

# **NOAA Report on the U.S. Marine Economy**

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**Office for Coastal Management**



## NOAA's Office for Coastal Management

"Coastal management" is the term used by communities and organizations striving to keep the nation's coasts safe from storms, rich in natural resources, and economically strong.

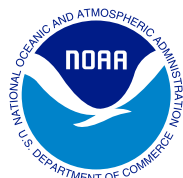
The national lead for these efforts is the National Oceanic and Atmospheric Administration's Office for Coastal Management, an organization devoted to partnerships, science, and good policy. This agency, housed within the National Ocean Service, oversees major initiatives that include the Coral Reef Conservation Program, Digital Coast, National Coastal Zone Management Program, and National Estuarine Research Reserve System.

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**Data Note:** This report is based on 2017 Economics: National Ocean Watch (ENOW) data, produced by NOAA's Office for Coastal Management. The employment and gross domestic product (GDP) statistics are derived from the Bureau of Labor Statistics' Quarterly Census of Employment and Wages data (accessed in August 2019) and the Bureau of Economic Analysis' GDP by State data (released in June 2020).

# Table of Contents

Executive Summary .....	1
Introduction .....	2
National Profile .....	4
The Importance of the Marine Economy .....	4
The Resilience of the Marine Economy .....	5
The Diverse Composition of the Marine Economy .....	6
The Importance of Marine-Dependent Jobs .....	7
Sector Profiles .....	10
Marine Construction .....	10
Living Resources .....	12
Offshore Mineral Extraction.....	16
Ship and Boat Building.....	18
Tourism and Recreation .....	20
Marine Transportation.....	22





# Executive Summary

When communities face tough times, economic data are used to guide the decisions and investments designed to bolster economic resilience. This report provides insights into jobs and wages in the marine economy that depend on the nation's oceans and Great Lakes, as well as other economic information.

This marine economy comprises six economic sectors—living resources, marine construction, marine transportation, offshore mineral extraction, ship and boat building, and tourism and recreation. Report data come from ENOW, or Economics: National Ocean Watch, a NOAA collection of marine-focused economic data that spans 2005 through 2017. This report presents data from the year 2017, the most up-to-date information available.

## Report Highlights

In 2017, the marine economy accounted for

- 157,000 individual business establishments,
- 3.3 million employees,
- \$132 billion in wages, and
- \$307 billion in goods and services.

Each of these represents an increase from the previous year.

Employment in the marine economy increased 1.8 percent (adding 58,000 jobs), which is faster than the national average employment growth of 1.4 percent during the same reporting period. To put that in context, here's a comparison: the marine economy employed more people (3.3 million) than the combined crop production, telecommunications, and building construction sectors (2.9 million).

Marine construction showed the most growth in 2017 compared to 2016; employment and gross domestic product (GDP) in this sector increased by 6.2 percent and 4.8 percent, respectively. Living resources, ship and boat building, and marine transportation also saw increases in both employment and GDP percentages. Simply put, the marine economy is big, complex, diverse—and growing.

## Using the Data

These data provide a baseline for economic growth discussions. In addition to longitudinal studies, data are also available at a more refined scale for 402 coastal counties, 30 coastal states, and eight regions. The data can be found on NOAA's Digital Coast at this address: [coast.noaa.gov/digitalcoast/data/enow.html](https://coast.noaa.gov/digitalcoast/data/enow.html).

These data show changes in gross domestic product, employment, and wages over time. The level of granularity available provides a unique resource for people who want to understand, invest in, and advocate for our nation's marine resources.

## About the Data

The data in this report come from the Economics: National Ocean Watch (ENOW) data set ([coast.noaa.gov/digitalcoast/data/enow.html](https://coast.noaa.gov/digitalcoast/data/enow.html)). ENOW is produced by NOAA in partnership with the Bureau of Economic Analysis, Bureau of Labor Statistics, and U.S. Census Bureau.

An alternative source that provides national-level, non-inflation-adjusted data can be found at [bea.gov/data/special-topics/ocean-economy](https://bea.gov/data/special-topics/ocean-economy). This data source provides information for 10 marine sectors, using a different methodology than is featured here, and provides data for 2014 through 2018.

# Introduction

The oceans and Great Lakes support the lives, lifestyles, and livelihoods of all Americans. Marine activities (those dependent on the oceans and Great Lakes) are important contributors to the nation's economy. Oil and gas production provides energy for personal and commercial use. Seafood production and processing meets the demands of restaurants and households. Tourism and recreation supports millions of part-time and seasonal jobs. Marine construction, marine transportation, and ship building provide access to global markets.

The marine environment also provides a wide range of benefits that, although real and fitting for economic consideration, do not lend themselves to traditional measures of jobs, wages, and gross domestic product. We fish from ocean and Great Lakes waters, vacation on their edges, ship cargo on their surface, and extract oil, gas, sand, and gravel from their seafloors. Coastal and marine ecosystems sequester carbon from the atmosphere, protect communities from the harmful effects of coastal storms, and provide myriad other benefits that support human life and well-being.

This report provides insights into the benefits derived from the marine economy that result in jobs and wages, contributing directly to the nation's gross domestic product. This focus should not be understood to mean that the benefits whose footprints show up well in market data are the largest or most important ones. Instead, data presented in this report should be taken for what they are—indicators of the impacts that marine resources and ecological systems have on the market economy of the United States, viewed through the lens of nationally consistent data produced by federal agencies.

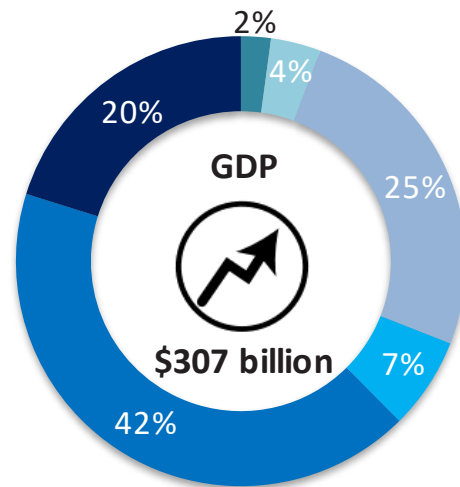
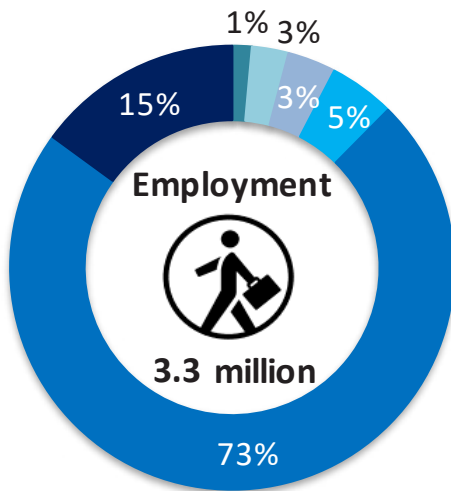
In addition to gaining a better understanding of today's marine economy, documenting changes over time also provides helpful insights. Previous years' ENOW marine economy reports are available for the years 2005 through 2017 ([coast.noaa.gov/digitalcoast/training/econreport.html](https://coast.noaa.gov/digitalcoast/training/econreport.html)). These data cover 402 coastal counties, 30 coastal states, eight regions, and the nation.

Many marine economy industries, such as commercial fishing (part of the living resources sector), depend on the health of coastal and marine ecosystems. Yet all of the sectors include activities that have the potential to harm these ecosystems, putting jobs, wages, and gross domestic product—as well as human life and well-being—at risk. Maintaining the strength and sustainability of the marine economy requires good stewardship and care for the underlying natural systems that support each sector.

## 2017 U.S. Marine Economy National Summary

### Annual Totals

The marine economy accounted for 2.3 % of total employment and 1.5% of total GDP in the United States



- Marine Construction
- Living Resources
- Offshore Mineral Extraction
- Ship and Boat Building
- Tourism and Recreation
- Marine Transportation

### Annual Changes in Employment, 2016-2017



### Annual Changes in GDP, 2016-2017



**Economics: National Ocean Watch (ENOW)**  
[coast.noaa.gov/digitalcoast/data/enow.html](http://coast.noaa.gov/digitalcoast/data/enow.html)

Note: Seafood wholesale activities were added to the living resources sector data from 2016 onward.

