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**APPENDIX E:  
NAVIGATION**

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**CONTENTS**

1  
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4 APPENDIX E: Navigation .....E-1  
5 E.1 Introduction .....E-5  
6 E.2 POCS Platform and Designated Navigation Areas .....E-5  
7 E.3 Vessel Traffic in the Vicinity of the POCS Platforms .....E-7  
8 E.3.1 Tugboat Traffic .....E-7  
9 E.3.2 Cargo and Tanker Vessel Traffic .....E-9  
10 E.3.3 Fishing Vessel Traffic .....E-10  
11 E.3.4 Passenger Vessel Traffic .....E-12  
12 E.3.5 References .....E-13  
13  
14

**FIGURES**

15  
16  
17 E-1 Shipping Fairways, Safety Designations, and Major Ports on the Southern  
18 California POCS. ....E-6  
19 E-2 U.S. Coast Guard-designated Traffic Lanes, Traffic Separation Schemes, and  
20 Precautionary Areas in the Vicinity of the POCS Platforms. ....E-6  
21 E-3 2019 Tugboat Traffic Density off Southern California. ....E-8  
22 E-4 2019 Tugboat Traffic Density in the Vicinity of the POCS Platforms.....E-8  
23 E-5 2019 Commercial Cargo and Tanker Traffic Density off Southern California. ....E-9  
24 E-6 2019 Commercial Cargo and Tanker Traffic Density in the Vicinity of the POCS  
25 Platforms. ....E-10  
26 E-7 2019 Commercial Fishing Vessel Traffic Density off Southern California. ....E-11  
27 E-8 2019 Commercial Fishing Vessel Traffic Density in the Vicinity of the POCS  
28 Platforms. ....E-11  
29 E-9 2019 Commercial Passenger Vessel Traffic Density off Southern California. ....E-12  
30 E-10 2019 Commercial Passenger Vessel Traffic Density in the Vicinity of the POCS  
31 Platforms. ....E-13  
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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 7 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 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).

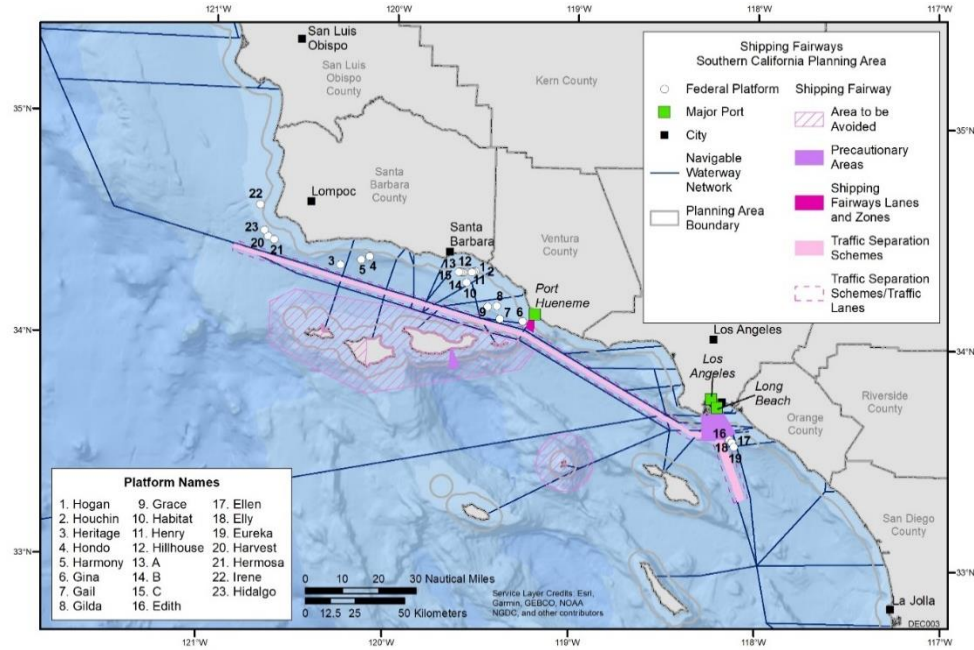
All commercial vessel traffic on the Southern California POCS follows established shipping safety fairways<sup>1</sup>, traffic lanes<sup>2</sup>, and traffic separation schemes (TSSs)<sup>3</sup> to the extent feasible when traveling to, from, and between ports. Under the authority of the Ports and Waterways Safety Act (PWSA—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).

