



Promoting BlueTech
and Blue Jobs®

Case Study

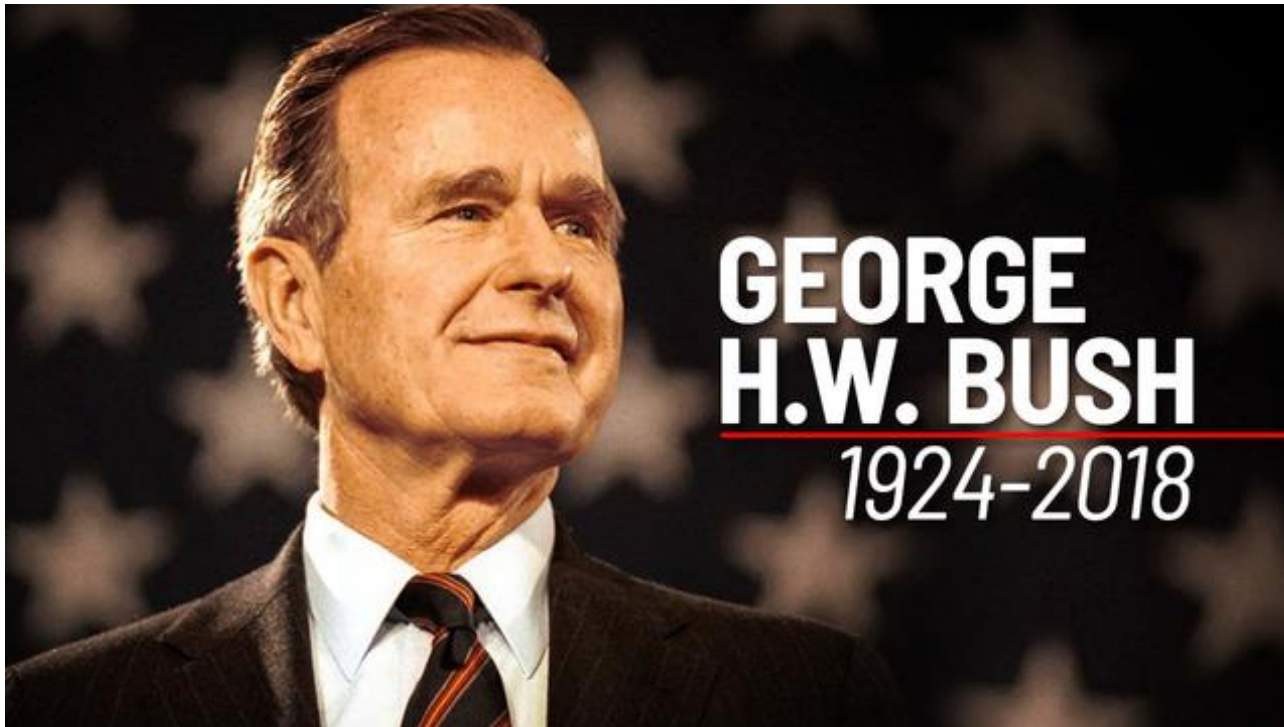
The San Diego Blue Economy

Greg Murphy
Executive Director


www.themaritimealliance.org

President
Blue Economy Strategies
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NACo Presentation
December 5, 2018



National Day of Mourning
Wednesday, December 5, 2018



"President George H.W. Bush's enduring impact on the ocean can be found today across the country in the waters of America's national marine sanctuaries, underwater parks that protect the country's most iconic natural and cultural marine resources,"

- Rebecca Holyoke, deputy director of NOAA's Office of National Marine Sanctuaries.

"As the nation mourns, we are inspired by his efforts to keep our ocean healthy and productive for current and future generations."



Promoting BlueTech
and Blue Jobs®

Non-profit
industry
association &
cluster
organizer

Largest U.S.
BlueTech
cluster – 95
members

Triple Helix:
academia,
industry, &
policy makers

Create a
regional **Blue
Voice**

Entering 13th year

Our Tagline:

**“Promoting BlueTech
and Blue Jobs”®**

Our Mission:

**“Promote sustainable
science-based ocean &
water industries”**



16 Sectors of the **Blue Economy**

Aquaculture and Fishing

Biomedicine

Boats & Shipbuilding

Cables & Connectors

Defense & Security

Desalination/Clean Water

Marine Recreation

Ocean Energy & Minerals

Ocean Instrumentation

Oceanography & Marine Science

Ports & Maritime Transportation

Professional Services

Robotics & Submarines

Telecommunications

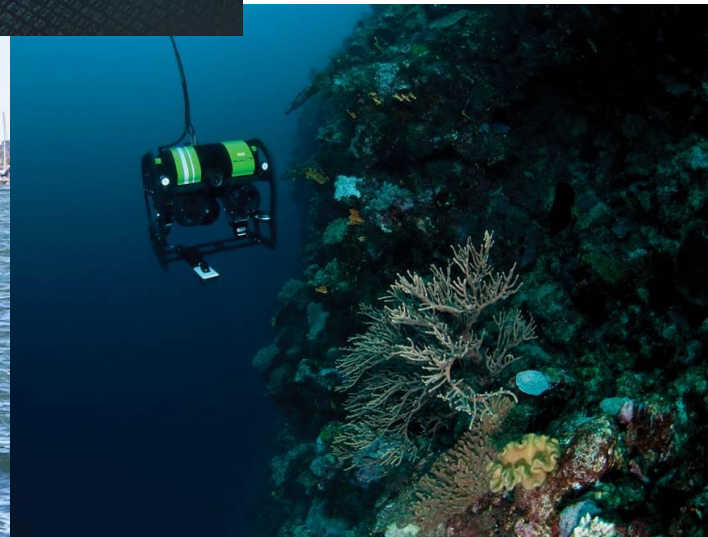
Very Large Floating Platforms

Weather & Climate Science

*"If it's wet, it's **Blue**"*

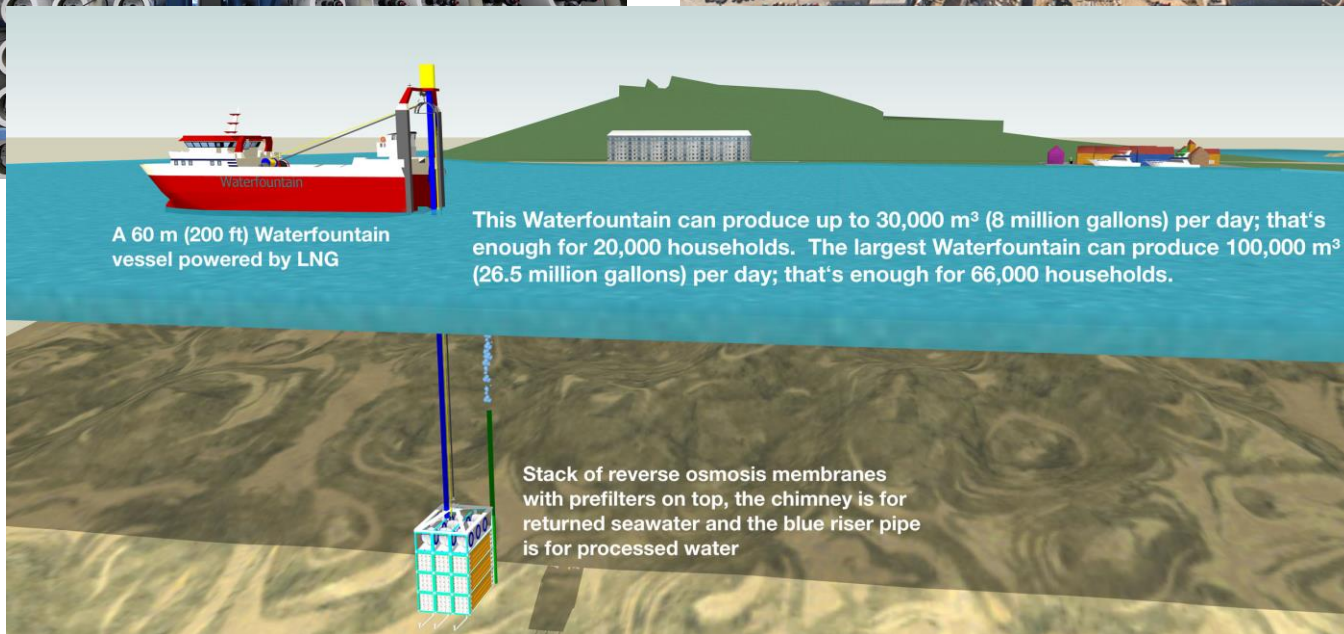


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A 60 m (200 ft) Waterfountain
vessel powered by LNG

This Waterfountain can produce up to 30,000 m³ (8 million gallons) per day; that's enough for 20,000 households. The largest Waterfountain can produce 100,000 m³ (26.5 million gallons) per day; that's enough for 66,000 households.

