WASHINGTON OCEAN USES ATLAS PROJECT
OCEAN USES MAP BOOK

Introduction

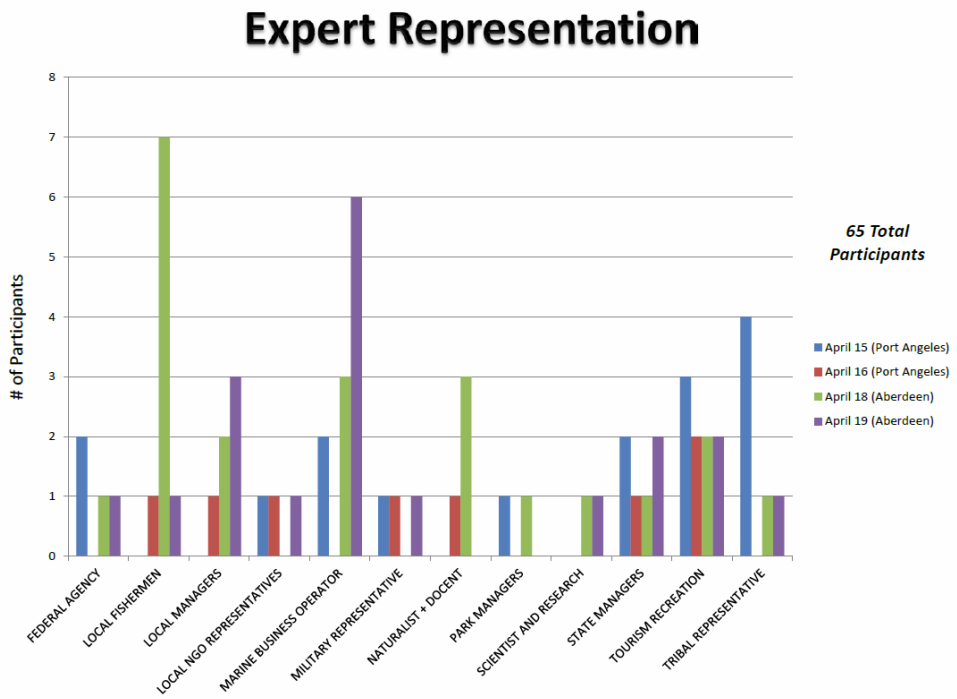
This map book contains cartographic products derived from the Washington Ocean Uses Atlas participatory mapping workshops conducted in Port Angeles on April 15-16, 2013 (at the Clallam County Courthouse) and Aberdeen on April 18-19, 2013 (at Grays Harbor College). These participatory mapping workshops 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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Hugo Selbie
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

Ocean Dumping

Includes:
The deliberate legal dumping of dredged spoils and other materials into ocean waters

Excludes:
Sewage Discharge, Mining and Mineral Extraction

Use Notes:
Ocean dumping that occurs in the study area is mainly associated with dredge spoils near ports, harbors and river mouths. It can also include the dumping of fish waste and ballast water throughout the study area. More questionable is the illegal dumping of plastics and nuclear waste. The majority of the use occurs as dredge spoils in the EPA Region 10 ocean dumping sites.

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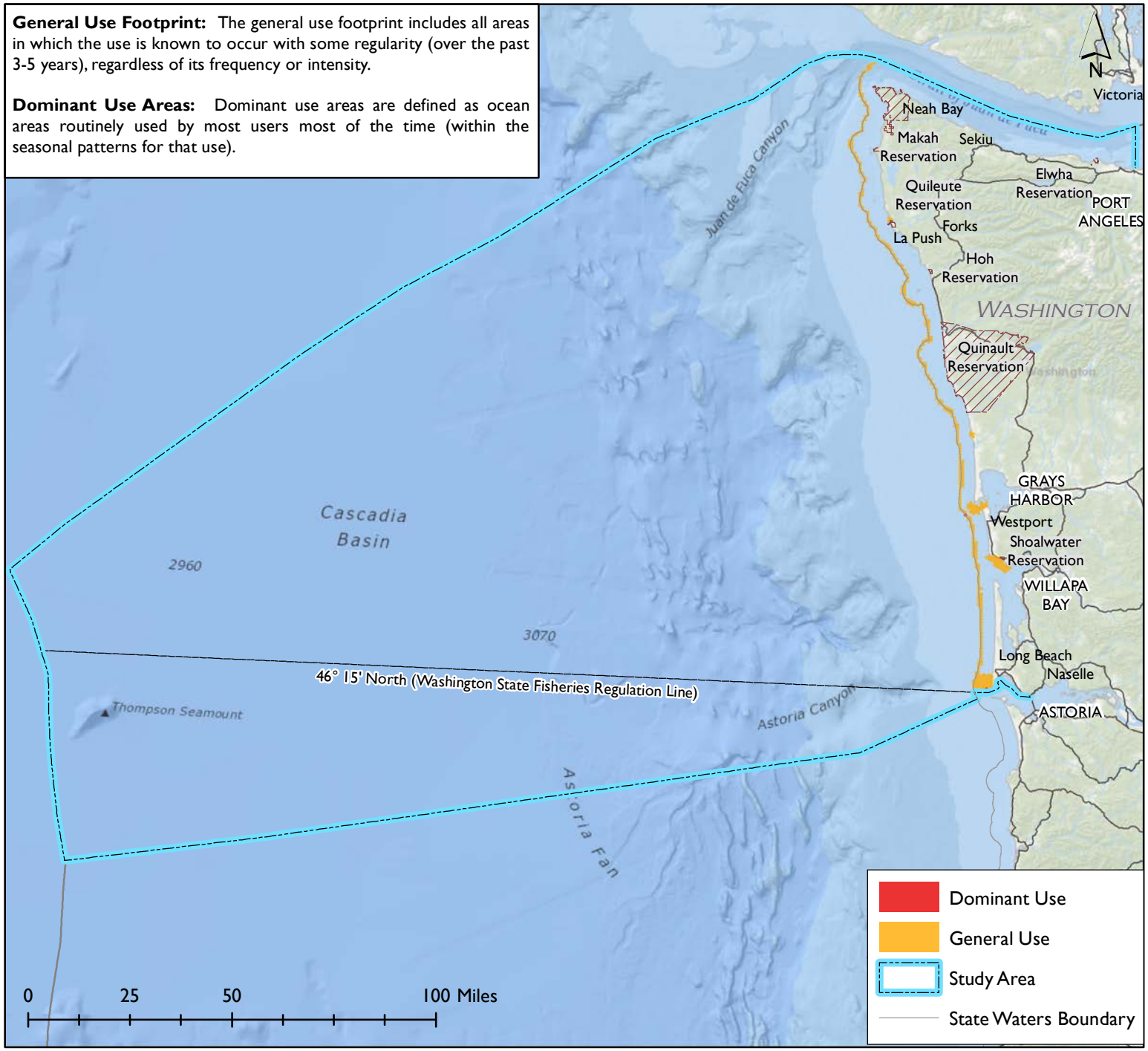

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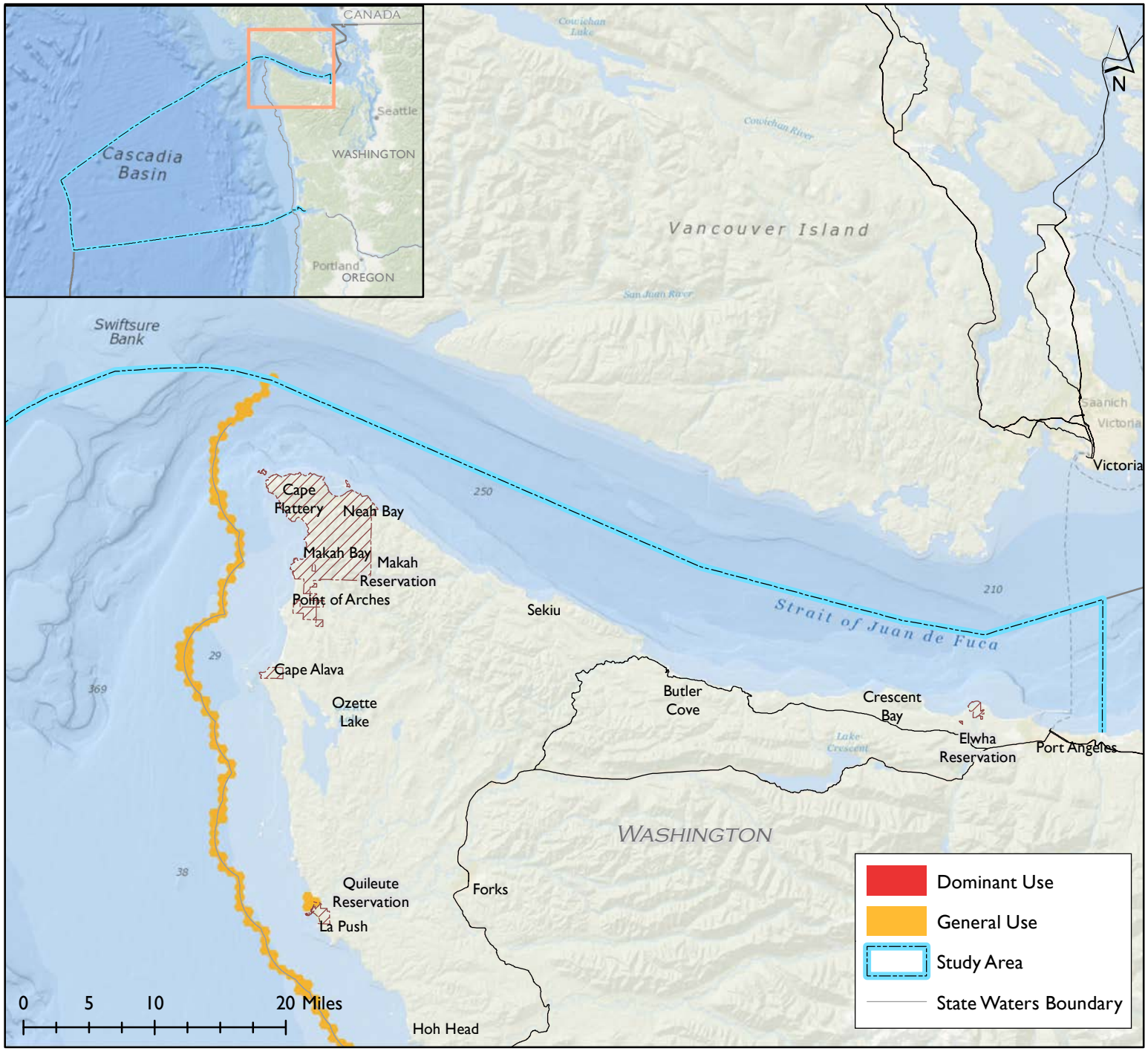

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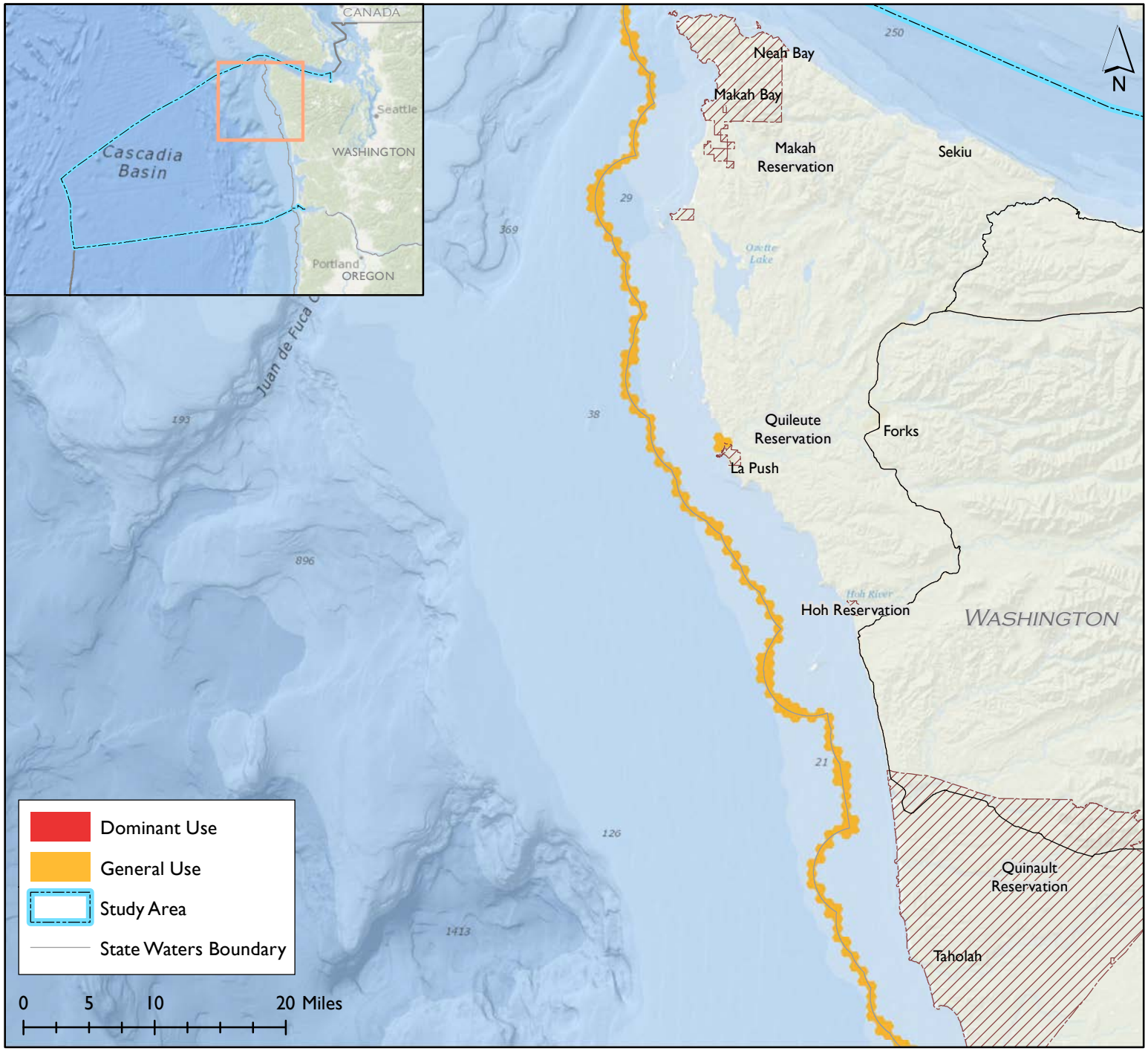

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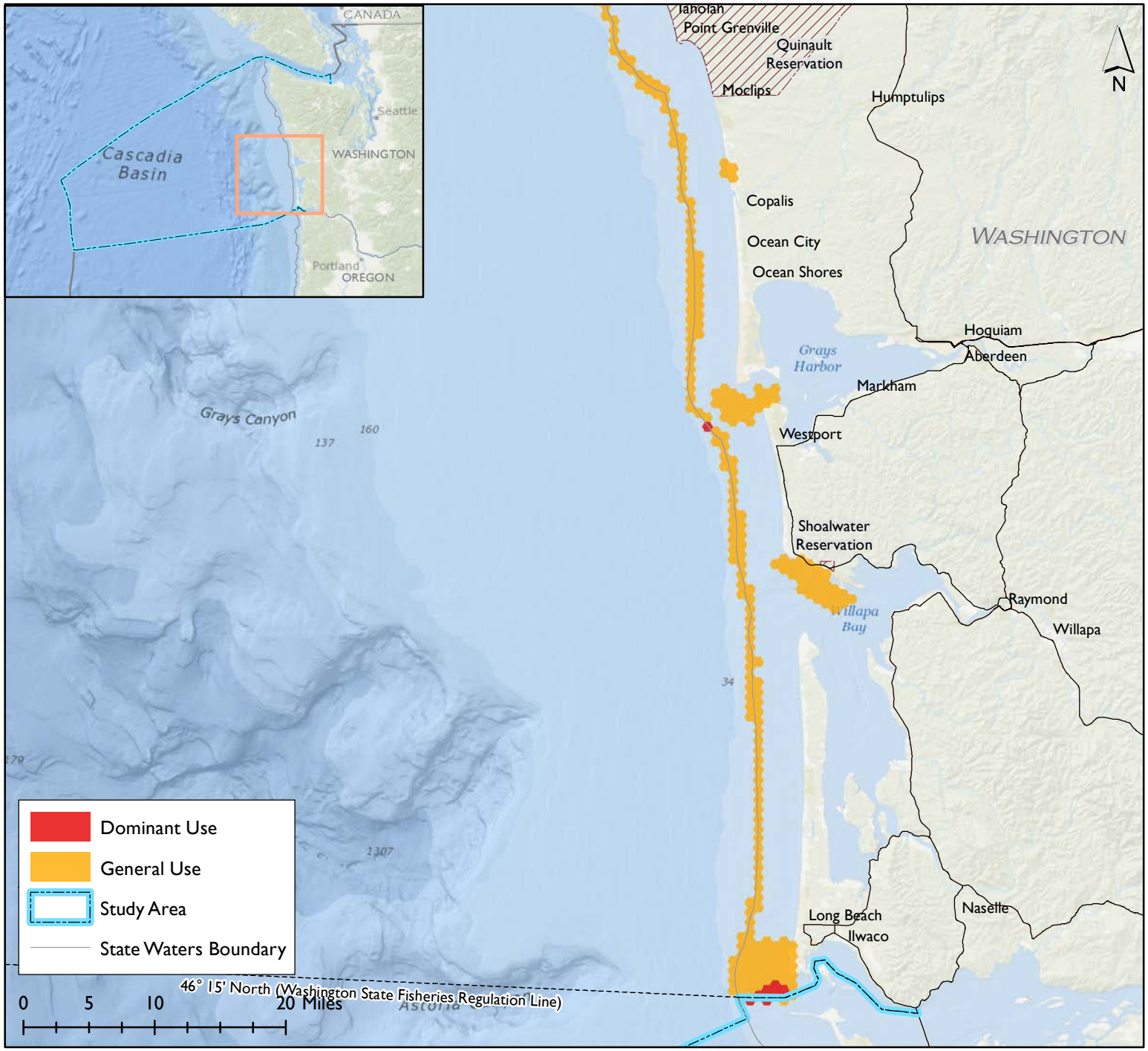

 Date: 12/18/2013

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Mariculture

Includes:
Cultivating and harvesting marine organisms in the near-shore or offshore using man-made enclosures that can be fixed, floating or submerged (e.g. nets, pens and cages)

Excludes:
Aquaculture wholly pursued on land

Use Notes:
Mariculture occurs in a number of the coastal bays for oysters, clams, salmon and baitfish. Shellfish research beds are present in Neah Bay (geoduck) and Makah Bay (shellfish); bait pens are present in Grays Harbor; net pens (salmon) in Port Angeles.

