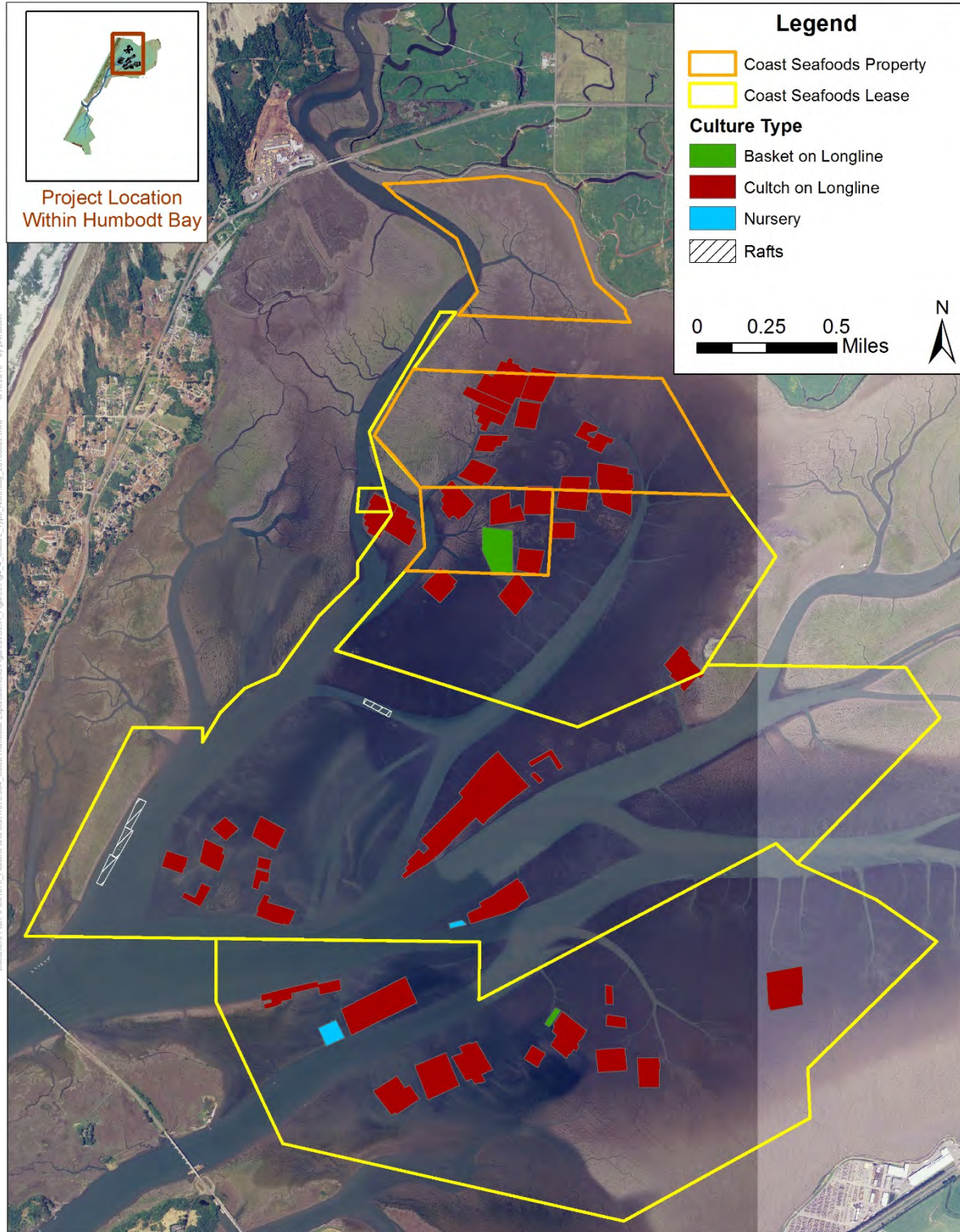




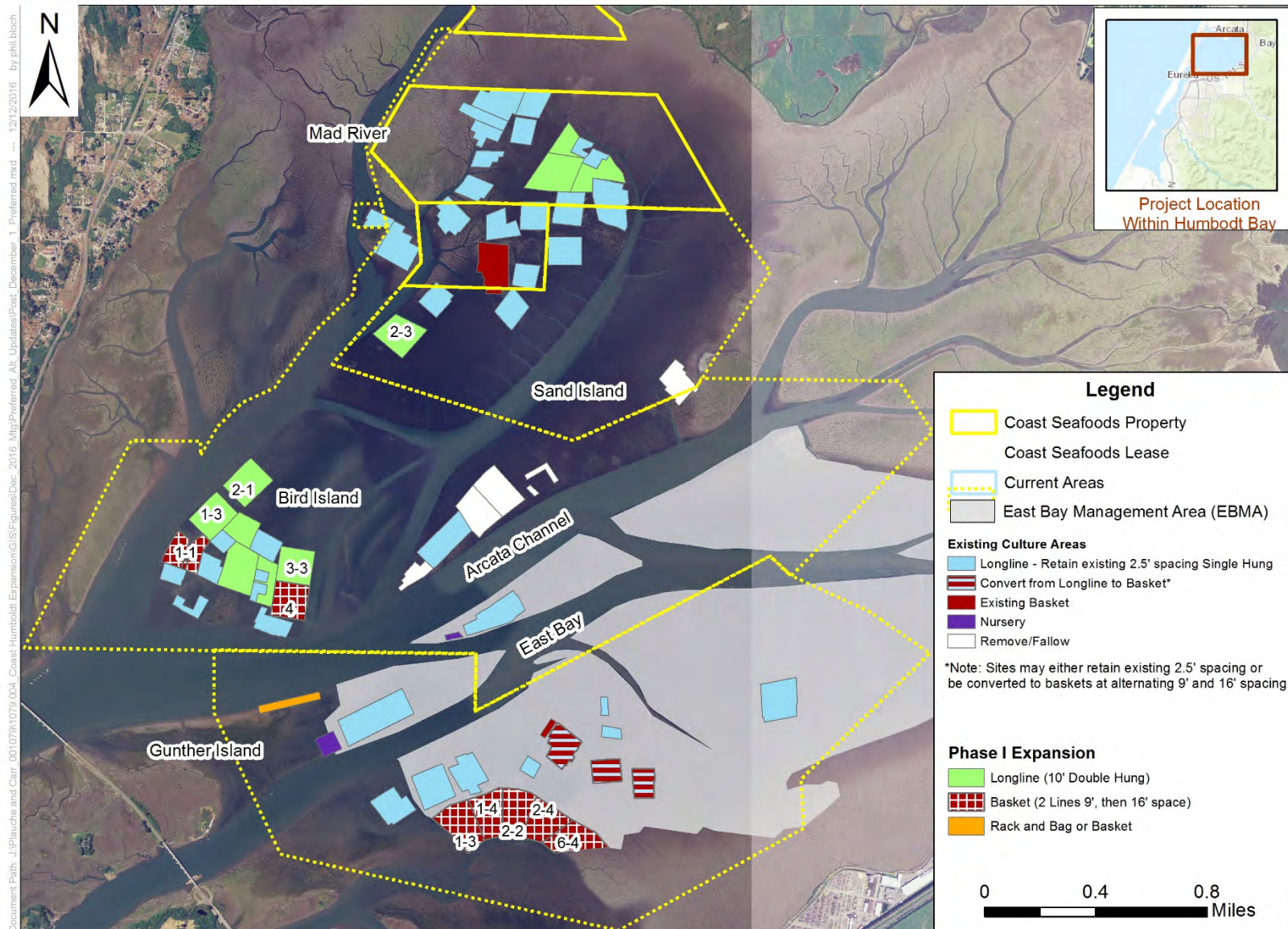
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Coast's existing intertidal and subtidal shellfish culture footprint and methods in North Bay.³