Stack of reverse osmosis membranes
with prefilters on top, the chimney is for
returned seawater and the blue riser pipe
is for processed water

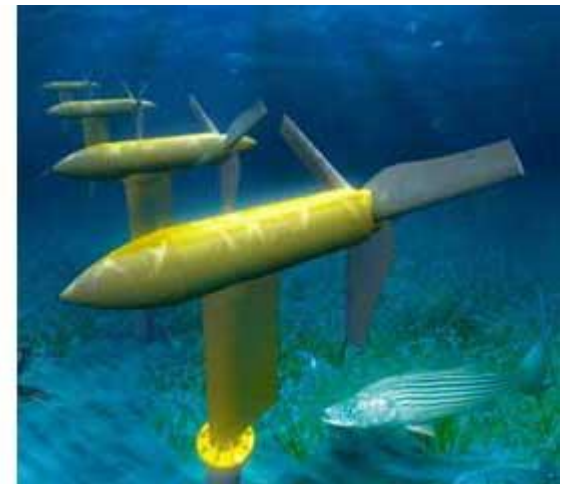


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Why focus on the Blue Economy?

- It is an enormous, growing market
- Every 2nd breath we take is from ocean organisms
- The big 5 issues for Humanity
 - Food: aquaculture/mariculture essential to feed humanity
 - Water: 97% of earth's water in the ocean...
 - Energy: inexhaustible, clean, offshore renewable energy
 - Medicine: 98% of habitable earth is under water
 - Real estate: water is rising...floating infrastructure
- It is a defining "attribute" for San Diego



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Global **Blue Economy**: Enormous and growing

OECD* 2016 study:

The Ocean Economy in 2030

2010 – US \$1.5 trillion (conservatively)

2030 – US \$3.0 trillion (conservatively)

“The ocean economy is essential to the future welfare and prosperity of humankind...only recently begun to garner attention and move up the international policy agenda.”

Comparison:

2010 global water industry = \$500 B

2015 space industry = \$355 B

OCEANOLOGY INTERNATIONAL CONNECTS THE ENTIRE SUPPLY CHAIN:



UNDERWATER
COMMUNICATIONS



UNMANNED
UNDERWATER
VEHICLES



MARINE
AND SURVEY
VESSELS



HYDROGRAPHY



METROLOGY



MARINE
RENEWABLES



OCEAN
RESEARCH



OIL & GAS



MARINE
SECURITY



AQUACULTURE

*NOTE: The OECD is a Paris-based organization with 35 democratic country members founded in 1960 to stimulate economic progress and world trade.



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2012: San Diego Maritime Industry Report

- **1,431** companies & organizations (200+ NAICS codes)
- **700+** self-report maritime focus (350+ report over 75%)
- **45,778 jobs and \$14 billion+ annual direct sales only**
- Maritime technology industries (as a sub-group):
 - Biggest segment with 18,948 jobs
 - \$6.2 billion annual revenue
 - **Good wages & high exports**

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

2019: Update

- Discussing funding for an updated SD study
- **TMA** is SME for 1st ever US **BlueTech** satellite account





