

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
SCENARIO AND DISCUSSION DOCUMENT

INTRODUCTION

The Fisheries Leadership & Sustainability Forum (Fisheries Forum) developed the following 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).

Prior to beginning the case study exercise, please review the following resources:

- 2011 West Coast Forum Summary ([Summary](#))
- Forum Report: *The Role of Regional Fishery Management Councils in Multi-Sector Spatial Planning: Exploring existing tools and future opportunities* ([Report](#))
- Video and PDF materials from all presentations –

Ecosystem and Policy Context for CMSP

- *Implementation of Ecosystem-Based Management via Marine Spatial Planning*, Larry Crowder [\[PDF\]](#) - [Video](#)
- *Coastal and Marine Spatial Planning*, Linwood Pendleton [\[PDF\]](#) - [Video](#)

Scientific Principles & Governance Framework for CMSP - [\[PDF\]](#)

- *Scientific Principles*, Melissa Foley - [Video](#)
- *Governance Framework*, Erin Prahler - [Video](#)

Information & Data Needs for CMSP

- *MSP & Fisheries*, Daniel Dunn [\[PDF\]](#) - [Video](#)
- *Mapping Human Communities onto Ecosystems*, Kevin St. Marin [\[PDF\]](#) - [Video](#)
- *Use of Fisheries Data in Ocean Planning*, John Weber [\[PDF\]](#) - [Video](#)
- *Fisheries Data and Coastal & Marine Spatial Planning*, Dave Beutel [\[PDF\]](#) - [Video](#)

Data Portals & Decision Support Tools

- *Data Portals*, Melissa Foley & *Decision Support Tools*, Erin Prahler [\[PDF\]](#) - [Video](#)

Management Tools to Support Multi-Sector Spatial Planning

- *Management Tools to Support Fisheries Engagement in Integrated Oceans Governance*, Meghan Jeans [\[PDF\]](#) - [Video](#)
- *Opportunities and Impediments for Using Essential Fish Habitat Authority in CMSP*, Karen Abrams [\[PDF\]](#) - [Video](#)

LEARNING OBJECTIVES

The case study is designed to stimulate thought and reflection on the avenues and tools available to councils to provide input on emerging ocean uses, and to consider how councils can engage with broader, multi-sector marine spatial planning initiatives. Specifically, the case study exercise will provide individuals the opportunity to:

- Reflect on the spatial characteristics of fisheries and consider how those spatial requirements influence the Council's ability to achieve their stated management objectives;
- Evaluate the attributes of other ocean uses that influence their potential compatibility or incompatibility with fisheries interests;
- 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; and
- 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.

The aim of the exercise is to provide a creative framework for examining potential strategies and processes for communicating objectives, engaging in the management and siting of other ocean uses, and evaluating how data can help substantiate fisheries interests in multi-sector spatial planning and decision-making. The scenario presented in the case study is fictional and is not intended to reflect or represent any one fishery or region.

INSTRUCTIONS

The Yellowstone Coast Case Study is organized into three documents:

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

After reviewing the online materials from the 2011 West Coast Forum, please read the following *Yellowstone Coast Case Study Scenario and Discussion Document* carefully. The case study is accompanied by a series of exercises (*Yellowstone Coast Case Study Exercises*), formatted as a set of worksheets and organized according the learning

objectives as outlined above. To maximize your experience with the case study, please print the worksheets and complete the exercises after reading the full case study. While many of the exercises relate directly to specific information provided in the scenario, the questions are designed to prompt critical thinking and reflection on the reader's own experiences, and thus there are no single correct answers.

The Fisheries Forum has also developed a teaching guide to accompany the case study exercises (*Yellowstone Coast Case Study Teaching Guide to Exercises*). 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. If you are interested in utilizing the case study exercise as part of a group learning experience, the Fisheries Forum is happy to work with you to refine the exercises to meet your specific needs.

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 (<http://www.fisheriesforum.org/about-us>) with any comments or questions about the case study.

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SCENARIO

The Yellowstone Fishery Management Council (YFMC) manages fisheries in federal waters off the states of Yosemite, Redwood and Denali. Commercial and recreational fisheries are a pillar of the local lifestyle and an economic driver throughout the Yellowstone Coast. Recreational fisheries are widely enjoyed by Yellowstone citizens and are a cornerstone to the region's tourism industry. Commercial fisheries also have a deep history in the region and are an important economic contributor to the region's three largest port cities (Mesa Verde, Acadia Park and Biscayne Beach). The productivity of Yellowstone's valuable fisheries depends upon the health of the region's sensitive coral reef and estuarine ecosystems.

The Council administers a habitat management plan along with three fishery management plans (FMPs): Grouper Complex, Zion Jack, and Smokey Mountain Clams. With annual catch limit (ACL) amendments complete, the YFMC has begun shifting its attention to discussions about Coastal and Marine Spatial Planning (CMSP) that have been occurring at local, regional and national levels. Though CMSP is still in its conceptual phase along the Yellowstone Coast, the states of Yosemite, Redwood and Denali recognize the need for a more integrated governance framework to coordinate marine uses and are poised to engage as these initiatives take shape.

Last summer, the Council's Executive Director (ED) and several council members learned of a proposed lease sale for offshore oil development in the region through an article in a local paper. Offshore oil development is one of several non-fishing ocean uses that are increasingly competing for space in the Yellowstone Coast region. Due to the surge of interest in non-fishing marine uses off the Yellowstone Coast in the last few years, several council members are concerned about how the Council can remain informed of proposed activities and developments and how the Council could engage effectively in CMSP and ensure that fishery priorities are represented under broader planning initiatives.

Surprised by the how far along in the process this offshore oil development appears to be, the fishing industry and several non-governmental organizations (NGOs) have been vocal in expressing their objections to the proposed offshore oil development. In response, the Council chair has requested the Council consider whether and how the Council could engage on:

- (a) The specific issue of the offshore oil development lease sale,*
- (b) The siting and management process of other non-fishing ocean uses, and*
- (c) Broader multi-sector marine spatial planning initiatives.*

Existing and Potential Non-Fishing Marine Uses

There are several existing and potential non-fishing ocean uses along the Yellowstone Coast. These uses have the potential to intersect with fishery usage patterns and management objectives. The design, extent and management objectives of other ocean uses in concert with those of fisheries provide the landscape in which coastal marine spatial planning initiatives will take shape.

Mineral Resources

The region's valuable offshore mineral resources have only been moderately developed over the past several decades. Small-scale gravel and sand mines operate along the shallow offshore slope of northern Yosemite. Though operations are concentrated in a small part of the region, conservation groups and fishery managers have expressed concern about the impacts (i.e., sedimentation) of mining activities if operations are expanded elsewhere in the region.

Oil & Gas

Although the proposed lease sale could increase investment in offshore energy infrastructure, offshore drilling has occurred off the Yellowstone Coast for several decades. Federal waters off Yosemite currently host 12 offshore oil development platforms, which have been in operation since the early 1990s.

Renewable Energy

Discussions regarding the potential for wind energy development off the state of Denali are ongoing; however there have been no development proposals to date. Currently, the Department of Interior's 'Smart from the Start' wind energy initiative, which is intended to facilitate siting, leasing and construction of new wind energy projects, has prompted the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) to initiate a process to identify areas suitable for offshore wind energy development off the Yellowstone Coast. BOEMRE is in the process of collecting data to inform government and industry assessments and planning, allowing a more efficient process for permitting and siting responsible wind energy development.