Draft, not for submission. For discussion of options only.
12 December 2016 - Phase I

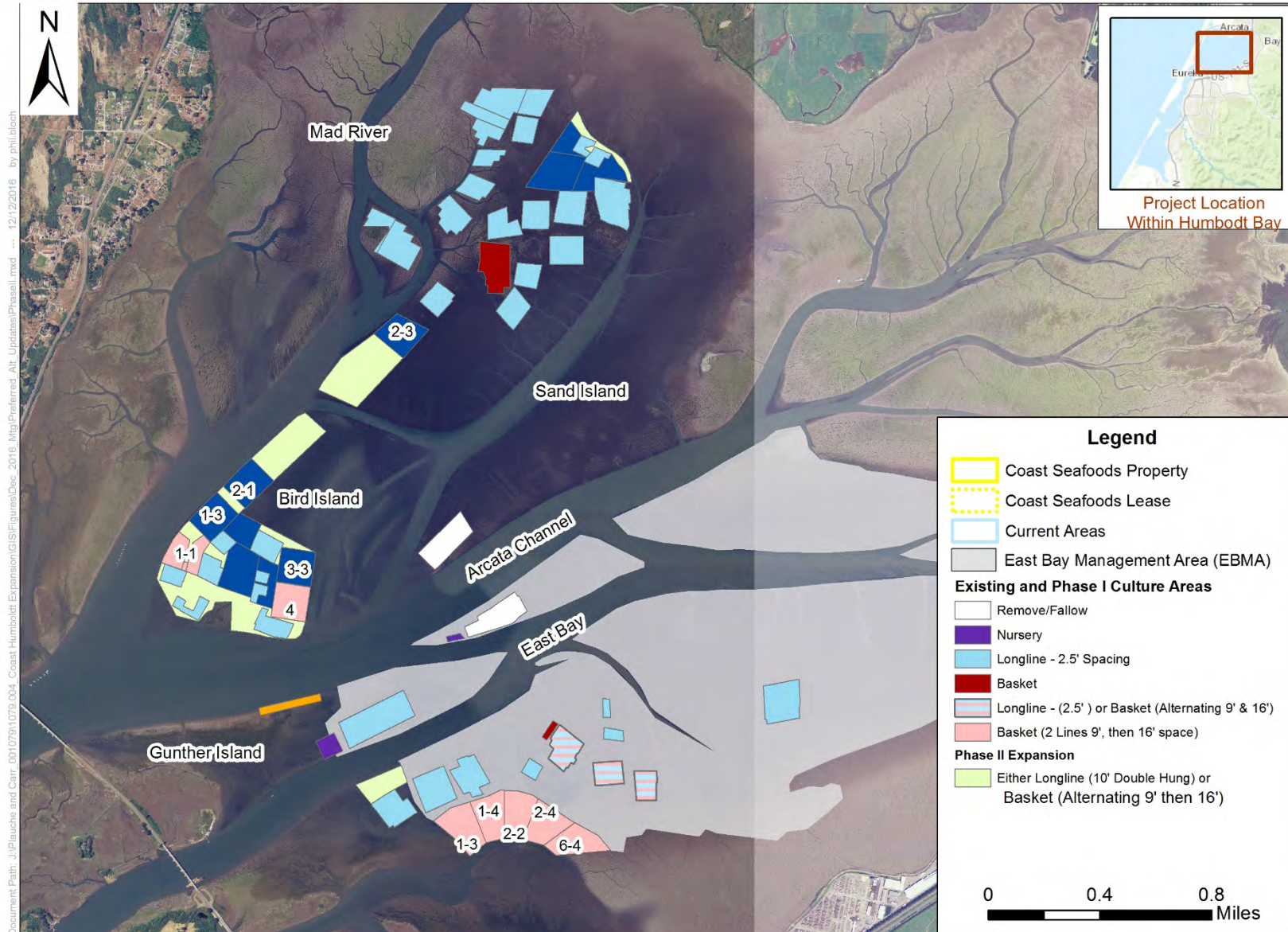


Overview of Phase I Showing Proposed Expansion and Removal of Existing Aquaculture.



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Overview of Phase II Proposed Expansion and Removal of Existing Aquaculture.

Rack and bag culture in Humboldt Bay.

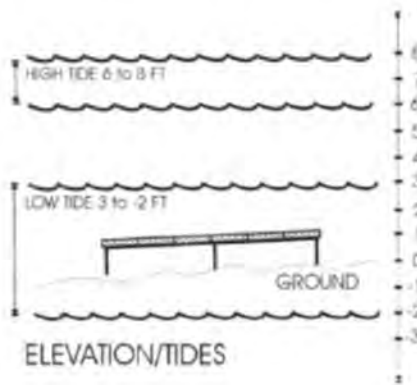
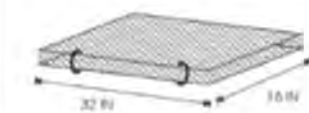


