

**APPENDIX E:
NAVIGATION**

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APPENDIX E:

NAVIGATION

E.1 INTRODUCTION

California's ports and harbors handle almost 31% of all U.S. ocean trade. These ports and harbors are an interdependent system of centralized large and decentralized small deepwater ports and small craft harbors (CMNAC 2021). The large centralized deepwater ports (e.g., San Pedro Port Complex) contain massive terminals for container ships, supertankers, and large bulk carriers. For the functions provided by these large ports to meet demand, other functions are accommodated in surrounding decentralized smaller deepwater ports and small craft harbors (such as the Port of Hueneme).

The decentralized small deepwater ports and harbors serve as collection and distribution points for a variety of cargo (CMNAC 2021). California's port and harbor system includes seven small- and medium-sized deep-draft harbors, 25 shallow-draft harbors at decentralized coast and estuary sites, and small craft facilities in all the deep-draft harbors.

E.2 PACIFIC OUTER CONTINENTAL SHELF (POCS) PLATFORM AND DESIGNATED NAVIGATION AREAS

The Pacific Outer Continental Shelf (POCS) platforms are in one of the busiest maritime shipping areas along the west coast of North America. This area includes a major north-south shipping lane, which passes through the Santa Barbara Channel, as well as one of the world's busiest harbor complexes (the San Pedro Port Complex, which consists of the Ports of Los Angeles [POLA] and Long Beach [POLB]) (Figure E-1).

All commercial vessel traffic on the Southern California POCS follows established shipping safety fairways,¹ traffic lanes,² and traffic separation schemes (TSSs)³ to the extent feasible when traveling to, from, and between ports. Under the authority of the Ports and Waterways Safety Act (33 U.S.C. 1223), the U.S. Coast Guard (USCG) has designated safety fairways with traffic lanes, fairway anchorages, and TSSs to provide unobstructed approaches to the Southern California ports and safe transit through the Santa Barbara Channel. No POCS platforms are located within designated vessel traffic lanes or precautionary areas (Figure E-2).

¹ A "Shipping safety fairway or fairway" is a lane or corridor in which no artificial island or fixed structure, whether temporary or permanent, will be permitted.

² A "traffic lane" means an area within defined limits in which one-way traffic is established (33 CFR 167.5(c)).

³ A "traffic separation scheme (TSS)" is a designated routing measure aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes (33 CFR 167.5(b)).

PEIS for Oil & Gas Decommissioning Activities on the POCS

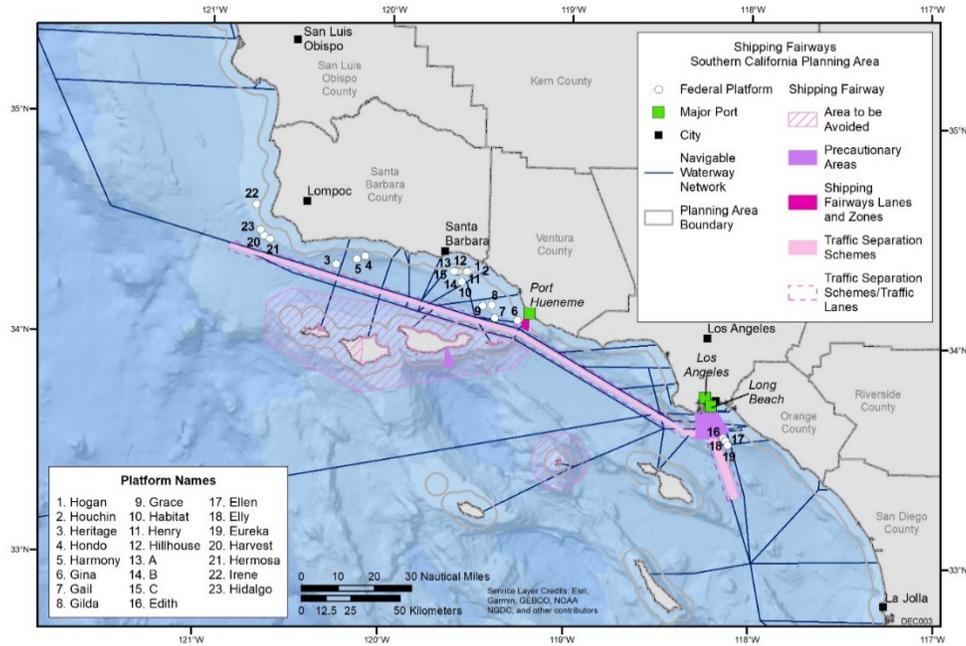


FIGURE E-1 Shipping Fairways, Safety Designations, and Major Ports on the Southern California POCS.

