National Marine Sanctuaries
National Oceanic and Atmospheric Administration

Port Access Route Study (PARS) update

February 10, 2011

By: Michael C. Carver

USCG Port Access Route Study (PARS)

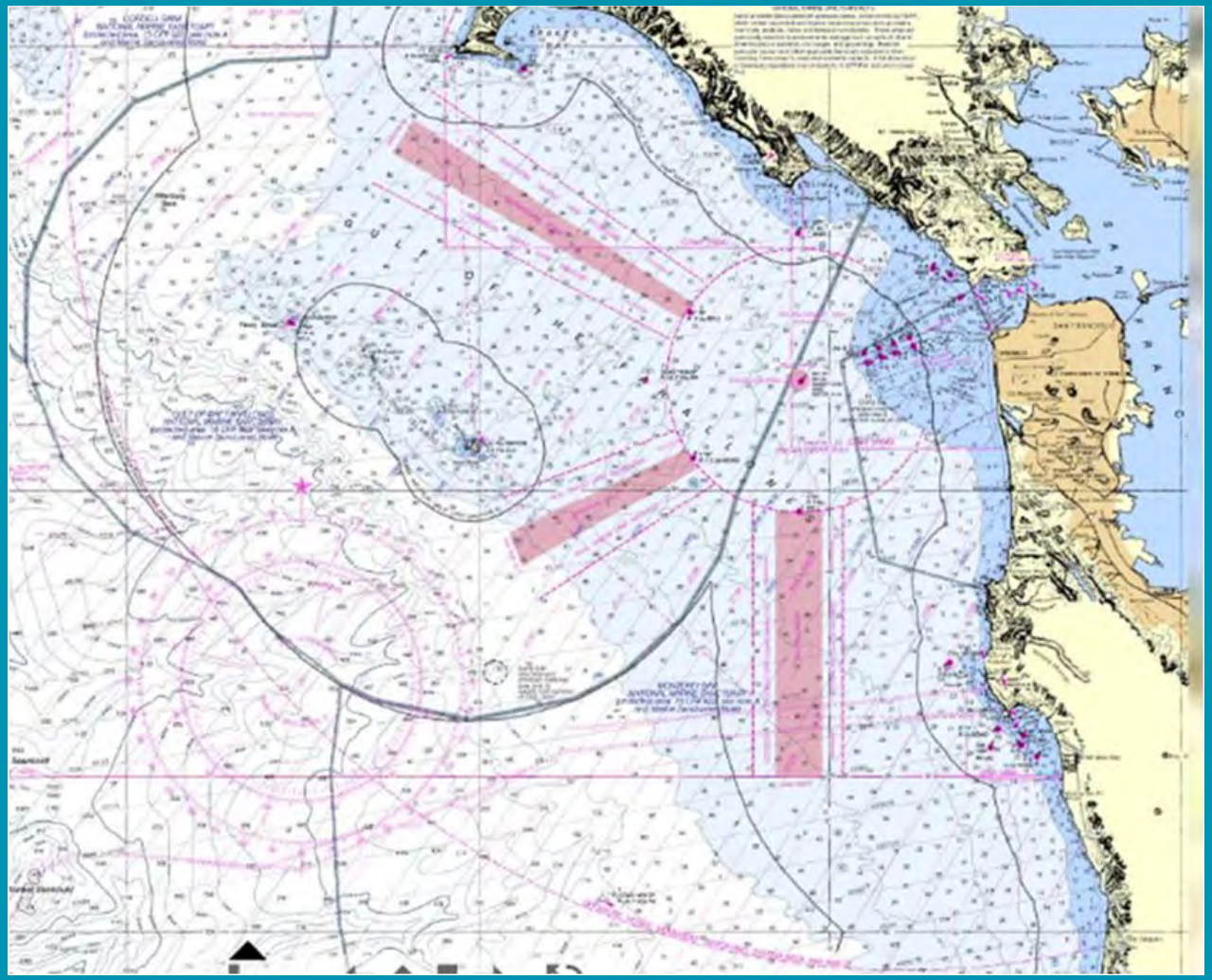
Coast Guard is responsible for:

- Designation of fairways and traffic separation schemes to provide safe access routes for vessels proceeding to and from ports.

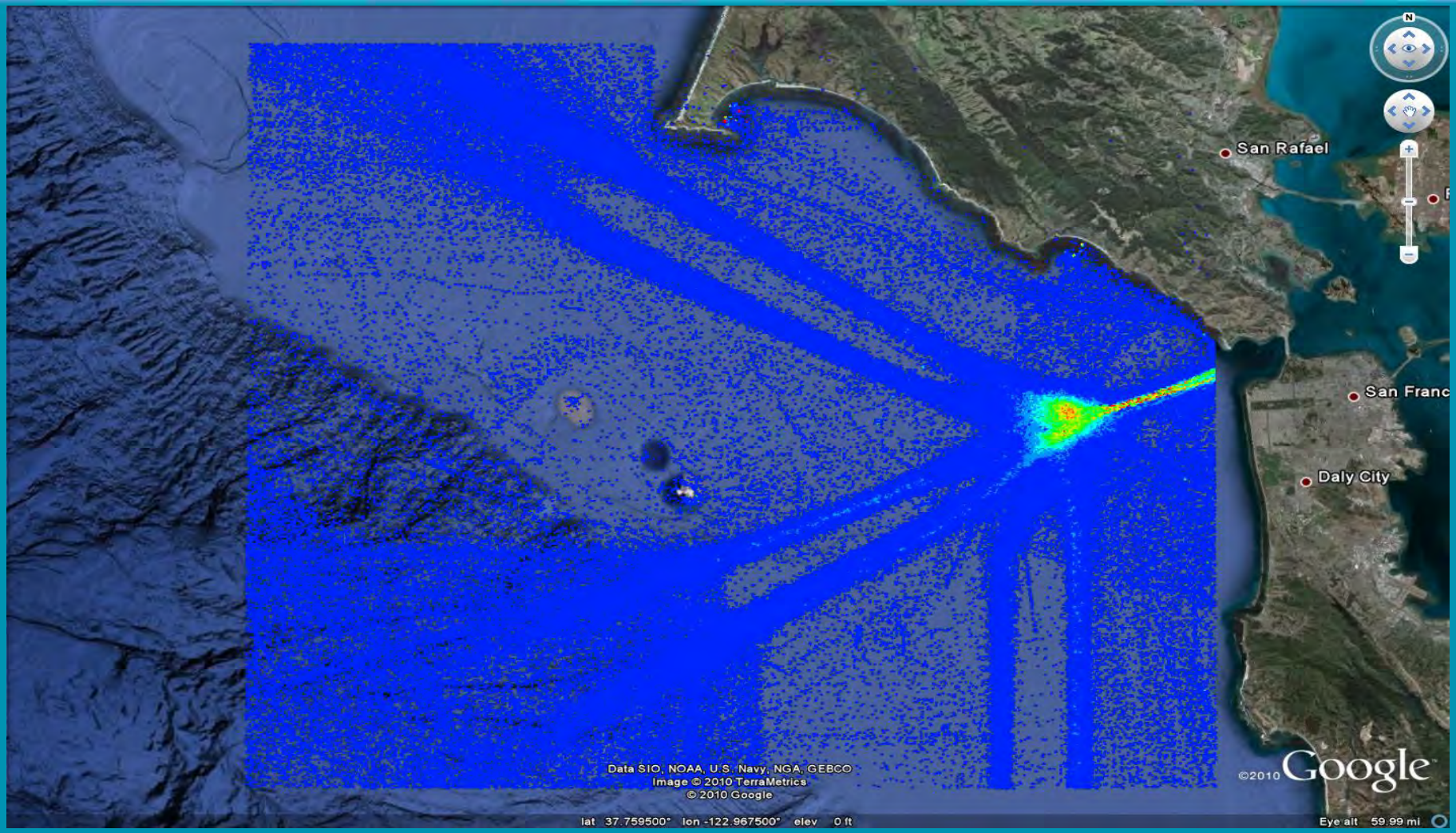
History

- The Coast Guard has since identified a potential safety enhancement which could result in extending the northern TSS lanes to increase predictability of vessel traffic in a popular fishing area.

- Study intended to review whether to extend vessel traffic lanes to the VTS limit.



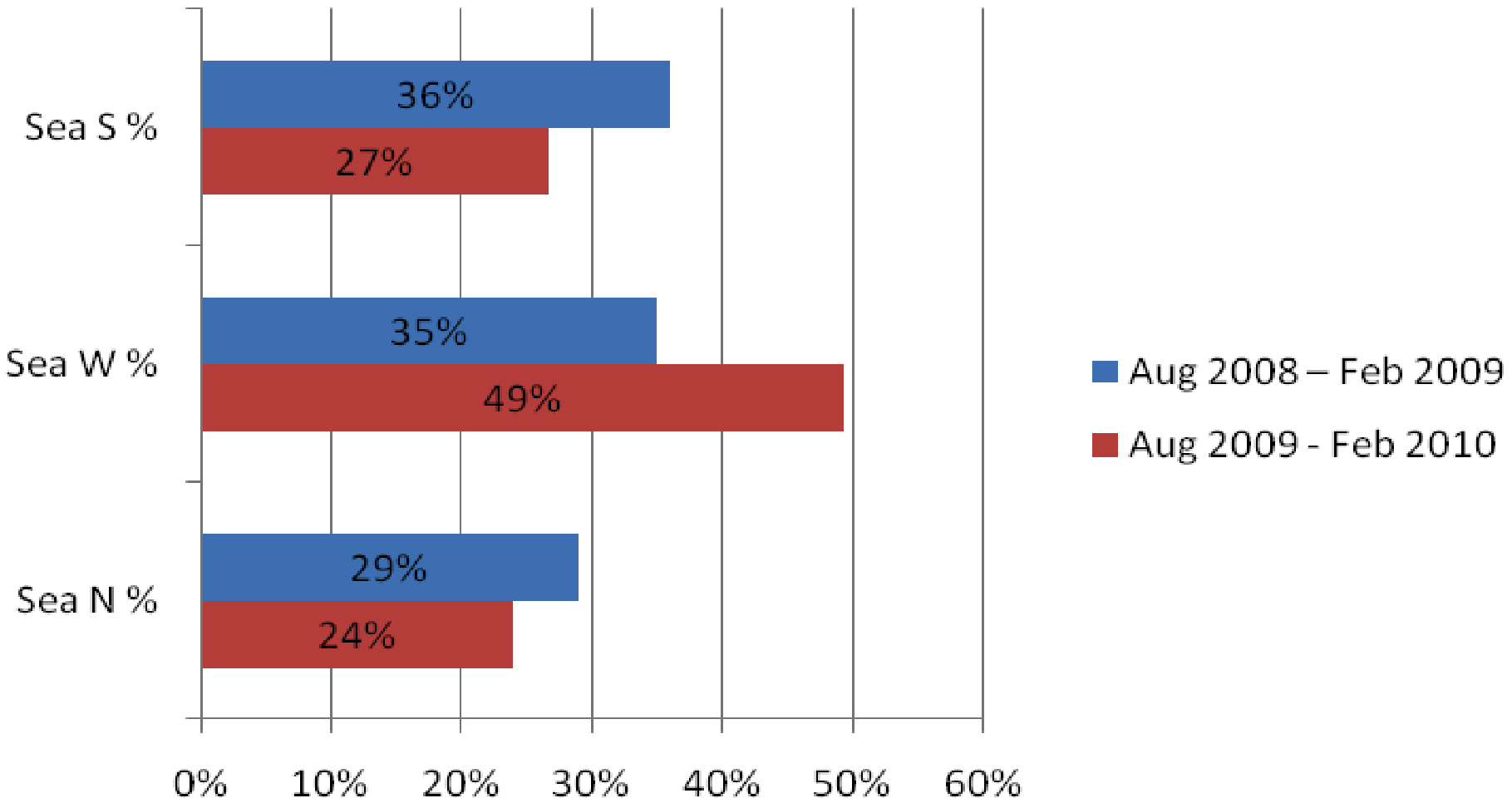
AIS Ship Traffi c Summer Average



AIS Ship Traffi c

VTS VESSEL DATA	Tot. Vessels	Sea N	Sea W	Sea S
Aug 2008 – Feb 2009	3083	907	1076	1100
Aug 2009 - Feb 2010	1947	467	961	519

AIS Ship Traffi c



Process to date

- Notice of PARS study: December 2009
- Comments due: February 2010
- Notice of public meetings: September 2010
- Meeting held: October 2010
- NMS provided USCG with data and conference with them on favored options
- Final PARS report: June 2011.