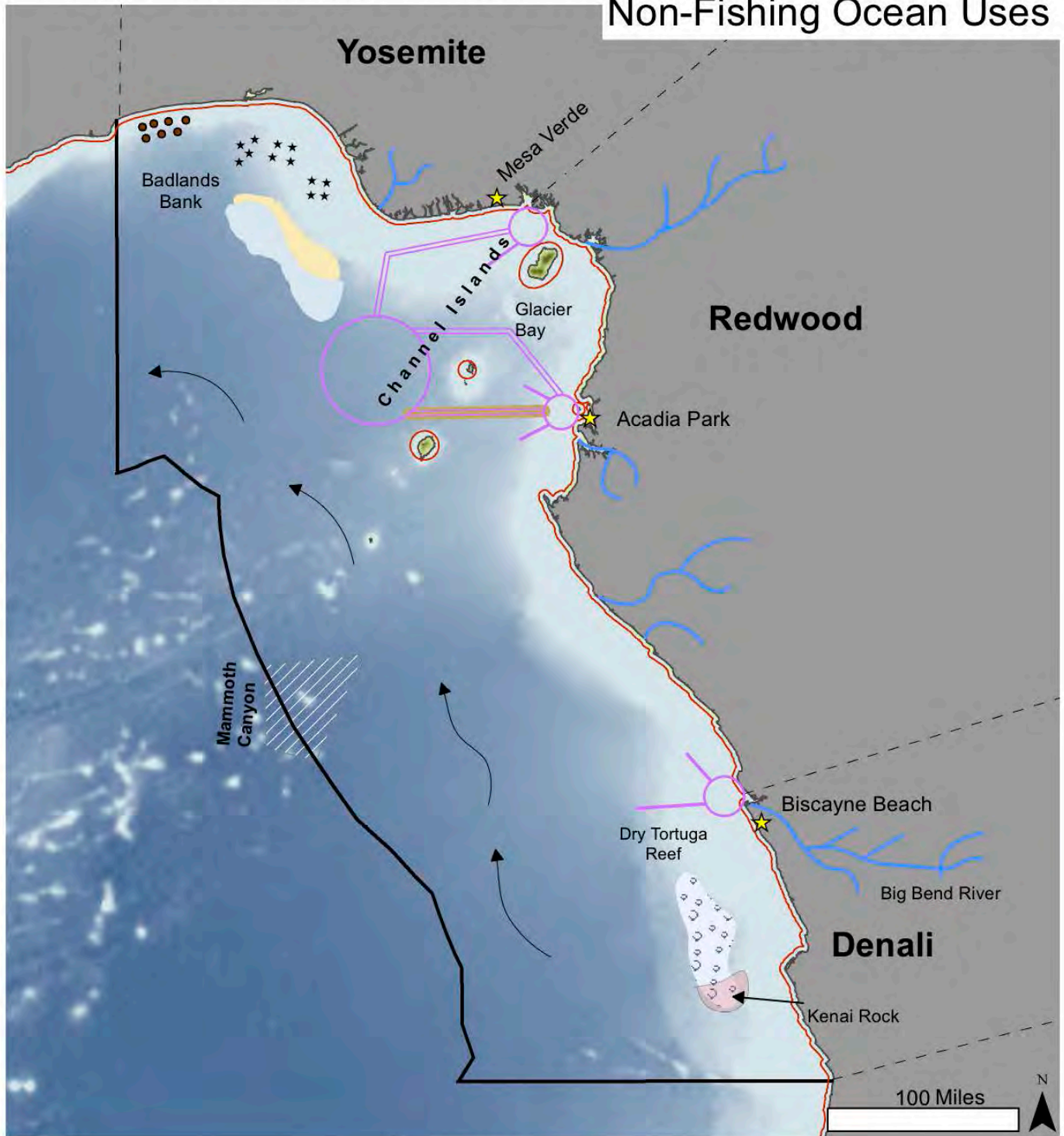
Shipping and Transportation

Throughout the Yellowstone exclusive economic zone (EEZ), extensive shipping lanes have been designated to facilitate regional and international shipping. Redwood hosts the largest shipping terminal along the Yellowstone Coast, located in the city of Acadia Park. The shipping channel through Glacier Bay is maintained through periodic dredging. In order to accommodate increased shipping capacity, the Redwood Port Authority has been discussing plans to increase the dredge depth of the existing channel.

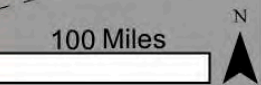
Tourism and Recreation

The Yellowstone Coast's warm temperate climate, vibrant coral reefs and sandy beaches provide year-round recreation and host a profitable tourism industry. Over the last several months, the Denali Regional Tourism Board has been encouraging the Council to support the establishment of a marine protected area (MPA) for a popular dive spot known as Kenai Rock, through banning the use of bottom contact fishing gear in the area. Known for its extensive labyrinth of coral structures, Kenai Rock is located on the southern tip of Dry Tortuga Reef, the largest coral reef ecosystem in the region. The primary purpose of the MPA would be to ensure the persistence of healthy coral reef habitats and the fish stocks that depend on them. While the designation of Kenai Rock as an MPA does not exclude non-fishing uses, other regions have found such designations effective in deterring offshore development.

The Yellowstone Coast Potential and Existing Non-Fishing Ocean Uses



- ★ City
 - River
 - ← Sequoia Stream
 - - - State border
 - State waters (3 mi)
 - Yellowstone Coast EEZ Management Area
 - Coral
 - Gravel/sand mines
 - ★ Offshore oil platform
 - Dredging
 - Major shipping lane
 - Minor shipping lane
 - Proposed MPA
 - Exposed sand bank
 - Submerged sand bank
- Depth (feet)**
- High : -1
 - Low : -600



Map: C. Curtice (2011)
 Marine Geospatial Ecology Lab
 Duke University

YFMC DISCUSSION DOCUMENT

Council staff prepared the following discussion document to aide the Council in considering whether and how the Council could engage on the three issues identified above:

- (a) The specific issue of the offshore oil development lease sale,*
- (b) The siting and management process of other non-fishing ocean uses, and*
- (c) Broader multi-sector marine spatial planning initiatives.*

Drawing on statutory and regulatory information, FMPs, available fisheries data and public and Council communication, the discussion document contains the following components:

- Fishery Management Council FMP Summaries
 - Habitat Management Plan
 - Grouper Complex Fishery Management Plan
 - Zion Jack Fishery Management Plan
 - Smokey Mountain Clam Fishery Management Plan
- Newspaper article
- Proposed Notice of Sale Summary– Yellowstone Lease Sale 214
- Offshore Oil Development Primer
- The Yellowstone Clean Ocean Alliance Position Statement
- Stakeholder Letter
- Data Availability
- Excerpts from Magnuson-Stevens Fishery Conservation and Management Act and Code of Federal Regulations

Yellowstone Fishery Management Council FMP Summaries

Habitat Management Plan

The YFMC manages the region's essential fish habitat (EFH) through the administration of the Habitat Management Plan. This management plan identifies habitat requirements for species managed by the Council, designates EFH and Habitat Areas of Particular Concern (HAPC) for each species, evaluates adverse impacts to EFH and puts forth recommendations for the conservation of EFH.

Adverse impacts to EFH

Fishing activities can have direct and indirect adverse impacts on EFH through removal of key species and habitat damage from fishing gear. These adverse impacts are managed under three FMPs through catch limits, gear restrictions, and spatial and temporal management measures.

Non-fishing activities can also result in direct and indirect impacts to EFH. The habitat management plan details potential threats to estuarine and offshore processes posed by the following activities:

1. Threats to estuarine processes (occurring landward of the shoreline) include, but are not limited to: agriculture; aquaculture; timber management; coastal development; commercial and industrial activities; navigation (support activities and vessel operation); recreational boating; mining; hydrologic modifications; natural events, and climate change.
2. Threats to offshore processes (occurring seaward of the shoreline) include, but are not limited to: navigation; offshore sand and mineral mining; offshore energy exploration and development; commercial and industrial activities; natural events, and climate change.

Potential Threats from Oil and Gas Exploration, Development and Transportation:

Potential threats include: elimination of or damage to bottom habitat due to drilling and production infrastructure (e.g., drilling platform, anchors, pipelines, etc.), release of harmful and toxic substances as drilling byproducts, damage to organisms and habitats due to accidental spills, damage to fishery resources and habitats due to well decommissioning, loss of fishing gear due to entanglement with structures and debris.

Cumulative impacts

Cumulative impacts are defined in the EFH implementing regulations as “impacts on the environment that result from the incremental impacts of an action when added to other past, present and reasonably foreseeable future actions.” The cumulative impacts on aquatic systems are poorly understood at a quantitative level. From a qualitative perspective, however, the impacts of human activity on EFH along the Yellowstone are quite apparent. Coastal development has eliminated approximately 40% of historical

wetland habitats, which serve as critical habitat for juvenile grouper and Zion Jack. Agricultural runoff and nutrient enrichment have altered the vegetation profiles of important juvenile fish habitat, and contributed to algal blooms resulting in widespread fish kill events. Offshore dredging and sand mining have altered benthic substrates and limited the species range of stocks dependent on those habitats.

Essential Fish Habitat Conservation Recommendations

To promote stewardship of EFH by non-fishing activities, YFMC developed a set of activity-specific policy statements that outline recommendations for preserving EFH. The YFMC also developed the following set of guiding principles that provide a framework for conserving EFH:

- Avoidance and minimization of impacts,
- Incorporation of compensatory mitigation when impacts are avoidable,
- Enhancement of essential fish habitat as a fundamental aspect of fishery resource recovery, and
- No net loss or significant environmental degradation of existing habitat.

YFMC Policy Statement on Oil & Gas Exploration, Development and Transportation:

The YFMC recommends the following to the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) when considering proposals for oil and gas activities in areas under Council jurisdiction:

- 1) Oil or gas drilling for exploration or development on or closely associated with live bottom habitat, or other special biological resources essential to commercial and recreational fisheries under Council jurisdiction, should be prohibited.
- 2) All facilities associated with oil and gas exploration, development and transportation should be designed to avoid impacts on coastal and vegetated wetlands, estuaries, tidal creeks and areas containing submerged aquatic vegetation.
- 3) All impacts of proposed exploratory and development activities on fisheries resources at all life stages and habitats should be determined prior to BOEMRE approval of any permit applications.
- 4) Environmentally sensitive areas should be mapped relative to oil and development plans and deleted from inclusion in the respective lease block(s).
- 5) Adequate contingency plans should be developed and spill containment and cleanup equipment are maintained for all development and transportation activities.

Habitat Areas of Particular Concern

The Council has adopted the following criteria, as outlined in Title 50 of the CFR, for identifying specific types or areas of habitat within EFH as habitat areas of particular concern (HAPC). Designation of HAPCs may occur when one or more of the following criteria are met:

- i. The habitat serves an important ecological function;
- ii. The habitat is sensitive to human-induced environmental degradation;
- iii. Development activities are, or will, stress the habitat type; and
- iv. The habitat type is considered rare.

Grouper Complex Fishery Management Plan

The Grouper Complex FMP includes 20 co-occurring reef species, most of which are unassessed. Grand Canyon and Grand Teton grouper are the primary commercial and recreational targets and account for 95% of landings. Your council sets species-specific ACLs for these two stocks and an aggregate ACL for the remaining non-target species.

Management Objectives (not in priority order):

1. Institute management measures to rebuild overfished stocks and achieve optimum yield
2. Control fishing mortality to ensure that overfishing does not occur
3. Minimize habitat damage and protect habitat for juvenile fish
4. Collect necessary data and promote public compliance and enforcement
5. Promote equitable, stable and efficient use of the resource across the recreational and commercial sectors

Grand Canyon Grouper –

Status: Grand Canyon Grouper are overfished though overfishing is not occurring. Heavy fishing pressure on spawning aggregations in the 1990s led to a dramatic decline of the stock, prompting the YFMC to prohibit harvest and possession in 2000. YFMC implemented an aggressive rebuilding plan in 2003, which allowed for limited but increasing recreational and commercial harvest. Though still classified as “overfished”, recent assessments show the stock is recovering and on track to be fully rebuilt in 2015.

