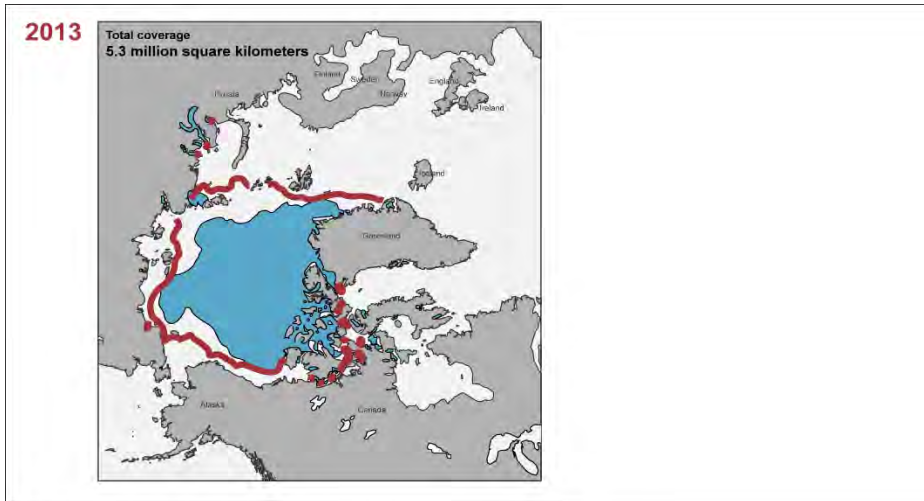


Multilevel Fragmentation in Arctic Offshore Drilling Regulation

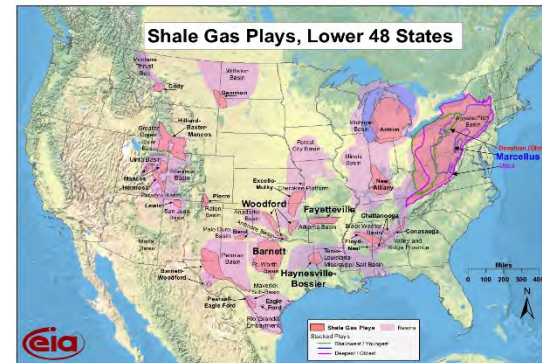
An Assessment of Governance Challenges and Proposed Solutions



Source: National Snow and Ice Data Center.



<http://blog.usnavyseals.com/2010/08/former-navy-seal-works-in-oil-spill-cleanup.html>



Source: Energy Information Administration based on data from various published sources. Updated: March 10, 2011.

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An Assessment of Governance Challenges and Proposed Solutions

