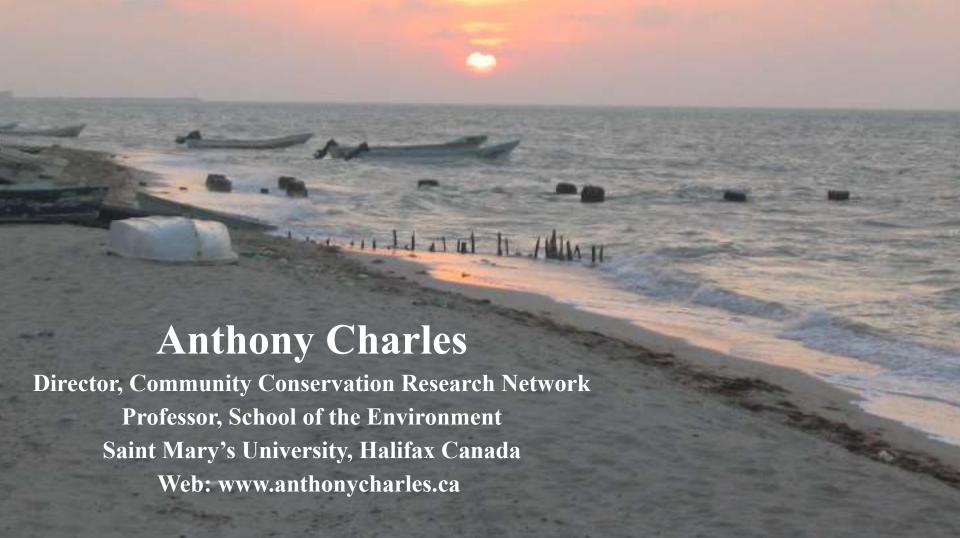
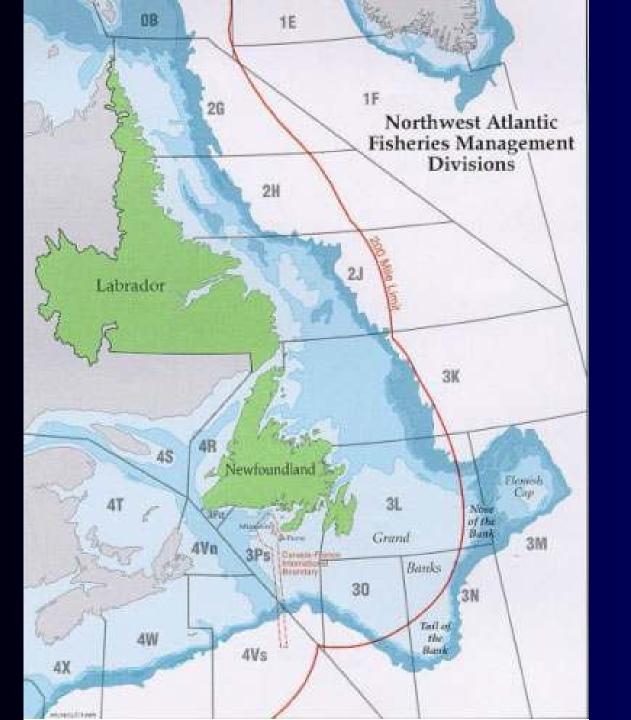
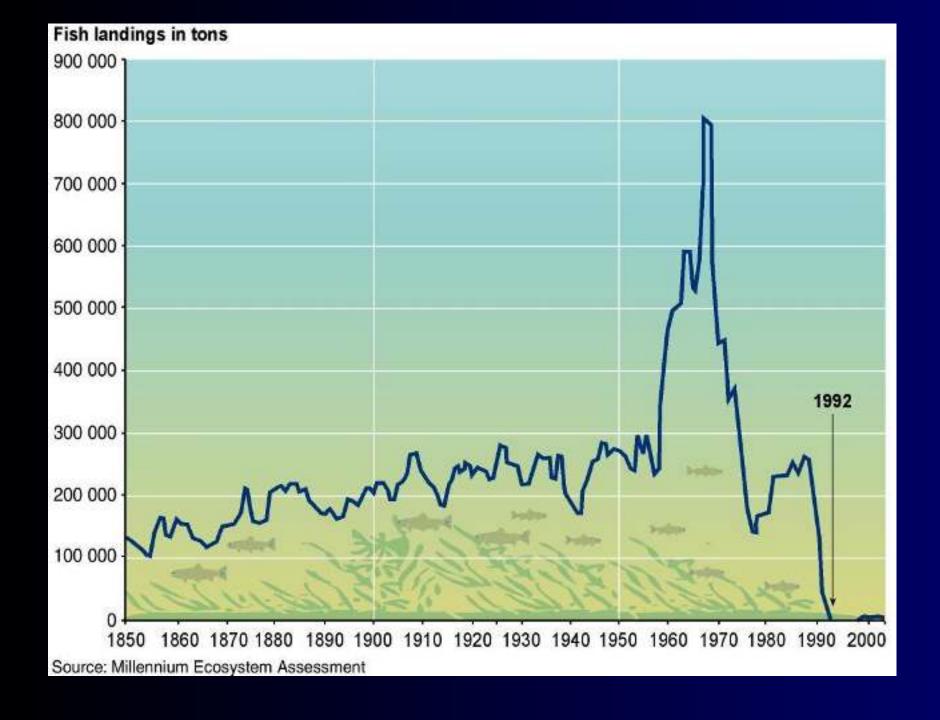
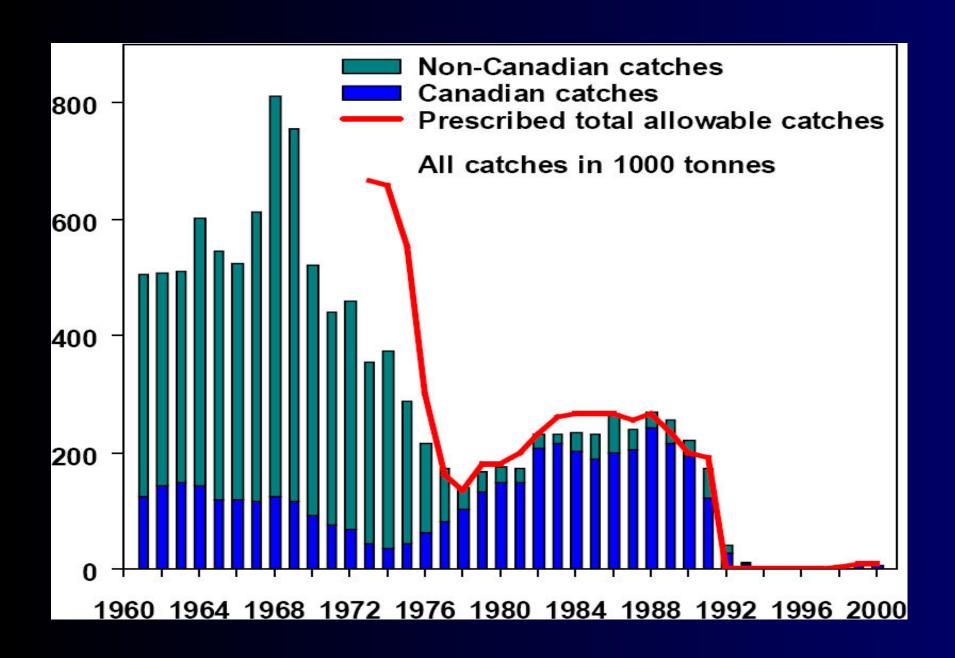
he challenge of governance in marine social-ecological systems











Cod Collapse & Coastal Communities

Coastal communities play a key role in conservation of the ocean.