# National Profile

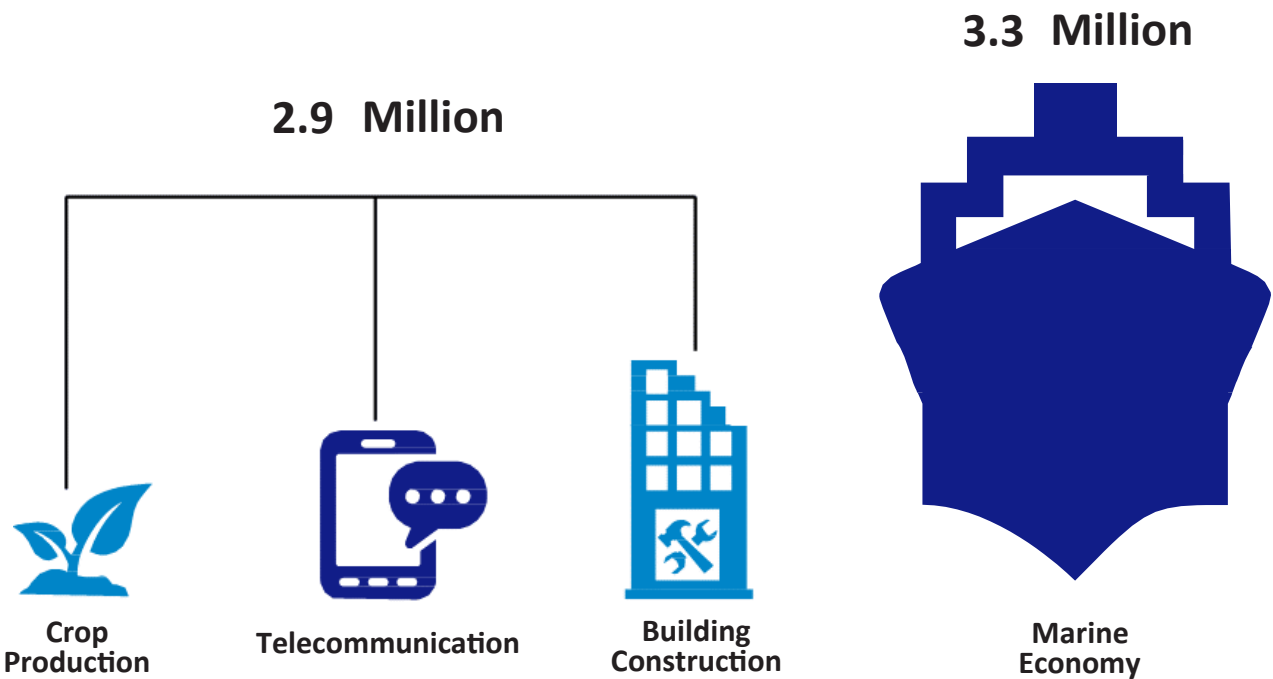
## The Importance of the Marine Economy

In 2017, the marine economy’s 157,000 business establishments employed about 3.3 million people, paid \$132 billion in wages, and produced \$307 billion in goods and services, or gross domestic product (GDP). This accounted for about 2.3 percent of the nation’s employment and 1.5 percent of its GDP.



This may seem small, but our nation’s economy is diverse and includes many “small” but integral parts. Most people, for example, have some sense of the importance of better-known economic activities such as crop production, telecommunications, and building construction. In 2017, the marine economy employed more people than these three sectors combined.

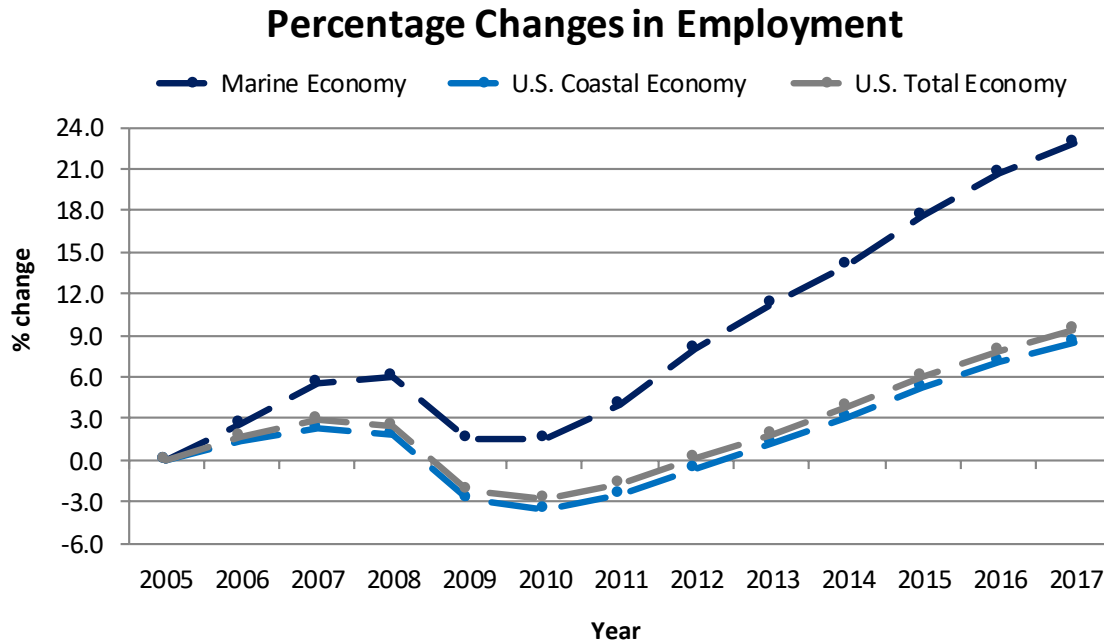
## U.S. Total Employment Comparison, 2017





# The Resilience of the Marine Economy

The marine economy weathered the recession of 2007 to 2009 better than the U.S. coastal economy and total economy as a whole.



By 2017, employment in the marine economy had increased by 16.5 percent from pre-recession levels (2007), compared to 6.3 percent in the U.S. economy as a whole. From 2016 to 2017, the marine economy gained about 58,000 employees, an increase of 1.8 percent—more than the U.S. economy as a whole, which grew by 1.4 percent during the same period.<sup>1</sup>

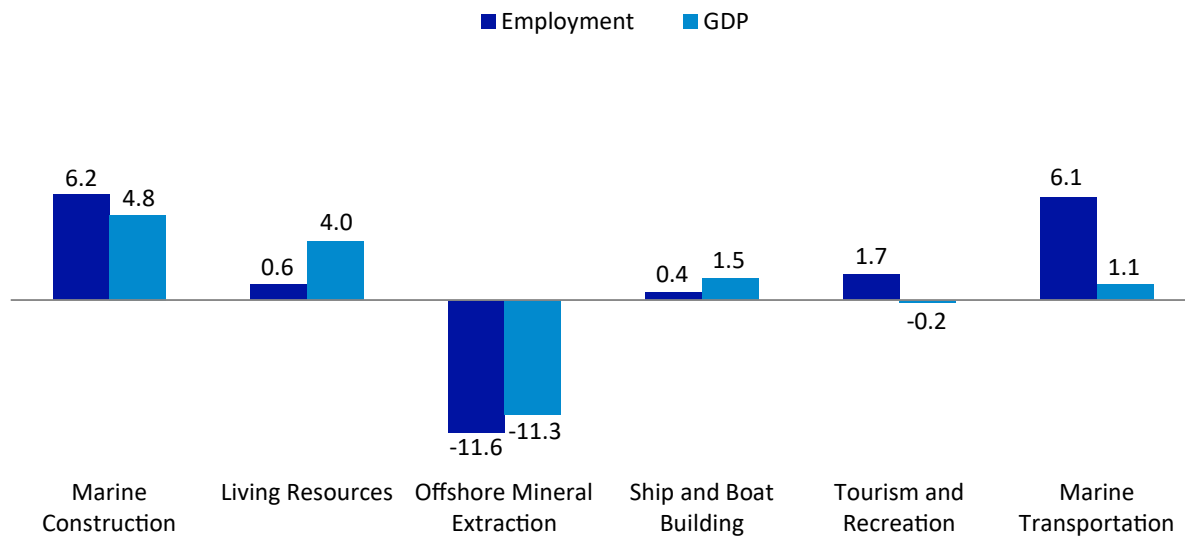
Trends in gross domestic product also show the resilience of the marine economy. In 2017, inflation-adjusted (hereafter, “real”) gross domestic product in the marine economy was 20.2 percent higher than pre-recession levels (2007), contrasted with a 23.8 percent increase in the U.S. economy as a whole. While oil prices rebounded somewhat in 2017 from 2016, this did not contribute substantively to growth in the real gross domestic product of the offshore mineral extraction sector (decreased 11.3 percent) and the U.S. marine economy as a whole (decreased 4.7 percent). Removing the offshore mineral extraction sector from the total, gross domestic product in the remainder of the U.S. marine economy grew by 2.2 percent. Employment in the marine construction sector showed the highest rate of increase (6.2 percent), perhaps in part because of the increased focus on infrastructure projects. The tourism and recreation sector added the greatest number of jobs (40,000) in 2017.<sup>2</sup>