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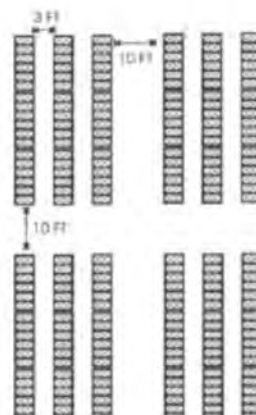
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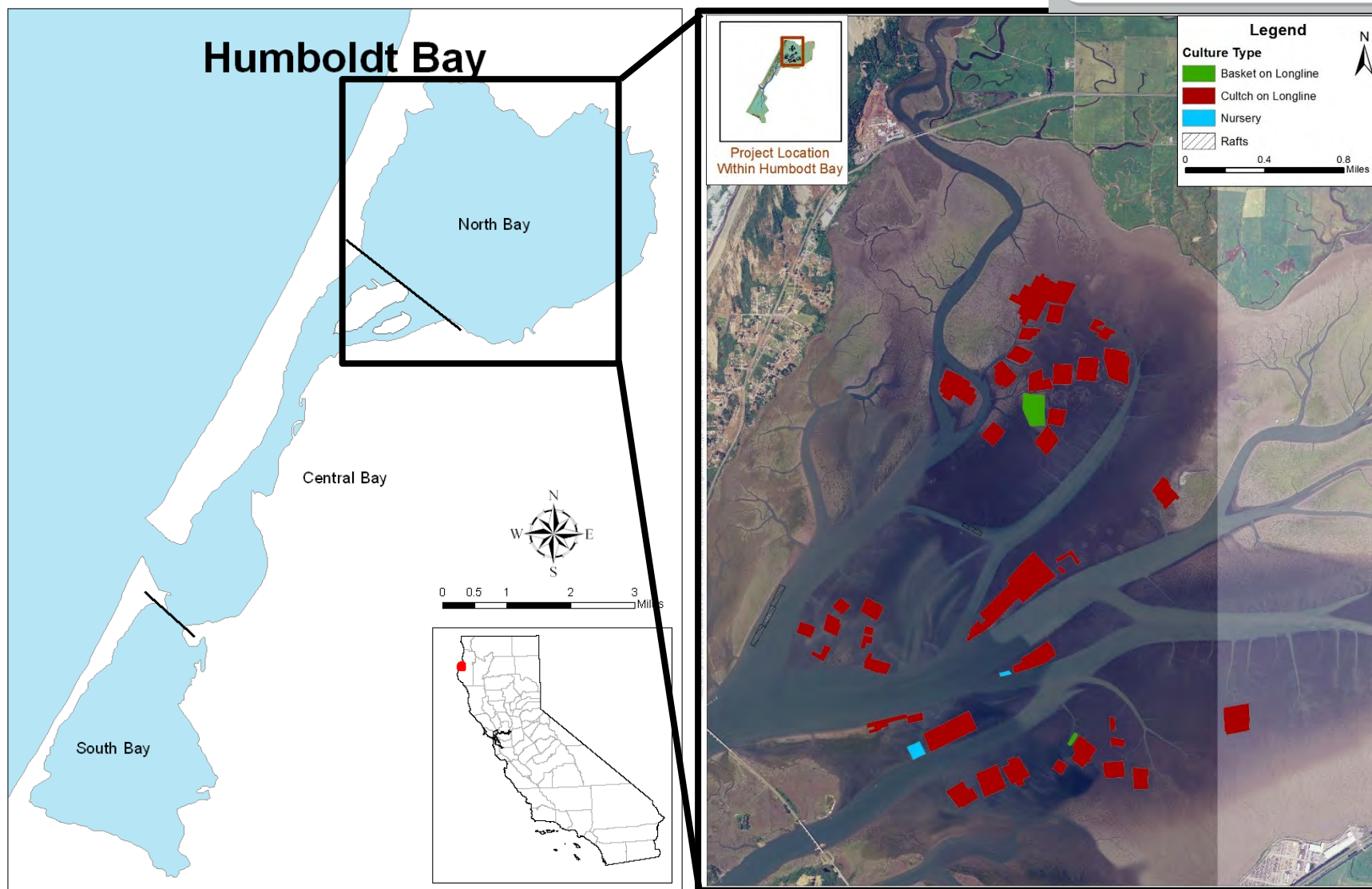
Rack and Bag Culture



TYPICAL PLOT



Rack and bag culture
configuration.



Location of Humboldt Bay, California, and Existing Shellfish Aquaculture.

Source: GIS layers provided by Wagschal, pers. comm., 2015; Notes: Habitat and shellfish culture areas based on data from NOAA (2012).

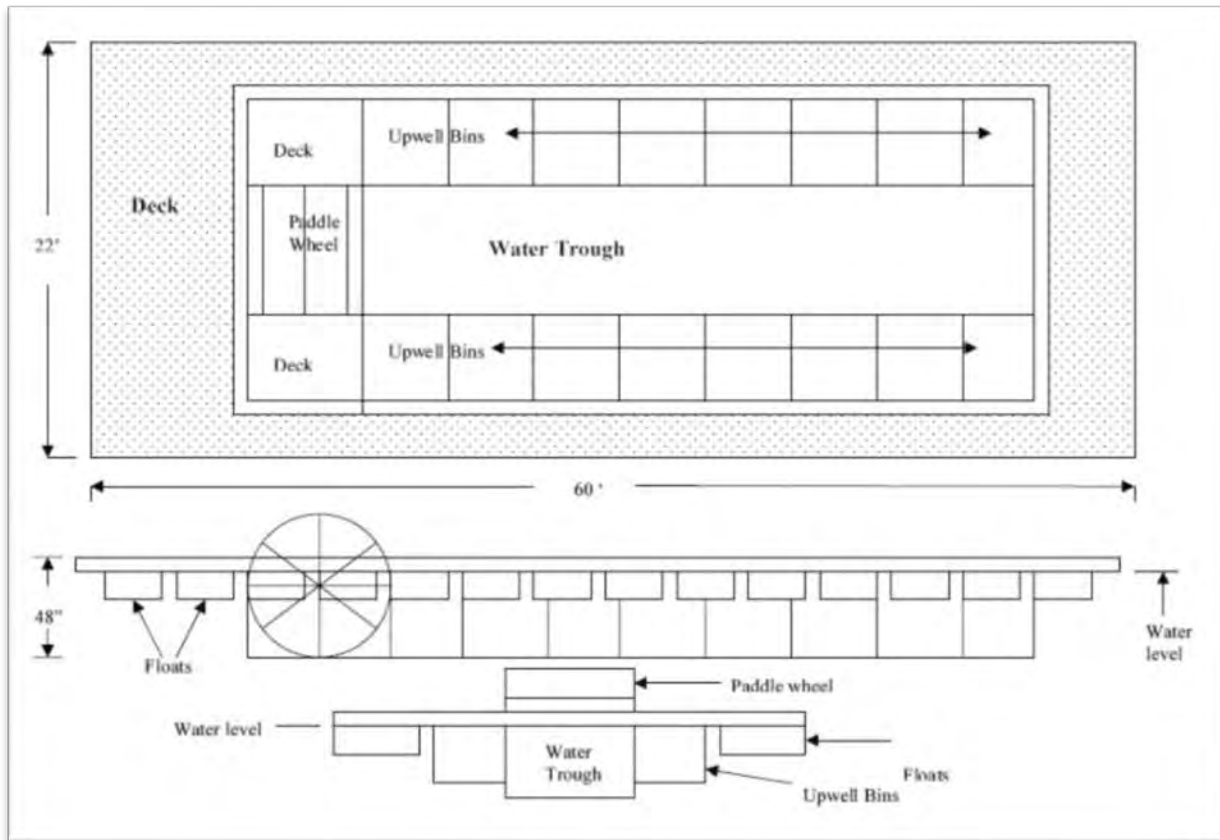
Subtidal Floating Upwelling System

FLUPSY Configuration.



