed with the Commonwealth (OCS).
- State only, above low water mark, internal waters.
W.A Fisheries
Summary of Western Australian Fisheries

• ~ 50 commercial fisheries
• 2016 GVP in excess of AUD 570 million GBP 325 million
• Highly regulated – ITQ/ITE for major fisheries
• For major ITE multispecies fisheries an ‘Indicator species’ approach focusing on key vulnerable species
• Risk-based, ‘Ecosystem Based Fisheries Management’
• Significant recreational sector
Development of Australian fisheries since 1980s
Harper v Minister of Sea Fisheries (1989) High Court of Australia *

“What was formerly in the **public domain** is converted into the exclusive and controlled preserve of those who hold licences...it is an **entitlement of a new kind** created as part of system of preserving a limited public natural resource in a society which is coming to recognise that, in so far as such resources are concerned, to fail to protect may destroy and to preserve the right of everyone to take what he or she will may eventually **deprive that right of all content**...the commercial licence fee is properly to be seen as the **price exacted by the public, through its laws, for the appropriation of a limited public natural resource”

“It is common for fisheries to operate across the State and Commonwealth boundaries at 3 nautical miles and in most cases this has been resolved through offshore constitutional settlements (OCS) with authority for management of the fishery shifted to one of the jurisdictions. As a result, Australian seafood is managed under a range of different fisheries legislation, policies and approaches.”
Common Approaches Since 1988: Policy

• **Rights based management** applied to commercial sector: Long term secure access, tradeable rights, application of economic concepts (quota management etc).

• Sustainability objectives increasingly important – **ecosystem perspective**

• Increasing formal **stakeholder** provisions, but **decreasing** stakeholder **engagement**.

• Third party certification – Industry and Government **not credible** sources on fisheries management.
Common Factors Since 1988: Legislative Structures

• **Broad objectives** in legislation – often conflicting
• **General Provisions** including licensing, enforcement etc
• **Wide discretions** given to the Minister and Director (Secretary of the Department)
• **Statutory Management Plans** – Subsidiary legislation - typically disallowable by Parliament. Most major commercial fisheries, some recreational fisheries.
Common Factors Since 1988: Management Practice

- Rights based management progressively applied to commercial sector.
- As fisheries come under management - allocation of rights; commercial, recreational, indigenous and conservation (passive use).
  - Although a lot of political manoeuvring, basic practice is to respect existing rights Australian Fisheries Management Policy 8
- Funding. Funding from commercial fisheries for management and research through levies or cost recovered. Between 5-8% of landed value. Limited recreational charges.
- Many jointly managed fisheries under OCS arrangements have ended up in single management.
The Fishery Management ‘Ecosystem’:
How well does it work?

Depends on the Question?

W.A. Fisheries:

97% of WA fish stocks are not at risk from fishing

Major Western Australian fisheries now MSC Certified or entering certification
Figure 9. 2014 High Level Performance by Sector 2014

- Commercial wild: Management = 6.6, Environment = 6.8
- Recreational: Management = 5.9, Economy = 5.8
- Customary: Management = 5.2, Environment = 4.7
- Aquaculture: Management = 6.1, Environment = 7.1
Issue 1: Complexity and Community Demands

**Trend:** More science more complexity and increased community demands for sustainability

**Response:** WA has adopted the MSC framework (Target Stocks, Fishery, Environmental Impact and Governance).
Issue 2. Legislative Changes

All Rowing Together?

Rowing Together

The Other Way?
Issue 3: The long tail

Value of Production

- Major Commercial (Greater than $2m GVP)
- Minor Commercial (Less than $2m GVP)

Slide Courtesy of Heather Brayford, Deputy Director Dept. of Primary Industries
Issue 4: Who pays

**Trend:** Pressure on budgets increasing expectations. Commercial fishers already paying significant fees.

**Response:** Increase efficiency, adopt new techniques, on board videos, vessel monitoring schemes (satellite) data entry direct by fishers. Extend fee base, recreational and broad community funding for passive uses.
What IF we could start over again?

• Unitise everything - to allow for future adjustment whether Quota or ITE.
• Limit ‘joint authorities’ as much as possible. Effective cross jurisdictional delegations.
• Invest in timely economic/sociological research to inform of likely impacts.
Looking Forward: Harvest Strategies

National Guidelines to Develop Fishery Harvest Strategies

“In its simplest form, a harvest strategy provides a framework to ensure that fishery managers, fishers and key stakeholders think about, and document, how they will respond to various fishery conditions (desirable or undesirable), before they occur”

Thank you
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BREAK

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PETER GULLESTAD
Norwegian Directorate of Fisheries
Elements from Norwegian Fisheries Management
by Peter Gullestad

Best Practice in World Fisheries Conference
London, 21 November 2017
The role of the Directorate of Fisheries

• Input to the policy making process
  – Collection of data – production of statistics
  – Analysis
  – Policy proposals
  – Drafting legislation/regulations
  – Expert and advisory role

• Managing fisheries
  – Implementing political decisions
  – Processing applications and appeals
  – Monitoring and control
The legal framework

• The Act relating to the Economic Zone of Norway (1976) provides the legal basis for exercising fisheries jurisdiction in the 200 mile zone.