In 2017, four of the six marine economy sectors—marine construction, living resources, ship and boat building, and marine transportation—experienced expansion in both gross domestic product *and* employment, compared to only two of the six sectors in 2016.

<sup>1</sup> U.S. coastal economy represents the total economy in the shoreline counties.

<sup>2</sup> U.S. Energy Information Administration. “Crude Oil Prices Increased in 2017, and Brent-WTI Spread Widened.” Accessed at [eia.gov/todayinenergy/detail.php?id=34372](http://eia.gov/todayinenergy/detail.php?id=34372).

## Annual Percentage Change by Sector, 2016-2017

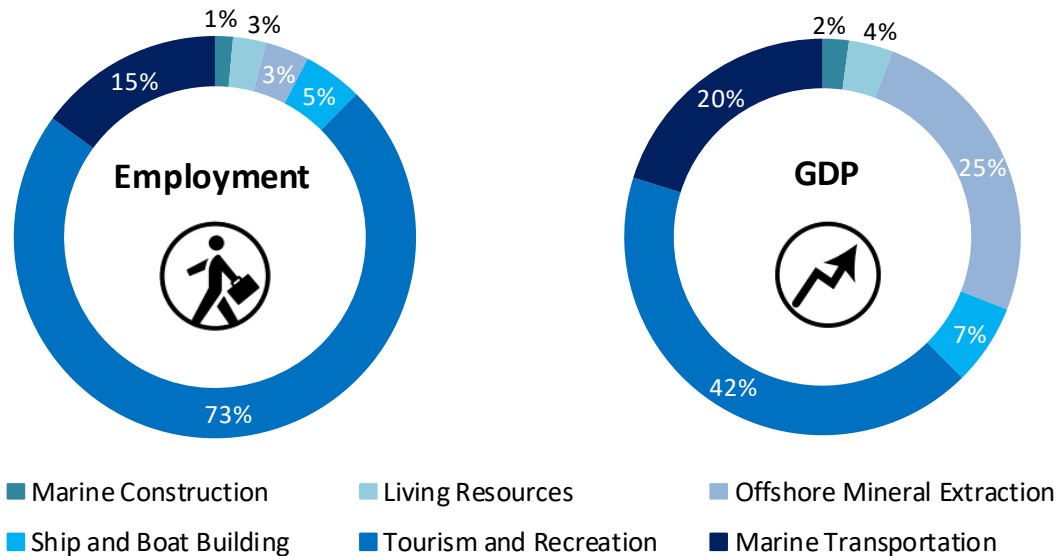


## The Diverse Composition of the Marine Economy

The six marine sectors make very different contributions to the economy, as seen in the next figure, which compares measures of employment and gross domestic product. Some sectors, such as tourism and recreation, include service-intensive activities that support a large number of jobs. Employment in this sector accounts for a much larger share of the marine economy (72.6 percent) than would be expected in light of its much smaller contribution to gross domestic product (42.3 percent). On the other hand, capital-intensive industries, such as offshore mineral extraction, yield high levels of gross domestic product with a relatively small share of the marine economy's workforce (3.5 percent). In 2017, offshore mineral extraction accounted for 25.2 percent of the marine economy's gross domestic product, second only to tourism and recreation (42.3 percent).

An important distinction should be made about the relationship of these economic activities to the marine resources and ecological systems that support them. Some marine sectors make non-consumptive use of the oceans. Marine transportation, ship and boat building, and marine construction are marine-dependent because they require proximity to the marine environment and involve activities that do not consume or "use up" marine resources. Commercial fishing is an extractive activity. Fish are harvested from the ocean, but with proper management fish harvesting can be sustainable into the future. Offshore mineral extraction is different, being dependent on a very large but finite base of resources. Coastal tourism and recreation includes both consumptive uses of marine resources (recreational fishing) and non-consumptive uses (beachgoing).

## Employment and GDP by Marine Sector, 2017



The fact that all these activities take place in the same place underscores the complexity and importance of effective use, management, and governance of the marine environment.

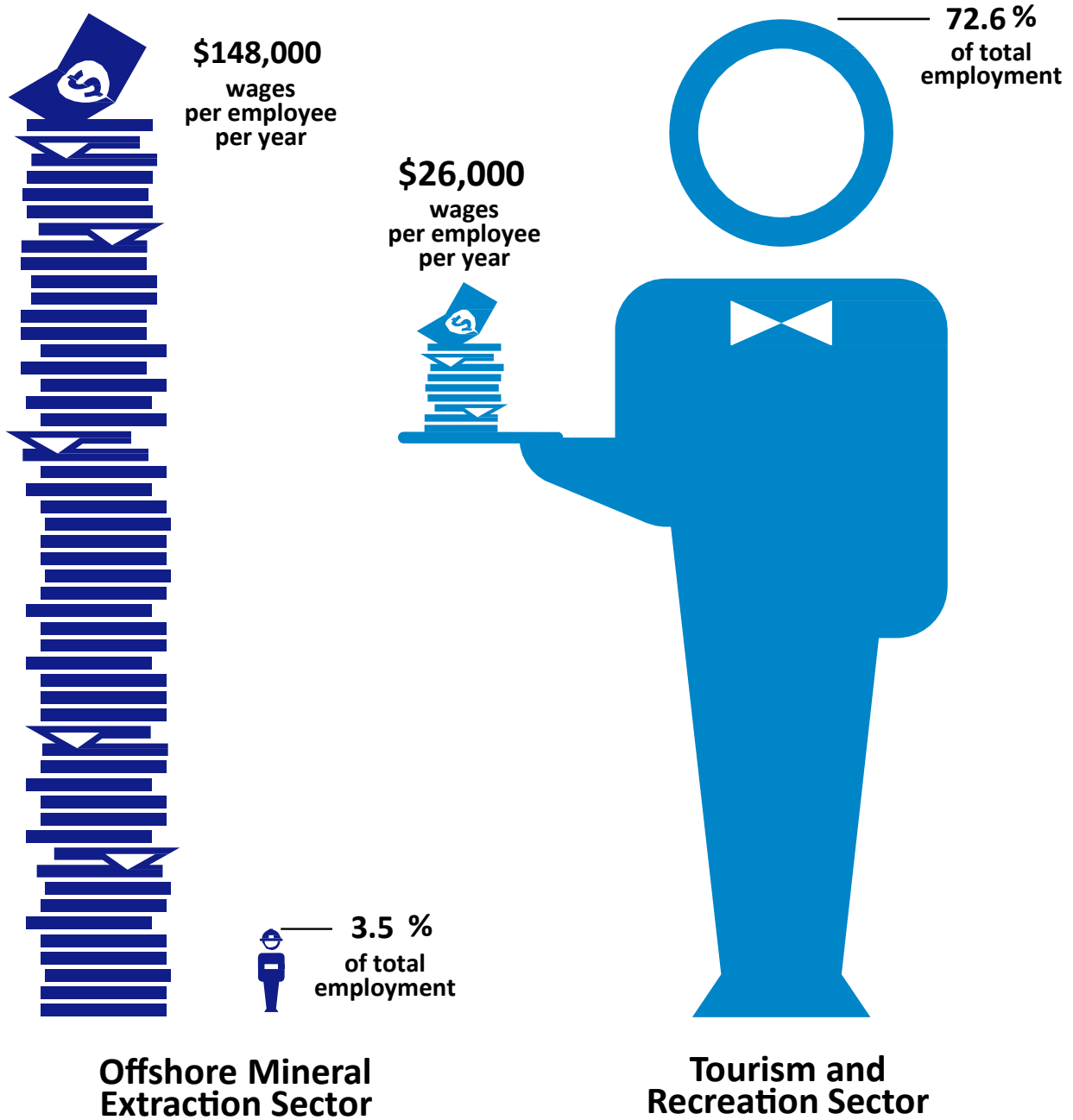
## The Importance of Marine-Dependent Jobs