USCG Authority/Responsibility

- Ports and waterways safety act dictates the Coast Guard is responsible for:

  Designation of fairways and traffic separation schemes to provide safe access routes for vessels proceeding to and from ports.

PARS Requirements

- USCG is required to conduct a PARS before establishing new fairways or traffic separation schemes (TSS) or making any adjustments.
- USCG must coordinate with interested stakeholders

Collect and analyze data on

- Vessel traffic trends
- Fishing activity
- Recreational boating
- military activities
- Environmental factors
- Economic impact
- Present & potential traffic density

- If existing traffic routing measures are adequate or require modifications
- Type of modifications

Development

- Federal Register Notice (74 FR 65543, December 10, 2009) announced the Eleventh Coast Guard District initiated a PARS for the approaches to San Francisco and solicited comments.

- Nine letters received to the docket in response to the notice of study.

Goal

Find optimal solution(s) that reduce the risk of marine accidents while minimizing risks to wildlife and sensitive areas.

NMS Comment Letter

- Analyze data from Mount Tamalpais AIS station to identify trends in traffic pattern, the problems, and how routing changes would reduce risk of vessel spills or ship strikes.
- Northern traffic lane infringes on the ASBS.
- Ships are anchoring within 2 NM of Bolinas Lagoon.
- Consider vessel speed to reduce risks of marine casualties and to reduce air emissions.
- Assess the impact of traffic lane alternatives on the various fisheries.

Cascadia Research Comment Letter

- Extend Western route over the shelf break to prevent ships from traveling along the shelf edge.
- Research is being conducted using whale sightings and AIS data to identify ships that transits in the vicinity.
- Other studies noted.

Center for Biological Diversity Comment Letter

- Consider implementing a mandatory speed limit.
- Include an incentive program similar to the Port of Long Beach.

Commercial Fisherman Comment Letter

- Send all traffic to and from the Western lane.
- Keep tow boats to one side of the lanes.
- Extend the lanes farther offshore.
- The proposed extension of the Northern lane and combining the Western and Southern lanes into one

Chevron Ship Masters' Comments

- A logical change would be to combine the Southern and Western lanes into a single Southwest lane.
- The Western approach is most frequently used but there are concerns with the Farallon Islands (less than 4 miles away) during strong southerly winds.
- Generally, northerly winds prevail. Extending the Western lane further offshore would make for an unpleasant and possibly unsafe ride during strong N' lies.
- Creating a Southwest lane provides a reasonable distance from shore and the Farallon Islands and reduces vessel pitching during NW' ly and S' ly winds and swells.

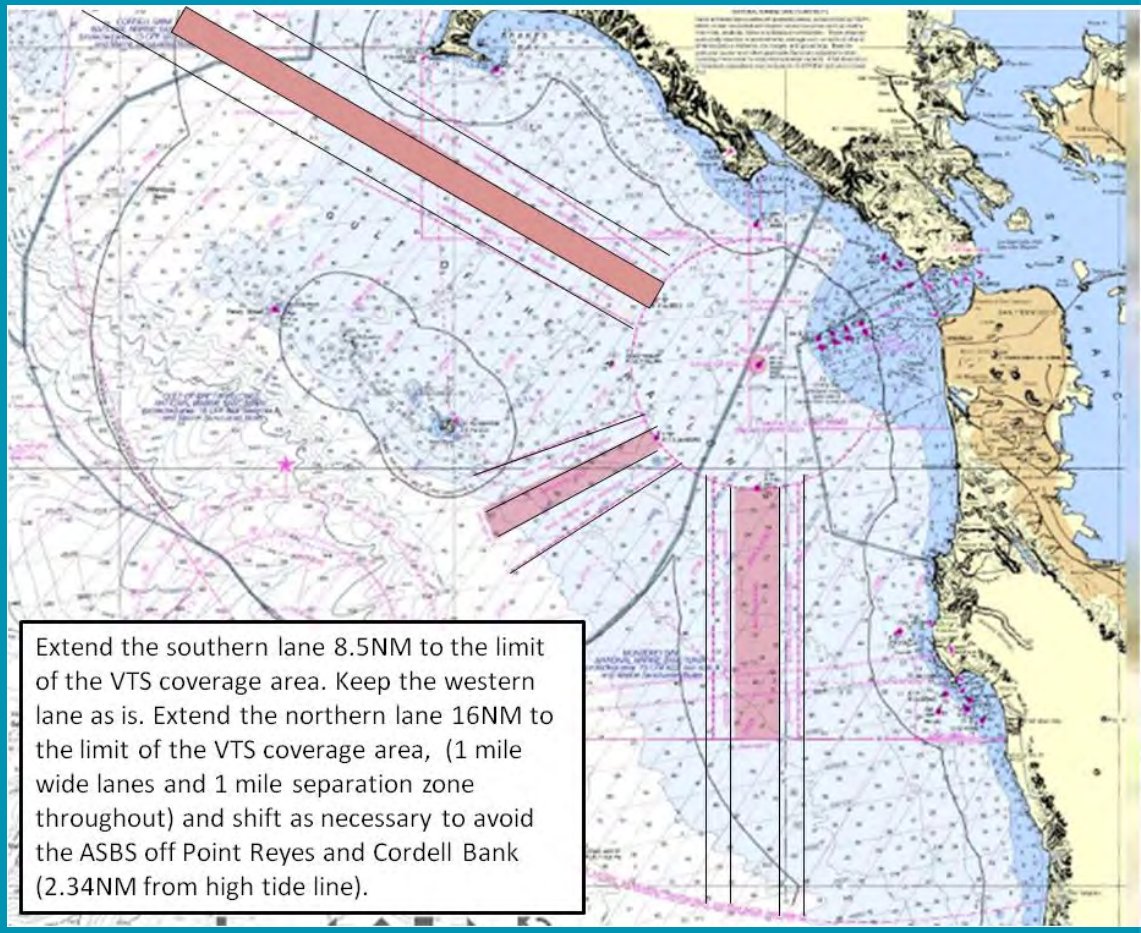
Chevron Ship Masters' Comments (cont.)

- Chevron prefers that its ships not use the Northern lane but it's often more prudent due to weather and fog.
- If Western lane is extended, it may result in more frequent use of Northern of Southern lanes during heavy weather.
- There have been near collisions while transiting the precautionary area during pilot boarding due to congestion.
- The Western lanes are also being used more frequently because of CA emission limits.
- Fishing vessels are more frequently encountered in the area of the Western Lane.

Preliminary Proposal #1

Pros:
- Extends northern/southern TSS and gives all vessels a predictable approach and departure pattern.
- Helps give P/C and F/V visibility on standardized commercial traffic routes.

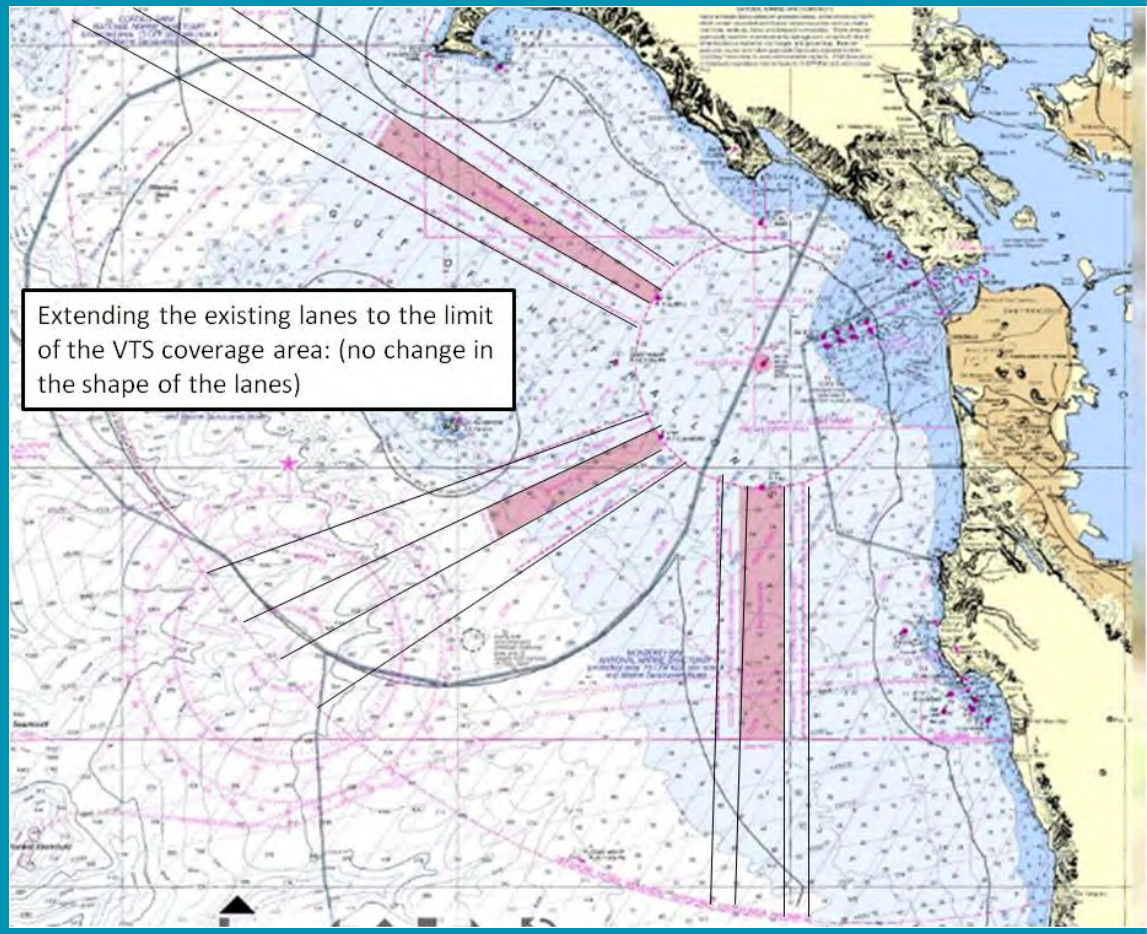
Cons:
- Could potentially bring vessels to close to Cordell bank on northern approach.



Preliminary Proposal #2

Pros:
- Extends TSS's and gives all vessels a predictable approach and departure pattern.

