WASHINGTON OCEAN USES ATLAS PROJECT
OCEAN USES MAP BOOK

Introduction

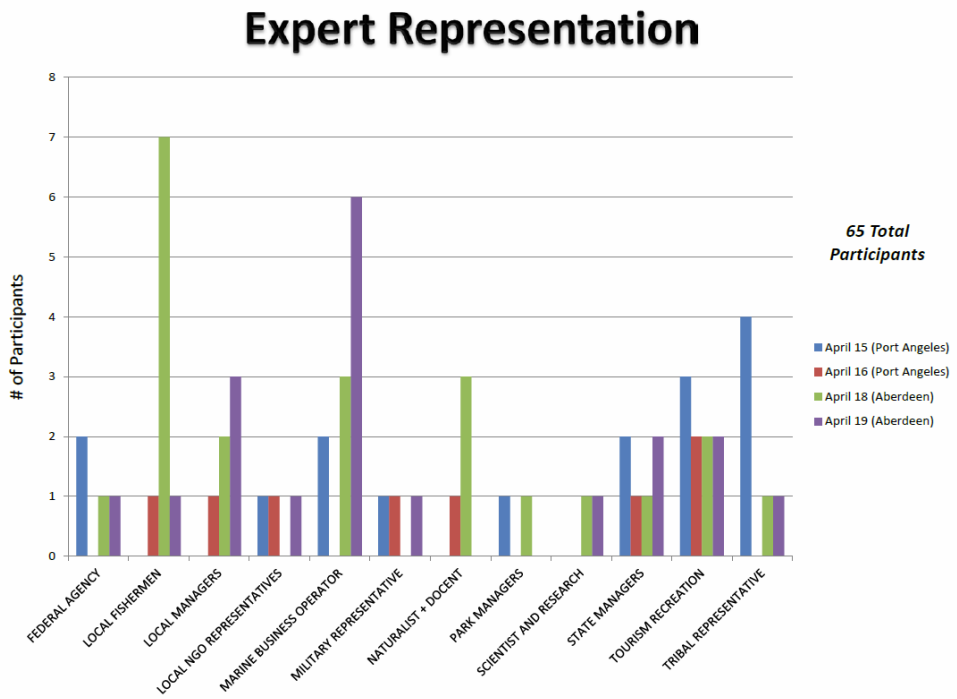
This map book contains cartographic products derived from the Washington Ocean Uses Atlas participatory mapping workshops conducted in Port Angeles on April 15-16, 2013 (at the Clallam County Courthouse) and Aberdeen on April 18-19, 2013 (at Grays Harbor College). These participatory mapping workshops were designed to collect spatial data from regional ocean uses experts and stakeholders for a wide range of activities that occur throughout the coastal and marine waters offshore of Washington. Through facilitated discussion and hands-on digital mapping, workshop participants documented areas where uses occur, variation in use patterns and historical and/or community perspectives on how the use has evolved over recent years.

The Washington Ocean Uses Atlas project is a collaborative effort between NOAA, the Bureau of Ocean Energy Management, and Washington state agencies designed to collect spatial data on ocean uses throughout Washington's coastal and offshore waters to inform the state's marine spatial planning process and planning for potential offshore renewable energy development. The project was funded by the U.S. Department of the Interior, Bureau of Ocean Energy Management, through an Interagency Agreement with the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service.

Workshop Attendance

The four days of participatory mapping workshops were facilitated by 7 staff from both NOAA Coastal Services Center and NOAA's Marine Protected Areas Center.

In total over the 4 days, 65 participants attended from throughout the state, representing all use sectors, including tribal representatives from the Makah Tribe, Quileute Nation and Quinault Indian Nation. The participants spanned a wide range of expertise, as shown on the adjacent plot.



October 2013

Targeted Uses

Industry/Military Sector	Extractive Sector	Non-Extractive Sector
• Commercial Shipping • Mariculture • Marine Debris • Military Operations • Mining and Mineral Extraction • Ocean Dumping • Renewable Energy • Underwater Transmission Cables • Underwater Pipelines	• Commercial Dive Fishing • Commercial Fishing with Benthic Mobile & Fixed Gear • Commercial Intertidal Harvest • Commercial Pelagic Fishing • Commercial Seaweed Harvest • Kayak Fishing • Recreational Dive Fishing • Recreational Fishing from Boats for Benthic & Pelagic Species • Recreational Fishing from Shore • Recreational Intertidal Harvest • Subsistence Fishing and Harvest	• Beach Use • Cruise Ships • Cultural Use • Motorized Boating • Paddling • Permanent Research Areas • Sailing • SCUBA/Snorkeling • Surface Board Sports • Swimming • Tide Pooling • Wildlife Viewing at Sea

The following is the list of uses that were mapped in the workshops. Maps for each of these uses are provided at various scales in this map book and include definitions for each use category.

Generalized Workshop Process

At the start of the workshop, participants were assigned to a work group and an associated mapping station. With guidance from facilitators, participants were asked to draw use areas based on their knowledge and observation of where this type of activity is known to occur. For some uses, existing data was presented and participants were asked to review, if necessary, modify the existing data for completeness and accuracy. Each use was explicitly defined (see uses list) and participants were asked to map the general use footprint and dominant use areas, as described below. Participants were also asked to record relevant supplemental information (e.g., seasonality, social and cultural significance, historical patterns) that was compiled and added to the final use maps. The following provides detail for type of information collected for each use category:

- **General Use Footprint:** The general use footprint includes all areas in which the use is *known to occur with some regularity* (over the past 3-5 years), regardless of its frequency or intensity. The general use footprint does not include areas where the use may occur once or twice or where it might *conceivably* occur now or in the future.

- **Dominant Use Areas:** Dominant use areas are defined as *ocean areas routinely used by most users most of the time* (within the seasonal patterns for that use). Dominant use areas must be drawn within the general use footprint. Participants were asked to work together to draw dominant use areas as they occur throughout the study region.

- **Supplemental Use Data:** Participants were asked to provide supplemental information on the *ocean use information form*. For some uses, participants noted specific locations on the map where variation of the use occurs (e.g. fishing for special events, night vs. day fishing). This information was compiled and added to the use maps in the notes section.

Tribal uses of the ocean were not mapped explicitly, though tribal chairs and/or their designated representatives were formally invited by BOEM to participate in the mapping workshops. The sharing of tribal use information was dependent upon each tribe's determination of whether the mapping

workshops were an appropriate forum for sharing such information. Any tribal use information shared during the workshops was incorporated into the defined use categories. Thus, the atlas data and map products do not explicitly depict tribal use.

Maps

Data compiled during the workshop were processed to create maps documenting the use patterns as drawn by the workshop participants. The following maps show patterns for each use mapped in the workshops and include the general use footprint and dominant use areas, as well as a compilation of the supplemental data provided by participants throughout the mapping process. In creating the use maps, note the following protocol used to create the general use footprint and dominant use areas.

The ***general use footprint*** includes **ALL** areas that were mapped as general use by **ANY** of the groups that mapped that particular use over the four days of workshops.

The ***dominant use areas*** shown on the maps include **ONLY** those areas that were mapped as dominant by a **MAJORITY** of the groups that mapped that particular use over the four days of workshops.

The maps have been reviewed by workshop participants prior to publication. Slight revisions and modifications were made to some of the draft maps based on the collective participant feedback. For access to the spatial data (including detailed metadata on processing, review and revisions) please visit the Washington Marine Spatial Planning (www.msp.wa.gov) online mapping application.

Contacts

If you have questions about this project, please contact:

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Pacific Regional Ocean Uses Atlas Project Coordinator
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October 2013

THE WASHINGTON OCEAN USES ATLAS

Participatory ocean use mapping to inform marine spatial planning in Washington's marine waters

BOEM
Bureau of Ocean Energy Management

Commercial Fishing with Benthic Fixed Gear

Includes:
Use of traps, pots, bottom longlines, bottom or anchored gillnets, pound nets, weirs, and other bottom tending gear types used to catch benthic fishes and invertebrates

Excludes:
All other forms of fishing

Use Notes:
Commercial fishing with benthic fixed gear occurs throughout the study area with a focus on dungeness crab, black cod, halibut, spot prawn and hagfish. Longlines are used in the canyons at depths of 50 fathoms or more; crab pots are most commonly between 2-75 fathoms with most of the crabbing inside 100 fathoms. Crabbers hold over 200 permits in the state and account for over 100,000 crab pots. Protection of the crab fisher heritage and culture is very important to the local coastal communities. Recently the crab fishery has been shifting towards the southern coast near Klipsan Beach where 40-50% of the crab fleet is fishing in 9% of the 140 mile coast.

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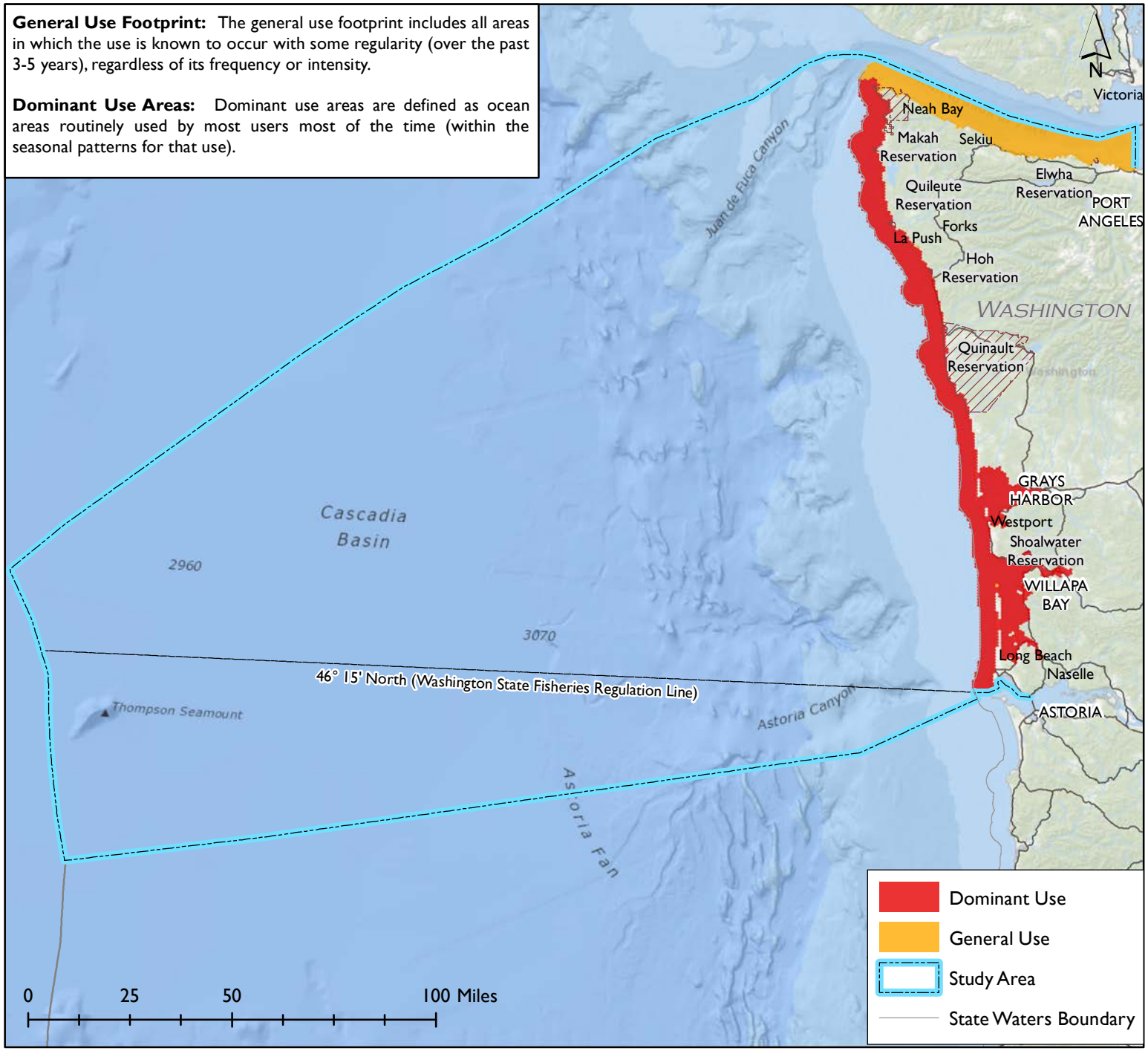

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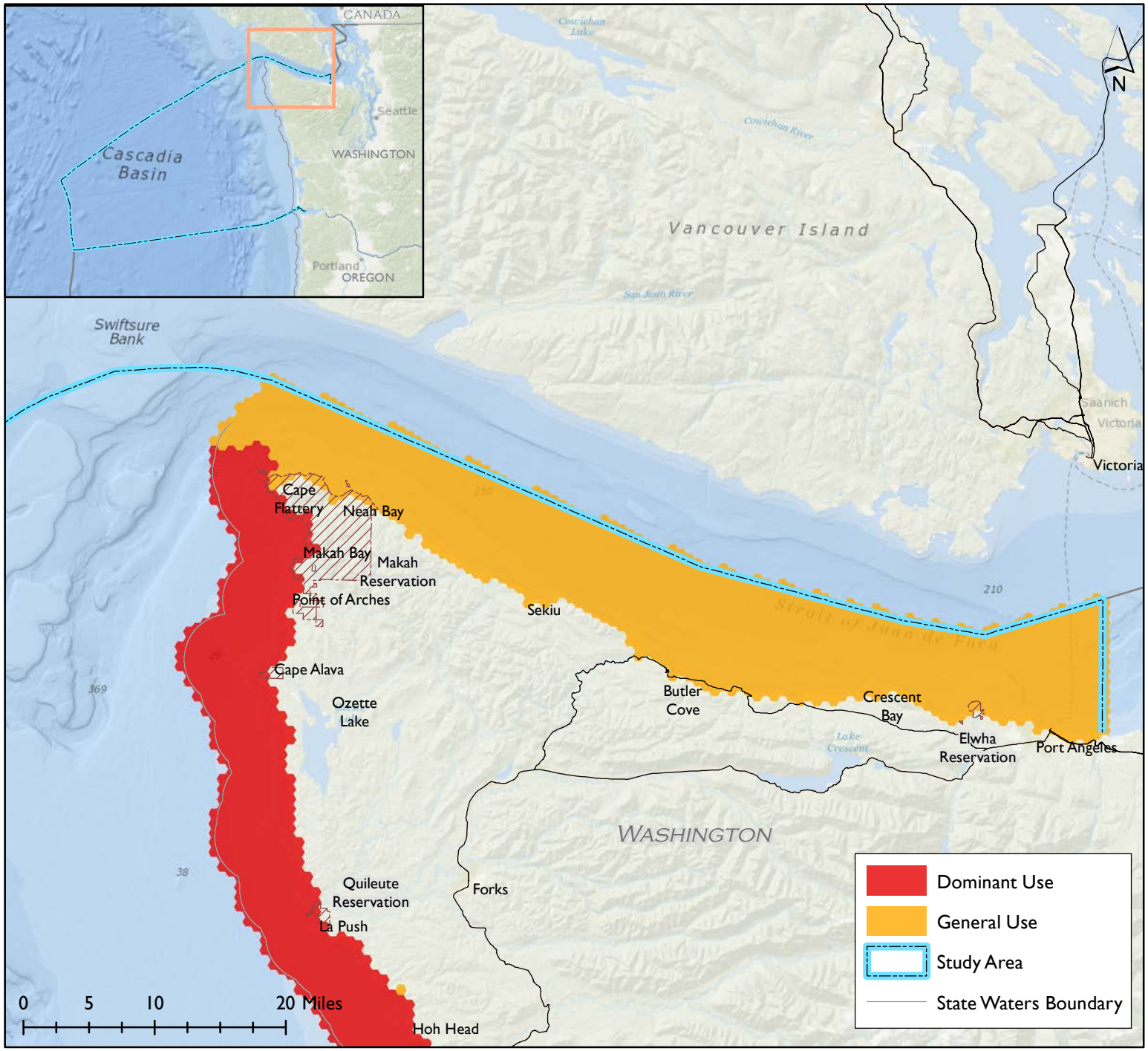

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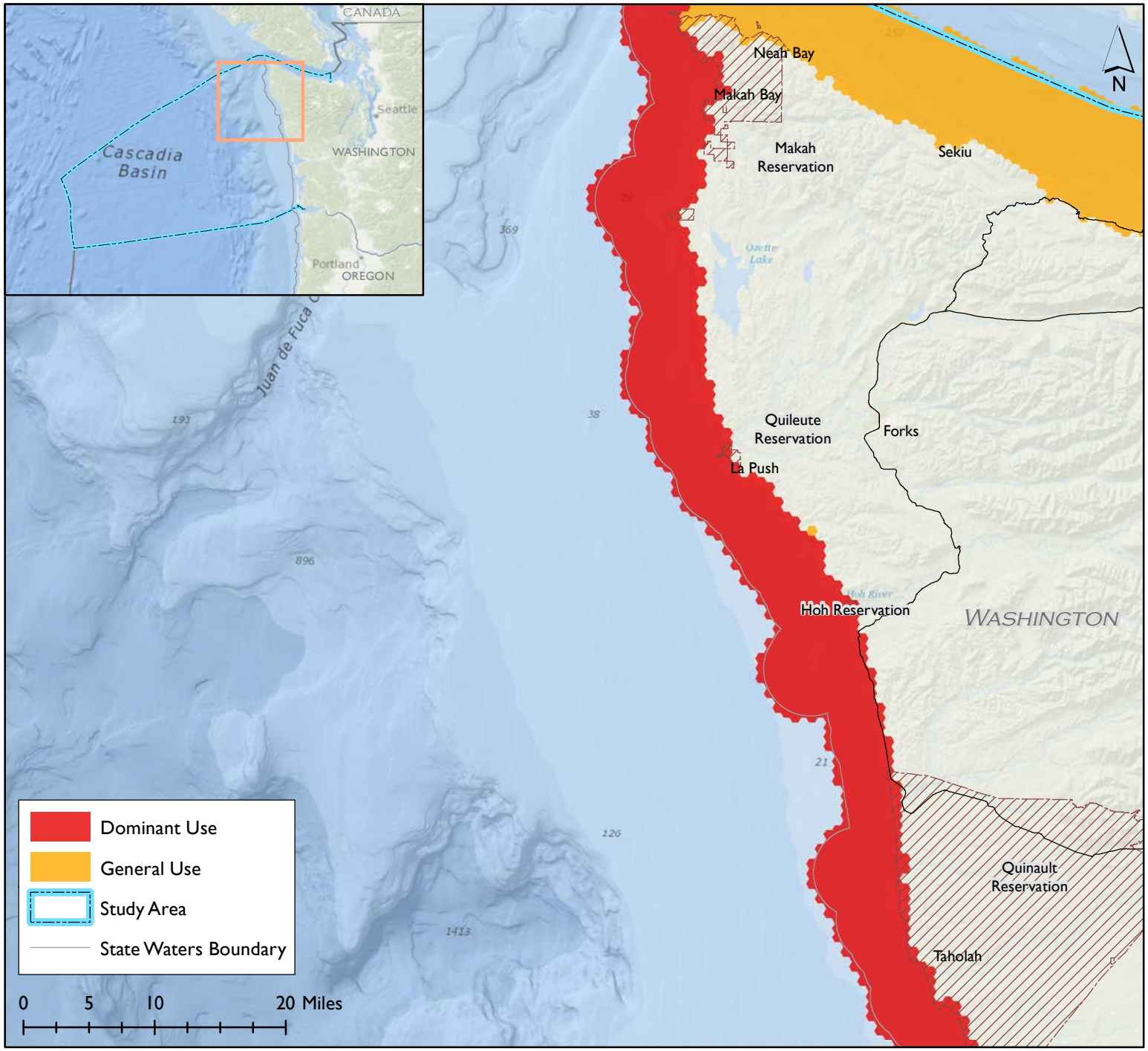

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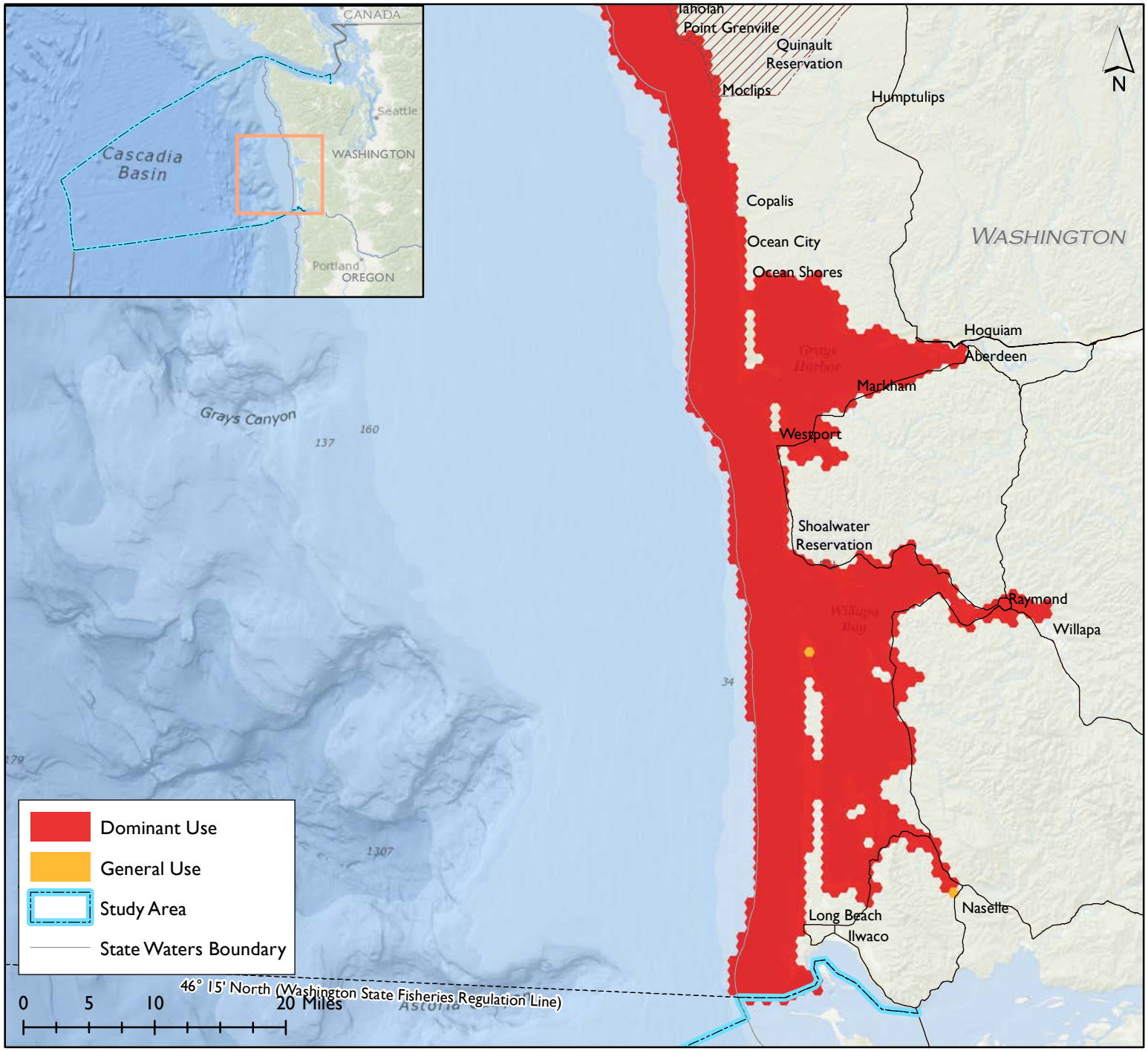

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Commercial Fishing with Benthic Mobile Gear

Includes:
The use of rod and reel, trolling, trawling and other mobile gear to catch benthic fishes and mobile invertebrates

Excludes:
All other forms of fishing

Use Notes:
Commercial fishing with benthic mobile gear occurs mainly on the offshore portion of the continental shelf between 20-700 fathoms. This includes fishing for pink shrimp along the rocky edge of the shelf and around muddy, soft bottom areas; halibut trolling concentrated around 30-180 fathoms; black cod and groundfish between 60-700 fathoms; sole or flatfish between 20-700 fathoms.