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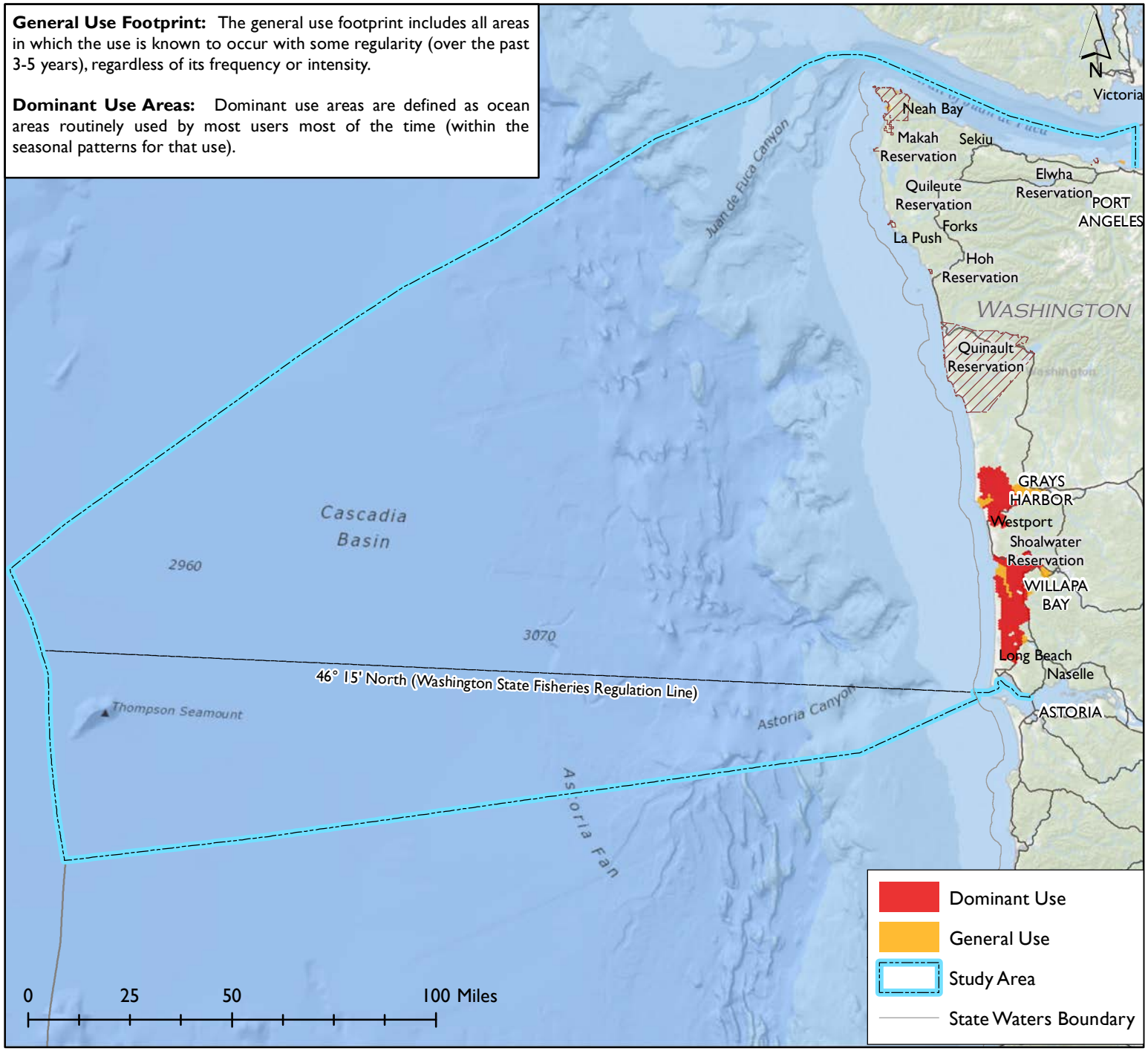

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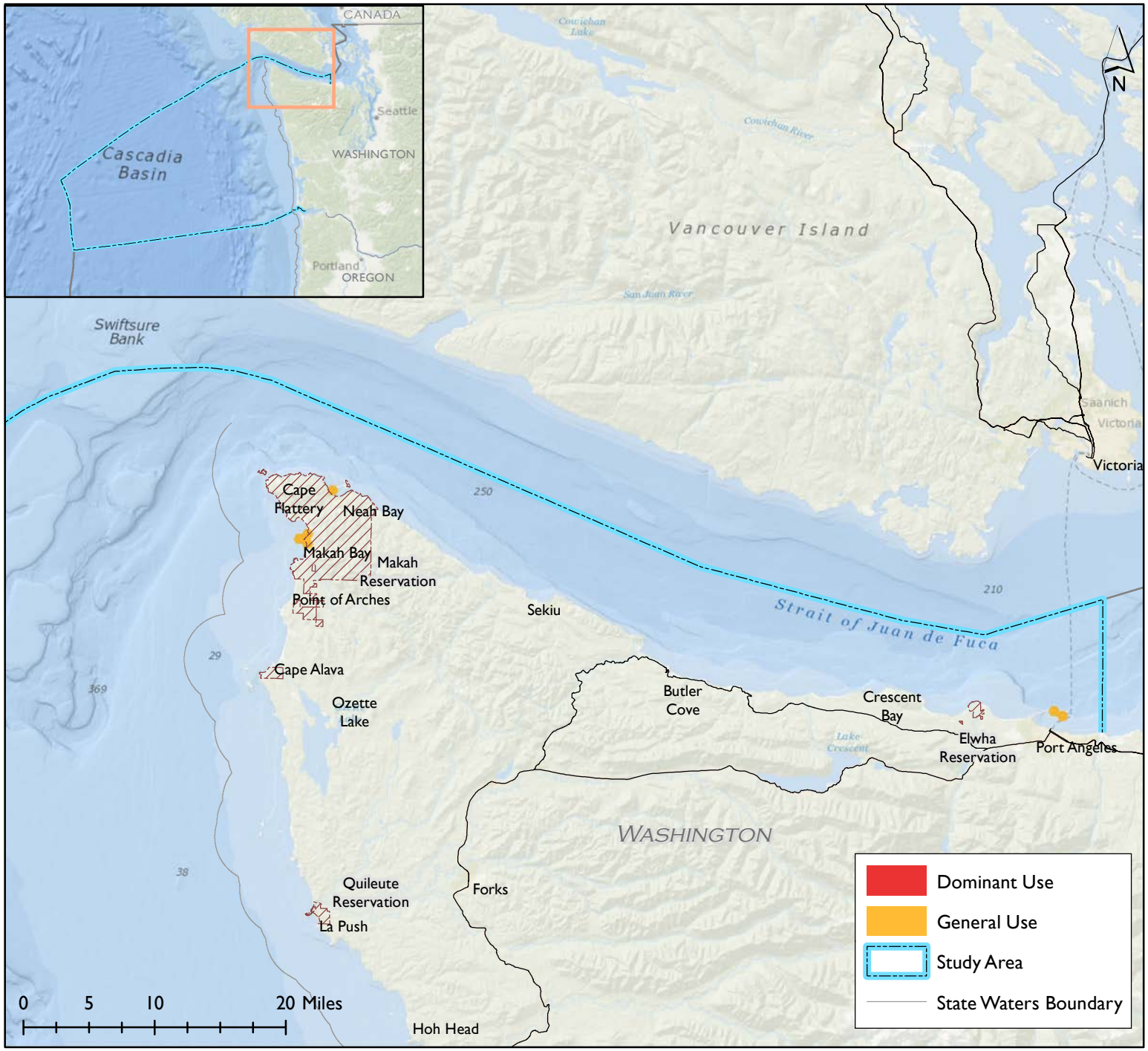

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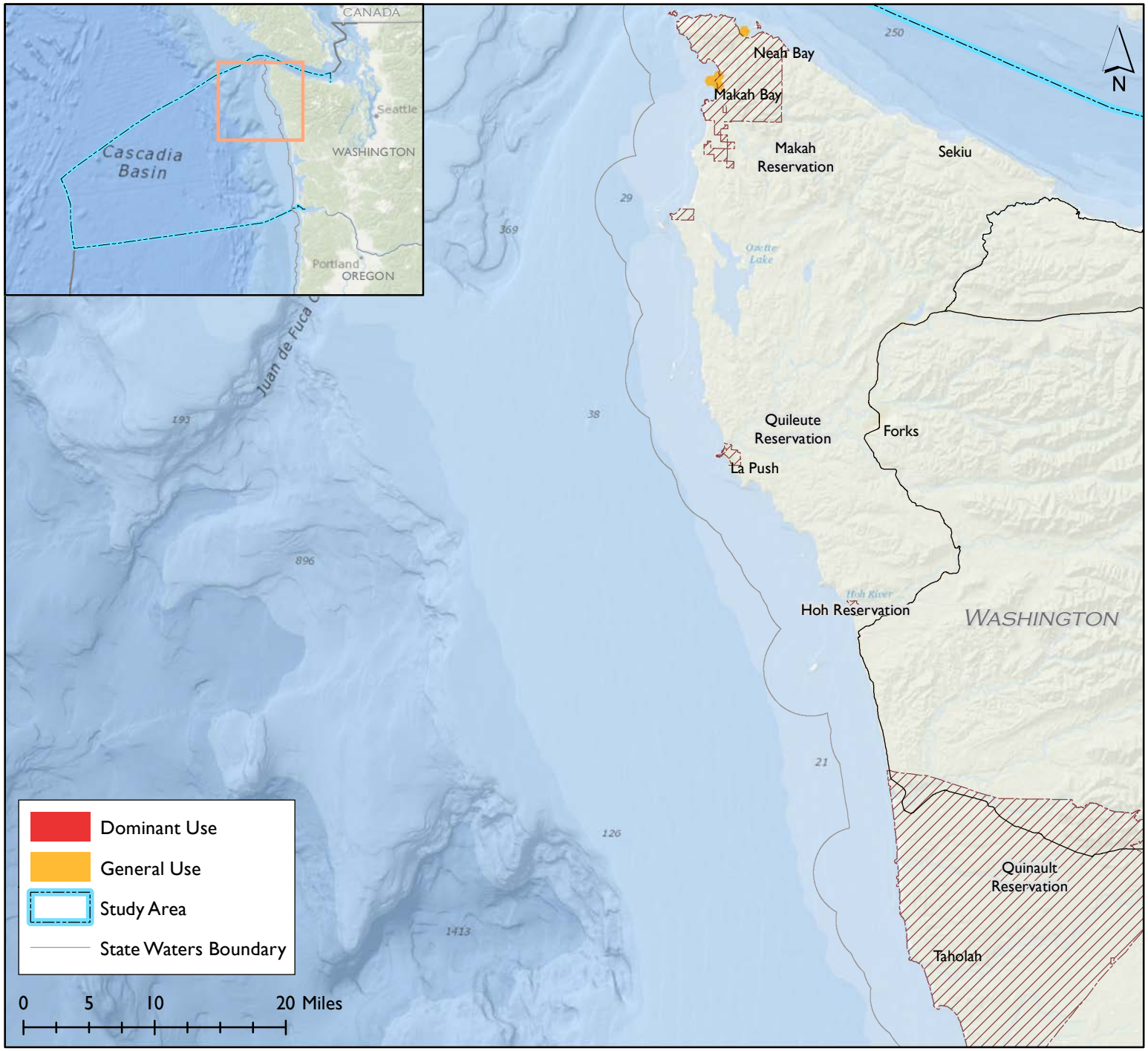

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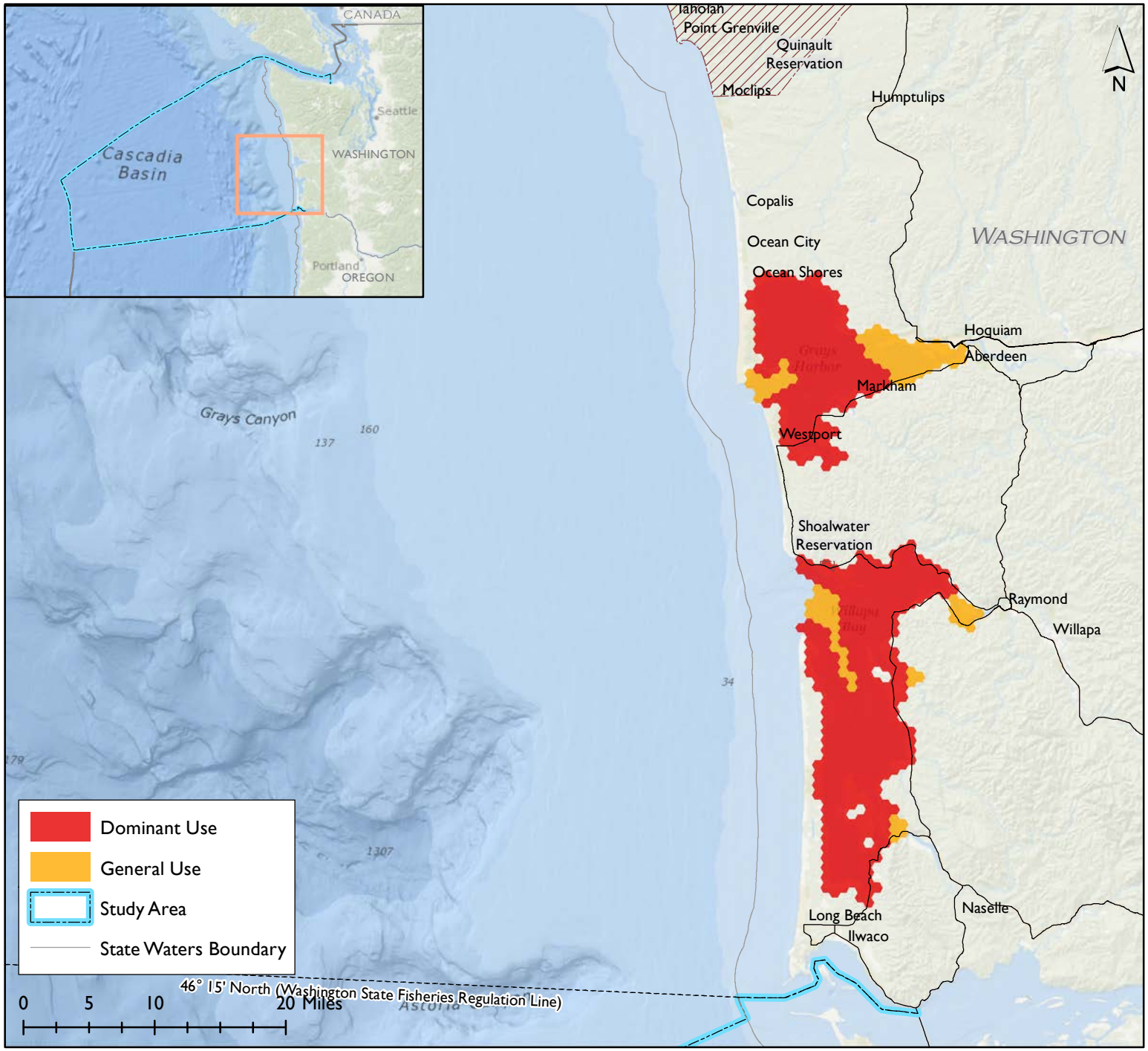

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Marine Debris

Includes:
The collection, monitoring and routine siting of marine debris, including targeted debris removal areas.

Excludes:
Any other form of ocean dumping

Use Notes:
Marine debris siting has increased significantly in recent years. Routine monitoring and collection of debris occurs at various locations throughout the study area. The use is concentrated after large storms and in response to community sitings of debris on beaches and floating debris in nearshore waters.