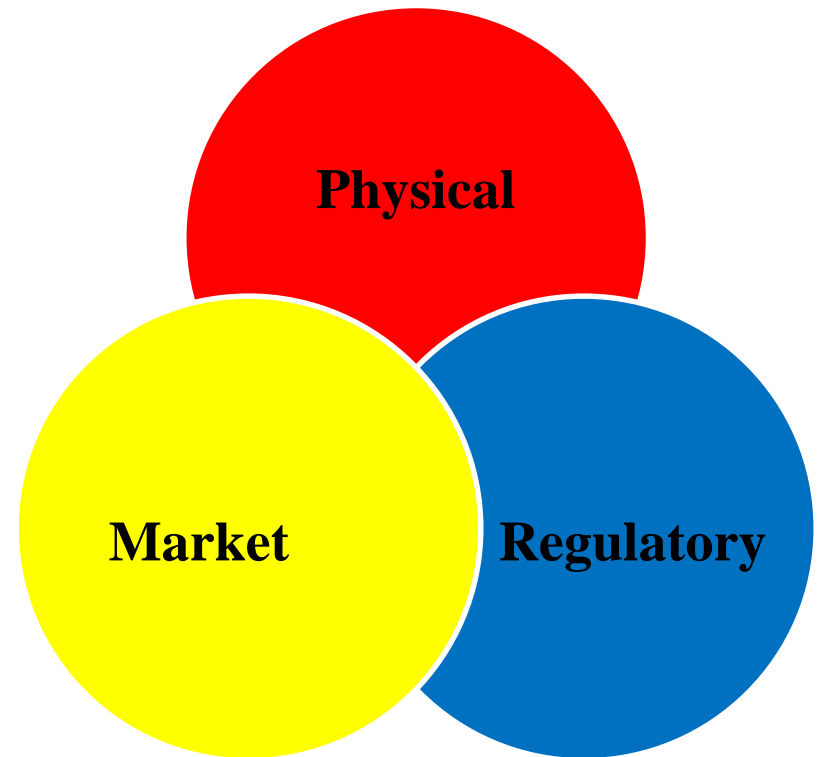
Map of Talk

I. Arctic Offshore Drilling: Drivers and Challenges

II. Multilevel Regulatory Approaches to Arctic Offshore Drilling

III. Core Governance Challenges: Lessons from the BP *Deepwater Horizon* Oil Spill

IV. Towards More Effective Governance

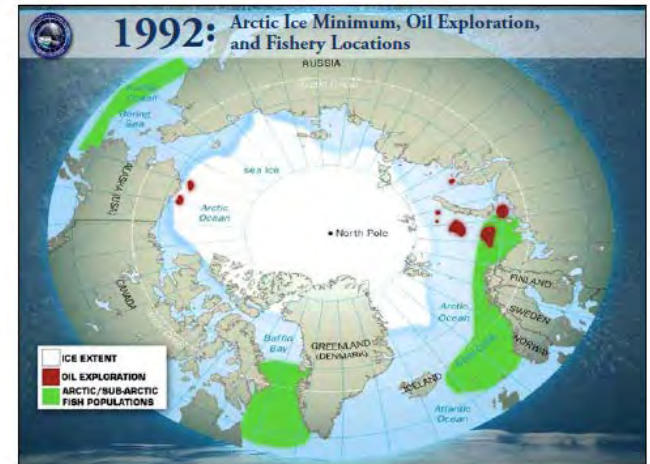


Multilevel Fragmentation in Arctic Offshore Drilling Regulation

An Assessment of Governance Challenges and Proposed Solutions

I. Arctic Offshore Drilling: Drivers and Challenges

A. Climate Change Opens New Possibilities for Meeting Demand



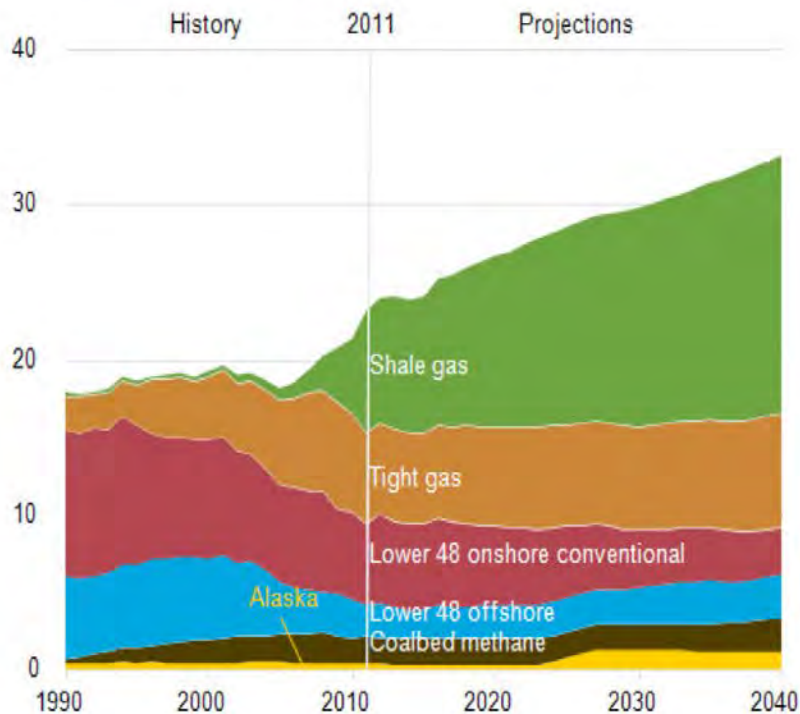
Multilevel Fragmentation in Arctic Offshore Drilling Regulation