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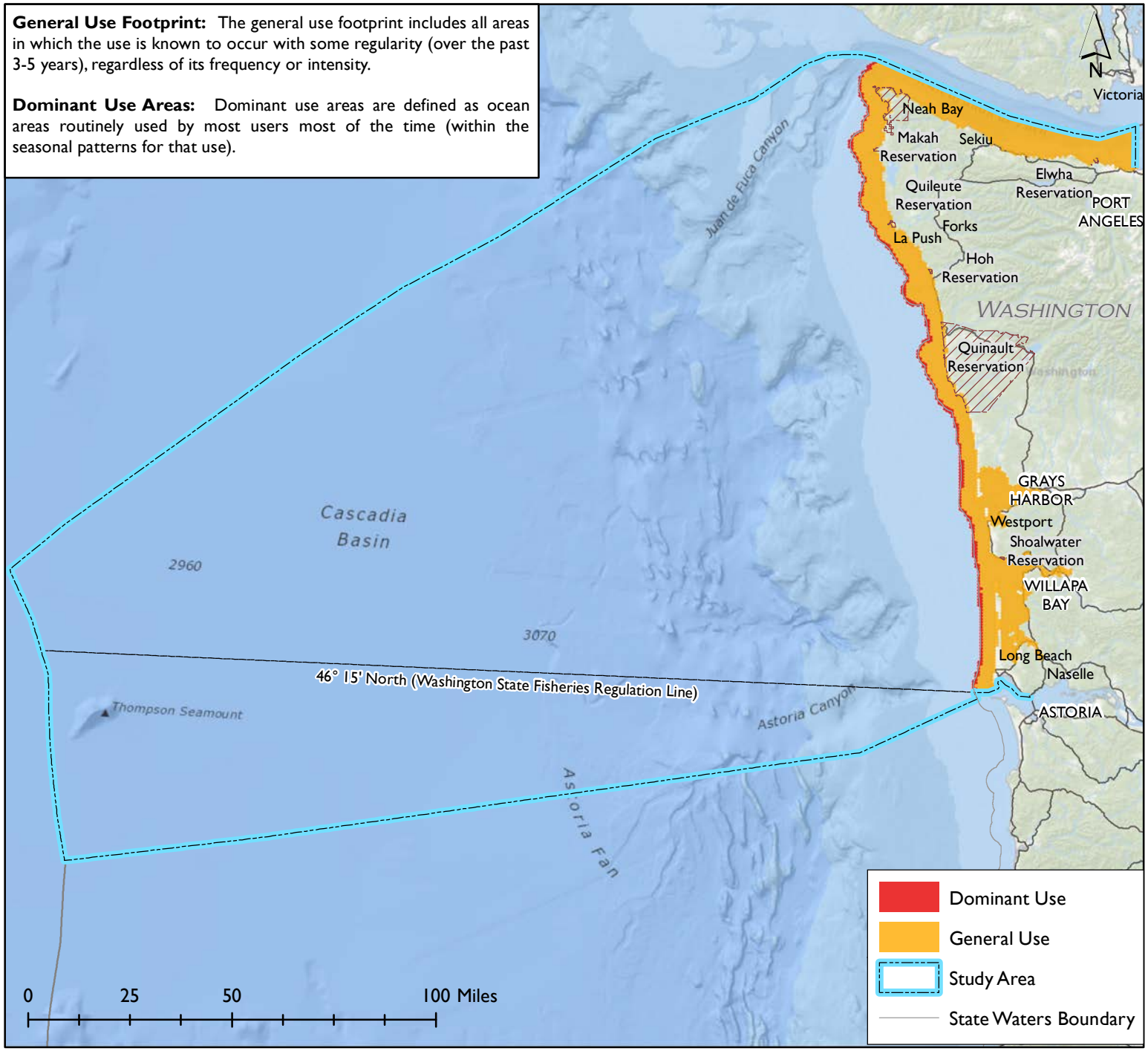

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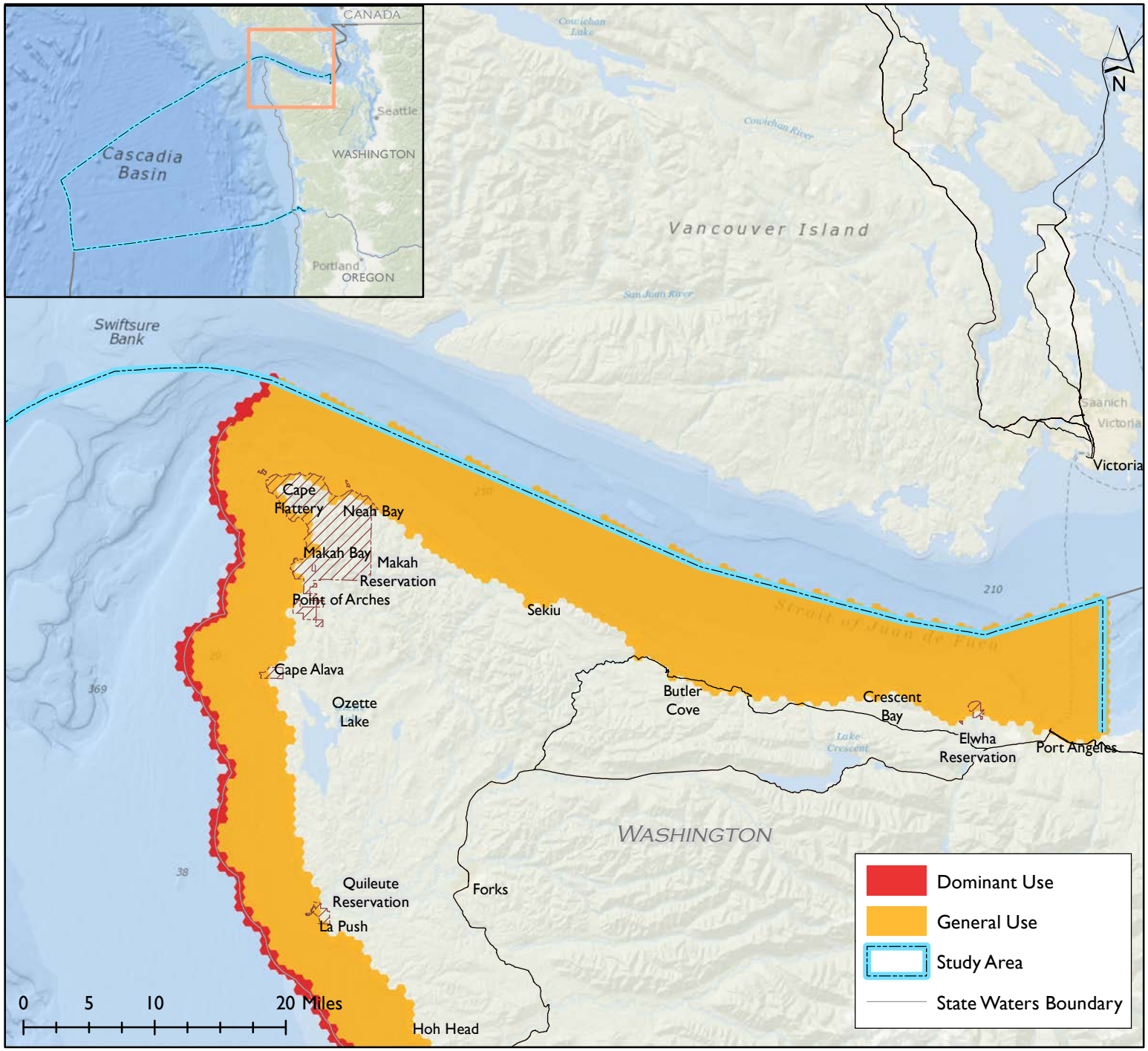

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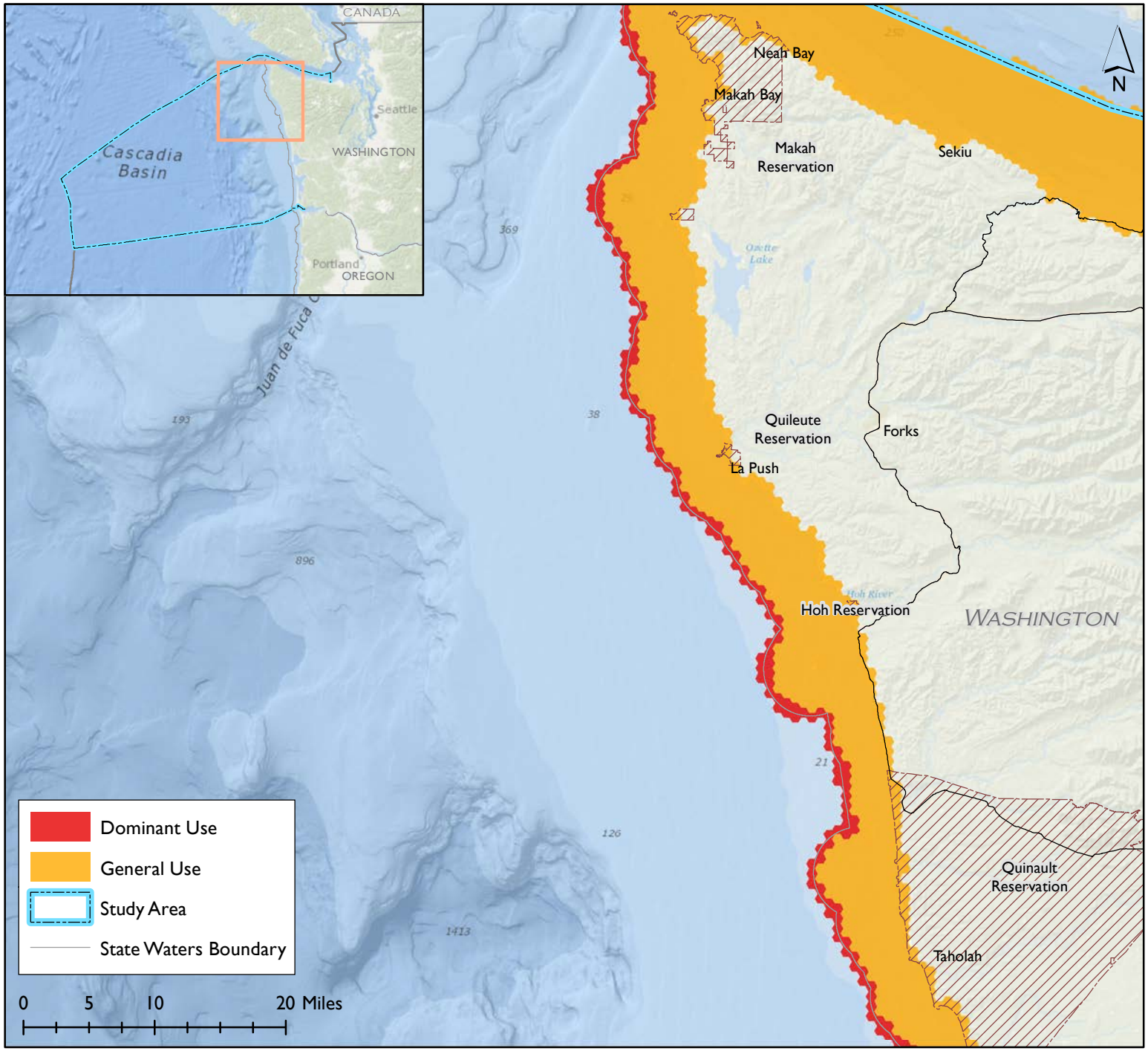

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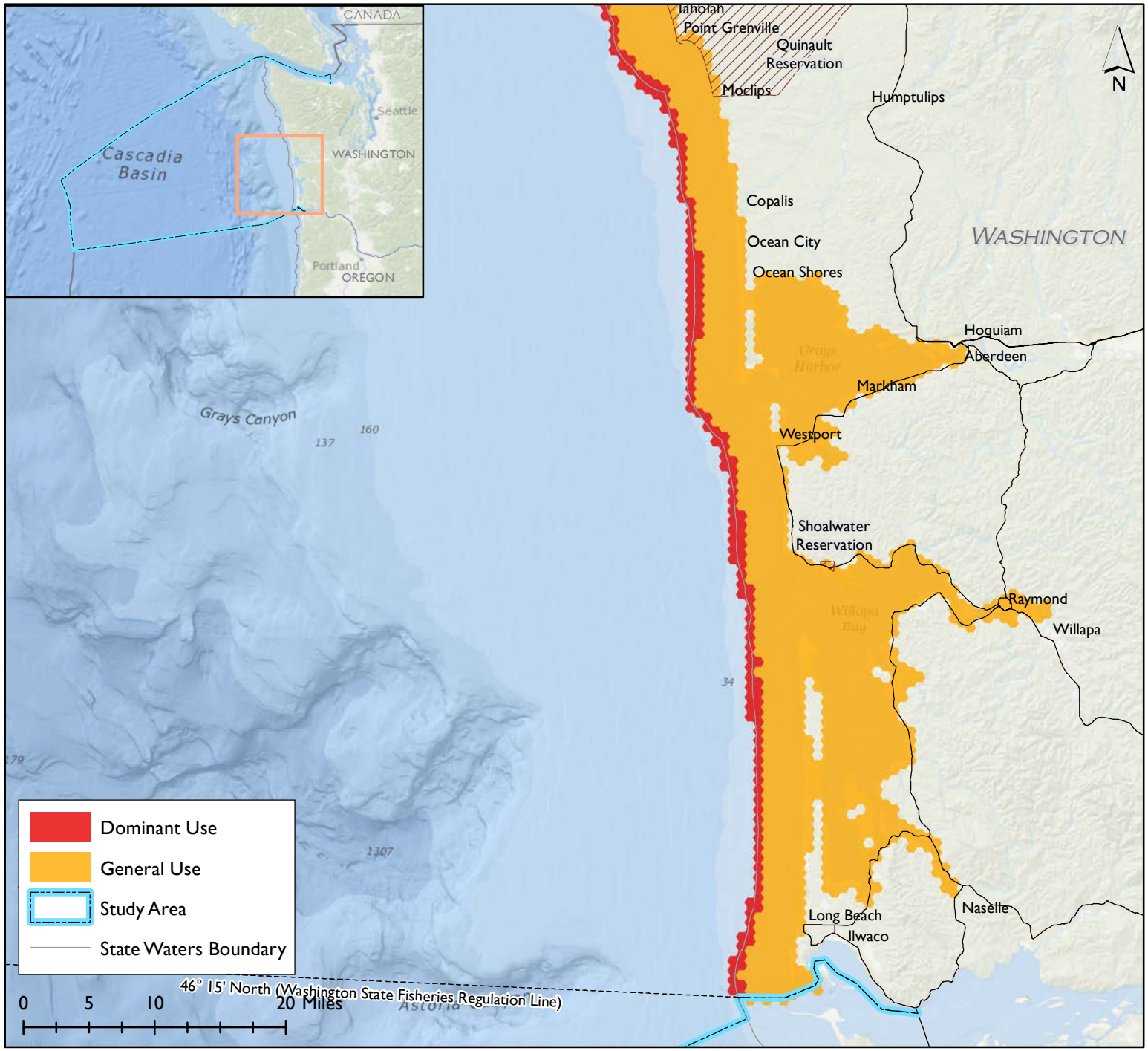

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Commercial Dive Fishing

Includes:
The use of SCUBA diving, surface supply diving or snorkeling (free diving) to catch fishes and invertebrates for commercial purposes

Excludes:
All other forms of fishing, recreational SCUBA/Snorkeling

Use Notes:
Commercial dive fishing is not a significant use in this area. Mainly a tribal use, it is most common along the eastern shore of the Strait within 50 feet of water. Geoduck, shellfish, urchin and sea cucumber are the most commonly targeted species.

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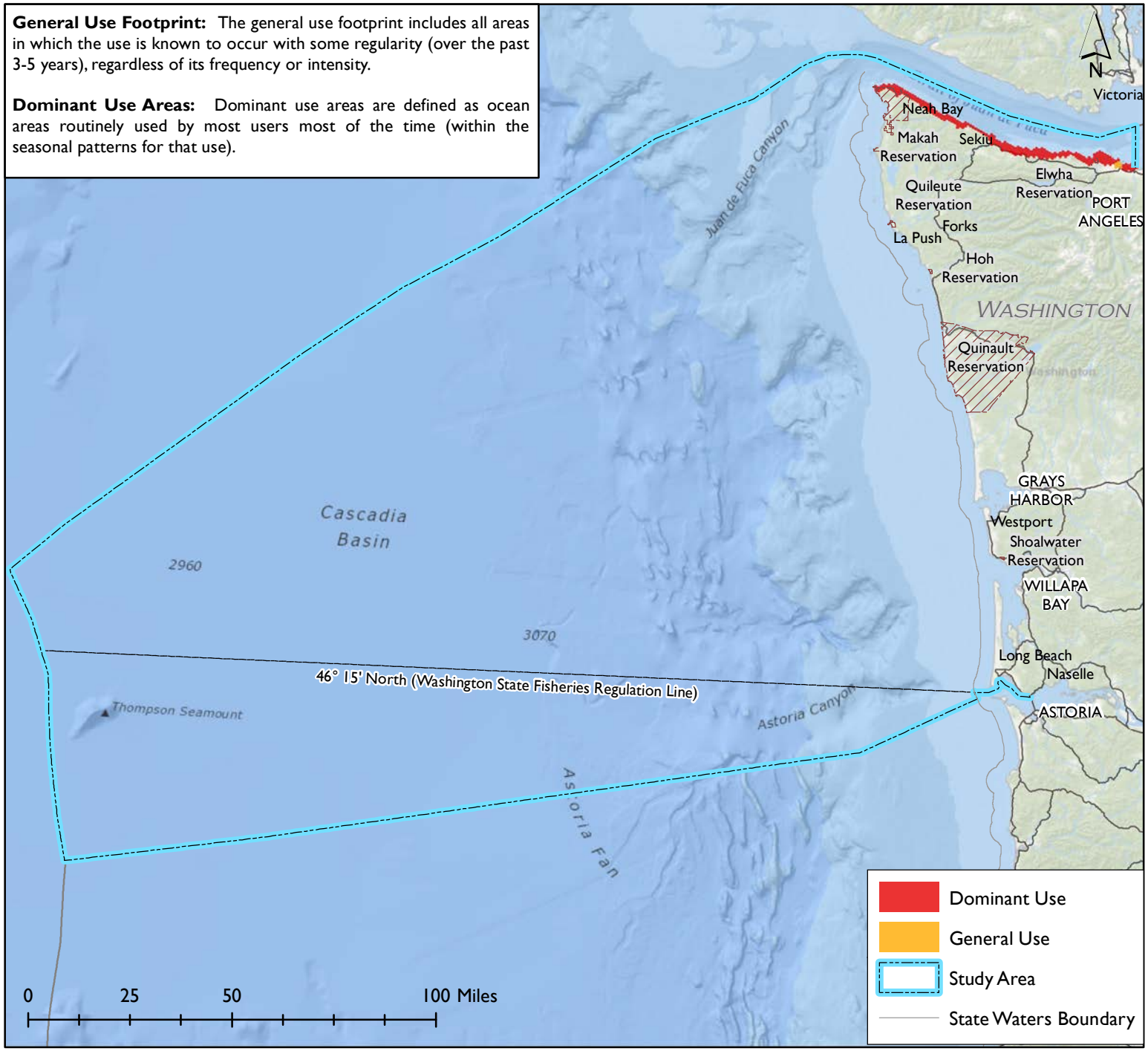

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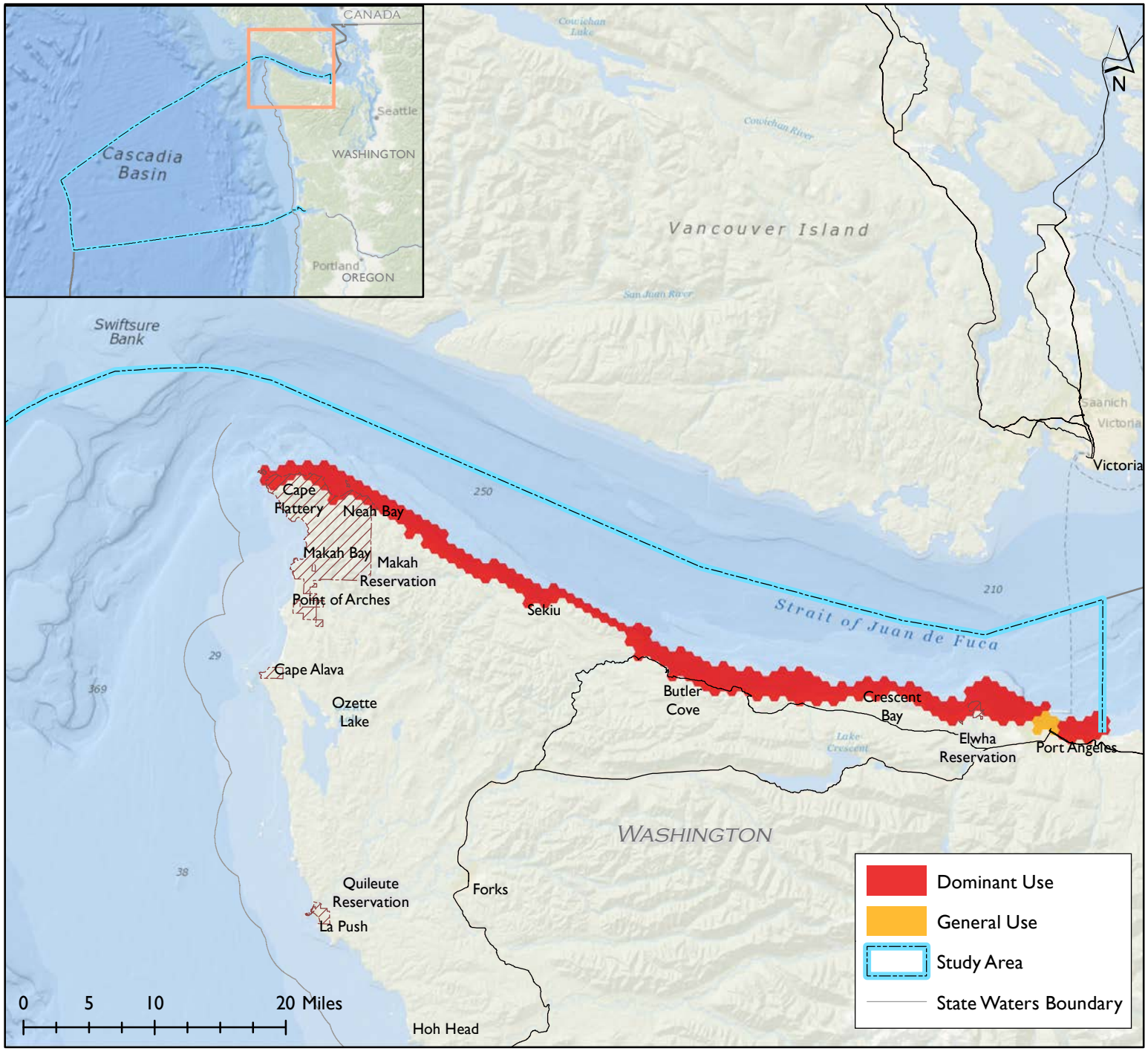

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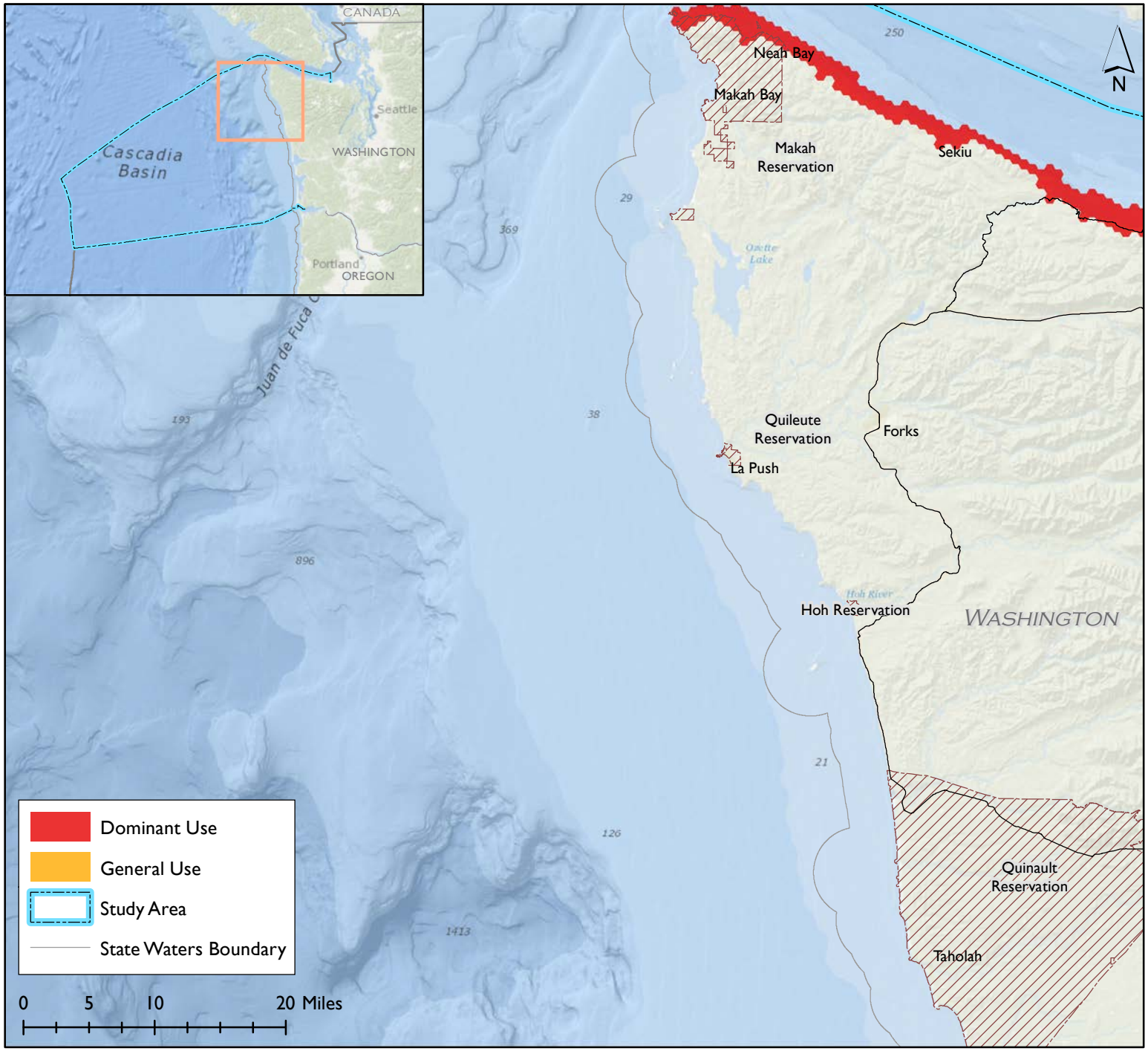