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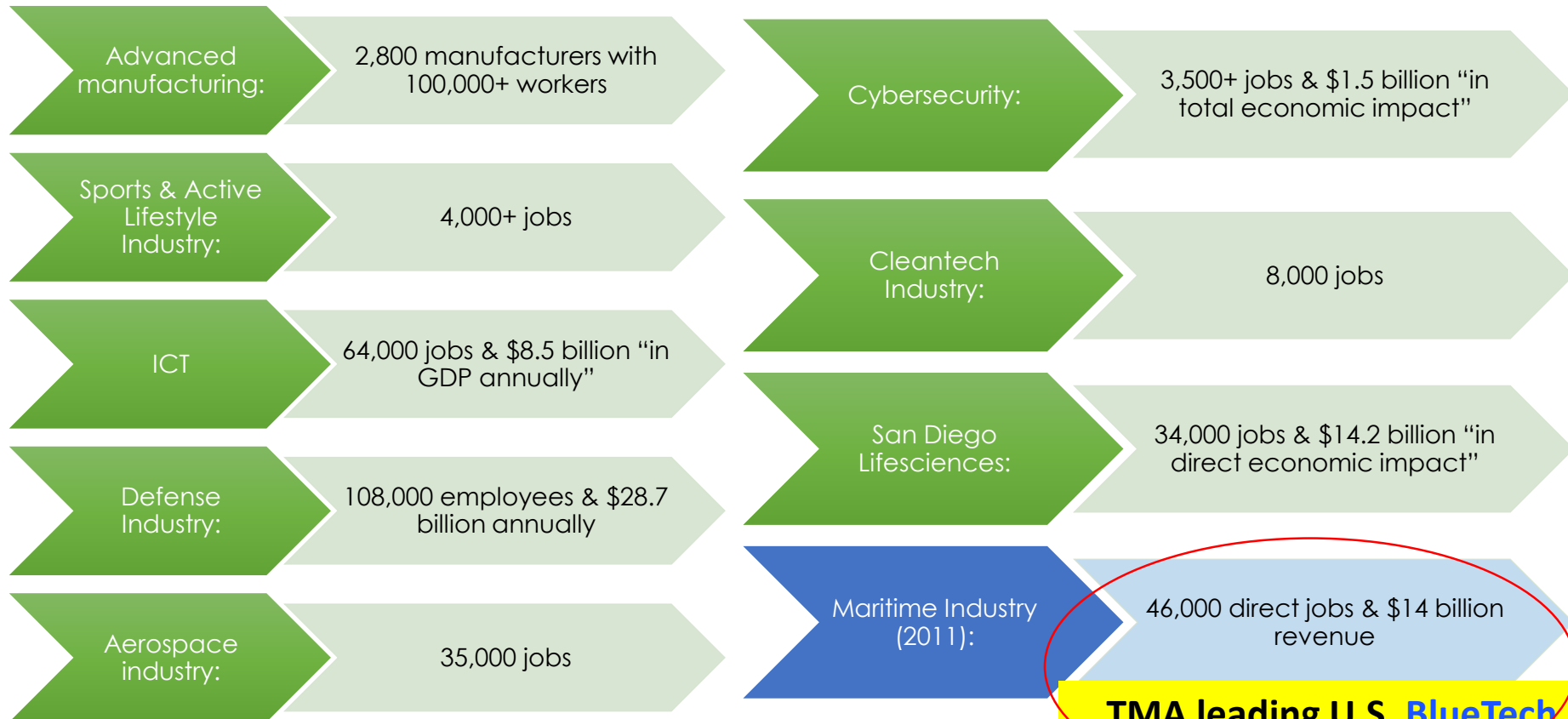
The Ocean Economy in the U.S.

- NOAA estimates the San Diego **Blue Economy** to be **\$1.8 billion** (net of tourism), but **TMA** 2012 study shows **\$14 billion**.
- The Ocean Enterprise study – published by the U.S. Integrated Ocean Observing System (part of NOAA) and co-authored by **TMA** focused on ocean measurement, observation and forecasting – found over 400 companies in 36 US states generating \$7 billion in revenue annually. (3 of the 16 sectors)
- **TMA** estimates there are 4,000 **BlueTech** companies in the U.S., but there has been no national study.



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Comparative industry clusters in San Diego



TMA leading U.S. BlueTech cluster & leading intl. cluster

Source: San Diego Regional Economic Development Corporation 2016



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BLUETECH INCUBATOR

Launched a BlueTech Incubator (Oct. 25, 2017):

- Collaboration with the City of San Diego, Dentons and Scripps Institution of Oceanography
- Initially launched with 6 companies
- www.BlueTechIncubator.org





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BlueTech Cluster Alliance (BTCA)

established January 2017



BTCA Member Clusters:

- Oceans Advance (Canada)
- Pôle Mer Mediterranee (France)
- Pôle Mer Bretagne Atlantique (France)
- Marine Institute (Ireland)
- GCE Subsea (Norway)
- Forum Oceano (Portugal)
- PLOCAN (Spain)
- **The Maritime Alliance (U.S.)**
- UK Blue Growth Network (UK)



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Launched a BlueSTEM Career Pathway (Oct. 24, 2017):

- Partnership with San Diego Unified School District
- Pilot Project with PB Middle School and Mission Bay High School
- Continuum of curriculum for grades 6-12 to also include:
 - Internships for students
 - Externships for teachers
 - Industry Speakers
 - Site Visits