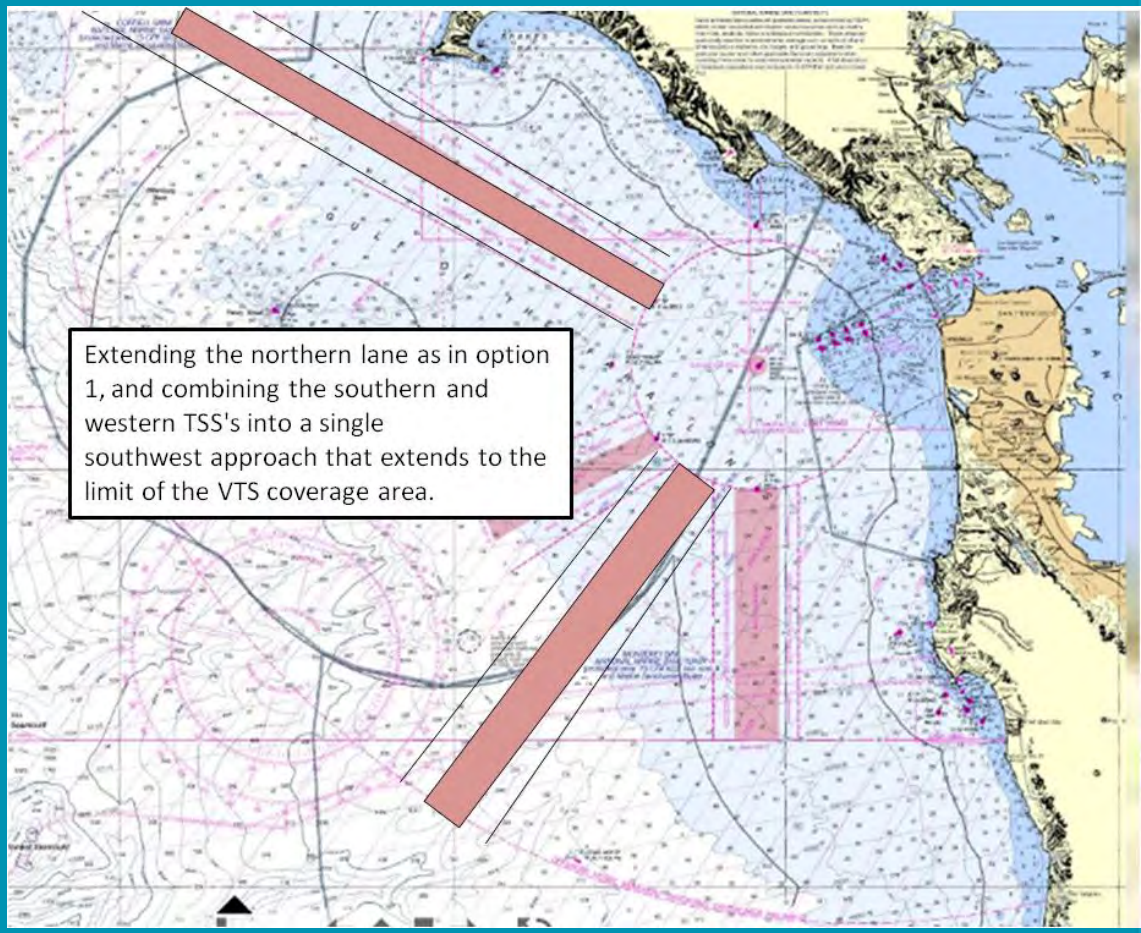
Cons:
- Could potentially bring vessels to close to Cordell bank on northern approach.



Preliminary Proposal #3

Pros:
- Extends northern/southern TSS and gives all vessels a predictable approach and departure pattern.
-Helps give P/C and F/V visibility on standardized commercial traffic routes.

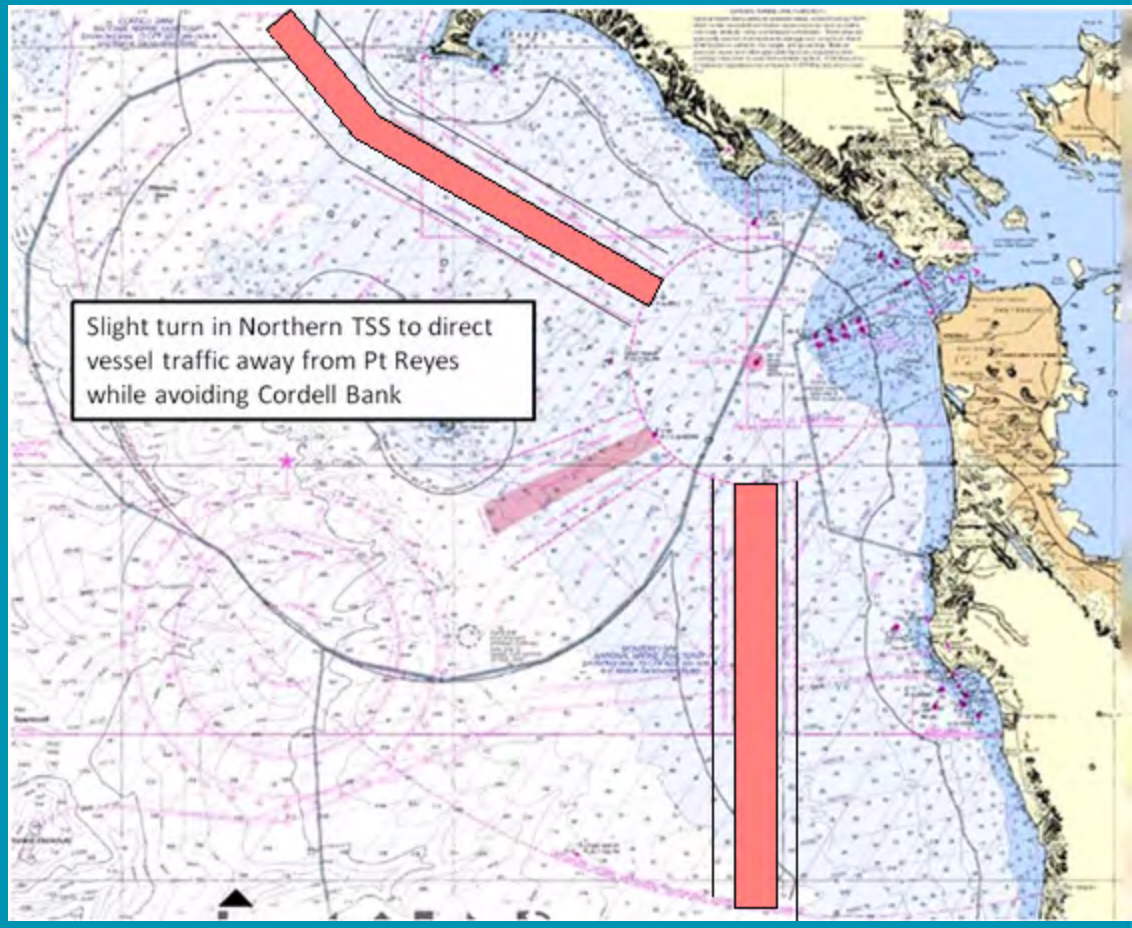
Cons:
- impact on vessels transiting to or from SF that use existing southern TSS.
- May result in vessels not using the new southern TSS.



Preliminary Proposal #4

Pros:
- Extends northern/southern TSS and gives all vessels a predictable approach and departure pattern.
-Directs traffic away from Pt Reyes and avoids Cordell Bank.