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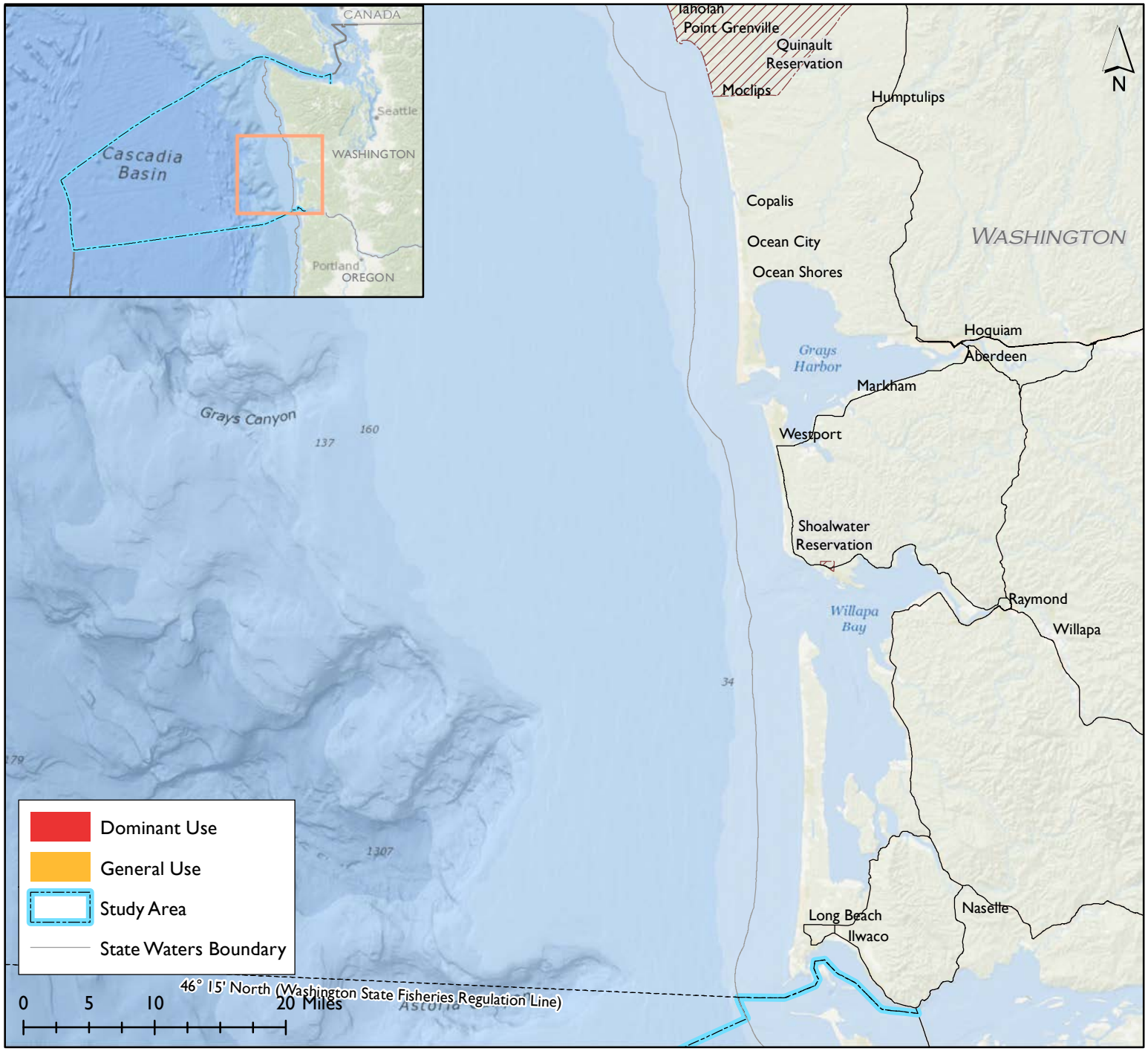

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Excludes:
All other forms of fishing

Use Notes:
Commercial pelagic fishing is most common from March-September and targets a wide range of pelagic species including salmon, tuna, whitting, anchovy and sardines. There is some limited commercial pelagic fishing in estuaries for salmon and bait fish, but mainly it occurs outside of 3 miles. Use is concentrated around the channels within 30-40 miles from shore, but it is highly mobile, subject to the regulatory seasons, migration patterns, ocean temperatures and currents.

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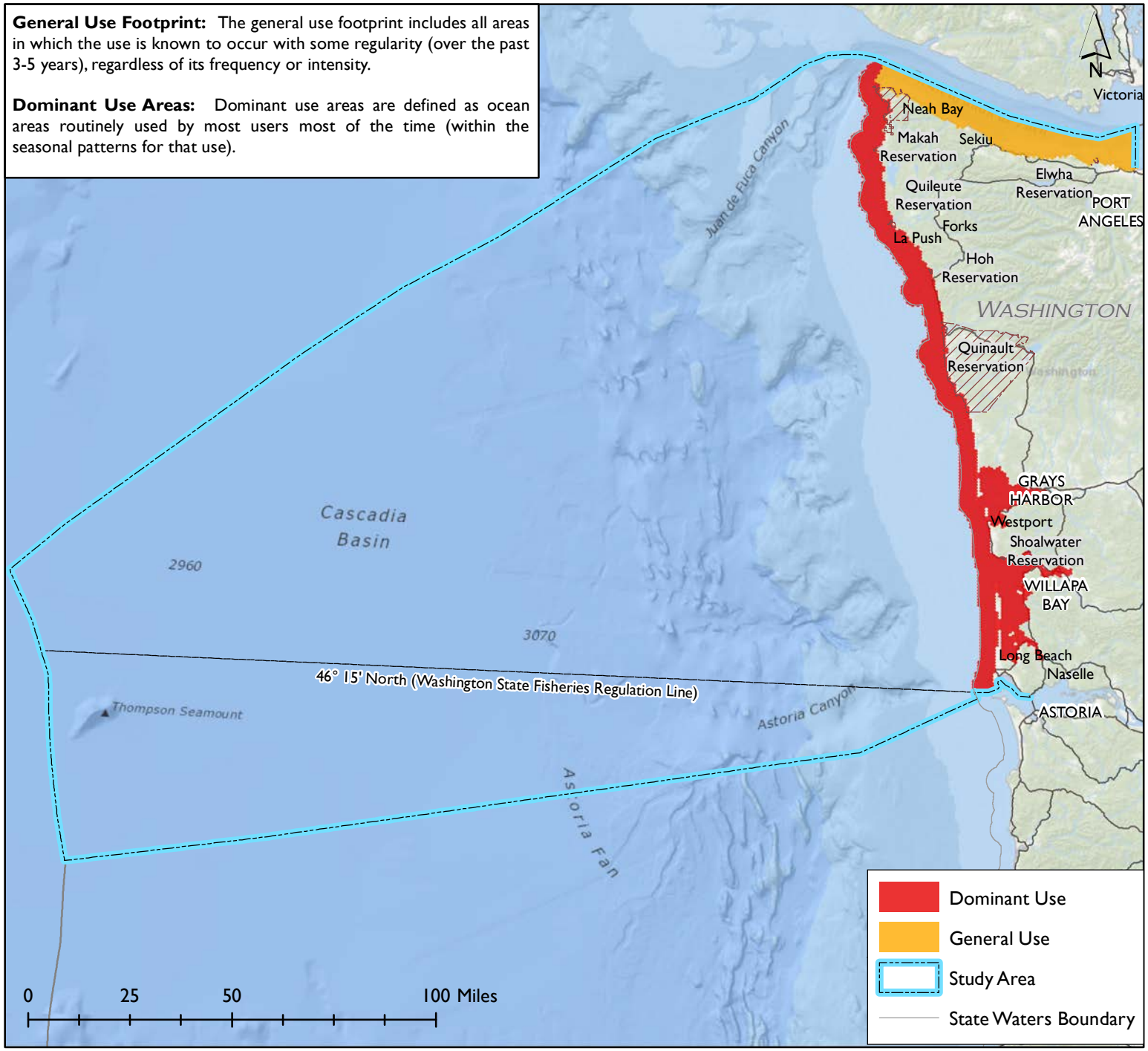

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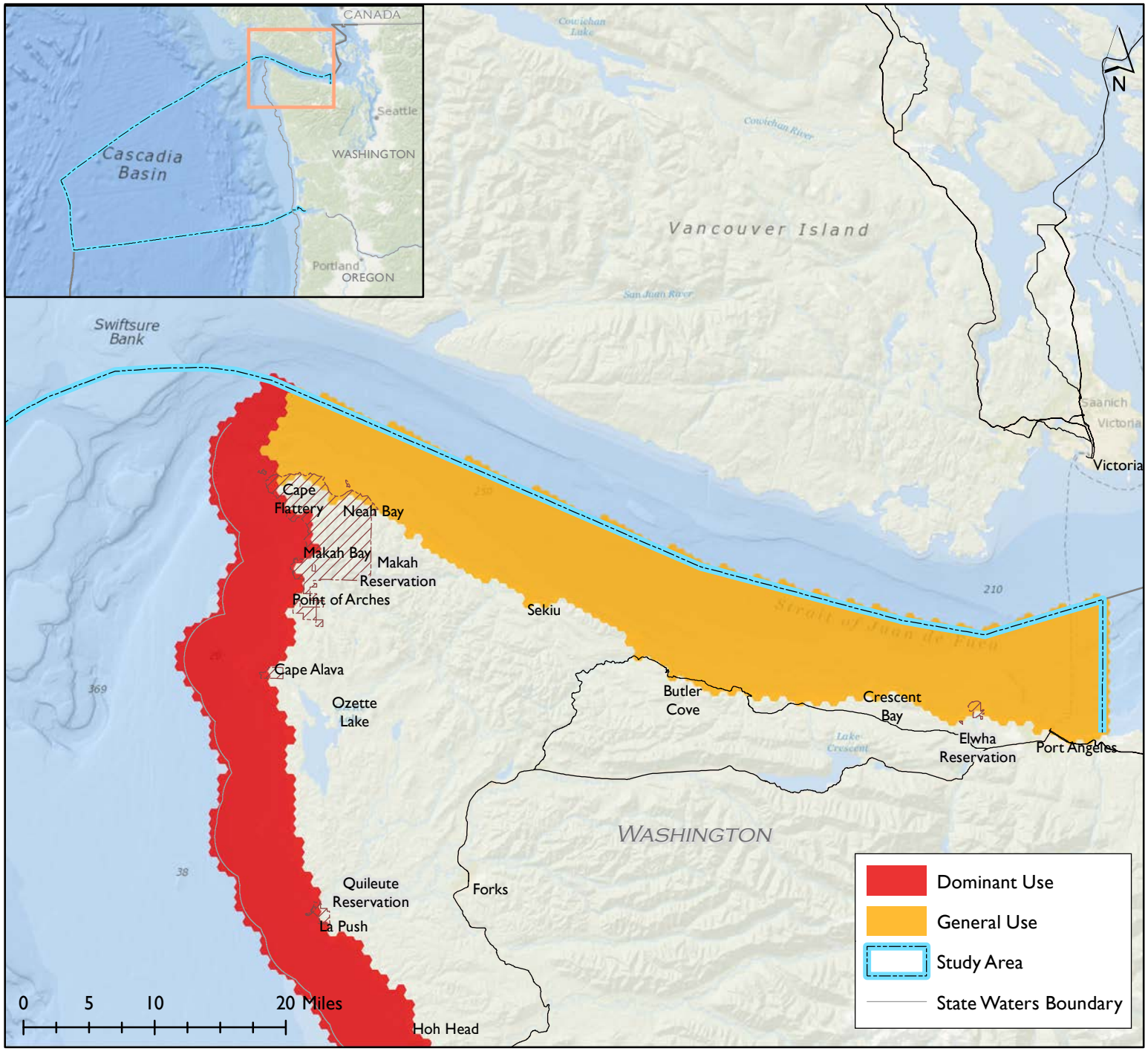

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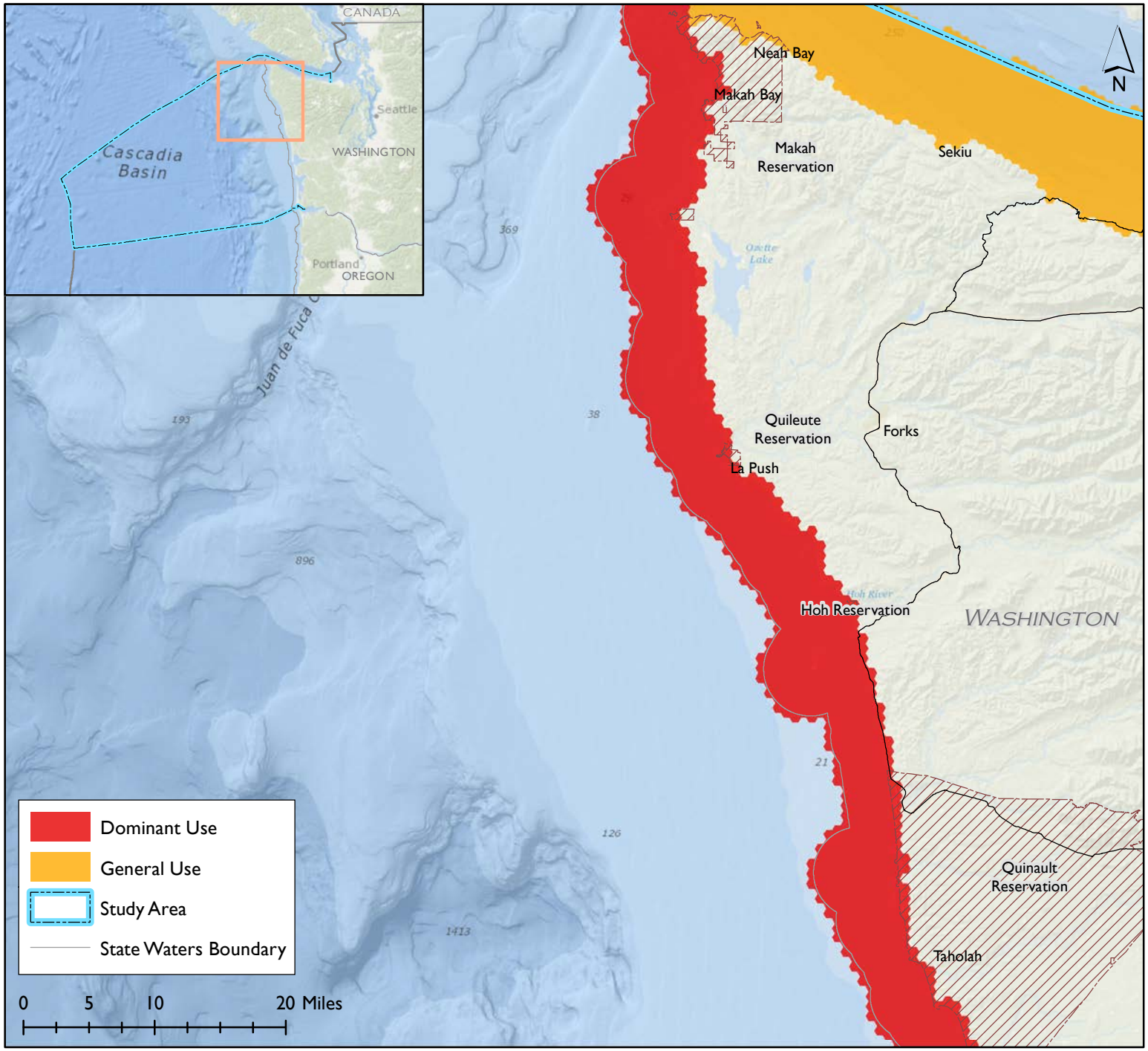

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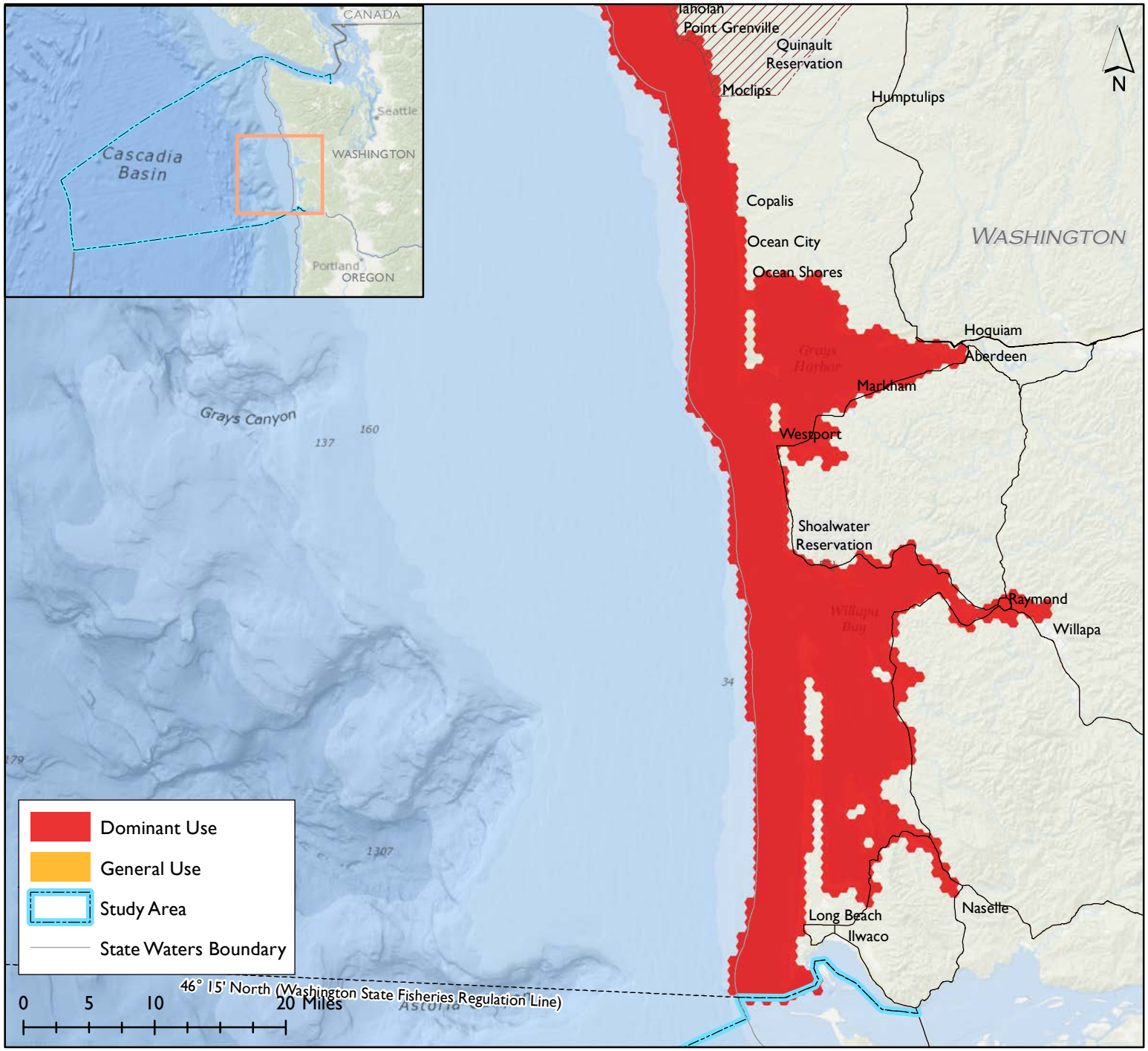

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Commercial Intertidal Harvest

Includes:
Commercial harvest in the intertidal zone of living marine plant or animal species for consumption or aquaria

Excludes:
All other forms of intertidal or coastal harvesting

Use Notes:
Commercial intertidal harvest occurs predominantly in Willapa and Grays Harbors. These two bays account for nearly 10 percent of oyster production in the US. Harvesting for clams is also a significant within the study area.