Average wages across the marine economy vary greatly. In 2017, offshore mineral extraction paid the highest wage per employee (\$148,000) in the marine economy. The occupations represented in this sector range from the workers on offshore oil platforms to the engineers, geologists, and mappers who support exploration activities. The tourism and recreation sector paid the lowest average wage (\$26,000) of all marine economy sectors. This is partly due to the large share of part-time jobs in the sector, which are often held by students and others just entering the work force.<sup>3</sup>

The living resources sector also paid an average wage (\$47,000) that was lower than the national average of \$55,000. Similar to tourism and recreation, this sector employs a significant number of seasonal and part-time workers, most of whom are not highly paid. The three remaining sectors—marine construction, marine transportation, and ship and boat building—all paid wages that were higher than the 2017 national average.

<sup>3</sup> U.S. Census Bureau. 2017. Quarterly Workforce Indicators (QWI) Data. "Longitudinal-Employer Household Dynamics Program." Accessed at [lehd.ces.census.gov/data/#qwi](https://lehd.ces.census.gov/data/#qwi).

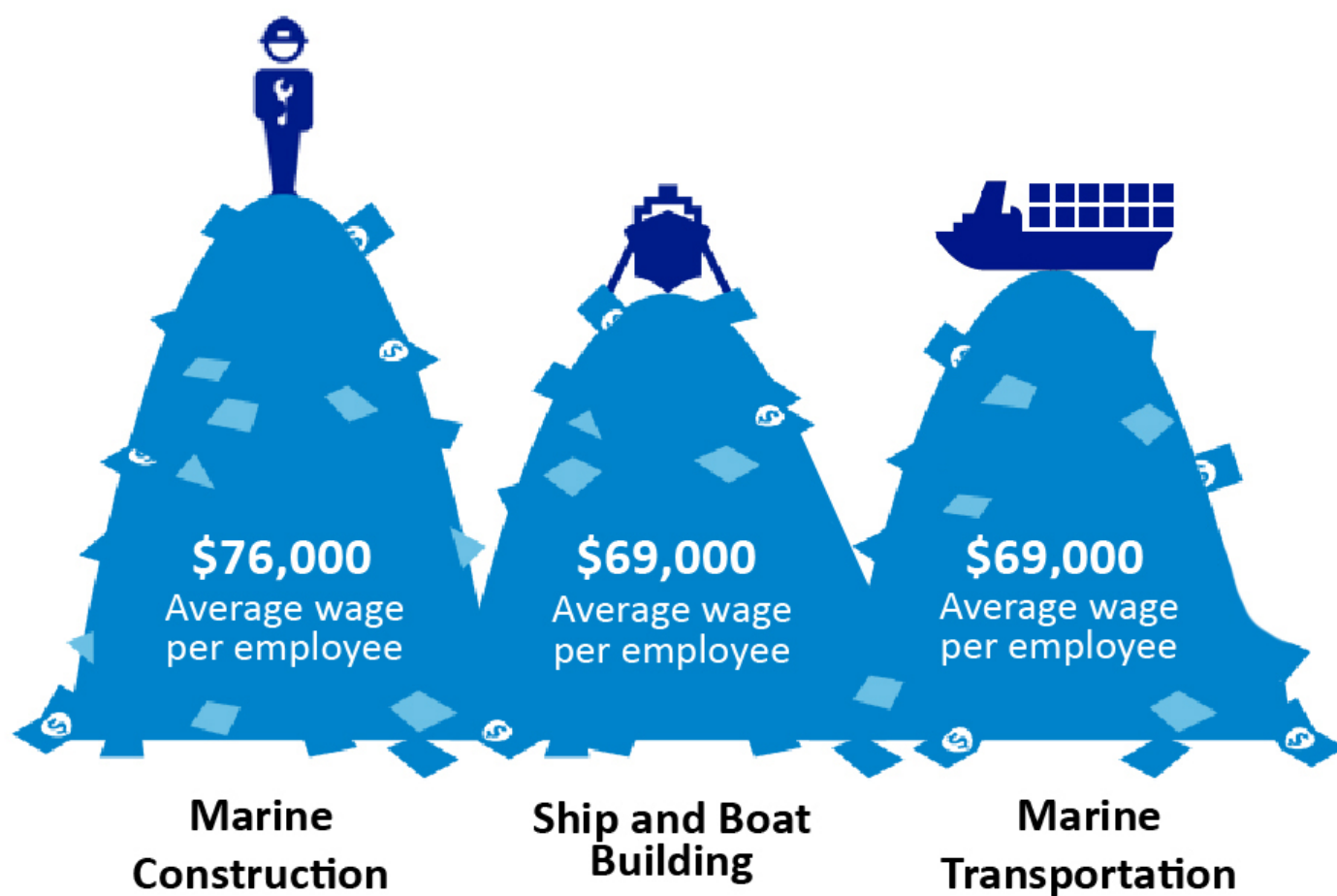
## 2017 Employment versus Wages



## 2017 Wages per Employee Working on the Water

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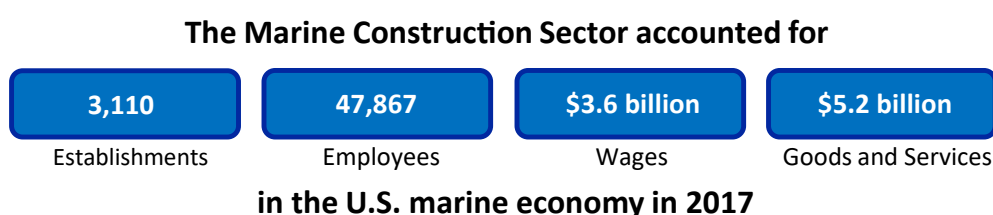
All three sectors paid an average wage per employee above the national average of \$55,000



# Sector Profiles

## Marine Construction

The marine construction sector accounts for the heavy construction activities associated with dredging navigation channels, beach renourishment, and dock building. Although it would seem logical to include activities associated with the construction of oil and gas pipelines that directly support offshore oil and gas production, the underlying data are almost always suppressed because of the small number of businesses in any one area. In many cases, protecting the confidentiality of these businesses requires the suppression of the entire sector, including information for activities that could otherwise be reported. For this reason, these activities are not included in ENOW's data on the marine economy. The effect of this omission is most prominent in the Gulf of Mexico and Alaska.



Marine construction accounted for 1.4 percent of the employment and 2.1 percent of the gross domestic product in the U.S. marine economy. While the sector represents a small percentage of the marine economy, it is an integral component, paying one of the highest average wages per employee of \$76,000, much higher than the national average of \$55,000. Furthermore, dredging navigation channels and renourishing beaches are vital to the marine transportation and tourism and recreation sectors.

Since activity in this sector is affected, for example, by weather's influences on sedimentation and erosion and federal, state, and local governments' ability to fund new projects, the level of activity tends to vary significantly, even at the national level. From 2016 to 2017, employment in this sector increased by 6.2 percent, while gross domestic product increased by 4.8 percent. At the state and local levels, trends of marine construction activities are far more erratic, spiking and rapidly declining as major harbor dredging or beach renourishment projects are initiated and completed. Since important private sector components of this sector (oil and gas pipeline construction) are not reflected in the data, the effects of government spending decisions are an important factor in trends, often overshadowing general economic conditions.