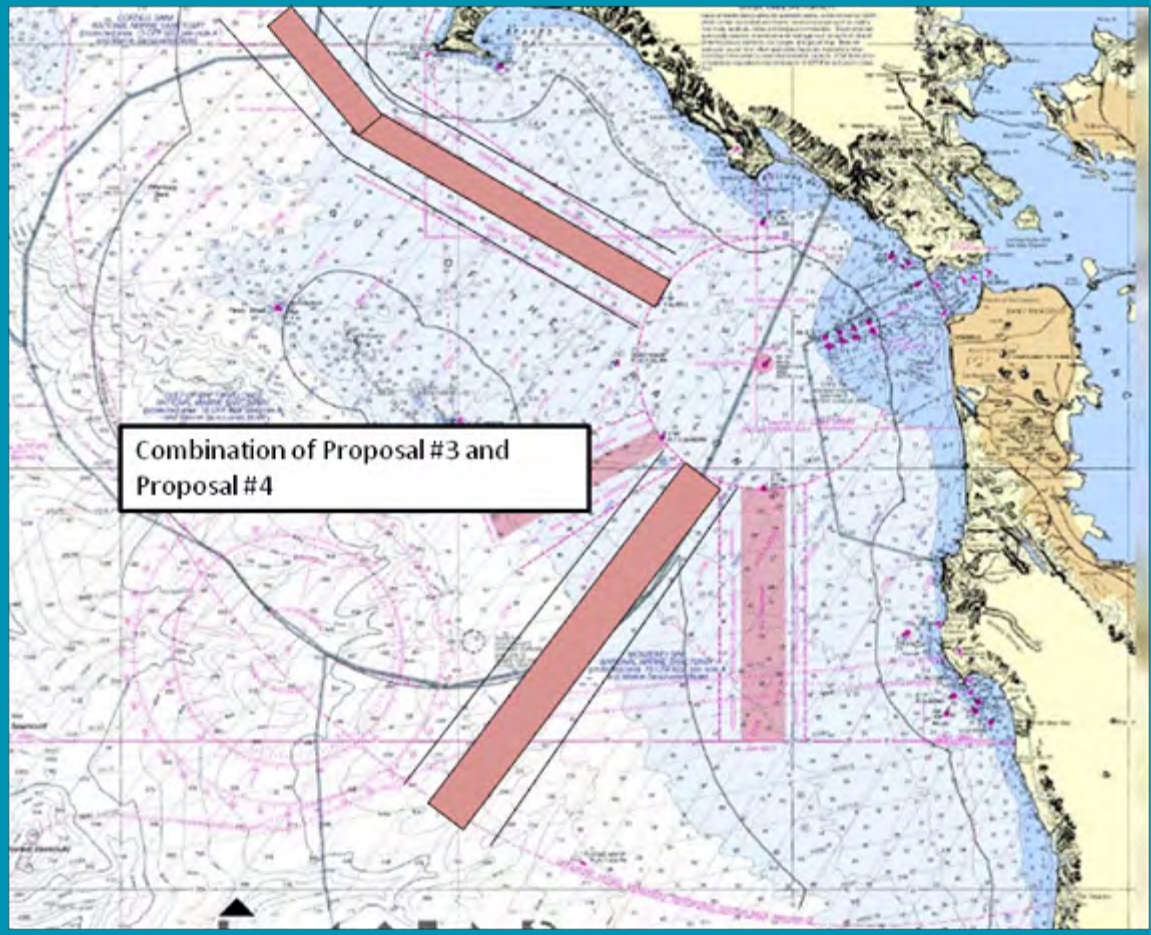
Cons:
- Putting a turn in the TSS



Preliminary Proposal #5

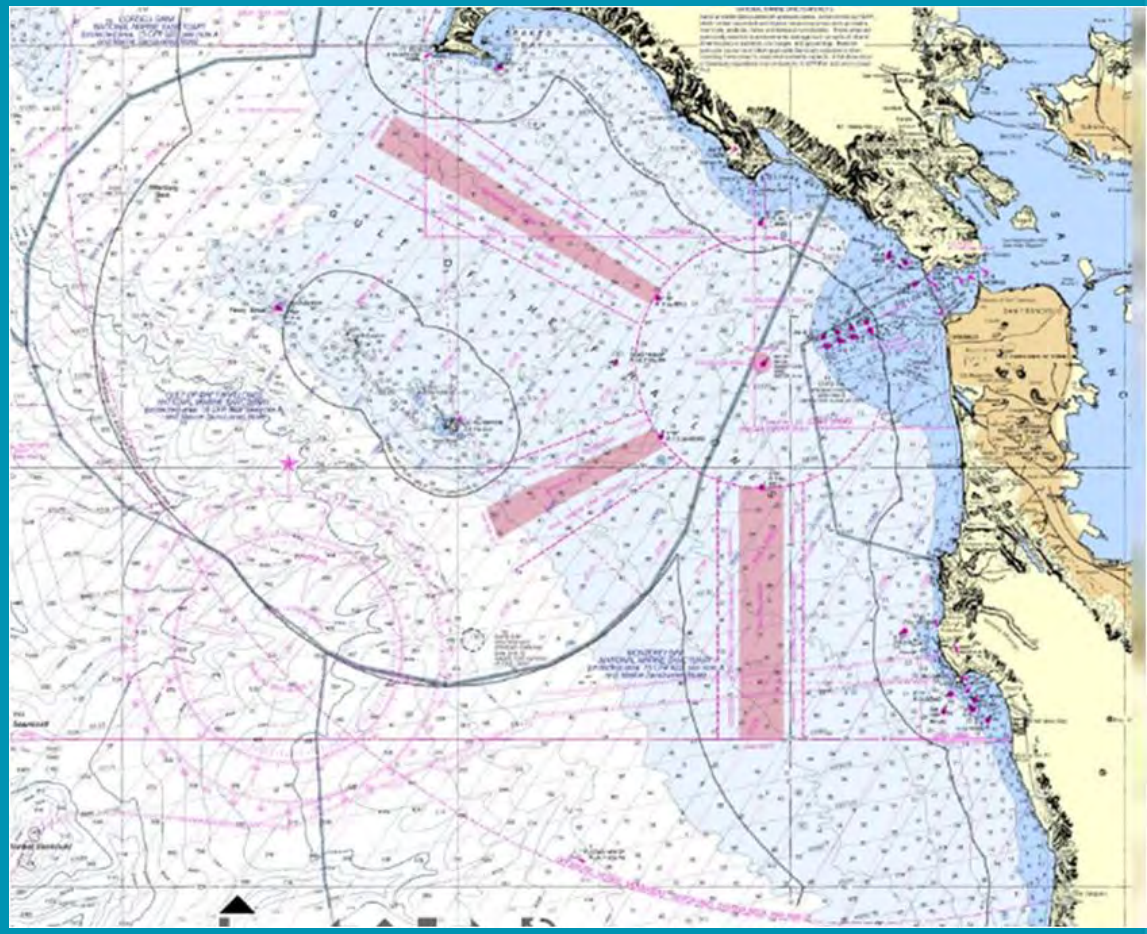
Pros:
- Extends northern/southern TSS and gives all vessels a predictable approach and departure pattern.
-Directs traffic away from Pt Reyes and avoids Cordell Bank.
-Helps give P/C and F/V visibility on standardized commercial traffic routes.

Cons:
-Impact on vessels transiting to and from SF that use the existing southern TSS.
- May result in vessels not using the southern TSS .
-Putting a turn in the Northern TSS.