• The Act on Participation in Fisheries (1972/1999) provides the legal basis for regulating the participation in commercial fisheries and measures to restrict fishing fleet capacity; that is who, with which vessel and which licences.

• The Marine Resources Act (1983/2009) provides the legal basis for regulating the actual fishing; that is where, when, how, how much.

• The Fishermen’s Sales Organization Act (1938/1951/2013) gives monopoly to 6 «producer organizations» to set minimum prices and to conduct all first hand sales of fish. They collect data on all landings and submit them in real time to The Directorate of Fisheries. One of their duties is to withhold payment for fish over quota.

The laws gives the Minister quite large delegated power of attorney, powers that in many cases are delegated further to the Directorate of Fisheries. UNCLOS, UNFSA and other international legal commitments (ecosystem based management, precautionary approach etc.) are all incorporated in national law.
Evolution of fishery policy objectives

In the 1960s and 70s the broadly recognized Norwegian fishery policy objectives were:

• First of all, the fisheries sector had a major responsibility for the maintenance and development of settlement and employment in coastal communities, safeguarding a fleet structure with many small coastal vessels.

• Secondly, the fisheries sector had to be sufficiently profitable, being able to secure wages and living conditions similar to those of other sectors of the Norwegian economy. This was achieved by means of substantial subsidies.

• And, with the overfishing and collapse of the Norwegian Spring Spawning Herring Stock around 1970, a third policy objective gradually and painfully emerged: fish stocks should not be depleted.
Norwegian catches versus number of fishermen 1945 – 2016

- Kvantum (tonn)
- Fiskere (i 1000)
- Fangst (tonn) per fisker

*Foreløpige tall*
Fishery policy objectives 2017 – the priority order is reversed

1. Ecological sustainability – well managed fish resources – biodiversity
2. Economic sustainability – A profitable fishing fleet adapted to available resources – without subsidies
3. Social sustainability:
   • A fishing fleet predominantly owned by the fishermen themselves
   • A diversified fleet of offshore as well as larger and smaller coastal vessels
   • A fair distribution of fishing opportunities between fleets and regions
   • Increasing the volume of national processing/value added production and the income from export of fishery products
   • Employment and rural settlement
   • Cost recovery – resource rent taxation ??
   • ???

How to spend the resource rent – that is the question!
Aggregate spawning stock of the 5 most important groundfish species 1985 – 2016

Stocks: Northeast Arctic cod, haddock, saithe, Greenland halibut and North Sea saithe
The fishing fleet – 
average operating margin and 
total operating revenues 1980-2015
Proportion of first hand value by fleet groups 1990 – 2016*
Management of fisheries – main issues and tasks

• Managing structure and capacity of fishing fleet – reduction of excess capacity
• Improving exploitation patterns and reduction of unwanted fishing mortality and waste
• Implementation of sustainable and precautionary harvest levels (quotas) – Harvest Control Rules/Management Plans
• The sharing of resources – internationally and nationally
• Moving from single species to an ecosystem based fisheries management
• Effective monitoring, control and enforcement – sanctions
Fisheries management – the main elements

Structural policy measures

Scientific research

Regulatory measures:
- Sharing of resources
- Exploitation pattern
- Exploitation level

Monitoring, control and enforcement
- Sanctions

International cooperation

Stakeholder participation
Structural policy measures

• Abolition of fishery subsidies
• Limiting access – closure of the commons
• Sharing of resources - distribution of fishing opportunities – individual licenses and quotas
• Scrapping schemes in the 1970-80s, then license aggregation schemes (for vessels over 11 meters)
Closure of coastal fisheries

1983: Mackerel, purse seiners 70 – 90 feet
1986: NS herring, purse seiners 70 – 90 feet
1990: Arctic cod
1997/98: Mackerel, vessels over 13 meter
1998: Shrimp NS/Skagerrak, vessels over 11 meter
1999: Arctic saithe, purse seiners over 13 meter
2002: King crab
2002: NSS herring
2002: Mackerel, vessels under 13 meter
2003: NS herring
2003: Arctic haddock and saithe
2003: NS saithe, purse seiners over 13 meter
2003: NS cod

Still – with limitations – to some extent open access for vessels less than 11 meters
Sharing of resources

• Between coastal states and in NEAFC
  – The bilateral agreements with Russia in the Barents Sea, and with the EU in the North Sea, have been characterized by long term stability, whereas the multilateral agreements for pelagic stocks are not

• Nationally between gear- and fleet groups – and between individual vessels
  – The Norwegian Fishermens Association has played a crucial role in hammering out broad compromises (1990, 1994, 2001) between gear- and fleet groups – a big burden for the organization
  – Based on these compromises the «Regulatory Meeting» has been the arena for further distribution to individual vessels

• Recreational fisheries are not quota-regulated. Limitations on type and amount of gear. Tourists can take a maximum of 15 kg out of the country
The annual regulations of national fisheries

The annual regulatory cycle

Stock assessment and advice from ICES – The International Council for the Exploration of the Seas

Research cruises and catch statistics

Mid-term Regulatory Meeting in June

Regulatory amendments during the year

Negotiations with neighbouring coastal states; Russia, EU, NEAFC etc.