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Intertidal Nurseries

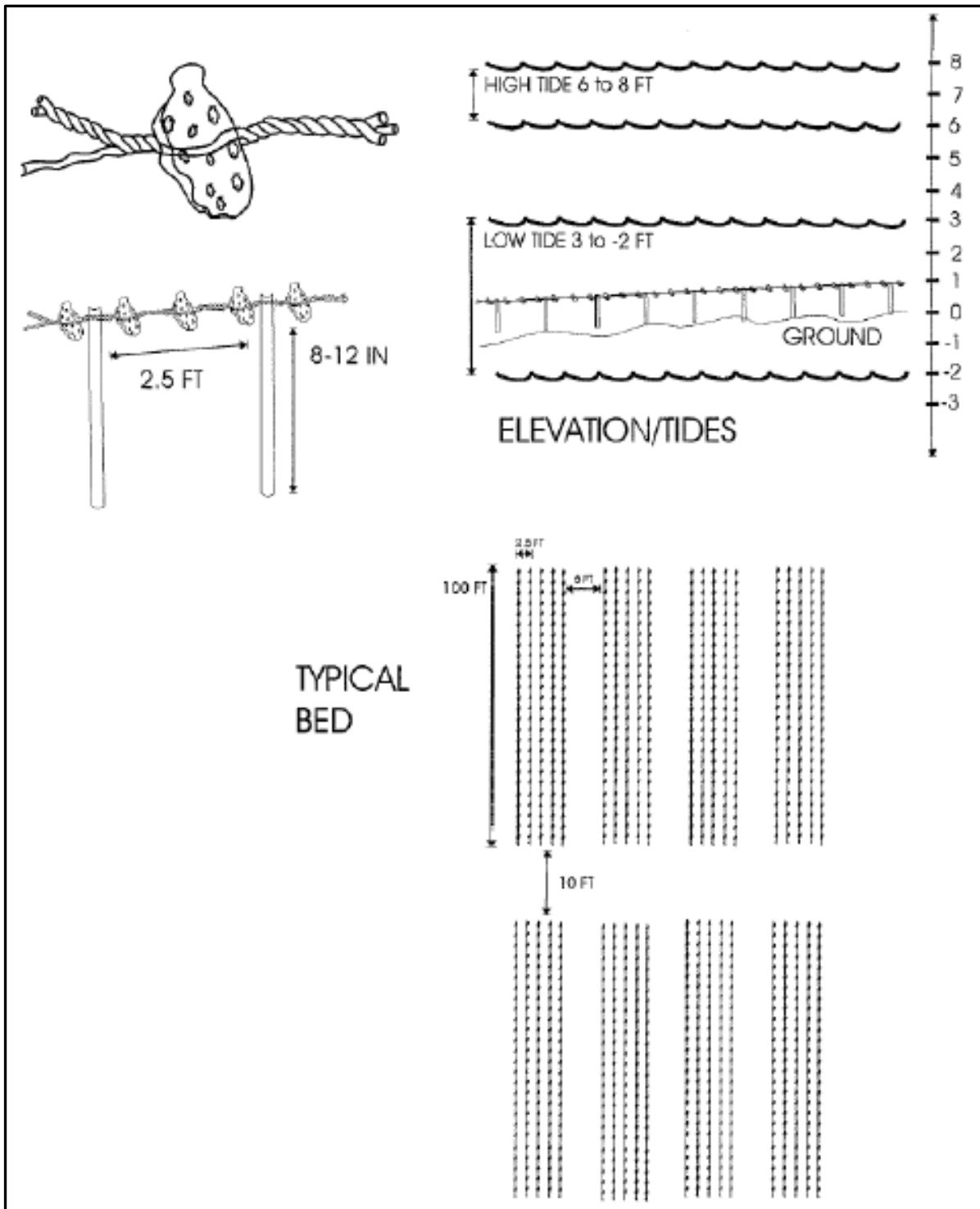


Seed bags at a nursery.



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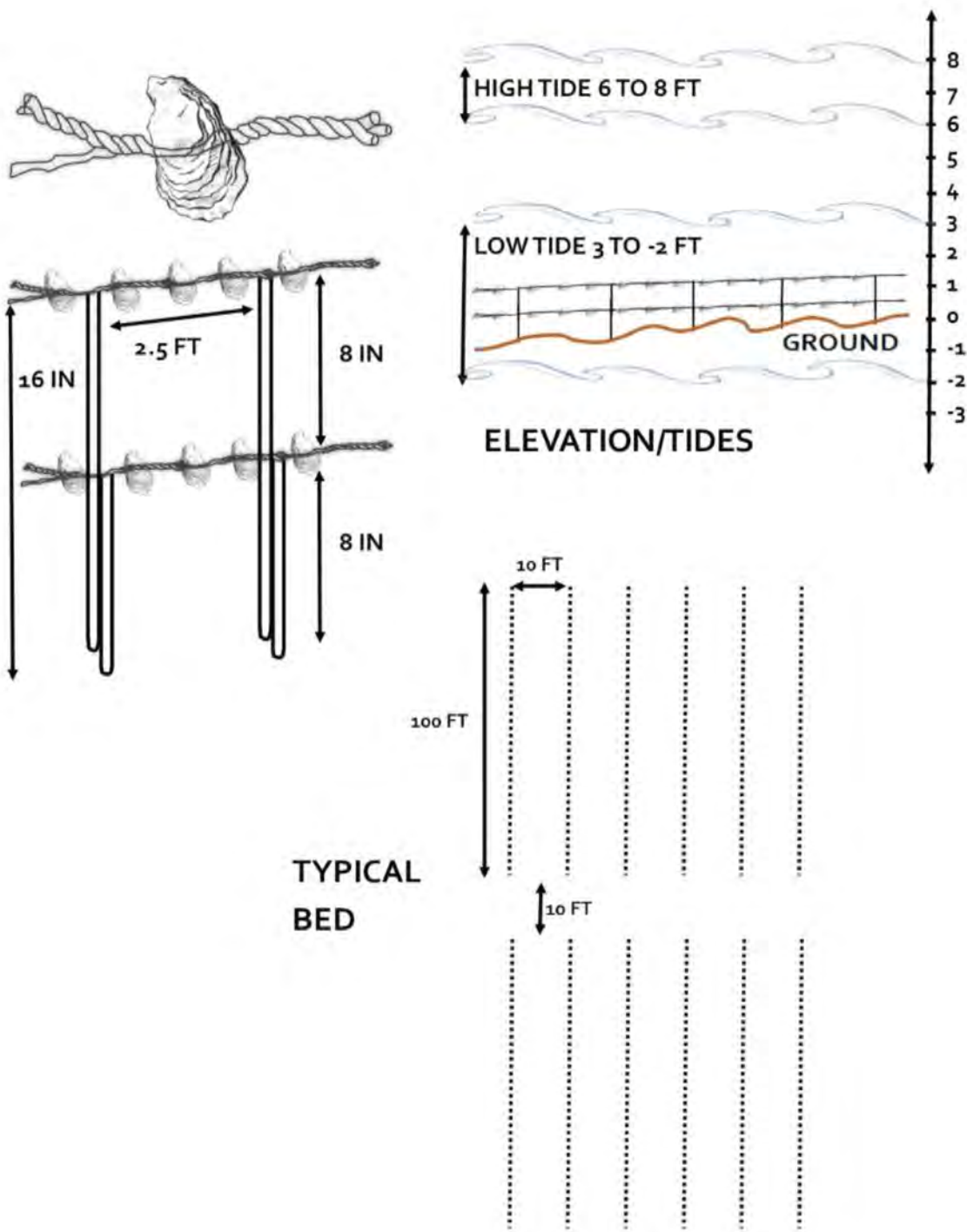