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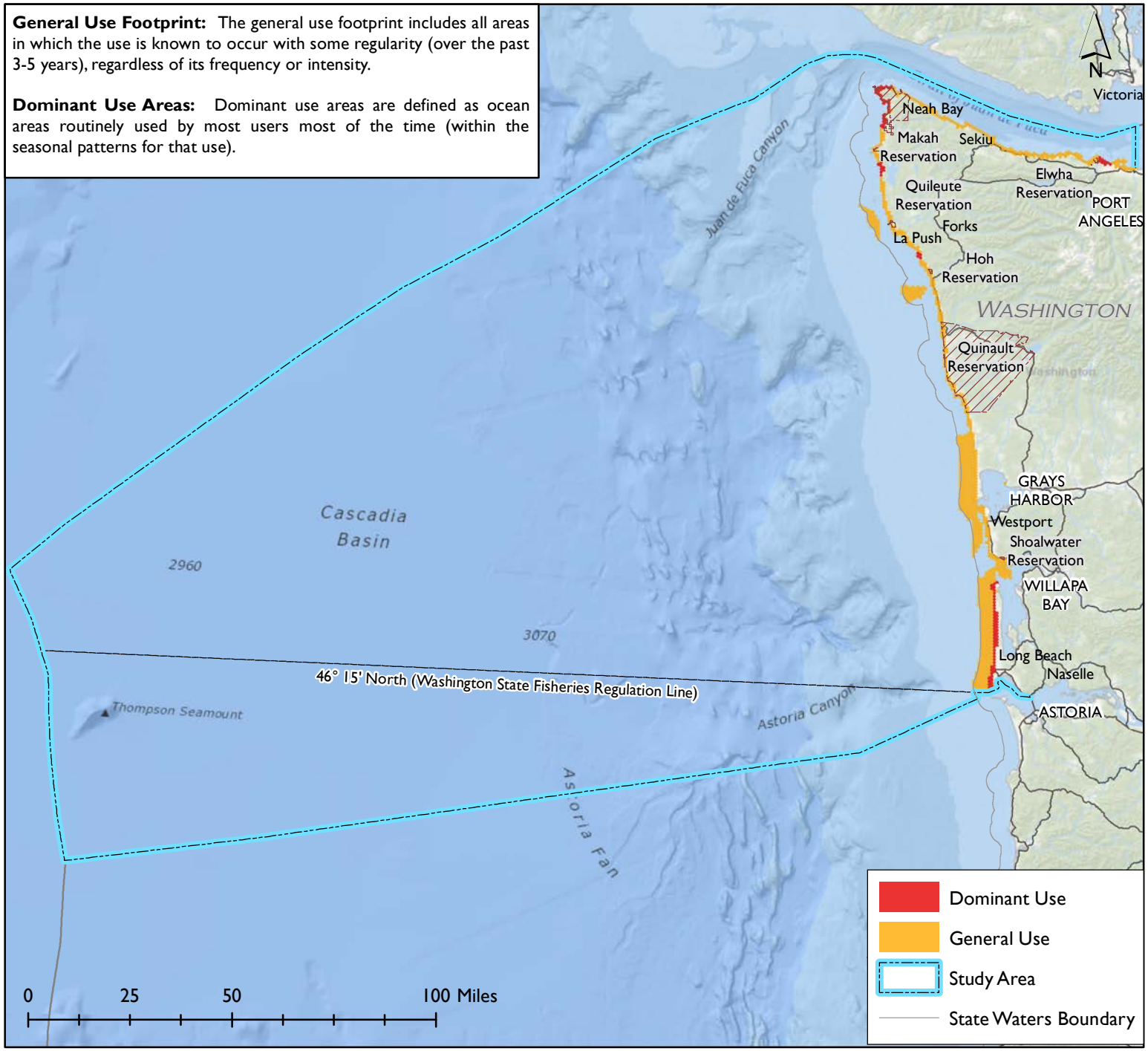

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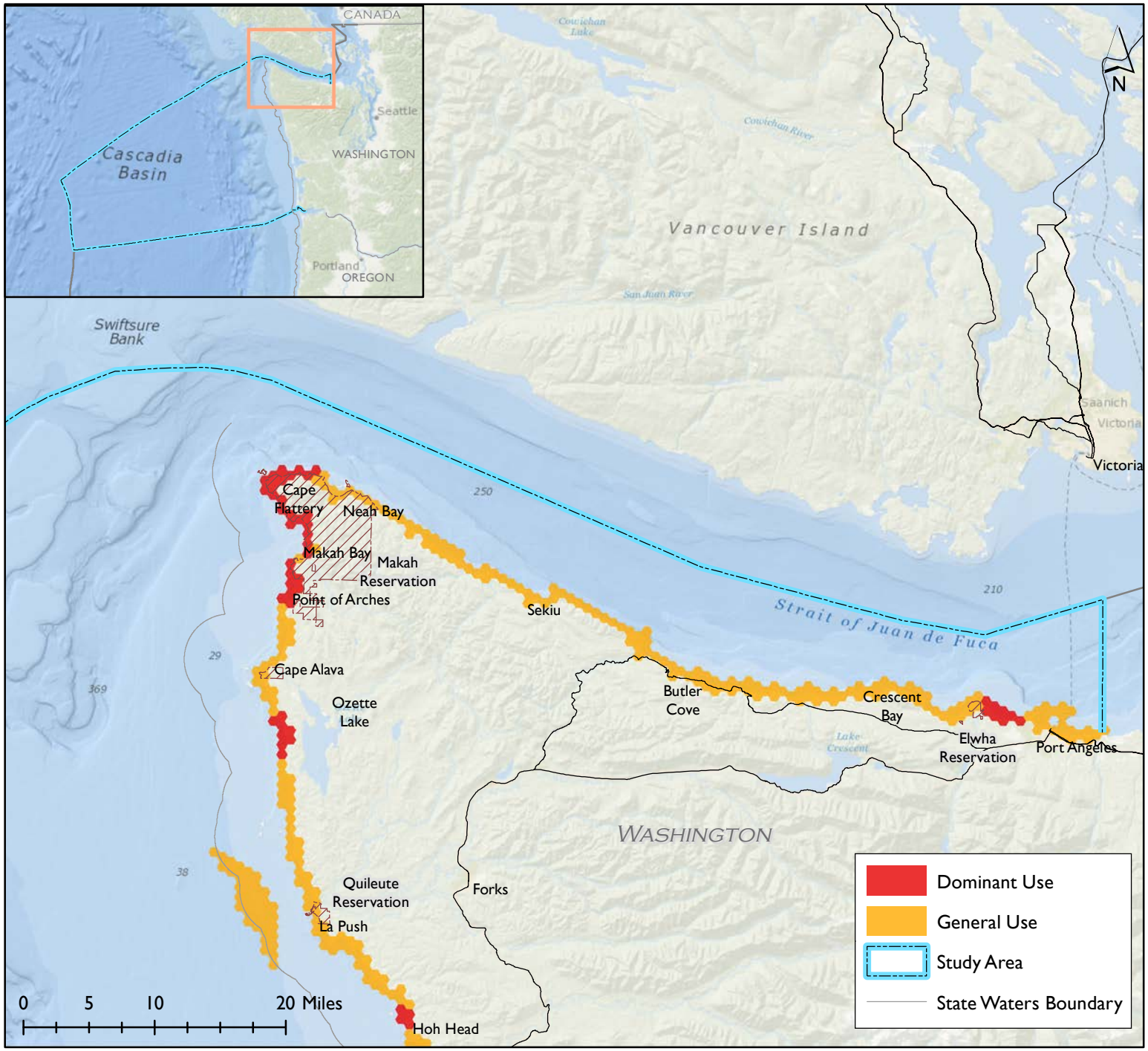

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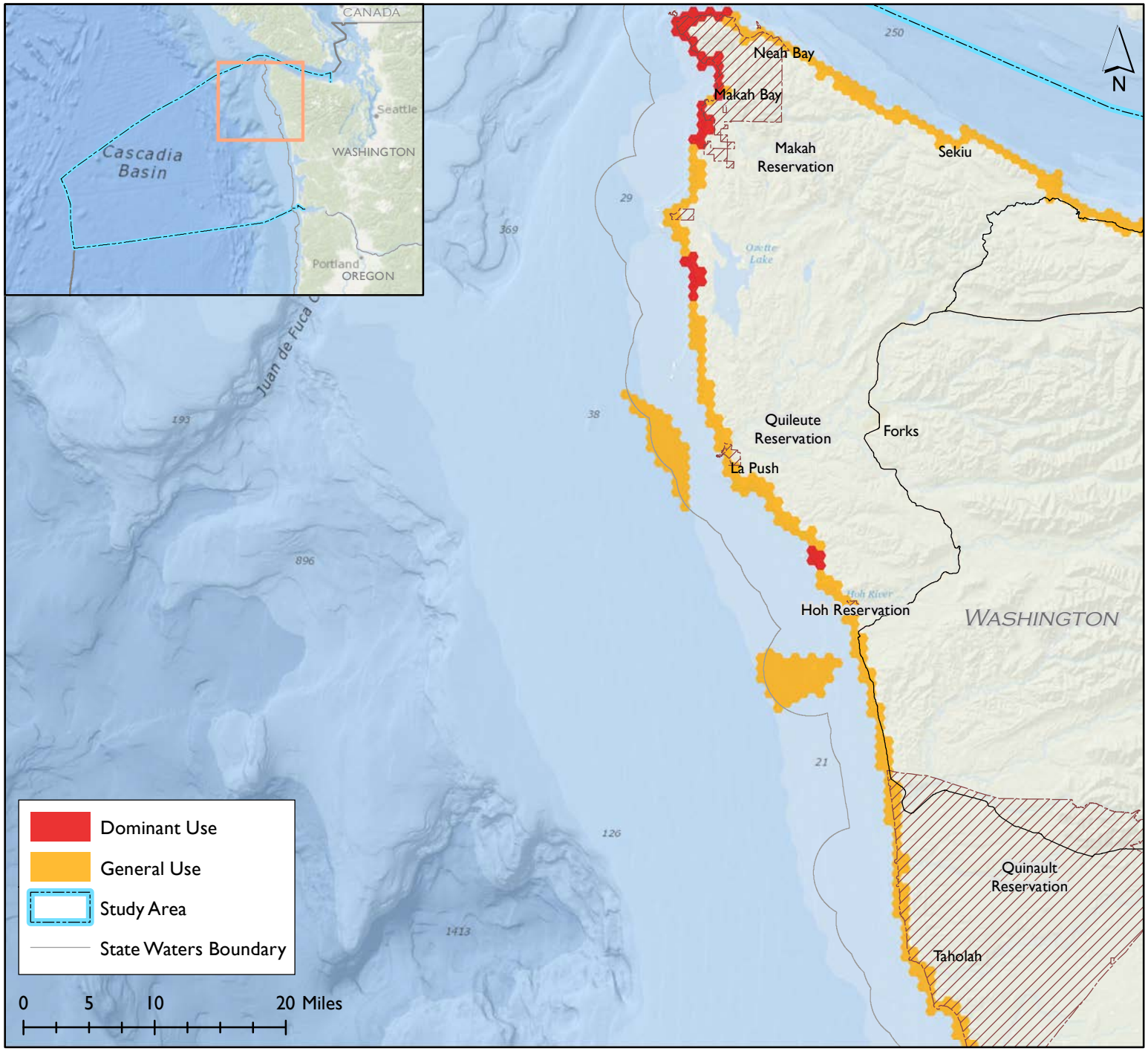

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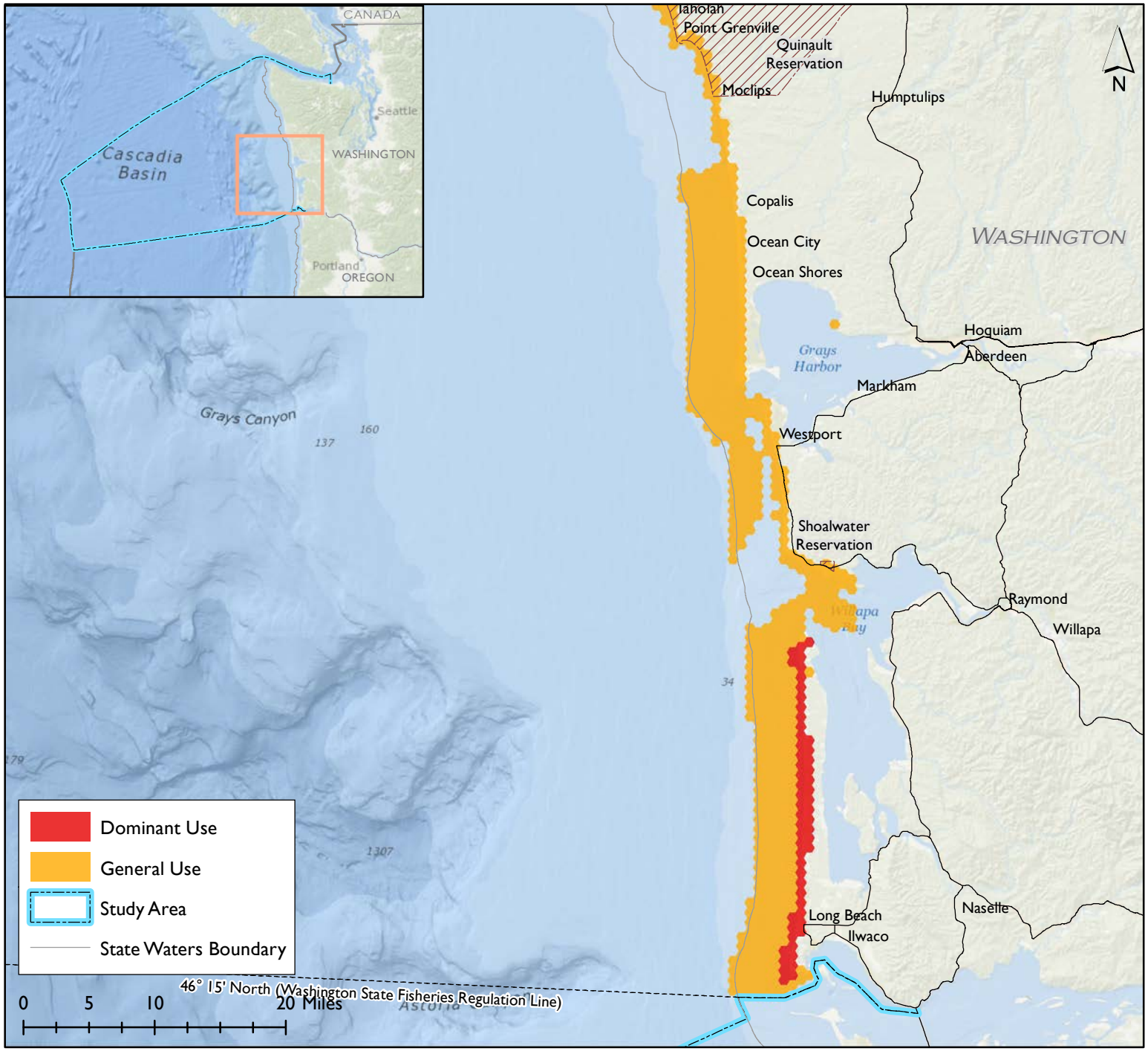

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Military Operations

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Transit of military vessels related to training activities, ship and submarine maneuvers, war games, and ordnance disposal

Excludes:
Wartime military operations

Use Notes:
Military operations occur throughout a majority of the study area. This includes areas for military training, rescue operations, exercises and ordnance disposal. Live fire testing is known to occur in the Quinault Underwater Test Range and throughout the Strait of Juan de Fuca. Military submarines and carriers transit through the area, staying mainly within the shipping lanes. Some military activities focus around Camp Rilea and the US Coast Guard bases at LaPush and Westport. Military research occurs around the Quileute canyon, basic training around Wade Island and rescue operations training in Sekiu and Clallam.

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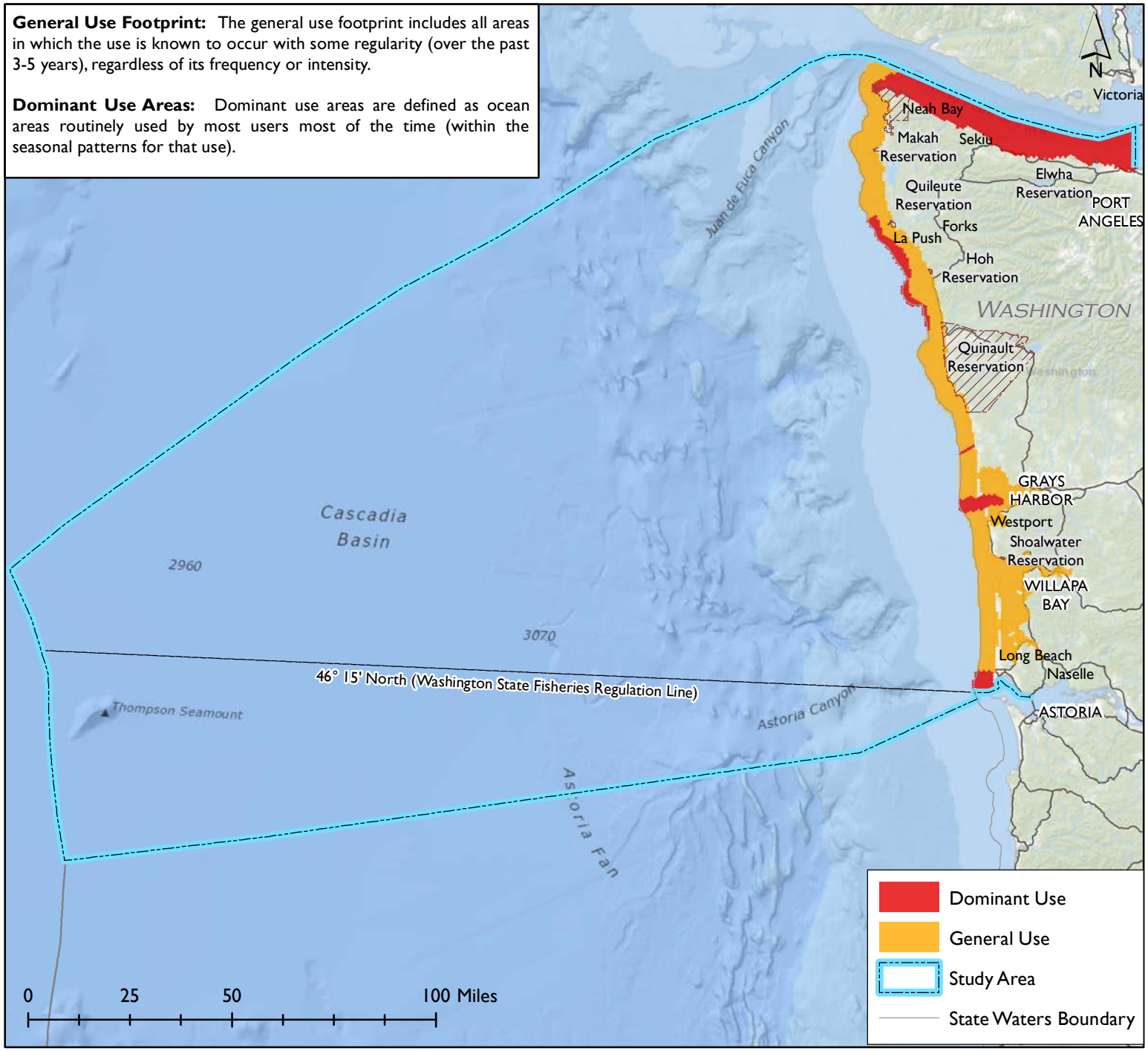