Fishery Information: Grand Canyon Grouper are targeted commercially and recreationally using hook and line, and benthic longline gear. The Grand Canyon Grouper ACL is allocated 80% commercial and 20% recreational, and both sectors are eagerly anticipating a substantial ACL increase in 2015. The current ALC of 300,000 pounds is expected to increase to 1.5 million pounds when the fishery is fully rebuilt.

Biological Information: Grand Canyon Grouper are long-lived, late maturing, substrate-specific reef fish. The largest of the grouper species, they can grow to 8 feet and 800 pounds and live as long as 50 years. Males achieve sexual maturity between 4 and 6 years of age and females between 6 and 7 years of age. Grand Canyon Grouper spawn July through September throughout their range, forming large spawning aggregations around shipwrecks, rock ledges and isolated patches of reef and live bottom at depths of 90-120 feet.

Habitat Information: Grand Canyon Grouper occur in shallow, nearshore and offshore waters near live bottom and coral to depths of 150 feet. Adults are solitary and territorial by nature and occupy limited home ranges. Juveniles inhabit estuaries, wetlands and tidal creeks.

Geographic distribution: Grand Canyon Grouper have a historical distribution throughout the Yellowstone coast from south of Dry Tortuga Reef to the northern tip of Badlands Bank, however since the fishery reopened they are encountered only in waters off Redwood and Denali. Coastal development and storm water runoff have impacted recruitment through the loss of estuarine habitat.

Grand Teton Grouper–

Status: Grand Teton Grouper are not overfished and are not undergoing overfishing.

Fishery Information: YFMC manages sector specific ACLs of 1.2 million pounds for the commercial fishery and 2.1 million pounds for the recreational fishery. There is a fishery wide minimum size limit of 24 inches and a closed season from January through April to protect spawning aggregations. Both sectors utilize hook and line gear, and recreational spear fishing is permitted.

Biological Information: Grand Teton Grouper are long-lived, late maturing, protogynous hermaphrodites. They can grow to a maximum of 48 inches, weigh 80 pounds and live over 25 years. Females first reach sexual maturity at 6-7 years and may change sex in response to biological cues, possibly in response to a spawning aggregation’s sex ratio. Due to their complex life history, Grand Teton Grouper are susceptible to overfishing.

Habitat Information: Grand Teton Grouper are found on areas of live bottom and reef in waters from 60-500 feet deep. Adult grouper tend to congregate around rocky ledges and swim in small groups. Juveniles inhabit estuaries and salt marshes.

Geographic distribution: Grand Teton Grouper are widely distributed throughout the Yellowstone coast. Spawning takes place during April and May in the northern part of the species’ range and January through April in the southern part of the range. Major spawning aggregations have been observed around Dry Tortuga Reef, Channel Islands and Badlands Bank.

EFH Designation (Grand Canyon and Grand Teton Grouper):

Essential fish habitat designations for the grouper complex management unit are based on broad habitat classifications for each life stage:

Habitat classification	Life stage dependency
Estuarine and marine submerged aquatic vegetation (SAV)	Adult, larval and juvenile habitat
Coral and Artificial Reefs	Adult habitat
Live/Hard bottom	Adult habitat
Medium to high profile outcroppings on and around the shelf break zone	Adult habitat
Water column in spawning areas above adult habitat	Adult habitat
Sargassum	Larval Survival



Sequoia Stream	Larval dispersal
Vegetated wetlands, estuaries, tidal creeks and salt marshes	Larval and juvenile habitat
Broad pelagic environment	Larval food supply and dispersal

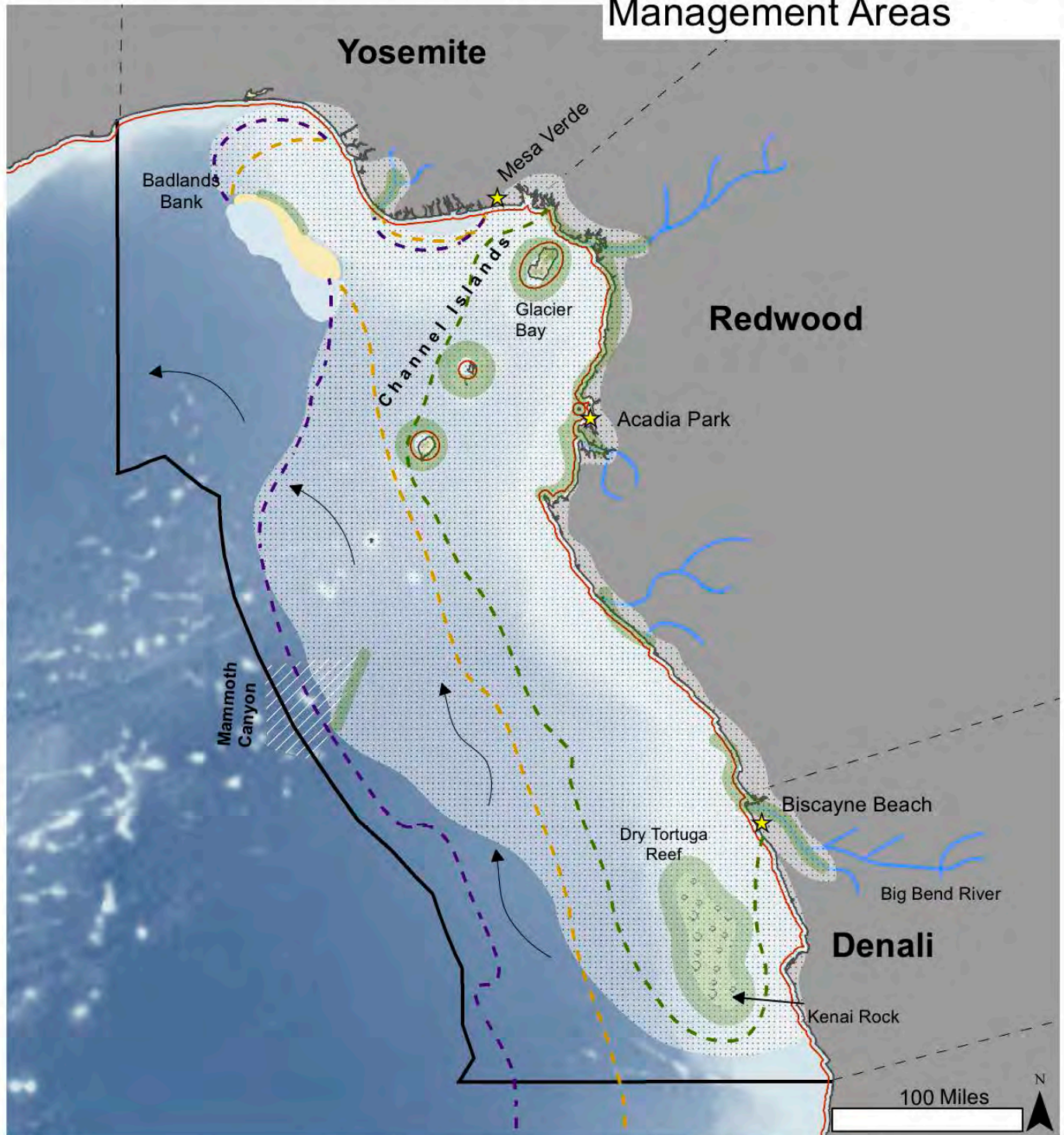
HAPC Designation (Grand Canyon and Grand Teton Grouper)

Areas that meet the criteria for HAPC for the grouper complex include the rocky eastern shoals of Badlands Bank, the waters around Dry Tortuga Reef and the Channel Islands, and the southeastern ledge of Mammoth Canyon. Coastal inlets, wetlands, tidal creeks and estuaries that are deemed nursery habitat are also designated as HAPC for grouper.

The following regulations have been implemented for Grouper HAPC areas:

- Fishing with bottom trawls, dredges, pots or traps is prohibited on Dry Tortuga Reef;
- Prohibition on take, damage and possession in the EEZ of prohibited corals and live rock (except under a federal permit for scientific, educational, or restoration purposes); and
- Seasonal closure of the grouper fishery from January through April to protect spawning stock biomass.

The Yellowstone Coast Grouper Complex Management Areas



- ★ City
 - River
 - ← Sequoia Stream
 - - State border
 - State waters (3 mi)
 - Yellowstone Coast EEZ Management Area
 - ☐ Coral
 - Current Grand Canyon Distribution
 - Historical Grand Canyon Distribution
 - Grand Teton Distribution
 - HAPC
 - ☐ EFH
 - Exposed sand bank
 - Submerged sand bank
- Depth (feet)**
- High : -1
 - Low : -600

Map: C. Curtice (2011)
 Marine Geospatial Ecology Lab
 Duke University

Zion Jack Fishery Management Plan

Management Objectives (not in priority order):

1. Prevent overfishing while managing the resource to achieve optimum yield
2. Minimize the impacts of fishing on the spawning population to maximize productivity
3. Protect habitat for juvenile fish
4. Establish a monitoring and catch reporting systems in support of regional allocations
5. Ensure fair and efficient allocation of commercial and recreational catch quotas between management zones

Status: Zion Jack are not overfished and overfishing is not occurring.

Fishery Information: The Zion Jack fishery is prosecuted by commercial and recreational fisheries using hook and line gear. Landings for both sectors have been stable for the last 15 years at approximately 3.2 million pounds each year. Commercial and recreational sectors are managed through sector ACLs. The commercial ACL is allocated between three different geographic subzones to distribute fishing opportunity throughout the species' migratory range. The recreational fishery is managed with a size limit of 30 inches and a bag limit of 10 fish per person per day.