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Key Ideas in Ocean Governance



1. Values

Intergenerational respect

Importance of place

Valuing community

Building consensus

Food security

Respect for human rights

Healthy & safe ecosystems and communities

Ecological sustainability

Resilience & diversity

2. Objectives

Biological / resource conservation:

- Conservation of fish stocks; Avoid over-fishing
- Enhance biodiversity and ecosystem health

Social / Economic:

- Fish for food, livelihood, profit
- Economic efficiency, rent generation
- Employment, support of coastal communities

Equity:

• Fair distribution of access to fishery resources

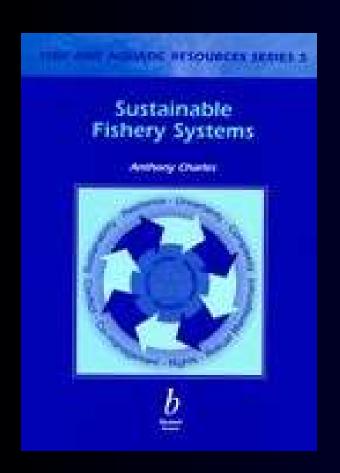
Bio-Socio-Economic Fishery Models: Labour Dynamics and Multi-Objective Management

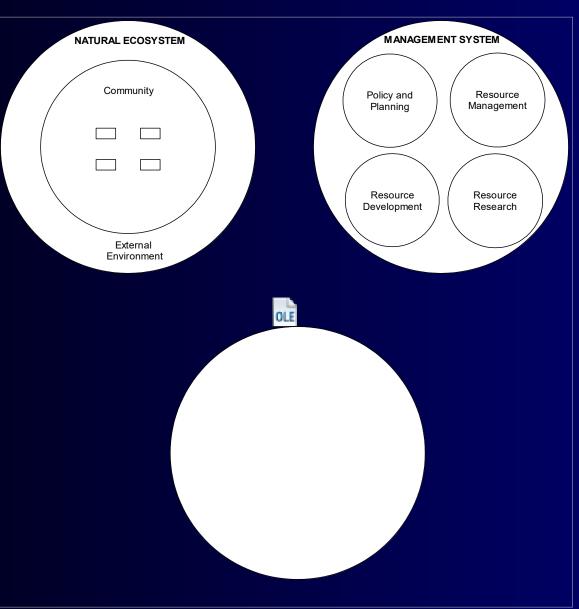
Anthony T. Charles

Department of Finance and Management Science, Saint Mary's University, Halifax, N.S. 83H 3C3

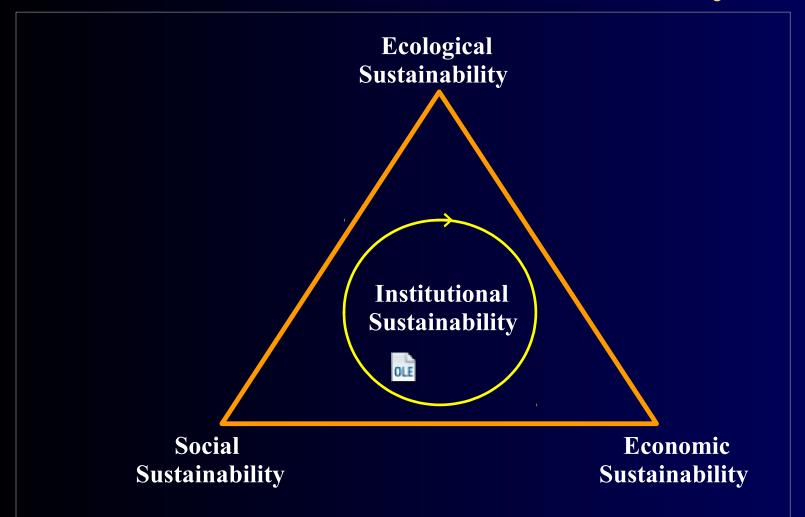
Charles, A.T. 1989. Bio-socio-economic fishery models: labour dynamics and multi-objective management. Can. J. Fish. Aquat. Sci. 46: 1313-1322.

3. Systems





4. Pillars of Sustainability



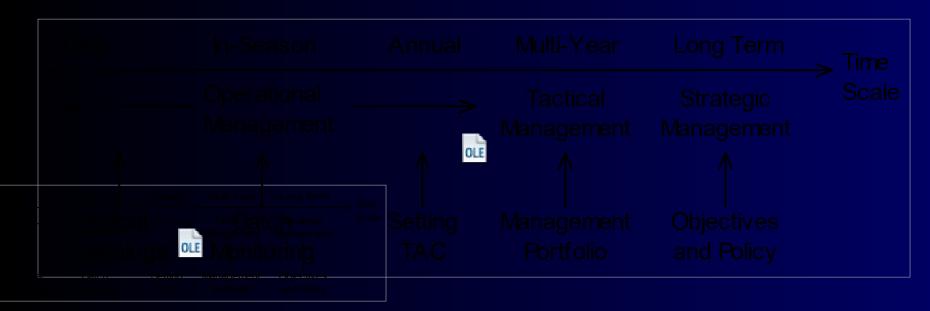
Towards Sustainability: The Fishery Experience. *Ecol. Econ.* 11:201-211 (1994)

5. Resilience

- Resilience is a property of a fishery system implying that all its components (including ecological, human & management) can persist or 'bounce back' following unexpected shocks...
- Ingredients of a resilient fishery...
 - ⇒ Resilient ecosystem
 - Resilient human communities
 - ⇒ Resilient socioeconomic structure
 - ⇒ Resilient management institutions



6. Scale





Global

Regional

National

Local

7. Uncertainty, Complexity & Attitudes

Illusion of Certainty

... a perverse tendency to ignore or downplay major elements of uncertainty, so policy, management and operating practices take place as if the world is certain and predictable.

Fallacy of Controllability

... a perception that more can be known, and more controlled, in fisheries than is realistic, given the realities of imperfect information and imperfect controllability.



8. Rights

Three key forms of rights in rights-based management:

Human rights:

the right to food, livelihood, etc.

Use rights:

...the right to 'use' the fishery, i.e. to access and harvest.

...TURFs, limited entry and community-based rights.

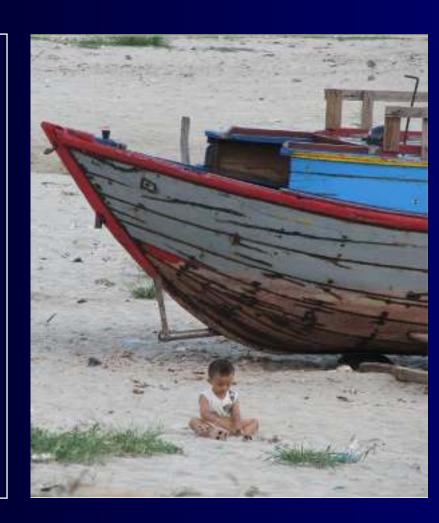
Management rights:

...the right to be involved in management of the fishery.



9. Global Drivers

- 1. Sustainable Development Goals increasing attention to human rights, poverty alleviation, and enhancement of food security & food sovereignty
- 2. Good Governance: to ensure fisheries have secure tenure and management rights to participate in decision-making
- 3. Fish Stock Depletion converges with initiatives for trade reform, leading to active discussion of the nature and role of subsidies in fisheries.
- How do these avenues of fishery debate inter-relate internationally?