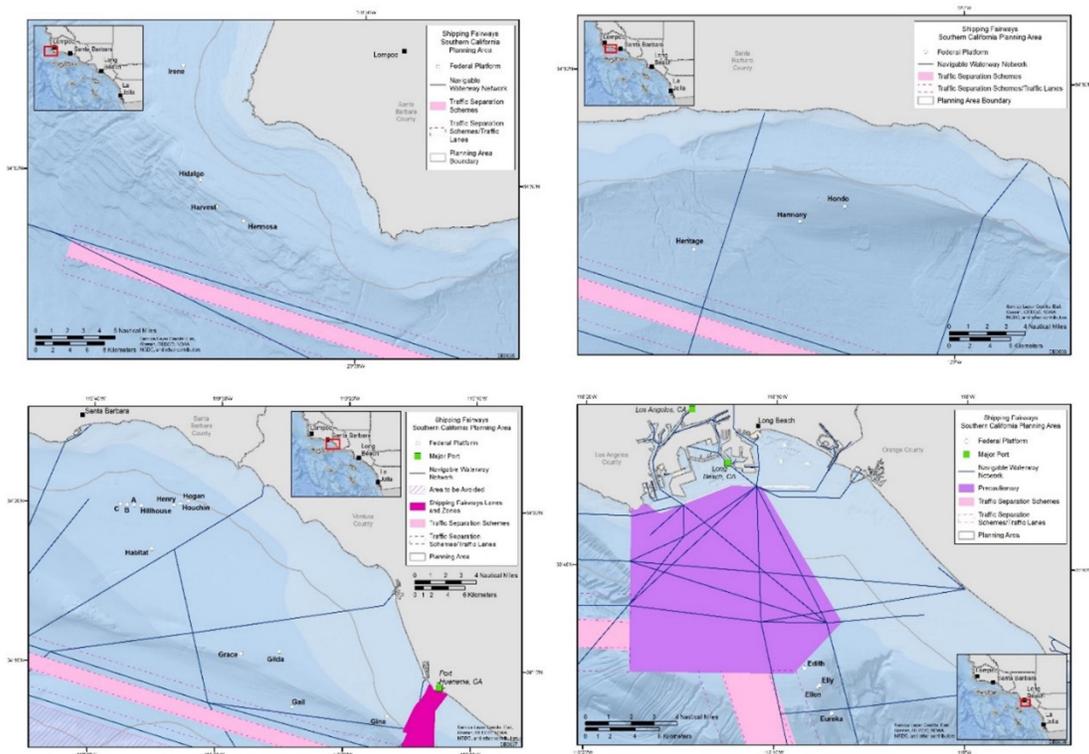


FIGURE E-2 U.S. Coast Guard-designated Traffic Lanes, Traffic Separation Schemes, and Precautionary Areas in the Vicinity of the POCS Platforms.

E.3 VESSEL TRAFFIC IN THE VICINITY OF THE POCS PLATFORMS

Decommissioning-related vessel traffic has the potential to interfere with navigation and shipping in the vicinity of the POCS platforms or to congest established shipping safety fairways, traffic lanes, and TSSs, as well as area harbors and ports. To examine the potential for such effects, vessel transit data in the vicinity of the POCS platforms were examined to identify the locations and traffic density of four categories of surface vessels: tugboats, cargo ships and tankers, passenger vessels, and commercial fishing vessels.

The evaluation of vessel traffic used automatic identification system (AIS) data from 2019, the most recent pre-pandemic data (Office for Coastal Management 2022). The International Maritime Organization requires all ships to carry AISs capable of providing information about the ship to other ships and to coastal authorities automatically. The International Maritime Organization regulation requires AIS to be fitted aboard all ships of 300 gross tonnage and upwards engaged on international voyages, cargo ships of 500 gross tonnage and upwards not engaged on international voyages, and all passenger ships irrespective of size.

The USCG collects vessel traffic (AIS) data through an onboard navigation safety device that transmits and monitors the location and characteristics of large vessels in United States and international waters in real time. In the United States, the USCG and commercial vendors collect AIS data, which can also be used for a variety of coastal planning purposes. The Bureau of Ocean Energy Management and the National Oceanic and Atmospheric Administration have worked jointly to repurpose and make available some of the most important records from the USCG's national network of AIS receivers. These data are available at Office for Coastal Management (2023). These data are presented in maps that show the total number of vessels that occurred per aliquot (an area of $1,200 \times 1,200$ m [$3,940 \times 3,940$ ft]) off Southern California in 2019.