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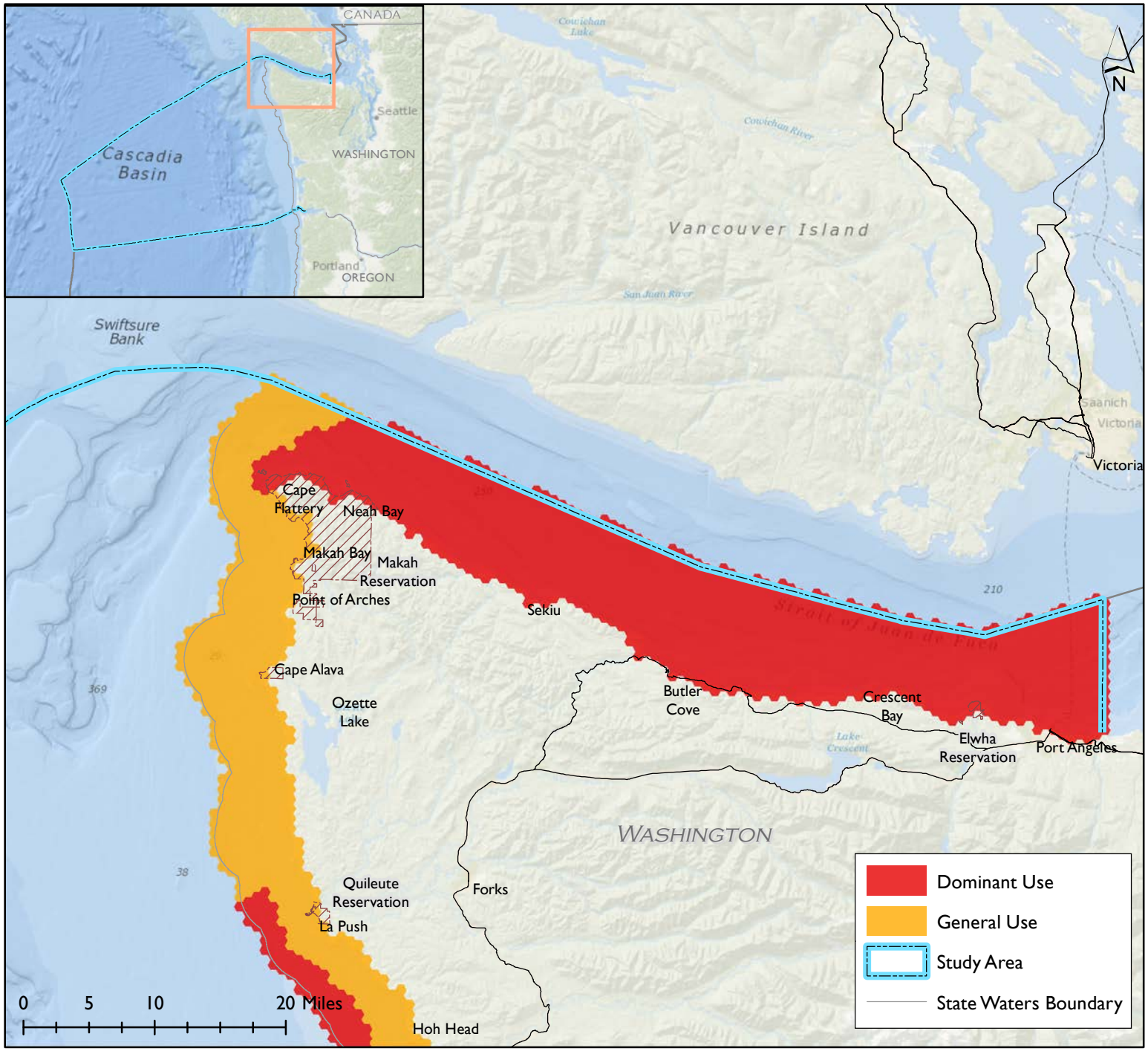

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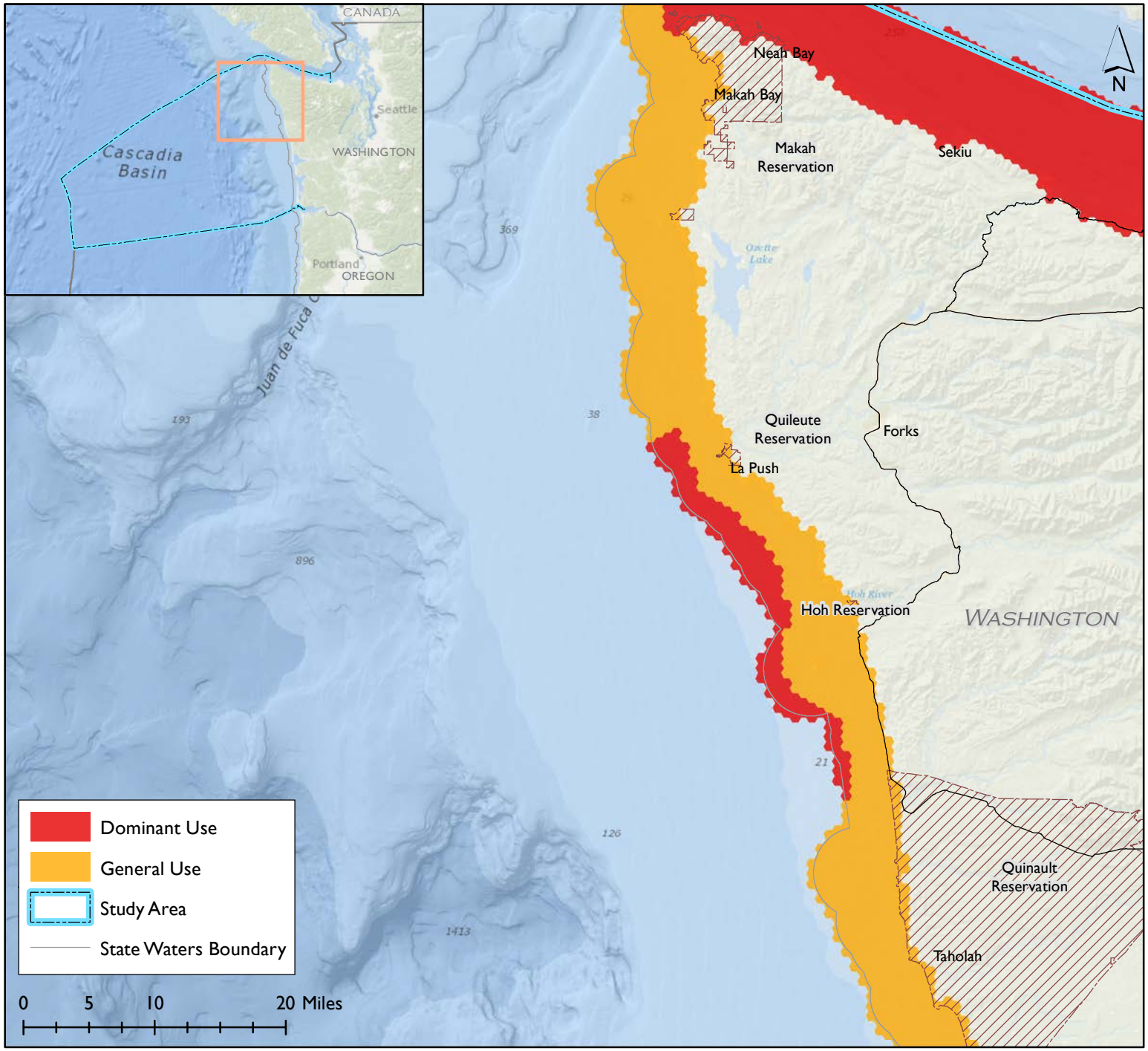

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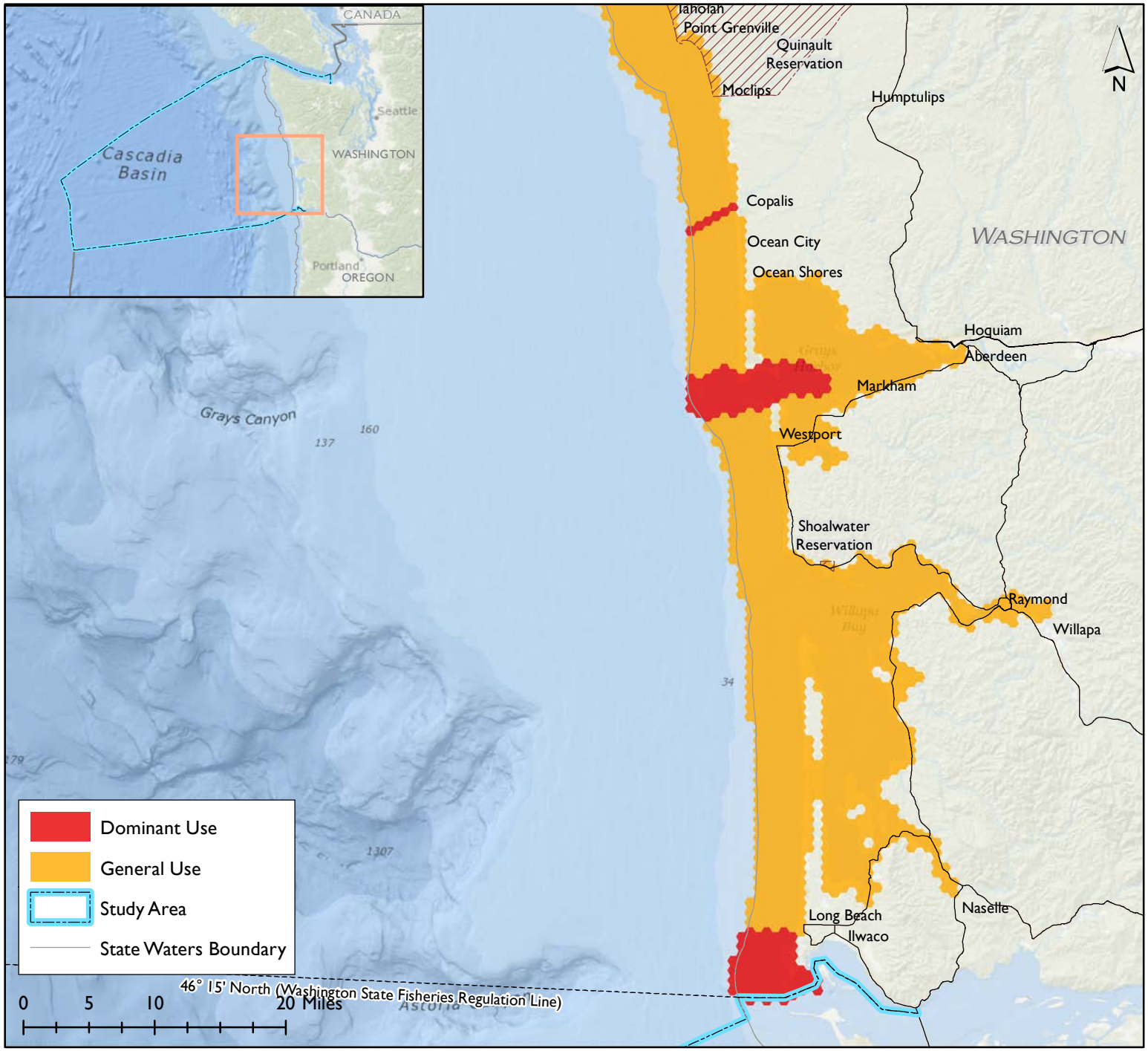

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Mining and Mineral Extraction

Includes:
Sand and gravel and sediment extraction, seabed mining for commercial minerals, dredging, and beach re-nourishment

Excludes:
Energy production

Use Notes:
Mining and mineral extraction occurs as part of routine monitoring and maintenance of ports and harbors, through dredging activities. The use also includes some beach renourishment activities and gold mining along beaches for recreational purposes. Sand mining occurs around Ocean Park, and sand removal for cranberry bogs occurs in Grayland.

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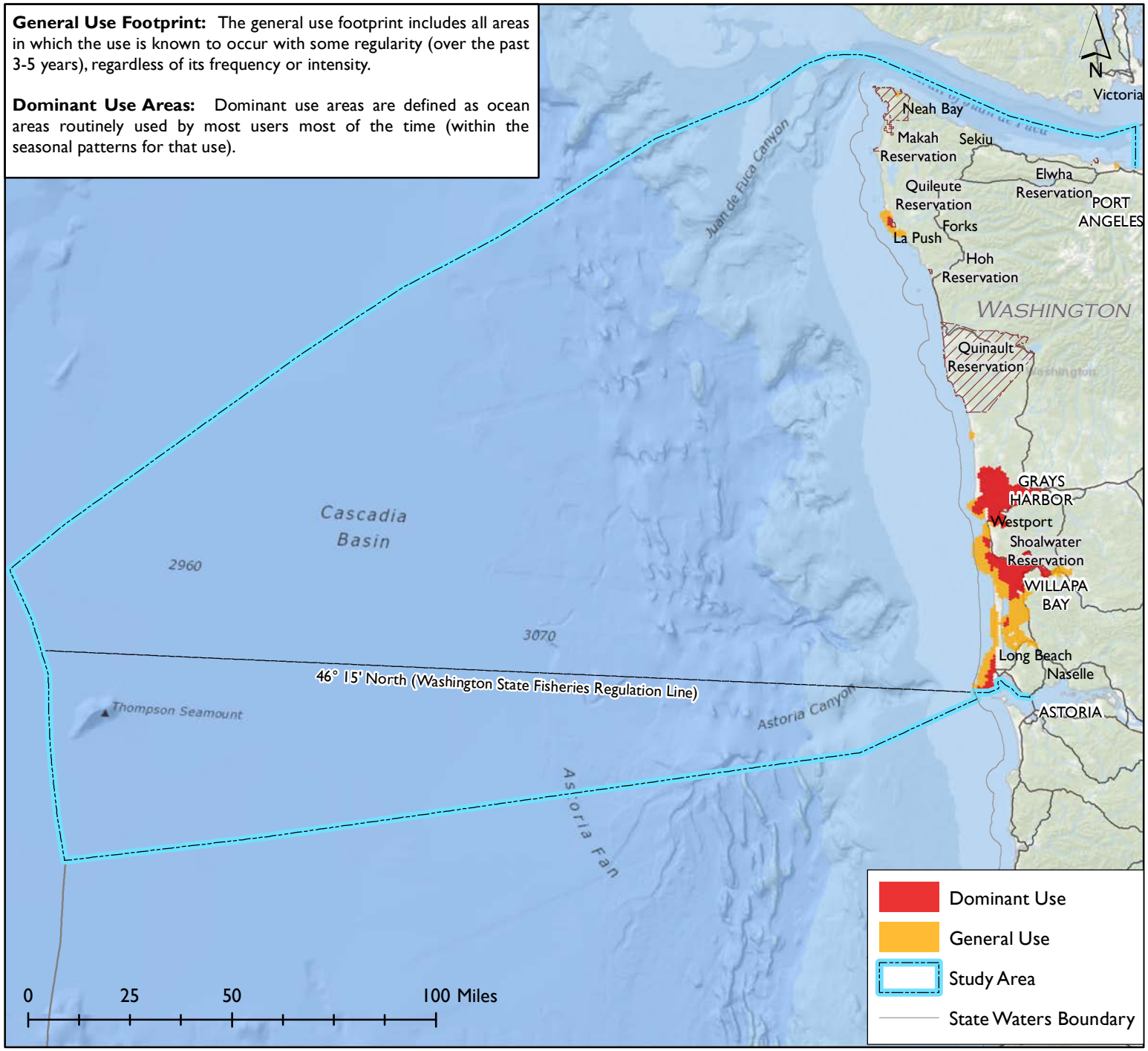

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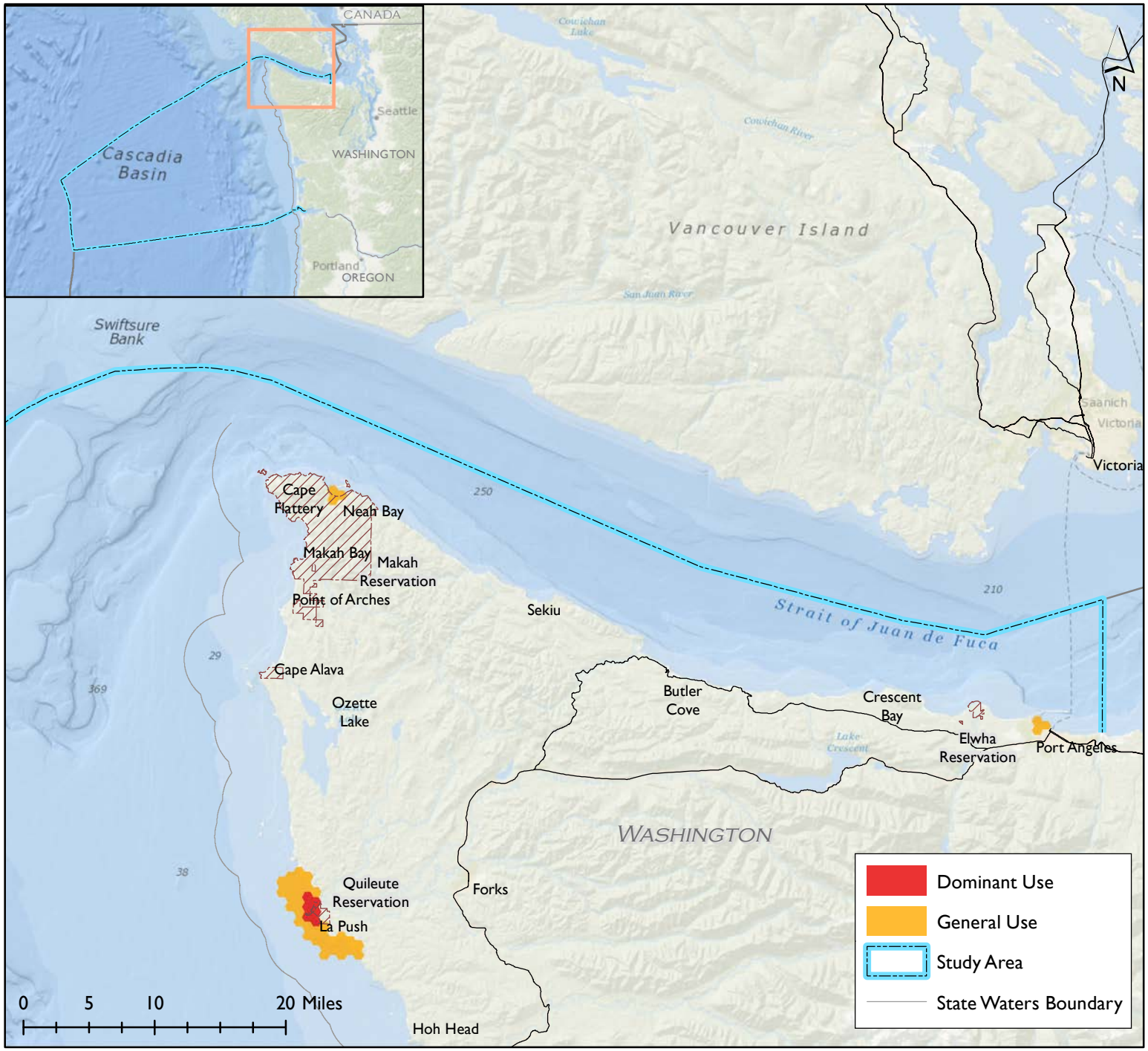