10. Interdisciplinarity & Integration



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MEASURING SUSTAINABLE DEVELOPMENT

APPLICATION OF THE GENUINE PROGRESS INDEX TO NOVA SCOTIA

THE NOVA SCOTIA GPI FISHERIES & MARINE ENVIRONMENT ACCOUNTS

A PRELIMINARY SET OF ECOLOGICAL, SOCIOECONOMIC AND INSTITUTIONAL INDICATORS FOR NOVA SCOTIA'S FISHERIES AND MARINE ENVIRONMENT

> Prepared by: Anthony Charles Heather Boyd Amanda Lavers Cheryl Benjamin



MEASURING SUSTAINABLE DEVELOPMENT

APPLICATION OF THE GENUINE PROGRESS INDEX TO NOVA SCOTIA

FISHERIES AND THE MARINE ENVIRONMENT IN NOVA SCOTIA: SEARCHING FOR SUSTAINABILITY AND RESILIENCE

by

Anthony Charles* Chris Burbidge* Heather Boyd Amanda Lavers

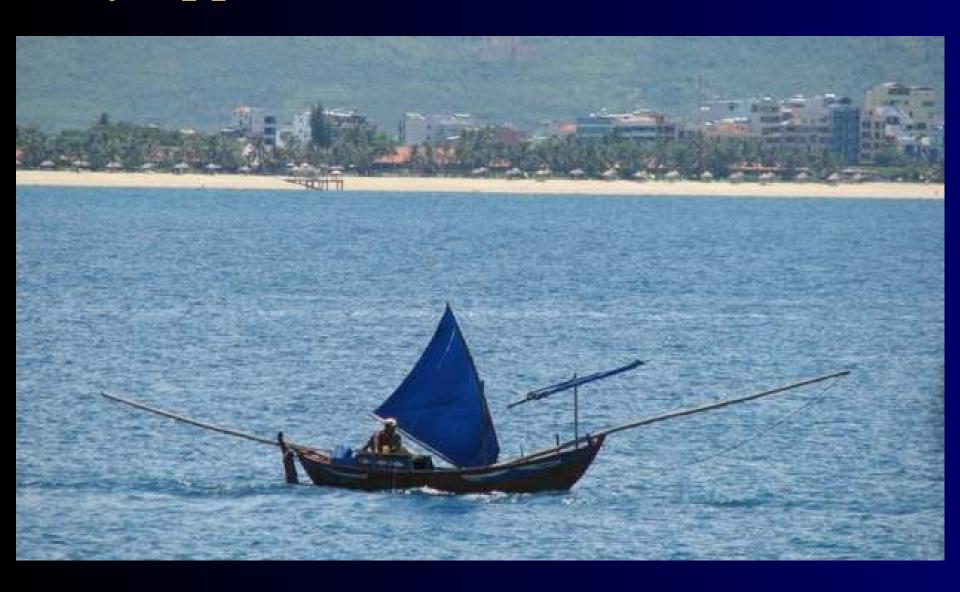
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January 2009

A. Churles, C. Burbidge, H. Boyd and A. Lavers. 2009. Fisherner and the Marine Environment in Nova Scotta: Sourching for Sustainability and Residence. GPI Atlantic. Habitas, Nava Scotta. Web: http://www.grisoflonic.org/pdf/fishernes/falsenes. 2009.pdf.



Key Approaches in Ocean Governance



1. The SDG

SUSTAINABLE GOALS





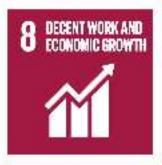


























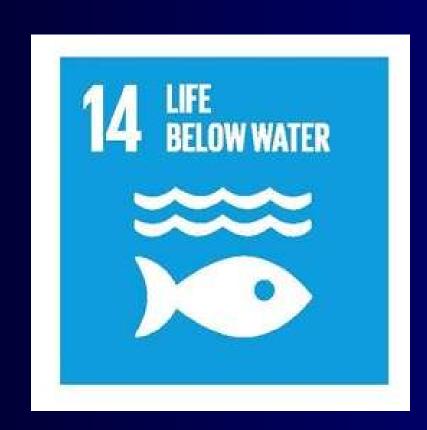






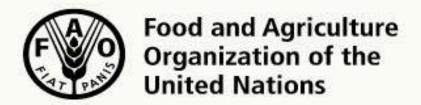
SDG 14

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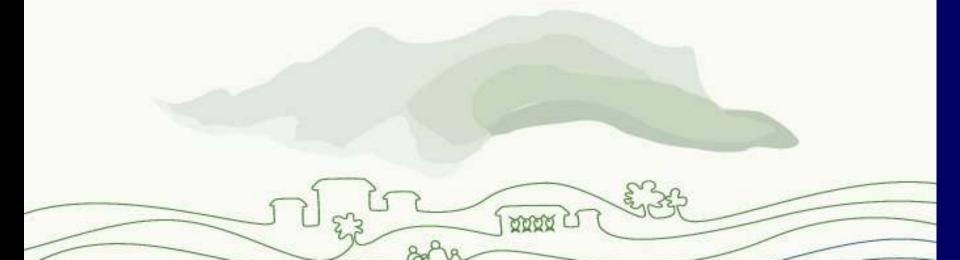
Integration across the SDG

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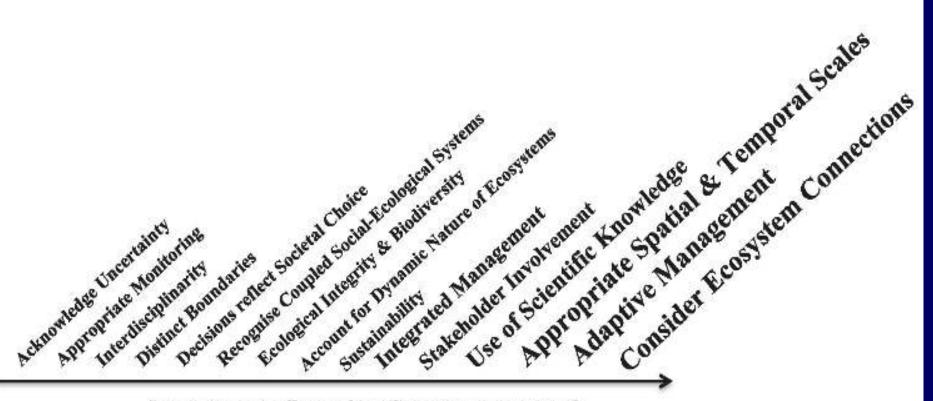
Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries

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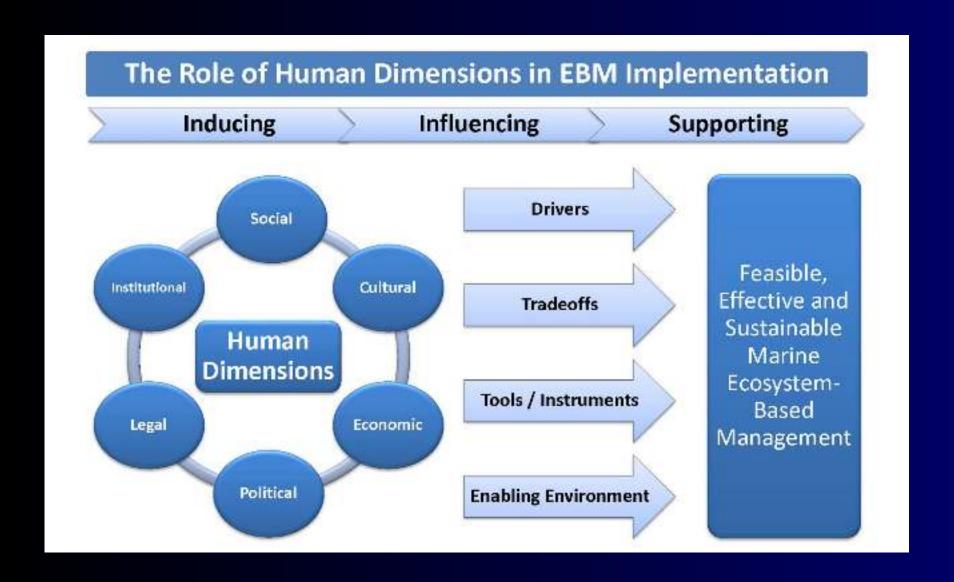


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R.D. Long et al. / Marine Policy 57 (2015) 53-60



Importance (based on literature review)
Low → High

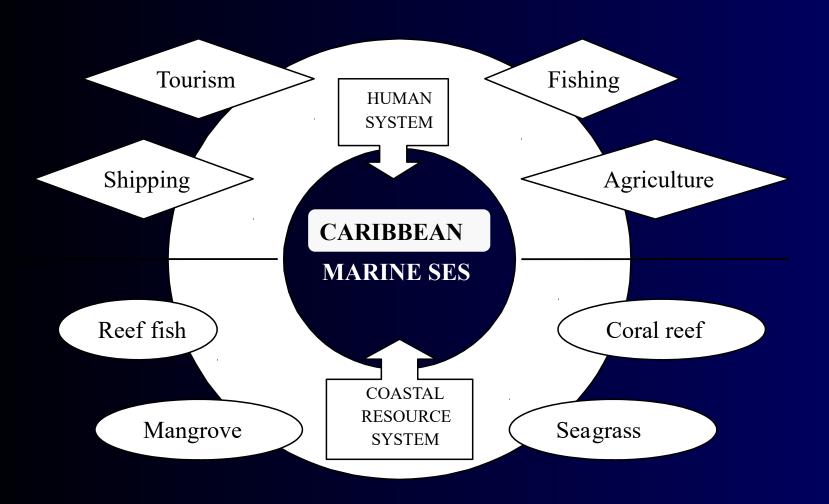


Charles, A. 2014. Human dimensions in marine ecosystem-based management. Marine ecosystem-based management. The sea. Vol. 16. (M.J. Fogarty & J.J. McCarthy, editors) Harvard U. Press. 568p.