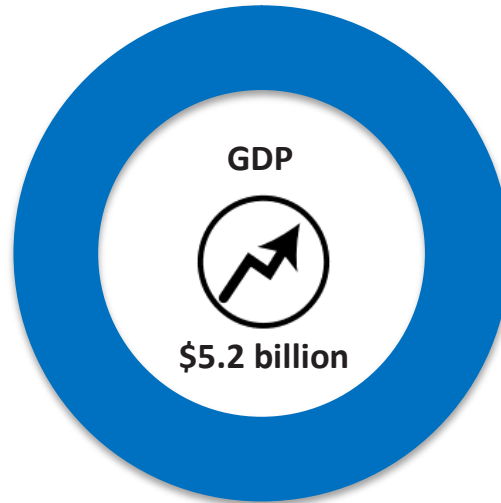
Marine construction activities occur in most regions of the U.S., but they are highly concentrated in Florida, Texas, California, and Louisiana, which together in 2017 accounted for about 60.3 percent of the employment and about 56.9 percent of the gross domestic product in this sector, both up from the previous year (2016).

## 2017 U.S. Marine Economy

# Marine Construction Sector

### Annual Totals

This sector accounted for 1.4 % of total employment  
and 2.1 % of total GDP in the marine economy



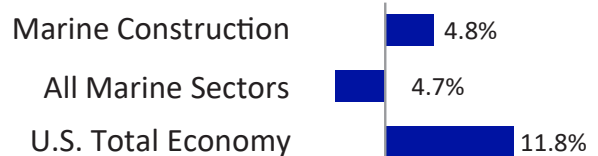
### ■ Marine Related Construction



#### Annual Changes in Employment, 2016-2017



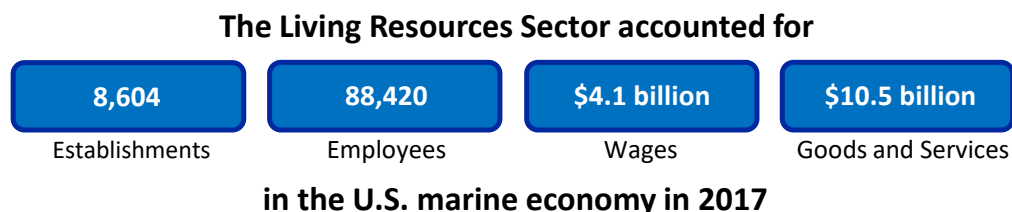
#### Annual Changes in GDP, 2016-2017



**Economics: National Ocean Watch (ENOW)**  
[coast.noaa.gov/digitalcoast/data/enow.html](http://coast.noaa.gov/digitalcoast/data/enow.html)

## Living Resources

The living resources sector includes commercial fishing, aquaculture, and seafood processing and markets.



The living resources sector accounted for only 2.7 percent of the employment and 3.6 percent of the gross domestic product of the U.S. marine economy, with the second lowest average wage of the marine sectors. However, it's important to remember that this relatively small sector accounts for all the seafood produced in the U.S. and, in this regard, is similar to the highly productive U.S. agriculture industry.

Seafood processing is the largest producer in the living resources sector, accounting for 41.1 percent of the gross domestic product. The seafood market industry accounts for most of the employed workers at 45.7 percent in the sector.

From 2016 to 2017, employment in the living resources sector increased by 0.6 percent, and gross domestic product (adjusted for inflation) increased by 4.0 percent.

An important attribute of this sector is its reliance on the health of coastal and marine ecosystems—wetlands that serve as habitat and feeding grounds for marine fish, estuaries that are the primary habitat for oysters and other shellfish, and the marine ecosystems where much of the finfish harvesting takes place. The health of these ecosystems can be affected by a wide range of other activities, including some marine-dependent activities, which underscores the need for wise use, conservation, and management of marine, coastal, and even upland resources.

Another important feature of this sector is its cultural significance. Even where it accounts for a relatively small percentage of total employment, commercial fishing can be an important component of a community's identity, affecting the nature of "families, friends, schools, churches, politics, and social networks."<sup>4</sup> Lobster, crab, oysters, and finfish are important to cultural identities from Maine to Chesapeake Bay on the mid-Atlantic coast, Apalachicola Bay in Florida, and Grays Harbor in Washington. Even seafood processing and marketing can shape cultural identities; consider the examples of Cannery Row in Monterey, California, and the Pike Place Market in Seattle, Washington.

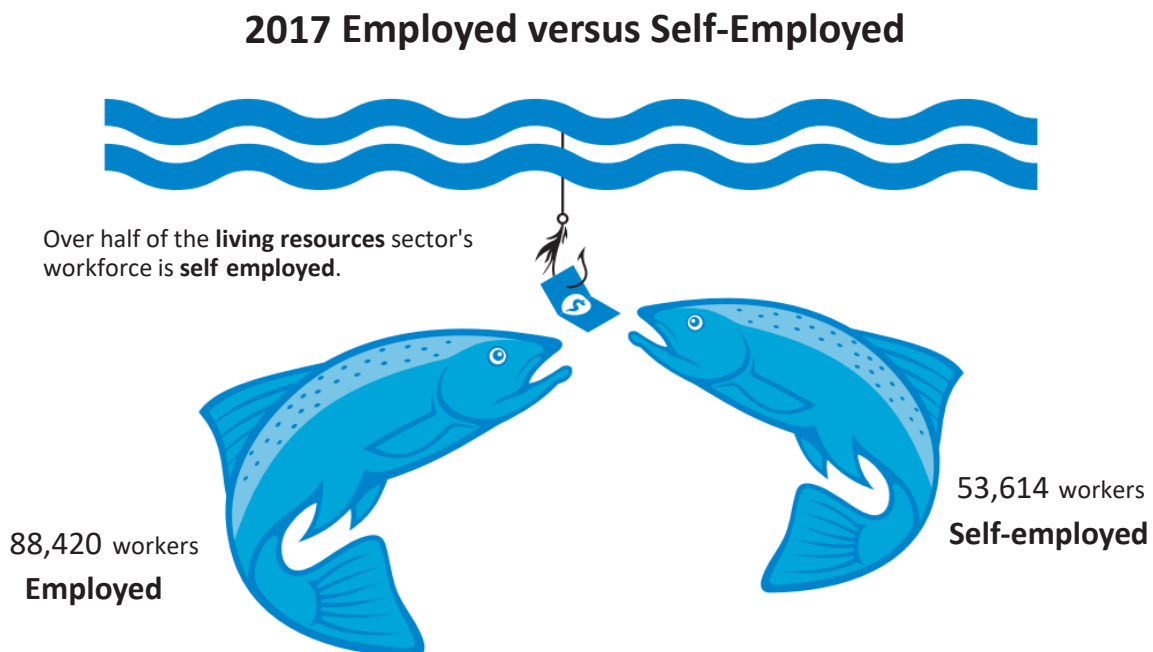
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4 Jacob, Steve, Michael Jepson, and Frank L. Farmer. 2005. "What You See Is Not Always What You Get: Aspect Dominance as a Confounding Factor in the Determination of Fishing Dependent Communities." *Human Organization*. Volume 64, Number 4. Pages 374 to 385.



But perhaps the most distinctive attribute of this sector is the importance of self-employed workers in seafood harvesting. Even though fishing vessels require multiple crew members, these individuals are frequently not employed by the owner but work for a share of the catch. At a national level, roughly half the workers in this sector are self-employed, most of whom work in fish harvesting (as opposed to seafood processing and marketing).