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<sup>1</sup> “Shipping safety fairway or fairway” means a lane or corridor in which no artificial island or fixed structure, whether temporary or permanent, will be permitted.

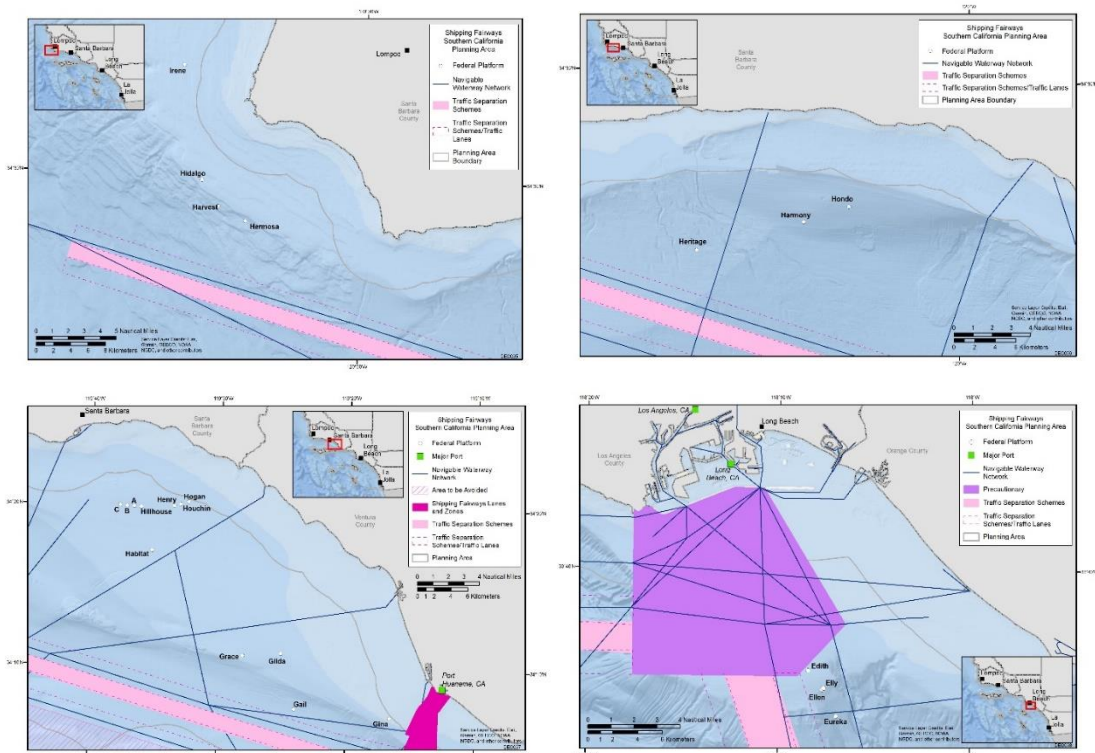
<sup>2</sup> A “traffic lane” means an area within defined limits in which one-way traffic is established (33 CFR 167.5 (c)).

<sup>3</sup> 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)).



