

2011 West Coast Forum
COASTAL & MARINE SPATIAL PLANNING
AND THE ROLE OF REGIONAL FISHERY MANAGEMENT COUNCILS IN
MULTI-SECTOR SPATIAL PLANNING

YELLOWSTONE COAST CASE STUDY
TEACHING GUIDE TO EXERCISES

The Fisheries Leadership & Sustainability Forum (Fisheries Forum) developed this case study for the September 2011 West Coast Forum on the topic of Coastal & Marine Spatial Planning, and the Role of Regional Fishery Management Councils in Multi-Sector Spatial Planning. The case study is intended to help fishery managers merge existing knowledge and experience with new ideas and skills derived from the 2011 West Coast Forum curriculum. This exercise is part of a larger learning module available on the Fisheries Forum website (www.fisheriesforum.org).

The following teaching guide provides example responses and additional prompts for the exercises associated with the Yellowstone Coast Case Study. The *Yellowstone Coast Case Study Teaching Guide to Exercises* is the third of three documents that comprise the 2011 West Coast Forum Case Study materials:

Yellowstone Coast Case Study Scenario and Discussion Document
Yellowstone Coast Case Study Exercises
Yellowstone Coast Case Study Teaching Guide to Exercises

The fictional scenario presented in Yellowstone Coast case study is intended to provide a platform for thought and reflection, rather than lead the reader to specific conclusions. Thus, the teaching guide is not intended to serve as an answer key, rather it provides additional direction and example responses for the questions posited in the exercises. The examples and prompts presented in the *Yellowstone Coast Case Study Teaching Guide to Exercises* are intended to serve as guideposts to help readers think through this challenging topic.

PART I. LINKING SPATIAL CHARACTERISTICS AND MANAGEMENT OBJECTIVES

Reflect on the spatial characteristics of fisheries and consider how those spatial requirements influence the Council's ability to achieve their stated management objectives.

1. List two important spatial characteristics/requirements for each of the four managed species. These may include habitat, distribution, spawning behavior, etc. (For example: Grand Canyon Grouper currently occupy only a portion of their historical range.)

a. Grand Canyon Grouper

- Spawn throughout their range
- Form spawning aggregations around shipwrecks, rock ledges, reef and live bottom at depths of 90-12- feet
- Adult habitat – shallow, nearshore and offshore waters near live bottom and coral to depths of 150 feet
- Juvenile habitat – estuaries wetlands and tidal creeks
- Currently occupy only a portion of historical range

b. Grand Teton Grouper

- Adult habitat – live bottom and reefs in waters 60-500 feet deep
- Adult aggregations around rocky ledges
- Juvenile habitat – estuaries and salt marshes
- Major spawning aggregations have been observed on Dry Tortuga Reef, the Channel Islands and Badlands Bank

c. Zion Jack

- Commercial ACL is allocated between three geographic sub-zones
- Spawning habitat – open waters of the OCS
- Adult habitat – near the coast at depth of 100 – 500 feet, association with sargassum
- Egg and larval habitat – pelagic at depths of 90-300 feet
- Juvenile habitat – close to shore at shelf depths of less than 9 meters and occasionally in estuaries
- Extensive migrations north in the summer and south in the winter

d. Smokey Mountain Clam

- Fishery is managed with a 5-year rotational closures strategy
- Density-dependent fertilization.
- Habitat – depths of 60-200 feet, close to shore in the northern part of their range. Found in substrates of medium to coarse sand and gravel.
- Major concentrations found in Badlands Bank and western slope of the Channel Islands.
- Sandy substrates are important for recruitment.

2. How are the spatial characteristics you identified above reflected in the Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) designations? (For example: EFH is designated for the historical range of Grand Canyon Grouper.)