Biological Information: Zion Jack are highly productive, relatively fast growing, schooling fish. They can grow to 65 inches and 100 pounds with a maximum life span of around 17 years. Zion Jack reach reproductive maturity at 3 years of age and spawn in the open waters of the outer continental shelf from July through November.

Habitat information: Adult Zion Jack live near the coast at depths of 100 to 500 feet and are often found near concentrations of sargassum. Eggs and larvae are pelagic and found at depths of 90-300 feet. Juveniles are typically found closer to shore at shelf depths of less than 9 meters and occasionally in estuaries.

Geographic distribution: Zion Jack are found in pelagic waters throughout Yellowstone, undertaking extensive migrations to the northern part of their range in the summer and the southern part of their range in the winter based upon water temperature and food availability.



EFH Designation

Essential fish habitat designations for the Zion Jack include the following habitats:

Habitat classification	Life stage dependency
Sandy shoals of capes and offshore bars	Adult habitat
High profile rocky bottom waters	Adult habitat
Ocean-side barrier islands	Adult habitat
Waters from the shelf break zone to the Sequoia Stream	Adult and larval habitat
Areas of high sargassum concentration	Adult habitat
Coastal inlets, estuaries and seagrass beds	Juvenile habitat
Sequoia Stream	Larval dispersal

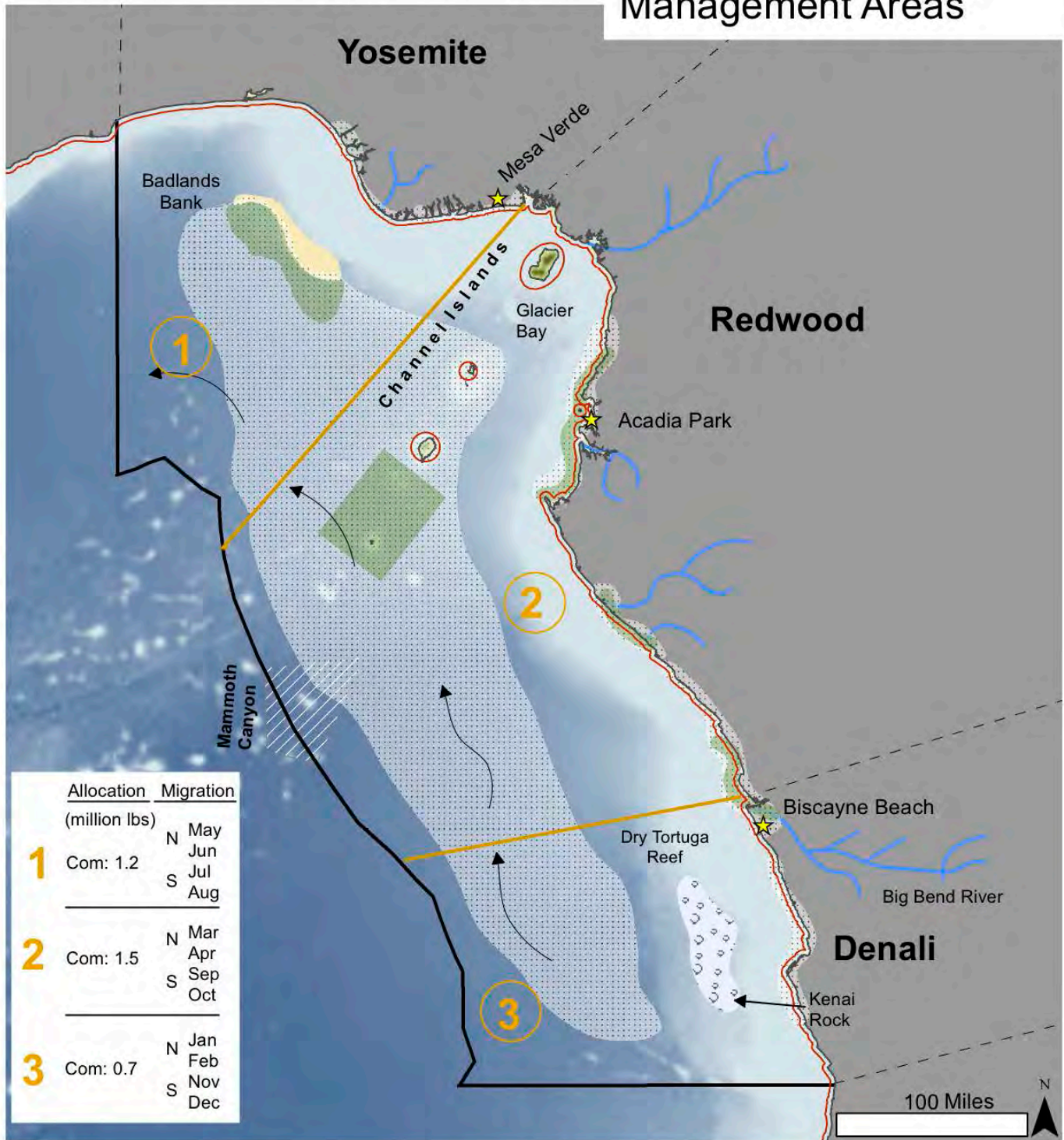
HAPC Designation

Areas that meet the criteria for HAPC designation include the sandy shoals of Badlands Bank and the pelagic area from the Channel Islands to the Sequoia Stream. Estuaries meeting these criteria for Zion Jack include the southeast shoreline of Glacier Bay, the Big Bend River Delta and shallow water estuaries between Biscayne Beach and Acadia Park.

No regulations have been implemented to protect Zion Jack HAPC.

The Yellowstone Coast

Zion Jack Management Areas



- ★ City
- River
- ← Sequoia Stream
- - - State border
- State waters (3 mi)
- Yellowstone Coast EEZ Management Area
- ☐ Coral
- Management zone
- ▭ HAPC
- ▭ EFH
- ▭ Exposed sand bank
- Depth (feet)**
- High : -1
- Low : -600

Smokey Mountain Clam Fishery Management Plan

Management Objectives (not in priority order):

1. Prevent overfishing while managing the resource to achieve optimum yield
2. Preserve long-term productivity that supports stable annual harvest rates
3. Protect clam populations during spawning and ensure densities are maintained above spawning threshold
4. Maximize the utility of catch reporting data and monitor clam populations to evaluate the performance of the rotational closure schedule
5. Provide a flexible management regime that is consistent with long term industry planning and investment needs

Status: Smokey Mountain Clams are not overfished and overfishing is not occurring. The stock suffered dramatic declines in catch and catch per unit effort (CPUE) in the 1980s, prompting the YFMC to implement a rebuilding plan that included a rotational area management strategy, moratorium on new permits and catch quotas. The management measures were effective in rebuilding the stock and stabilizing harvest at sustainable levels.

Fishery Information: To access the Smokey Mountain Clam ACL of 20 million pounds, the commercial fishery utilizes hydraulic clam dredges, which dislodge the species from the bottom sediments. High-density clam areas are managed through five-year rotational closures for grids on Badlands Bank and the Channel Islands. The rotational closure strategy allows these areas to maintain high clam densities and provides the opportunity for spawning of several year classes before recruiting into the fishery. There is no recreational fishery for Smokey Mountain Clams in federal waters.

Biological Information: Smokey Mountain Clams are slow growing, long lived bivalve mollusks. The species can grow up to 10 inches and live over 30 years. Researchers estimate the age at reproductive maturity to be between 2 and 5 years of age. Density dependent fertilization occurs in the water column, with current driven larval settlement occurring within 30 days. Smokey Mountain Clams spawn in the summer and early fall.

Habitat information: Smokey Mountain Clams are typically found at depths of 60-200 feet though clam beds have been found in water as deep as 300 feet. Distribution of clam beds range from even aggregations to localized or patchy dense beds. Adults burrow in medium to coarse sand and gravel substrates.

Geographic distribution: Smokey Mountain Clams are found primarily in federal waters off the states of Yosemite and Redwood, and occur closer to shore in the more northern range of their distribution. Major concentrations of clams have been found in Badlands Bank and the western slope of the Channel Islands.

Essential Fish Habitat

EFH for Smokey Mountain Clams is defined as sand and gravel bottom substrate from the sediment to a sub-surface depth of three feet within federal waters, from 90 to 200 feet below the ocean surface. The area is further defined as waters north of Biscayne Beach.