Configuration of cultch-on-longline oyster culture within Coast's existing culture area.



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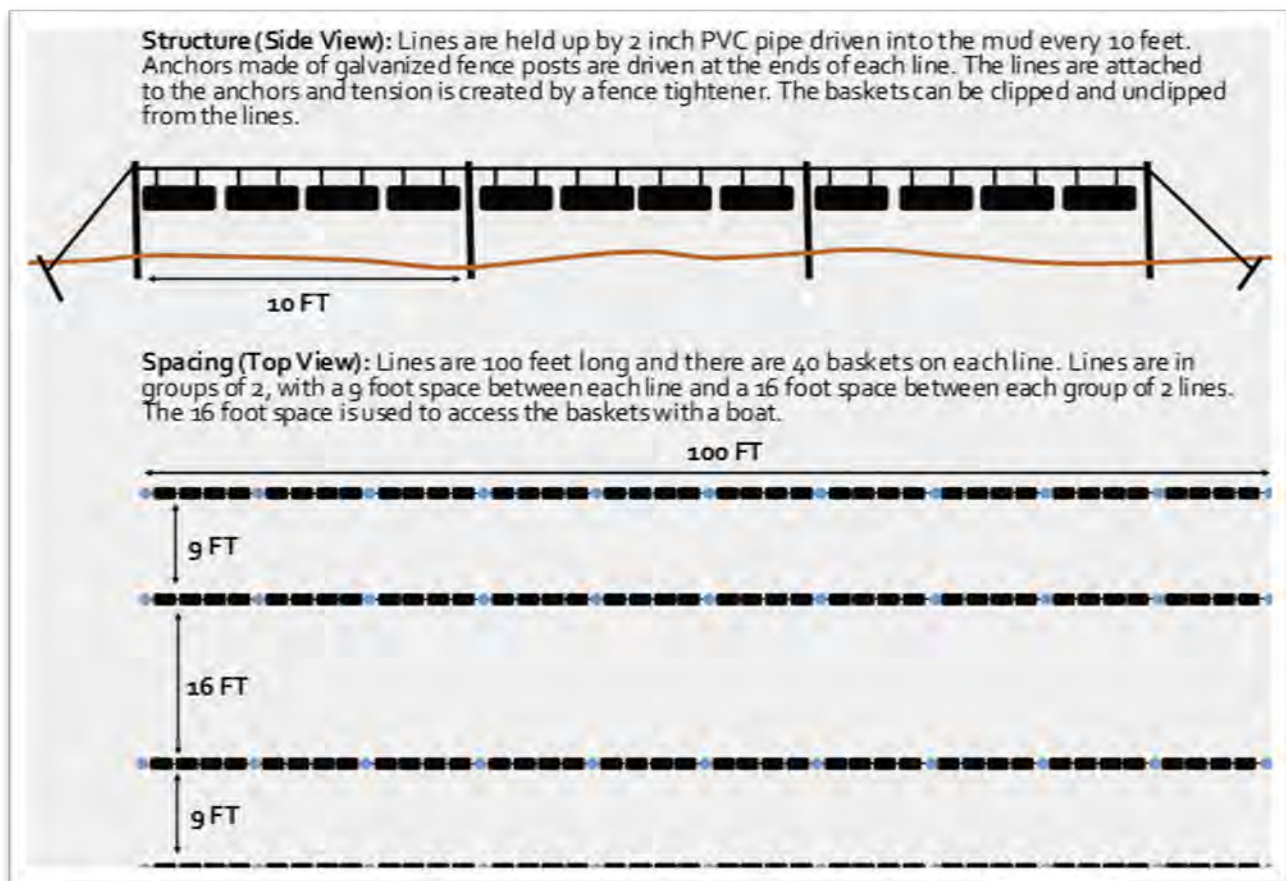
Proposed configuration of 10-ft spaced, double-hung cultch-on-longline within 150 acres of Coast's Phase I expansion area.