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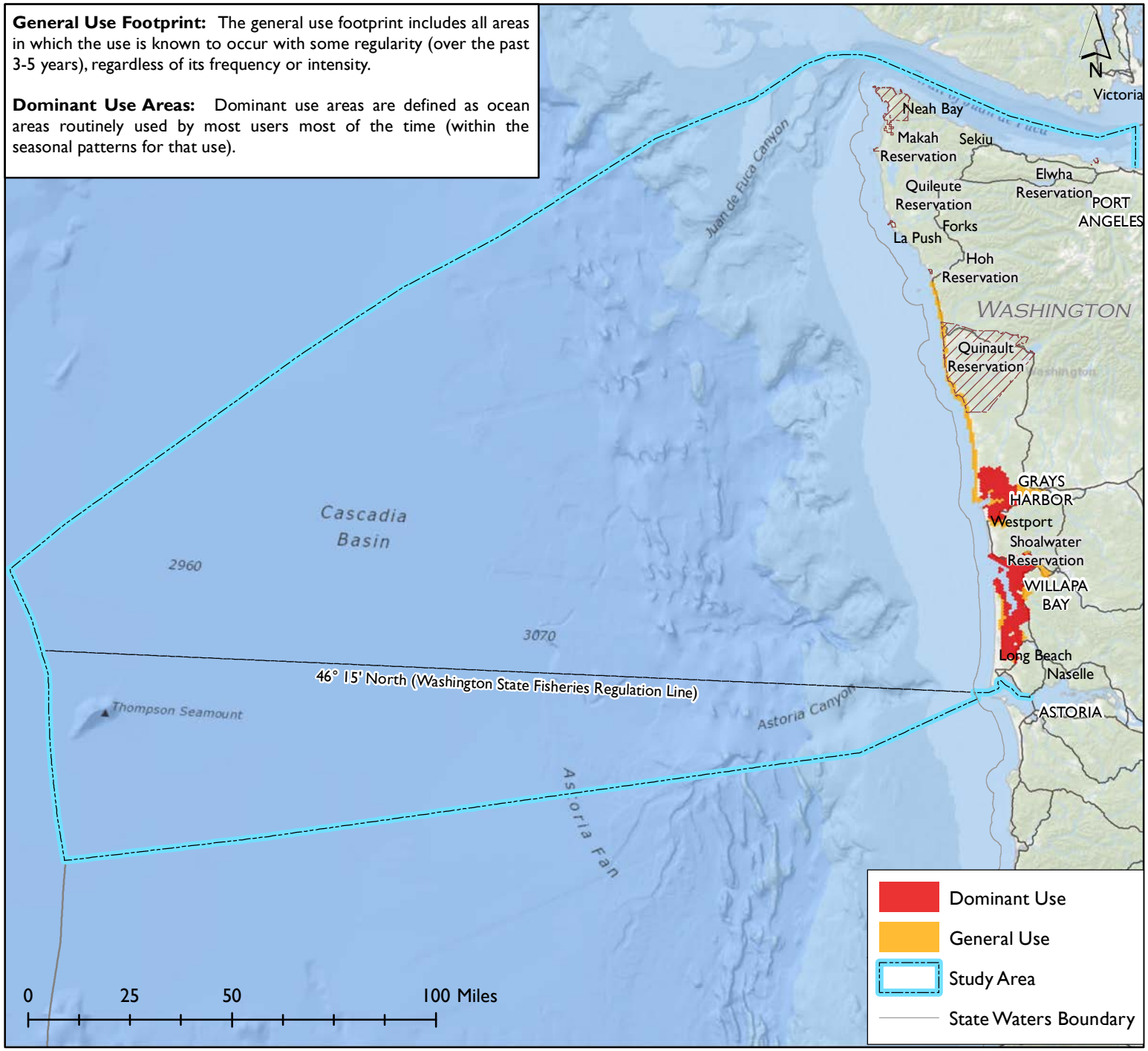

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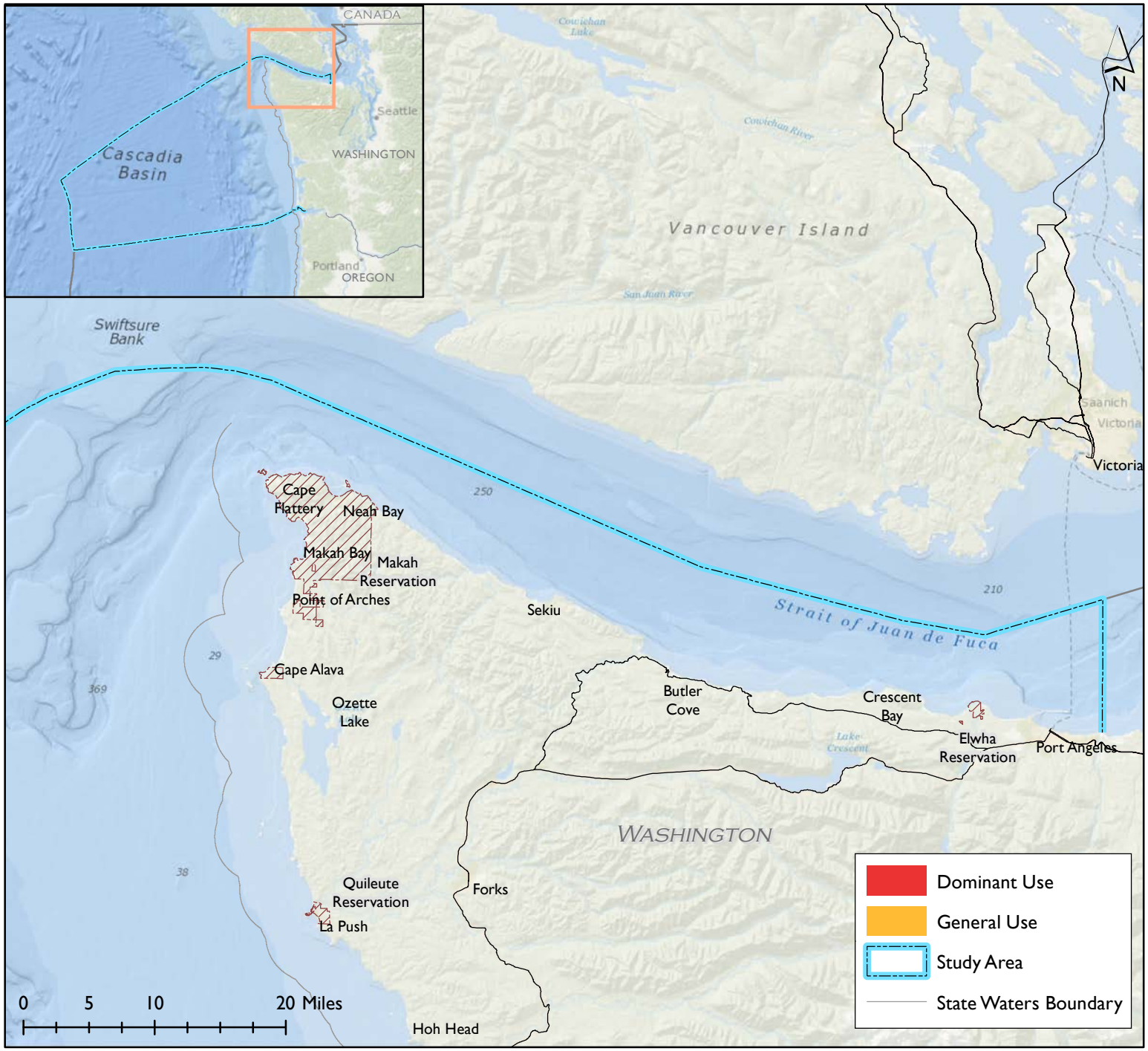

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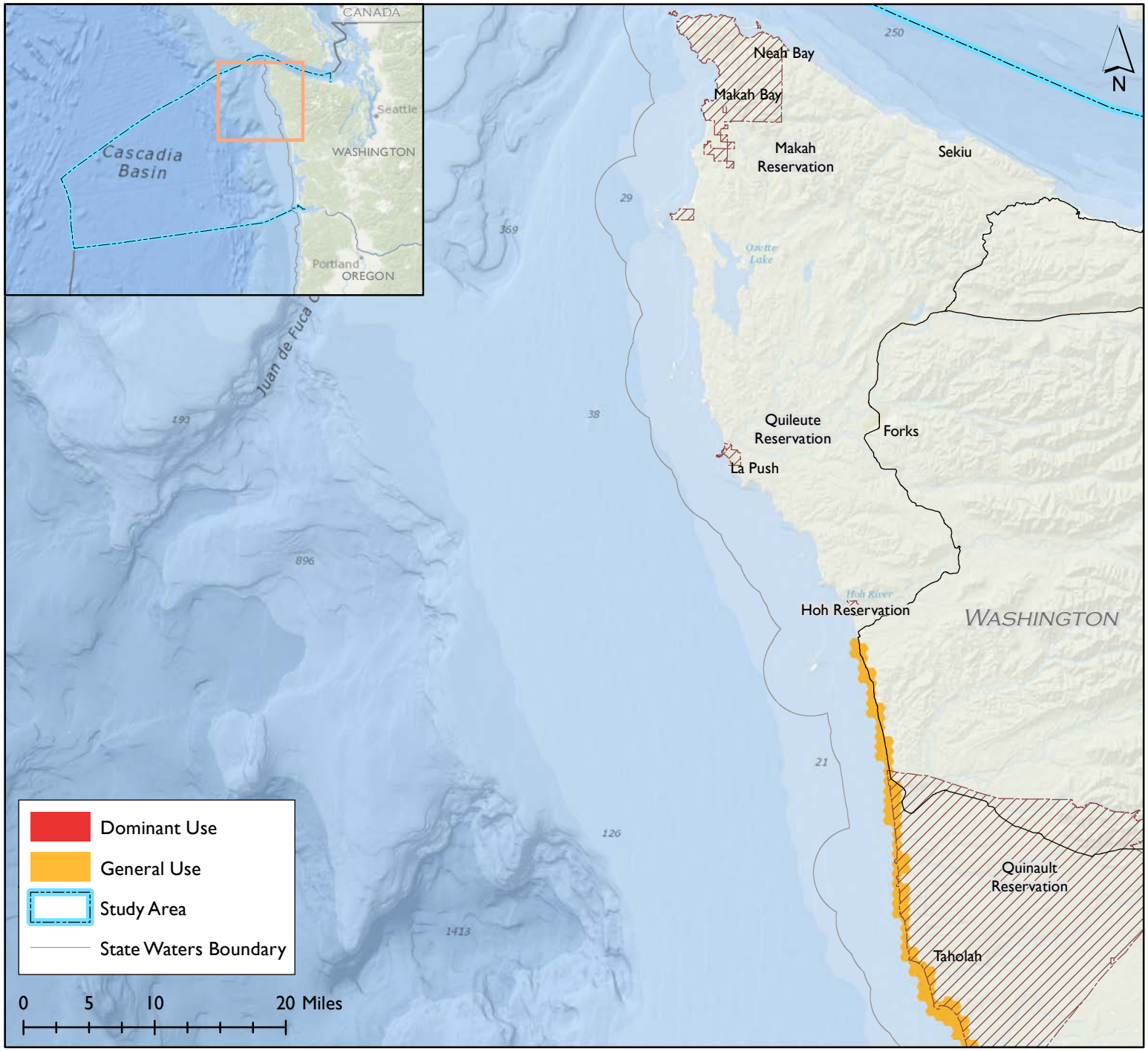
Participatory ocean use mapping to inform marine spatial planning in Washington's marine waters

Commercial Intertidal Harvest

Includes:
Commercial harvest in the intertidal zone of living marine plant or animal species for consumption or aquaria

Excludes:
All other forms of intertidal or coastal harvesting

Use Notes:
Commercial intertidal harvest occurs predominantly in Willapa and Grays Harbors. These two bays account for nearly 10 percent of oyster production in the US. Harvesting for clams is also a significant within the study area.



 Date: 12/18/2013

THE WASHINGTON OCEAN USES ATLAS

Participatory ocean use mapping to inform marine spatial planning in Washington's marine waters

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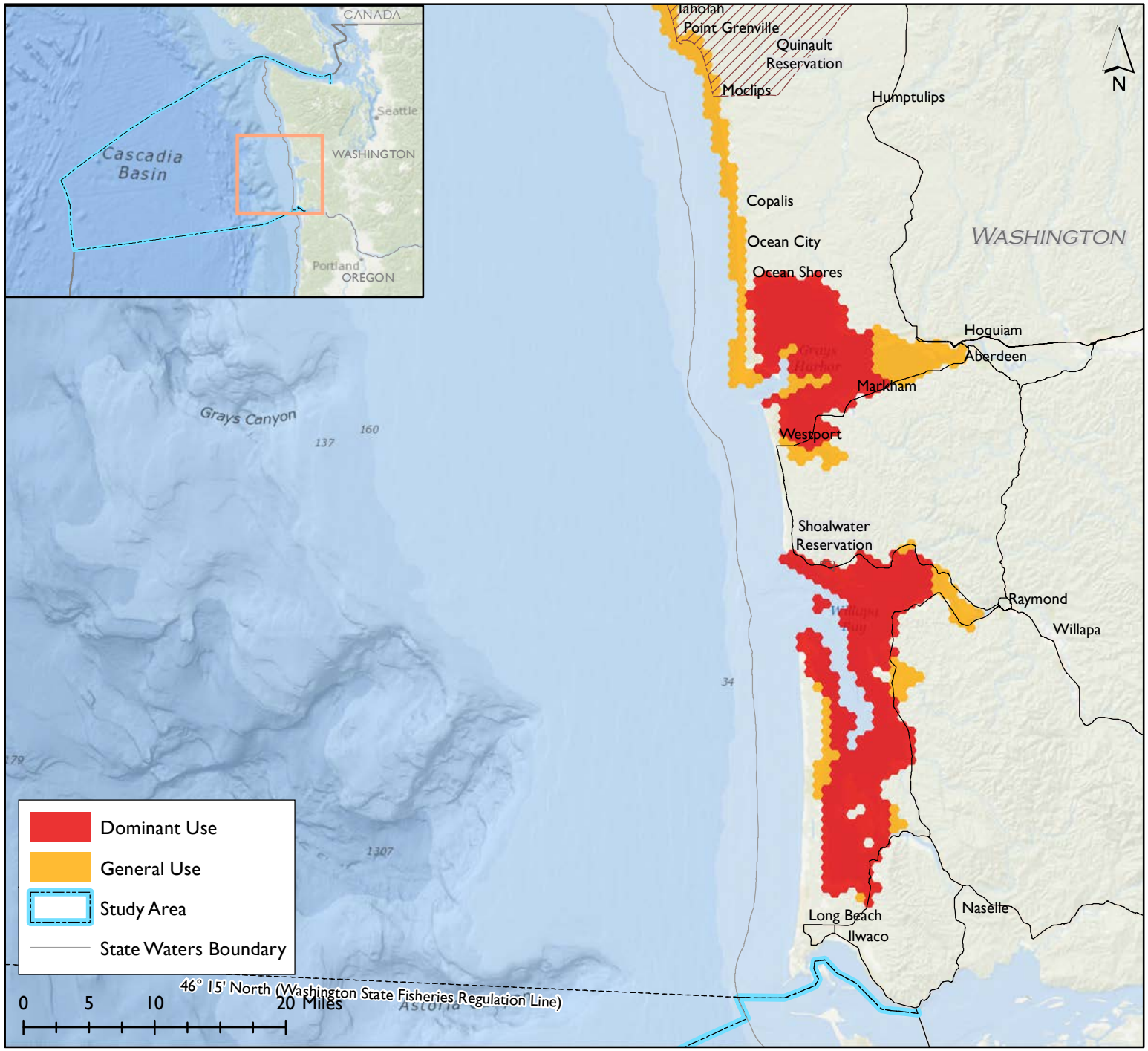


 Date: 12/18/2013

THE WASHINGTON OCEAN USES ATLAS

Participatory ocean use mapping to inform marine spatial planning in Washington's marine waters

BOEM Bureau of Ocean Energy Management

Recreational Fishing from Boats for Benthic Species

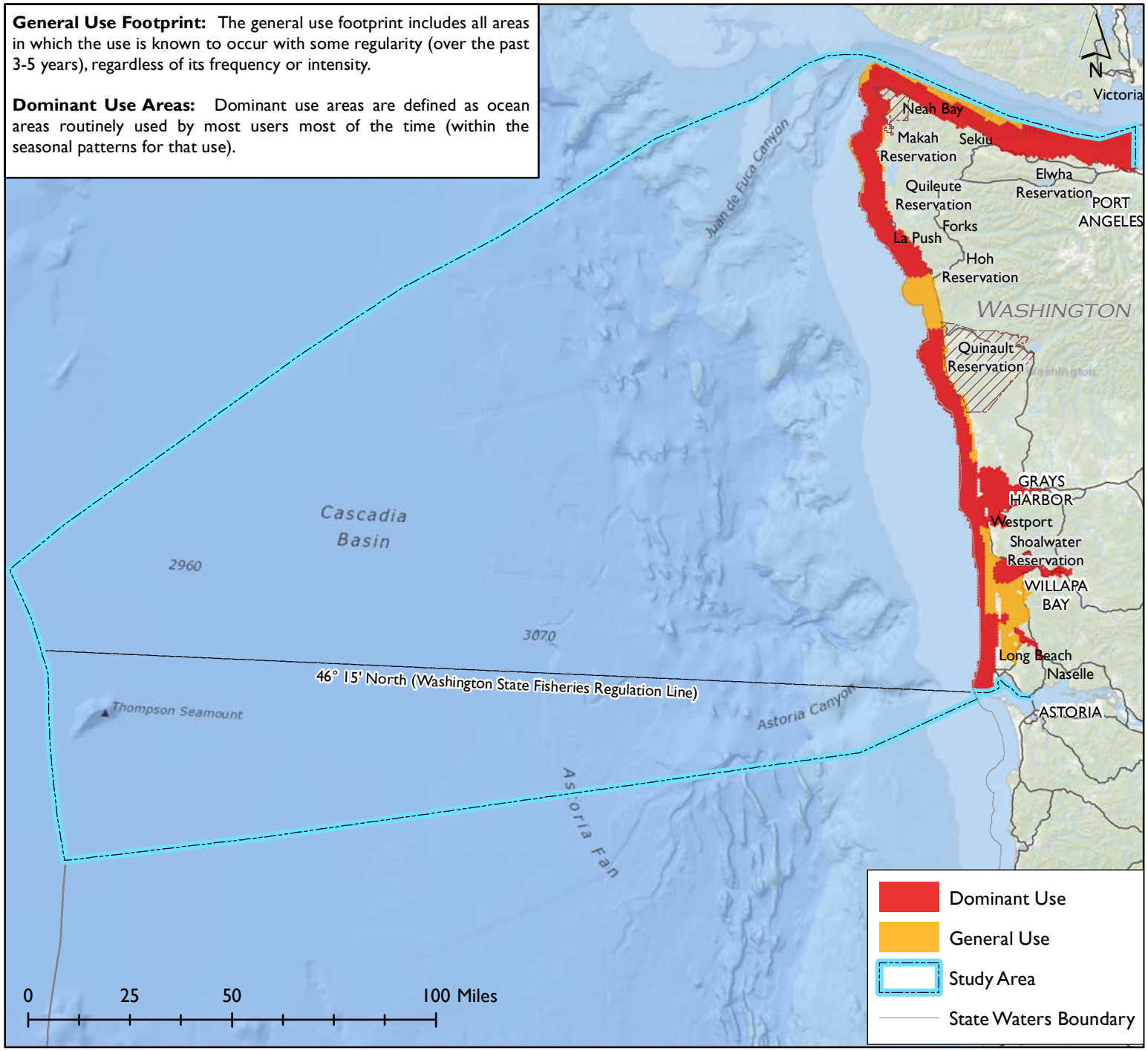
Includes:
Recreational fishing from head boats, party boats, charters, or private boats targeting benthic species including mobile invertebrates

Excludes:
Any other boat- or shore-based fishing

Use Notes:
Recreational fishing from boats for benthic species occurs all throughout the area from the shoreline out to around 150 fathoms, including the bays. The use occurs mostly through recreational charters and is more common near to port due to fuel costs. Generally, the use targets halibut and rockfish.

General Use Footprint: The general use footprint includes all areas in which the use is known to occur with some regularity (over the past 3-5 years), regardless of its frequency or intensity.

Dominant Use Areas: Dominant use areas are defined as ocean areas routinely used by most users most of the time (within the seasonal patterns for that use).



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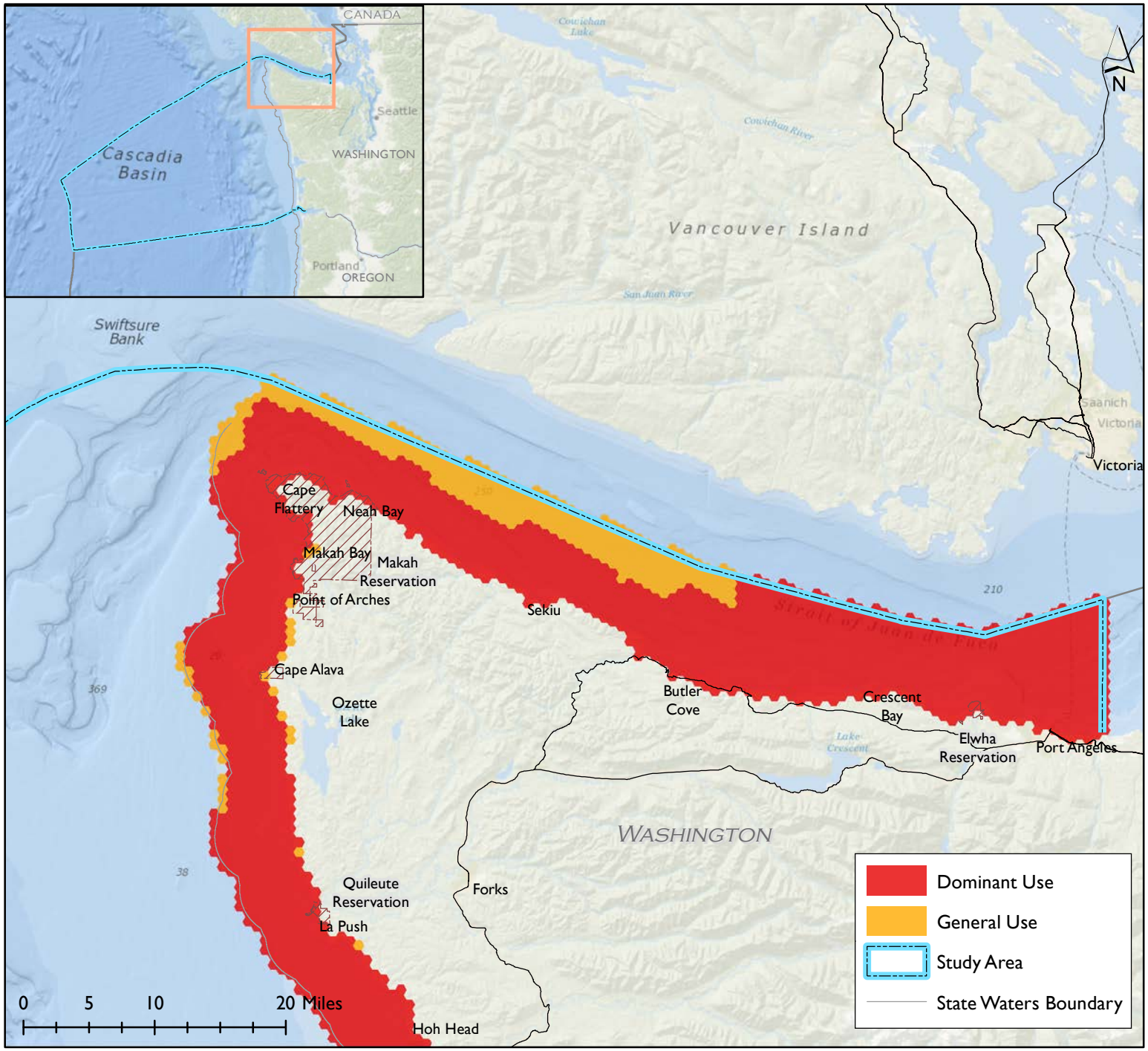

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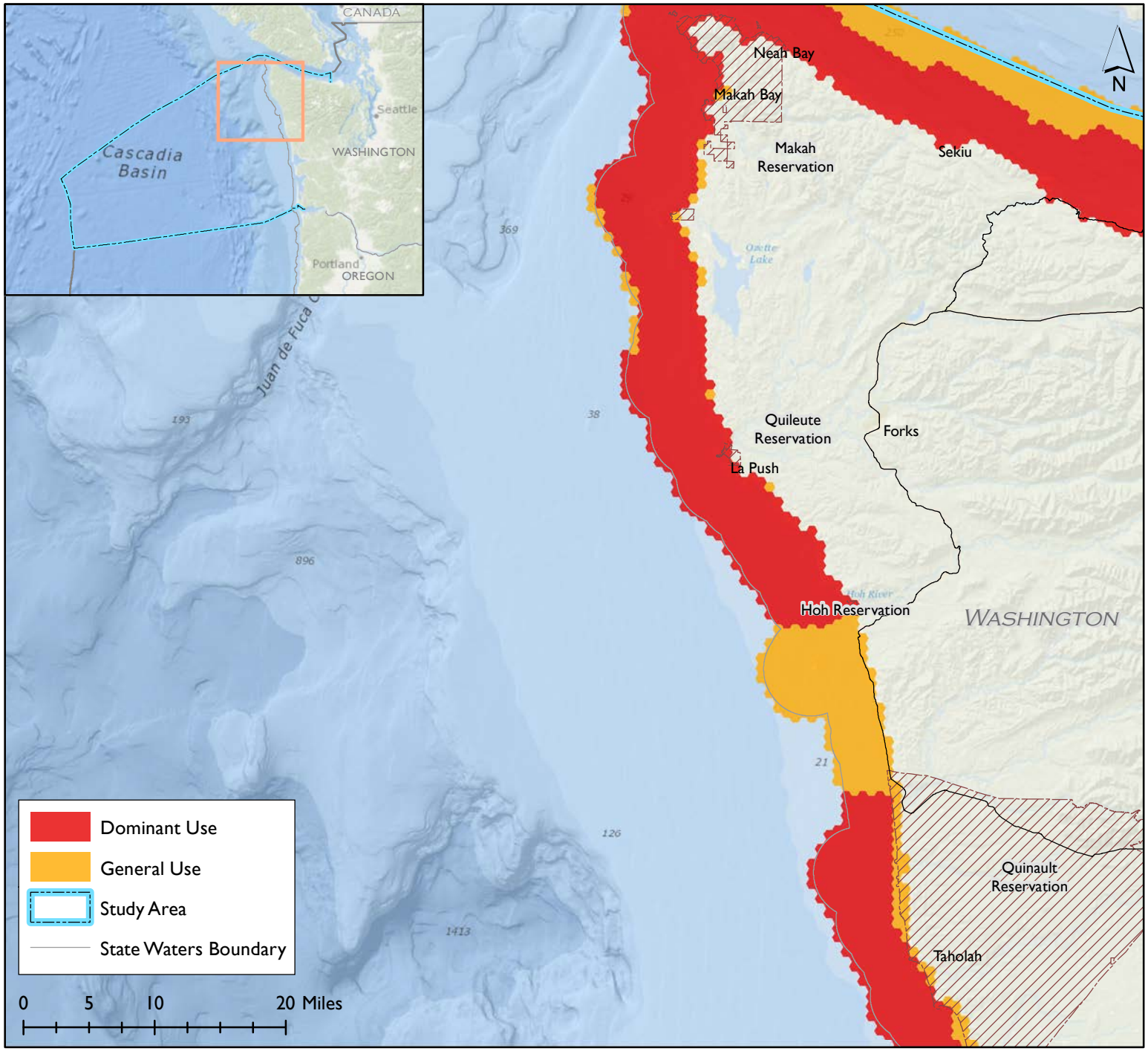