3. Integrated Ocean Management

- Integrated holistic approach to managing human uses
- Focus on processes, institutions, Ocean zoning, Marine spatial planning
- Shiretoko World Heritage Site (Hokkaido) Makino et al. (2009)





(with P. McConney, UWI Barbados)

4. Marine Protected Areas

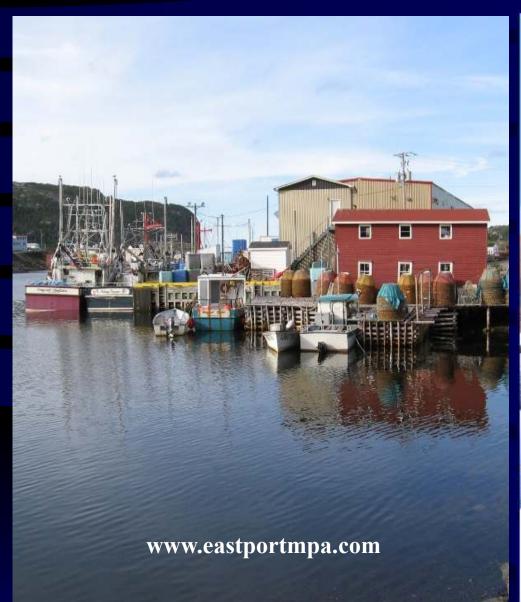
- CBD: "essential tool for conservation & sustainable use"
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AOUATIC CONSERVATION: MARINE AND FRESHWATER ECOSYSTEMS

Aquatic Conserv: Mar. Freshw. Ecosyst. (2016)

Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/aqc.2648

Fishing livelihoods as key to marine protected areas: insights from the World Parks Congress





PEHONICS AND AQUAQUITURE TOO NICAL PARTE

603

Marine protected areas: Interactions with fishery livelihoods and food security











'People Factors' of Successful MPAs

- 1. Find Suitable 'Entry Points'
- 2. Effective Governance is Critical
- 3. Get the Rights Right
- 4. Make Participation Meaningful
- 5. Costs Matter as much as Benefits
- 6. Support Local Communities
- 7. Deal with Displacement
- 8. Shift Underlying Attitudes
- 9. See MPAs in the Bigger Picture
- 10. Knowledge has a 'People Side'

5. Conservation & Stewardship

Governance of Marine Fisheries and Biodiversity Conservation

Interaction and Coevolution

Estind by Serge M. Garcia, Jake Rice and Anthony Charles

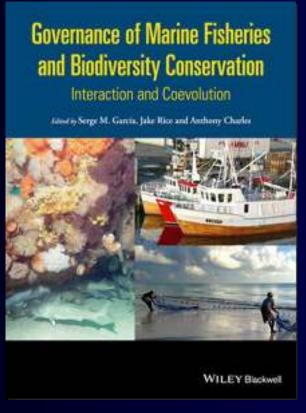


WILEY Blackwell

Streams of Governance

Fisheries
(management)
...FAO, fishery depts,
fisher organizations



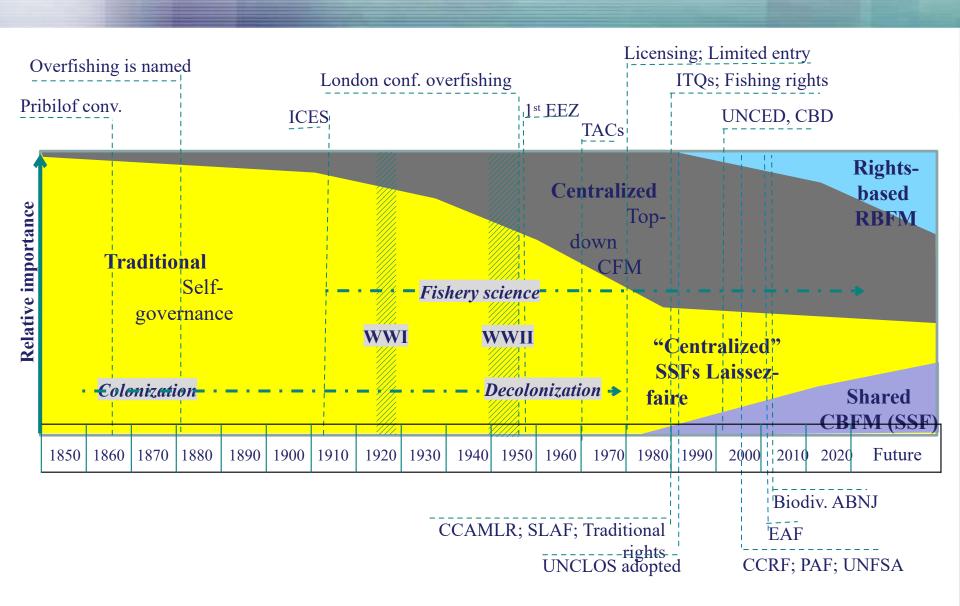




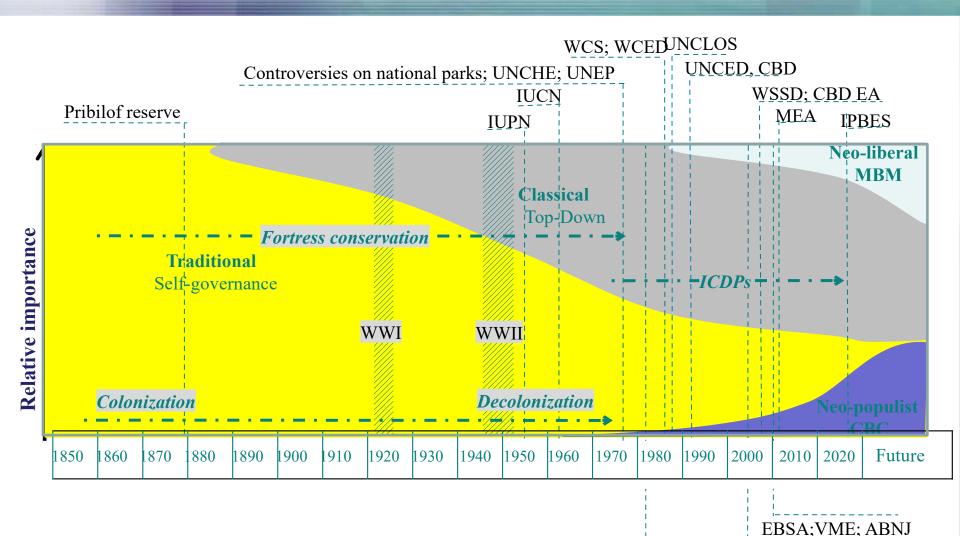
...CBD, environment ministries & ENGOs



Fishery governance trends



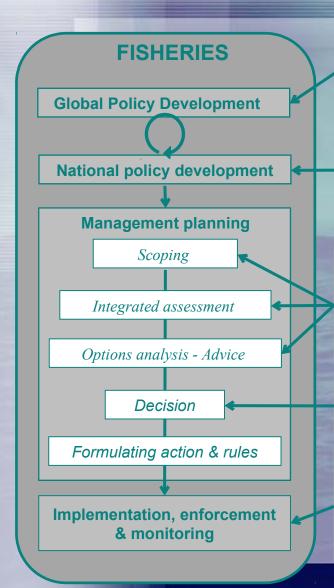
Biodiversity conservation trends



1st MPAs

UNICPOLOS

Integrative instruments



LOSC, UNGA, FAO, CBD

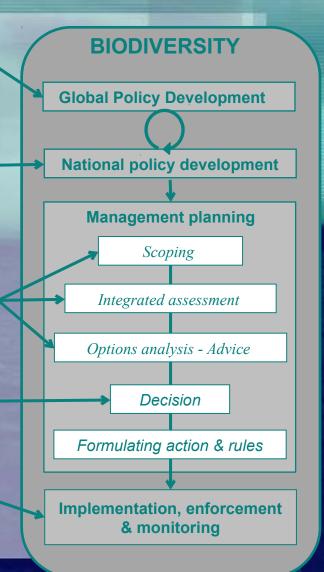
National framework
Institutional bridges
Principles and norms
Good governance
Joint ranking of objectives