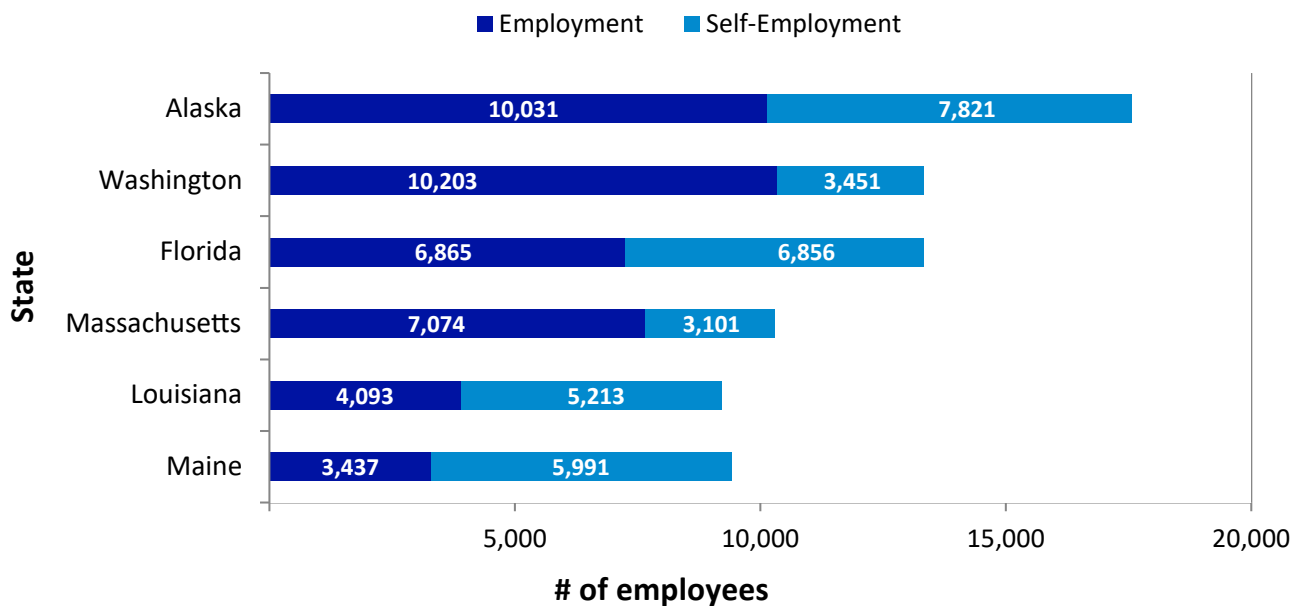
For this reason, NOAA has developed a complementary data set, ENOW for Self-Employed Workers, which is derived from the Nonemployer Statistics produced by the Bureau of the Census. In 2017, self-employed fishermen accounted for 53,614 jobs, bringing the total number of jobs in the living resources sector to more than 142,000.



In 2017, \$3.3 billion in gross receipts were reported by the self-employed in the living resources sector, almost as large as the amount of wages paid to employment in the same year. While these figures are not directly comparable (operating expenses are paid from gross receipts; this is not the case with wages), the gross receipts of the self-employed show the economic importance of this component of the sector. Said differently, this amount was also the highest amount of gross receipts of any of the six marine sectors, accounting for 39% of the gross receipts of the marine economy in 2017.

The chart below shows the combined number of employed and self-employed workers in the living resources sectors. Measured in these terms, the top three leading centers of the living resources sector, in terms of total employed and self-employed workers combined, are Alaska, Florida, and Washington. Both Alaska and Washington have high levels of employment relative to self-employed workers. Florida has about an equal share of employed and self-employed workers. Self-employed workers in Maine and Louisiana outnumber employees by large margins, largely because of self-employed workers in fish, oyster, and lobster harvesting.

## Leading States in the Living Resources Sector, 2017



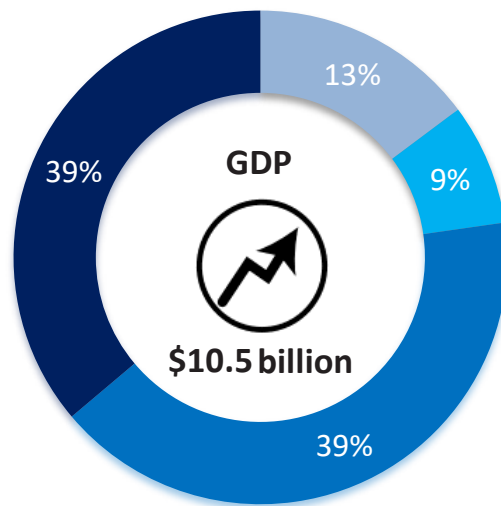
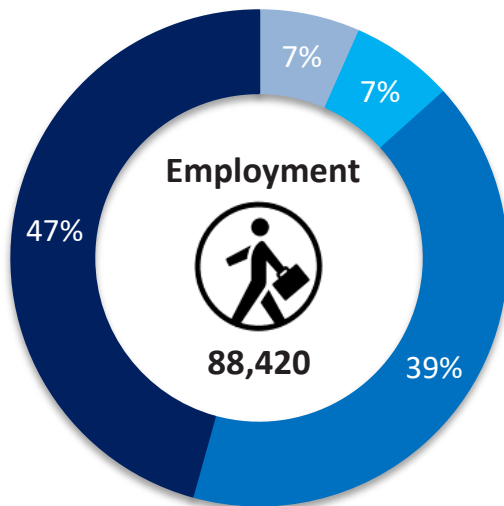
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## 2017 U.S. Marine Economy

# Living Resources Sector

### Annual Totals

This sector accounted for 2.7 % of total employment and 3.6 % of total GDP in the marine economy

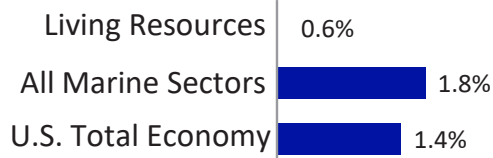


■ Fishing  
■ Seafood Processing

■ Fish Hatcheries and Aquaculture  
■ Seafood Markets



### Annual Changes in Employment, 2016-2017



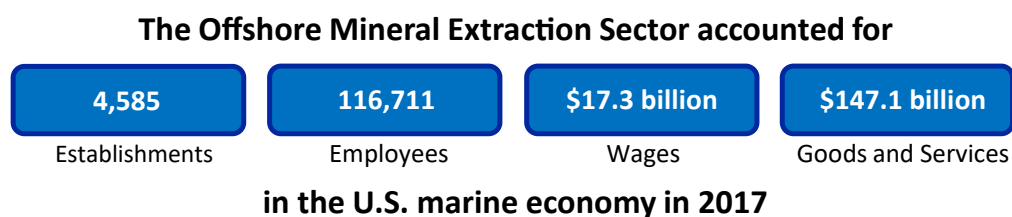
### Annual Changes in GDP, 2016-2017



**Economics: National Ocean Watch (ENOW)**  
[coast.noaa.gov/digitalcoast/data/enow.html](http://coast.noaa.gov/digitalcoast/data/enow.html)

## Offshore Mineral Extraction

Offshore mineral extraction includes oil and gas exploration and production, as well as limestone, sand, and gravel mining in the coastal and marine environment. The largest component of this sector is oil and gas production, which is concentrated in the Gulf of Mexico region.



In 2017, offshore mineral extraction accounted for only 3.5 percent of the total employment in the marine economy but contributed 25.2 percent of its gross domestic product. Average wages per employee of \$148,000 per year were almost three times the national average, and that number was largely due to the high wages in the oil and gas exploration and production industry. Average wages per employee in the limestone, sand, and gravel industry were about \$70,000, also higher than the national average.

Offshore mineral extraction is capital-intensive, requiring substantial investments in research, engineering, infrastructure, and operational equipment such as oceangoing vessels, and demanding comparably high skill sets that command high wages. The fact that much of the work takes place in hazardous conditions tends to further increase wages. The oil and natural gas extracted are sold at relatively high prices, which helps account for the large contribution this sector makes to the marine economy's gross domestic product.

Oil and gas exploration and production is the dominant industry in this sector, accounting for 94.6 percent of the employment and 98.1 percent of the gross domestic product in 2017. Limestone, sand, and gravel production is generally performed in support of construction activities and is, therefore, widely distributed among the U.S. coastal states. Generally speaking, states with large economies and long coastlines, such as California, Washington, Florida, and Texas, have the greatest production of sand, gravel, and limestone.