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



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

1 **E.3 VESSEL TRAFFIC IN THE VICINITY OF THE POCS PLATFORMS**  
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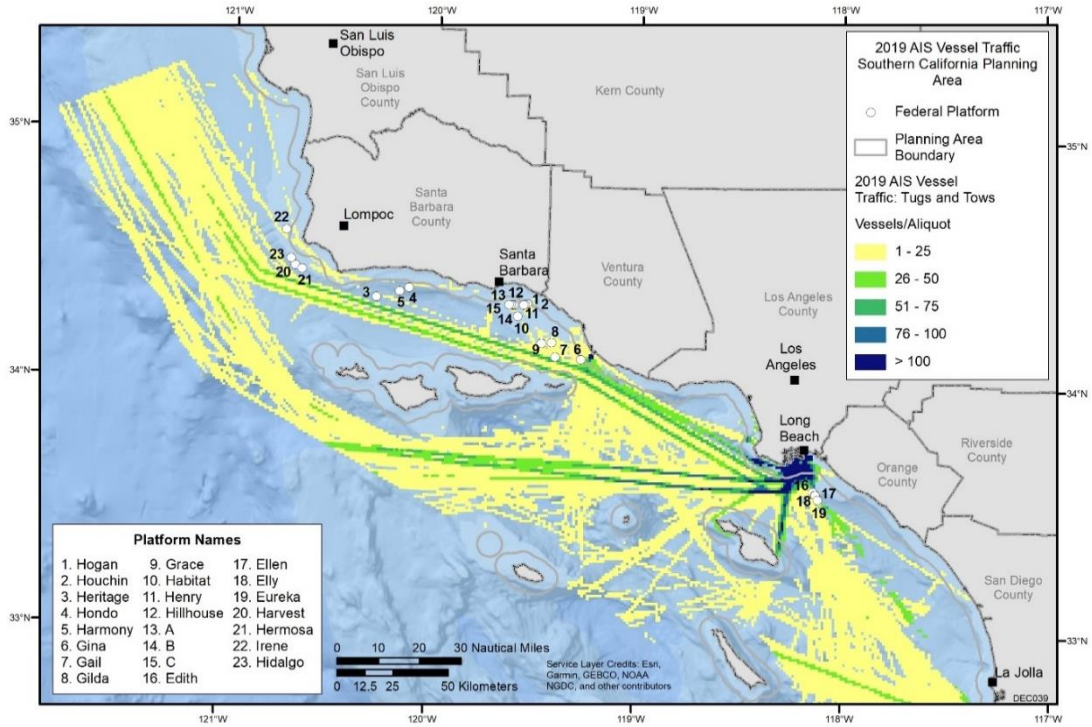
3 Decommissioning-related vessel traffic has the potential to interfere with navigation and  
4 shipping in the vicinity of the POCS platforms or to congest established shipping safety  
5 fairways, traffic lanes, and TSSs as well as area harbors and ports. To examine the potential for  
6 such effects, vessel transit data in the vicinity of the POCS platforms were examined to identify  
7 the locations and traffic density of four categories of surface vessels: tugboats, cargo ships and  
8 tankers, passenger vessels, and commercial fishing vessels.  
9

10 The evaluation of vessel traffic used automatic identification system (AIS) data from  
11 2019, the most recent pre-pandemic data (Office for Coastal Management 2022). The  
12 International Maritime Organization (IMO) requires all ships to carry AISs capable of providing  
13 information about the ship to other ships and to coastal authorities automatically. The IMO  
14 regulation requires AIS to be fitted aboard all ships of 300 gross tonnage and upwards engaged  
15 on international voyages, cargo ships of 500 gross tonnage and upwards not engaged on  
16 international voyages, and all passenger ships irrespective of size.  
17