EA, MSP
Integrated assessments,
GIS; Multicriteria analysis
Stakeholder analysis

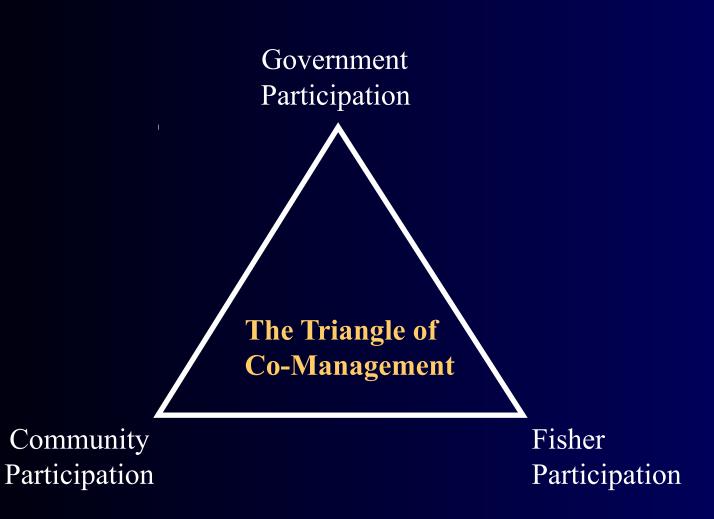
Common mechanism Cost/benefit allocation

Common MCS

Data warehouse
Info systems- Portals
Common indicators



6. Co-Management



Co-management Challenges

- Conflict over boundaries (ecological + human)
- Connecting with policy, legal and institutional realities
- Creating appropriate incentives and rights
- Fitting to the right scale of the system
- Making governance participatory and adaptive.



7. Community-Based Management

Community Fisheries Management Handbook







By Jennifer Graham with Anthony Charles and Arthur Bull

8. Community Role in Conservation

Coastal Communities Saving the Seas

Oceans are so vast, the problems so immense... can one coastal community make a difference? YES!



Anthony Charles

Pew Fellow in Marine Conservation Saint Mary's University Halifax, Nova Scotia Canada tony.charles@smu.ca

Save Money!

Governments and NGOs: in your marine conservation plans, be sure to support plenty of small-scale community-based initiatives. They work well and can save us money...

One Brick at a Time!
Local-level
community-based
conservation is
making a real
difference for ocean
ecosystems!





How do communities protect their environment and sustain their local economy at the same time?

How can governments help local communities?











Nuu-chah-Nulth Nation, Canada





Hishukish ts'awalk

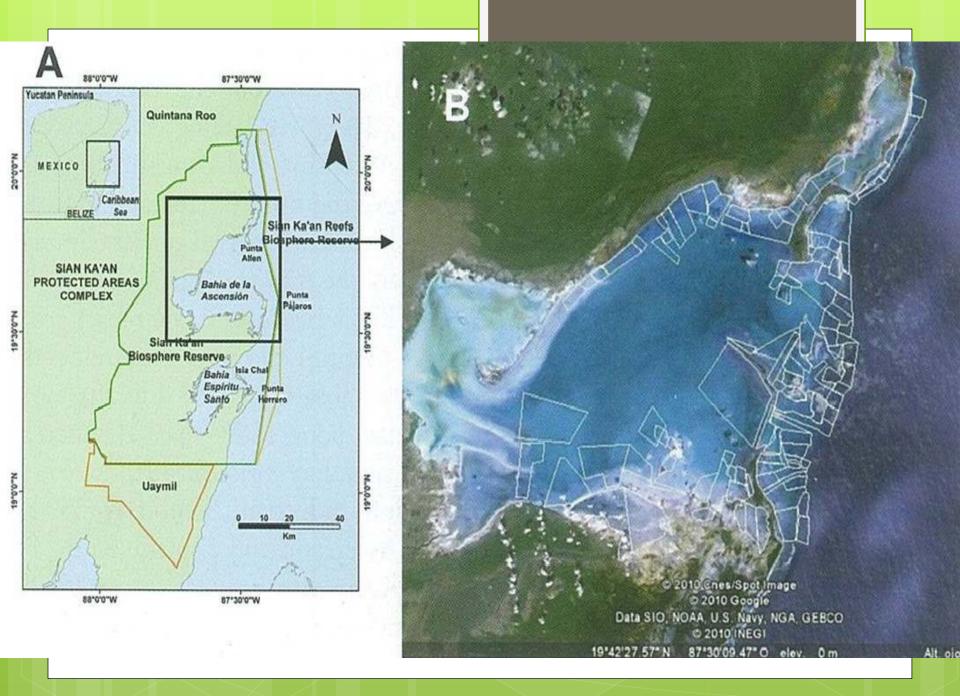
"everything is one, everything is connected"

lisaak

"respect" - caring for everyone and everything















Social Sciences and Humanities Research Council of Canada



Key Messages from the CCRN

- 1. Community conservation essential to livelihoods & economies.
- 2. Involving local communities leads to better sustainability results.
- 3. Excluding communities leads to conflict and management failure.
- 4. Conservation efforts must properly use community knowledge.
- 5. Must learn to 'scale up' and 'scale down' to maximize benefits.

www.CommunityConservation.net

Facebook.com/CommunityConservationResearchNet

Twitter: @CCRN_News



GOVERNING THE COASTAL COMMONS

COMMUNITIES, RESILIENCE AND TRANSFORMATION







DEREK ARMITAGE, ANTHONY CHARLES
AND FIKRET BERKES



Resource Centre

The COTE or system a gallest fearing and recording platform on community bound concernation and broadly. The restaural gas between Continuoday, December 1. Evelineds, Pleas take come time to immore our ever growing recounts which include an interactive Communities in Action may, Community Mortes from around the world, Publications on a uses range of environmental topics, Materials, Village, Radio class, etc.



Community Stories

stories that observable is freely perspective a marginful approach to community conversation A sustainable Evelhoods, within a local even mounted, cultural is political

BROWSE COMMUNITY STORES



Community Conservation Guidebooks

View our community contempation guidebooks. These resources focus un librer servewith Social-Ecological Systems respectively. View these frameworks in PSF of interactive.

SOCIAL ECOLOGICAL SYSTEMS GUIDEBUOK

GOVERNANCE GUIDERDON



The Community Conservation Research Notembro 10 part vestimal series is an in-depth exploration of the therein control to the CORE communities, conservation and hymmiods.

BROWSE WEISINGS VIDEOS



Videos

The following videou and short documentaries are produced by researchers and inquinitations of many forms, all conveying inpur fact margins and experiences on the litikages of Communities, Colorenation and Livelineous.

NEW CORN VIDEOS



Communities in Action

Card-Bala to our growing global database and above the efforts of a local consmanity with this conque, knowledge-themy, without and interactive risig.

EXPLORE OR CONTRIBUTE



Governing the Coastal Commons

An examination of how counted communities adapt to environmental change, approaches to governing the coastal commons, emphasizing a social ecological systems. perspective, and the role of resilience and transformation

HEAD BOOKLET

Communities in Action

A World of Communities, Conservation & Livelihoods

Around the world, local communities are working hard to keep their environment healthy and their economy and livelihoods sustainable.

What is "Communities in Action"?