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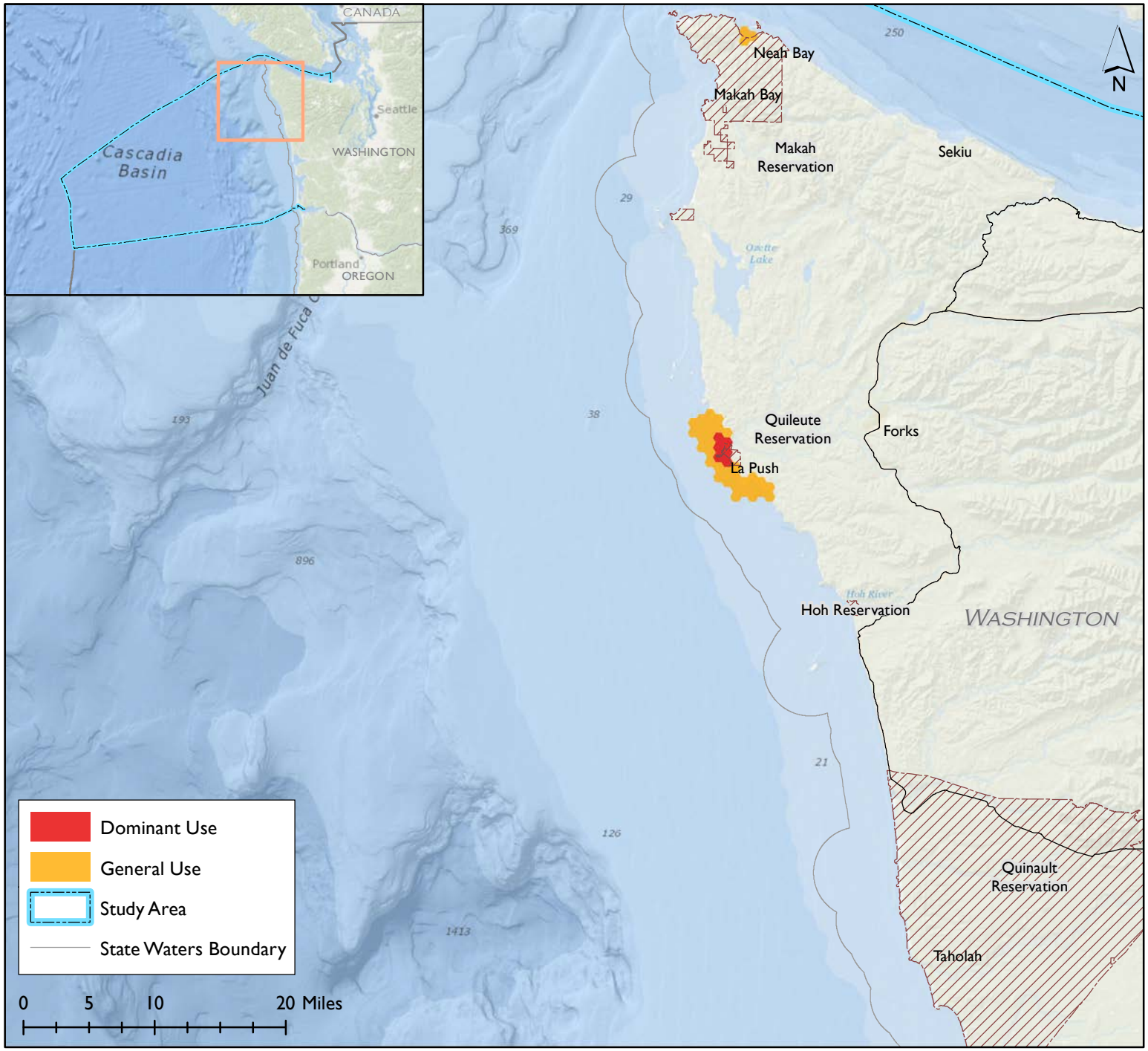

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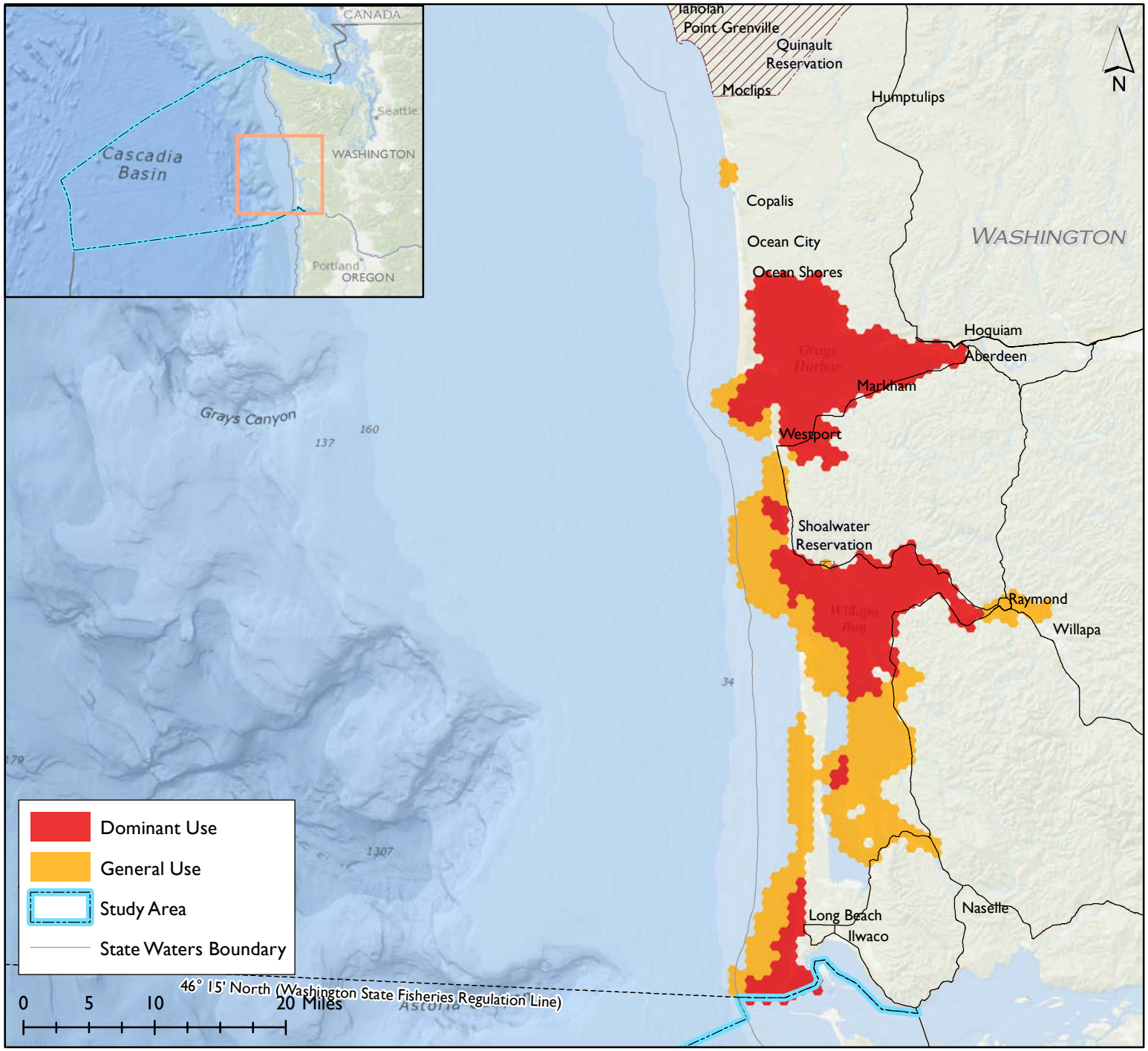

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Underwater Pipelines

Includes:
Any submerged pipe system used to transport oil, gas, sewage or other fluid

Excludes:
Underwater transmission cables

Use Notes:
Pipelines are present in the study area for sewage outfall. There are no oil pipelines in the area and no pipelines through the Olympic Coast National Marine Sanctuary.

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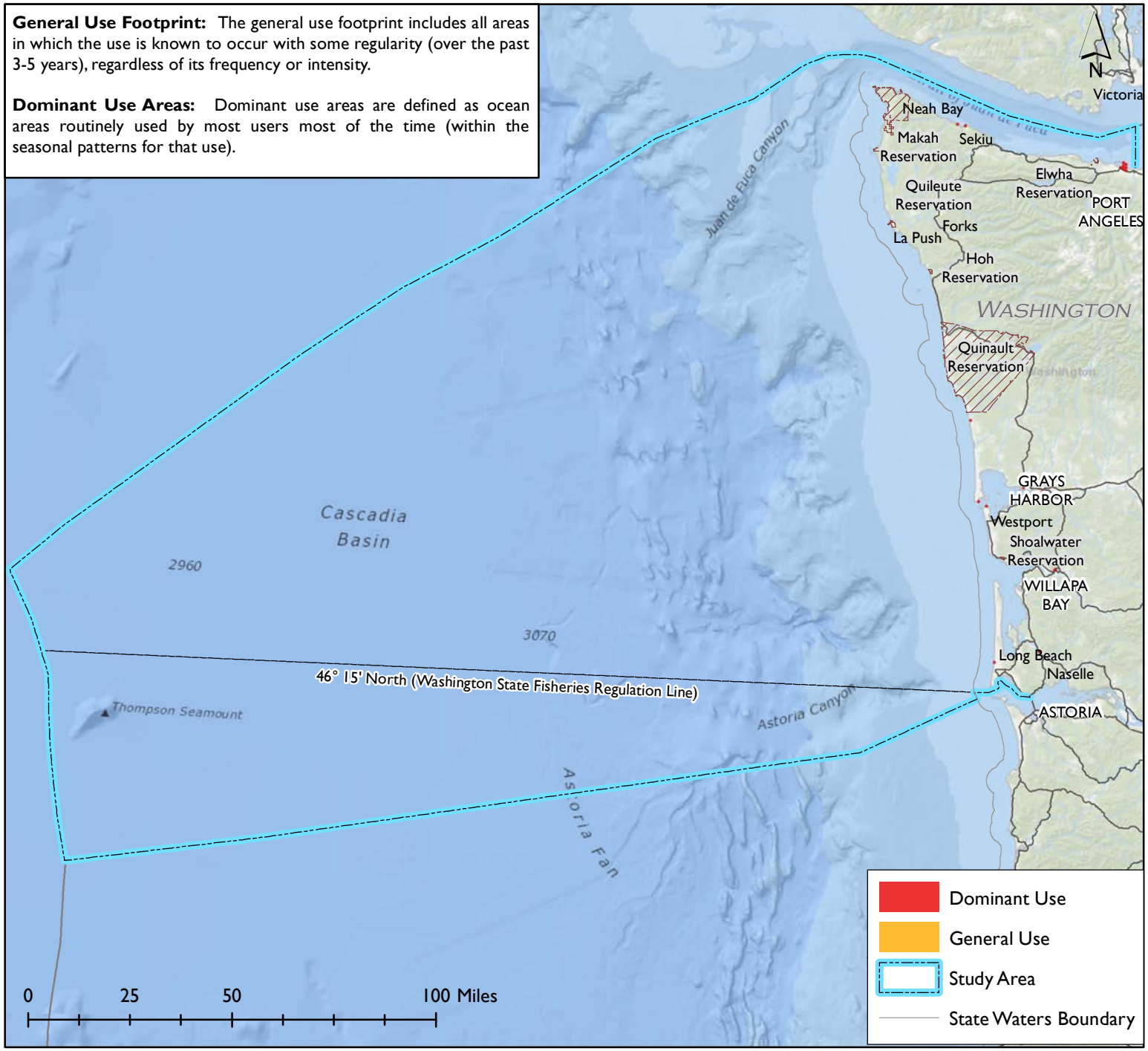

THE WASHINGTON OCEAN USES ATLAS

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

BOEM
Bureau of Ocean Energy Management

Underwater Pipelines

Includes:
Any submerged pipe system used to transport oil, gas, sewage or other fluid

Excludes:
Underwater transmission cables

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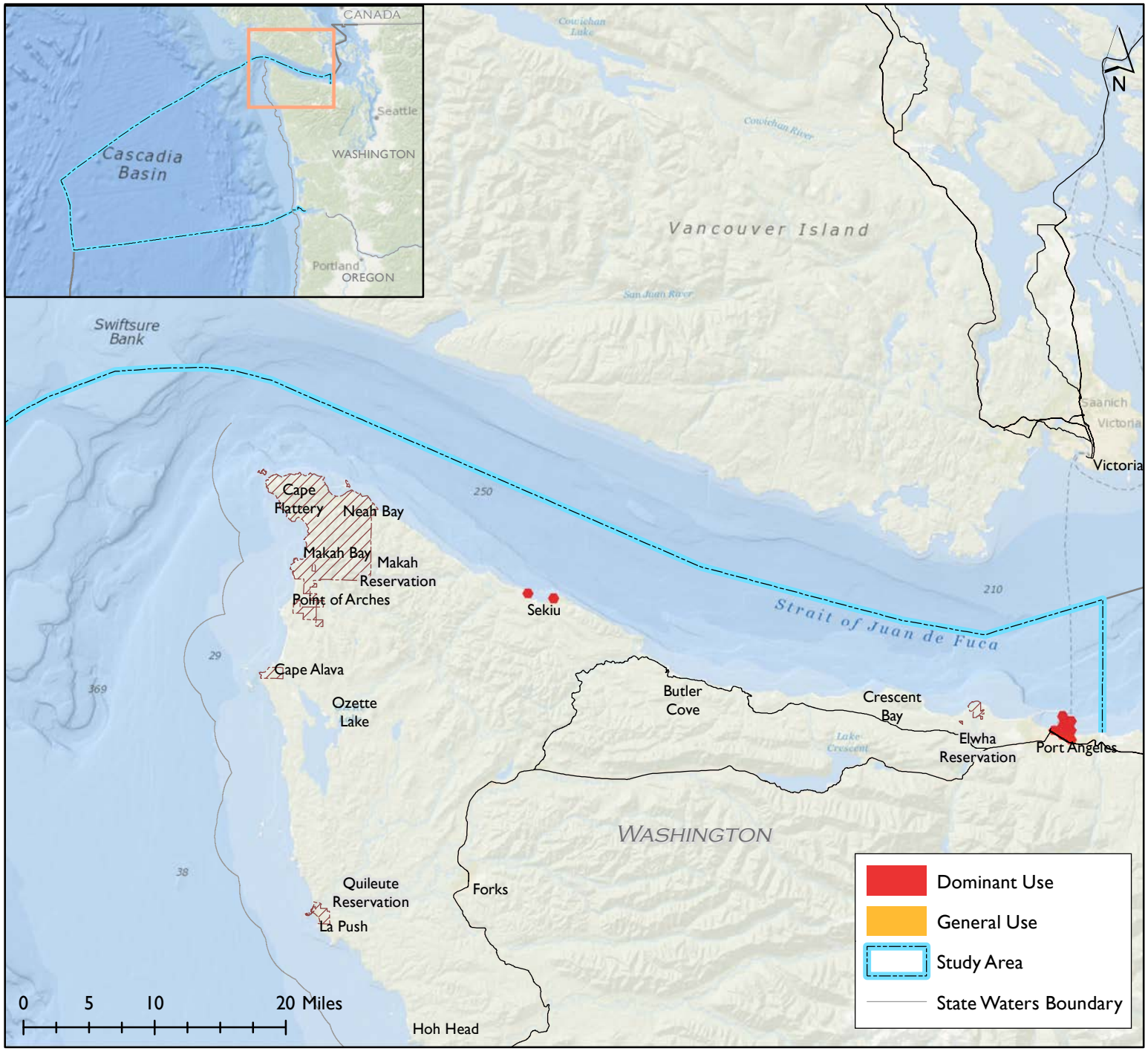