An Assessment of Governance Challenges and Proposed Solutions

I. Arctic Offshore Drilling: Drivers and Challenges

B. Technological Opportunities in Unconventional Energy

Figure 91. Natural gas production by source, 1990-2040 (trillion cubic feet)



Market Implications of Physical Risks



Multilevel Fragmentation in Arctic Offshore Drilling Regulation

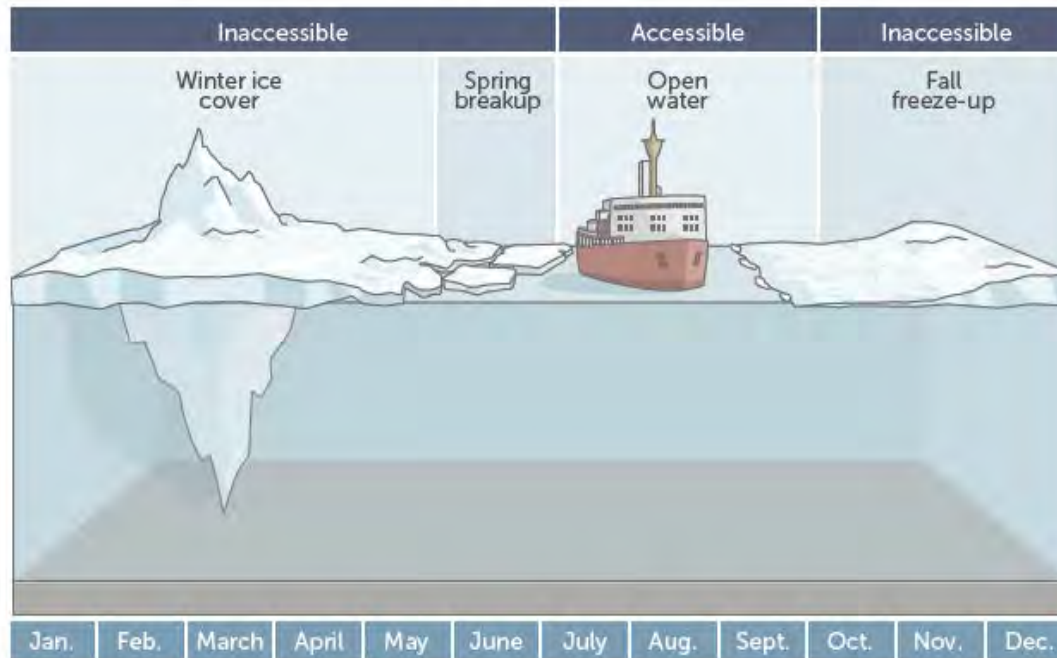
An Assessment of Governance Challenges and Proposed Solutions

I. Arctic Offshore Drilling: Drivers and Challenges

C. Constraints on Operations

Arctic Seasonal Drilling Limits

Icy conditions reduce the efficacy of oil spill response most of the year



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Pew Center Report (Sept 2013)



U.S. Coast Guard Arctic Strategy (May 2013).