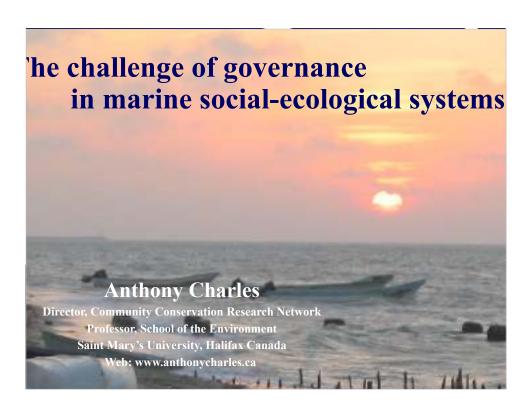
An online initiative to showcase these experiences of local communities working to protect their environment and their livelihoods.

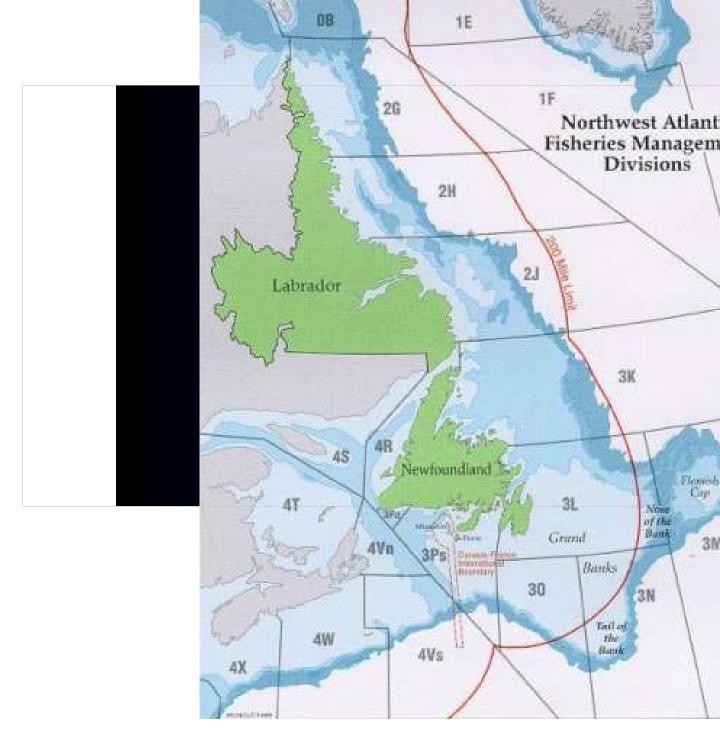
An interactive map highlighting the global extent of community conservation.



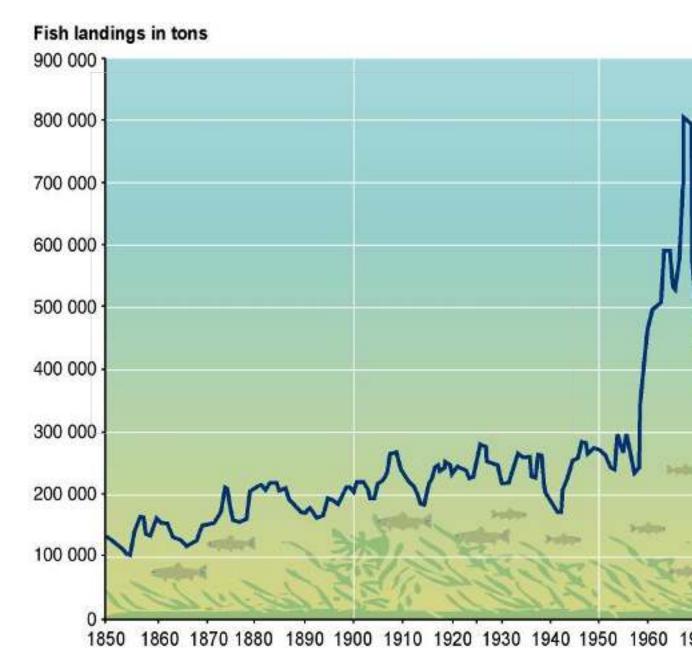
To submit a community story to Communities in Action, go to:



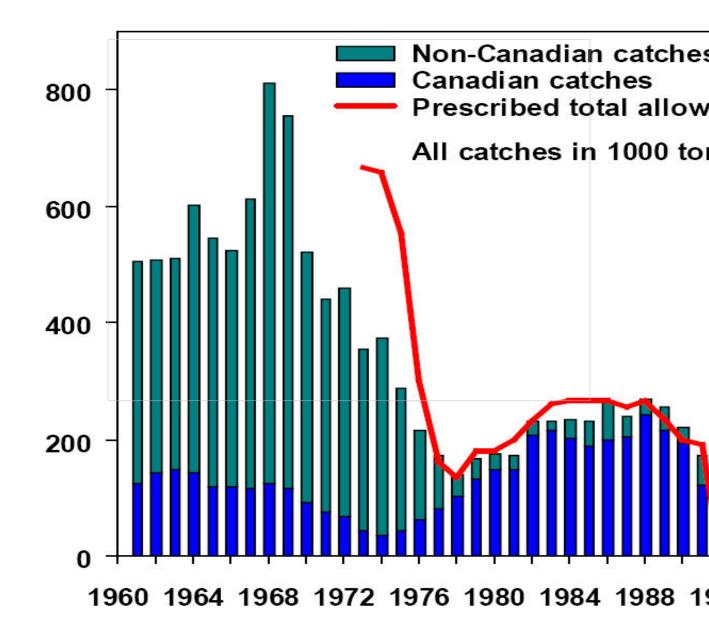








Source: Millennium Ecosystem Assessment



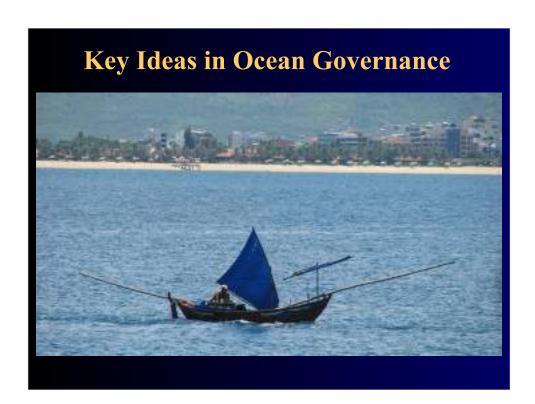
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2. Objectives

Biological / resource conservation:

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Social / Economic:

- Fish for food, livelihood, profit
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- Employment, support of coastal communities

Equity:

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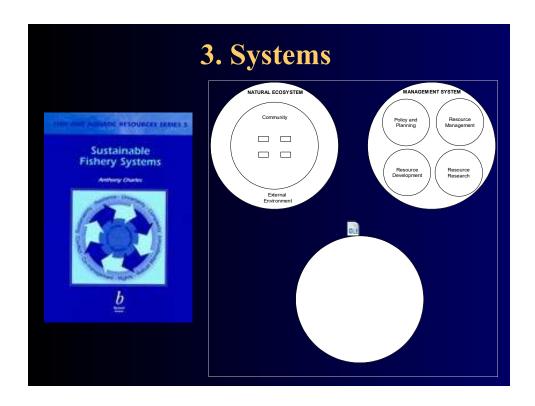
Bio-Socio-Economic Fishery Models: Labour Dynamics and Multi-Objective Management

Anthony I. Charles

Department of Federal and Marine and Superior Interprets Statesting, Plants, NJ 20112CO

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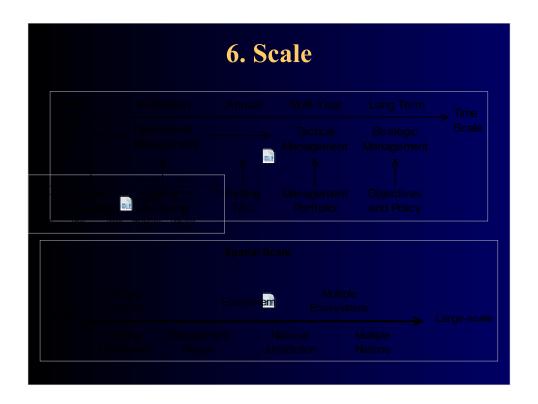




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... a perverse tendency to ignore or downplay major elements of uncertainty, so policy, management and operating practices take place as if the world is certain and predictable.