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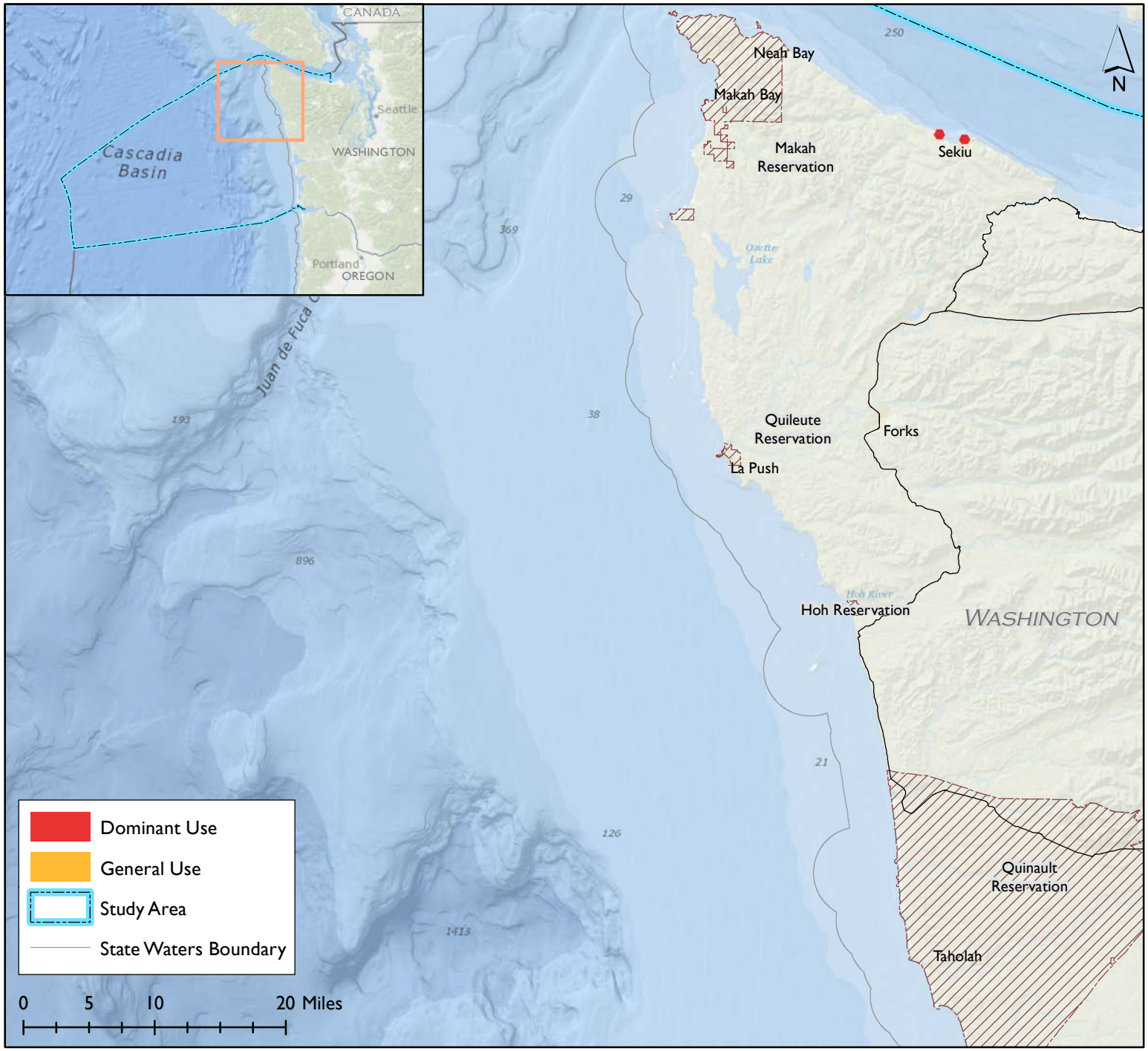

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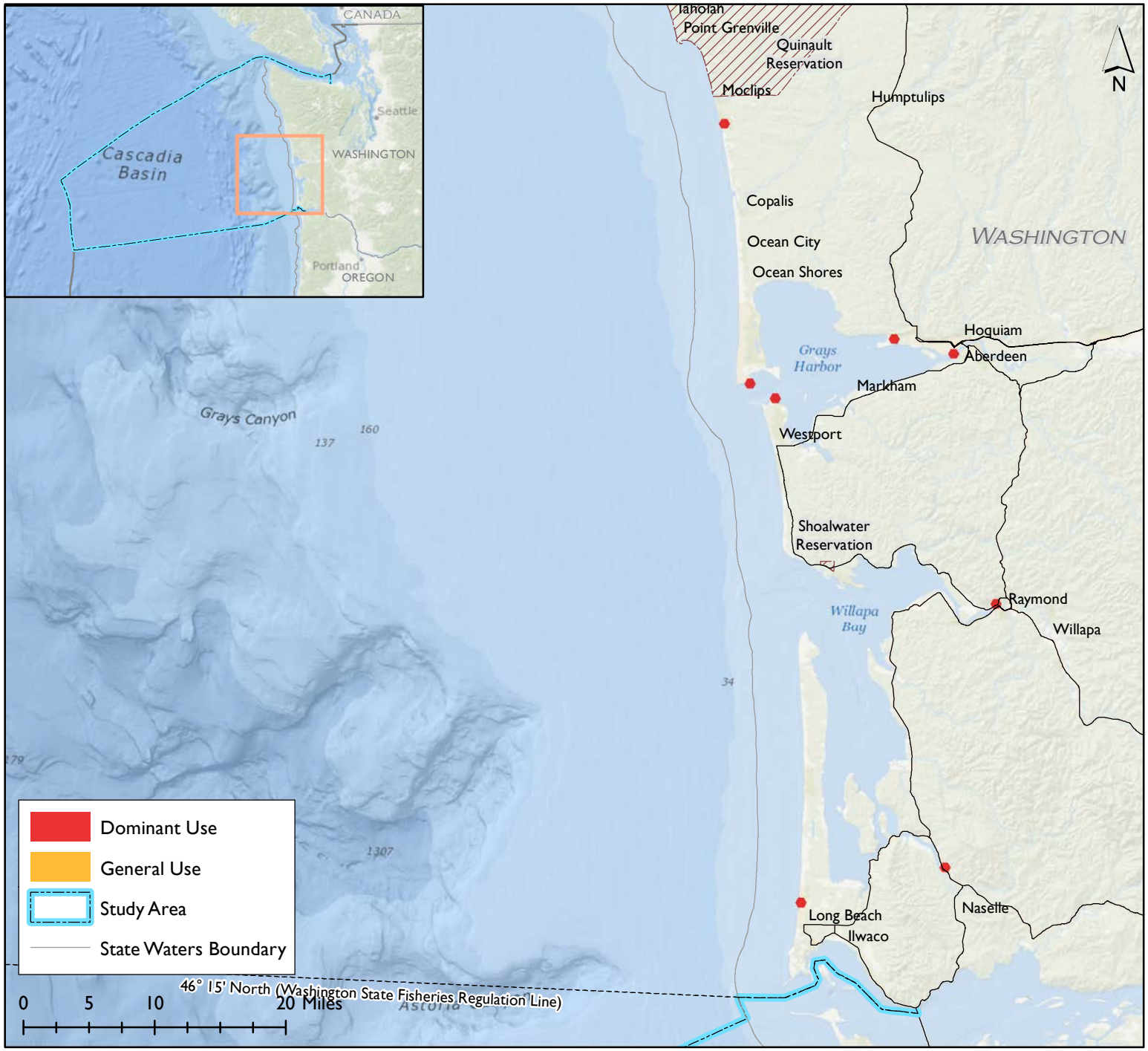

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Renewable Energy

Includes:
Systems designed to generate electricity from wind, wave, currents or tidal power using turbines, fixed or floating platforms, buoys, and/or dams, and associated offshore infrastructure including substructures, transmission hubs, generators, cables and service platforms

Excludes:
Onshore power grids

Use Notes:
Renewable energy has been considered and tested in a number of locations in the study area, but currently there are no permanent renewable energy developments in operation. Interest has been shown in Makah Bay for wave energy and Willapa Bay for tidal energy, but neither project has moved forward. The community is concerned with visual impacts and affects on local economies, jobs, seabird populations, and local fisheries.

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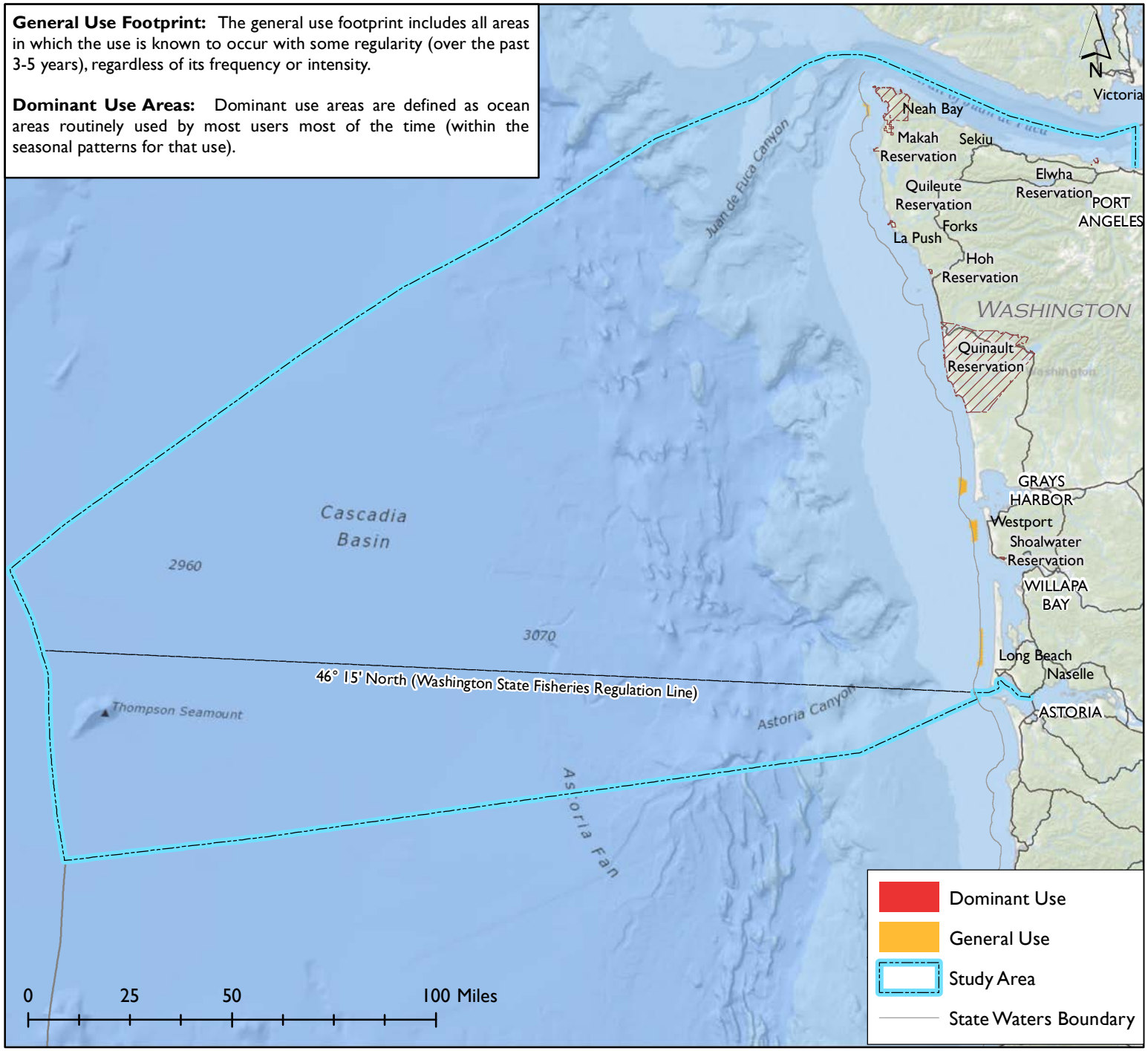

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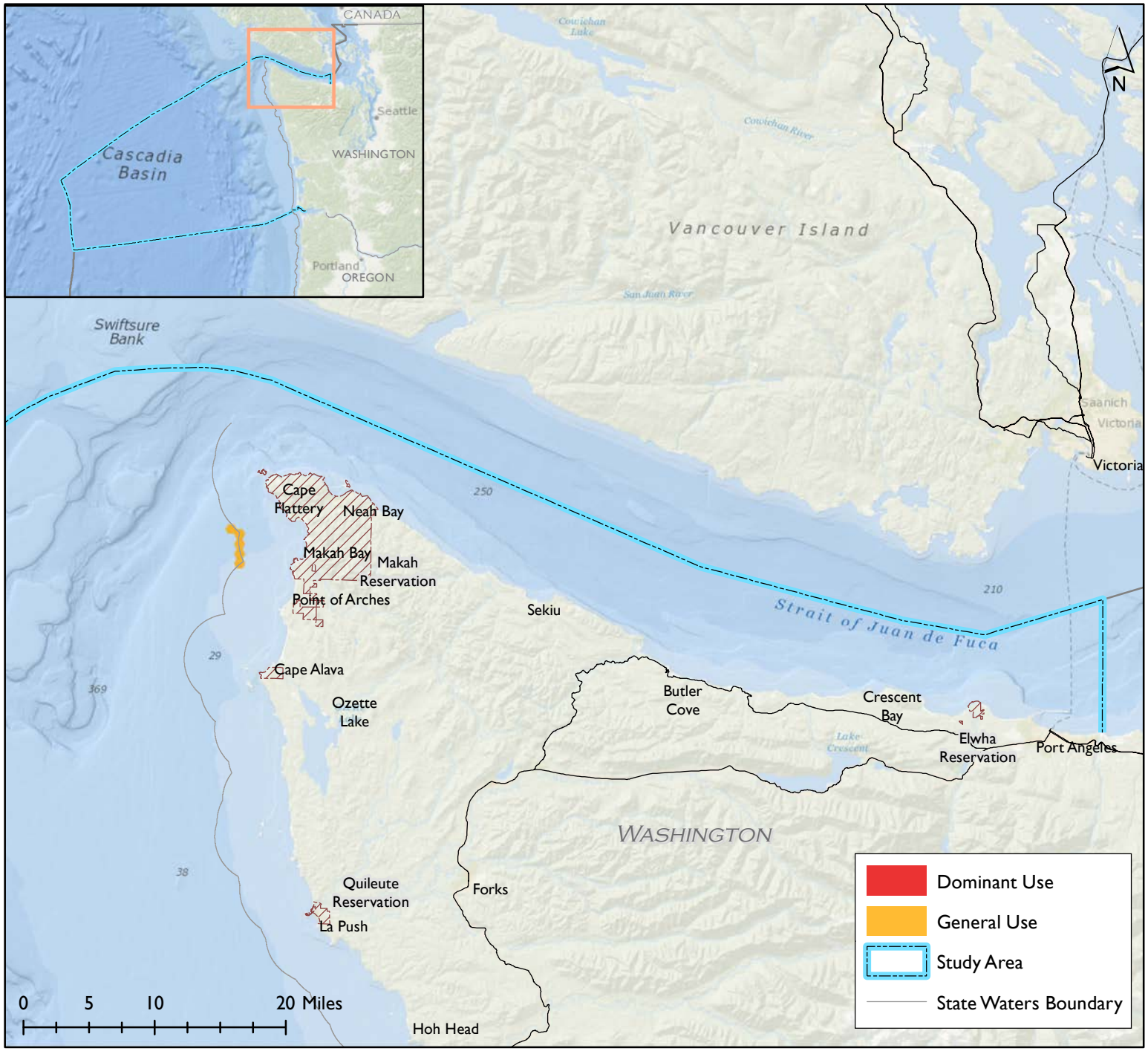

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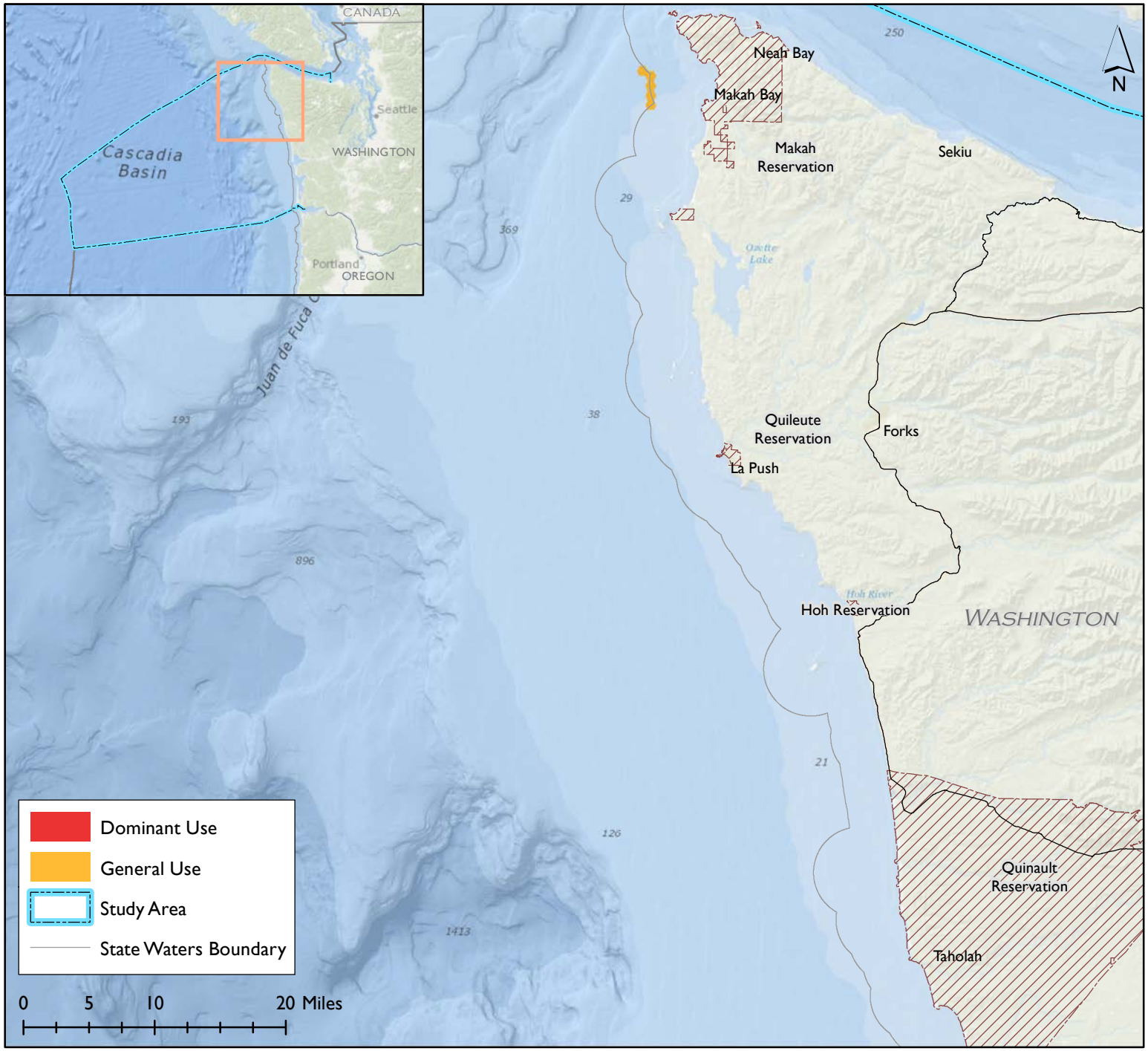

