

ICES Ecosystem Advisory Processes & Advice

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(Past-Chair, Consultative Committee
ICES)

Two “Identities” - Science

- Since founding in 1902
 - Subject-matter Committees (~8)
 - Living Resources, Oceanography, Marine Habitats, Resource Mgmt, Technology, etc
 - Monitor developments in science disciplines
 - Oversee ~ 40 Expert Groups
 - Assign Terms of reference – thematic / project oriented
 - QA/QC on reports
 - Historically identified research priorities and coordinated major research initiatives
 - EU funding is changing role but not eliminating it

Two “Identities” - Advisory

- Important by 1930s, major since ~1970s
 - A.C. on Fisheries Mgmt by 1980
 - AC Marine Pollution by mid 1980s, ACME (Environment) by early 1990s
 - ACE (Ecosystems) in 1999 (fill gaps)
 - Supported by ~ 70 Expert Groups
 - Many co-overseen by Science & Advisory Cttee
 - PRODUCT-oriented ToRs (do the analytical work)
 - Review groups between EC and ACFM - QA/QC\
 - ACs write advice – for consistency, integration

Major Changes 2007 (for 08)

- ONE Advisory Committee
 - Home labs & correspondence – core work
 - Expert Groups (Members much as at present)
 - QA/QC, draft advice, some integration
 - Review Groups (Regional & Multidisciplinary)
 - 2nd level QA/QC esp for integration; *consistency*
 - Advisory Committee – national membership
 - Strategic, priorities, client requests, ToRs for EGs
 - Co-Chairs will be professional (6,3,3, months)

Coordination

- Bureau & Council – national reps (policy)
- ICES Secretariat – 35-40 support (neutral)
- Consultative Committee
 - All SC and AC chairs – overall coordination
 - All ToRs and liaison with Bureau & Council
- Mgmt Cttee for the Advisory Process
 - Allocation of work to Advisory Committees
 - Manages *ad hoc* advisory processes (increasing)
 - Liaison with clients
 - ACFM – NEAFC, IBFSC, NASCO, states, DG FISH
 - ACME – OSPAR, HELCOM, States, DG Environment
 - ACE – All the clients (part of the problem)

Expert Groups

- Many are standing WGs, meet annually
- Advisory support; recurrent requests (stock advice), or recurrent themes (--- Ecology)
- Science support – Reviewing / promoting progress on projects, produce tools increasing
 - Mini-symposium types falling out of favour
- Develop *cultures* due to continuity & products
 - Culture essential to address complex questions in 1-2 meetings; hard to break in.
 - Most good at using what IS known, not just reciting what is NOT known (new challenge from EA work)

Key types of advice &
Expert Groups (Mostly
Ecosystems)

Multispecies Assessment WG 1979

- Originally to develop MSVPA
 - Full product by 1986
 - Coordinated replicate “Year of the Stomach”
 - Investigations of predation effects on community and population dynamics
 - Updates M2 estimates for North Sea, Baltic Sea, Barents Sea about every 5 years
 - Continues to improve tools for multispecies and predator-prey assessments.

WG on Ecosystem Effects of Fishing

- Formed in 1990 to supply 1992 OSPAR Quality Status Report (fishing effects)
- Early years –
 - LOTS of original analytical work on indicators, community impacts, testing strategies, etc
 - (basis for at least 8 primaries)
- Now mostly :
 - take inputs from other EGs and to the advisory applications/ interpretation
 - Develop FRAMEWORKS for approaching issues

WG Ecosystem Effects of Fishing – types of products

- Analyses and review to support advice on:
 - Benthic impacts of trawl fisheries
 - Sustainability of bycatches
 - Closed Areas for protecting vulnerable marine ecosystems
 - Community effects of fishing
 - Genetic considerations in fishing
 - Indicators matched to Bergen Declaration Objectives
- Advisory FRAMEWORKS for:
 - formulating Ecosystem Objectives
 - selecting Ecosystem Indicators
 - Strategic Environmental Assessments of Fishing
 - Reference points for Ecosystem Indicators

PA framework for ACFM

- Workshops in 1996/7 and 3 follow-up EGs
- Developed the "3-stage model"
 - Limit and PA reference points for F and B
 - closure below B_{limit} ; Fpa above B_{pa}
 - Biological basis for B_{limit} ,
 - Uncertainties determine space to B_{pa}
- Follow-up meetings
 - Update Reference Points
 - Consider regimes, predation effects, etc

WGRED (Feb each year)

- Regional Ecosystem DESCRIPTIONS
- Narrative introduction to each regional advisory package – physics to mammals
- Also IDENTIFY SIGNIFICANT ECOSYSTEM EVENTS IN PAST YEAR
 - Which assessment WG should consider it, and how
 - What other follow-up implications for events

WGOH

- “Oceanographic hydrography”
- Annual report of state of the ocean (physics and chemistry) and research developments, including climate effects
- Have identified 42 different oceanographic products it could produce “annually”
- Process underway to match products to WG groups that could use the products.

WGs on [taxon] Ecology

- Cases include Fish, Seabird, Marine Mammal, Benthic, Zooplankton, Phytoplankton, (some back to 1980s)
- Originally just forum for discussion, research review and planning
- Now get many ToRs to do a task for Assessment WG or WGECO

WG DEC / Deep / New

- Deal with deep-sea habitats (DEC) and species (DEEP), and non-standard species (new)
 - *where* vulnerable marine ecosystems are located
 - *How* to provide them protection
 - *How* to exploit deep-sea non-standard species sustainably
 - DEEP and DEC now usually meet jointly

Expert Groups under Fish Technology Committees

- Some back to 1980s
- Originally gear studies for improving industry performance
- 2000 review of Impact II with WGECO was turning point
- Now substantial work on reducing gear impacts and bycatches
- Symposia about every 3 years

WKFMMPA

- Fisheries Management in Marine Protected areas
 - Prompted by German Natura2000 sites set up ONLY by conservation agency
 - Experiment for ICES in having industry experts in WG exploring implications and options; also mix of fisheries and conservation biology experts
 - Specific to German problem but seeking general principles
- Two addition groups established in 07/08 and likely to become a standing Working Group

WKEFA

- Workshop on methods for including Ecosystem Attributes in assessments and MSEs
- Trying to bring together different strengths of ICES; focused on case histories.
- Feedback to WGOH on products.

Some Other Expert Groups

- Modelling Physical-Biological Interactions
- Integrated Coastal Zone Management
- GOOS; GLOBEC; Cod & Climate change
- Long-term variation of small pelagics
- Recruitment variation in NS planktivorous fish
- GROMAT & PRISM (analytical methods)
- Fisheries Management Strategies
- Mixed fishery management
- Risk Assessment and Management Advice
- Fishery Induced Adaptive Change
- Several INTEGRATED ASSESSMENTS by area (etc)

Some noteworthy advisory conclusions

- Environmental variation dealt with more effectively in Management Strategy than in assessment computations;
- Harvest advice is better from single species models than multispecies models; just update M2 periodically
- Regimes should affect RPs for exploitation by probably NOT for biomass;
- If fisheries are kept within RPs for target species and bycatches, there will no value to community-scale indicators/ RPs;
- There are few **good** Ecosystem Indicators /Objectives for community properties (size based are most promising) and none for spatial pattern of ecological properties;
- Several beliefs about trawl impacts have little empirical evidence (except sedentary and fragile things)
- Good management incentives and modest ecological knowledge much more effective than poor incentives and tons of ecology.