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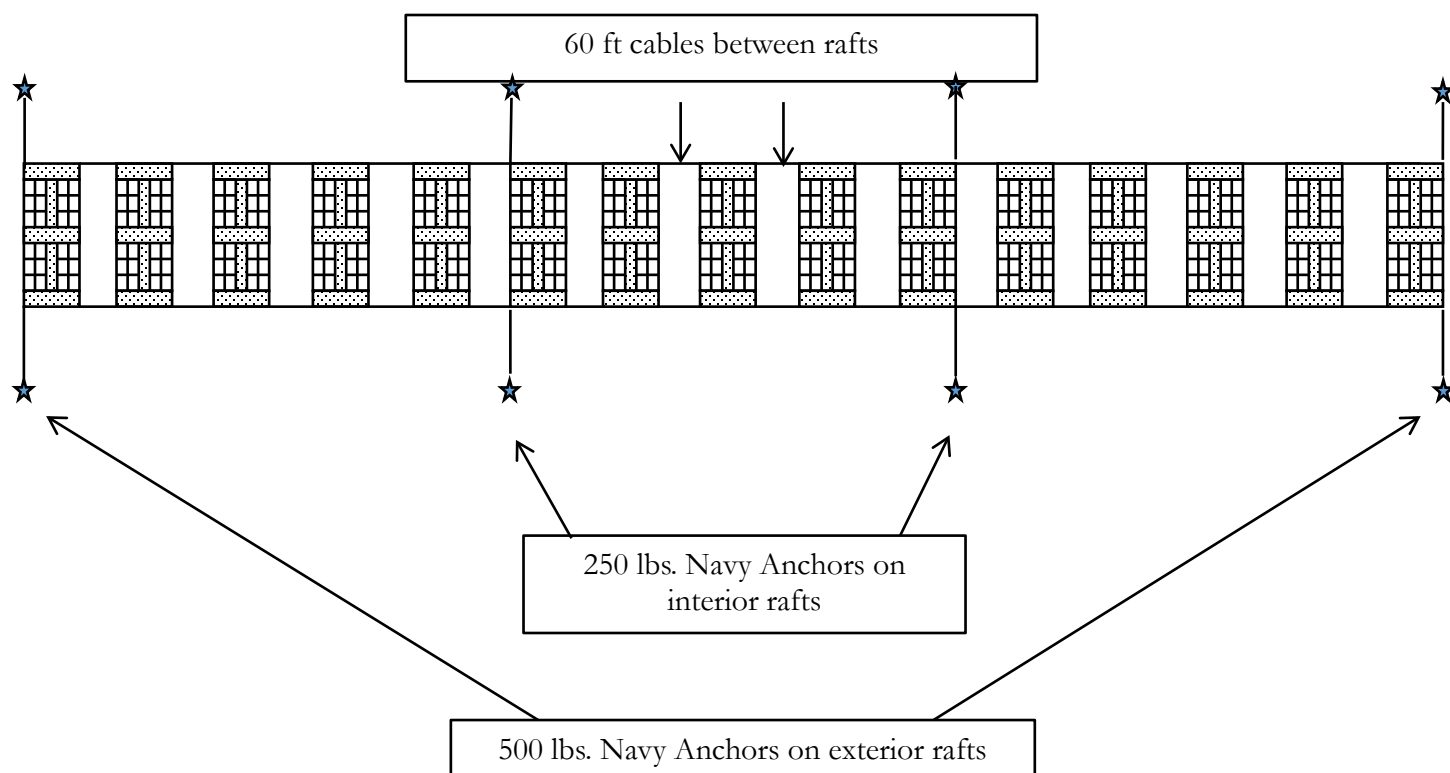
Intertidal Basket-on-Longline Culture



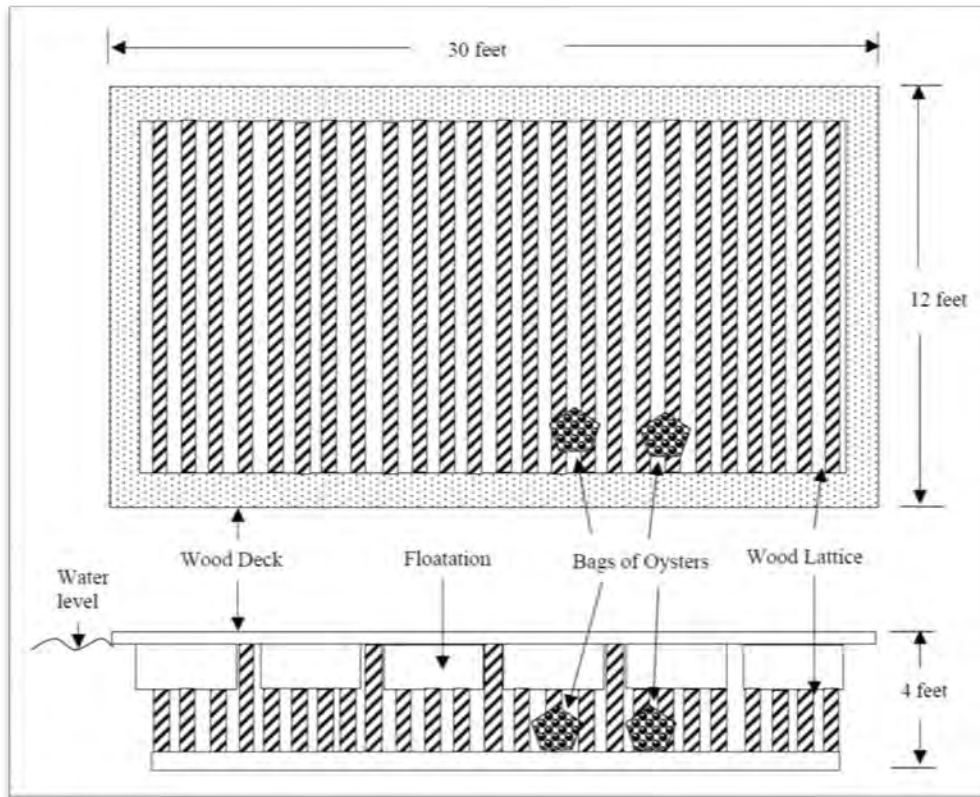
Proposed configuration of basket-on-longline within 50 acres of Coast's Phase I expansion area.



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Configuration of clam rafts.



Configuration of wet storage floats.