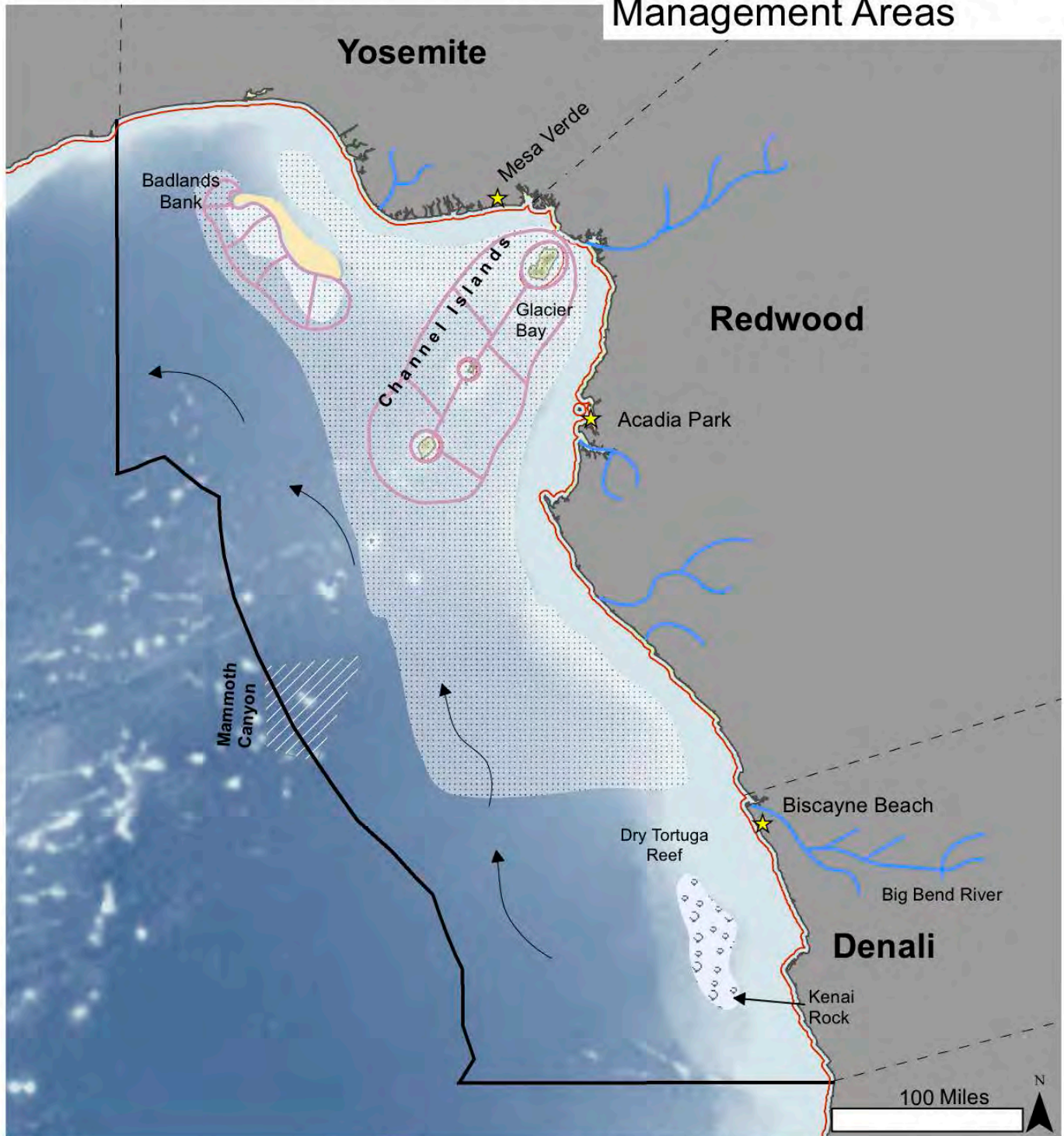
Habitat Areas of Particular Concern

HAPC has not been designated for Smokey Mountain Clam, as information was not available during the last EFH five-year review to indicate associations between habitat type or location and recruitment.

A recent study conducted by the Yellowstone Fishery Science Center (YFSC) provides new insights into the life history characteristics of Smokey Mountain Clams. In addition to revising density dependent reproduction thresholds, the study indicates a strong association between sandy substrate habitats and recruitment. The study further concludes that disruption of benthic substrates during larval settlement drastically reduces the survival rate of Smokey Mountain Clam larvae and juveniles.

The Yellowstone Coast

Smokey Mountain Clam Management Areas



- ★ City
 - River
 - ← Sequoia Stream
 - - - State border
 - State waters (3 mi)
 - Yellowstone Coast EEZ Management Area
 - ☐ Coral
 - ☐ Rotational Management Zone
 - ☐ HAPC
 - ☐ EFH
 - ☐ Exposed sand bank
- Depth (feet)**
- High : -1
 - Low : -600

Map: C. Curtice (2011)
 Marine Geospatial Ecology Lab
 Duke University

Newspaper article

Offshore energy development underway; Yellowstone residents await governors' next steps

The Redwood Post
August 23, 2011

Washington, DC – Offshore energy development may proceed in federal waters off Yellowstone, following a Proposed Notice of Sale released by the Bureau of Ocean Energy Management Regulation and Enforcement (BOEMRE). The agency, part of the Department of the Interior, oversees the development of energy and mineral resources on the Outer Continental Shelf of the United States. The announcement is likely to spur offshore energy development in the region, to mixed reactions from coastal residents.

Governor Michael Rainier of Yosemite expressed enthusiasm for the proposed lease sale, citing the proposed lease sales as “a much needed opportunity for economic development, and a step forward in reducing our dependency on foreign oil.” The southern states of Denali and Redwood reacted with cautious support. “In this economy we need to support industries that generate revenue and create jobs for the citizens of Redwood,” said Governor Ted Haleakala. “However, we want to understand how oil and gas leasing might impact other important coastal industries.”

Federal law provides the governors of Yosemite, Denali and Redwood with the ability to comment on the proposed lease sale, and to evaluate the consistency of the proposal with state coastal zone management policies. Governor Haleakala furthermore called for a series of public meetings over the next two weeks, to solicit feedback on the consequences of this decision.

The governors' mixed reactions are representative of an ongoing debate about the direction of U.S. energy policy. Earlier this year, a year-long moratorium on offshore oil and gas leasing expired, reopening the outer continental shelf of the United States for leasing, exploration and development. Several companies expressed interest in the lease blocks

identified by BOEMRE, prompting a competitive lease sale process.

The Proposed Notice of Sale (NOS) follows BOEMRE's development of a 5-Year Program for oil and gas lease sales, which outlines the size, timing, and location of leasing activity. The proposed NOS published by BOEMRE earlier this month outlines the proposed lease sales for federal waters off of Yosemite, Redwood and Denali, identifying 259 lease blocks encompassing 1.47 million acres. The agency estimates the amount of economically recoverable hydrocarbon deposits contained in the sale area at approximately 160 million barrels of oil.

Many Yellowstone leaders, businesses and organizations are anxiously awaiting opportunities to weigh in during comment periods mandated by the National Environmental Policy Act (NEPA). “Drill, baby, drill!” urges Yosemite resident Scott Everglade. Others have expressed concern. “We're paying close attention to this process,” said Virginia Shenandoah, executive director of the Yellowstone Coast Coalition. “We represent the tourism industry, and we're worried that offshore energy development is just fundamentally incompatible with many of the things visitors love about our coast.” The Yellowstone Clean Ocean Alliance has also expressed concern about offshore energy development in the region.

Redwood public meetings will be held from 5-8 pm at the public library in Acadia Park August 29th and 30th and at the Civic Center in Olympic City September 1st and 2nd. Interested parties can also provide written comments directly to BOEMRE during the 60-day public comment period as noticed in the Federal Register.

Proposed Notice of Sale Summary– Yellowstone Lease Sale 214

Overview

BOEMRE proposes to hold OCS Oil Lease Sale 214 for all acreage in the Yellowstone Planning Area identified on the following map. Leases on all blocks are offered for an initial 10-year period.

NOAA-BOEMRE Coordination History

During the development of the 5-Year Program (see Offshore Oil Primer), BOEMRE initiated a programmatic consultation with NOAA. NOAA provided high-level comments through the consultation process, which resulted in the identification of the following stipulations. These proposed stipulations are required only for designated lease blocks:

NOAA Programmatic Consultations

NOAA often consults with other federal agencies on a programmatic basis, which involves providing input on a framework for specific activities or on a group of similar actions that fall within a broader program definition. Programmatic consultations promote consistency of conservation measures, more efficient management and reduce procedural redundancy between federal agencies.

Stipulation No. 1 – Topographic Features

Lease blocks covered under this stipulation are designated as “No Activity Zones”. No activity including structures, drilling rigs, pipelines, or anchoring will be allowed to access subsurface oil deposits within the lease blocks.