18 Vessel traffic (AIS) data are collected by the USCG through an onboard navigation safety  
19 device that transmits and monitors the location and characteristics of large vessels in  
20 United States and international waters in real time. In the United States, the USCG and  
21 commercial vendors collect AIS data, which can also be used for a variety of coastal planning  
22 purposes. The Bureau of Ocean Energy Management (BOEM) and the National Oceanic and  
23 Atmospheric Administration (NOAA) have worked jointly to repurpose and make available  
24 some of the most important records from the USCG’s national network of AIS receivers. These  
25 data are available at <https://marinecadastre.gov/ais/>. These data are presented in maps that show  
26 the total number of vessels that occurred per aliquot (an area of 1,200 x 1,200 m [3,940 x  
27 3,940 ft]) off Southern California in 2019.  
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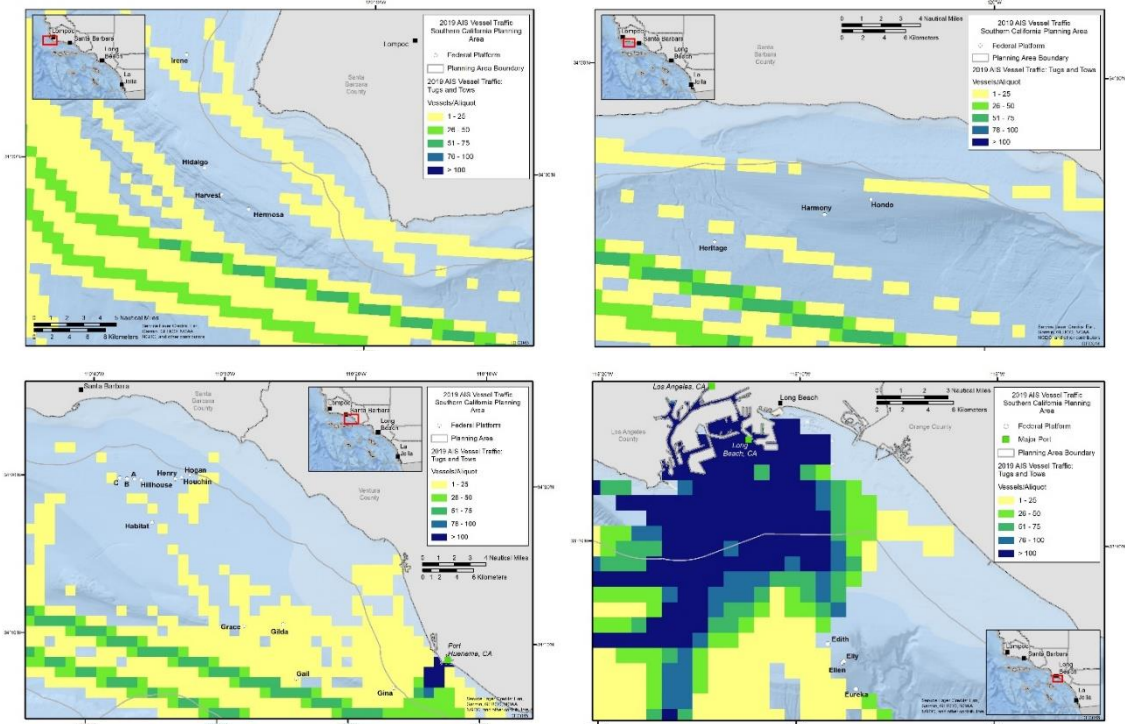
30 **E.3.1 Tugboat Traffic**  
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32 Figure E.3 shows the locations and density of tugboat traffic in 2019 in the vicinity of the  
33 POCS platforms, while Figure E-4 shows this same information, but at a finer scale, in order to  
34 better display how this traffic occurred in the immediate vicinity of the platforms. As shown in  
35 these figures, relatively little tugboat traffic (<25 per aliquot over the course of the year)  
36 occurred in the immediate vicinity of the POCS platforms. The greatest density of tugboat traffic  
37 occurred at the Port of Hueneme, and the POLA–POLB complex (>76 tugboats per aliquot in  
38 these areas in 2019), and to a lesser extent, along the designated shipping fairways through the  
39 Santa Barbara Channel, and westward from the POLA–POLB complex (densities between 26  
40 and 75 tugboats per aliquot).  
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FIGURE E-3 2019 Tugboat Traffic Density off Southern California.