E.3.1 Tugboat Traffic

Figure E-3 shows the locations and density of tugboat traffic in 2019 in the vicinity of the POCS platforms. Figure E-4 shows this same information, but at a finer scale, in order to better display how this traffic occurred in the immediate vicinity of the platforms. As shown in these figures, relatively little tugboat traffic (<25 per aliquot over the course of the year) occurred in the immediate vicinity of the POCS platforms. The greatest density of tugboat traffic occurred at the Port of Hueneme, and the POLA–POLB complex (>76 tugboats per aliquot in these areas in 2019), and to a lesser extent, along the designated shipping fairways through the Santa Barbara Channel, and westward from the POLA–POLB complex (densities between 26 and 75 tugboats per aliquot).

PEIS for Oil & Gas Decommissioning Activities on the POCS

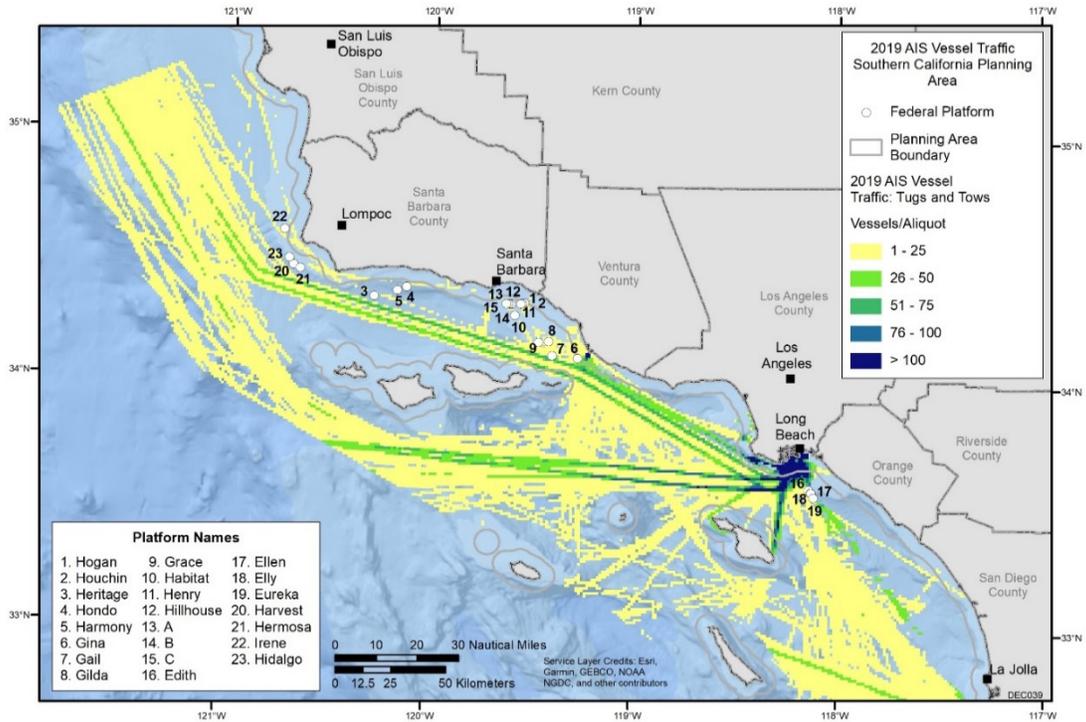


FIGURE E-3 2019 Tugboat Traffic Density off Southern California.