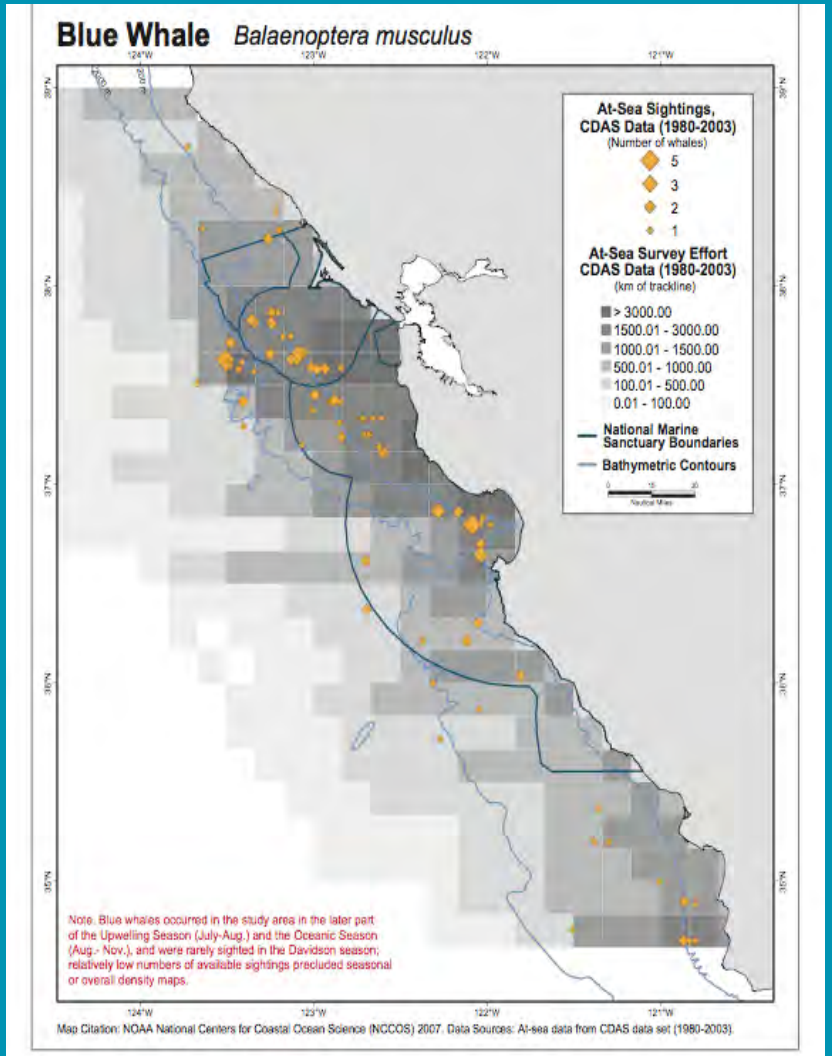


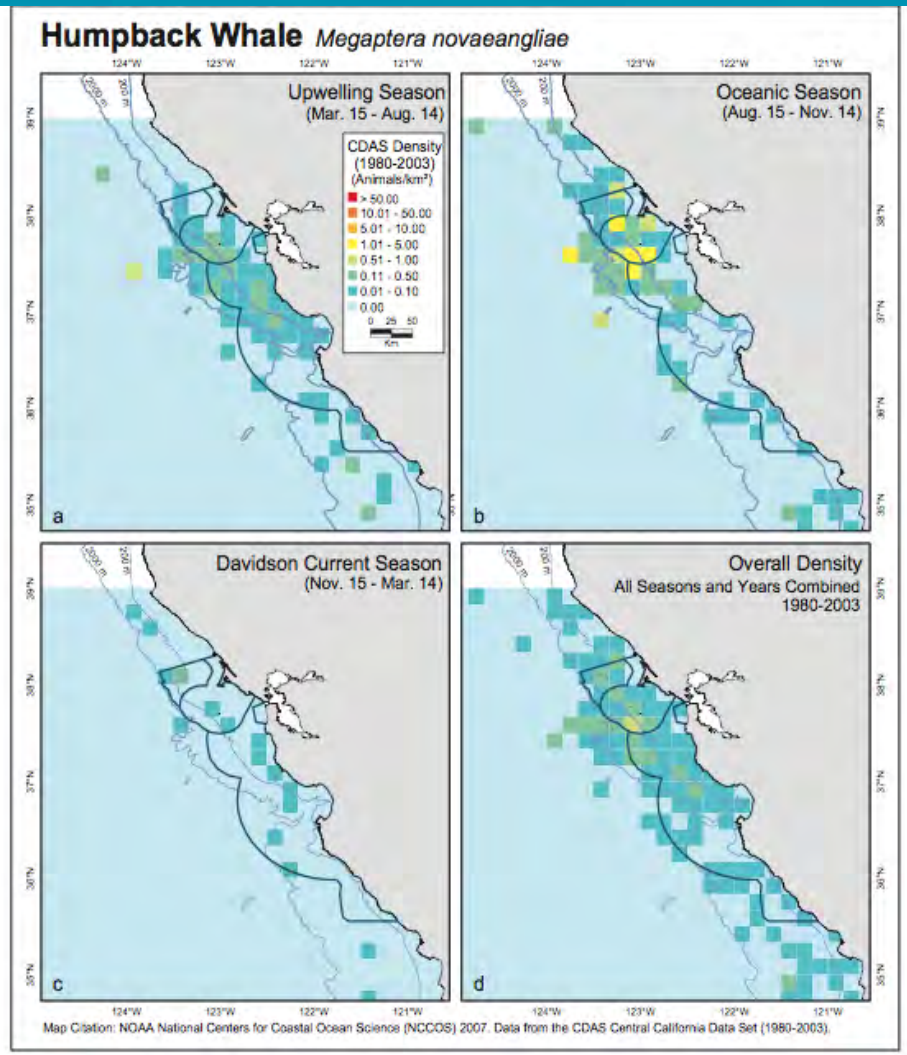
Preliminary Proposal #6

No Change

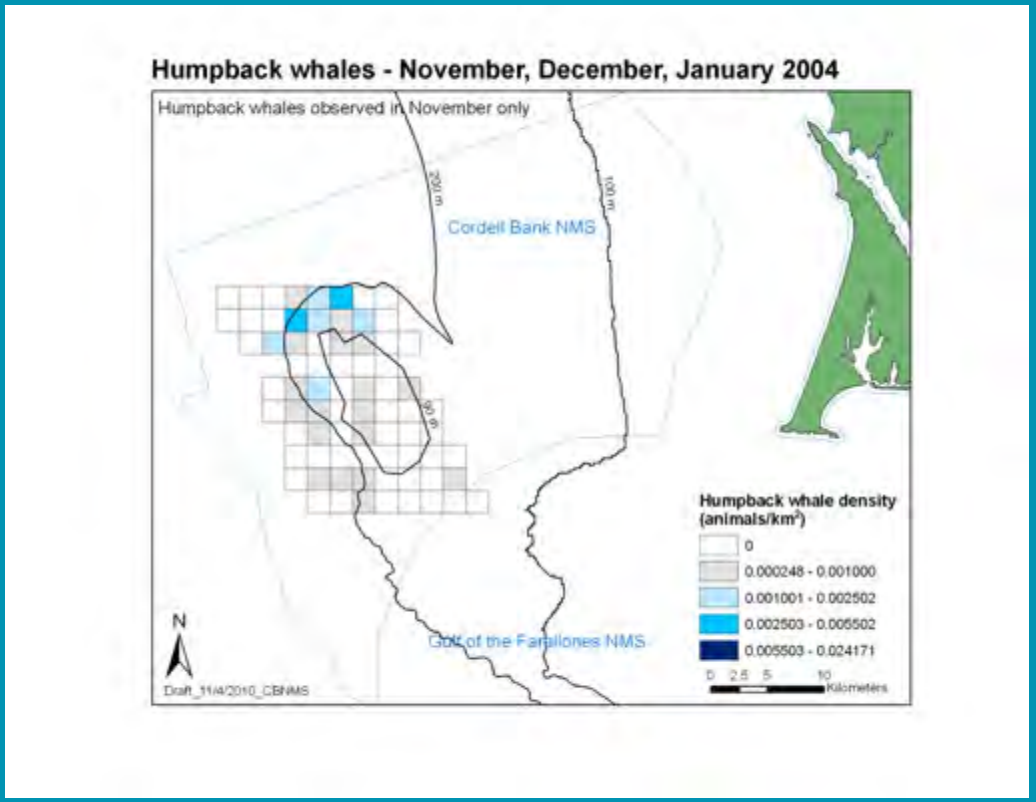


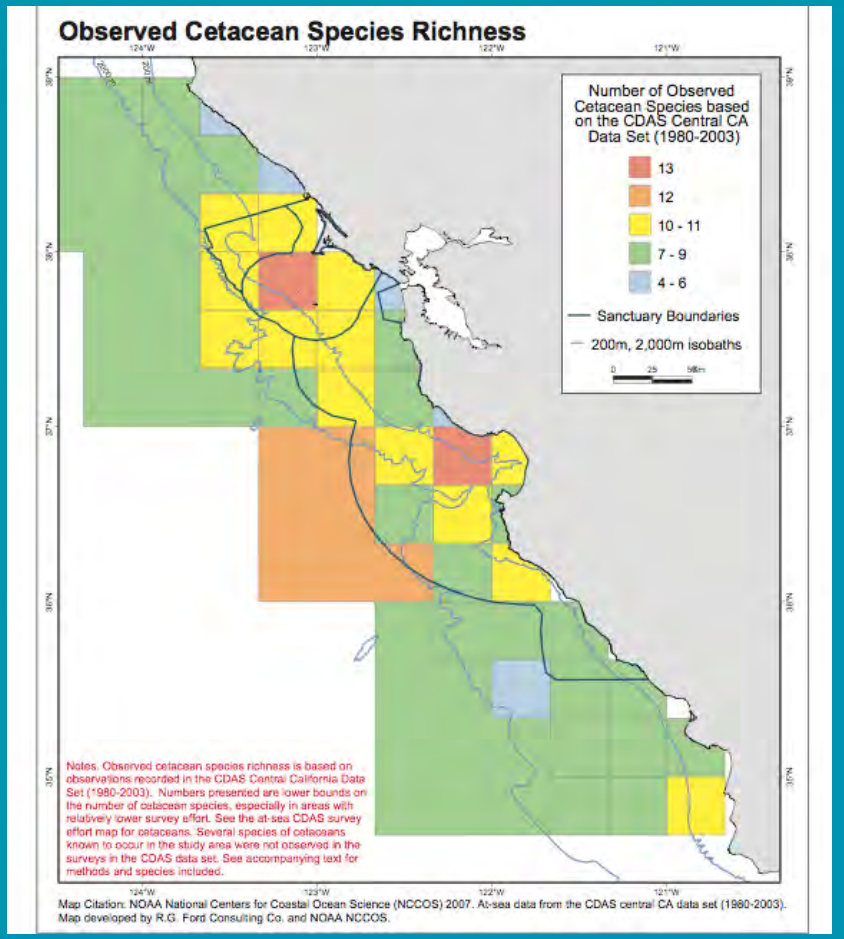
We looked at existing data



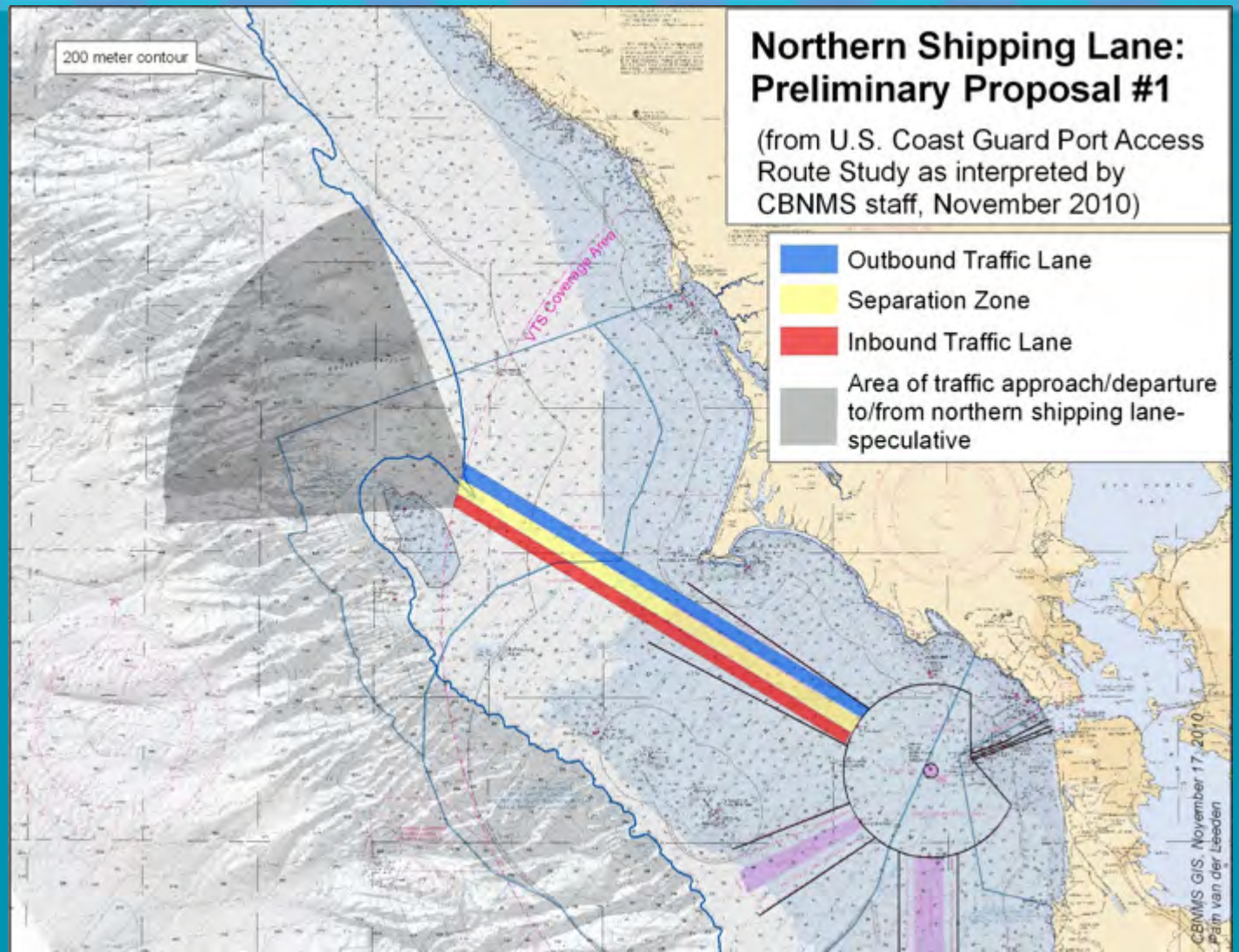


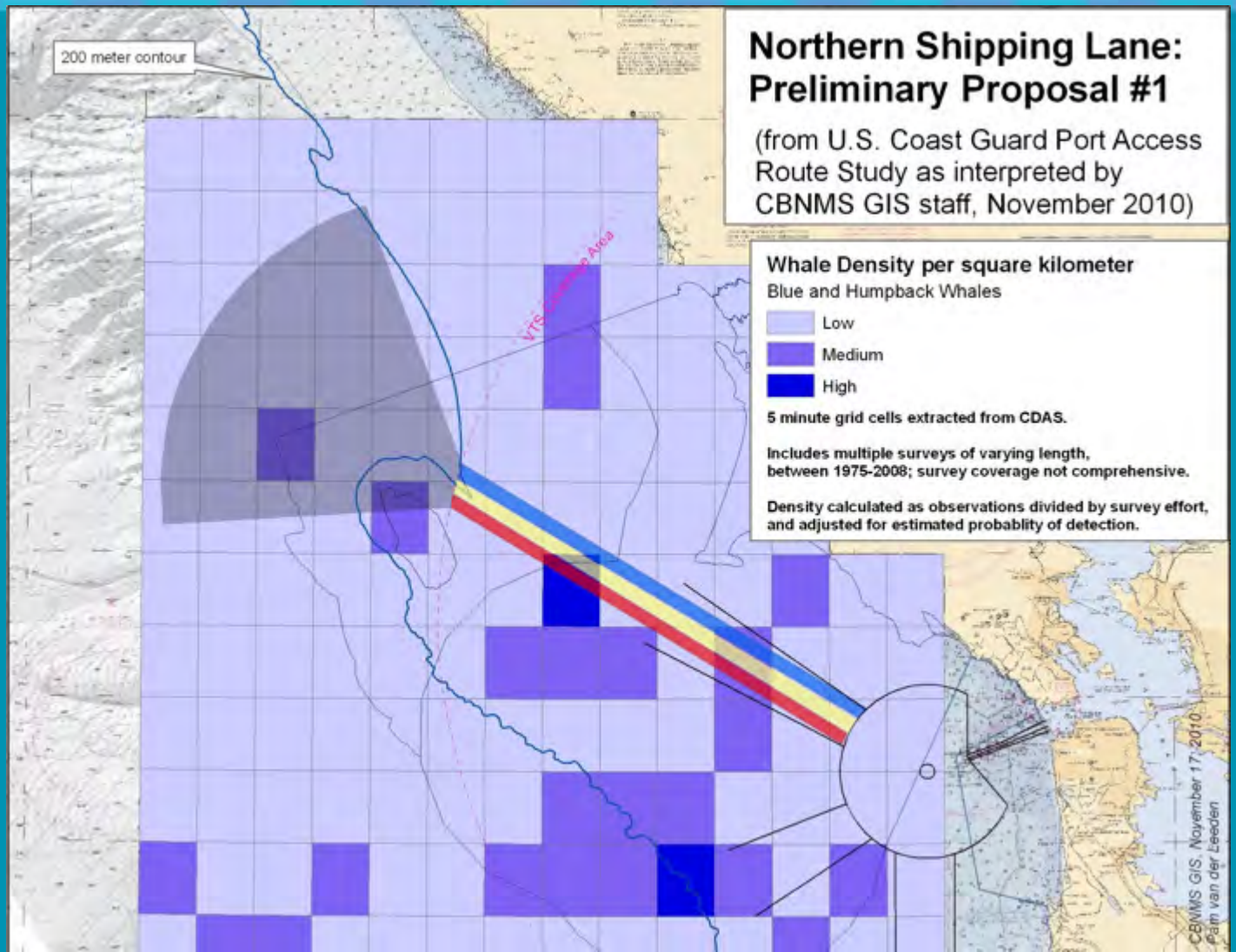
Scale

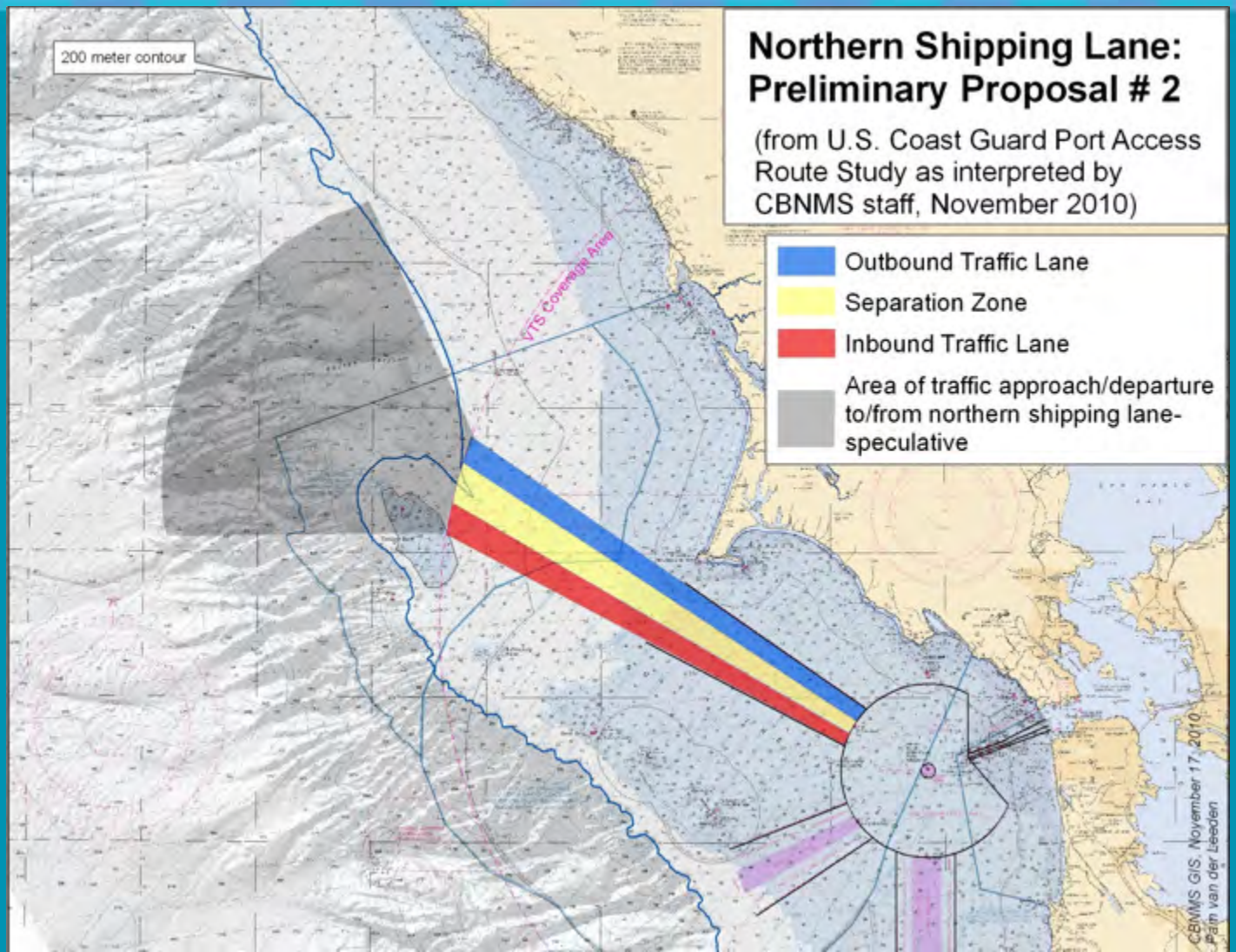

Humpback whales - November, December, January 2004
Humpback whales observed in November only
200 m
100 m
Cordell Bank NMS
Gulf of the Farallones NMS
N
Humpback whale density (animals/km²)
0
0.000248 - 0.001000
0.001001 - 0.002502
0.002503 - 0.005502
0.005503 - 0.024171
0 2.5 5 10
Kilometers
Draft_11/4/2010_CBNMS

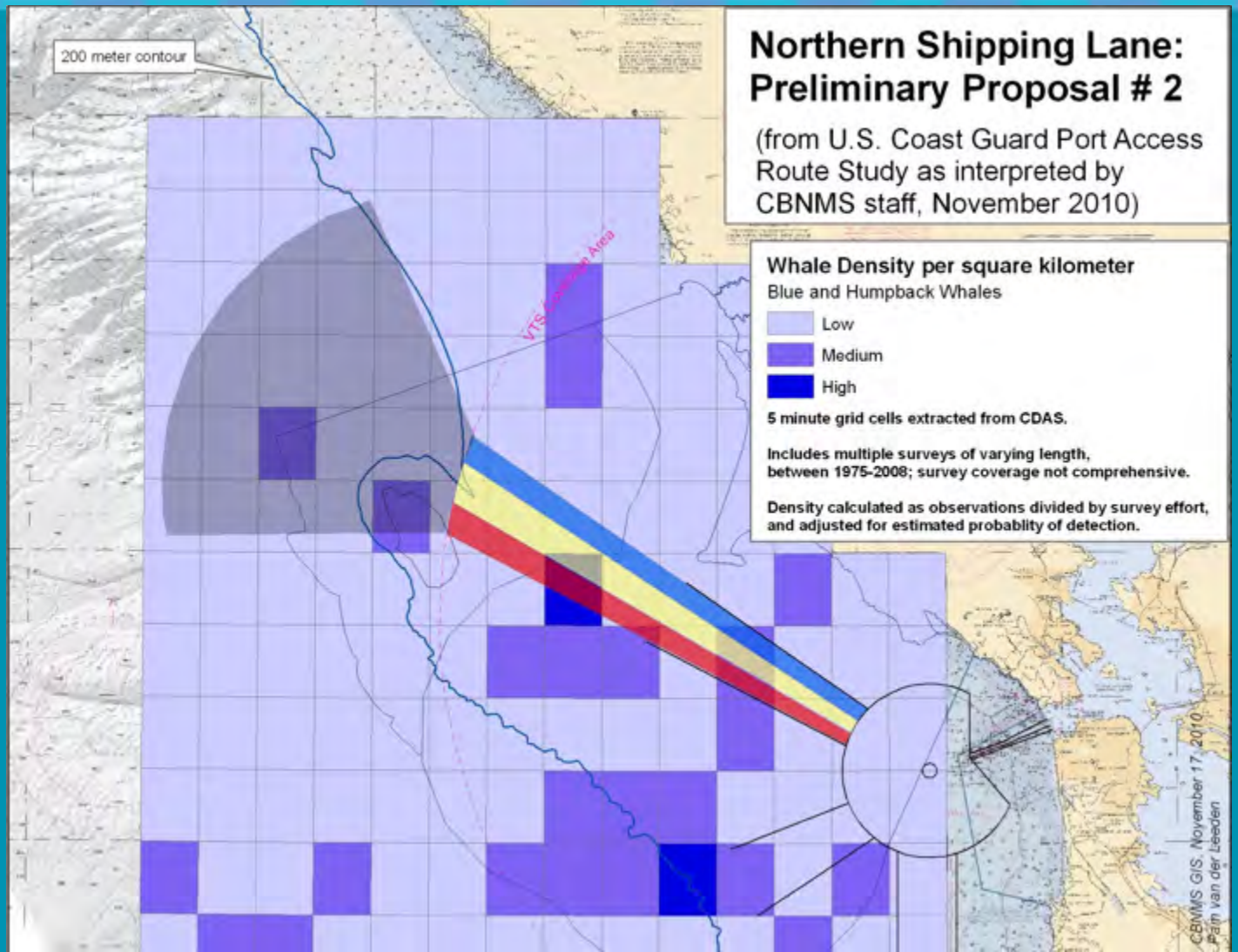

Observed Cetacean Species Richness
Number of Observed Cetacean Species based on the CDAS Central CA Data Set (1980-2003)
13
12
10 - 11
7 - 9
4 - 6
Sanctuary Boundaries
200m, 2,000m isobaths
Notes. Observed cetacean species richness is based on observations recorded in the CDAS Central California Data Set (1980-2003). Numbers presented are lower bounds on the number of cetacean species, especially in areas with relatively lower survey effort. See the at-sea CDAS survey effort map for cetaceans. Several species of cetaceans known to occur in the study area were not observed in the surveys in the CDAS data set. See accompanying text for methods and species included.
Map Citation: NOAA National Centers for Coastal Ocean Science (NCCOS) 2007. At-sea data from the CDAS central CA data set (1980-2003).
Map developed by R.G. Ford Consulting Co. and NOAA NCCOS.

A sample of the data




200 meter contour
Northern Shipping Lane:
Preliminary Proposal #1
(from U.S. Coast Guard Port Access Route Study as interpreted by CBNMS GIS staff, November 2010)
Whale Density per square kilometer
Blue and Humpback Whales
Low
Medium
High
5 minute grid cells extracted from CDAS.
Includes multiple surveys of varying length, between 1975-2008; survey coverage not comprehensive.
Density calculated as observations divided by survey effort, and adjusted for estimated probablity of detection.
CBNMS GIS, November 17, 2010
Pam van der Leeden


Northern Shipping Lane:
Preliminary Proposal # 2
(from U.S. Coast Guard Port Access Route Study as interpreted by CBNMS staff, November 2010)
Outbound Traffic Lane
Separation Zone
Inbound Traffic Lane
Area of traffic approach/departure to/from northern shipping lane-speculative
200 meter contour
VTS Coverage Area
CBNMS GIS, November 17, 2010
Pam van der Leeden