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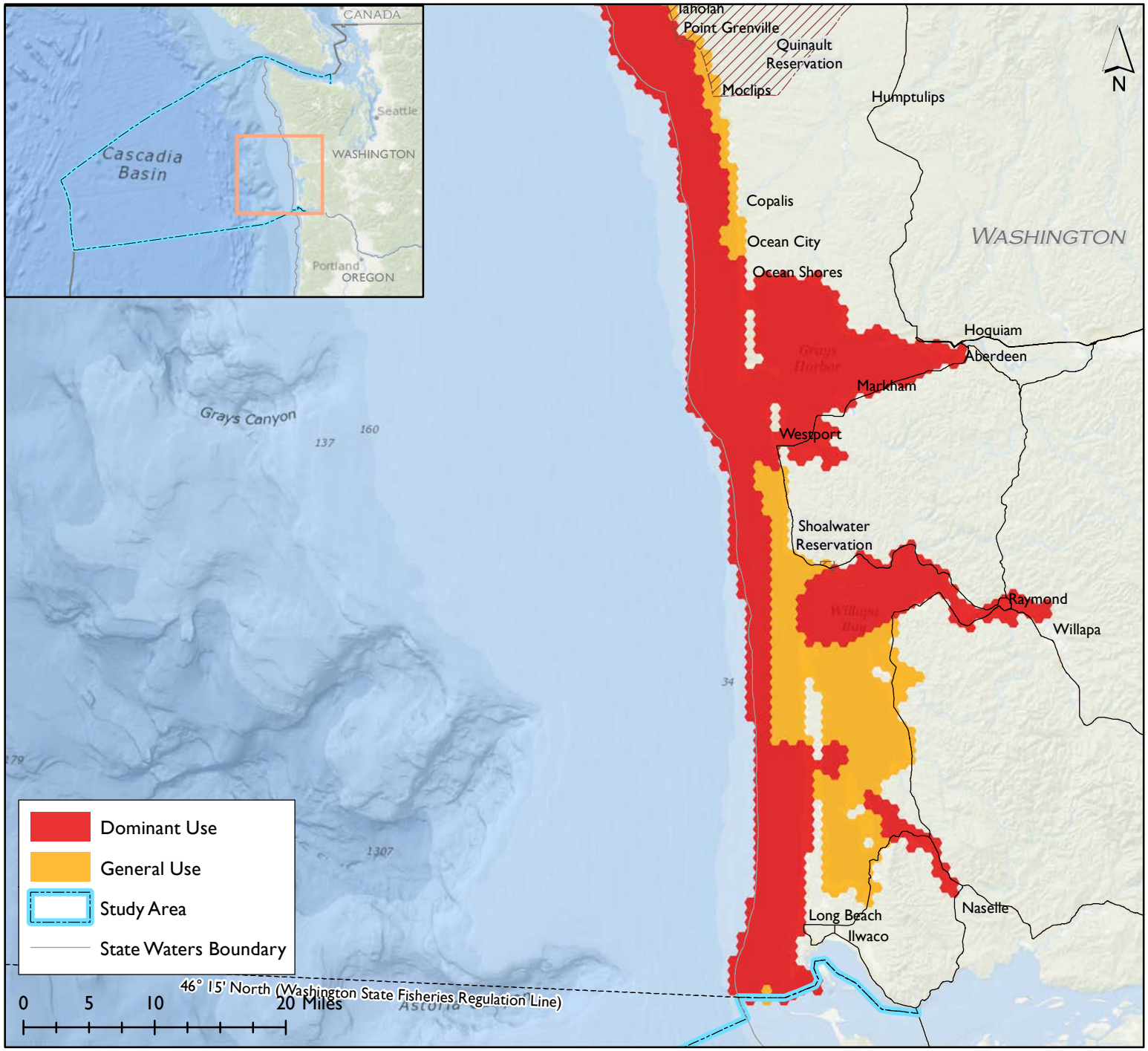

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THE WASHINGTON OCEAN USES ATLAS

Participatory ocean use mapping to inform marine spatial planning in Washington's marine waters

Recreational Fishing from Boats for Pelagic Species

Includes:
Recreational fishing from head boats, party boats, charters, or private boats targeting pelagic species

Excludes:
Any other boat- or shore-based fishing

Use Notes:
Recreational fishing from boats for pelagic species is dominant along the edges of canyons. It is most common during the fishing openers (annual event to kick off fishing season), and decreases significantly in the winter months. The use mainly targets salmon and tuna, with some bait fishing. The use has decreased in recent years due to increased fuel costs.

General Use Footprint: The general use footprint includes all areas in which the use is known to occur with some regularity (over the past 3-5 years), regardless of its frequency or intensity.

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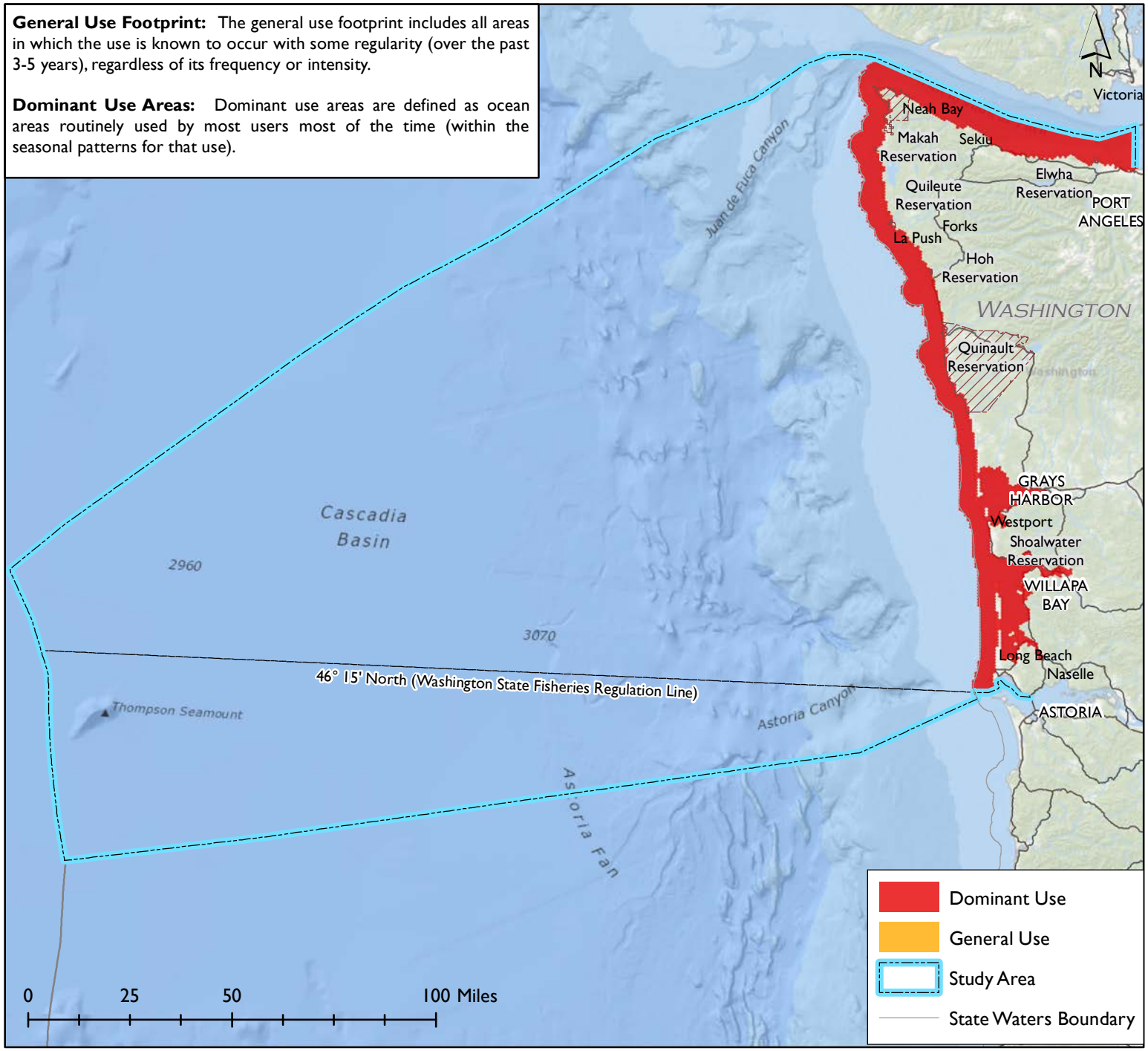

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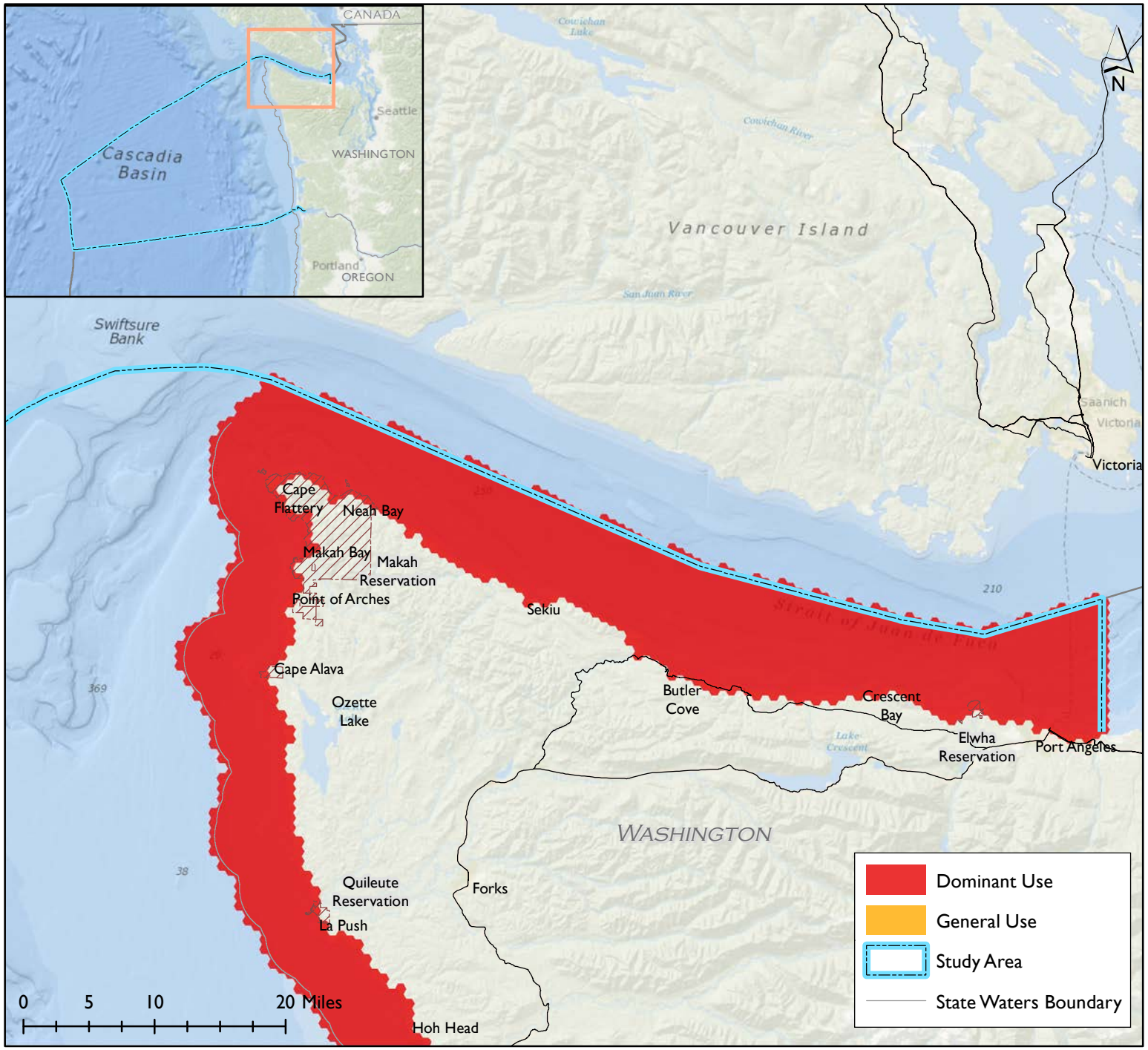

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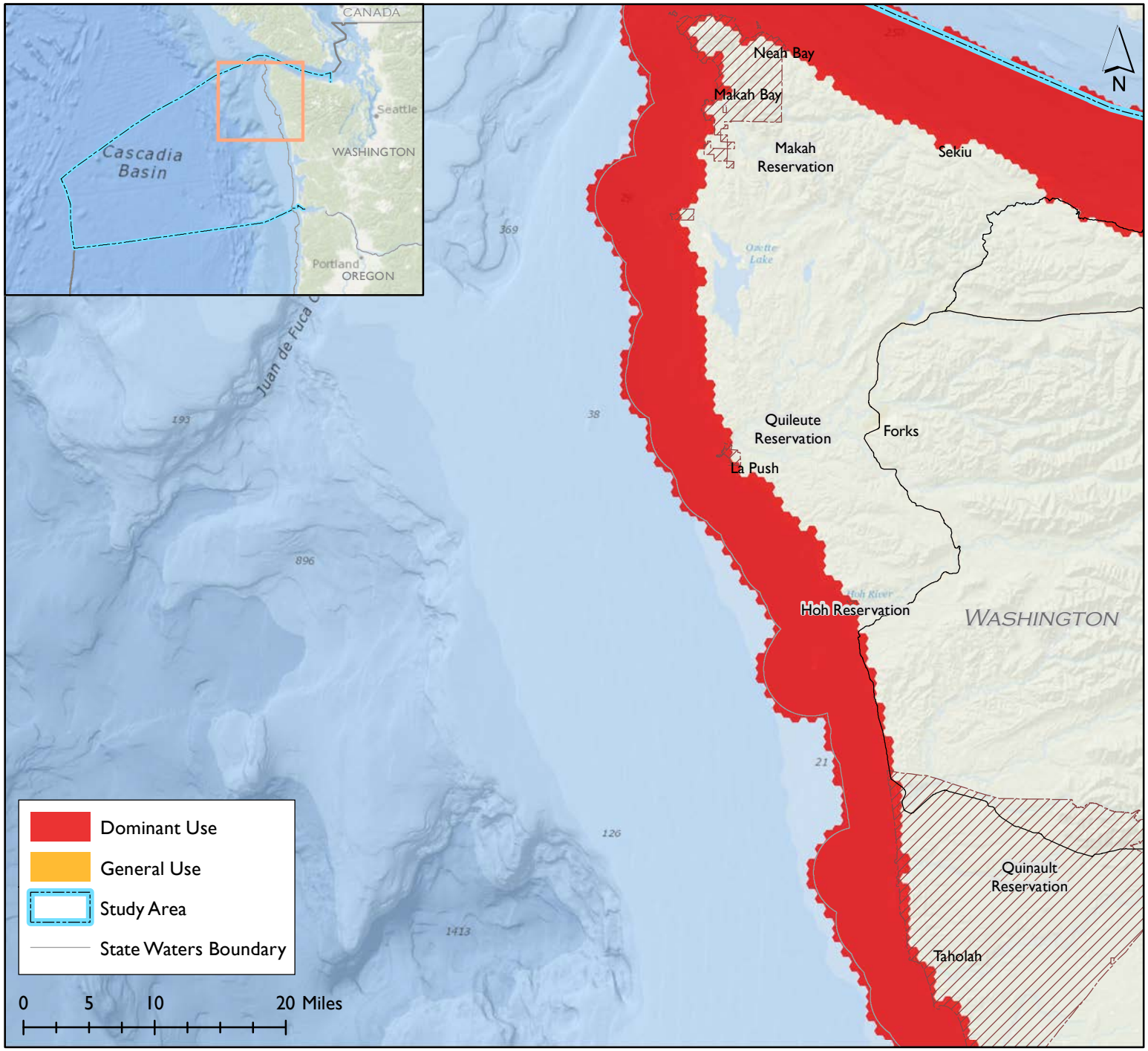

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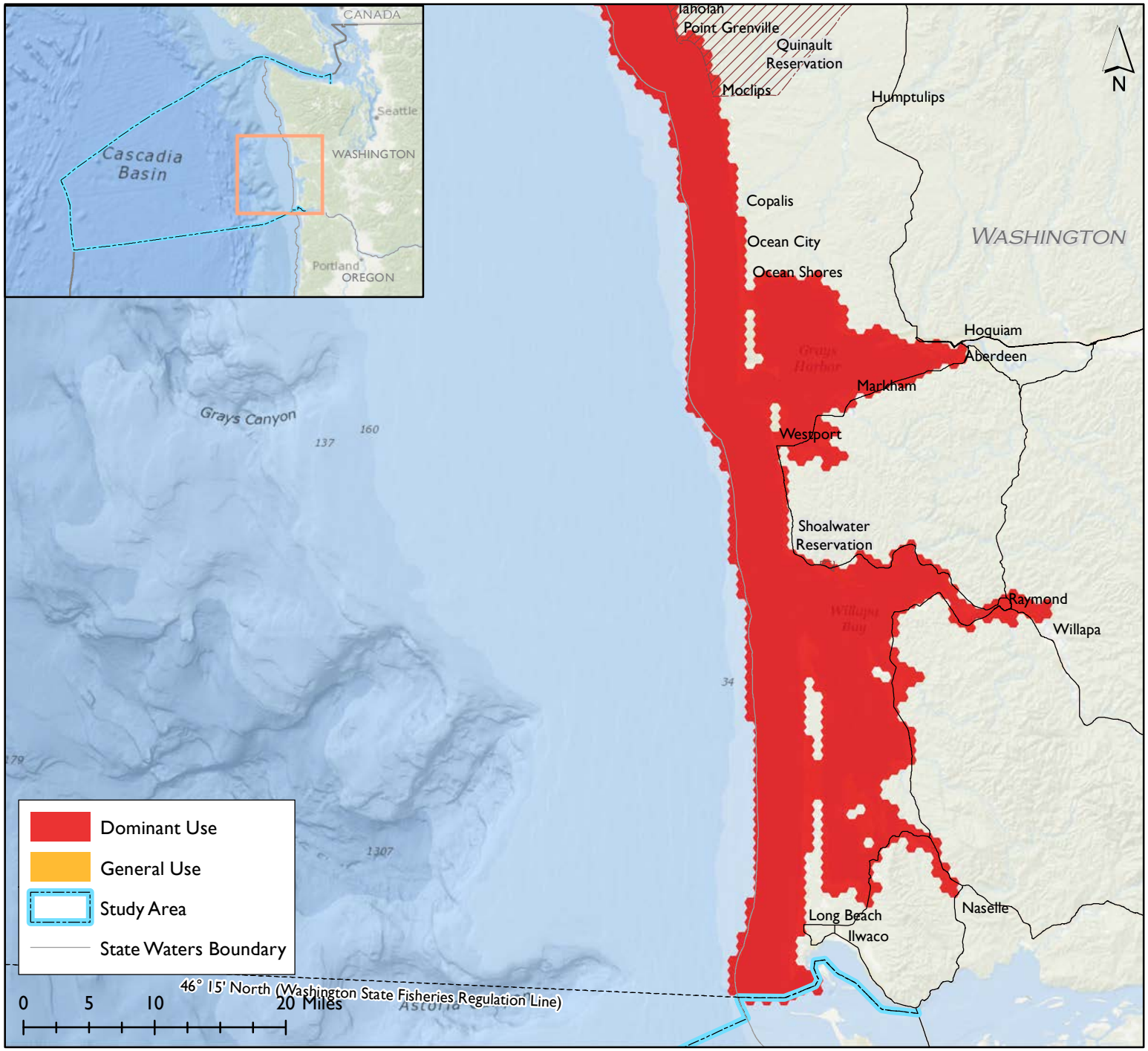

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THE WASHINGTON OCEAN USES ATLAS

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BOEM Bureau of Ocean Energy Management

Recreational Dive Fishing

Includes:
The use of SCUBA diving, surface supply diving or snorkeling (free diving) to catch fishes and invertebrates for recreational purposes

Excludes:
Commercial fishing with SCUBA/snorkel, SCUBA/snorkel for viewing purposes

Use Notes:
Recreational dive fishing occurs year-round and is concentrated around jetties, rocky pinnacles and shipwrecks, as well as in select bays. The use occurs mainly within 60 feet of water, but can go as deep as 120 feet. The target species include rockfish, lingcod, dungeness crab and occasionally octopus. The use is more dominant when salmon season is closed.

General Use Footprint: The general use footprint includes all areas in which the use is known to occur with some regularity (over the past 3-5 years), regardless of its frequency or intensity.

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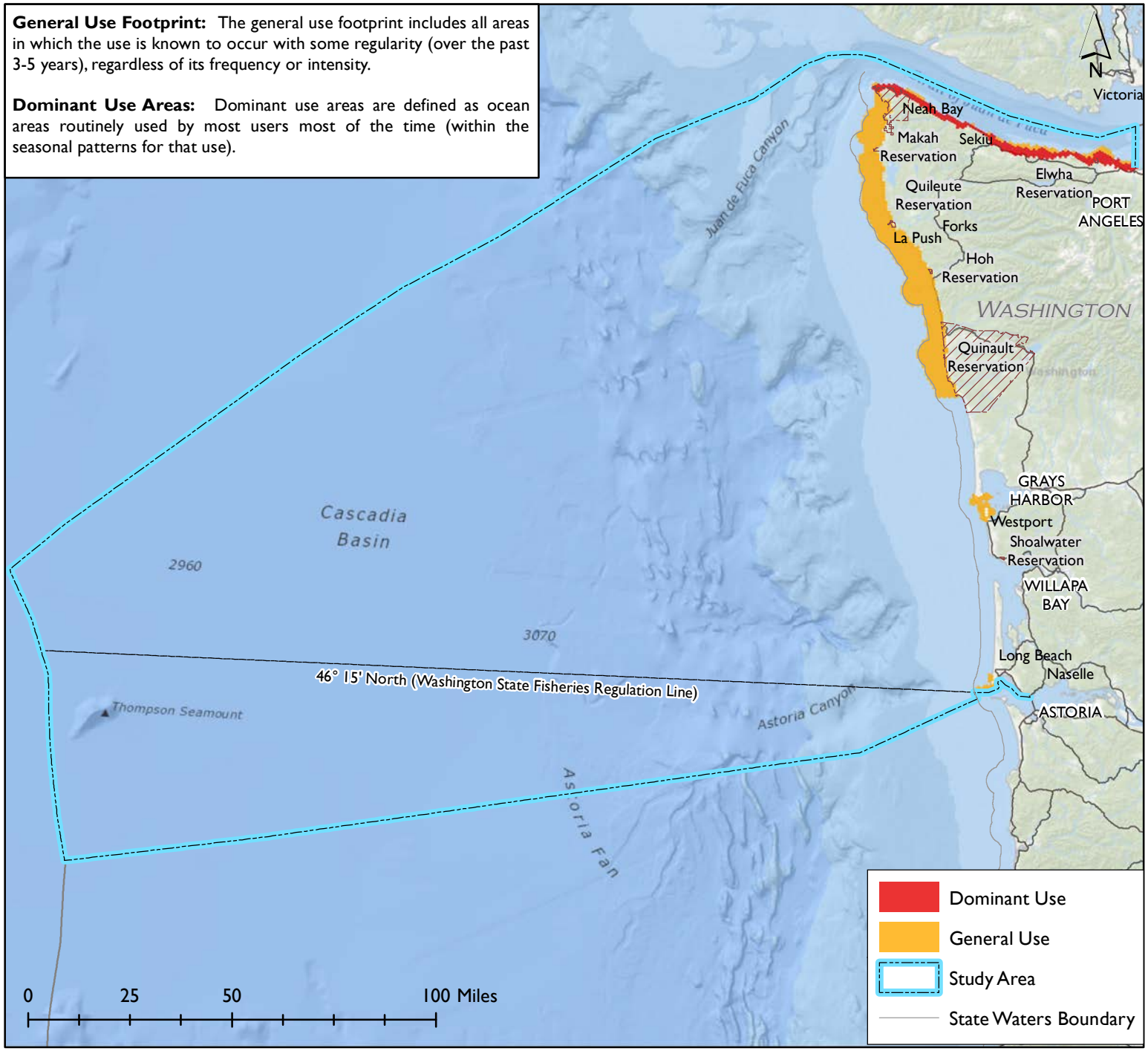