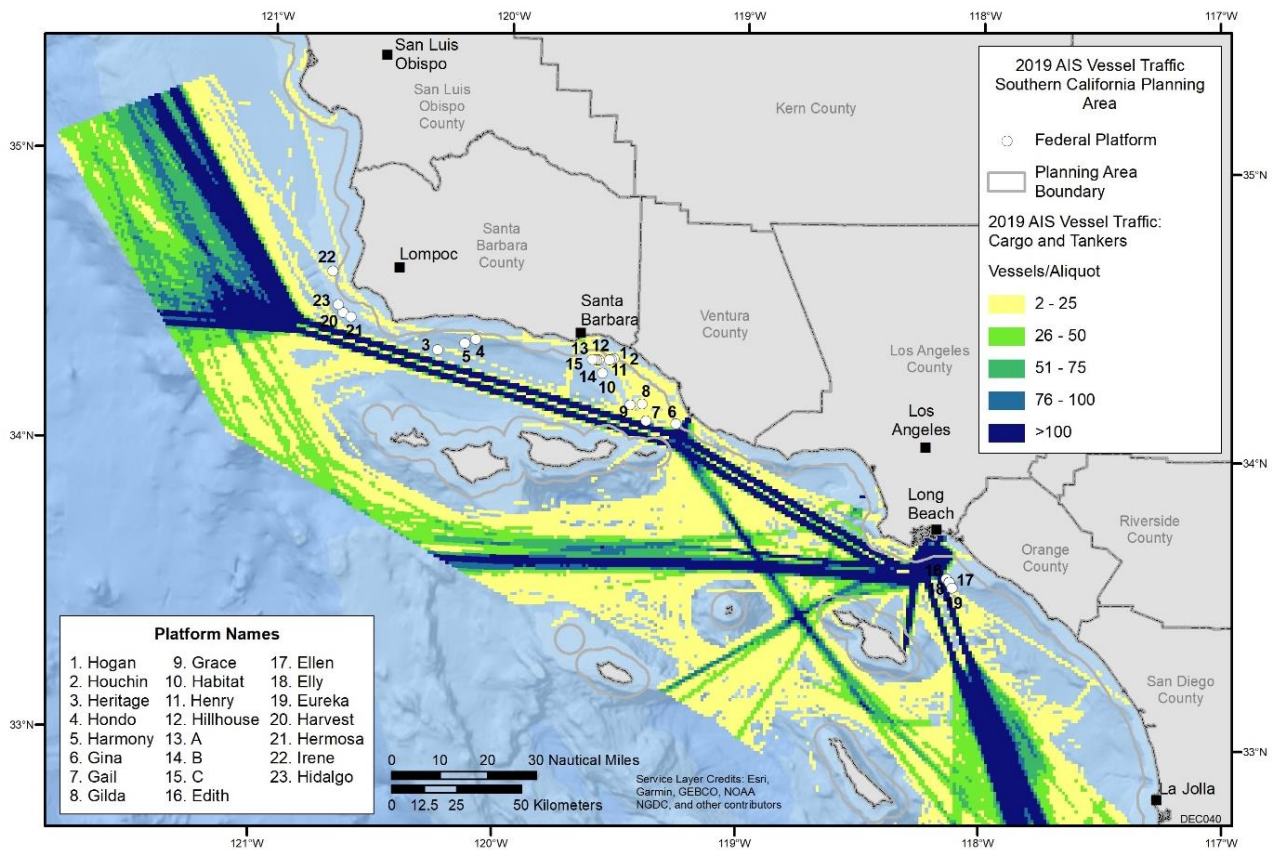
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FIGURE E-4 2019 Tugboat Traffic Density in the Vicinity of the POCS Platforms.