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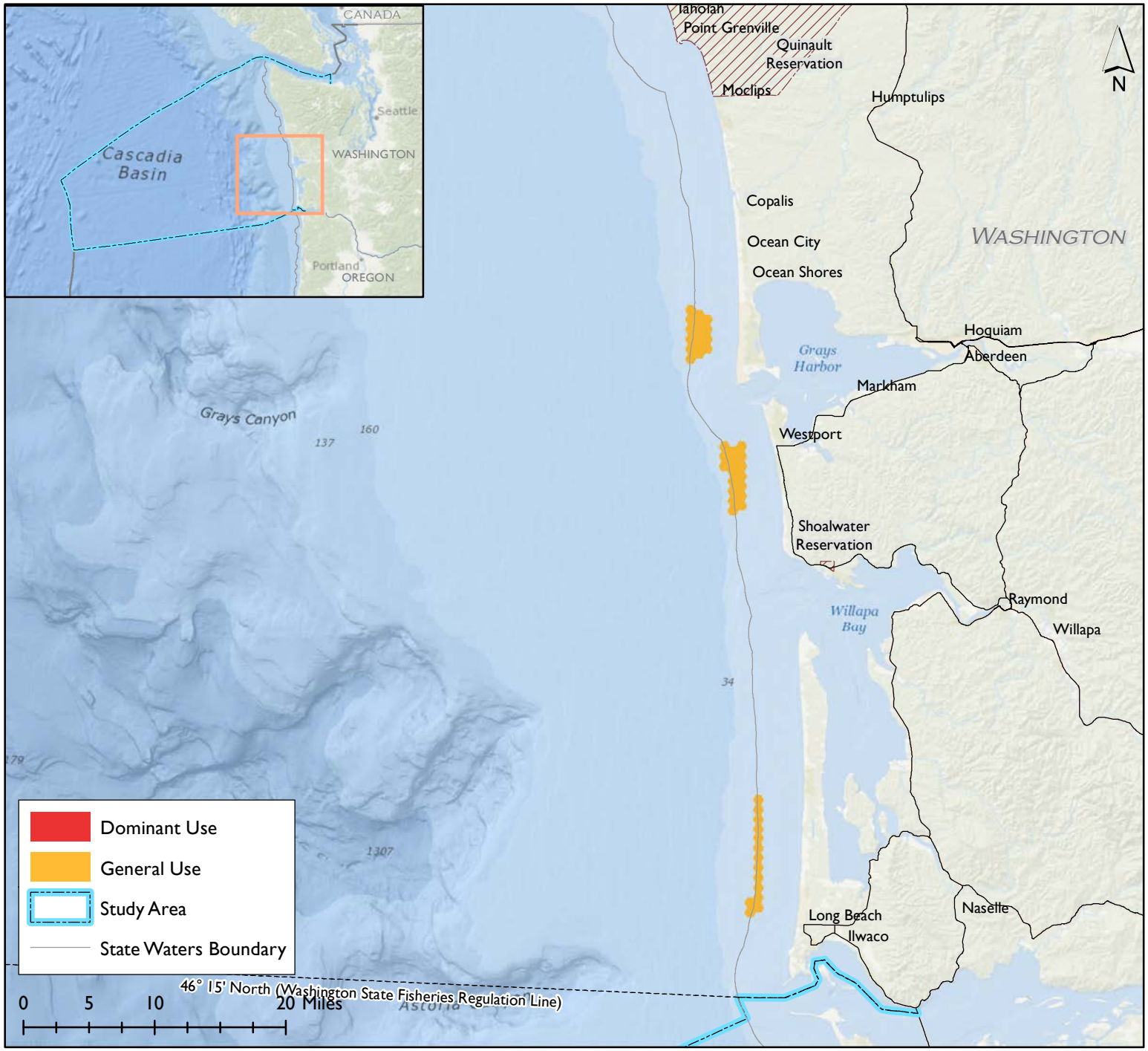

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Commercial Shipping

Includes:
Transit, mooring, towing, barging or anchoring by ships, tankers, ferries and other large commercial vessels

Excludes:
Cruise Ships, Military Vessels

Use Notes:
Commercial shipping occurs throughout the study area. Deep draft vessels follow traffic lanes inside of Cape Flattery. Outside the Strait, it depends on the point of origin or destination - generally north from entrance for Alaska or Far East, south of entrance for coastal trade. Cargo vessels transit generally around 25 miles from shore, tanker vessels around 50 miles from shore. Low sulfur fuel requirements (1% in August 2012 to 0.1% in 2015) will likely push traffic further offshore to 200 miles or greater. Commercial transit occurs year-round with anchoring in Port Angeles harbor. Regular ferry runs occur between Port Angeles and Victoria year-round. Vessel traffic is dominant in the tug lanes and channels, with heavy traffic around the entrance to the Strait and pilot station in Port Angeles.

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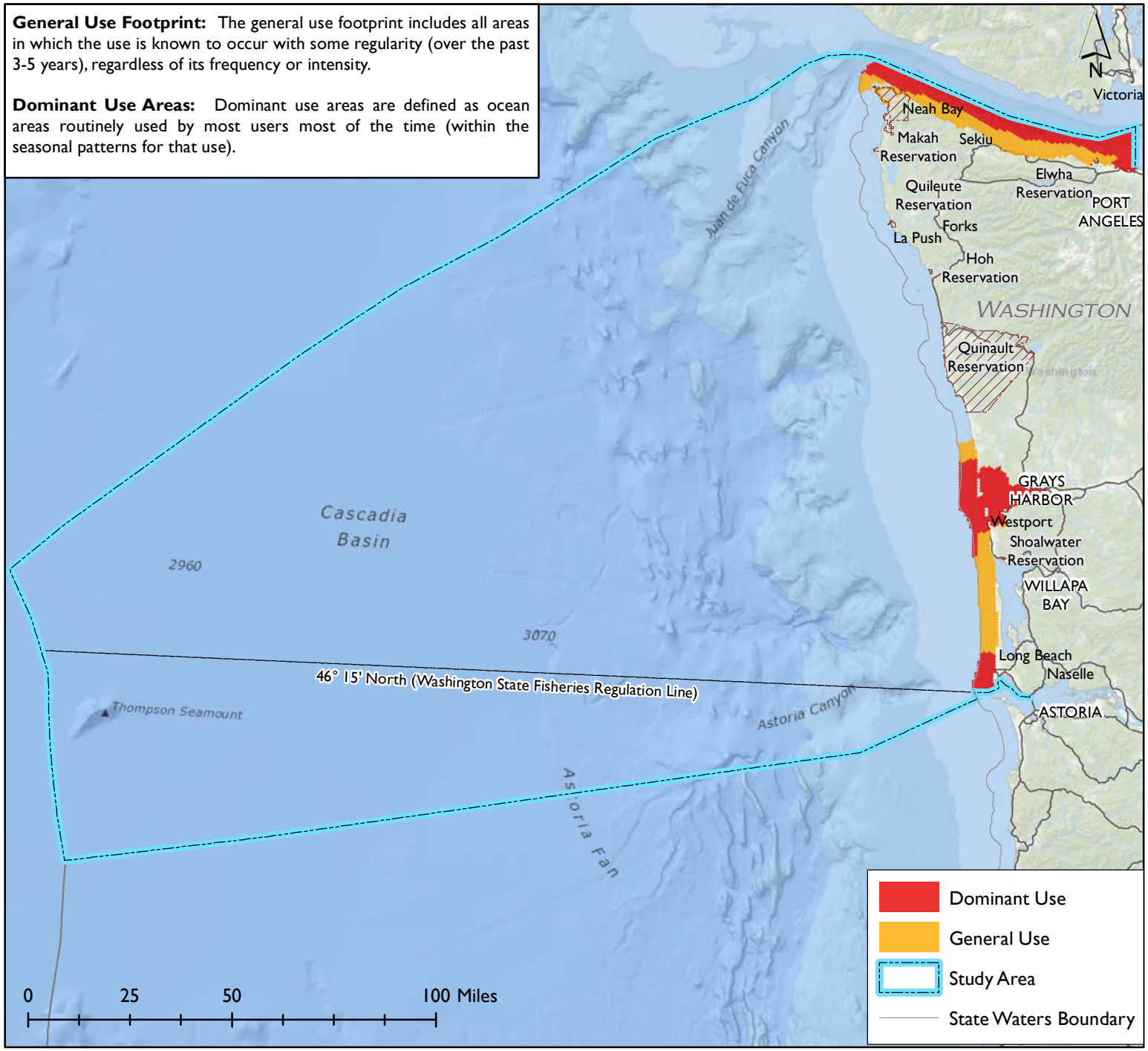

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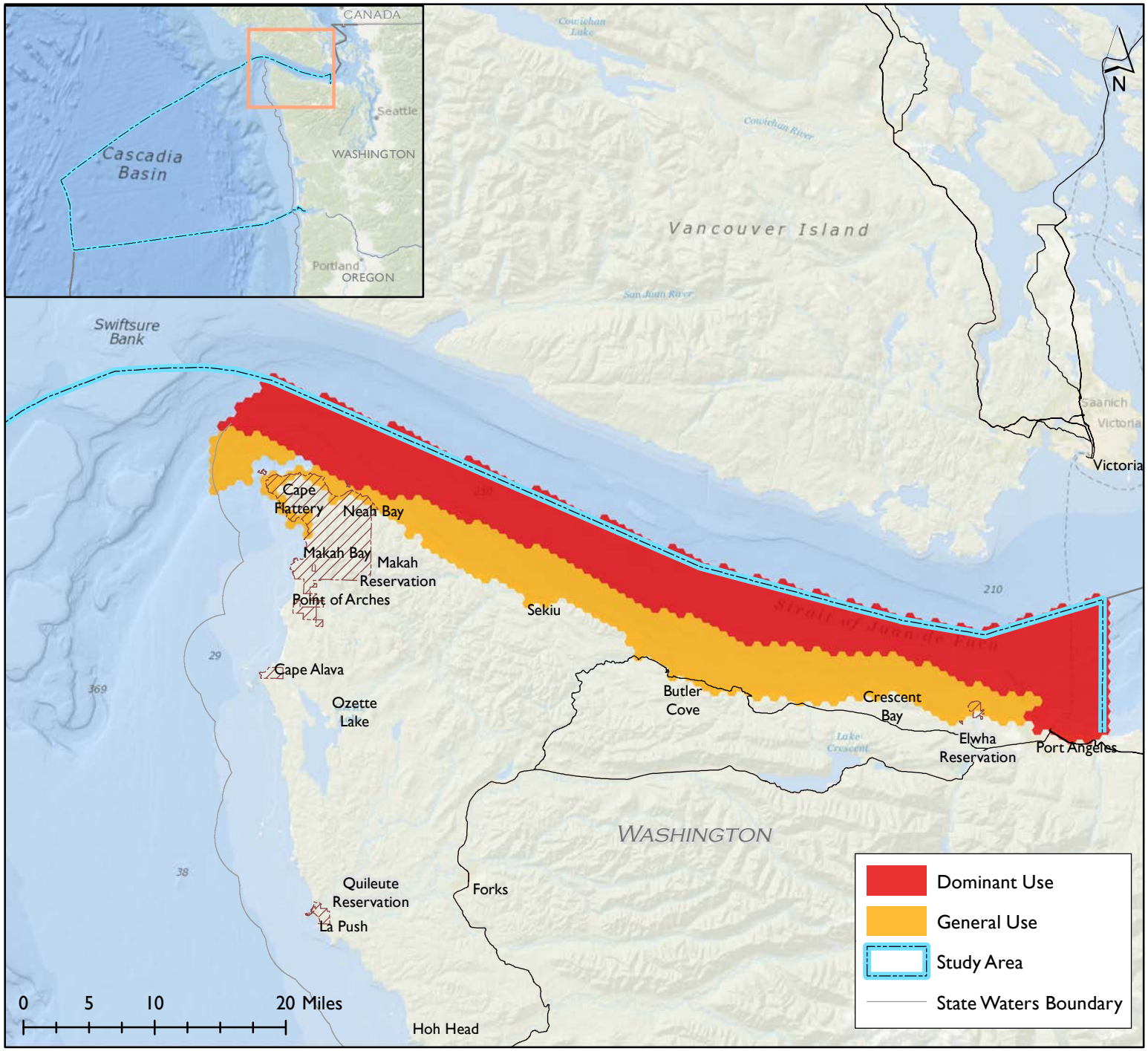

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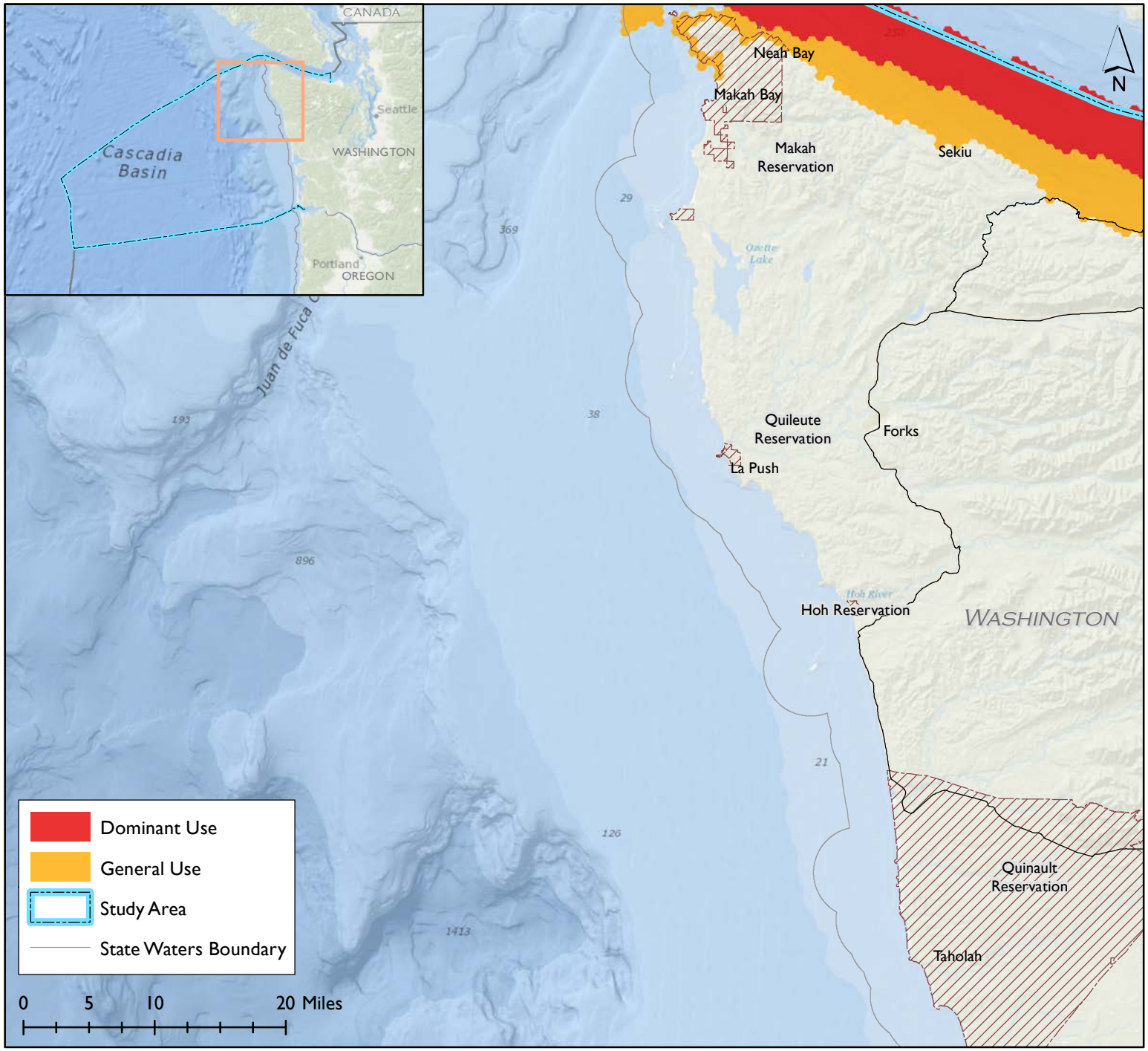