Arctic Melting and Unconventional Energy

Multi-Level Governance Challenges at the Mitigation-Adaptation Interface

I. Arctic Offshore Drilling: Drivers and Challenges

D. Difficulties for Spill Clean Up

Seasonal Constraints to Cleaning Up an Arctic Oil Spill

The symbols show the approximate operating limits for mechanical oil removal and burning of spilled oil under various concentrations of ice and weather conditions

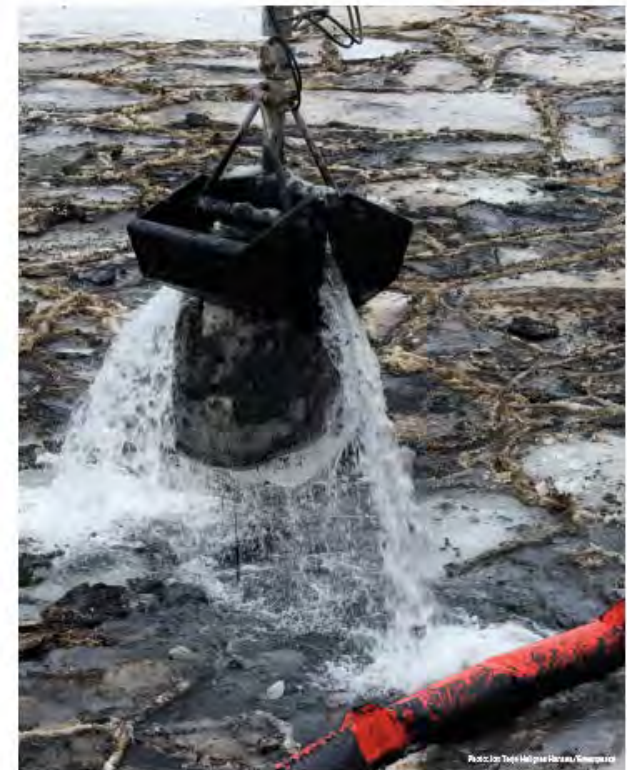
Limiting Factor	Ice Coverage						Wind			Wave Height			Visibility		
	Oil spilled on top of ice or among ice					Oil spilled under solid ice	0-20 mph	21-35 mph	>35 mph	<3 ft.	3-6 ft.	>6 ft.	High	Moderate*	Low†
	<10%	11%-30%	31%-70%	>70%	Solid ice 100%										
Mechanical recovery with no ice management	○	×	×	×	✓	×	✓	○	×	✓	○	×	✓	○	×
Mechanical recovery with ice management	✓	○	×	×	✓	×	✓	○	×	✓	○	×	✓	○	×
In-situ burning	✓	○	×	○	✓	×	✓	×	×	✓	○	×	✓	○	×

✓ Favorable response conditions ○ Response hindered × Response ineffective

* Moderate visibility is light fog or visibility of less than a mile. † Low visibility is heavy fog, less than a quarter mile of visibility, or darkness.

Source: Nuka Research and Planning Group

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The presence of ice hindered cleanup efforts when the Icelandic container ship Godafoss ran aground and started leaking heavy oil in the Ytre Hvaler Marine National Park in southern Norway in February 2011.

From Pew Center Report (Sept 2013)

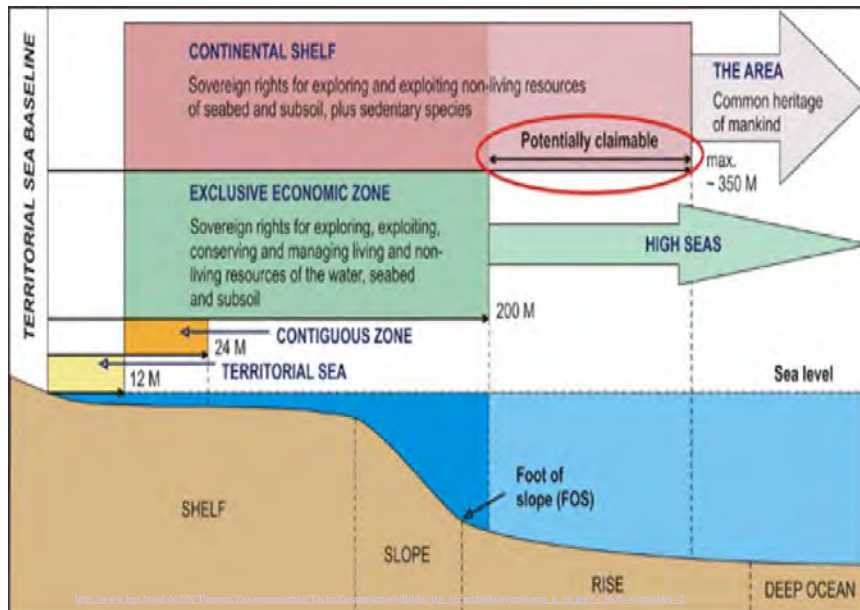
Multilevel Fragmentation in Arctic Offshore Drilling Regulation