200 meter contour
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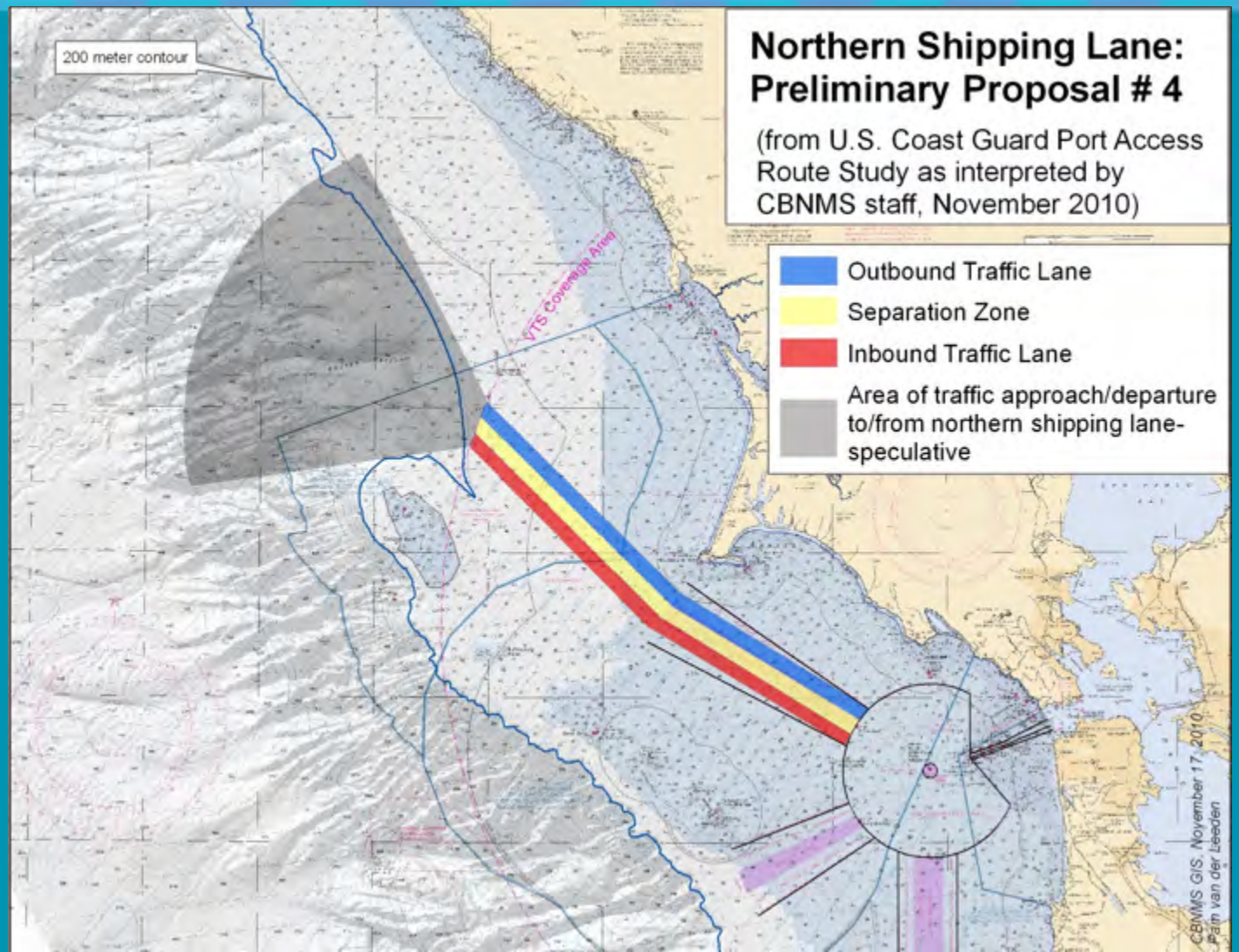
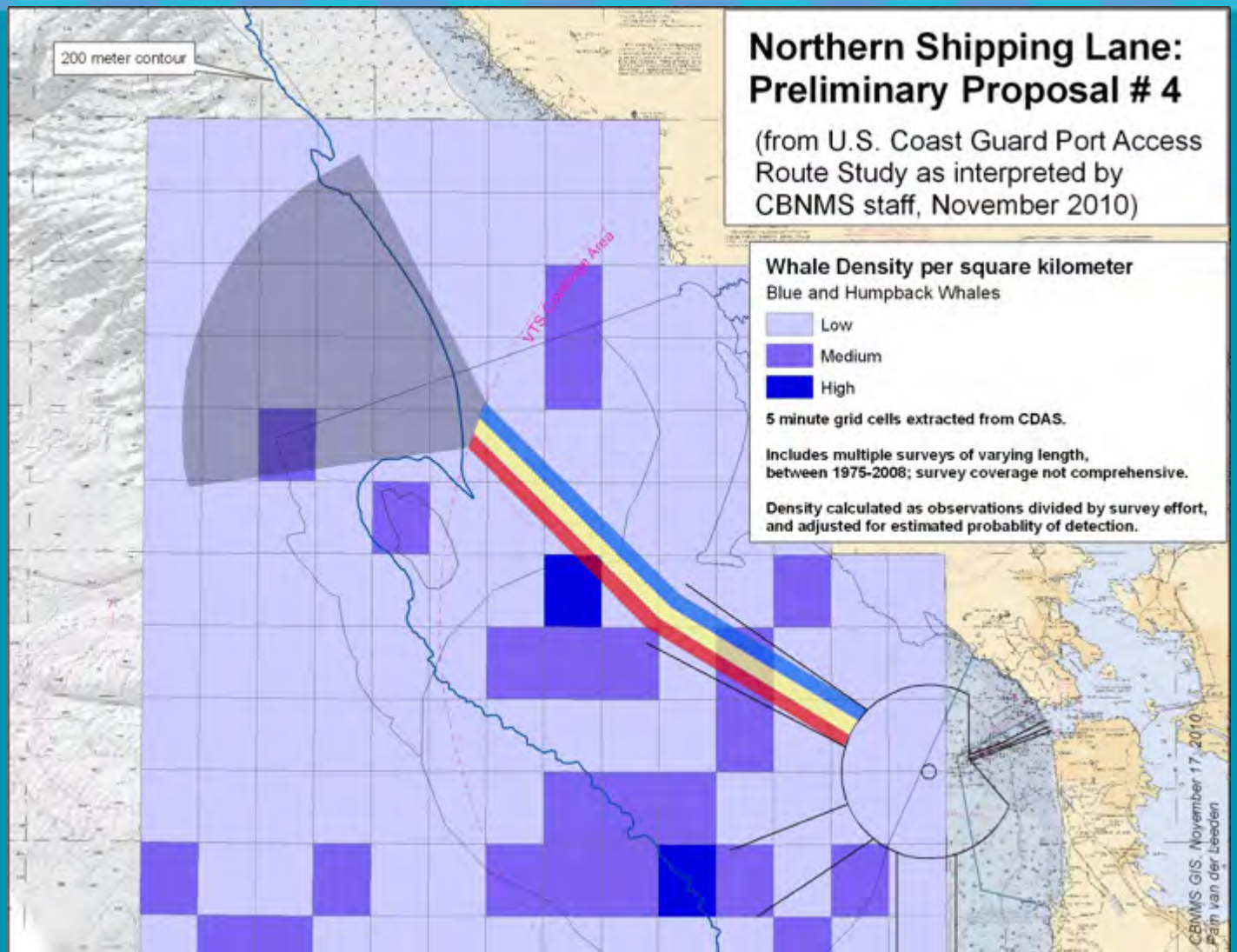
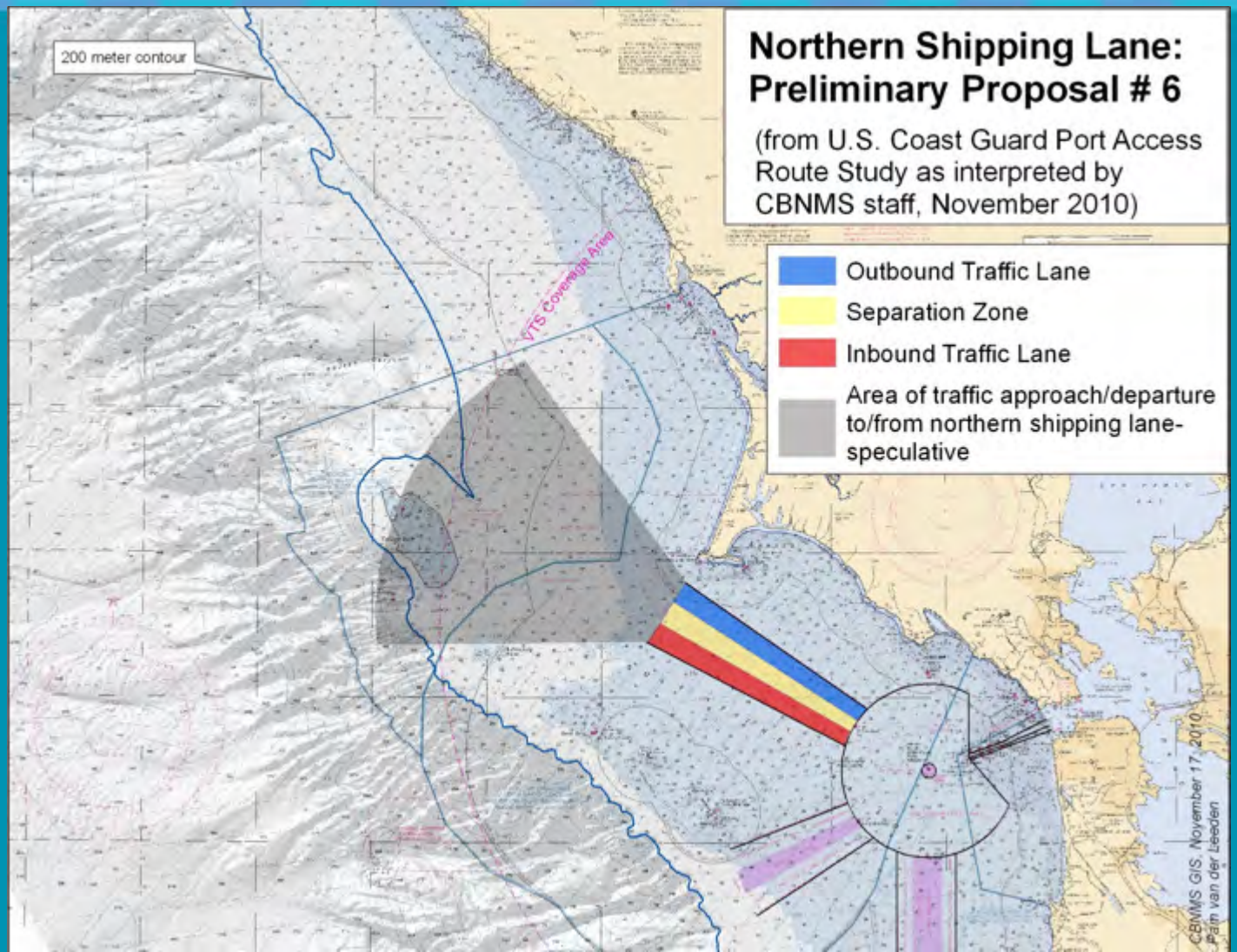
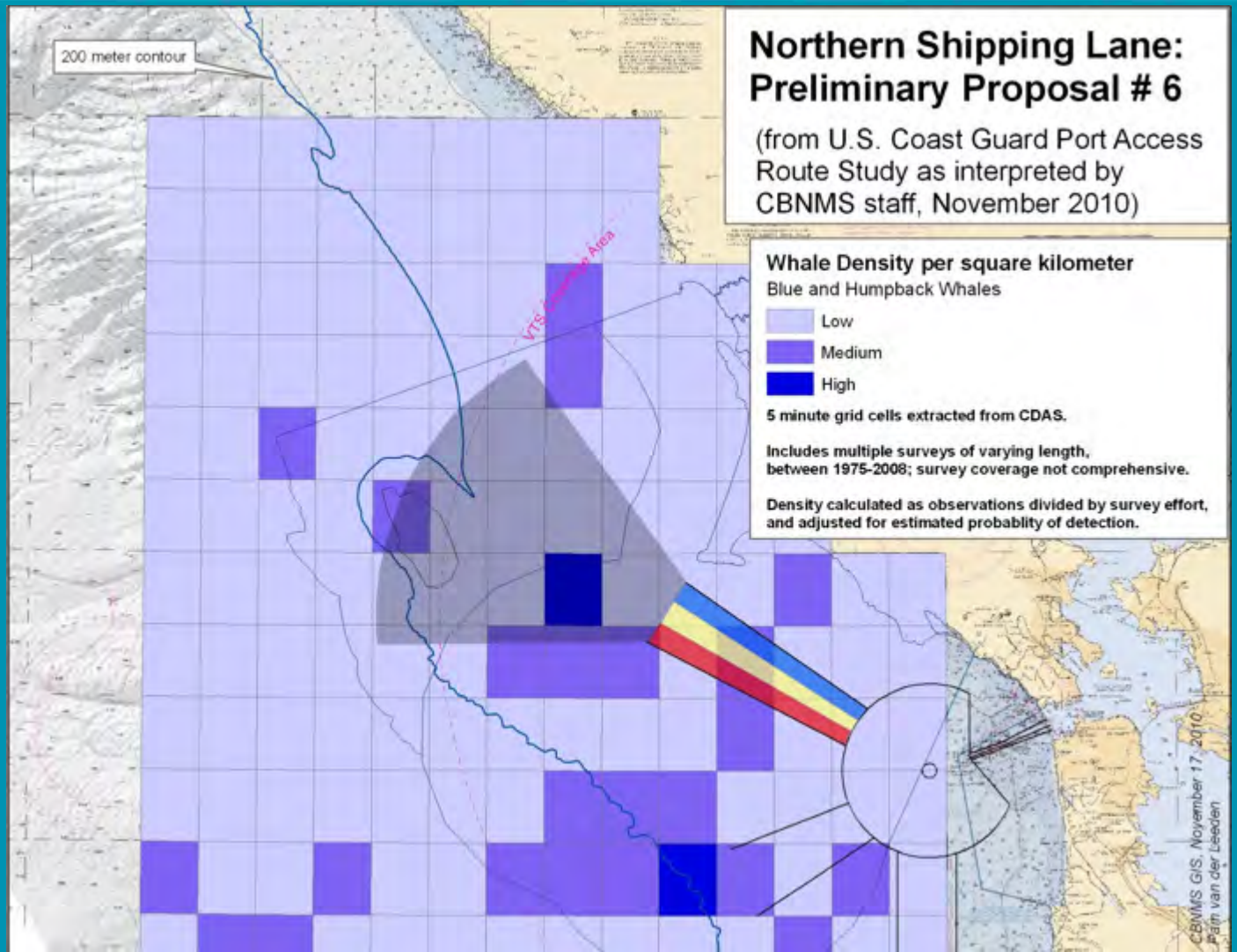