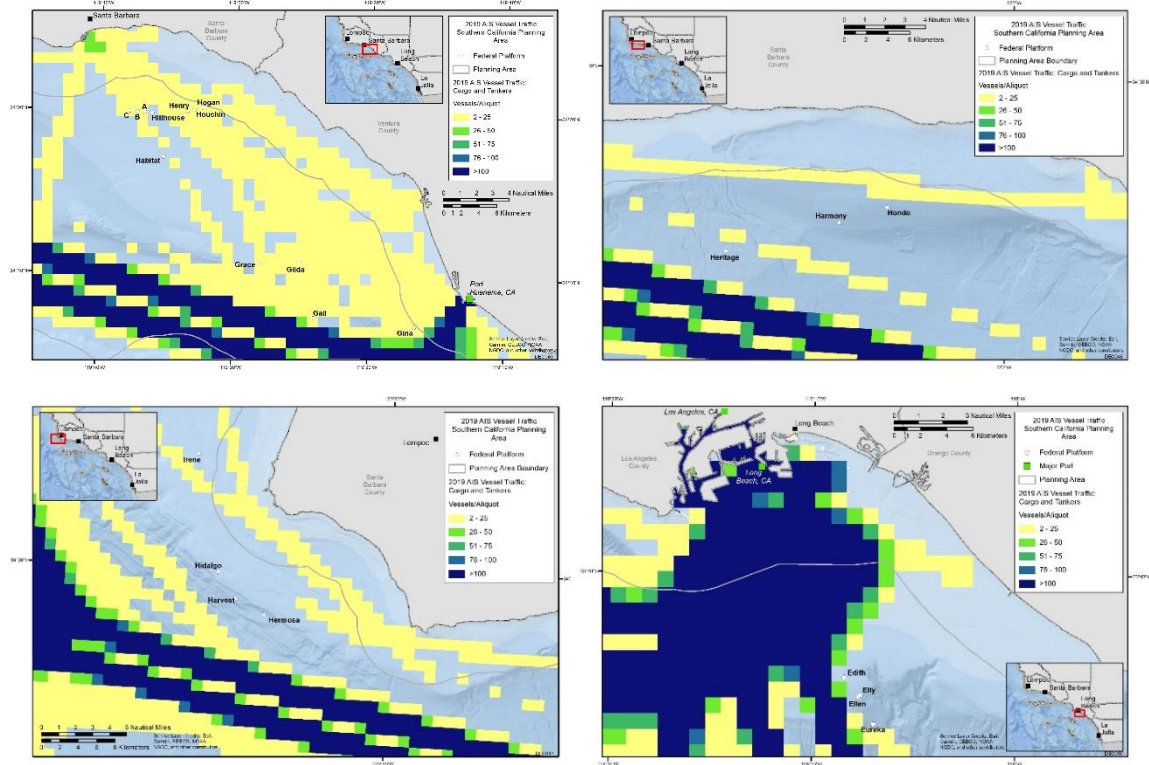


**E.3.2 Cargo and Tanker Vessel Traffic**

Figures E-5 shows the locations and density of commercial and cargo traffic in 2019 in the vicinity of the POCS platforms, while 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.



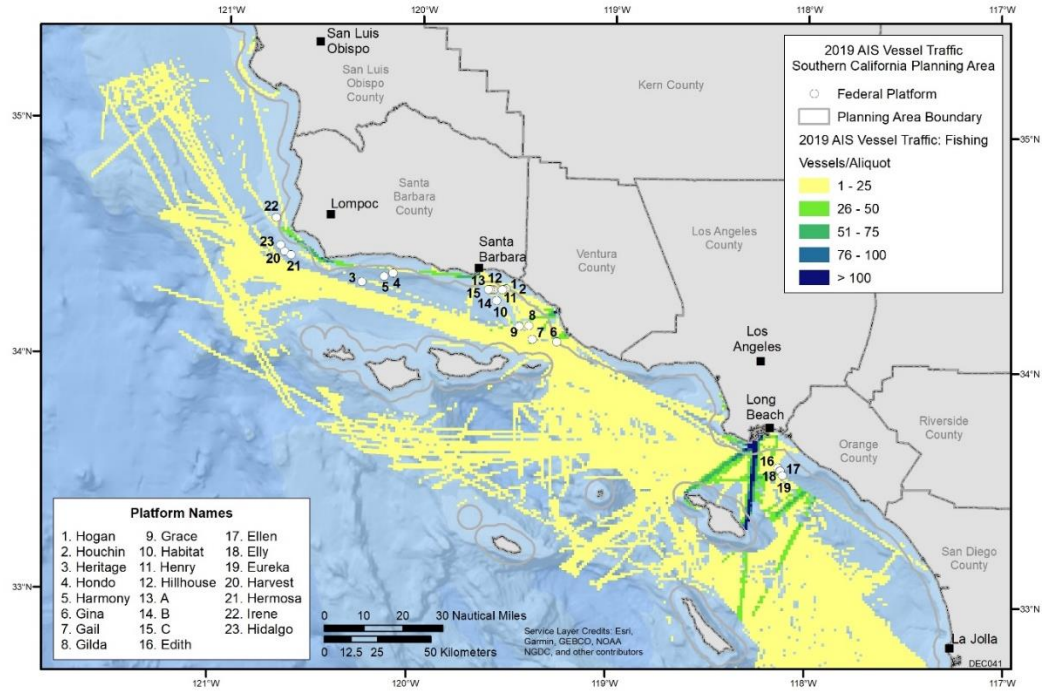
**FIGURE E-5 2019 Commercial Cargo and Tanker Traffic Density off Southern California.**