An Assessment of Governance Challenges and Proposed Solutions

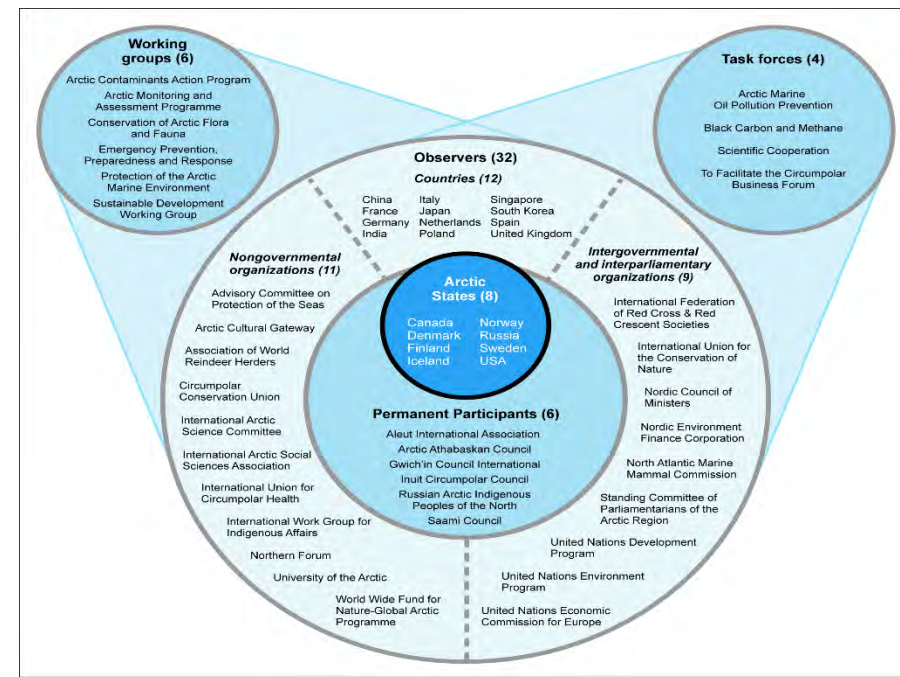
II. Multilevel Regulatory Approaches to Arctic Offshore Drilling

A. International Level Law and Institutions

United Nations Convention
on the Law of the Sea (UNCLOS)



Arctic Council



Source: GAO analysis of Arctic Council information.

State Sovereignty over Natural Resources

Multilevel Fragmentation in Arctic Offshore Drilling Regulation

An Assessment of Governance Challenges and Proposed Solutions

II. Multilevel Regulatory Approaches to Arctic Offshore Drilling

B. Multi-Level Legal Interactions Among Diverse Stakeholders

Exhibit B: Current Governance Framework for Offshore Oil & Gas Activities in the Arctic (Selected Instruments and Organizations)



Source: Adapted from Steve Walker and Jan de Jong, "The involvement of IRF in setting standards and best practices," International Regulators Forum, Summit Conference, Stavanger, Norway, 4/5 October 2011.

Note: Graphic does not depict all efforts, instruments or entities, rather selected, main governance mechanisms relevant for the Arctic. In addition, these mechanisms may be binding or voluntary. There is also considerable inter-action and coordination amongst these mechanisms.