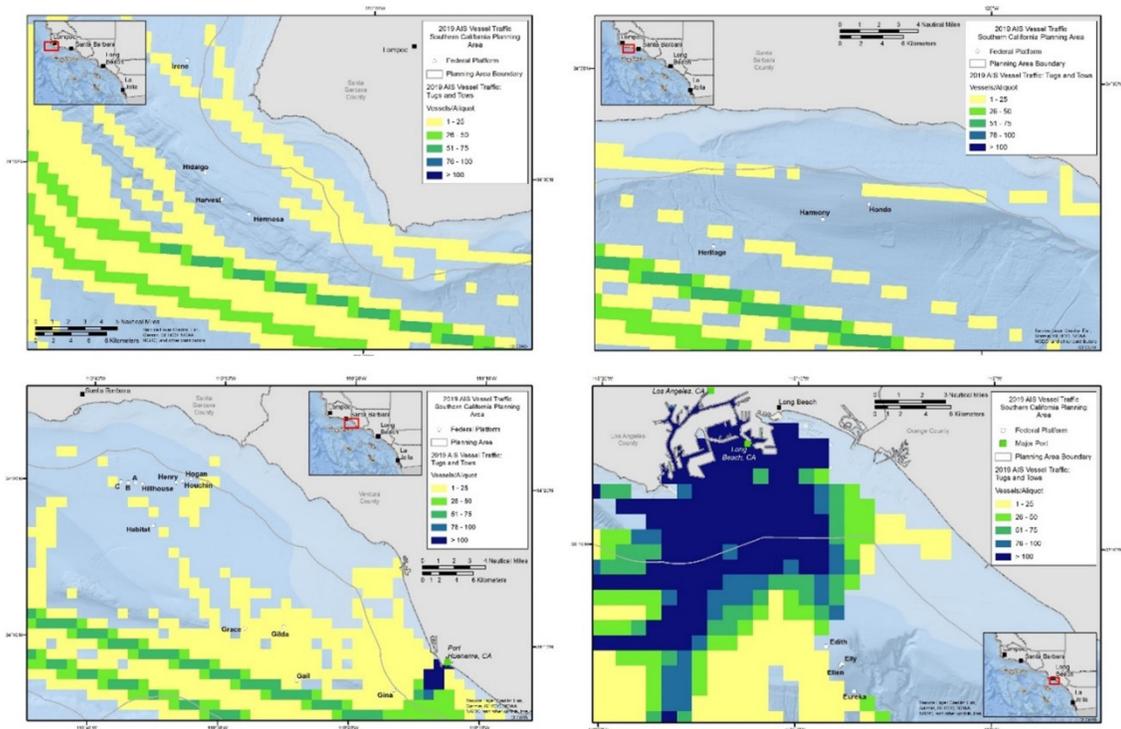


FIGURE E-4 2019 Tugboat Traffic Density in the Vicinity of the POCS Platforms.

E.3.2 Cargo and Tanker Vessel Traffic

Figures E-5 shows the locations and density of commercial and cargo traffic in 2019 in the vicinity of the POCS platforms. Figure E-6 shows this same information, but at a finer scale, in order to better display how this vessel traffic occurred in the immediate vicinity of the platforms. As shown in these figures, relatively little commercial cargo and tanker traffic (<25 per aliquot over the course of the year) occurred in the immediate vicinity of the POCS platforms. The greatest density of cargo and tanker traffic (>100 cargo and tanker vessels per aliquot in these areas in 2019) occurred at the Port of Hueneme, the POLA–POLB complex, along the designated shipping fairways through the Santa Barbara Channel and south from the POLA–POLB complex, and westward from the POLA–POLB complex.