From 2016 to 2017, the offshore mineral extraction sector decreased by 11.6 percent in employment and 11.3 percent in real gross domestic product, perhaps caused by a shift in extracting overseas, given that 2017 experienced a sharp uptick (about 25 percent) in crude oil prices from 2016<sup>5</sup>,<sup>6</sup>. The decline in gross domestic product in this sector was concentrated in the Gulf of Mexico, where most of the nation's offshore oil production takes place. The second highest-producing region for offshore mineral extraction—the North Pacific—also experienced a 13.4 percent decrease in employment and 1.7 percent decrease in gross domestic product. Future trends in this sector will likewise be driven by oil prices and production levels, which are more sensitive to global than national conditions.

The national center of the oil and gas industry is Texas. Harris County, Texas, alone accounted for 4.1 percent of the employment in the nation's offshore mineral extraction sector and 26.4 percent of its gross domestic product.

5 U.S. Energy Information Administration. "Domestic Crude Oil First Purchase Prices by Area." Accessed at [eia.gov/dnav/pet/pet\\_pri\\_dfp1\\_k\\_a.htm](http://eia.gov/dnav/pet/pet_pri_dfp1_k_a.htm).

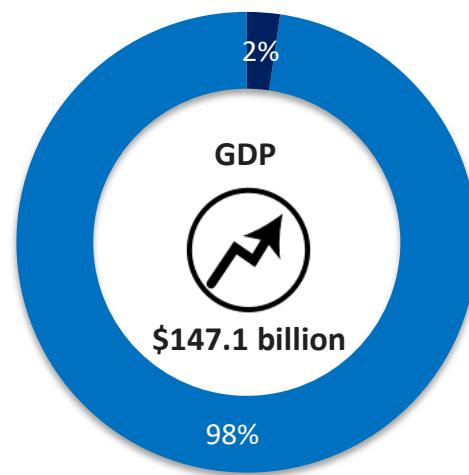
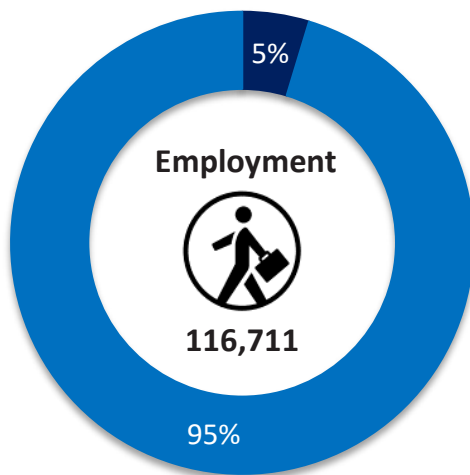
6 As reported by the Bureau of Economic Analysis, real value added (adjusted for inflation) for mining, quarrying, and oil and gas extraction increased 0.13 percent for the nation as a whole from 2016 to 2017. Accessed at [bea.gov/news/2018/gross-domestic-product-state-4th-quarter-2017-and-annual-2017-preliminary](http://bea.gov/news/2018/gross-domestic-product-state-4th-quarter-2017-and-annual-2017-preliminary).

## 2017 U.S. Marine Economy

# Offshore Mineral Extraction Sector

### Annual Totals

This sector accounted for 3.5 % of total employment and 25.2 % of total GDP in the marine economy



■ Limestone, Sand and Gravel

■ Oil and Gas Exploration and Production



### Annual Changes in Employment, 2016-2017



### Annual Changes in GDP, 2016-2017

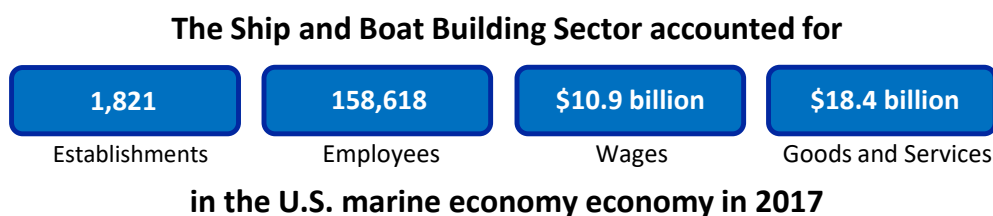


**Economics: National Ocean Watch (ENOW)**  
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## Ship and Boat Building

This sector includes the construction, maintenance, and repair of ships, recreational boats, commercial fishing vessels, ferries, and other marine vessels. An important attribute of this sector is the concentration of large shipyards in a few locations around the country. However, boat building and repair activity is spread more evenly around the country, with concentrations in areas with high levels of commercial fishing and recreational boating.

In 2017, the ship and boat building sector accounted for 4.8 percent of the employment and 6.6 percent of the gross domestic product in the U.S. marine economy. Average wages per employee, of \$69,000, were significantly higher than the national average of \$55,000. The ship building, maintenance, and repair component of this sector accounted for about 81.4 percent of the employment and 81.6 percent of the gross domestic product.



The ship and boat building sector increased by 0.4 percent in employment and 1.5 percent in gross domestic product from 2016 to 2017, following a decline in gross domestic product in previous years caused by production costs outpacing inflation for decades. This increase also reflects plans by the U.S. Navy to expand the fleet by 36 battle force ships.<sup>7</sup> The sector has been experiencing some ups and downs over the years, with a significant decline during the 2008 economic recession.

Ship building, ship repairs, and to some extent boat building tend to be concentrated in a few areas around the country. Major shipyards, for example, are absent from most areas' marine economies, but where they are present, they typically employ several thousand workers. This sector also includes boat repair services—generally small businesses that are common in most areas that are home to fishing fleets or frequented by recreational boats.

In 2017, Virginia contributed most to employment in this sector, accounting for 22.2 percent of the national total. Washington State was the largest contributor to gross domestic products in this sector, accounting for 21.0 percent of the total. As in 2016, Kitsap County, Washington, was still the largest county in the nation's ship and boat building sector; it alone accounted for about 4.8 percent of the employment and 5.8 percent of the gross domestic product in the nation's ship and boat building sector.

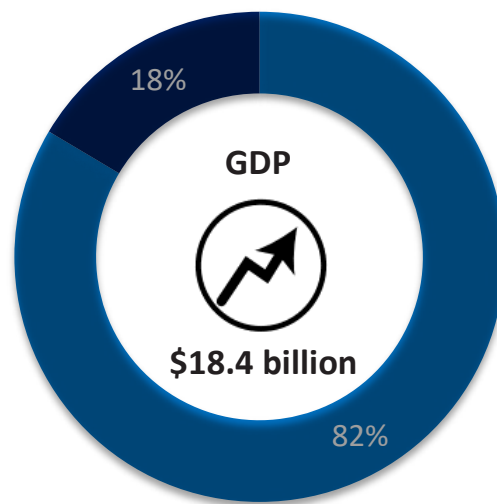
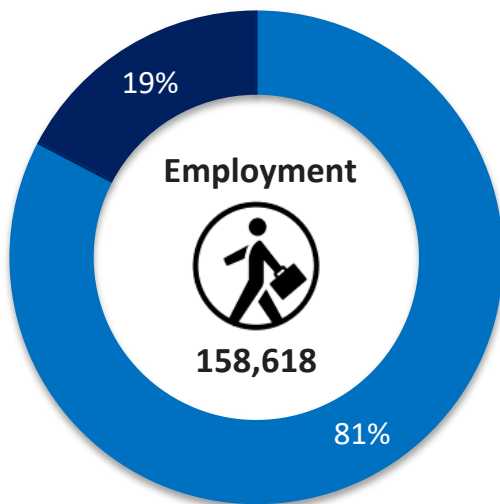
<sup>7</sup> U.S. Congressional Budget Office. "An Analysis of the Navy's Fiscal Year 2017 Shipbuilding Plan." Accessed at [cbo.gov/sites/default/files/115th-congress-2017-2018/reports/52324-shipbuildingreport.pdf](https://www.cbo.gov/sites/default/files/115th-congress-2017-2018/reports/52324-shipbuildingreport.pdf).