Stipulation No. 2 – Live Bottoms

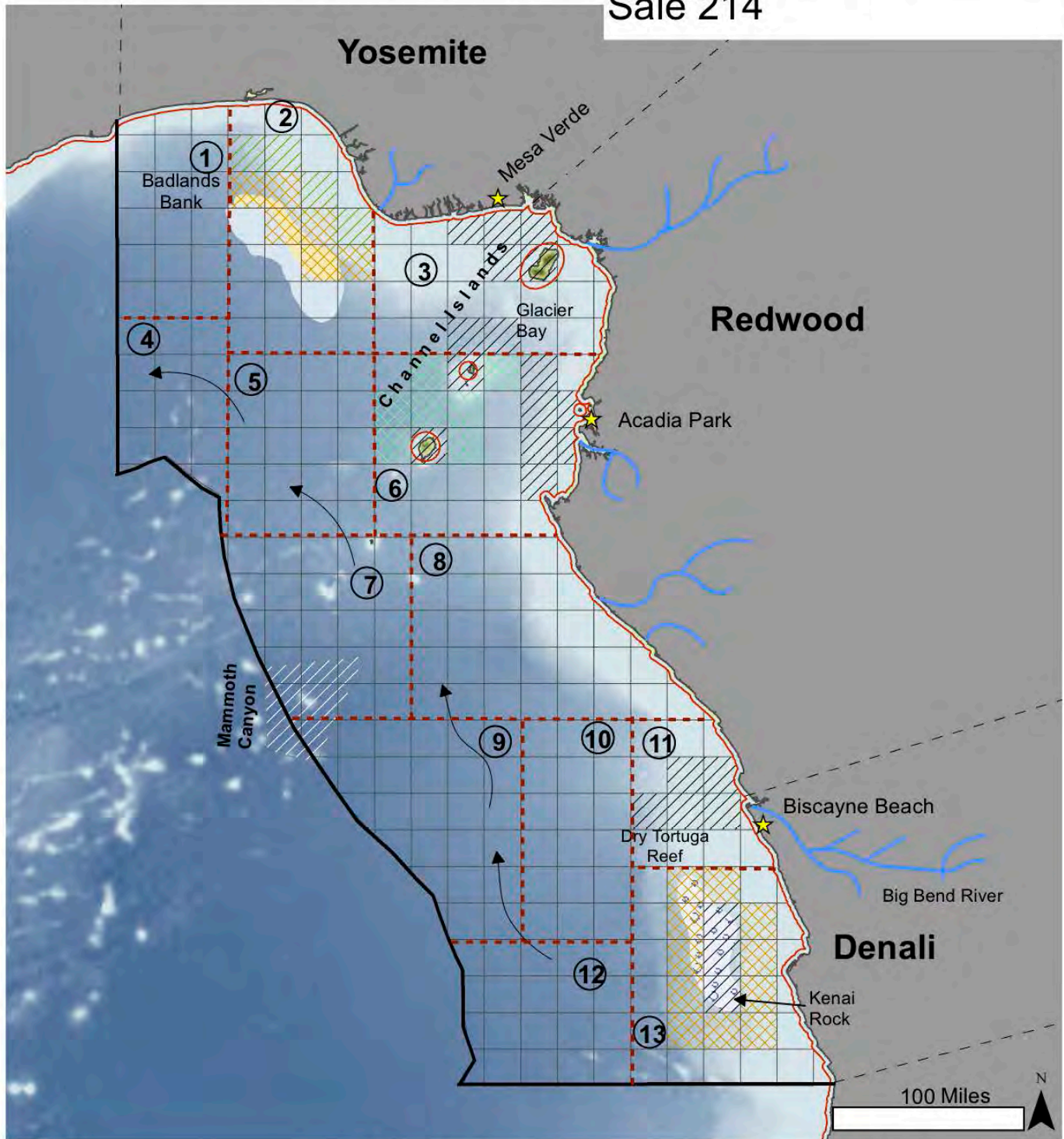
Prior to any exploration or development activities within lease blocks identified under this stipulation, the lessee will conduct and submit a live bottom survey report to the BOEMRE Regional Director to determine if the live bottoms might be adversely impacted by the proposed activity. If adverse impacts are identified, the lessee is required to outline mitigation measures.

Lease Stipulations

Federal regulations require BOEMRE to consult with the appropriate federal agencies to develop measures, such as lease stipulations, to mitigate adverse environmental impacts of oil and gas development. Lease stipulations are often identified prior to the execution of OCS oil and natural gas lease sales, however additional lease stipulations may be identified through the planning and permitting phases for exploration, development and production. Leases may stipulate “No Activity Zones” which identify specific geographic areas where exploration and development activities are not permitted. BOEMRE may add or amend lease stipulations at any time through issuing a Notice to Lessees and Operators (NTL). Lease stipulations are legally-binding, contractual provisions associated with the lease agreement and any relevant permits.

The Yellowstone Coast

Proposed Lease Sale 214



- ★ City
- River
- ← Sequoia Stream
- - - State border
- State waters (3 mi)
- Yellowstone Coast EEZ Management Area
- ☐ Coral

- Lease blocks**
- ☐ Active
 - ☐ Not offered in sale
 - ☐ Stipulation 1 - Topographical features
 - ☐ Stipulation 2 - Live bottom
 - ☐ Offered in sale
 - ☐ Planning subzone

- ☐ Exposed sand bank
 - ☐ Submerged sand bank
- Depth (feet)**
- High : -1
 - Low : -600

Map: C. Curtice (2011)
 Marine Geospatial Ecology Lab
 Duke University

Offshore Oil Development Primer

The following Offshore Oil Primer was developed by Council staff to provide context for the purpose of the discussion document. The primer provides a summary of the Forum Report: *The Role of Regional Fishery Management Councils in Multi-Sector Spatial Planning: Exploring existing tools and future opportunities* ([Report](#)). Prepared for the 2011 West Coast Forum, the report provides a more detailed description of the offshore oil and gas development process.

This primer presents a simplified version of the federal process as required by the Outer Continental Shelf Lands Act (OCSLA) for the purpose of facilitating the case study exercise and does not address the procedural discrepancies and regional nuances often seen in practice.

Federal Agency Jurisdiction

The Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE), a bureau within the U.S. Department of the Interior (DOI), is the federal agency that manages the nation's natural gas, oil and other mineral resources on the outer continental shelf (OCS). The Outer Continental Shelf Lands Act (OCSLA) assigns the Secretary of the Interior responsibility for the administration of mineral exploration and development of the OCS and authority to grant and regulate leases associated with exploration and development activities.

BOEMRE Oil & Gas Leasing Process

BOEMRE administers offshore oil and gas leases through four discrete steps as outlined below. Throughout the process, there are various environmental reviews and opportunities for inter-agency consultation and public comment.

1. Five-Year Leasing Program

Section 18 of OCSLA requires the Secretary of the Interior to prepare a 5-year oil and gas leasing program (5-Year Program) that balances the priorities of national energy needs, environmentally sound and safe operations, and fair market return to the taxpayer. The 5-Year Program, which consists of a schedule of proposed lease sales that shows the size, timing, and location of leasing activity, includes 3 separate comment periods, 2 separate draft proposals, a final proposal, and development of an environmental impact statement (EIS).

2. Planning for Specific Sale

Following the adoption of a 5-Year Program, specific lease sales are conducted. The lease sale process begins with a Call for Information and Nominations (“Call”) and a Notice of Intent to prepare an EIS. At this stage, industry is asked to identify which blocks within an OCS planning area they have interest in potentially leasing. The public may also comment on areas that should or should not be considered for leasing, as well as issues relevant to the EIS. The Call is followed by identification of the lease sale area and publication of the Proposed Notice of Sale (NOS) and Draft EIS for public review and comment. The Proposed NOS document indicates the time and location of the proposed lease sale with terms and conditions and applicable mitigation measures. The Proposed NOS is forwarded to the

Governor(s) of the affected state(s) for review and comment within 60 days. BOEMRE also prepares a consistency determination as required by the CZMA to determine whether the proposed lease sale is consistent with the coastal zone policies of the affected state(s). The state has sixty days to respond. Upon the completion of this process, the final EIS is published along with the Final NOS and lease sales are conducted through competitive sealed bids. Leases are then awarded to the highest bidder for each lease block.

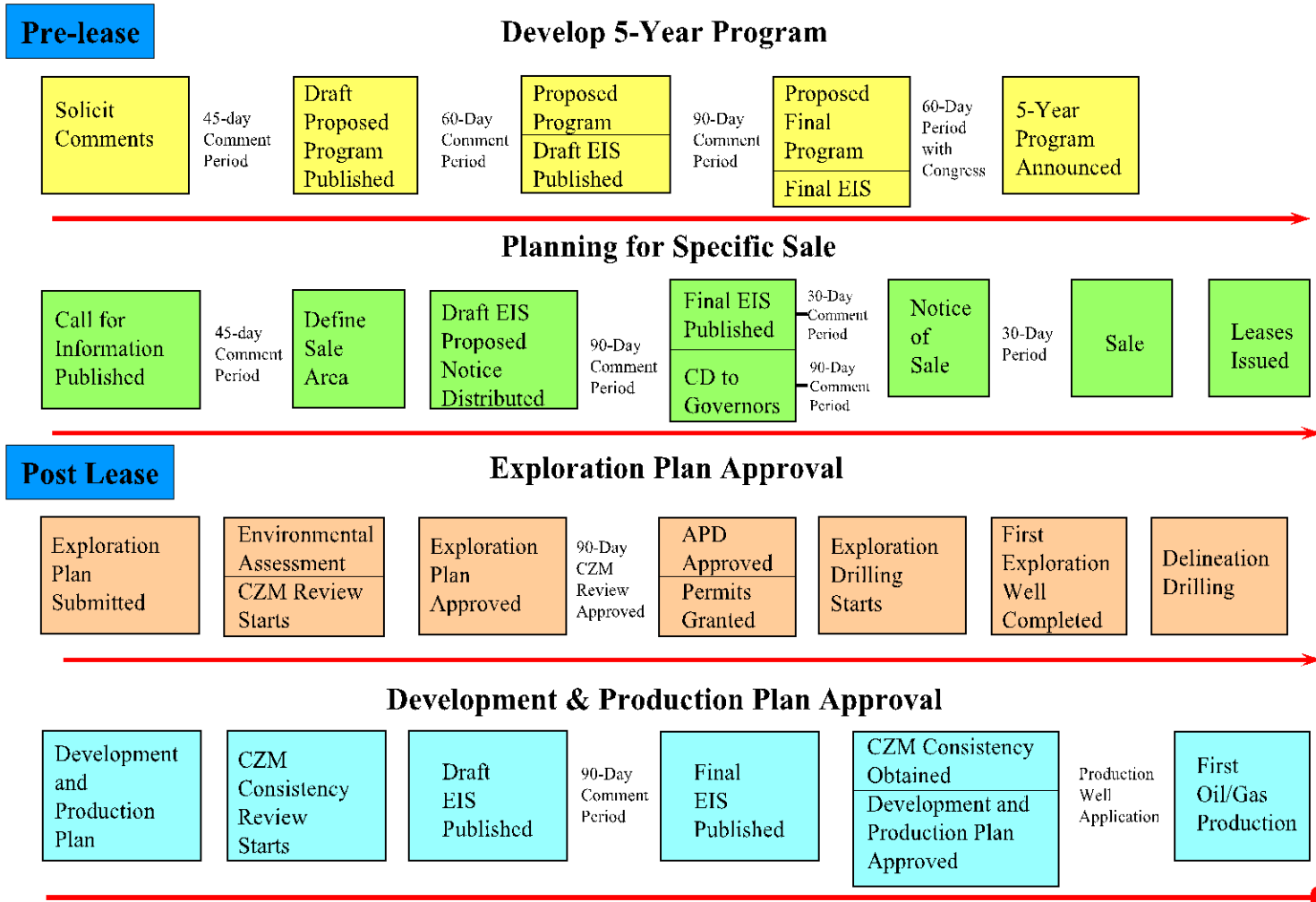
3. Exploration Plan Approval

To conduct exploratory drilling, the lessee must submit an Exploration Plan (EP) to BOEMRE for review and if necessary, modification. Following this review, BOEMRE develops an Environmental Assessment (EA) or an EIS. The EP is then conditionally approved pending final approval from federal agencies and state consistency review. The lessee then submits an Application for Permit to Drill (APD) that includes more technical details about containment of oil spills and mechanical fitness of the platforms. After the APD is approved, drilling can begin.