a. *Grand Canyon Grouper*

- Spawn throughout their range – EFH designated for range
- Form spawning aggregations around shipwrecks, rock ledges, reef and live bottom at depths of 90-12- feet – HAPC for eastern shoals of Badlands Bank, Dry Tortuga Reef, Channel Islands, and southeastern ledge of Mammoth Canyon.
- Adult habitat – shallow, nearshore and offshore waters near live bottom an coral to depths of 150 feet – EFH is designated for entire adult habitat
- Juvenile habitat – estuaries, wetlands and tidal creeks – EFH for juvenile habitat and HAPC designation for critical nursery habitat
- Currently occupy only a portion of historical range – EFH is designated for historical range

b. *Grand Teton Grouper*

- Adult habitat – live bottom and reefs in waters 60-500 feet deep – EFH is designated for entire adult habitat
- Adult aggregations around rocky ledges – HAPC designation for southeastern ledge of Mammoth Canyon.
- Juvenile habitat – estuaries and salt marshes – EFH for juvenile habitat and HAPC designation for critical nursery habitat
- Major pawning aggregations have been observed on Dry Tortuga Reef, the Channel Islands and Badlands Bank – HAPC for eastern shoals of Badlands Bank, Dry Tortuga Reef and the Channel Islands.

c. *Zion Jack*

- Commercial ACL is allocated between three geographic sub-zones – not applicable
- Spawning habitat – open waters of the OCS – all designated as EFH
- Adult habitat – near the coast at depth of 100 – 500 feet, association with sargassum – EFH and HAPC for areas of high sargassum and sandy shoals of Badlands Bank
- Egg and larval habitat – pelagic at depths of 90-300 feet – EFH designation
- Juvenile habitat – close to shore at shelf depths of less than 9 meters and occasionally in estuaries – EFH and HAPC designations for juvenile habitat
- Extensive migrations north in the summer and south in the winter – entire migratory range is designated as EFH

d. Smokey Mountain Clam

- Fishery is managed with a 5-year rotational closures strategy – not applicable
- Density-dependent fertilization – recent study gives insight into density dependent reproduction thresholds – might influence an EFH or HAPC designation.
- Habitat – depths of 60-200 feet, close to shore in the northern part of their range. Found in substrates of medium to coarse sand and gravel – Habitat is designated as EFH.
- Major concentrations found in Badlands Bank and western slope of the Channel Islands – designated as EFH and managed under rotational closures.
- Sandy substrates are important for recruitment – could influence refining EFH or HAPC designation.

3. The first management objectives for all three FMPs involve managing the resource to achieve optimum yield. How do the spatial characteristics of the stock(s) as described through EFH and the designation of HAPC influence the Council's ability to meet the stated management objective?

Central to this question is the definition of optimum yield. National Standard 1 - Optimum Yield provides the following guidance (50 CFR 600.310 (e)(3)(iii)): Magnuson-Stevens Act section (3)(33) defines "optimum," with respect to the yield from a fishery, as the amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems; that is prescribed on the basis of the MSY from the fishery, as reduced by any relevant economic, social, or ecological factor; and, in the case of an overfished fishery, that provides for rebuilding to a level consistent with producing the MSY in such fishery.

The following represent a few potential responses to this question based upon the information provided in the case study scenario.

a. Grouper Complex

Management Objective: Institute management measures to rebuild overfished stocks and achieve optimum yield

Achieving optimum yield for Grand Canyon and Grand Teton Grouper requires maximizing the productivity and health of the population to optimize recreational opportunities and commercial yield from the fishery. For productive and healthy Grouper populations – Grand Canyon Grouper must be rebuilt. This requires enabling the stock to rebuild throughout its entire range. Ensuring EFH and HAPC areas remain suitable habitats to support the stock through all life stages, and maximizing the stocks reproductive potential are central to this rebuilding.

For both Grand Canyon and Grand Teton Grouper, protecting spawning aggregations and spawning habitat, particularly those designated as HAPC will aid in achieving optimum yield.

b. Zion Jack

Management Objective: Prevent overfishing while managing the resource to achieve optimum yield

Achieving optimum yield for Zion Jack requires maintaining adequate habitat to support healthy Zion Jack populations throughout all life stages. Given the depletion of coastal wetland habitat along the Yellowstone Coast, coastal inlets, estuaries and sea grass beds designated as EFH and/or HAPC for juvenile Zion Jack are particularly important to preserve. Zion Jack undertake extensive migrations, inhabiting waters off Yosemite, Redwood and Denali during spawning season. Thus, adult and juvenile habitat are important to maintain within the full extent of the stocks range. Ensuring a healthy population throughout the Yellowstone Coast also supports commercial and recreational access to the resource in all three management subzones.

c. Smokey Mountain Clam

Management Objective: Prevent overfishing while managing the resource to achieve optimum yield

Achieving optimum yield for Smokey Mountain Clam requires successful management of the rotational management strategy in a way that maintains high biomass and productive success of the Badlands Bank and Channel Island populations. Habitat designated as EFH will need to be maintained in a manner that supports optimal reproduction and recruitment. New information regarding density dependent fertilization and the importance of sandy substrate will need to be translated into management measures that protect sandy substrate habitats from disruption and support population densities above the threshold level.