Experiences from existing regulations – Preparation of documents and proposals by the Directorate of Fisheries to the November Regulatory Meeting

November Regulatory Meeting with all interested stakeholder groups

The Director General of Fisheries summarizes inputs and presents her final proposals to the Ministry, complete with draft regulations

The Ministry of Trade, Industry and Fisheries establishes the fishery regulations for next year
From single species to an ecosystem based fisheries management (EBFM) (1)

Establishing quotas 1977-2000:

- Exploitation pattern
- Prognosis for growth, natural mortality and recruitment
- Stock assessment

Total allowable catch (TAC) set on an ad hoc basis
From single species to an ecosystem based fisheries management (EBFM) (2)

Establishing quotas after 2000:

- Limit and Precautionary reference points
- Exploitation pattern
- Prognosis for growth, natural mortality and recruitment
- Stock assessment

Management Strategy and associated Harvest Control Rule

Determine F and TAC
A new millenium – new dimensions are added to fisheries management

- In March 1999 trawling at Sularevet is prohibited – the worlds largest known cold water coral reef, discovered in November 1998
- In 2006 the government submitted its first cross-sectoral management plan, for the Lofoten – Barents Sea area. Similar plans follow for the Norwegian Sea (2009) and for the North Sea/Skagerrak (2013)
- In 2006 the Norwegian Biodiversity Centre issues its first Red List for Marine Species, later revised in 2010 and 2015. Based on IUCN-criteria
- In 2009 the old Act related to Seawater Fisheries is replaced by The Marine Resources Act, the new law covering all marine life and with sustainable use and protection of biodiversity as bearing principles
From single species to ecosystem based fisheries management (EBFM) (3)

Future – and the future has already started

Management Strategy and associated Harvest Control Rule

- Stock assessment
- Prognosis for growth, natural mortality and recruitment
- Exploitation pattern
- Limit and Precautionary reference points
- Species interactions
- Bycatch of fish, seabirds and marine mammals
- Bottom habitats
- Fish welfare
- Pollution
- Genetic diversity
- Determine TAC and how to fish it

???
A pragmatic approach to the implementation of an Ecosystem Based Fisheries Management

• Two excel tables – one for stocks (80) and one for fisheries (58) – with a number of columns each giving information graded by importance for each stock/fishery on issues relevant to the development of an EBFM

• The tables give a condensed survey of relevant issues and concerns, and form the basis for decisions on which new or improved measures should be prioritized the next year with respect to further development of fisheries management

• The tables are updated and discussed annually with stakeholders at the June Regulatory Meeting. New lines (stocks/fisheries) or issues (columns) may be added as appropriate
## An excerpt from the 2017 Stock Table

<table>
<thead>
<tr>
<th>STOCK</th>
<th>Status of knowledge 1-3</th>
<th>Key role 1-2</th>
<th>State of stock 0-6</th>
<th>Fishing mortality 0-5</th>
<th>Red/Black-listed 0-6</th>
<th>Pollution 0-2</th>
<th>Catch value 1-5</th>
<th>Recreational value 1-3</th>
<th>Recreational share 1-4</th>
<th>Shared stock 1-4</th>
<th>Management objective 0-4</th>
<th>Measures implemented 1-3</th>
<th>Priority new measures 1-3</th>
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**June 2017**
### June 2017

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Shift in management perspective 1970 – 2017:

From maximizing short term yield of individual stocks, without an immediate high risk of stock depletion to optimizing the long term economic yield of stocks, and gradually, as knowledge permits, taking into account species interaction, the protection of biodiversity, vulnerable habitats and the functioning of ecosystems.
3 Articles related to Norwegian Fisheries Management:

• Changing attitudes 1970–2012: evolution of the Norwegian management framework to prevent overfishing and to secure long-term sustainability

• The “Discard Ban Package”: Experiences in efforts to improve exploitation patterns in Norwegian fisheries
  Marine Policy 54 (2015) 1-9; P. Gullestad, G. Blom, G. Bakke, B. Bogstad

• Towards ecosystem-based fisheries management in Norway – Practical tools for keeping track of relevant issues and prioritising management efforts

Thank you for your attention
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21 November 2017 | Fishmongers’ Hall, London

Hosted by
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#betterbritishfisheries
Review Session

Moderated by Daniel Owen

#BetterBritishFisheries