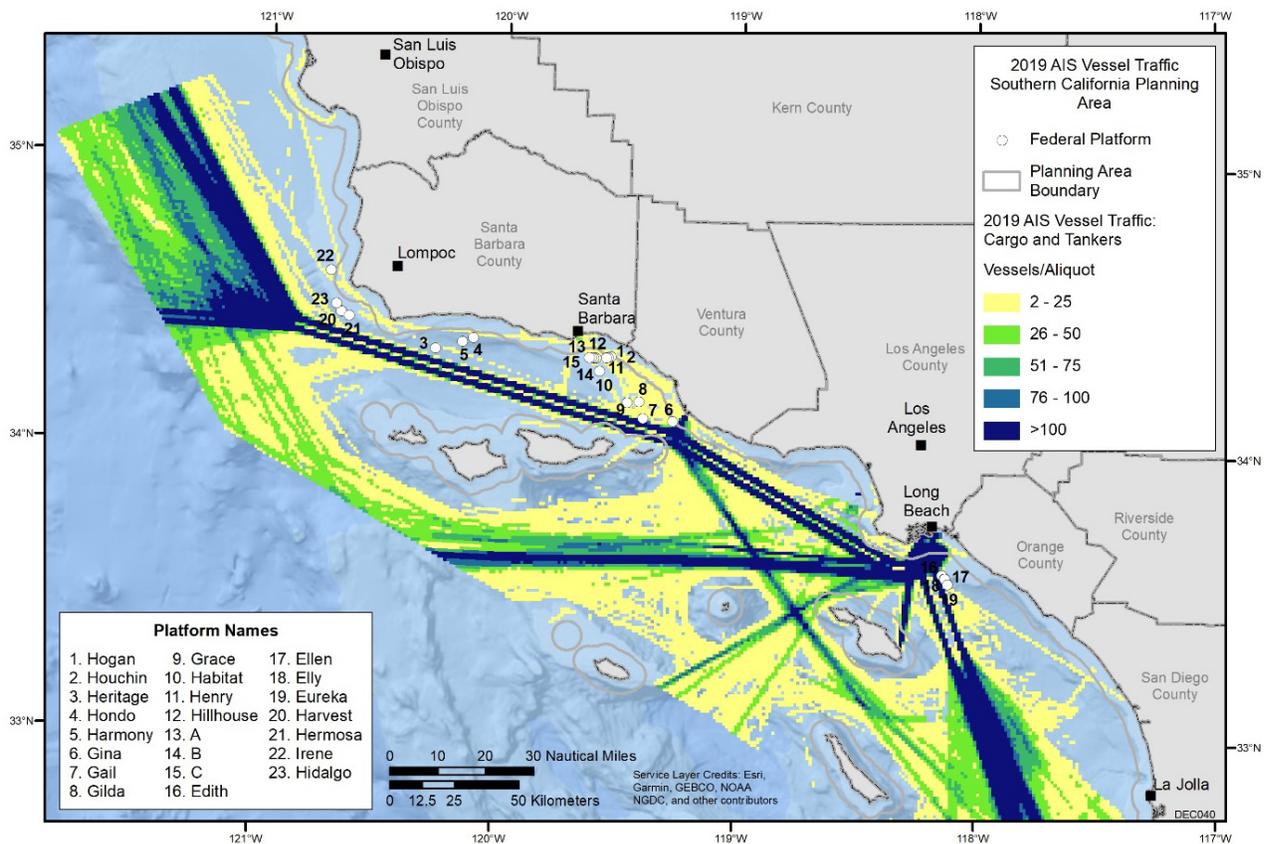


FIGURE E-5 2019 Commercial Cargo and Tanker Traffic Density off Southern California.

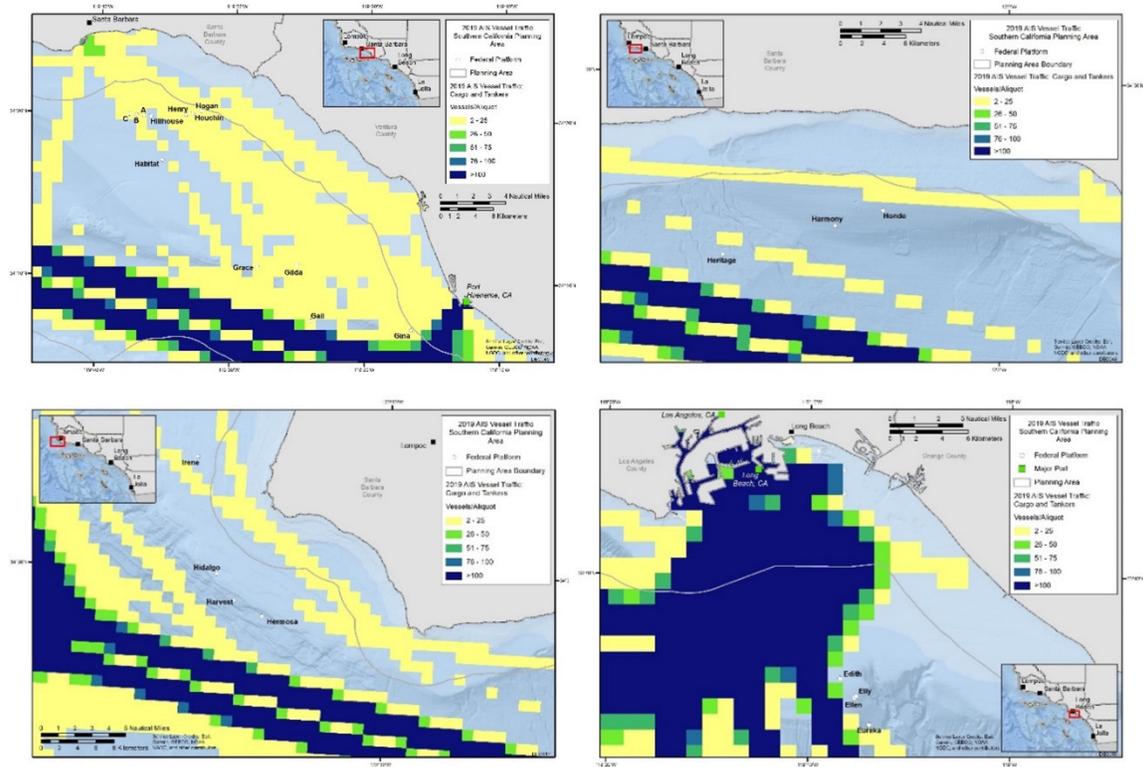


FIGURE E-6 2019 Commercial Cargo and Tanker Traffic Density in the Vicinity of the POCS Platforms.