4. Are there other management objectives outlined in the three FMPs for which the spatial characteristics of the stock(s) and EFH/HAPC designations influence the Council's ability to achieve the stated management objective?

Most of the management objectives for all three FMPs can be related to the spatial characteristics of the fisheries.

PART II. ASSESSING NON-FISHING OCEAN USES

Evaluate the attributes of other ocean uses that influence their potential compatibility or incompatibility with fisheries interests.

5. Based upon the fishery and habitat profiles provided, identify potential challenges and opportunities that other ocean uses might pose to the spatial activities, ecosystem needs and management objectives of Yellowstone Coast fisheries.

Potential challenges and opportunities include:

Ocean Use	Challenges	Opportunities
<i>Mineral Resources</i> <i>Sand and Gravel Mining</i>	Disruption of benthic habitat, sedimentation, increased shipping traffic for mineral transport. EFH/HAPC conflicts.	Less disruptive than other extractive operations (Revenue and jobs for coastal states)
<i>Oil and Gas</i>	<p>-Inherent Characteristics - multi-faceted operations that include seismic exploration, drilling, production and support;</p> <p>-Physical Impacts – both fixed (platforms, anchors and pipelines) and mobile (exploration, transportation and support) aspects. Localized damage to bottom habitat through fixed structures, but also broader potential indirect effects (Deepwater Horizon). Siting and safety buffers may restrict fishing areas.</p> <p>-Ecological Impacts – Potential pollution from drilling byproducts and accidental spills, potential damage to fishery resources and habitats. EFH/HAPC conflicts.</p> <p>-Political Characteristics – Oil and gas is big money, which can displace commercial and recreational support infrastructure. There are also market perceptions with regard to seafood safety near platforms or after spills; drilling platforms may aggregate certain species.</p>	<p>Drilling platforms may aggregate certain species. Functioning and decommissioned rigs may serve as artificial reef habitat. (Revenue resource for coastal states; creates jobs.)</p>
<i>Renewable Energy</i>	Fixed structures (energy turbines and transportation infrastructure) could result in habitat damage. Potential EFH/HAPC conflicts. Siting and associated safety buffers may restrict fishing area. Huge potential for growth, which may become a more widespread concern. New industry with many unknown impacts. High importance on specific placement and potentially strong political will for nearshore areas.	Considered to be a “clean” offshore development – preferred alternative to oil and gas development. Potential for physical infrastructure to aggregate certain species and serve as artificial reef habitat. Has potential as a tourist destination. (Revenue and job creation)

<p><i>Shipping and Transportation</i></p>	<p>-Shipping – high traffic shipping lanes present challenges in actively fishing those areas. Cumulative impacts from ship pollution.</p> <p>-Dredging – significant damage to benthic habitat both in dredging area and spoils deposit. EFH/HAPC conflicts.</p>	<p>Port and shipping infrastructure facilitates the seafood export market and provides an access point and port facilities for fishermen. Well-orchestrated shipping traffic promotes safe navigation.</p>
<p><i>Tourism and Recreation</i></p> <p>Twisted Pine Rock MPA</p>	<p>Will restrict benthic longline fishing, which may reduce catch for Grand Canyon Grouper. Industry perceptions that this would ultimately result in a no-take zone.</p>	<p>MPA designation would further assist in Grand Canyon Grouper rebuilding, and signifies the importance of this habitat. Positive synergies between tourism and local markets for seafood. Would create goodwill with coastal states for support during state Governor and CZMA consistency reviews for proposed offshore developments.</p>

PART III: RESPONDING TO PROPOSED OFFSHORE DEVELOPMENT

Consider the legal and process tools available to Councils to make spatially referenced management decisions and to influence the siting and management of other ocean uses.