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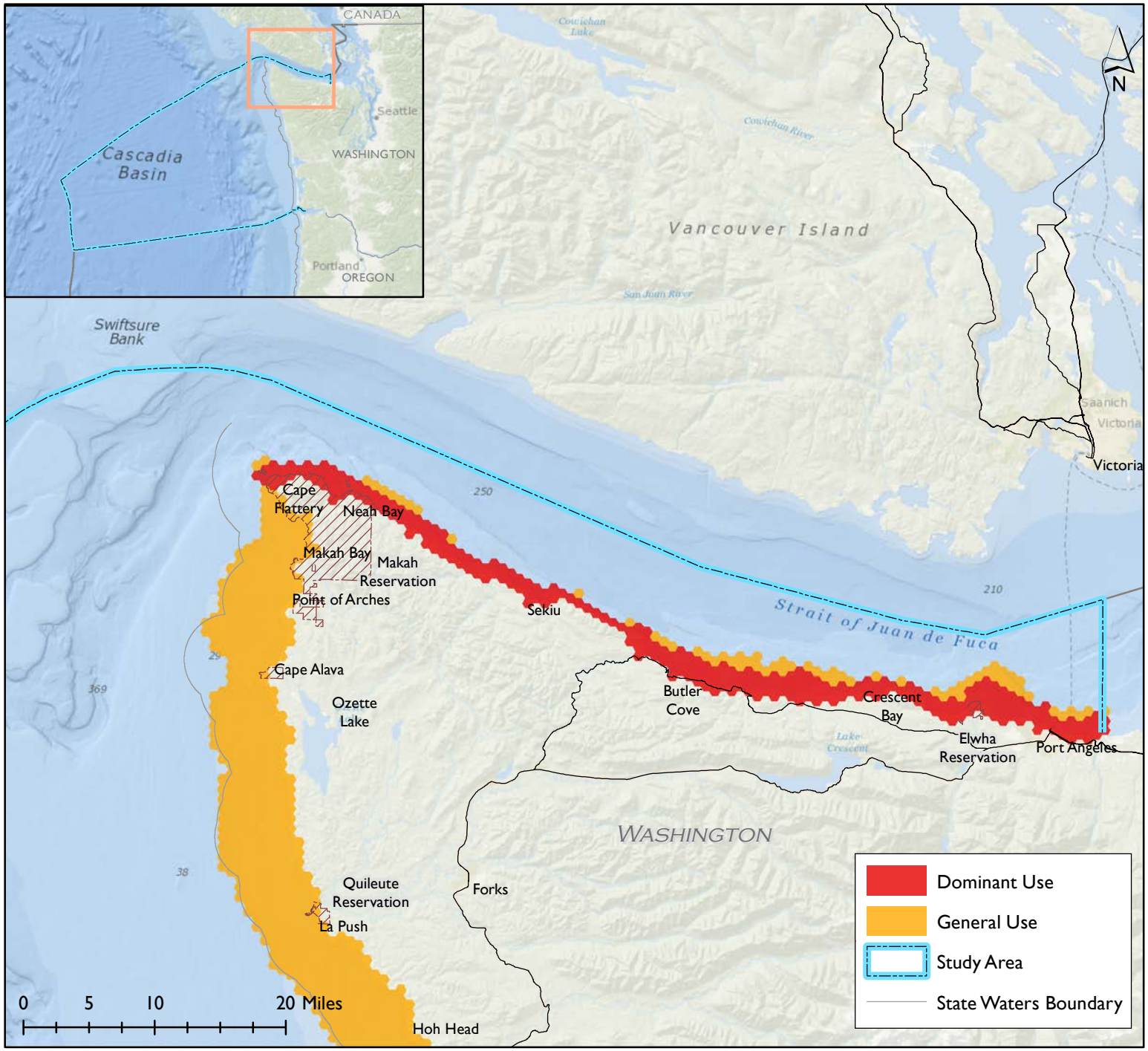

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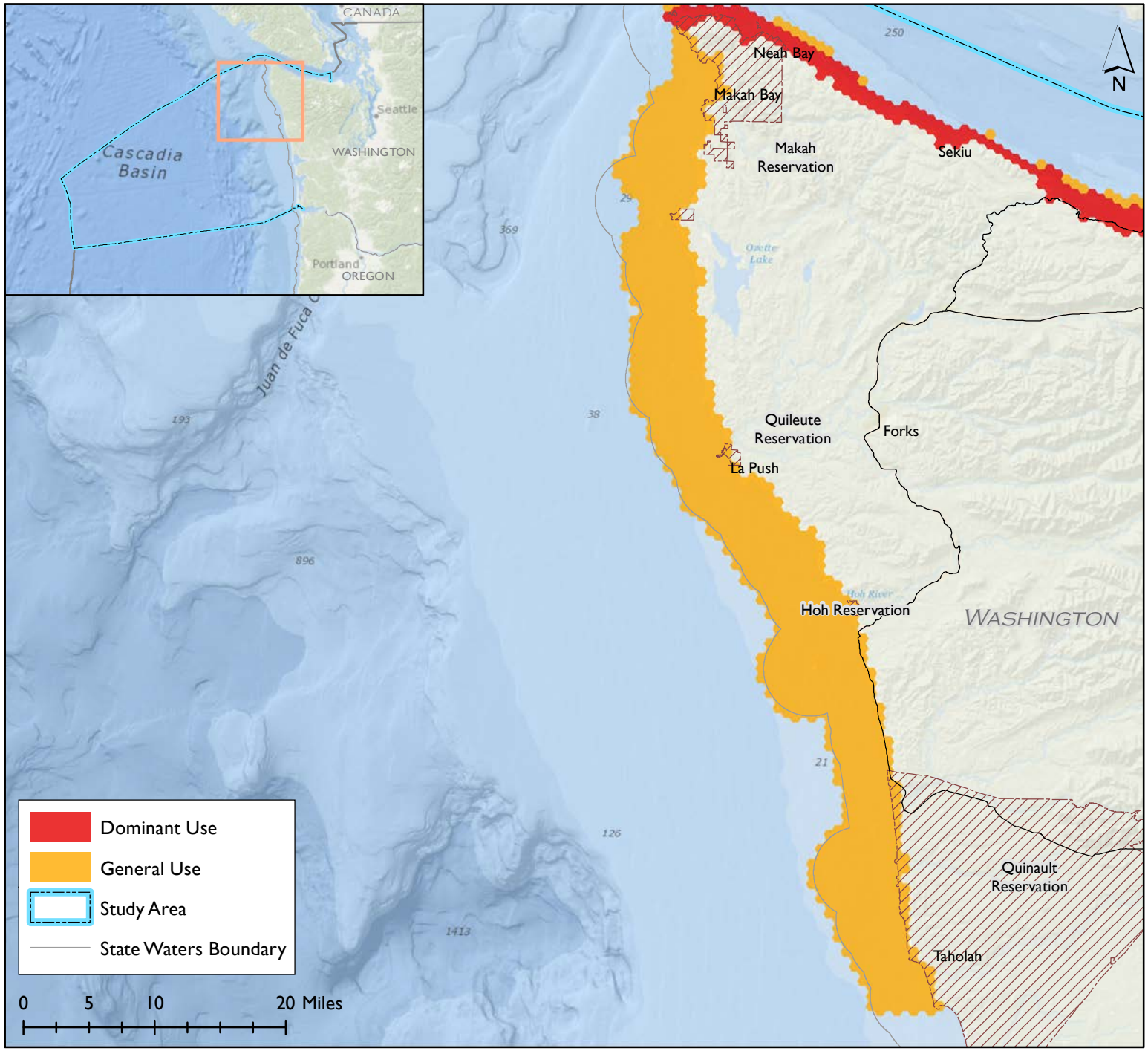

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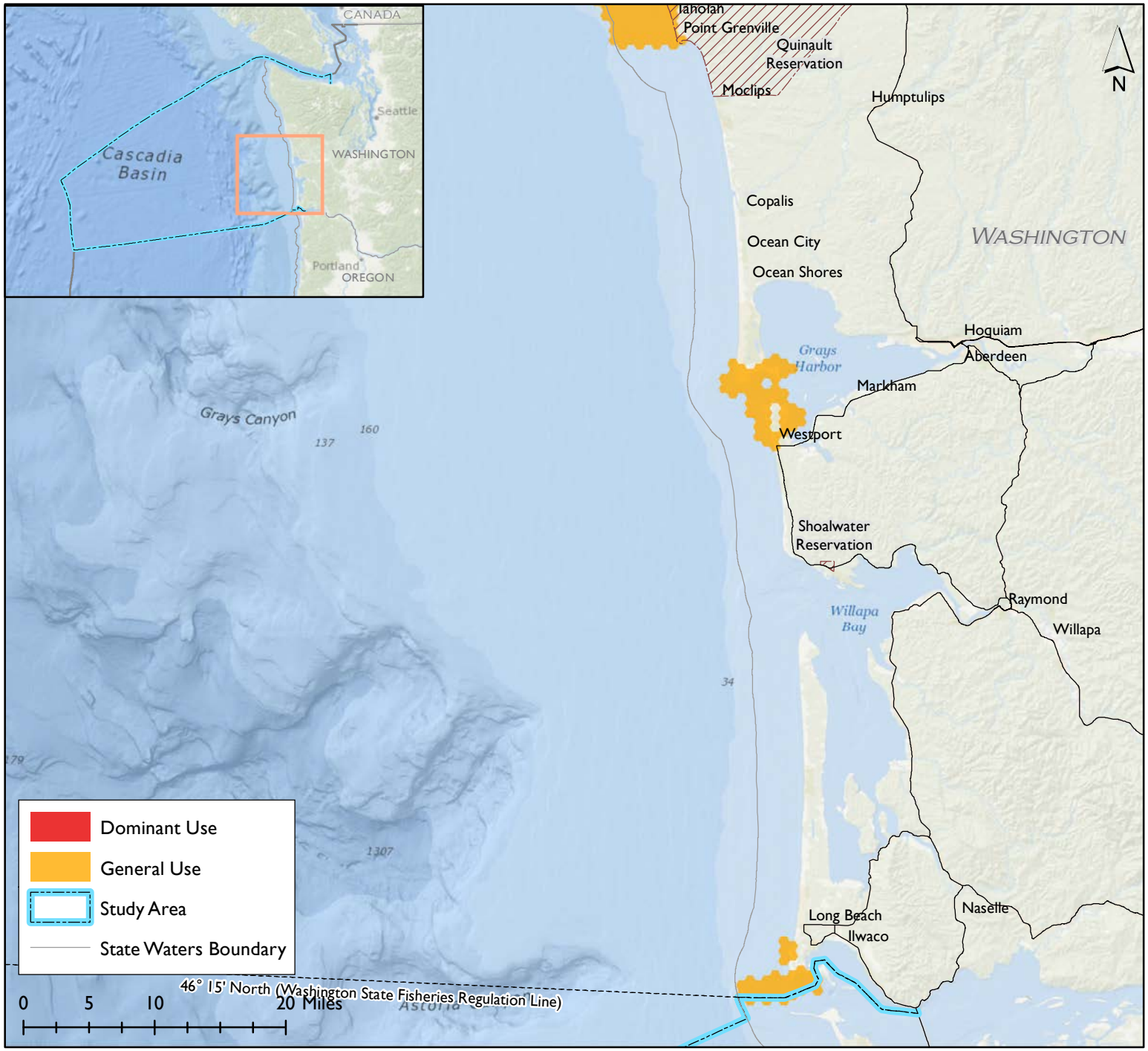

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THE WASHINGTON OCEAN USES ATLAS

Participatory ocean use mapping to inform marine spatial planning in Washington's marine waters

BOEM Bureau of Ocean Energy Management

Kayak Fishing

Includes:
The use of hook and line fishing from kayaks or any other similar vessel to catch fishes and mobile invertebrates

Excludes:
All other forms of fishing

Use Notes:
Kayak fishing occurs along the shore throughout most of the study area, out to a distance of approximately 1.5 miles. The dominant use areas are closer to shore and are highly influenced by coastal access. In general, the use use has increased in the past decade.

General Use Footprint: The general use footprint includes all areas in which the use is known to occur with some regularity (over the past 3-5 years), regardless of its frequency or intensity.

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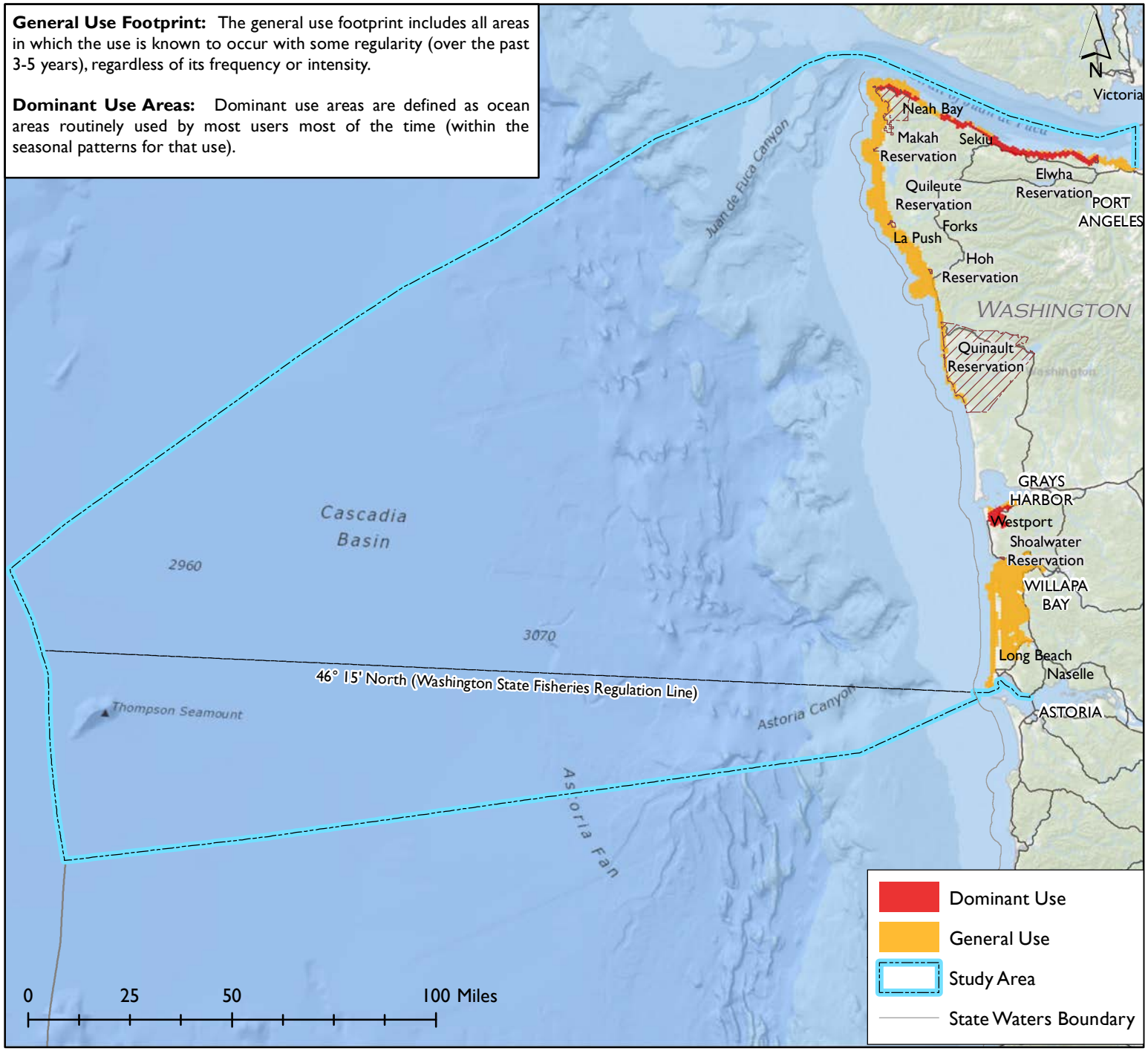

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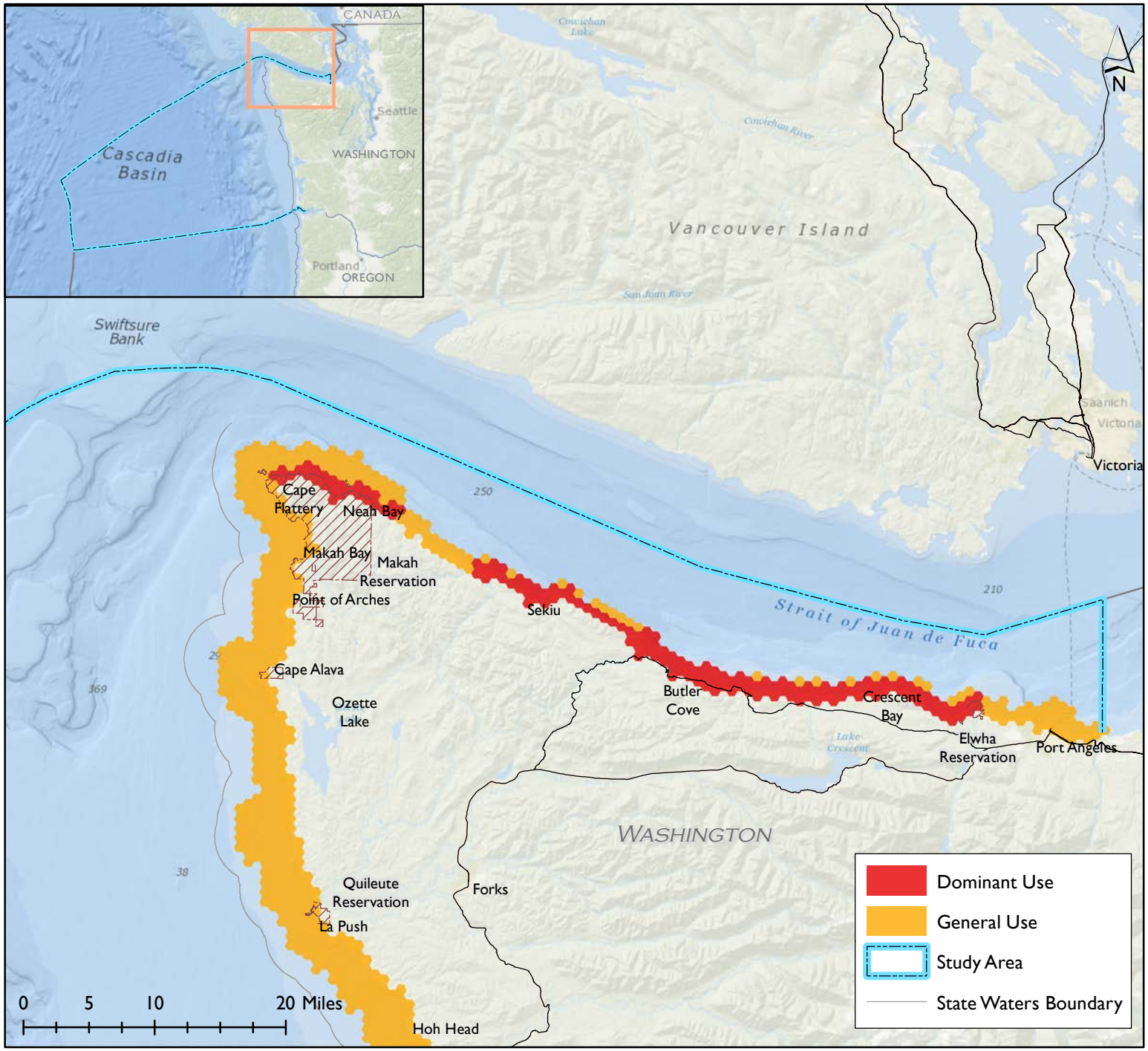

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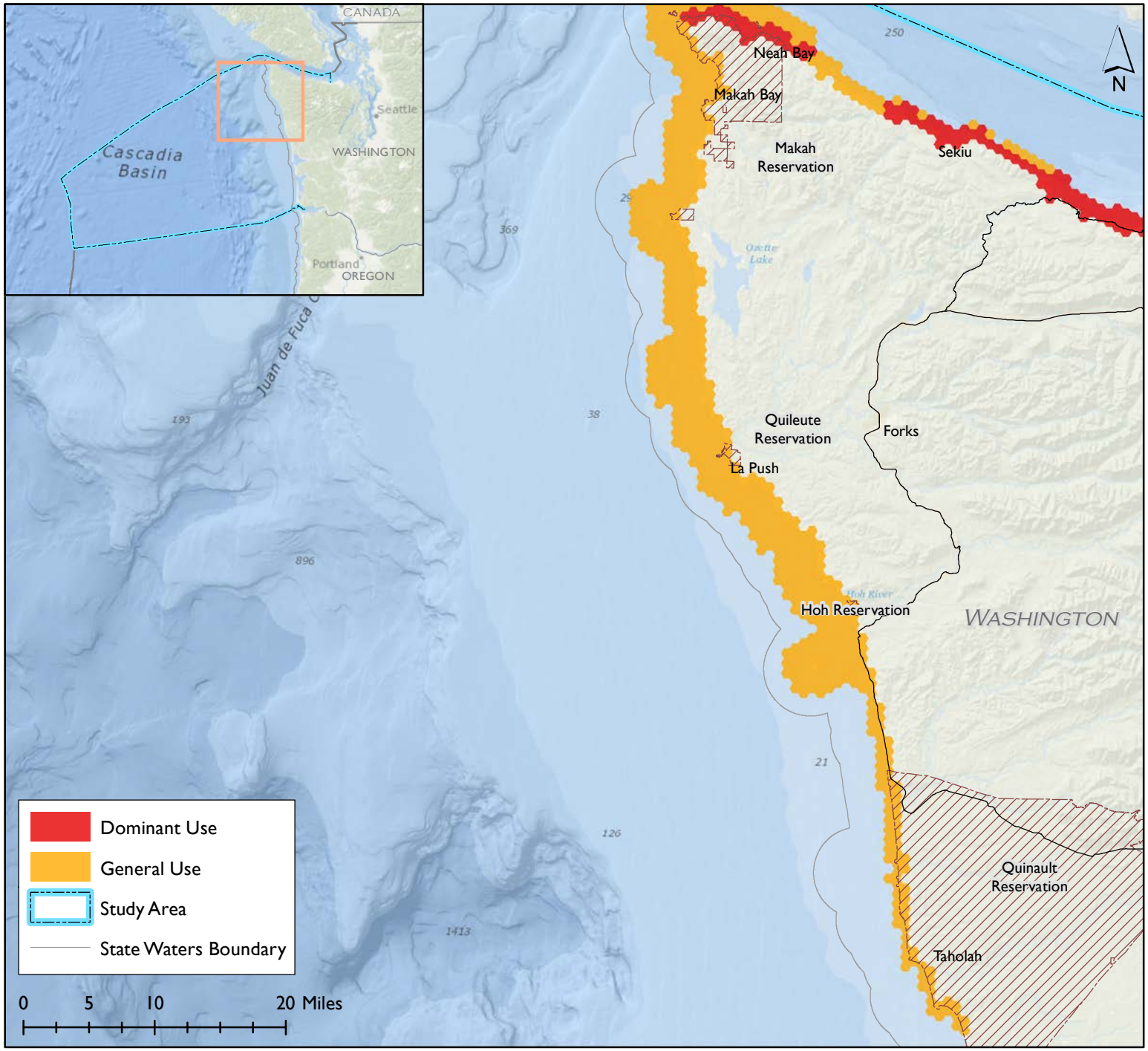

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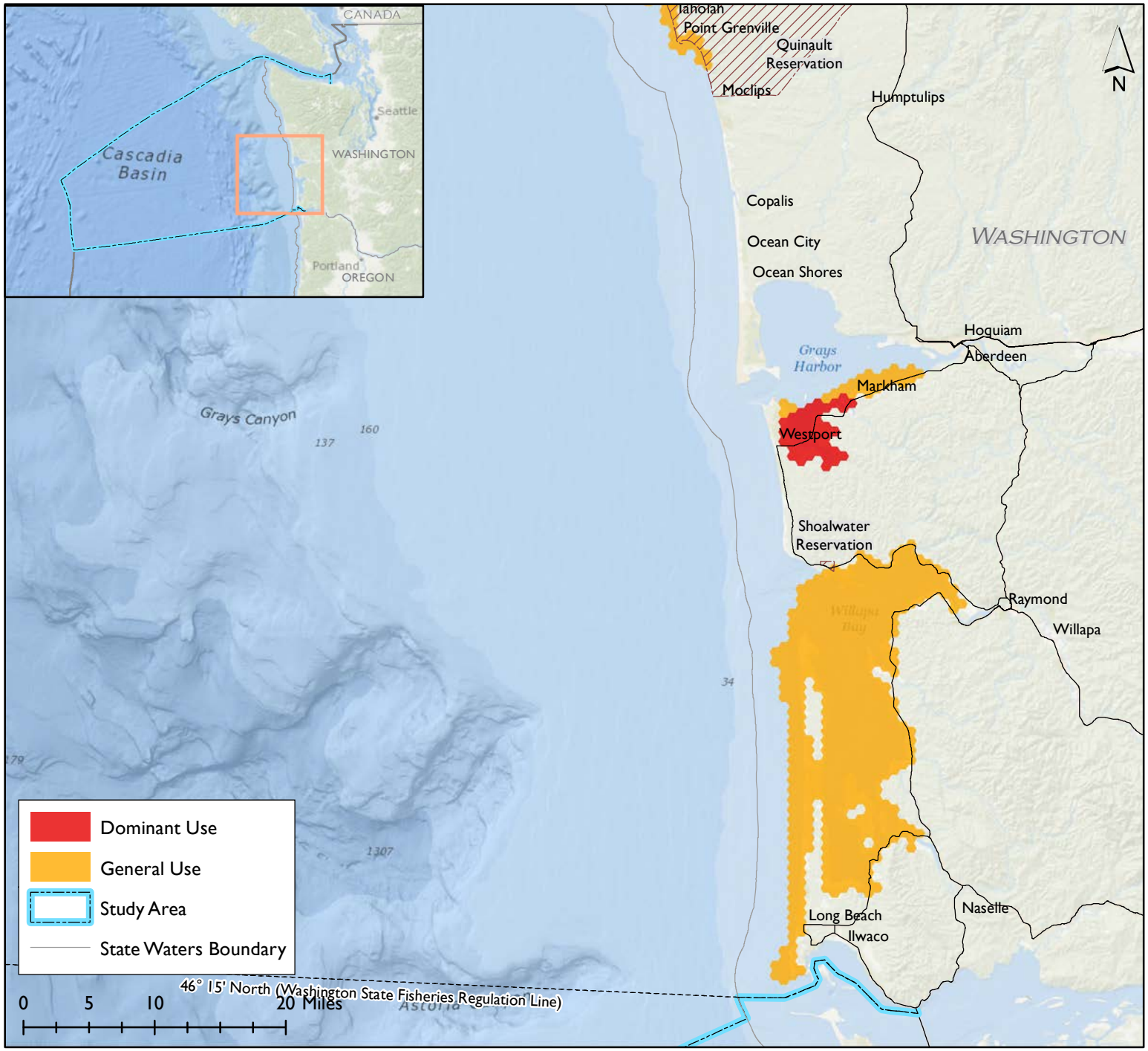

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Bureau of Ocean Energy Management

Recreational Fishing From Shore

Includes:
Rod and reel, surf-casting, fishing from piers, jetties, crab traps, cast nets for recreational purposes

Excludes:
All other forms of shore-based fishing

Use Notes:
Recreational fishing from shore occurs throughout the study area. Use is focused along sandy beaches and the shores of the Strait. Use also occurs within bays and harbors and is more concentrated around the jetties, breakwaters and piers.

