



The Importance of Maritime Technology: Promoting **Blue Tech & Blue Jobs**

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THE MARITIME ALLIANCE

“Promoting **Blue Tech** & **Blue Jobs**”



The mission of **The Maritime Alliance** is "Promoting **Blue Tech** & **Blue Jobs**". The non-profit **The Maritime Alliance** is the cluster organizer for the San Diego maritime technology community and fosters maritime business and technology innovation through collaboration around the U.S. and the world.



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What do we mean by **Maritime Technology**, **Blue Tech** & **Blue Jobs**?

Maritime technology – all high-tech maritime products and services

Blue Economy – the sum of economic activity having to do with oceans, seas, harbors, coastal and intra-coastal waters

Blue Jobs – all employment created by the **Blue Economy**

Blue Tech – innovation of technology in the maritime domain



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The **Blue Economy**:

- U.S. Exclusive Economic Zone (1983): added more than four MM square miles of marine territory; doubled the area of U.S. territory
- **Coastal Economy** (2007)
 - Coastal states = 77% of U.S. population and 83% of GDP
 - Coastal counties = 18% of U.S. land, 108 MM residents, 48 MM jobs (31% of total), and GDP of \$5.7 trillion in 2007 (40% of total)
- **Ocean Economy**: an important subset of the Coastal Economy, but so far no good statistical information on its size
- **Maritime Technology**: not included due to lack of data

* Source: National Ocean Economics Program and Dr. Judith Kildow (testimony before the U.S. Senate, June 2009)



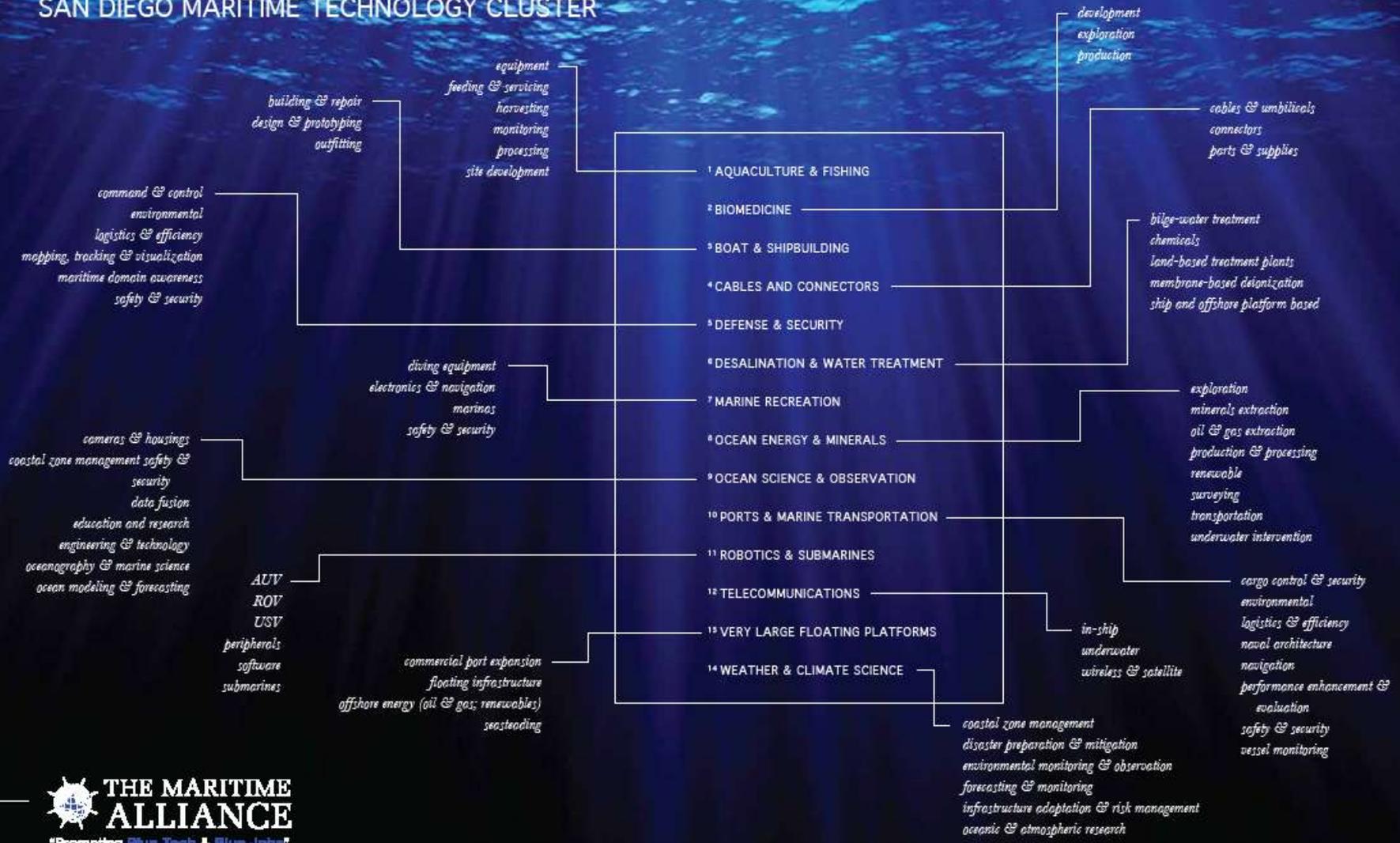
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Blue Tech:

- Highly differentiated industry – 14 sectors in San Diego; many sub-sectors
- Prevalence of multi-use technologies from small, specialized firms
- Largely invisible in local markets / limited public & government awareness
- No baseline economic data
- Highly export-oriented
- Markets exist in every country
- Growth in most sectors outpaces world economic growth

SAN DIEGO MARITIME TECHNOLOGY CLUSTER





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Blue Jobs potential - size and growth (select 3 sector overview):

- **Aquaculture:**
 - 50 percent of global seafood supply today / expected to be 67% by 2030
 - U.S. imported \$14.6 billion of fish and shellfish in 2010*
 - U.S. world leader in technology development, but no meaningful domestic offshore industry
 - Large job potential for regions that want it
- **Desalination:**
 - \$10 billion worldwide in 2010. Growing to \$30 billion by 2016**
 - San Diego as case study
 - birthplace of RO membrane / 3,000 jobs in San Diego (not counted in 2009 maritime report)
 - not recognized until recently
- **Robotics**
 - ROV market 2010 = \$1.7 billion; 2014 = \$3.4 billion***
 - AUV market spending 2010-2019 = \$2.3 billion***
 - Multi-use: defense, port security, aquaculture, oil & gas

* U.S. Bureau of Economic Analysis, June 2011

** Global Water Intelligence, January 2011

***Douglas-Westwood (World Market Reports)



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Leading U.S. Maritime Tech Clusters

Where are they and what do they focus on?

- Florida – primarily recreational boating traditionally. Maritime tech cluster being created in Tampa/St. Pete (SRI Intl.).
- Gulf States / Texas (Houston) – primarily oil & gas based. Technologies such as cables & connectors, drilling equipment, oil rigs, and visualization.
- Hawaii – Major drivers. UH & Navy labs. Focus aquaculture, energy, military.
- Monterey Bay / San Francisco Bay area – MBARI and Silicon Valley based. Focus includes ocean observation, robotics, software.
- Northeast – Represented by MOTN. Major drivers WHOI, MIT and long maritime tradition. Broad focus including ocean observation & robotics.
- Portland – Recent focus on ocean energy.
- San Diego – Represented by **The Maritime Alliance**. Major drivers SIO, U.S. Navy, defense contractors. Broad technology focus.
- Seattle – UW important. Ocean observation, robotics, specialty equipment.



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Blue Jobs:

- *San Diego Maritime Industry Report 2012* (San Diego, July 2012)*
 - 1,431 companies and organizations in maritime industry (200+ NAICS codes)
 - 700+ self-report maritime focus (350+ report over 75% maritime revenue)
 - 45,778 jobs and \$14 billion+ annual direct sales only (Sept. 2011)
 - Largest industry in San Diego (no one knew)
 - Maritime technology industries (as a sub-group):
 - Fastest growing segment with 18,948 jobs
 - \$6.2 billion annual revenue

“SD’s Maritime Industry Cluster, and its functional sub-set, the maritime technology or “Blue Tech” industry set, create one of the most unique regional economies in the world... Current industry codes and official occupational classifications are generally ill-suited to fully capturing the uniqueness of the SD maritime cluster and, especially, Blue Tech.” (p. 4).

* Sponsored by San Diego Workforce Partnership, San Diego Regional EDC and **The Maritime Alliance**



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The Opportunity for IHO Commissions:

- *Provide context - be relevant in today's world*
 - Explanation of change of mission from past...to present...into the future
 - Need to engage political & economic decision makers at national & intl. levels
 - Over 50% of world's population lives near water – who will pay to “retreat” from coast
 - How do we feed and provide clean water for the world's population?
 - Role of floating infrastructure
 - Potential for **Blue Jobs**... and the ability to attract funding for hydrography. Examples:
 - Aquaculture
 - Deep sea mining
 - Ocean Energy (OTEC) – *particularly important for islands paying very high rates*
 - Potential tag lines to underscore the importance of hydrography
 - “Hydrography is the Foundation for Maritime Development”
 - “Hydrography is the Cornerstone of Marine Spatial Planning”



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