From Brookings Institute Report, Offshore Oil and Gas Governance in the Arctic

Multilevel Fragmentation in Arctic Offshore Drilling Regulation

An Assessment of Governance Challenges and Proposed Solutions

II. Multilevel Regulatory Approaches to Arctic Offshore Drilling

C. The Complexities of the International-Domestic Interface

U.S. Federal Agency Leads in Arctic Council



Multilevel Fragmentation in Arctic Offshore Drilling Regulation

An Assessment of Governance Challenges and Proposed Solutions

II. Multilevel Regulatory Approaches to Arctic Offshore Drilling

D. Fragmentation of U.S. Law Applicable to Offshore Drilling

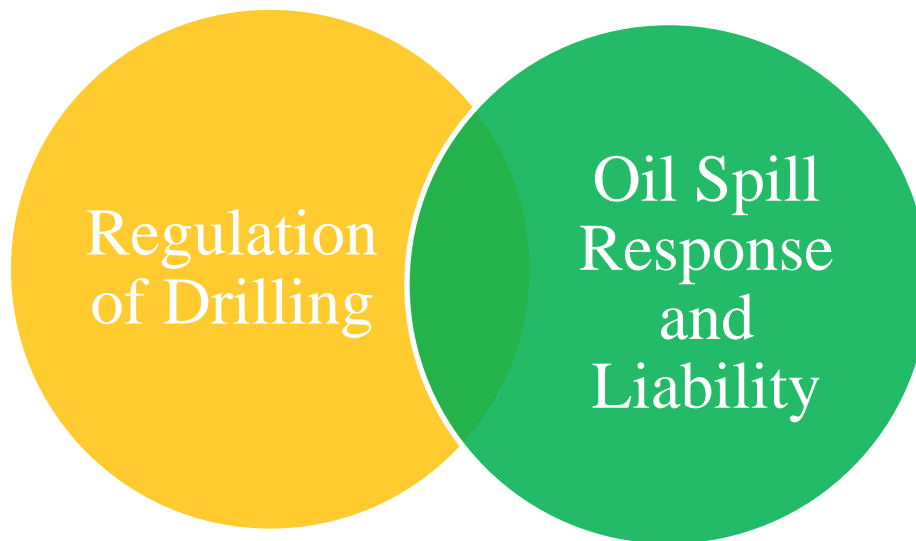
Vertical **Horizontal** **Direction of Hierarchy** **Cooperativeness** **Public-Private**

--Outer
Continental Shelf
Lands Act

--Coastal Zone
Management Act

--State Contract
Law as Federal
Law

--Property Law



--National Oil and
Hazardous
Substances Pollution
Contingency Plan
(created by multiple
federal laws)

--Clean Water Act

--State Mini-OPAs

--Tort Law

Multilevel Fragmentation in Arctic Offshore Drilling Regulation

An Assessment of Governance Challenges and Proposed Solutions

III. Core Governance Challenges: Lessons from the BP *Deepwater Horizon* Oil Spill

A. Causes of BP Spill and Implications for Arctic Context



Multilevel Fragmentation in Arctic Offshore Drilling Regulation

An Assessment of Governance Challenges and Proposed Solutions

III. Core Governance Challenges: Lessons from the BP *Deepwater Horizon* Oil Spill

B. Key Issues for Current Regulatory Efforts to Address

1. Diversity of Stakeholders

3. Physical Constraints



http://image.minyanville.com/assets/FCK_Jan2011/images/Joel%20Wolonic/Arcctic-oil-campaign2.jpg