4. Development & Production Plan Approval

If the lessee completes its exploration and discovers oil and/or natural gas, they must submit a Development and Production Plan to BOEMRE detailing plans to develop the prospect. This development plan must include the number and location of wells, the type of structure that will be used, and how it will transport the oil and/or natural gas to shore. The Development and Production Plan is subject to a 60-day comment period. BOEMRE reviews the Plan, conducts an EA or EIS, and submits the plan to adjacent State Governors and relevant state coastal agency for consistency review prior to approving the Plan and allowing development activities to commence.

OCS Oil and Gas Leasing, Exploration, & Development Process



Abbreviations: APD, Application for Permit to Drill; Consistency Determination; CZM, Coastal Zone Management; EIS Environmental Impact Statement

Source: Oil and Gas Leasing on the Outer Continental Shelf, Bureau of Ocean Energy Management, Regulation and Enforcement, <http://www.boemre.gov/offshore/>

The Yellowstone Clean Ocean Alliance Reacts to New Offshore Oil Proposal

Following their public comment at the offshore oil development hearing August 29, 2011 in Acadia Park, Yellowstone Clean Ocean Alliance issued the following statement:



Time and again, drilling for oil in offshore waters off the United States has proven to be dangerous. Despite these lessons, the Bureau of Ocean Energy Management Regulation and Enforcement (BOEMRE) continues to move forward with plans to develop the outer continental shelf the Yellowstone. With an increase in offshore oil development comes increased danger in the form of a higher risk of accidents, spills, fires and irreversible environmental harm.

The sale of lease blocks for offshore oil development along the Yellowstone poses significant threat to the health and productivity of our ocean ecosystem. Many of the areas highlighted under the proposed sale occur within regions designated by the Yellowstone Fishery Management Council (YFMC) as essential fish habitat (EFH) and/or Habitat Areas of Particular Concern (HAPC) for our fisheries. These designations signify the importance of the habitat area to sustaining healthy fish stocks. Exposing these habitats to offshore oil development could lead to dramatic and irreversible harm to our coastal ecosystems and fisheries.

In addition to the cumulative impacts of offshore oil exploration, development and production, the extraction of offshore oil reserves poses catastrophic ecological risk from major oil spills. As we have seen in other parts of the country, oil spills can happen at any point in the process and can have lasting ecological impacts on aquatic species, habitats, and coastal communities. The Yellowstone Clean Ocean Alliance is strongly opposed to oil development in the proposed sale area. We urge you to join us in the fight to protect our ocean and coasts from oil development by opposing the sale of these proposed lease blocks.

What Can You Do?

- Sign our petition to stop offshore oil development off the Yellowstone.
- Contact your Governor's office and tell them you oppose the proposed lease sale.

Environmental Impacts At Every Phase

Exploration: In the oil exploration phase of development, seismic testing is employed to locate mineral reserves, a technique that has shown deleterious effects on marine mammals and dislocation of fish stocks. Exploratory wells are drilled to assess the commercial viability of the oil reserve, disrupting habitat and discharging pollutants and oil into the water column.

Development: Commercial development of oil deposits requires the use of rigs to drill the well, and the construction of production platforms to produce the crude oil. The drilling phase releases metal cuttings and drilling muds into the environment, and produces acute habitat disruption. The construction of production platforms disrupts benthic habitats and produces noise and industrial pollution.

Production: Once operational, the offshore production process removes gas, water and salt from the crude oil. Produced water and salts are dispensed back into the environment while gas byproducts are dispensed of through flaring, which releases black carbon into the atmosphere. Produced oil is then transported from the rig to the shore through transport tankers or submerged pipelines. Submerged pipelines can be installed on the surface of the seafloor or buried beneath the ocean floor, which causes further habitat degradation. Though transport tankers have less of an impact on benthic habitats, the incident of spills is greater due to material transfer.

Stakeholder Letter

In response to BOEMRE's Proposed Notice of Sale (NOS), Mr. Joshua Tree submitted a letter to the Council on behalf of the Yellowstone Fishermen's Association communicating their position on the proposed sale and requesting support from the Council to safeguard the region's fisheries from further offshore oil development.

Yellowstone Fishermen's Association

2715 Arches Avenue
Mesa Verde, YS 84631

August 25, 2011

Thomas Bryce, Chair
Yellowstone Fishery Management Council
10 Canyonland Road, Suite 6
Acadia Park, RW 84221

Dear Chairman Bryce,

I write as a commercial clam fisherman from Mesa Verde, Yosemite and as President of the Yellowstone Fishermen's Association (YFA), a group of over 500 commercial fishermen along the Yellowstone Coast. BOEMRE's intention to conduct lease sales for offshore oil development in our coastal waters is a threat to our livelihoods. We consider the locations of the proposed lease blocks to be a dire threat to our region's fishermen and fisheries, and look to the council to take whatever action it can to prevent this loss of valuable habitat and potential damage to the Yellowstone commercial fisheries.

Our objections to the lease sales are rooted in three basic concerns: the direct threat to habitat associated with oil exploration and extraction; the loss of valuable fishing grounds rendered inaccessible due to oil development; and the concentration of fishing in areas remaining available to the fleet after the lease sales.

The threats to fish habitat posed by oil development are well documented, and the recent reminder of Deepwater Horizon tragedy underscores the level of risk associated with offshore oil exploration and extraction. The risk of habitat damage resulting from seismic exploration, drilling, extraction, and development support services is high, and cannot be satisfactorily mitigated to ensure the long term productivity of the habitat upon which we depend.

While it is impossible to determine the number of drilling sites that might ultimately result from the lease sales at this time, we are quite certain that nearly any additional oil development along the Yellowstone coast will displace members of our association from their traditional fishing grounds. As we have seen with the existing oil platforms off Yosemite, Mesa Verde fishermen have lost access to some

of our clam and grouper fishing grounds. Generations of fishermen have made their living from areas that could support future oil development. It is unacceptable that fishermen who bear the burden of conservation, and who have supported the preservation of these important habitats, should lose access to these areas and marine resources to an industry that poses a threat to those conservation efforts.

Those areas not affected directly by oil development will have to support both existing fishing effort and that of fishermen displaced from their traditional fishing grounds. The Yellowstone Fishermen's Association is concerned that increased effort in areas still available to fishing will intensify fishing impacts on the habitat, increase the likelihood of gear conflict among fishermen, and reduce the safety of the fleet.

The Yellowstone Fishermen's Association has long depended upon the YFMC to conserve and protect the marine habitat and the resources it supports. We believe that the proposed lease sales put much of the council's work in jeopardy, and strongly urge the council to take whatever actions it can to block these sales and protect our fisheries.

Sincerely,

J. Tree

Joshua Tree
President, Yellowstone Fishermen's Association

Data Availability

To support the Council's discussion, Council staff compiled the following list of available data and available time series where appropriate. Commercial data are validated by dealer reporting and observer coverage and thus have a high degree of certainty; recreational data carry a moderate degree of certainty.

Biological and Reproductive Attributes

Feeding Type
Movements
Social Behavior
Longevity of Life Stages
Age at Maturity
Fertilization and Spawning Behavior
Spawning Season

Habitat Associations

Location
Pelagic Domain
Oceanography

Harvest Data

Commercial Catch by Area and Species (1991 – 2010)
Recreational Catch by Area and Species (1991 – 2008)
Commercial Catch by Gear and Species (1991 – 2010)
Commercial Catch by Residency and Species (1991 – 2010)
Recreational Catch by Residency and Species (1991 – 2008)

Revenue Data

Ex-Vessel Value of Total Commercial Catch (1991 – 2010)
Ex-Vessel Value of Commercial Catch by Area (1991 – 2010)
Ex-Vessel Value of Commercial Catch by Species (1991 – 2010)
First Wholesale Product Values by Area (1991 – 2010)

Participation Data

Number of Vessels Registered that Made Landings (1991 – 2008)
Number of Vessels Registered by Gear Type (1991 – 2008)
Number of Vessels Making Landings by Month (1991 – 2008)
Number of Angler Days by Residence (2000 – 2008)
Number of Angler Days by Area (2000-2008)

Excerpts from Magnuson-Stevens Fishery Conservation and Management Act and Code of Federal Regulations

Excerpts from:
MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT
EFH-related Sections

Section 3. Definitions

(10) The term "essential fish habitat" means those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.