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

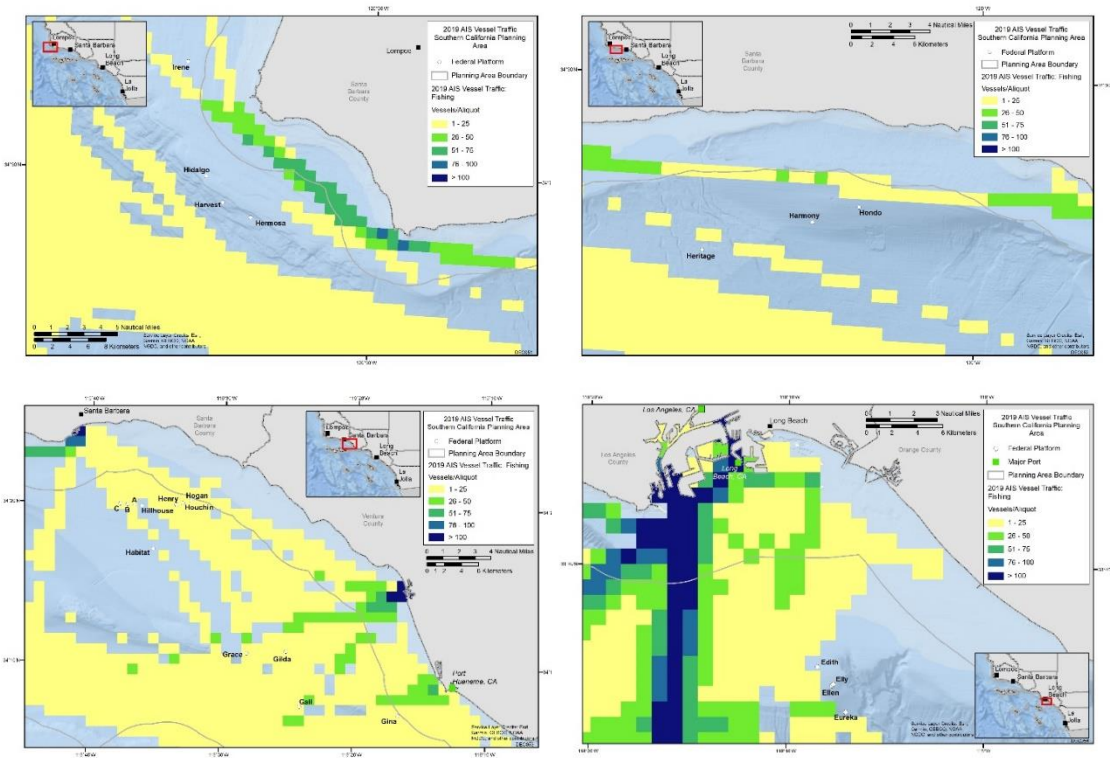
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6 **E.3.3 Fishing Vessel Traffic**