General Use Footprint: The general use footprint includes all areas in which the use is known to occur with some regularity (over the past 3-5 years), regardless of its frequency or intensity.

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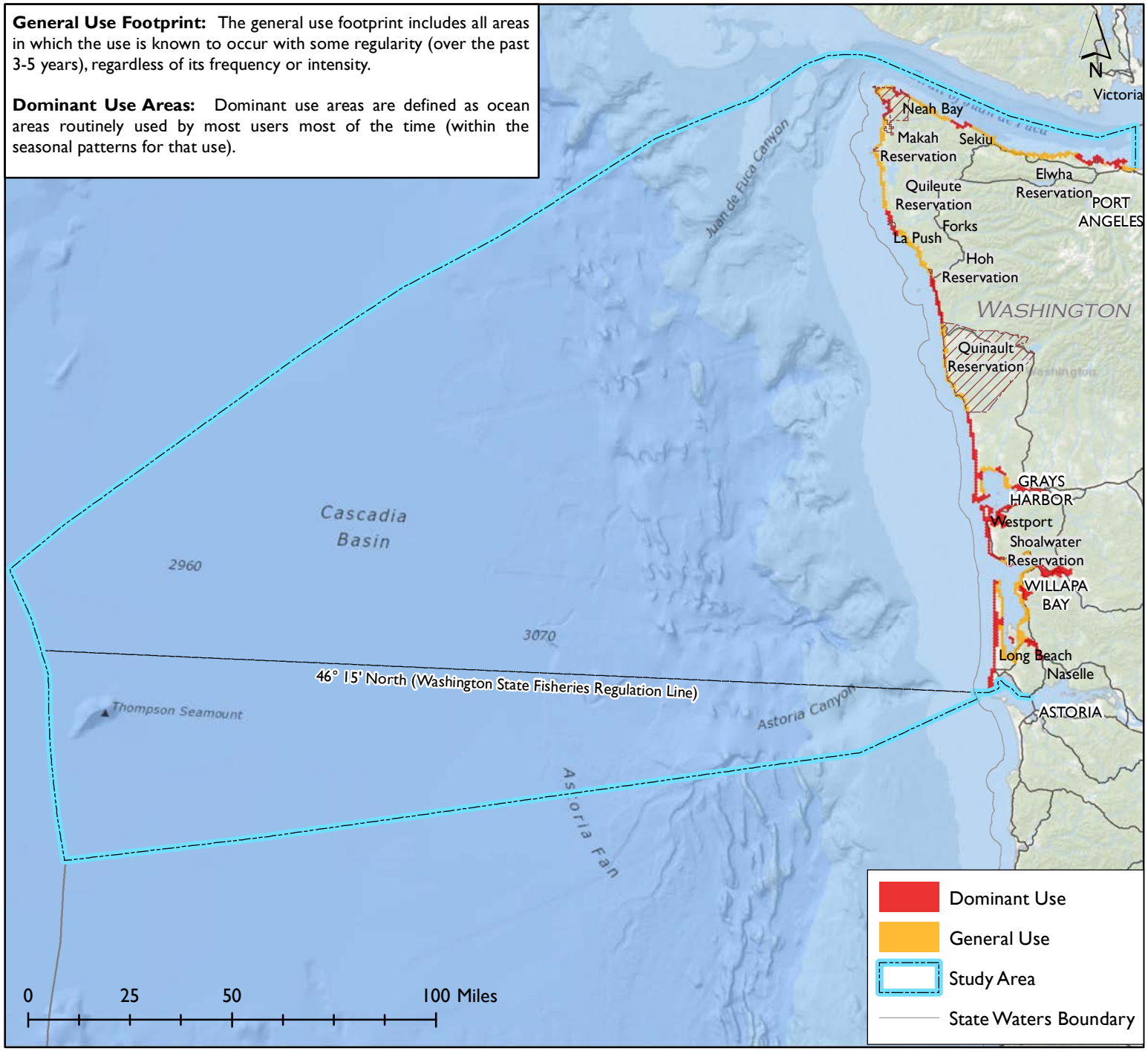

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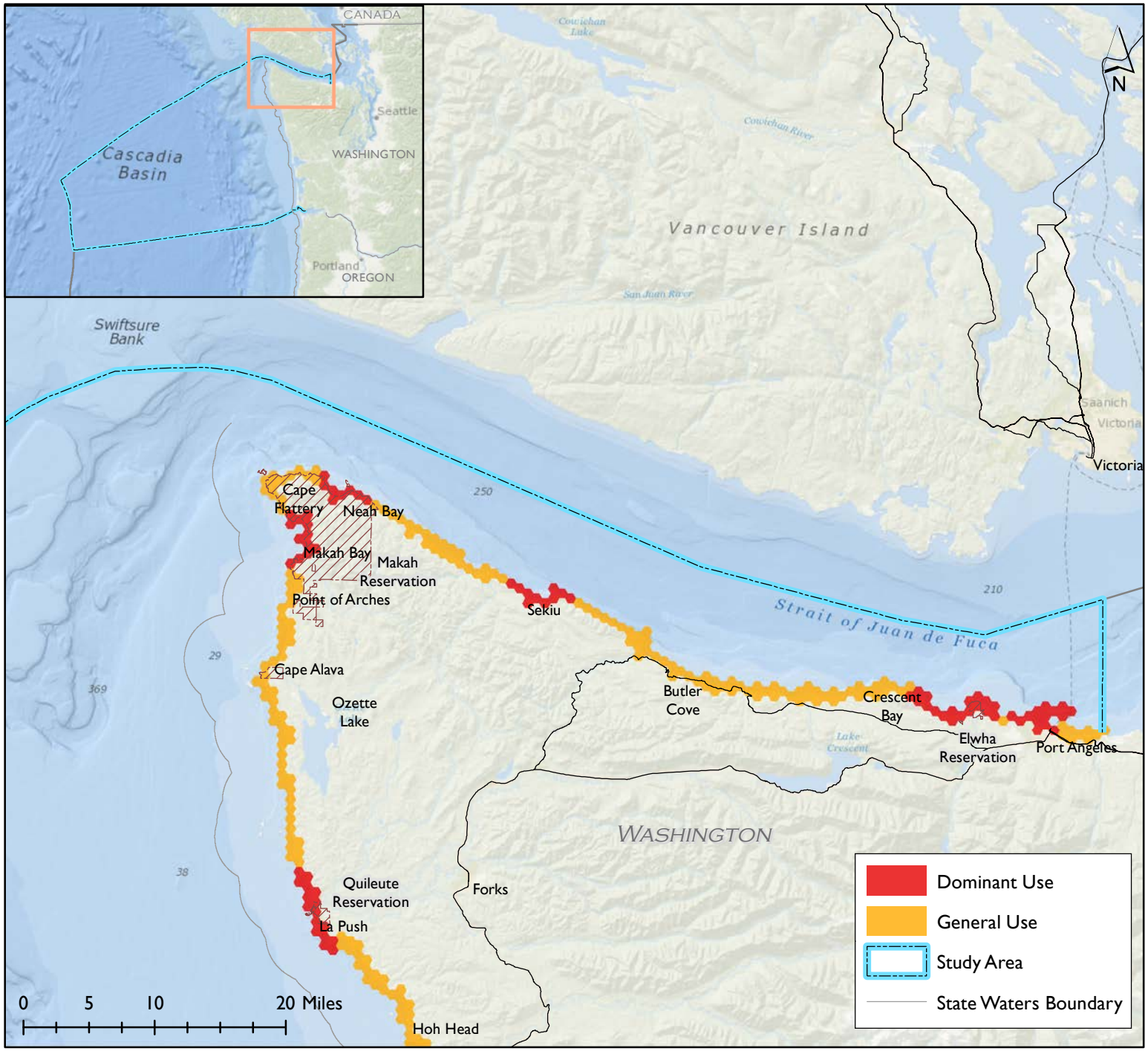

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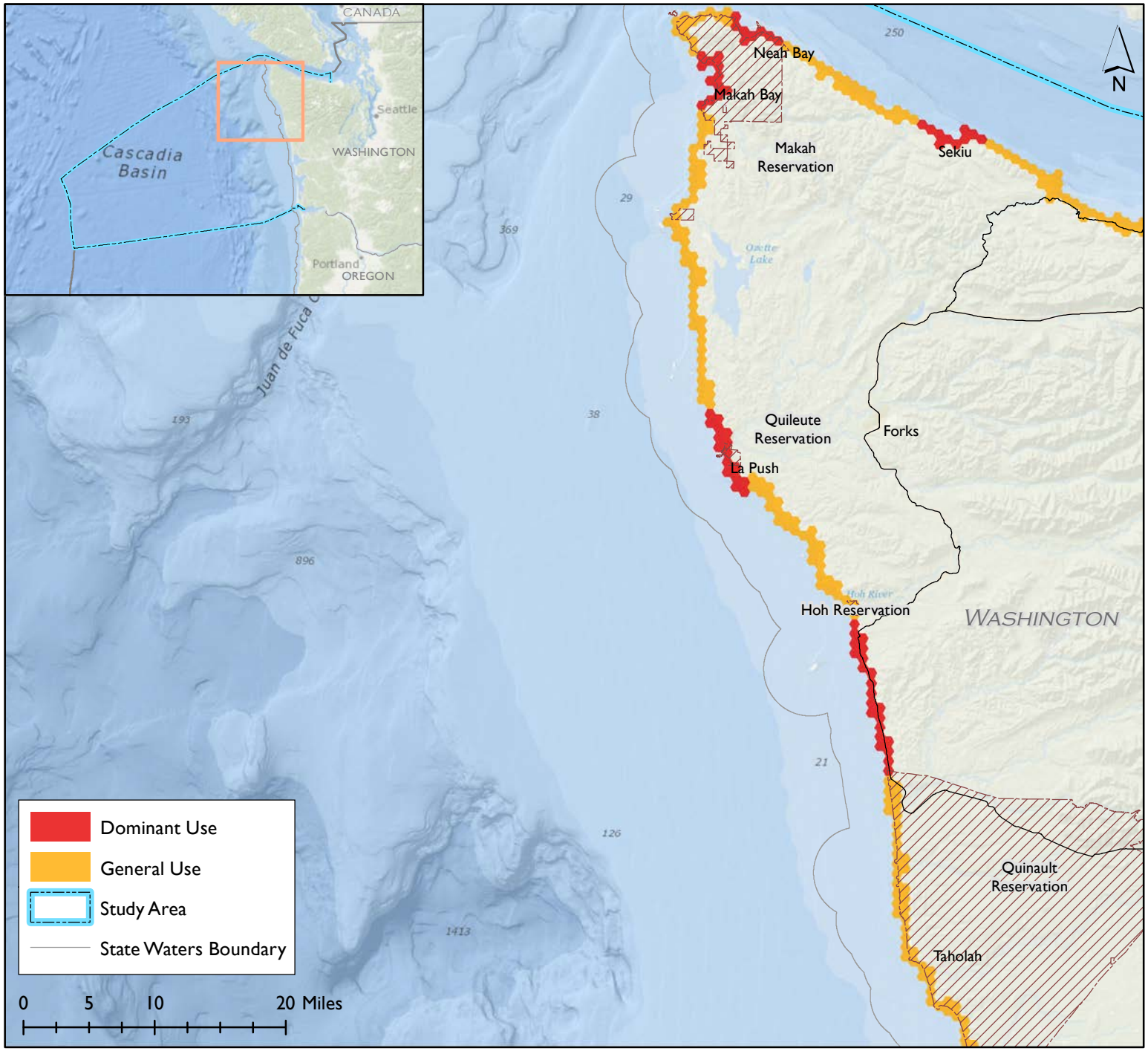

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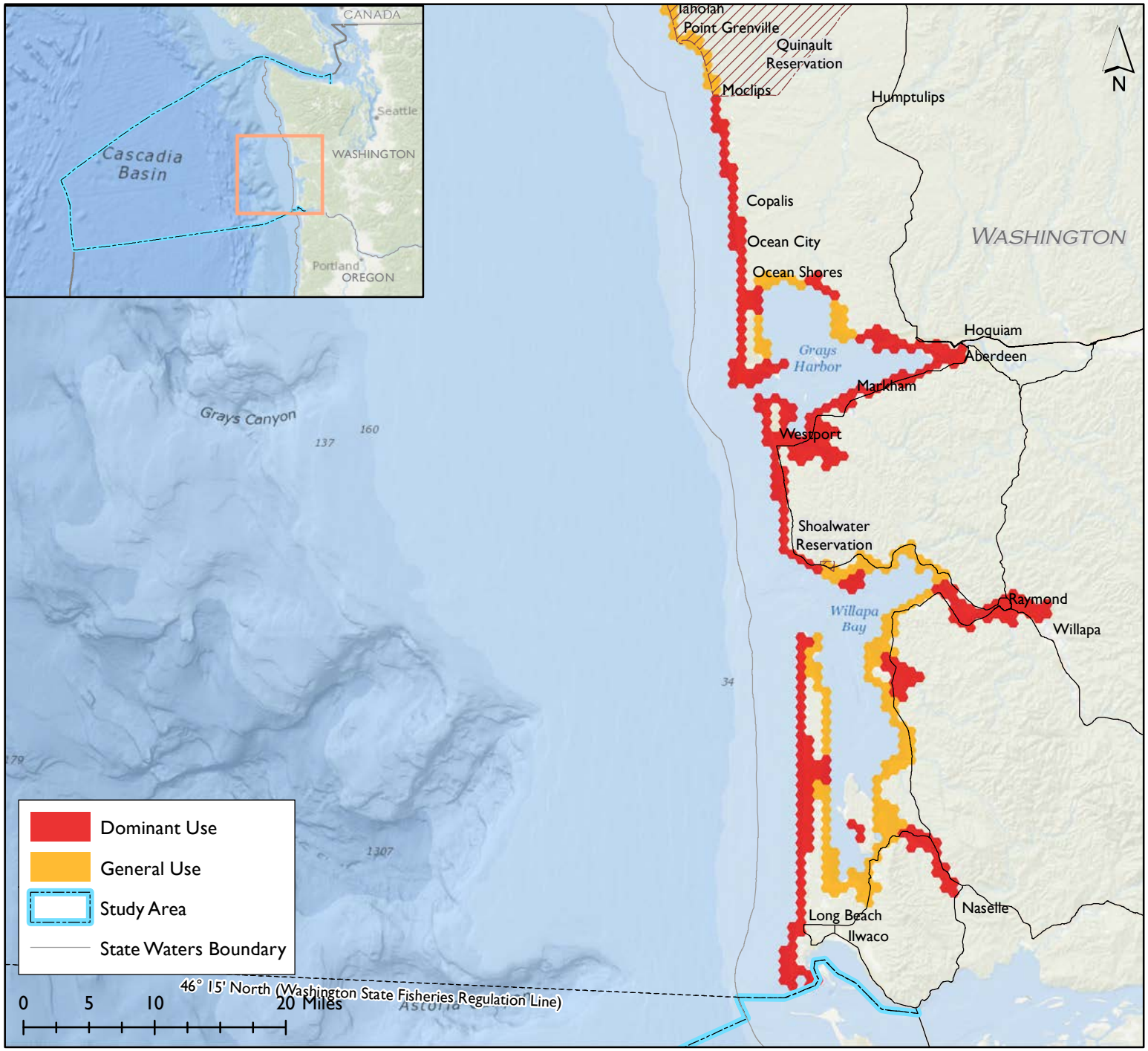

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Recreational Intertidal Harvest

Includes:
Recreational harvest in the intertidal zone of living marine plant or animal species for consumption or aquaria

Excludes:
All other forms of intertidal harvesting

Use Notes:
Recreational intertidal harvest occurs throughout the study area for a wide range of clam species (razor, butter, horse, and manila clams) and crabs. The use is most dominant in the summer months, but does occur year-round. Impacts from invasive seagrass have affected clam beds in Willapa Bay in recent years, as have harmful algal blooms.

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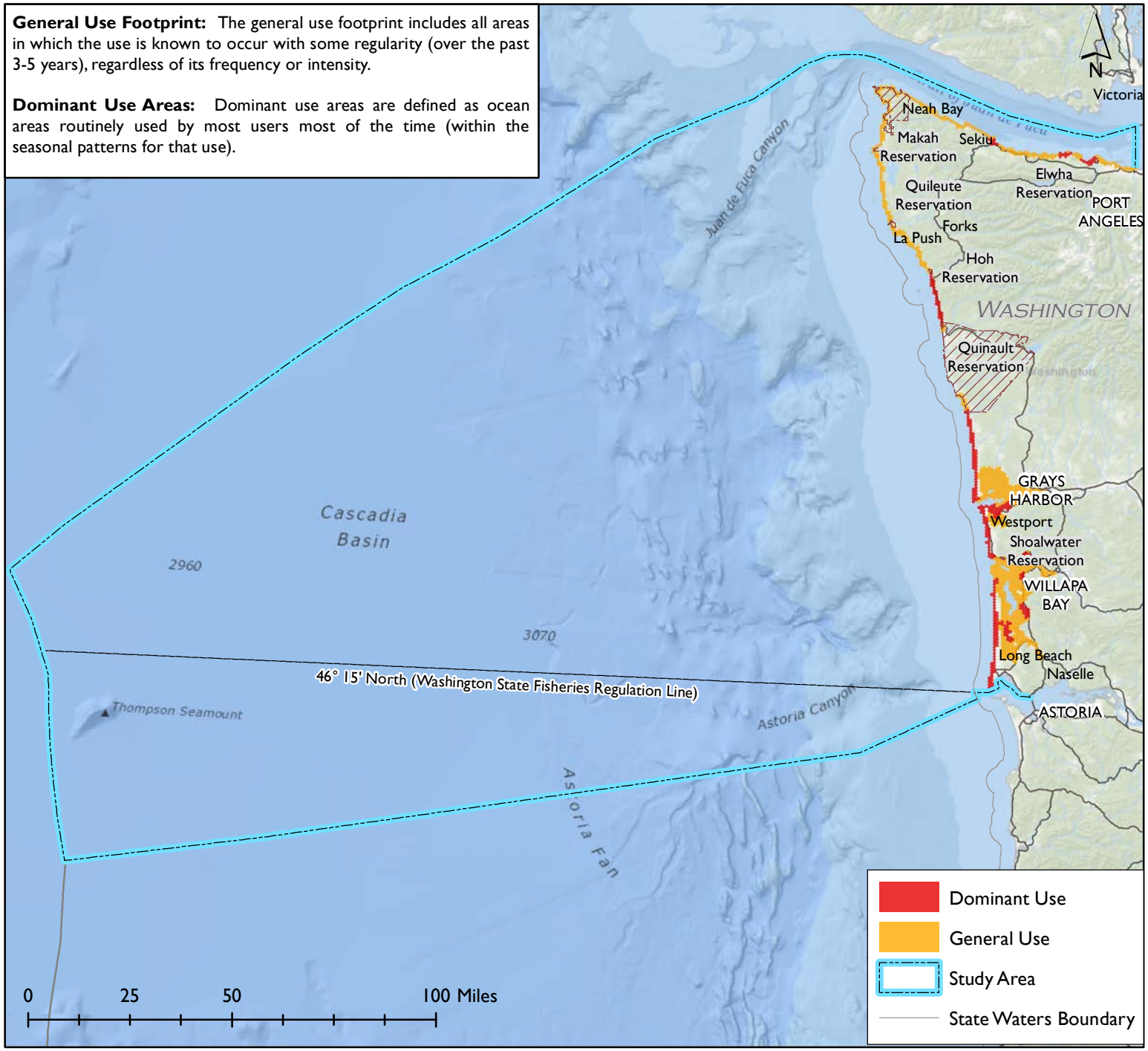

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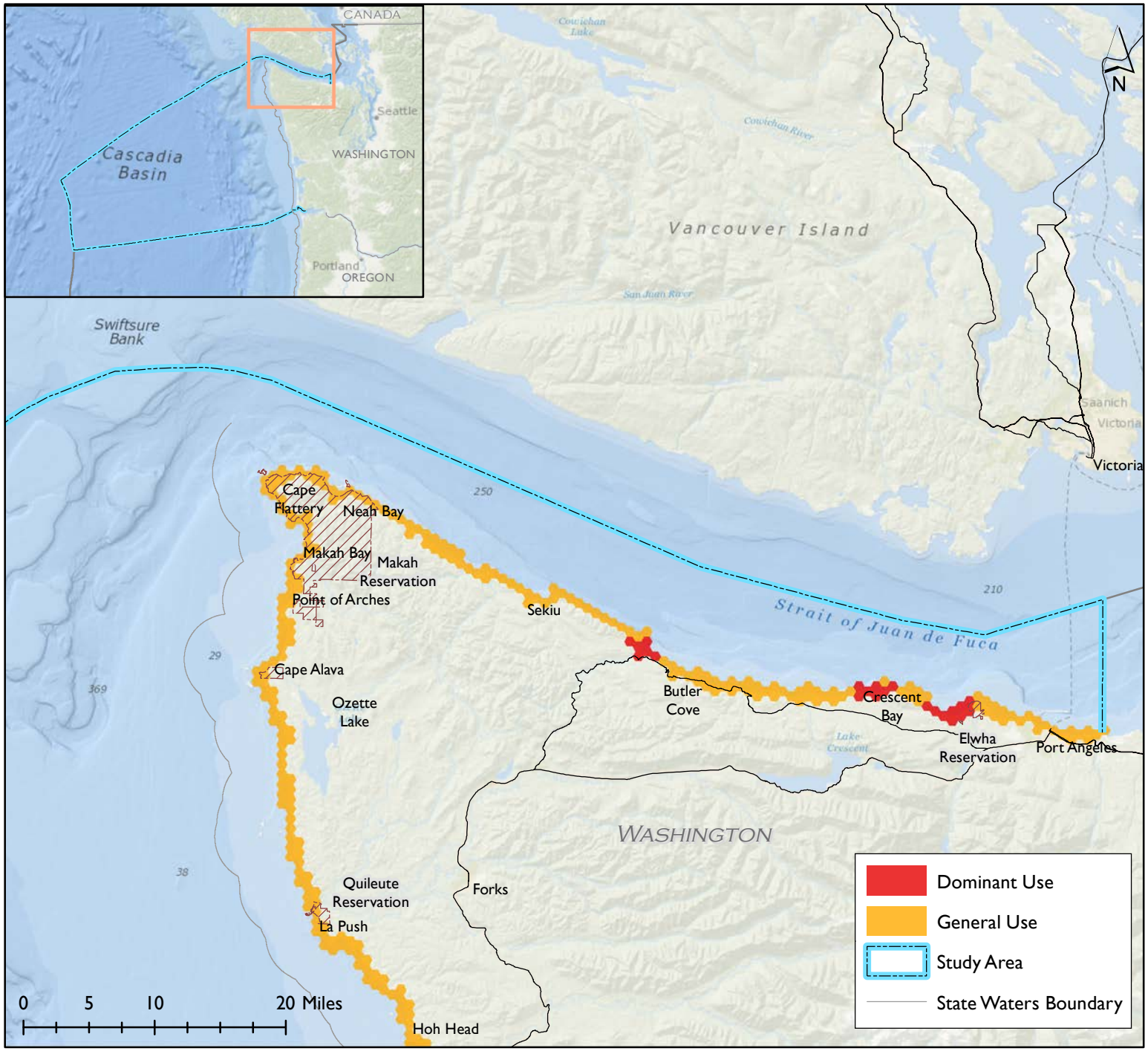