In the scenario presented in this case study, the development of offshore oil and gas resources is the lens to examine the potential processes and strategies the Council can employ to provide input in the siting and development of non-fishing ocean uses. In this section you will explore avenues for engaging through (a) the siting and development process for the proposed ocean development and (b) the authority and opportunities within the established Council process.

(a) OCS Oil and Gas Leasing, Exploration & Development Process

(Refer to Offshore Oil Development Primer (p. 24-25) and the Forum Report: [The Role of Regional Fishery Management Councils in Multi-Sector Spatial Planning: Exploring existing tools and future opportunities](#))

6. Identify two opportunities for each step in the OCS Oil and Gas Leasing, Exploration & Development Process where the Council can provide comments. (Hint: Consider opportunities to comment through resource-specific planning documents and through the NEPA process.)

a. 5-Year Leasing Program

- Initial Comment period
- Draft Proposed Program comment period
- Proposed Program comment period
- EIS Comment periods

b. Planning For Specific Sale

- Call for Information/Notice of Intent comment period
- Proposed NOS comment period
- EIS Comment periods

c. Exploration Plan Approval

- EIS/EA comment periods
- Exploration Plan comment period

d. Development and Production Plan Approval

- EIS comment periods
- Development and Production Plan comment period

7. Identify one opportunity for each step in the offshore oil development process where the Council can coordinate with and leverage the authority of federal or state agencies. (Hint: Consider opportunities under CZMA and NOAA agency authority.)

a. 5-Year Leasing Program

- NOAA programmatic and/or EFH consultations

b. Planning For Specific Sale

- State Governor comment/review
- State CZMA consistency review

c. Exploration Plan Approval

- State CZMA consistency review
- NOAA and/or FWS review of EP

d. Development and Production Plan Approval

- State Governor comment/review
- State CZMA consistency review

8. Are there points throughout BOEMRE's established process that represent optimal opportunities for councils to provide input?

Optimal points for input include the 5-Year Program Development, and Planning for Specific Sale phases. Providing input on the lease blocks considered for development and sale, as well as providing input for lease stipulations early in the process position the Council to be most effective. Continued comment and suggestions for lease stipulations are encouraged, however, industry investment during the Exploration, Development and Production Plan phases may constrain the actions that BOEMRE may take in response to the Councils comments. Another optimal opportunity for input involves Council to providing NOAA with up to date fisheries information to inform NOAA's programmatic and EFH

consultations and the additional communications outlined under the NOAA-BOEMRE Memorandum of Understanding (MOU).

9. *Reflecting on your experience, and the discussion of Current Permitting Processes & Opportunities in the [Forum Report](#), identify two potential barriers to utilizing the processes and strategies identified above. (Hint: Are there constraints associated with the timing of BOEMRE's process, coordinating with other agencies, limitations within the Council process, availability of data, etc.?)*

Potential responses include:

- NOAA-BOEMRE coordination can be a challenge as a result of jurisdictional differences, misaligned administrative timelines and competing political pressures and priorities.
- NOAA-BOEMRE MOU is non-binding.
- NEPA and other public comment timelines often do not align with the Council's meeting schedule.
- Asynchronous timelines exist between the Council's EFH 5-year review cycle and BOEMRE's 5-year program.
- Councils are not always aware of activities that may impact their fisheries.
- Comments from Councils are non-binding on BOEMRE.

10. *Identify possible solutions for overcoming these barriers. (Hint: Are there possible solutions related to Section VI. Strategies for Council Engagement in Multi-Sector Planning discussed in the [Forum Report](#)?)*

For example:

- Councils could **delegate** authority to draft and provide comments to a committee or staff member to enable the Council to provide input outside of the Council meeting time.
- Councils could **coordinate** with NOAA to provide additional weight to the non-binding comments provided to the action agency.