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



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

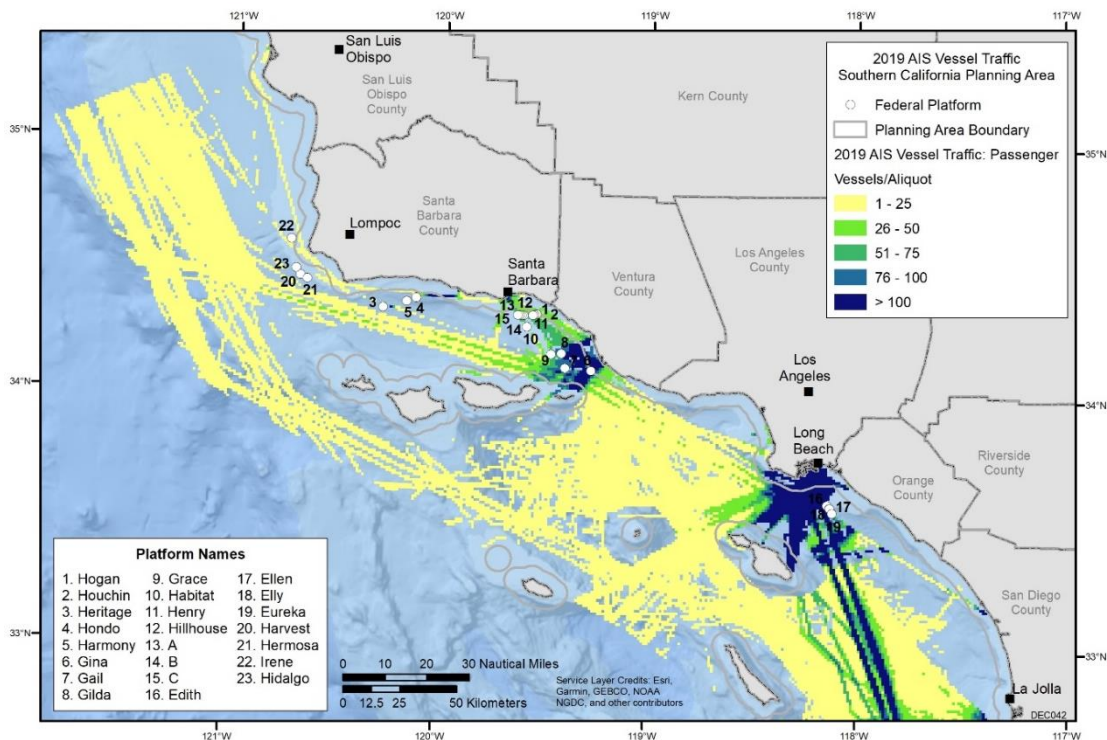


1 **E.3.4 Passenger Vessel Traffic**

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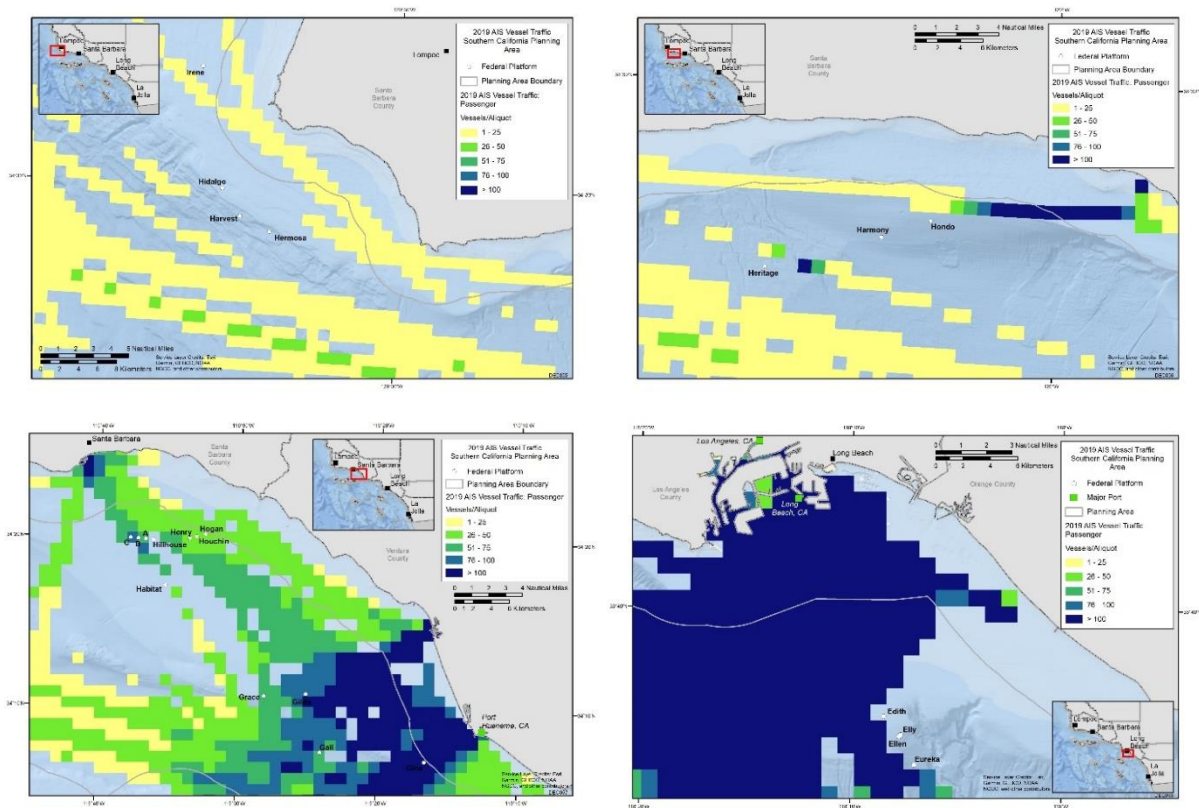
Figure E-9 shows the locations and density of commercial passenger vessel traffic in 2019 in the vicinity of the POCS platforms, while Figure E-10 shows this same information, but at a finer scale, in order to better display how this vessel traffic occurred in the immediate vicinity of the platforms. 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 vessel 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).



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



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

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6 **E.3.5 References**

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