2. Fragmentation of Governance Arrangements

4. Danger of Private Capture of Public Interests

Multilevel Fragmentation in Arctic Offshore Drilling Regulation

An Assessment of Governance Challenges and Proposed Solutions

IV. Towards More Effective Governance

A. Assessing Plans and Proposals: Selected Examples

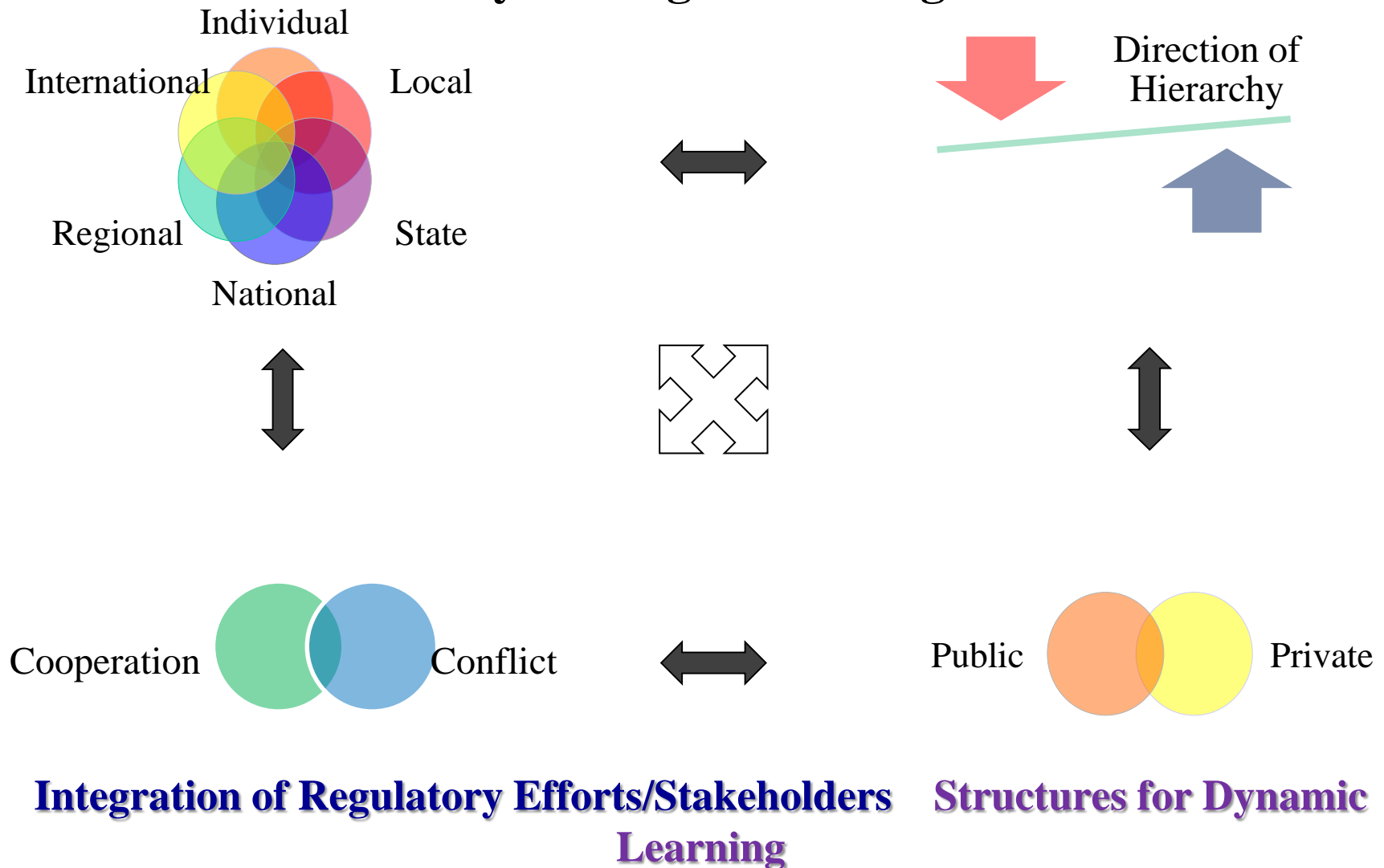
U.S. & Alaskan Government	Indigenous Peoples	Industry/Standard Setting	Think Tanks/NGOs/Universities
National Strategy for Arctic Region	Permanent Participants on Arctic Council with Alaskans (4 of 6): Arctic Athabaskan Council, Aleut International Association, Gwich'in Council International, Inuit Circumpolar Council	American Petroleum Institute	Pew Charitable Trusts
Department of Interior: BSEE & BOEM	Inuit Circumpolar Council Arctic Policy and Resolutions	International Oil and Gas Producers Association	Brookings Institute
Coast Guard Arctic Strategy	Corporations	Joint Industry Program	Center for New American Security
Navy Arctic Roadmap	Co-Management Arrangements: e.g., Prince William Sound Regional Citizens' Advisory Council; Nunavut Wildlife Management Board	IPIECA: Oil Spill Response in the Arctic Task Force	World Wildlife Fund
Department of Defense Arctic Strategy		International Organization for Standardization: Subcommittee 8 on Arctic Operations	Center for Strategic & International Studies
GAO Report to Congressional Requesters on U.S. Arctic Council Participation		Collaborations with Indigenous Peoples/Govt	Harvard Law School's Emmett Environmental Law and Policy Clinic
Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska			
Alaska Department of Natural			