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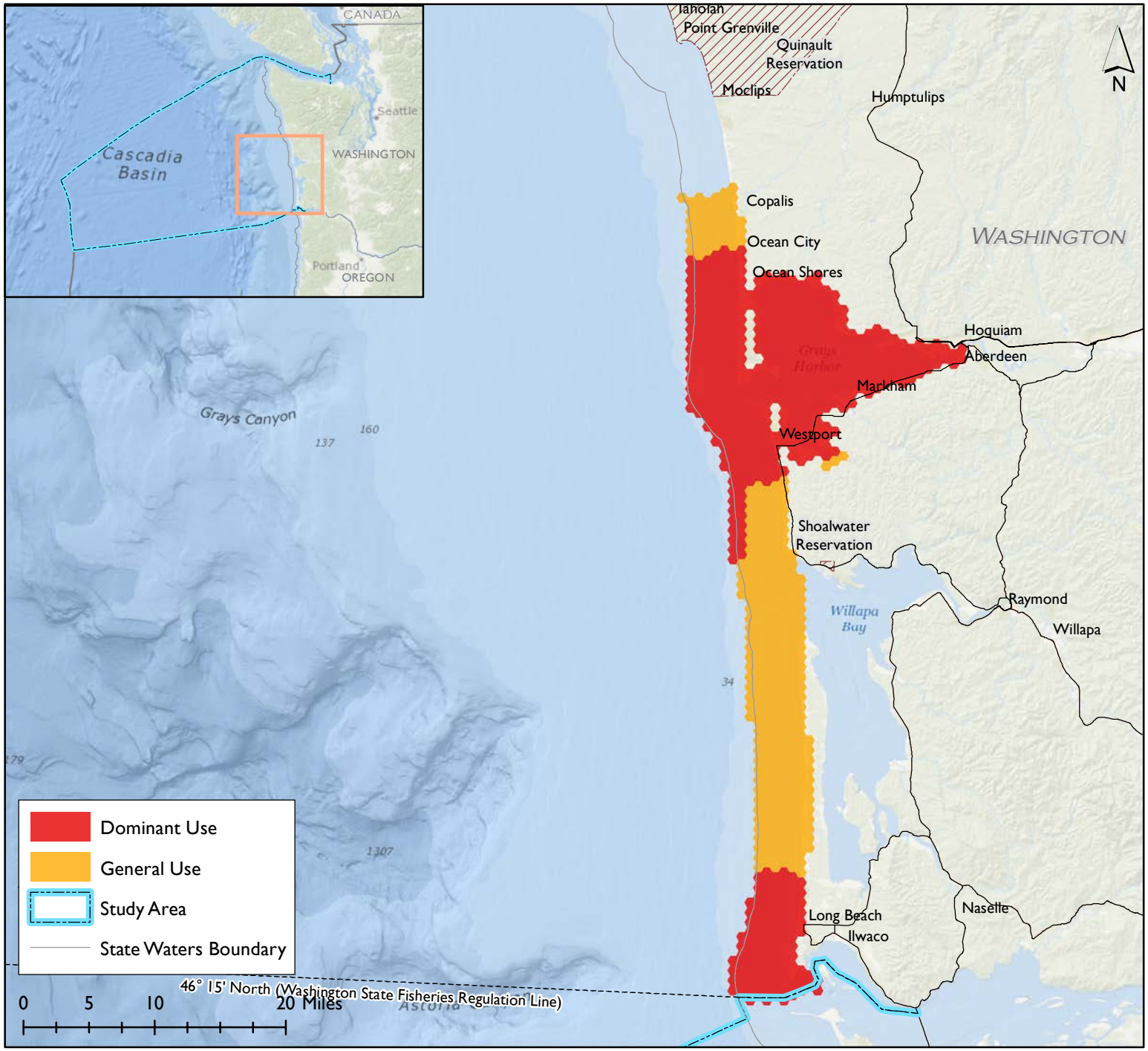

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Underwater Transmission Cables

Includes:
Cables installed on the seafloor to transmit data, communications, and electricity generated on land

Excludes:
Lost fishing gear, renewable electricity transmission cables

Use Notes:
Underwater transmission cables are present throughout the study area. They include a Navy listening cable off Pacific Beach, research cables off Neah Bay (may no longer be active), two Pacific crossing cables, ocean observing NEPTUNE and VENUS cables, as well as military cables off the Quinault Underwater Test range. There is an electrical transmission line planned along the coast of Washington, Oregon and California with coast tie ins in South West Washington and North West Oregon.

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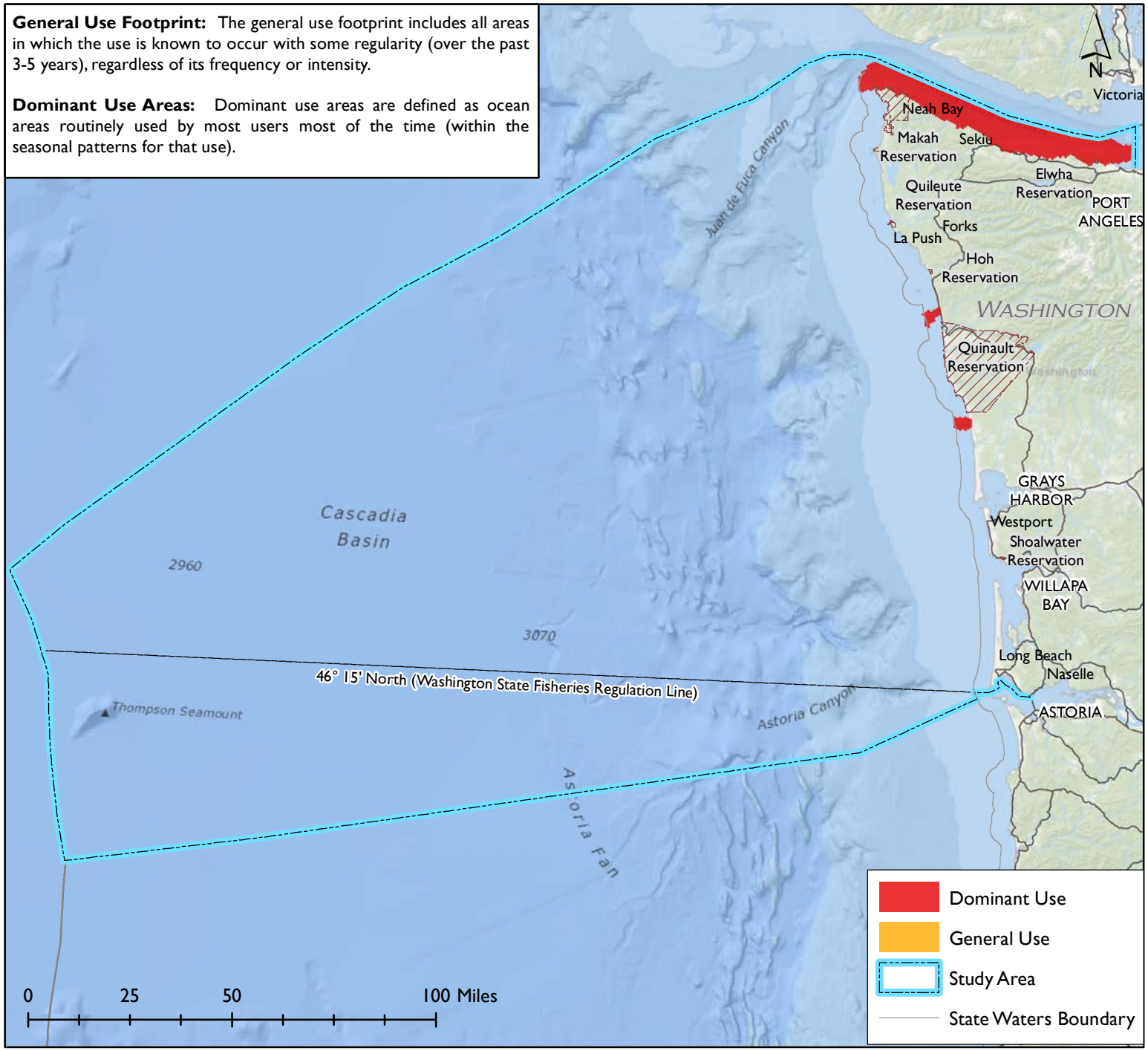

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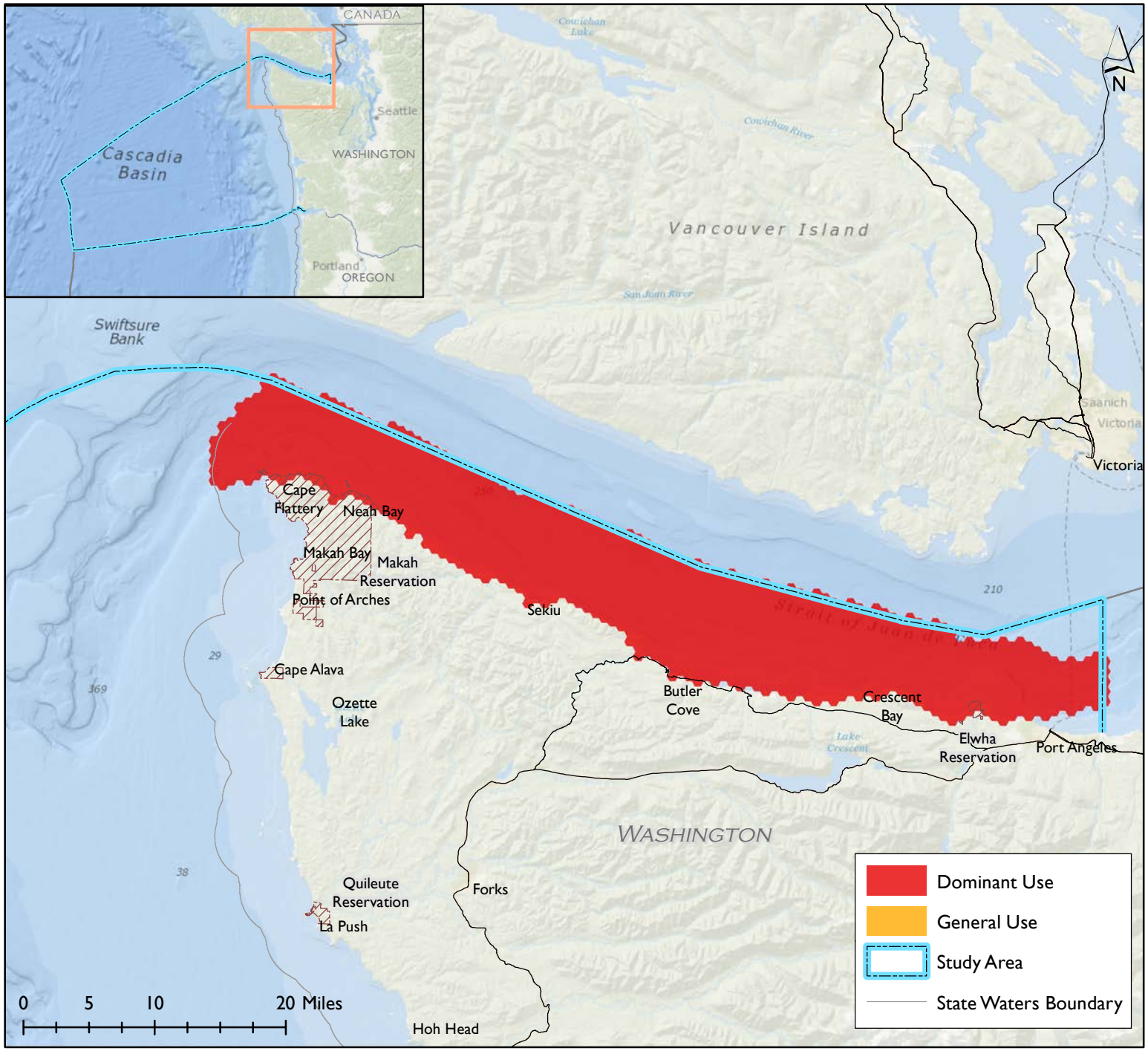

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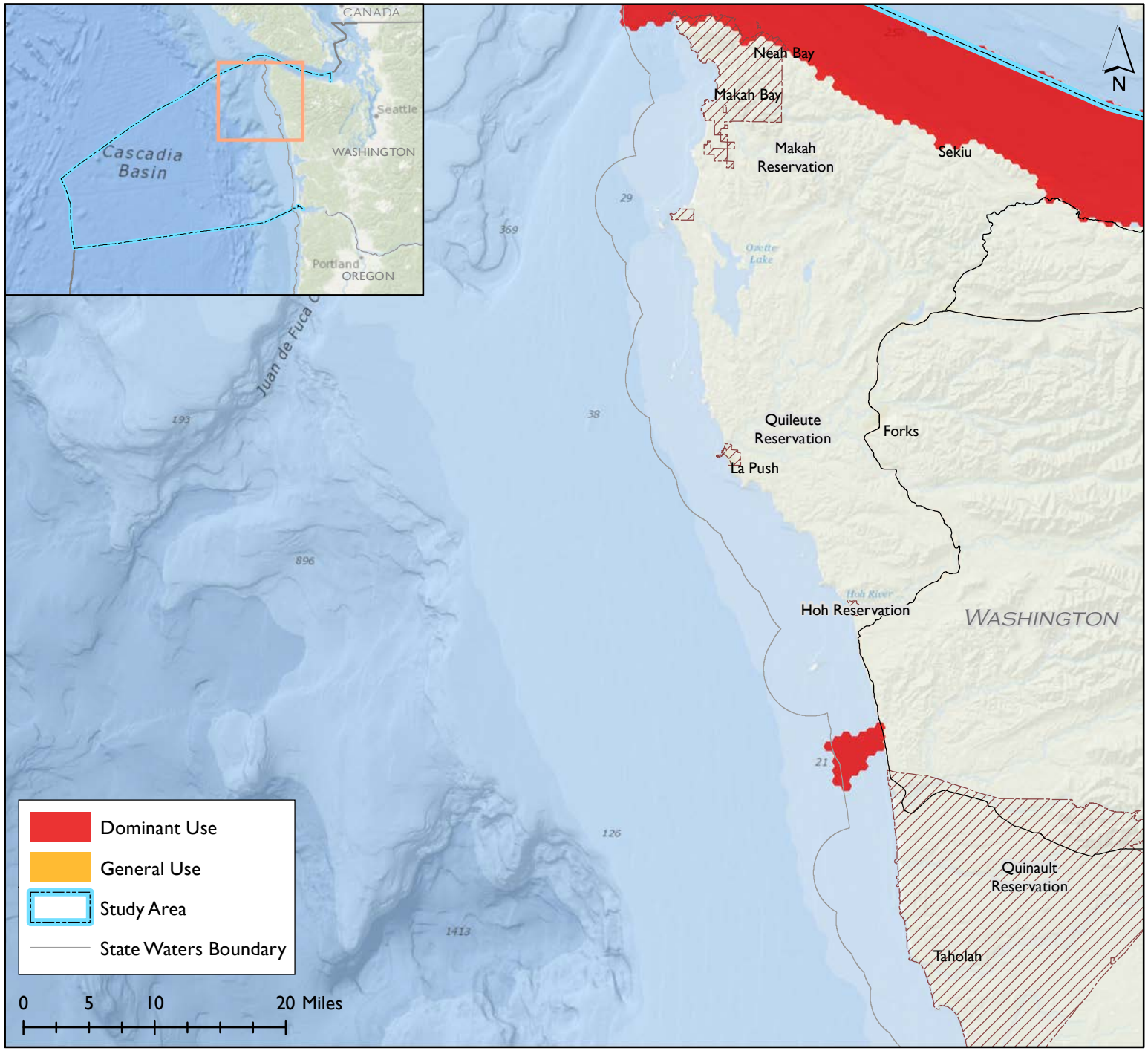

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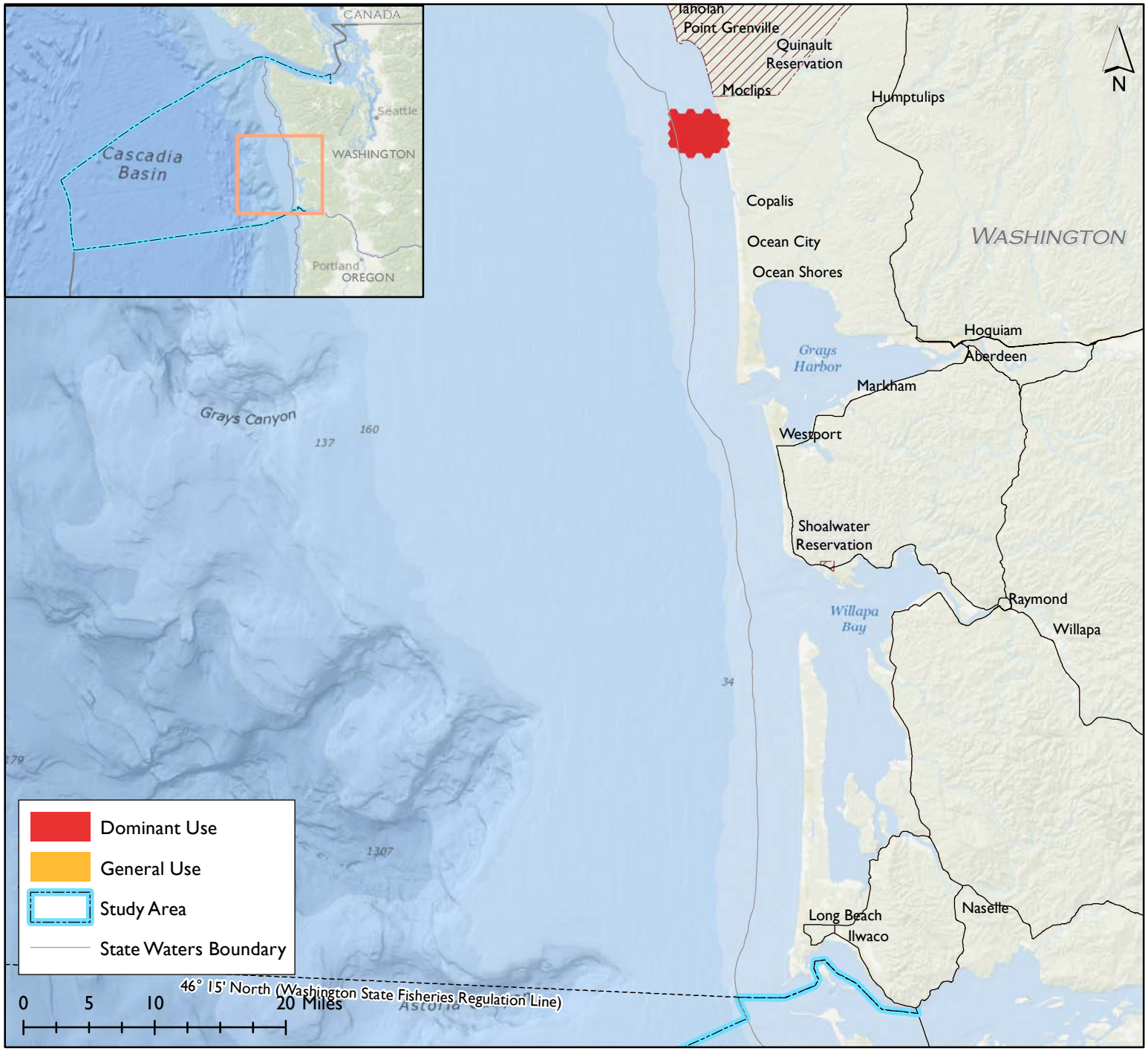
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