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... a perception that more can be known, and more controlled, in fisheries than is realistic, given the realities of imperfect information and imperfect controllability.



8. Rights

Three key forms of rights in rights-based management:

Human rights:

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- ...the right to 'use' the fishery, i.e. to access and harvest.
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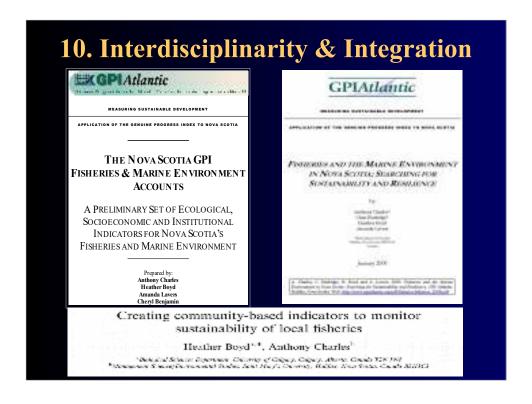
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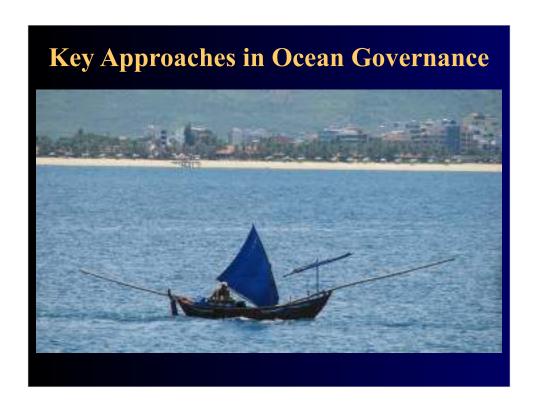
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- 3. Fish Stock Depletion converges with initiatives for trade reform, leading to active discussion of the nature and role of subsidies in fisheries.
- How do these avenues of fishery debate inter-relate internationally?





- "Win-win" is often a policy trump cards: everybody wins
- "Win-win" can only be, in reality, a sort of Nash equilibrium, balancing losses and gains.
- Real "win-win" solutions are hard to find if more than 2 dimensions are considered. For example: protection vs use; ecology vs socioeconomy; LSF vs SSF; Fisheries vs other sectors? Producers vs consumers;
- "Win-win" hides hard trade-offs and some losses to some parties
- Blue economy is sold as a win-win factory.
 In most cases it looks at 2 dimensions. It
 pretends to conserves resources while



1. The SDG SUSTAINABLE GOOD FEATTH 2 ZERO HUNGER 3 GOOD HEALTH AND WELL-BEING 4 QUALITY EDUCATION 8 DECENT WORK AND ECONOMIC GROWTH 9 INDUSTRY, INNOVATION 10 REDUCED INEQUALITIES

SDG 14

- "Conserve and sustainably use the oceans, seas and marine resources".
- Who is to benefit from "conserving" and who can make a living from the

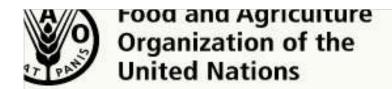
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R.D. Long et al. / Marine Policy 57 (2015) 53-60

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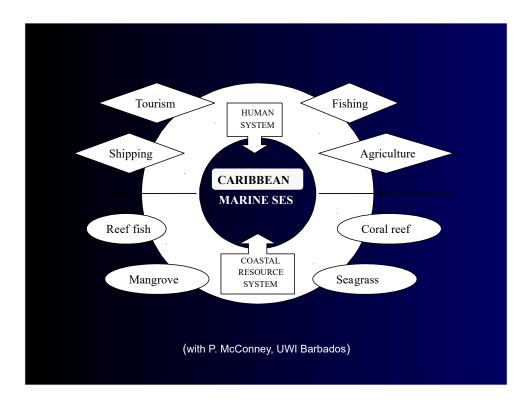
The Role of Human Dimensions in EBM Implen

Inducing Influencing Sup **Drivers** Social Institutional Cultural Tradeoffs Human (M.J. Foo s) Harvard U. lools / Instruments Legal Economic Finally, the book has looked mainly at the interaction between capture fisheries nvironment and conservation. However, that interaction occurs in a more complex system of cross sectoral interactions the impact of which on fisheries in the near future may be more important than what we have discussed in the book. All the recent policy documents point to the Ocean being the Last Frontier for development, disguised as blue growth. In the cataclysmic invasion of the ocean environment by land-based industries that seem to have exhausted their potential for expansion on land, fisheries will be one of the weakest sectors

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- Integrated holistic approach to managing human uses
- Focus on processes, institutions, Ocean zoning, Marine spatial planning
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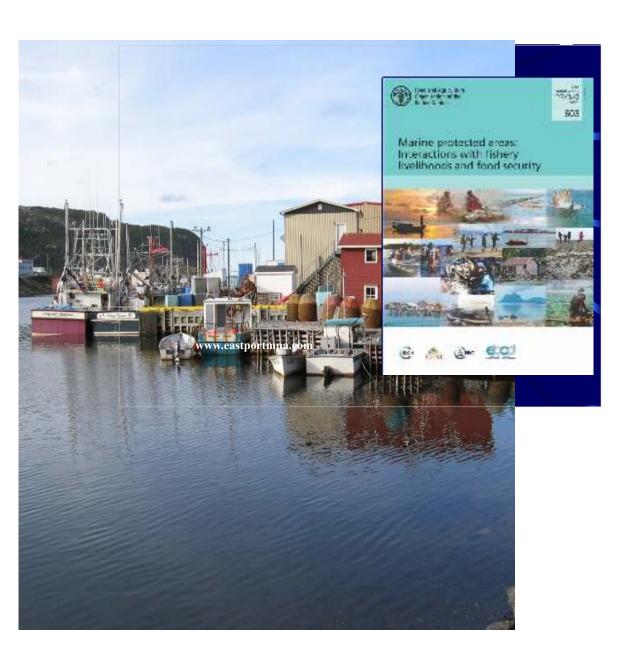


4. Marine Protected Areas

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AQUALL CONSERVATION MADINE AND PRESENTATION ECOSYSTEMS
Again Content May Right Short (2015)
Application on the West Order Unitary
(6-leye fine form) and DOI: 0.000741.0348

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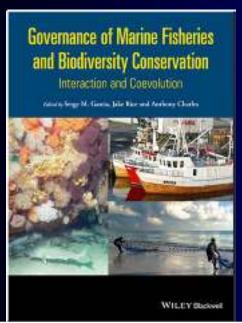


'People Factors' of Successful MPAs

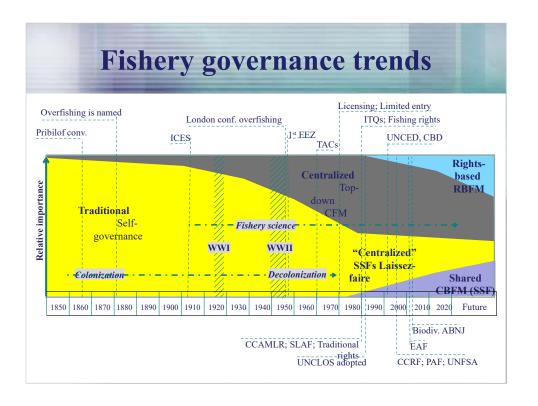
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- 7. Deal with Displacement
- 8. Shift Underlying Attitudes
- 9. See MPAs in the Bigger Picture
- 10. Knowledge has a 'People Side'

Charles, A. and L. Wilson (2009) Human dimensions of Marine Protected Areas. *ICES Journal of Marine Science* 66: 6-15.