Multilevel Fragmentation in Arctic Offshore Drilling Regulation

An Assessment of Governance Challenges and Proposed Solutions

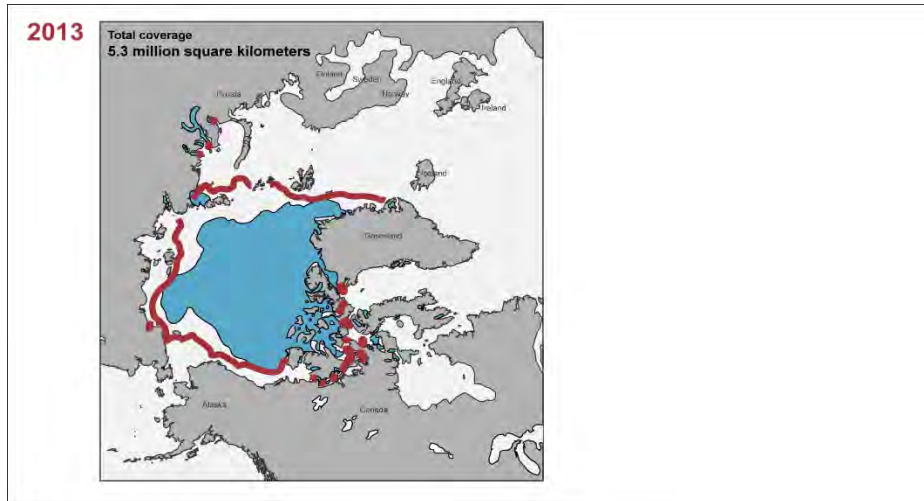
IV. Towards More Effective Governance

B. Key Strategies for Progress



Multilevel Fragmentation in Arctic Offshore Drilling Regulation

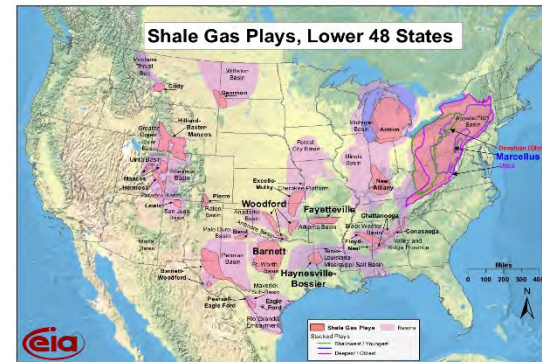
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Source: National Snow and Ice Data Center.



<http://blog.usnavyseals.com/2010/08/former-navy-seal-works-in-oil-spill-cleanup.html>



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