E.3.3 Fishing Vessel Traffic

Figure E-7 shows the locations and density of commercial fishing vessel traffic in 2019 in the vicinity of the POCS platforms, while Figure E-8 shows this same information but at a finer scale, in order to better see how this vessel traffic occurred in the platform vicinity. Relatively little commercial fishing vessel traffic (<25 vessels per aliquot over the course of the year) occurred over much of the POCS and in the immediate vicinity of the POCS platforms. The greatest density of commercial fishing vessel traffic (>76 fishing vessels per aliquot in 2019) was associated with harbors at Santa Barbara and Ventura, and at the POLA–POLB complex. Smaller densities (between 26 and 75 vessels per aliquot) were recorded in state waters between many of the POCS platforms and the coast, and in state and federal waters between the POLA–POLB complex and Santa Catalina Island.

PEIS for Oil & Gas Decommissioning Activities on the POCS

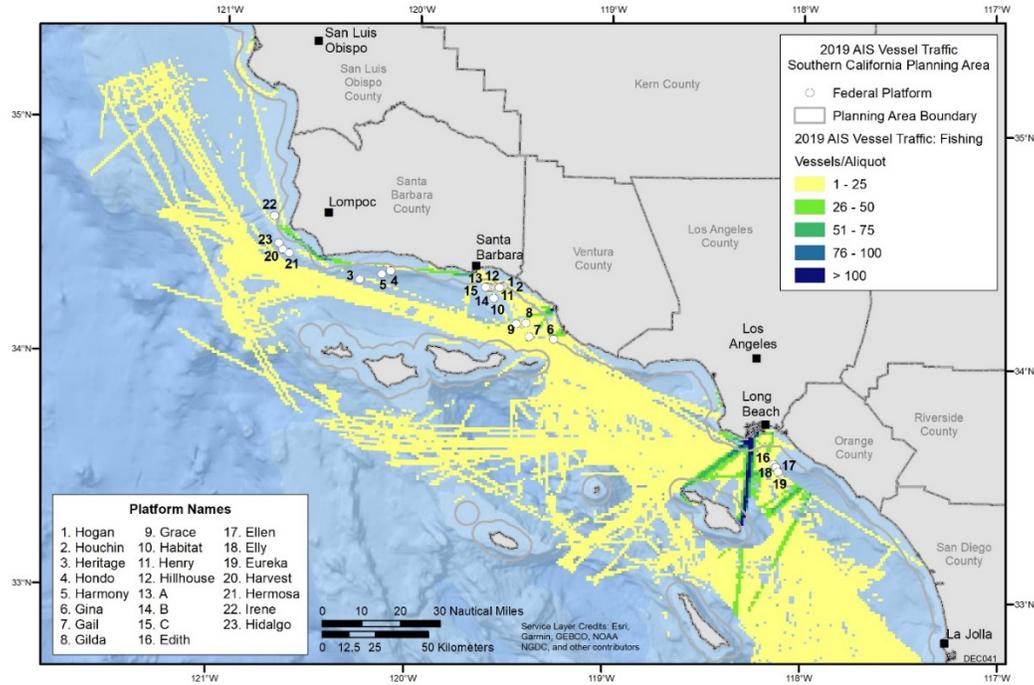


FIGURE E-7 2019 Commercial Fishing Vessel Traffic Density off Southern California.