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Helped Launch Oceanology International in San Diego (Feb. 14-16, 2017):

- **3100** Total Attendance
- **1775** Unique Visitors
- Over **300** Conference Delegates
- Close to **200** exhibitors
- Returning to San Diego **February 25-27, 2019** rebranded as Oceanology International Americas





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10th annual BlueTech Week (November 5-9, 2018) – San Diego, CA

SAVE THE DATE: 11th annual BlueTech Week November 18-22, 2019

“Sustainable Development Goals - Industry Solutions”

- 7 Events over 5 days
- 550+ Individual Attendees
- Tech Expo with 38 table-tops
- 150 speakers
- 140+ companies (95 in 2017)
- 16+ countries represented
- 20 companies in the PitchFest
- BlueTech Gala Dinner & Awards Ceremony
- www.bluetechweek.org



Aquaculture & BioMarine

Workforce Development

BlueTech Clusters

Marine Debris Solutions

Water/Wastewater

Offshore Renewables

BlueTech PitchFest

THE MARITIME ALLIANCE

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Members

FLYWIRE



Seaport | gafcon



GreenWave Instruments



HYDRONALIX

SCRIPPS INSTITUTION OF
OCEANOGRAPHY

UC San Diego



aquaai

DMO
DEL MAR OCEANOGRAPHIC



The Clay Company, Inc.



大成 DENTONS

EXOCETUS
AUTONOMOUS SYSTEMS

SONALYSTS
quam
water again

ENERGYSALES

SCEDC
South County Economic
Development Council



HYDRANAUTICS
Nitro Group Company



C.C.I
PARTNERS

IDE
Americas, Inc.
A subsidiary of IDE Technologies Ltd.

SMART Scientific Marine Services

TELEDYNE
MARINE
Everywhere you look

BlueRobotics

Canal

InterOcean systems, inc.
The Leader in Ocean Technology - Since 1986



Sunburst
Sensors

PLANCK
ANALYTICS

FLOAT INCORPORATED
Floating Ocean Real Estate
The Sensible Way To Float Large Platforms on our Oceans

KMEAS

MIRACOSTA
COLLEGE

W Ocean
Wings UAS, Inc.

OCEANEERING

MRV SYSTEMS
Marine Robotic Vehicles

McKINNEY
advisory group

Cardinal Point Captains, LLC

Pacific
Tugboat Service



PRINCIPLE
POWER

OCEANREEF
underwater, naturally.

XST
INCORPORATED
EXTENDING SCIENCE AND TECHNOLOGY
AND IMPROVING OCEANIC CAPABILITY

oceansadvance

xylem
Let's Solve Water

WAM-V
MARINE ADVANCED RESEARCH, INC.

PORTCALL.COM

ProFinance
ASSOCIATES, INC.



pillsbury

ocean
manager

OCEAN AERO

Canada

THE MARITIME ALLIANCE

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Institute of
the Americas®



SAN DIEGO
REGIONAL
EDC

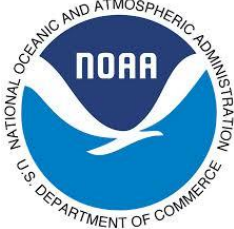
Partner Organizations



INTERNATIONAL
TRADE
ADMINISTRATION

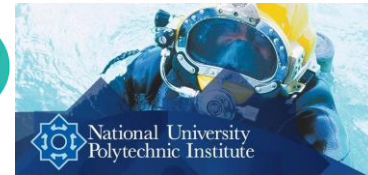


UC San Diego



IOOS
Integrated Ocean
Observing System

The City of
SAN DIEGO



marine
southeast



XPRIZE®



SCEDC
South County Economic
Development Council

SAN DIEGO
WORKFORCE
PARTNERSHIP®



Inter - American Committee
on Ports





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In Conclusion... From where have we come, and where are we going?

1806 – Lewis and Clark make it to the mouth of the Columbia river.

1983 – President Ronald Reagan established the United States' Exclusive Economic Zone out to 200 miles.

1989 – 1993 – President George H. W. Bush designates 6 National Marine Sanctuaries, the most by any President

2010 – President Barack Obama established the National Ocean Policy

2015 – California State Lands Commission launches a pilot ocean planning partnership in San Diego

2019 and beyond ??



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