(b) Council Authority and Opportunities Under the Magnuson-Stevens Act

(Refer to Offshore Oil Development Primer (p. 24-25) and the Forum Report: [The Role of Regional Fishery Management Councils in Multi-Sector Spatial Planning: Exploring existing tools and future opportunities](#))

11. *Identify two opportunities where Councils have direct authority under the MSA to influence the leasing and development of oil resources off the Yellowstone Coast? (Refer to presentation by Ms. Meghan Jeans: Management Tools to Support Fisheries Engagement in Integrated Oceans Governance [\[PDF\]](#) - [Video](#))*

Potential opportunities include:

- EFH/HAPC Conservation and consultation

- Optimum Yield and annual catch limit requirements
- Fishery ecosystem plans
- Aquaculture FMPs

Questions 12-14 refer to the presentation by Karen Abrams: Opportunities and Impediments for Using Essential Fish Habitat Authority in CMSP [\[PDF\]](#) - [Video](#)

12. Under the MSA, Councils are required to identify EFH for each life stage of the Council's managed specie(s). Councils are further authorized to comment and make conservation recommendations on any federal or state action that may affect habitat of a fishery resource, including EFH. Identify two ways the Council could utilize this EFH provision to influence the BOEMRE OCS Lease Sale 214?

Potential opportunities include:

- The Council could utilize new information provided by the Yellowstone Fishery Science Center to designate HAPC for Smokey Mountain Clam.
- The Council could provide conservation recommendations to BOEMRE regarding habitat impacts associated with Lease Sale 214, including recommendations for lease stipulations.
- Councils could initiate EFH and HAPC reviews and update designations with the most current information.

13. Describe potential barriers to utilizing the Council's authority to consult with federal and state agencies regarding actions that may adversely impact EFH? (Hint: Are there constraints associated with timing, coordinating with other agencies, limitations within the Council process, availability of data, etc.?)

Potential barriers include:

- EFH is broad in scope, which creates a challenge for the Councils in deciding where to direct their efforts.
- The volume of federal actions is large, posing a challenge for Councils in monitoring and evaluating which actions warrant Council comments.
- There is a lack of coordination with NMFS in responding to non-fishing actions.
- There is a lack of clarity on the process and timeline for Councils to provide comments.

14. How might Councils overcome some of these barriers?

Potential solutions include:

- Councils could identify priorities and habitat objectives for their fisheries to help narrow the scope of actions on which the Council should provide comment.
 - HAPC is one tool that can be used to prioritize EFH.

- Communicating the fishery priorities and objectives to NMFS and other federal agencies could increase the impact of the Council's conservation recommendations.
- Councils could establish clear procedures for developing, reviewing and submitting NEPA comments and conservation recommendations.

15. How might some of these processes, strategies, barriers, and solutions apply to other existing or potential ocean activities along the Yellowstone Coast?

Additional discussion topics:

- Consider if NEPA public notice and comment provisions might apply, and if the Council has authority under MSA to provide conservation recommendations.
- Consider if misaligned timelines and lack of agency coordination might influence the Council's ability to engage.
- Could the solutions identified above for offshore oil and gas development mitigate any barriers associated with these other ocean activities?

PART IV. ENGAGING IN COASTAL AND MARINE SPATIAL PLANNING

Examine how spatial information can be used in fisheries management to support and communicate the council's objectives, and how fisheries information can contribute to multi-sector planning processes.

16. Identify two value statements for each category below. These statements should articulate the take-home messages you need other ocean users and those involved in the coastal and marine spatial planning process in your region to recognize and understand about Yellowstone Coast fisheries interests.

a) Conservation Considerations

(For example: Preserving spawning habitat is crucial to ensuring the continued productivity of Yellowstone Coast fish stocks.)

b) Economic Considerations

(For example: Commercial and recreational fisheries are valuable contributors to the coastal economy.)

c) Social Considerations

(For example: The livelihood of fishing communities along the Yellowstone coast depends upon the continued access to historical fishing grounds.)

17. Select one value statement you identified for each category above, and consider the information and data inputs you need to support those statements.

a) Conservation Considerations

- (For example: Spatial data depicting the location of spawning habitat and the seasonal distribution of mature adults among those spawning habitats.)*
- b) *Economic Considerations*
(For example: Ex-vessel value, value added services and retail sales to convey the contributions of the commercial fishery to the local economy.)
- c) *Social Considerations*
(For example: The spatial distribution of effort associated with Yellowstone Coast communities to convey the importance of certain fishing grounds to local fishing fleets.)

We hope that you have found the 2011 West Coast Forum case study to be a valuable exercise. The Fisheries Forum strives to provide relevant and accessible educational materials, and we welcome your feedback on how we may continue to improve these resources. Please contact Kim Gordon or John Henderschedt with any comments or questions about the case study (<http://www.fisheriesforum.org/about-us>).