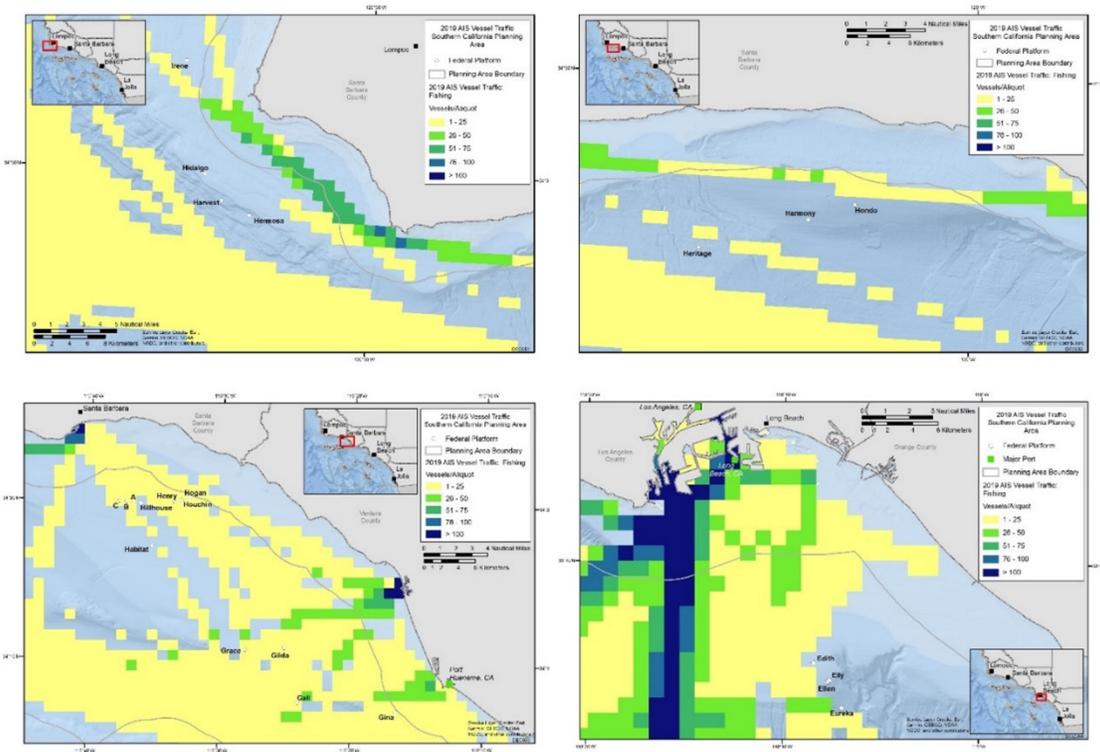


FIGURE E-8 2019 Commercial Fishing Vessel Traffic Density in the Vicinity of the POCS Platforms.

E.3.4 Passenger Vessel Traffic

Figure E-9 shows the locations and density of commercial passenger vessel traffic in 2019 in the vicinity of the POCS platforms. Figure E-10 shows this same information, but at a finer scale, in order to better display how this vessel traffic occurred in the immediate vicinity of the platforms. A passenger vessel is defined as a vessel certified to carry 12 or more passengers (33 CFR 164.46(b)(c)). Relatively little commercial passenger vessel traffic (<25 vessels per aliquot) occurred in 2019 over much of the POCS (Figure E-9) and in the immediate vicinity of the seven westernmost POCS platforms (Figure E-10).

In contrast, high densities of passenger vessel traffic (from >26 to >100 vessels per aliquot) were associated with the harbors at Santa Barbara, Ventura, and Port Hueneme, and the state and federal waters between these ports and the Channel Islands and including in the immediate vicinity of POCS platforms in this area (Figure E-10). These vessels were most likely associated with sightseeing trips. Very high densities (>100 vessels per aliquot) were documented in state and federal waters at and in the vicinity of the POLA–POLB complex, from the port complex out to Santa Catalina Island, and in the southern designated shipping lanes from the port complex area. This southern passenger vessel traffic avoided the four POCS platforms in this area (Figure E-10).