Northern Shipping Lane:
Preliminary Proposal # 4
(from U.S. Coast Guard Port Access Route Study as interpreted by CBNMS staff, November 2010)
200 meter contour
VTS Coverage Area
Outbound Traffic Lane
Separation Zone
Inbound Traffic Lane
Area of traffic approach/departure to/from northern shipping lane-speculative
CBNMS GIS, November 17, 2010
Pam van der Leeden


200 meter contour
Northern Shipping Lane:
Preliminary Proposal # 4
(from U.S. Coast Guard Port Access Route Study as interpreted by CBNMS staff, November 2010)
Whale Density per square kilometer
Blue and Humpback Whales
Low
Medium
High
5 minute grid cells extracted from CDAS.
Includes multiple surveys of varying length, between 1975-2008; survey coverage not comprehensive.
Density calculated as observations divided by survey effort, and adjusted for estimated probablity of detection.
CBNMS GIS, November 17, 2010
Pam van der Leeden


Northern Shipping Lane:
Preliminary Proposal # 6
(from U.S. Coast Guard Port Access Route Study as interpreted by CBNMS staff, November 2010)
Outbound Traffic Lane
Separation Zone
Inbound Traffic Lane
Area of traffic approach/departure to/from northern shipping lane- speculative
200 meter contour
VTS Coverage Area
CBNMS GIS, November 17, 2010
Pam van der Leeden


200 meter contour
Northern Shipping Lane:
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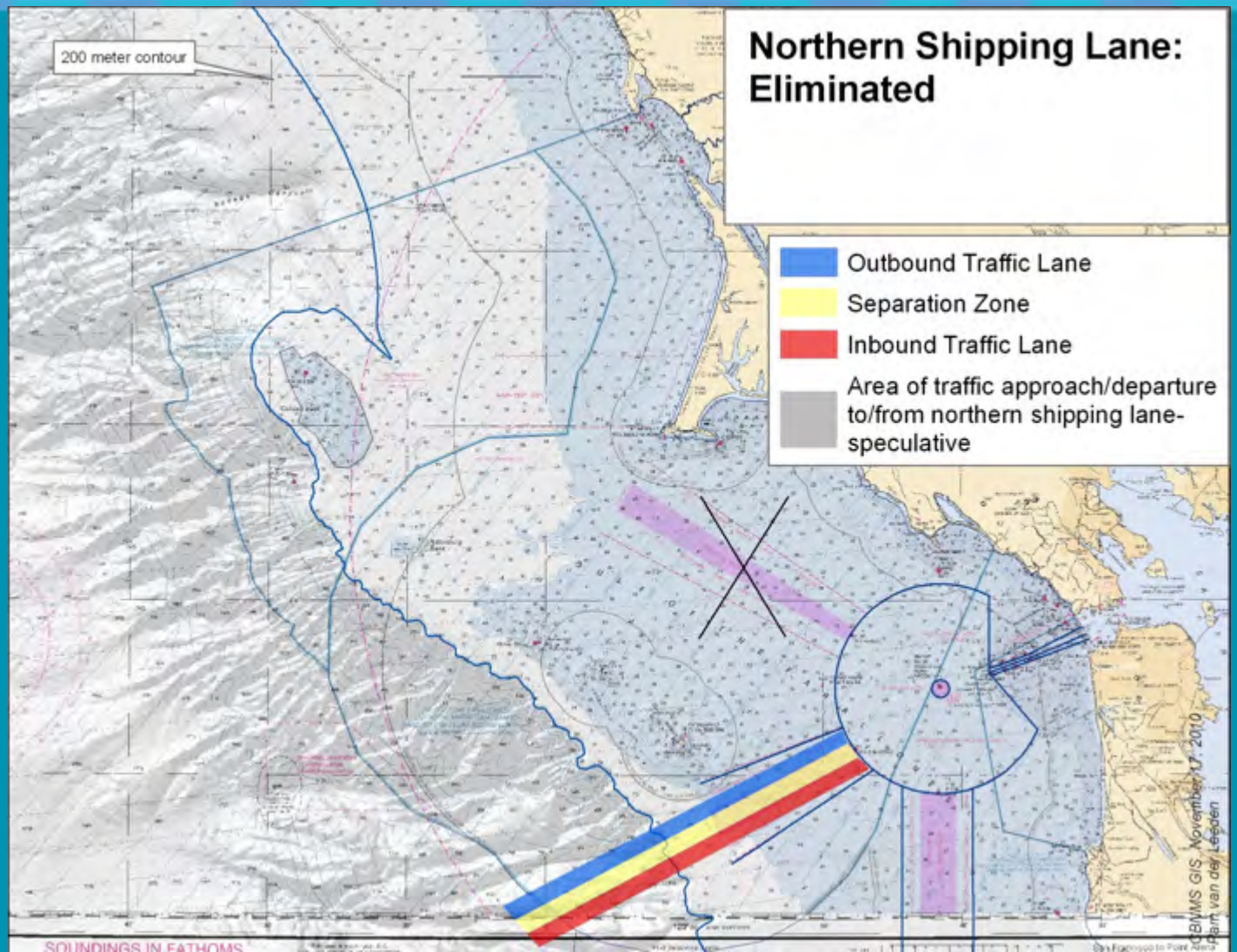
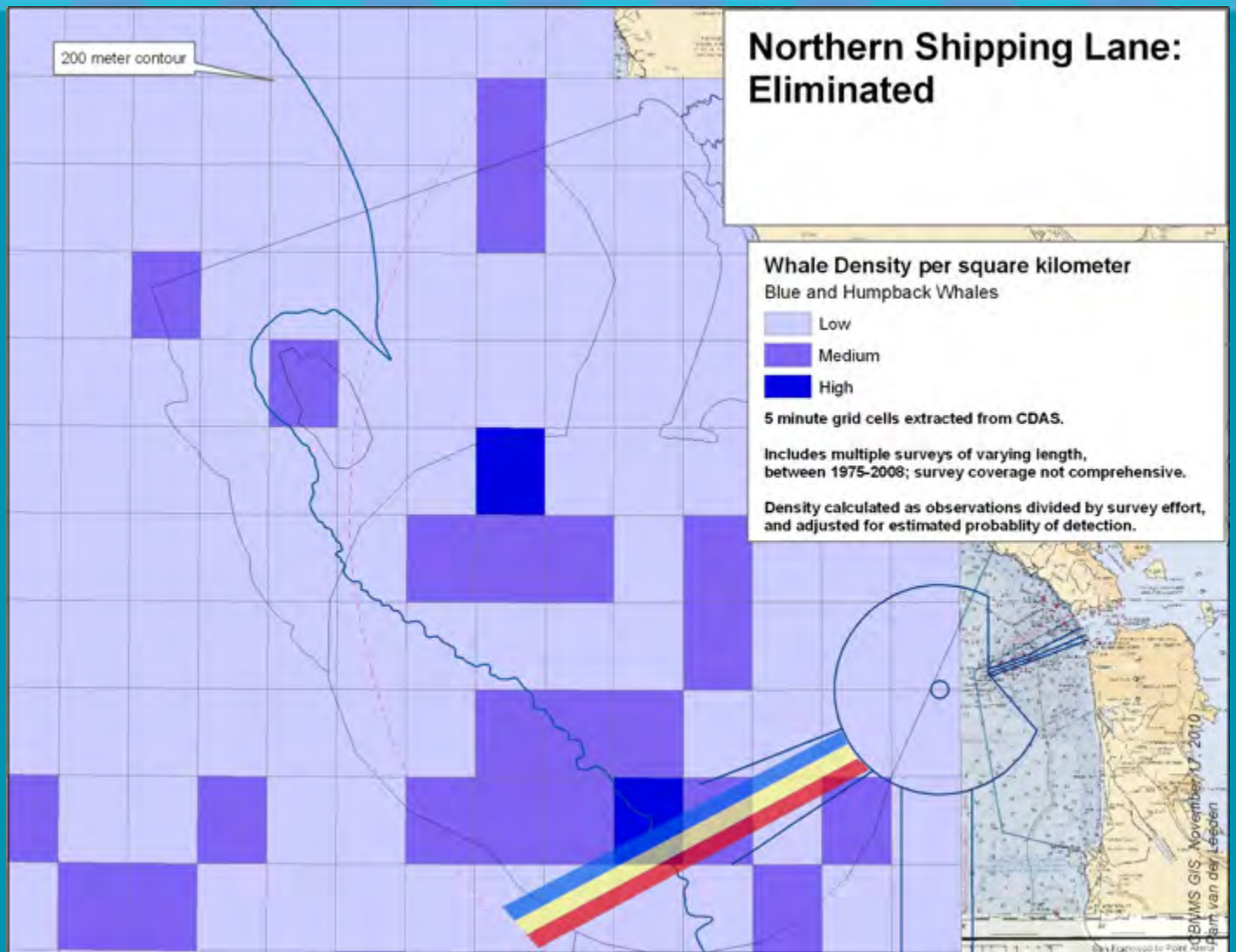
VTS Coverage Area
CBNMS GIS, November 17, 2010
Pam van der Leeden


200 meter contour
Northern Shipping Lane: Eliminated
Outbound Traffic Lane
Separation Zone
Inbound Traffic Lane
Area of traffic approach/departure to/from northern shipping lane-speculative
SOUNDINGS IN FATHOMS
MBWMS GIS, November 17, 2010
Pam van der Leeden


200 meter contour
Northern Shipping Lane: Eliminated
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Medium
High
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BBMMS GIS, November 17, 2010
Pam van der Leeden

Perspective

- 1989 PARS recommended shift of the southern TSS to reduce risk of grounding on the San Mateo coastline.

- Implementation delayed until study of potential impacts on Monterey Bay National Marine Sanctuary was conducted. October 1998 Vessel Management Report concurred with recommended shift of TSS.

- Recommended TSS shift implemented August 2000.

National Marine Sanctuaries
National Oceanic and Atmospheric Administration

NATIONAL MARINE SANCTUARIES

CORDELL BANK