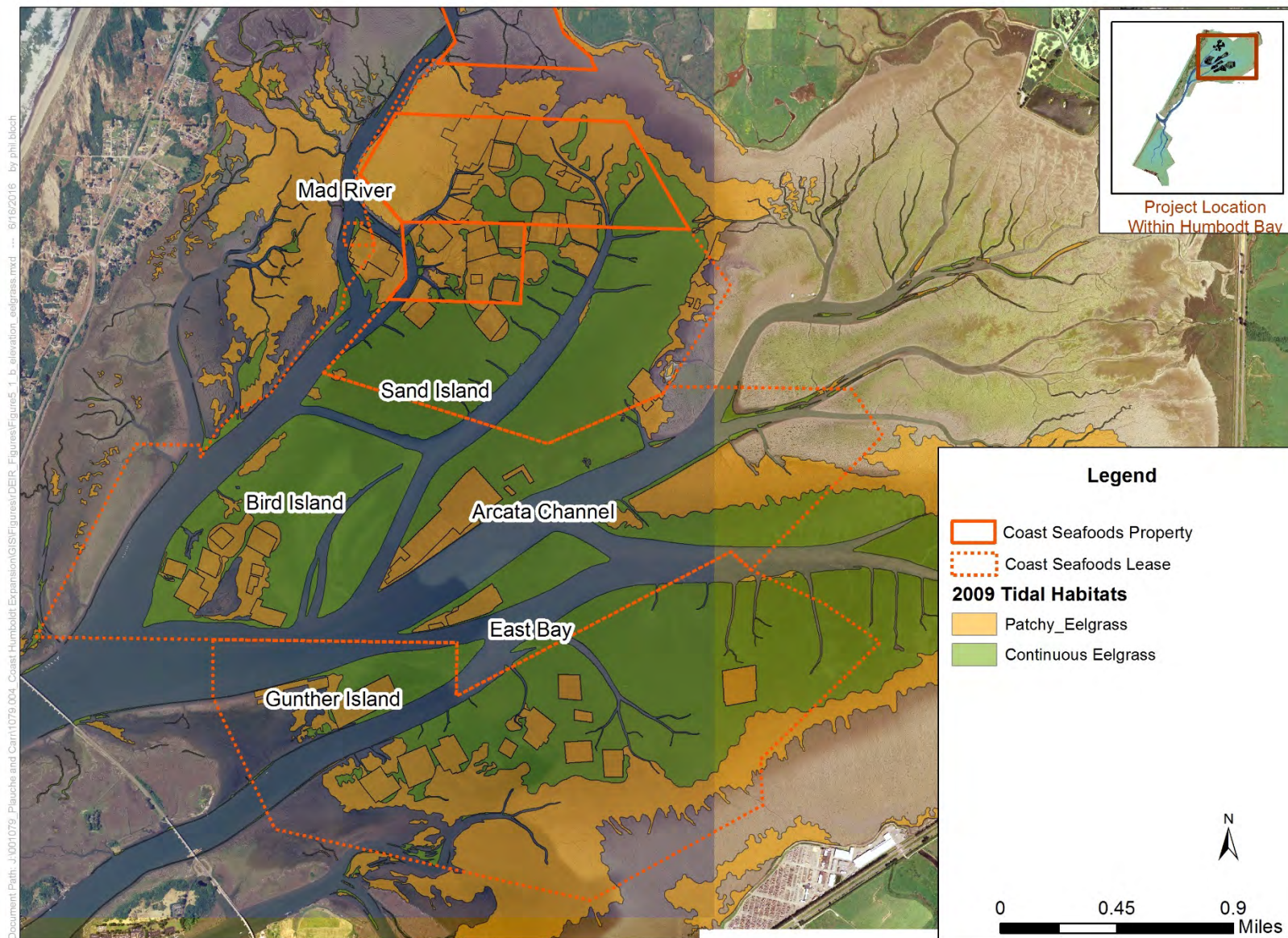
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Table 1 Habitat Categories by Culture Method

Area	Total Subtidal Habitat (acre)	Intertidal Habitat (acre)			Total Intertidal Habitat (acre)
		Non Eelgrass	Patchy Eelgrass	Continuous Eelgrass	
North Bay*	1127.2	3535.5	1928.2	1890	7353.7
Existing Culture					
Other	1.0**	3.2	1.6	1.3	4.8
Cultch-on-Longline	[0.1]	8.5	249.8	24.4	282.7
Basket-on-Longline	0	0	10.4	0.8	11.2
Total Culture	1	11.7	261.8	25.2	298.7***
Habitat Overlap (%)	0.1%	0.3%	13.6%	1.3%	4.1%
Proposed Culture (Expansion) - Phase I					
Rack-and-Bag	0	4	0	0	4
Cultch (10-ft double-hung)	0	2.7	30.2	56.3	89.2
Basket-on-Longline (9-ft)	0	1.2	48.9	20.6	71.9
Total Culture	0	9.2	79.1	76.9	165.2
Habitat Overlap (%)	0.0%	0.3%	4.1%	4.1%	2.2%
Proposed Removal (Mitigation) Phase I					
Cultch-on-Longline	0	0	34.4	0	34.4
Habitat Overlap (%)	0%	0%	1.8%	0%	0.5%
Proposed Culture (Expansion) - Phase II					
Cultch (10-ft double hung) or Basket (9-ft)	0	8.1	32.6	50.1	90.8
Habitat Overlap (%)	0.00%	0.2%	1.7%	2.7%	1.2%
Proposed Removal (Mitigation) Phase II					
Cultch-on-Longline	0	0	21.0	0	21.0
Habitat Overlap (%)	0%	0%	1.1%	0%	0.3%
<p>Source: Dale, pers. comm., 2016; NOAA 2012</p> <p>*Values for North Bay are reported as MHW, which is a similar comparison made for other estuaries along the West Coast when comparing habitat overlap.</p> <p>**Some of the existing subtidal culture (e.g., FLUPSY, wet storage floats, clam rafts) occurs in Central Bay, although for summarization purposes it is listed in this table.</p> <p>*** Existing permits are for 300 acres (299 intertidal and 1 subtidal). Existing maps show 298.7 of 299 acres of existing intertidal culture.</p> <p>[] Subtidal habitat calculations are limited to spatial overlap with floating culture in Central Bay. Although basic polygons in North Bay show an overlap with subtidal habitat, no culture would be planted in subtidal channels, including a 10-ft buffer. Therefore, the percent of habitat overlap is shown as 0.0%.</p>					