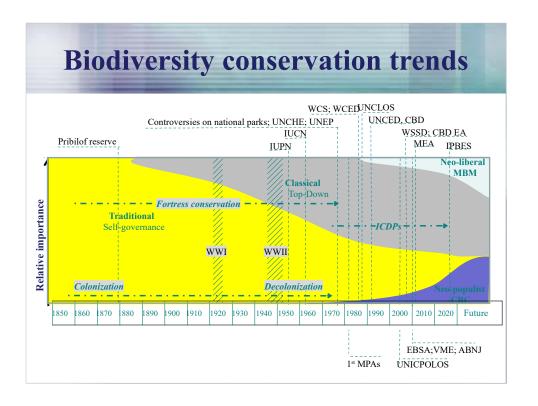
5. Conservation & Stewardship





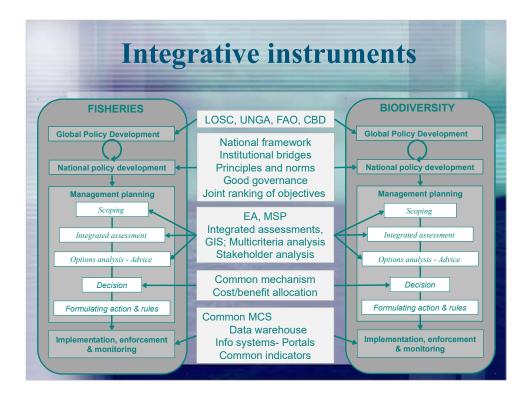


The level of convergence achieved is exemplified by the evolution of governance approaches in both streams.



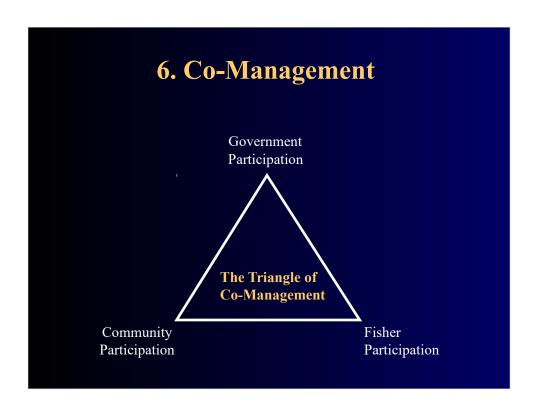
With minor differences in timing, the significance of which cannot be assessed, and with differences in the name given to the approaches, the sequence of the governance modes is very similar in the biodiversity stream. Considering the lack of coordination between the two streams for decades, this similarity can only be a striking example of convergence, forced in by ambient changes in understanding and overarching regulatory and policy frameworks. Colonization and globalization process have been powerful homogenizing factors. 16.2030 16.50

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Numerous **integrative instruments** of a legal, institutional, procedural and methodological nature exist and I will not describe then here. I will only stress that the decision-making processes advocated in both governance streams are similar and open large opportunities to use common databases and similar tools, increasing the opportunities for active collaboration of the two streams. Common scientific assessments would represent a major leap forward.

[THIS AGAIN IS A NICE DIAGRAM THAT COULD GO IN CH 29] 18:40 30' 19:10



Co-management Challenges

- Conflict over boundaries (ecological + human)
- Connecting with policy, legal and institutional realities
- Creating appropriate incentives and rights
- Fitting to the right scale of the system
- Making governance participatory and adaptive.



7. Community-Based Management

Community Fisheries Management Han





By Jennifer Graham with Anthony Charles and Arthur Bull

8. Community Role in Conservation

Coastal Communities Saving the Seas

Oceans are so vast, the problems so immense... can one coastal community make a difference? YES!

Anthony Charles

Pew Fellow in Marine Conservation Saint Mary's University Halifax, Nova Scotia Canada tony.charles@smu.ca

Save Money!

Governments and NGOs: in your marine conservation plans, be sure to support plenty of small-scale community-based initiatives. They work well and can save us money...

One Brick at a Time! Local-level community-based conservation is making a real difference for ocean ecosystems!

















Many Nuu-chah-nulth communities are in remote areas along the coast

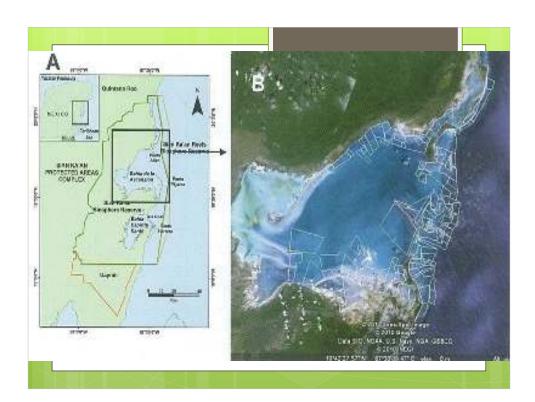


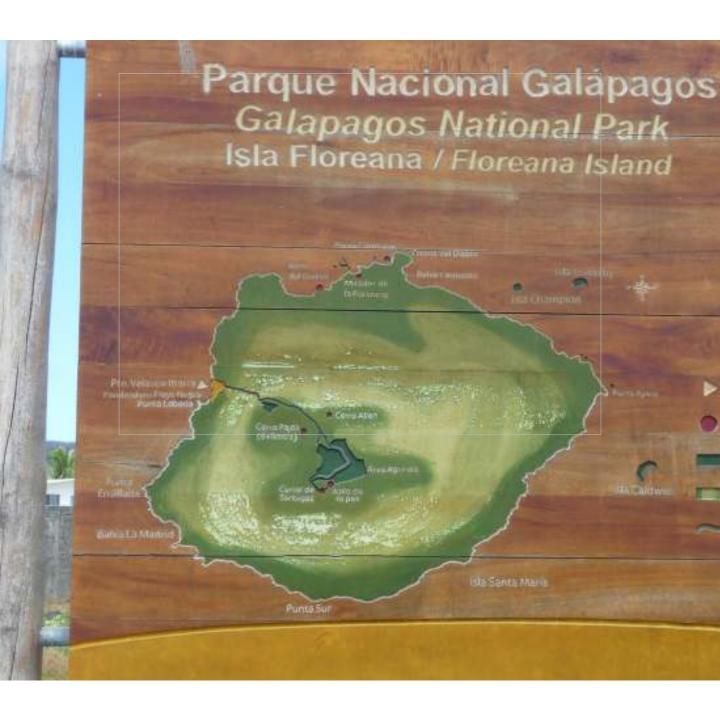
Whalers Island in Clayoquot Sound



















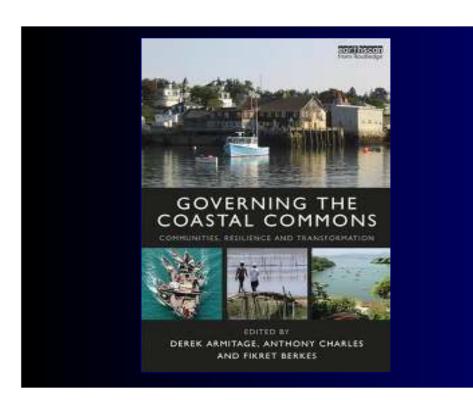
Key Messages from the CCRN

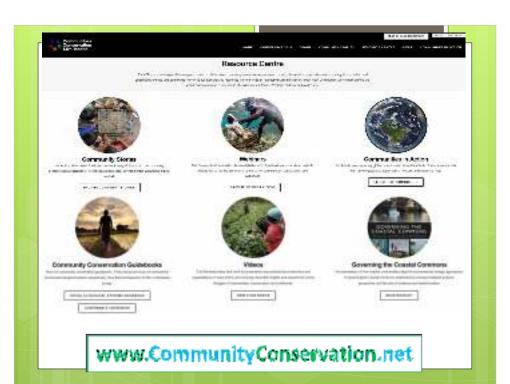
- 1. Community conservation essential to livelihoods & economies.
- 2. Involving local communities leads to better sustainability results.
- 3. Excluding communities leads to conflict and management failure.
- 4. Conservation efforts must properly use community knowledge.
- 5. Must learn to 'scale up' and 'scale down' to maximize benefits.

www.CommunityConservation.net

Facebook.com/CommunityConservationResearchNet

Twitter: @CCRN_News





Communities in Ac

A World of Communities, Conservation & I

Around the world, local communities are working has environment healthy and their economy and livelihoo



"Communities in Action"?
To submit a community story to

wea Communities in Action, go to: f local communi www.CommunityConservation.net livelihoods.

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