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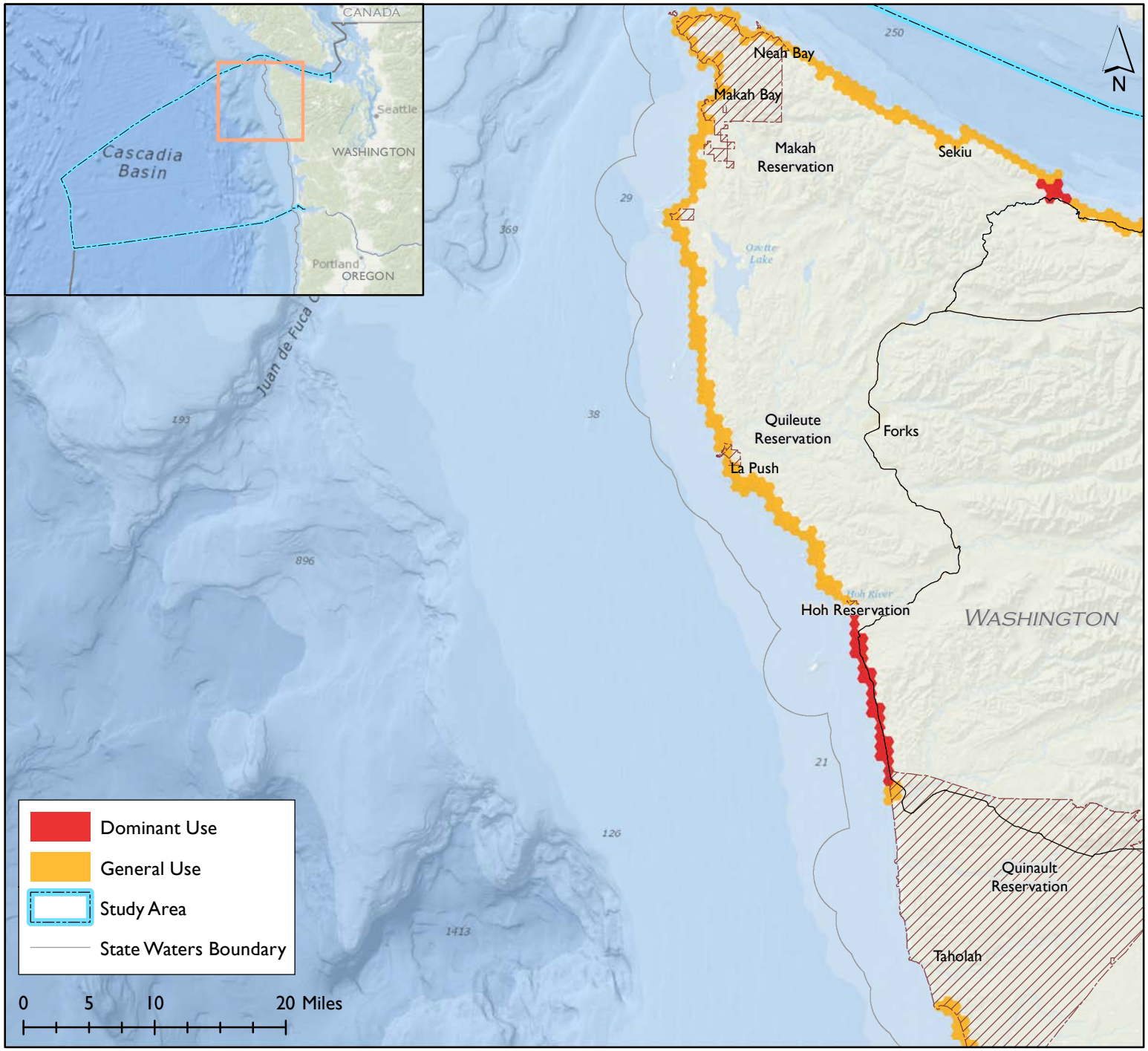

THE WASHINGTON OCEAN USES ATLAS

Participatory ocean use mapping to inform marine spatial planning in Washington's marine waters

BOEM
Bureau of Ocean Energy Management

Recreational Intertidal Harvest

Includes:
Recreational harvest in the intertidal zone of living marine plant or animal species for consumption or aquaria

Excludes:
All other forms of intertidal harvesting

Use Notes:
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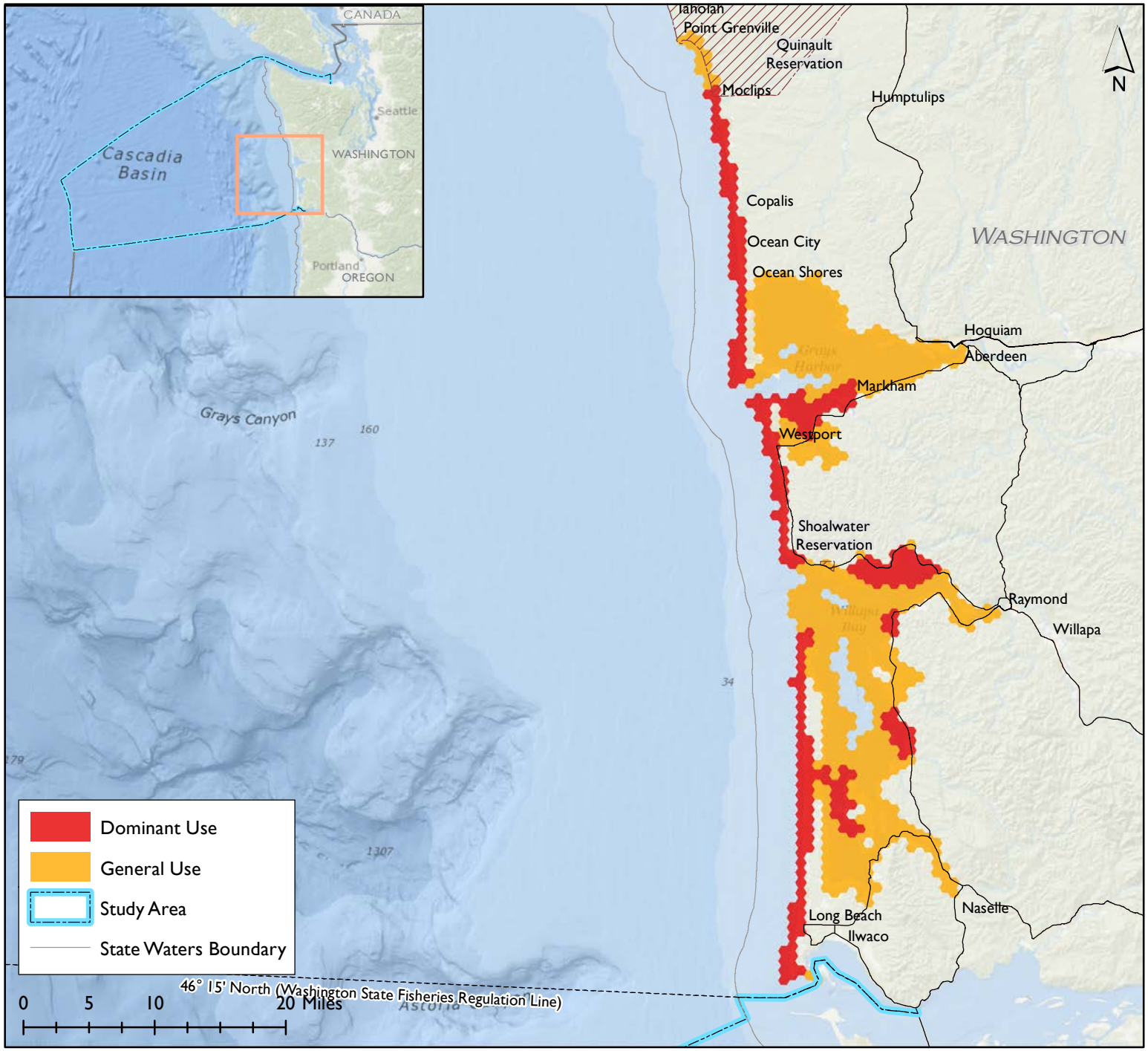

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Subsistence Fishing and Harvest

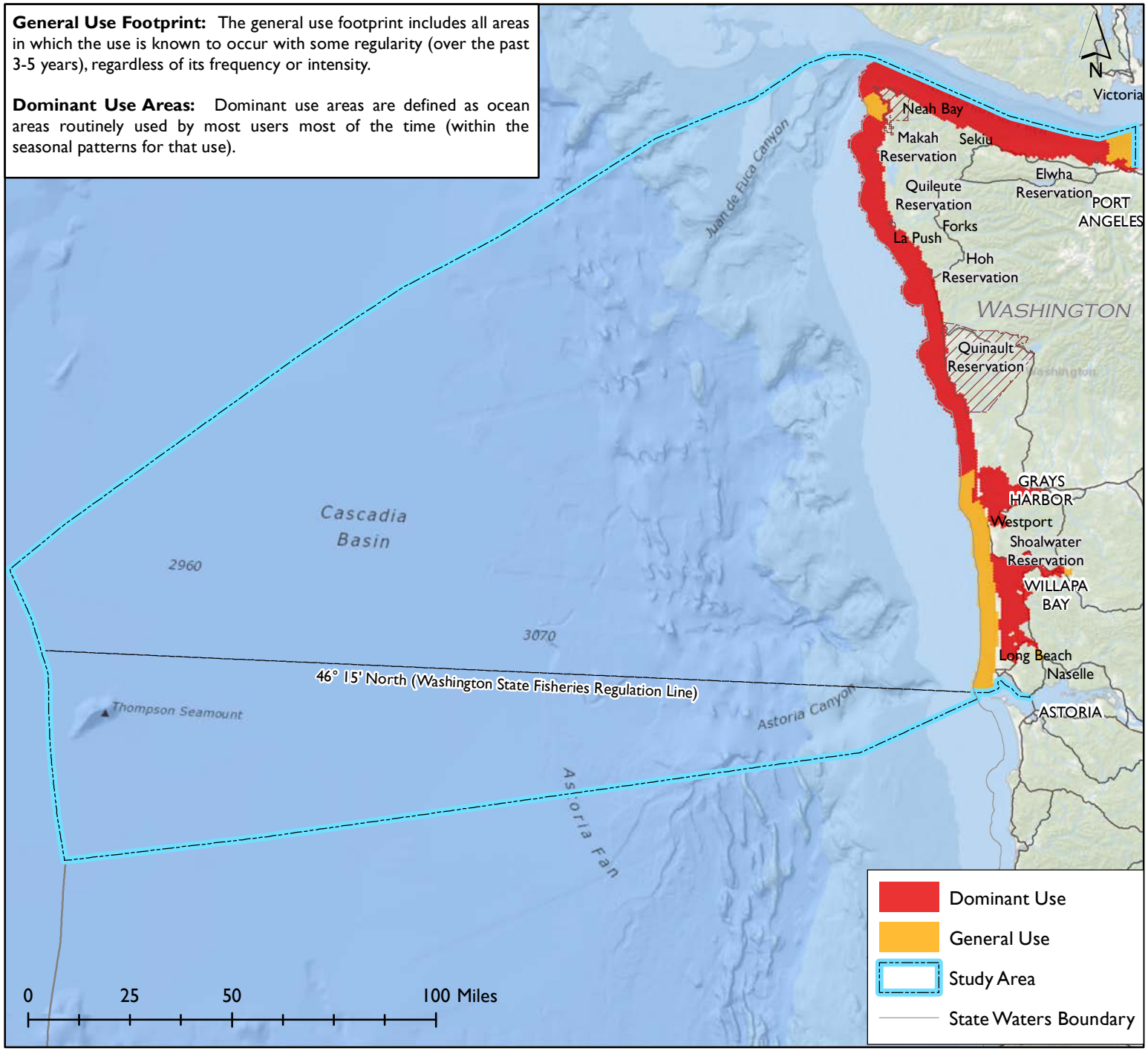
Includes:
Shore and boat-based fishing or hunting for vertebrates, birds, mammals and reptiles, harvest of seaweed or algae for subsistence purposes

Excludes:
All other forms of fishing

Use Notes:
Subsistence fishing, harvesting and hunting occurs to some degree throughout most of the study area, as a mixture of tribal and non-tribal use.

General Use Footprint: The general use footprint includes all areas in which the use is known to occur with some regularity (over the past 3-5 years), regardless of its frequency or intensity.

Dominant Use Areas: Dominant use areas are defined as ocean areas routinely used by most users most of the time (within the seasonal patterns for that use).



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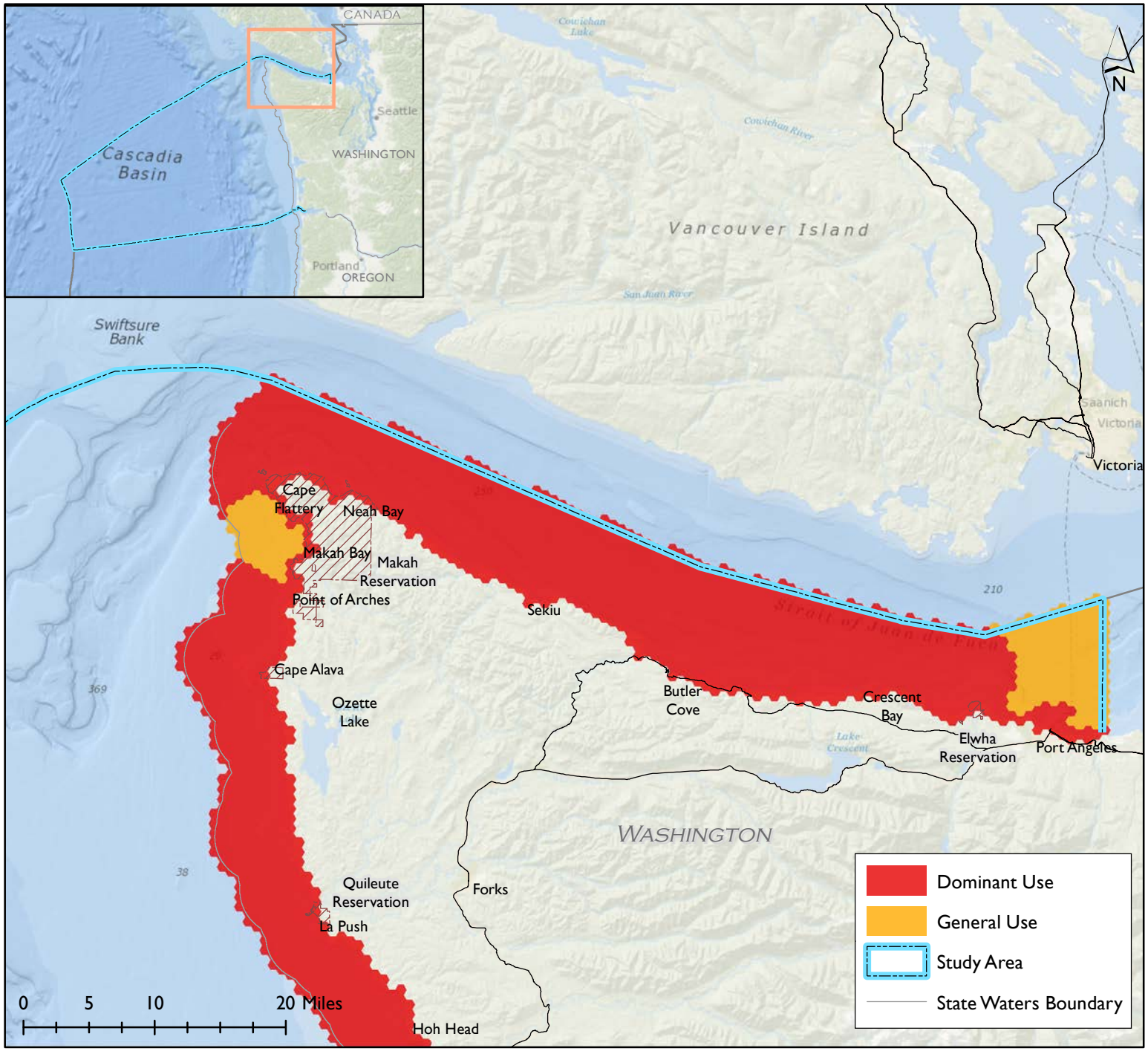

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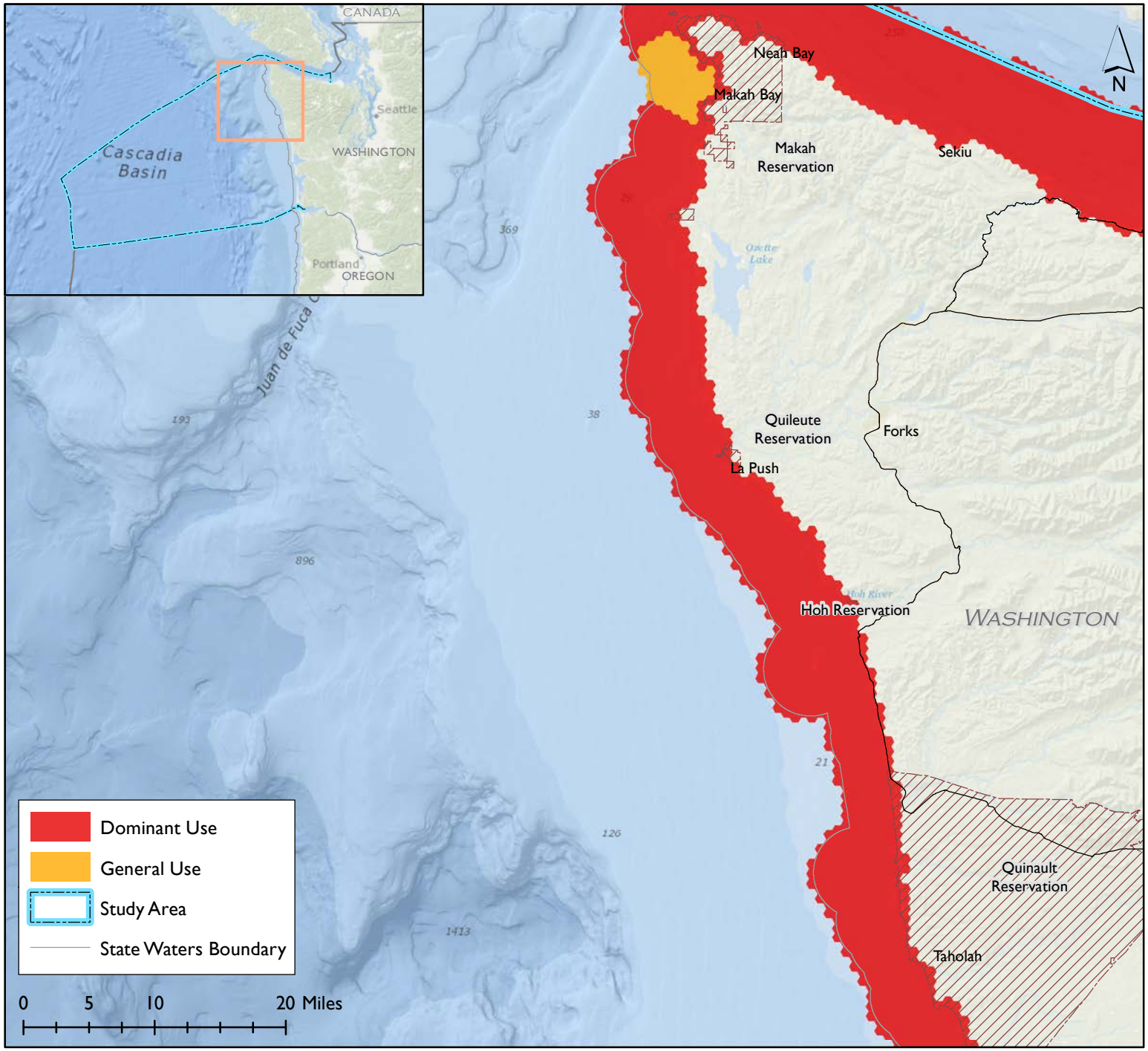

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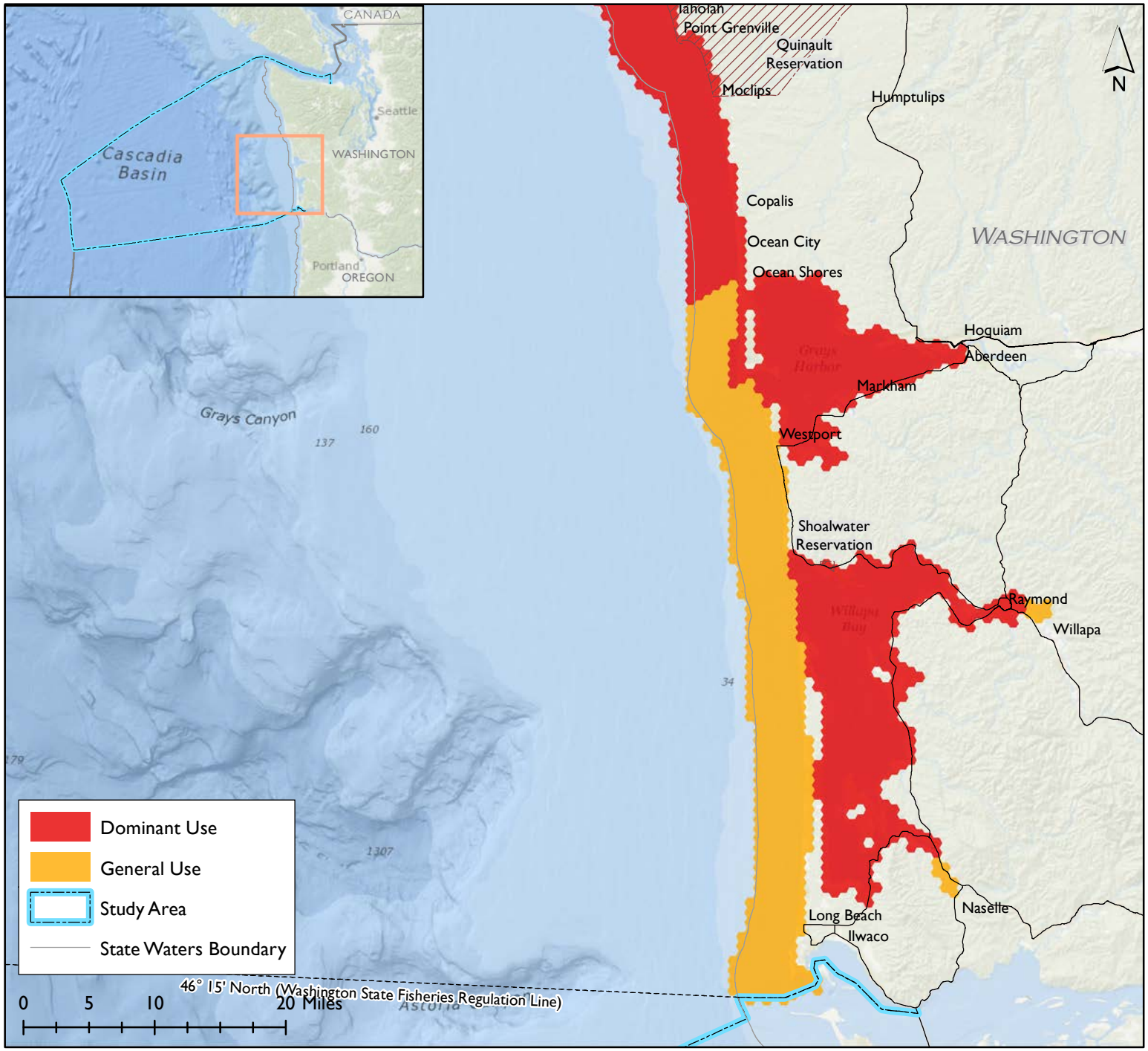
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