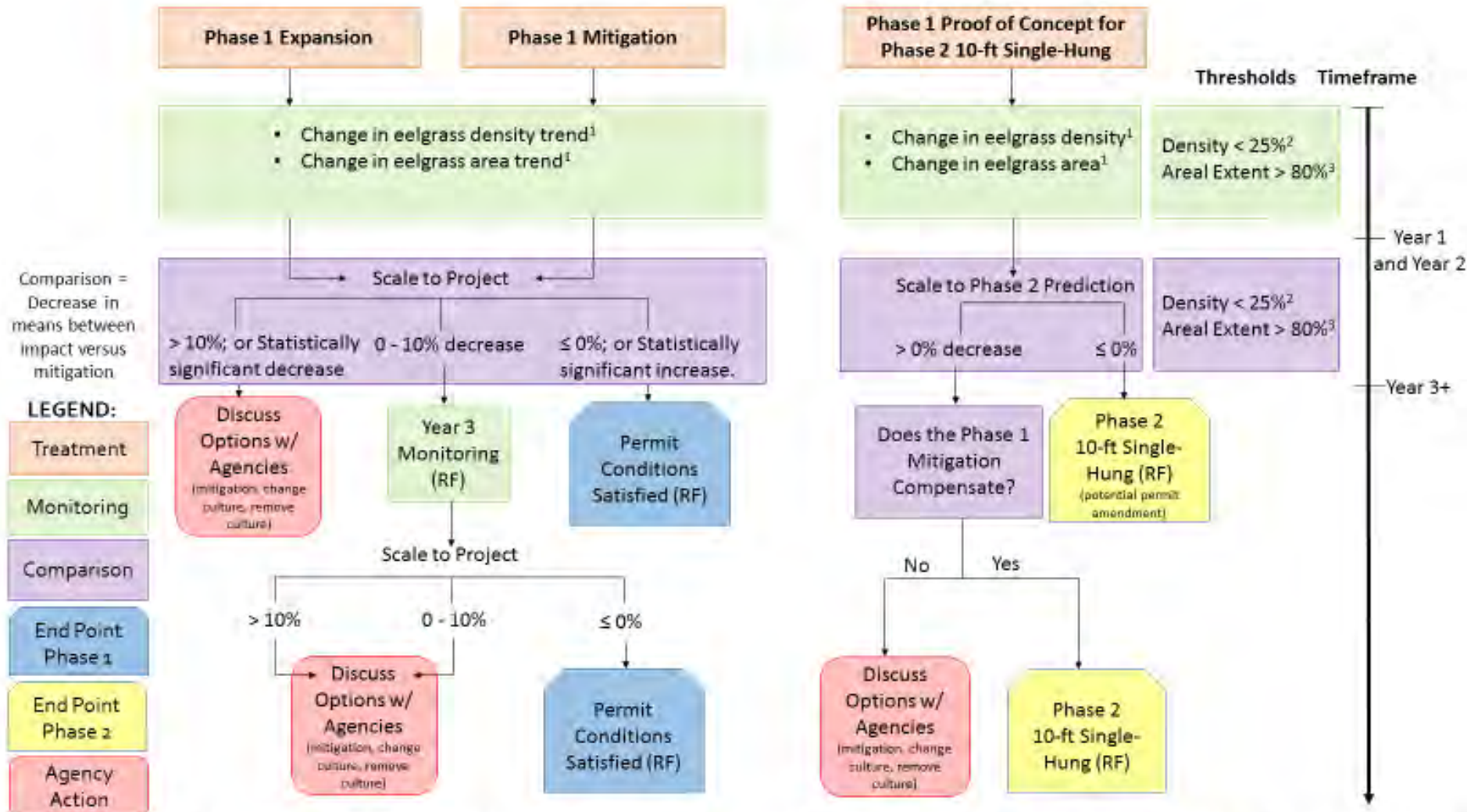
Map of Coast's leased and owned area with continuous and patchy eelgrass coverage.

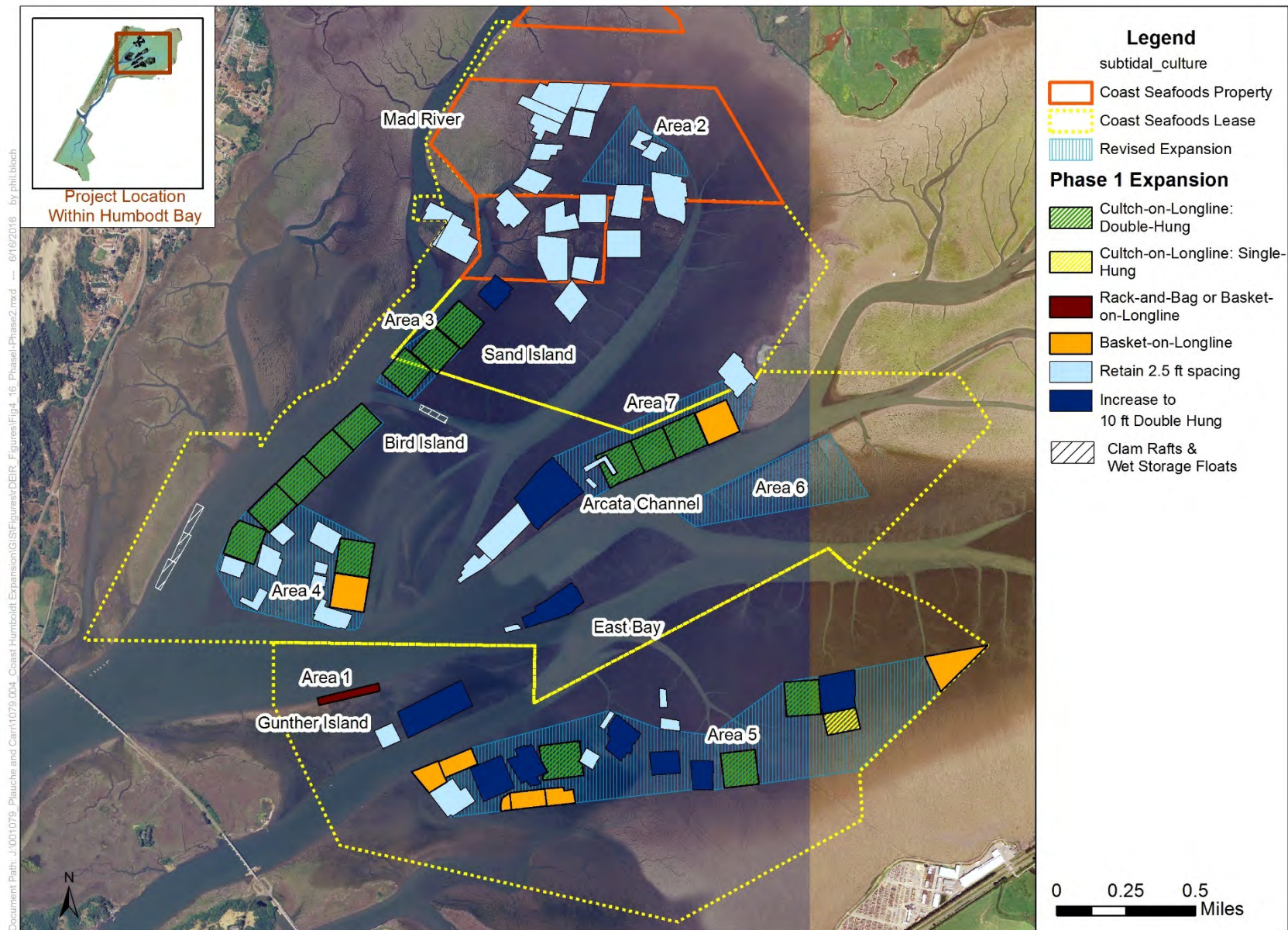


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Proposed Adaptive Management Process for the Proposed Coast Expansion Project.

DECISION TREE – ADAPTIVE MANAGEMENT





Location of the Re-Designed Phase I Proposed Expansion and Conversion of Existing Aquaculture. *Source:* Habitat and shellfish culture areas based on data from NOAA 2012 and elevation data provided by Wagschal, pers. comm., 2016.



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