Section 303. CONTENTS OF FISHERY MANAGEMENT PLANS

(a) REQUIRED PROVISIONS.—Any fishery management plan which is prepared by any Council, or by the Secretary, with respect to any fishery, shall—

(7) describe and identify essential fish habitat for the fishery based on the guidelines established by the Secretary under section 305(b)(1)(A), minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat;

Section 305. OTHER REQUIREMENTS AND AUTHORITY

(b) FISH HABITAT.—

- (1) (A) The Secretary shall, within 6 months of the date of enactment of the Sustainable Fisheries Act, establish by regulation guidelines to assist the Councils in the description and identification of essential fish habitat in fishery management plans (including adverse impacts on such habitat) and in the consideration of actions to ensure the conservation and enhancement of such habitat. The Secretary shall set forth a schedule for the amendment of fishery management plans to include the identification of essential fish habitat and for the review and updating of such identifications based on new scientific evidence or other relevant information.
(B) The Secretary, in consultation with participants in the fishery, shall provide each Council with recommendations and information regarding each fishery under that Council's authority to assist it in the identification of essential fish habitat, the adverse impacts on that habitat, and the actions that should be considered to ensure the conservation and enhancement of that habitat.
(C) The Secretary shall review programs administered by the Department of Commerce and ensure that any relevant programs further the conservation and enhancement of essential fish habitat.
(D) The Secretary shall coordinate with and provide information to other Federal agencies to further the conservation and enhancement of essential fish habitat.
- (2) Each Federal agency shall consult with the Secretary with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any essential fish habitat identified under this Act.
- (3) Each Council—
 - (A) may comment on and make recommendations to the Secretary and any Federal or State agency concerning any activity authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by any Federal or State agency that, in the view of the Council, may affect the habitat, including essential fish habitat, of a fishery resource under its authority; and
 - (B) shall comment on and make recommendations to the Secretary and any Federal or State agency concerning any such activity that, in the view of the Council, is likely to substantially affect the habitat, including essential fish habitat, of an anadromous fishery resource under its authority.
- (4) (A) If the Secretary receives information from a Council or Federal or State agency or determines from other sources that an action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by any State or Federal agency would adversely affect any essential fish habitat identified under this Act, the Secretary shall recommend to such agency measures that can be taken by such agency to conserve such habitat.
(B) Within 30 days after receiving a recommendation under subparagraph (A), a Federal agency shall provide a detailed response in writing to any Council commenting under paragraph (3) and the Secretary regarding the matter. The response shall include a description of measures proposed by the agency for avoiding, mitigating,

Excerpts from:
Code of Federal Regulations – Title 50: Wildlife and Fisheries

**CHAPTER VI: FISHERY CONSERVATION AND MANAGEMENT, NATIONAL OCEANIC AND ATMOSPHERIC
ADMINISTRATION, DEPARTMENT OF COMMERCE
PART 600: MAGNUSON-STEVENS ACT PROVISIONS**

Subpart J: Essential Fish Habitat (EFH)

600.815 - Contents of Fishery Management Plans.

(a) Mandatory contents

(1) Description and identification of EFH

(i) Overview. FMPs must describe and identify EFH in text that clearly states the habitats or habitat types determined to be EFH for each life stage of the managed species. FMPs should explain the physical, biological, and chemical characteristics of EFH and, if known, how these characteristics influence the use of EFH by the species/life stage. FMPs must identify the specific geographic location or extent of habitats described as EFH. FMPs must include maps of the geographic locations of EFH or the geographic boundaries within which EFH for each species and life stage is found.

...

(iv) EFH Determination

...

(C) If a species is overfished and habitat loss or degradation may be contributing to the species being identified as overfished, all habitats currently used by the species may be considered essential in addition to certain historic habitats that are necessary to support rebuilding the fishery and for which restoration is technologically and economically feasible. Once the fishery is no longer considered overfished, the EFH identification should be reviewed and amended, if appropriate.

...

(4) Non-fishing related activities that may adversely affect EFH. FMPs must identify activities other than fishing that may adversely affect EFH. Broad categories of such activities include, but are not limited to: dredging, filling, excavation, mining, impoundment, discharge, water diversions, thermal additions, actions that contribute to non-point source pollution and sedimentation, introduction of potentially hazardous materials, introduction of exotic species, and the conversion of aquatic habitat that may eliminate, diminish, or disrupt the functions of EFH. For each activity, the FMP should describe known and potential adverse effects to EFH.

...

(5) Cumulative impacts analysis. Cumulative impacts are impacts on the environment that result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of who undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. To the extent feasible and practicable, FMPs should analyze how the cumulative impacts of fishing and non-fishing activities influence the function of EFH on an ecosystem or watershed scale. An assessment of the cumulative and synergistic effects of multiple threats, including the effects of natural stresses (such as storm damage or climate-based environmental shifts) and an assessment of the ecological risks resulting from the impact of those threats on EFH, also should be included.

...

8) Identification of habitat areas of particular concern. FMPs should identify specific types or areas of habitat within EFH as habitat areas of particular concern based on one or more of the following considerations:

(i) The importance of the ecological function provided by the habitat.

(ii) The extent to which the habitat is sensitive to human-induced environmental degradation.

(iii) Whether, and to what extent, development activities are, or will be, stressing the habitat type.

(iv) The rarity of the habitat type.

...

(10) Review and revision of EFH components of FMPs. Councils and NMFS should periodically review the EFH provisions of FMPs and revise or amend EFH provisions as warranted based on available information. FMPs should outline the procedures the Council will follow to review and update EFH information. The review of information should include, but not be limited to, evaluating published scientific literature and unpublished scientific reports; soliciting information from interested parties; and searching for previously unavailable or inaccessible data. Councils should report on their review of EFH information as part of the annual Stock Assessment and Fishery Evaluation (SAFE) report prepared pursuant to 600.315(e). A complete review of all EFH information should be conducted as recommended by the Secretary, but at least once every 5 years.

Excerpts from:
Code of Federal Regulations – Title 50: Wildlife and Fisheries

**CHAPTER VI: FISHERY CONSERVATION AND MANAGEMENT, NATIONAL OCEANIC AND ATMOSPHERIC
ADMINISTRATION, DEPARTMENT OF COMMERCE
PART 600: MAGNUSON-STEVENSON ACT PROVISIONS**

Subpart K: EFH Coordination, Consultation and Recommendations

600.910 - Definitions and word usage.

(a) Definitions. In addition to the definitions in the Magnuson-Stevens Act and 600.10, the terms in this subpart have the following meanings:

Adverse effect means any impact that reduces quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

600.920 - Federal agency consultation with the Secretary.

(a) Consultation generally

(1) Actions requiring consultation. Pursuant to section 305(b)(2) of the Magnuson-Stevens Act, Federal agencies must consult with NMFS regarding any of their actions authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken that may adversely affect EFH.

...

600.925 - NMFS EFH Conservation Recommendations to Federal and state agencies.

(a) General. Under section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS is required to provide EFH Conservation Recommendations to Federal and state agencies for actions that would adversely affect EFH. NMFS will not recommend that state or Federal agencies take actions beyond their statutory authority.

(b) Recommendations to Federal agencies. For Federal actions, EFH Conservation Recommendations will be provided to Federal agencies as part of EFH consultations conducted pursuant to 600.920. If NMFS becomes aware of a Federal action that would adversely affect EFH, but for which a Federal agency has not initiated an EFH consultation, NMFS may request that the Federal agency initiate EFH consultation, or NMFS will provide EFH Conservation Recommendations based on the information available.

(c) Recommendations to state agencies

(1) Establishment of procedures. The Magnuson-Stevens Act does not require state agencies to consult with the Secretary regarding EFH. NMFS will use existing coordination procedures or establish new procedures to identify state actions that may adversely affect EFH, and to determine the most appropriate method for providing EFH Conservation Recommendations to state agencies.

(2) Coordination with states on recommendations to Federal agencies. When an action that would adversely affect EFH is authorized, funded, or undertaken by both Federal and state agencies, NMFS will provide the appropriate state agencies with copies of EFH Conservation Recommendations developed as part of the Federal consultation procedures in 600.920. NMFS will also seek agreements on sharing information and copies of recommendations with Federal or state agencies conducting similar consultation and recommendation processes to ensure coordination of such efforts.

(d) Coordination with Councils. NMFS will coordinate with each Council to identify the types of actions on which Councils intend to comment pursuant to section 305(b)(3) of the Magnuson-Stevens Act. For such actions NMFS will share pertinent information with the Council, including copies of NMFS' EFH Conservation Recommendations.

Excerpts from:
Code of Federal Regulations – Title 50: Wildlife and Fisheries

**CHAPTER VI: FISHERY CONSERVATION AND MANAGEMENT, NATIONAL OCEANIC AND ATMOSPHERIC
ADMINISTRATION, DEPARTMENT OF COMMERCE
PART 600: MAGNUSON-STEVENSON ACT PROVISIONS**

Subpart K: EFH Coordination, Consultation and Recommendations

600.930 - Council comments and recommendations to Federal and state agencies.

Under section 305(b)(3) of the Magnuson-Stevens Act, Councils may comment on and make recommendations to the Secretary and any Federal or state agency concerning any activity or proposed activity authorized, funded, or undertaken by the agency that, in the view of the Council, may affect the habitat, including EFH, of a fishery resource under its authority. Councils must provide such comments and recommendations concerning any activity that, in the view of the Council, is likely to substantially affect the habitat, including EFH, of an anadromous fishery resource under Council authority.

(a) Establishment of procedures. Each Council should establish procedures for reviewing Federal or state actions that may adversely affect the habitat, including EFH, of a species under its authority. Each Council may receive information on actions of concern by methods such as directing Council staff to track proposed actions, recommending that the Council's habitat committee identify actions of concern, or entering into an agreement with NMFS to have the appropriate Regional Administrator notify the Council of actions of concern that would adversely affect EFH. Federal and state actions often follow specific timetables which may not coincide with Council meetings. Therefore, Councils should consider establishing abbreviated procedures for the development of Council recommendations.

(b) Early involvement. Councils should provide comments and recommendations on proposed state and Federal actions of concern as early as practicable in project planning to ensure thorough consideration of Council concerns by the action agency. Each Council should provide NMFS with copies of its comments and recommendations to state and Federal agencies.