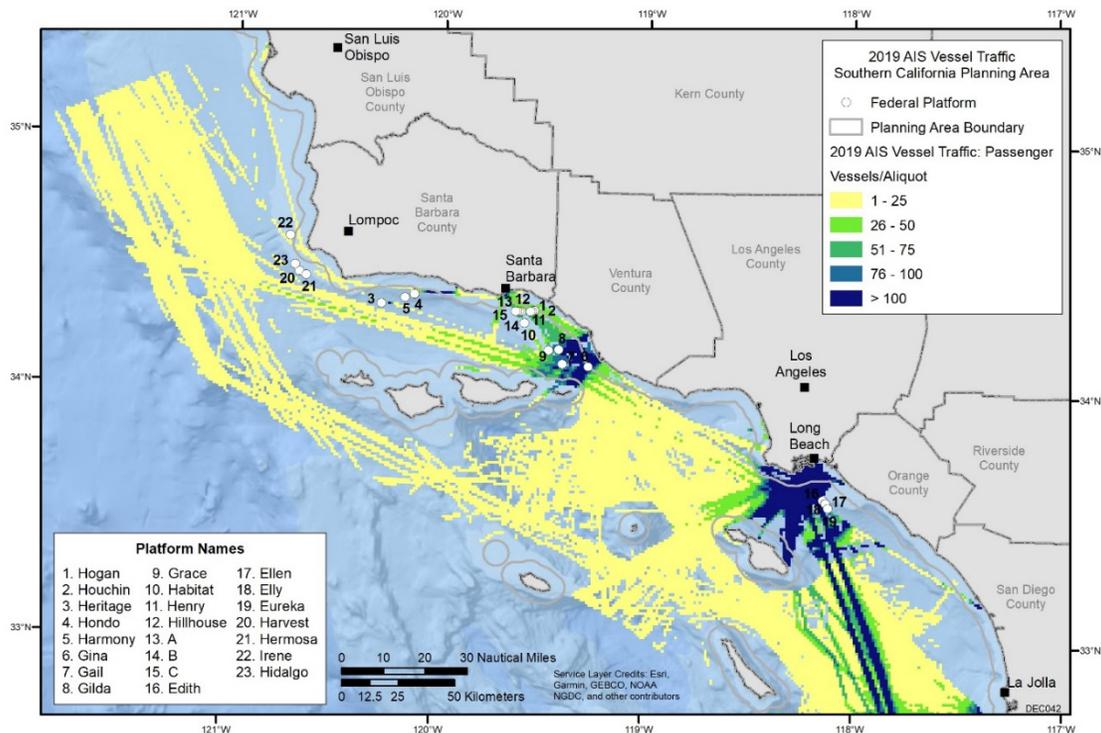


FIGURE E-9 2019 Commercial Passenger Vessel Traffic Density off Southern California.

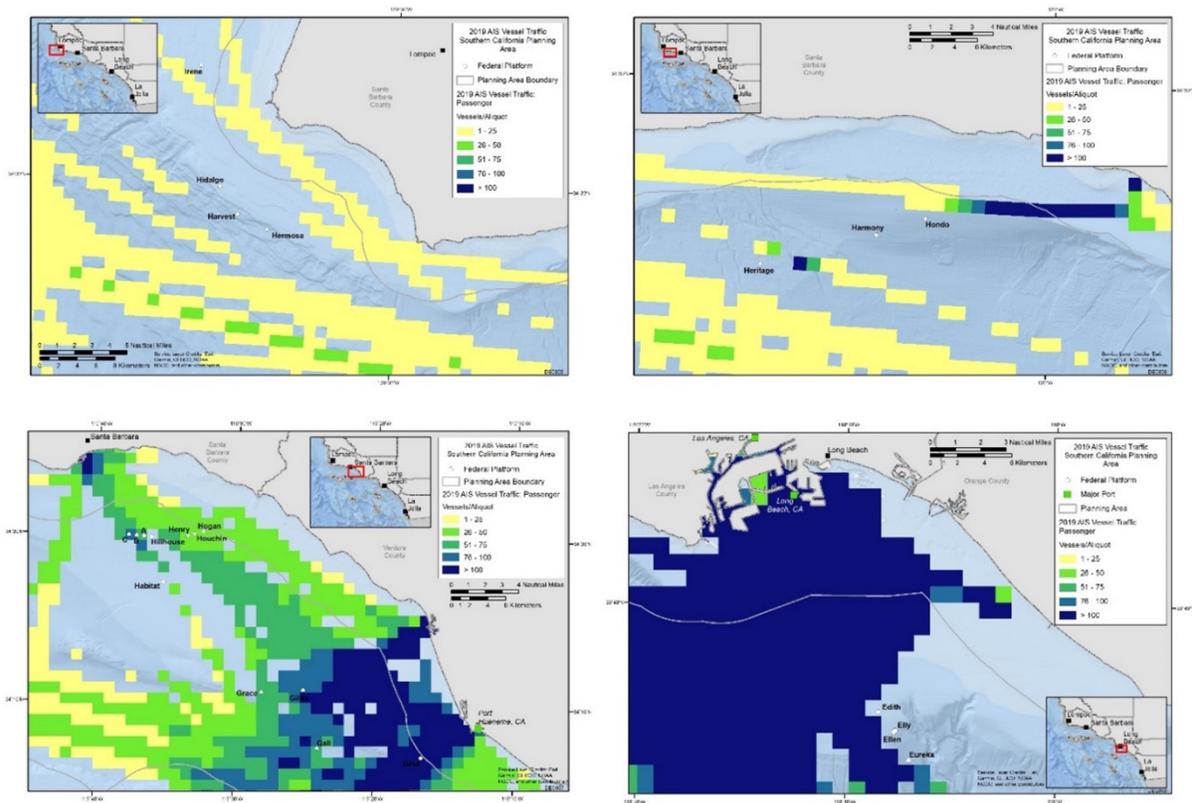


FIGURE E-10 2019 Commercial Passenger Vessel Traffic Density in the Vicinity of the POCS Platforms.

E.3.5 References

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Office for Coastal Management, 2022, “AIS Vessel Transit Counts 2019,” National Oceanic and Atmospheric Administration. Available at <https://www.fisheries.noaa.gov/inport/item/61037>.

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