## 2017 U.S. Marine Economy

# Ship and Boat Building Sector

### Annual Totals

This sector accounted for 4.8% of total employment and 6.6% of total GDP in the marine economy

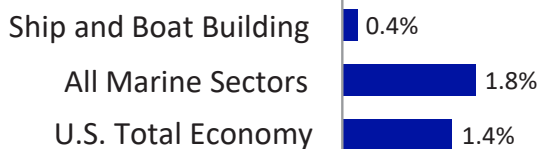


■ Ship Building and Repair

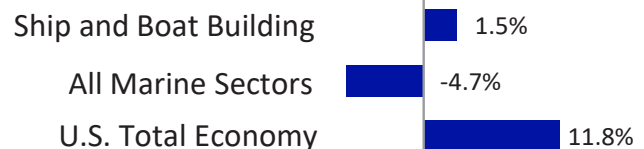
■ Boat Building and Repair



### Annual Changes in Employment, 2016-2017



### Annual Changes in GDP, 2016-2017



**Economics: National Ocean Watch (ENOW)**  
[coast.noaa.gov/digitalcoast/data/enow.html](http://coast.noaa.gov/digitalcoast/data/enow.html)

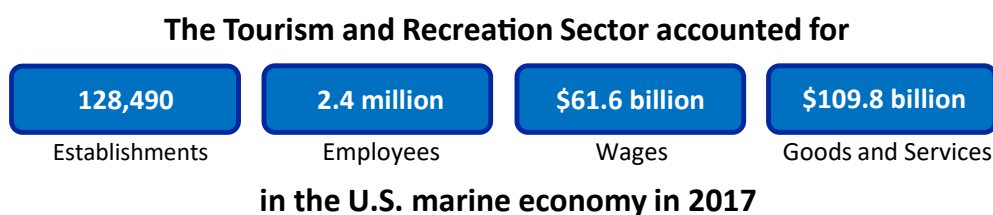
## Tourism and Recreation

The tourism and recreation sector has more business establishments and employs more people than all the other five sectors combined. In 2017, it was also the largest sector measured in terms of gross domestic product, accounting for \$110 billion alone, equivalent to about 42.3 percent of the total marine economy. This sector includes a wide range of businesses that attract or support marine-based tourism and recreation: eating and drinking places, hotels and lodging, scenic water tours, aquariums, parks, marinas, boat dealers, recreational vehicle parks and campsites, and associated sporting goods manufacturing.

An important attribute of this sector is the seasonal nature of much of the activity and the large number of part-time employees that it supports. This, in part, accounts for the relatively low wages for employees in this sector. It should be noted that workers in this sector on average are relatively young, with a large number of students to whom seasonal employment is ideally suited.

Another important attribute of this sector is the fact that many of the coastal and marine amenities that attract visitors are free, generating no direct employment, wages, or gross domestic product. However, these “nonmarket” features are usually key drivers for all of the market-based activity. It should also be noted that the market-based aspects of this sector can be greatly affected by ecosystem health, water quality, and the associated aesthetics.

Since many of the activities associated with this sector, such as hotels and restaurants, are not always marine-dependent, only businesses located in shore-adjacent zip codes are considered to be marine-dependent.



The majority of the jobs are in hotels and restaurants in nearshore areas where many of the tourist attractions are located, with these two industries alone accounting for 94.0 percent of the employment and 93.1 percent of the gross domestic product in this sector. Although the other industries are much smaller compared with hotels and restaurants—for example, aquariums, whale watching, and recreational fishing charters—they are arguably a prime reason for tourists’ visits to the coast. Vacationers stay at hotels and eat in restaurants, but the real attraction is the marine-related recreational activities and the nonmarket activities such as surfing and beach visitation.

From 2016 to 2017, tourism and recreation gained 40,000 jobs, accounting for most of the employment growth in the marine economy. Gross domestic product in the tourism and recreation sector declined during the 2008 economic recession but recovered rapidly and has grown for eight consecutive years.

The boat dealer industry declined steadily between 2005 and 2013, corresponding to declines in the boat building industry. However, this industry began to rebound in 2014, with continued growth in real gross domestic product of 4.6 percent in 2017 from the previous year. The marina industry grew the fastest within the tourism and recreation sector from 2016 to 2017, both in employment (3.5 percent) and real gross domestic product (5.9 percent). California and Florida are the two major contributors to the sector, together accounting for 35.0 percent of its total employment and 34.6 percent of its total gross domestic product in 2017.

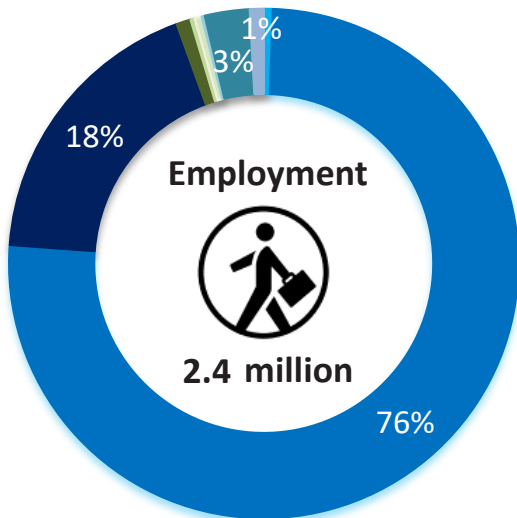


# 2017 U.S. Marine Economy

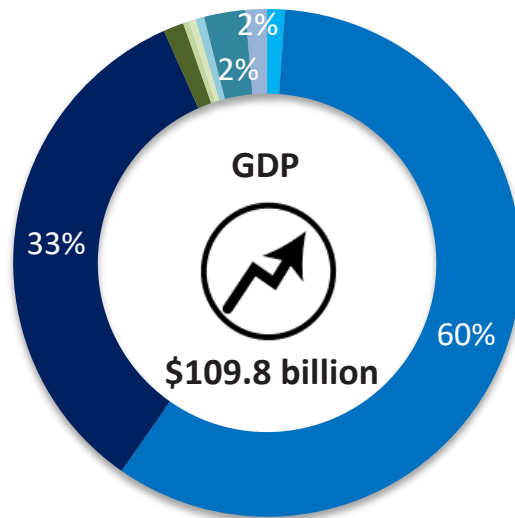
## Tourism and Recreation Sector

### Annual Totals

This sector accounted for 72.7% of total employment and 42.3 % of total GDP in the marine economy



- Boat Dealers
- Hotels and Lodging Places
- RV Parks and Campgrounds
- Sporting Goods Manufacturing
- Zoos and Aquaria



- Eating and Drinking Places
- Marinas
- Scenic Water Tours
- Amusement and Recreation Services



### Annual Changes in Employment, 2016-2017



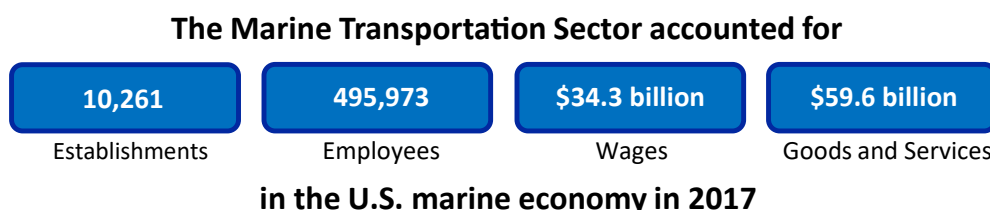
### Annual Changes in GDP, 2016-2017



**Economics: National Ocean Watch (ENOW)**  
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## Marine Transportation

This sector includes businesses engaged in the traffic of deep-sea freight, marine passenger services, marine transportation services, warehousing, and the manufacture of navigation equipment. It accounted for 15.0 percent of the employment and 20.2 percent of the gross domestic product in the U.S. marine economy. While the sector represents a smaller percentage of the marine economy than tourism and recreation or offshore mineral extraction, it is an integral component of the marine economy, paying one of the highest average wages per employee, \$69,000, in 2017.



Warehousing is the largest component of the marine transportation sector in terms of employment, accounting for 52.8 percent of total employment for the sector in 2017. To avoid overestimation, only warehousing activities located in shore-adjacent counties are included in the ENOW data.

Also, while these figures include economic activity associated with loading, unloading, and warehousing cargo and supporting its movement in and out of harbors, they do not include the value of the cargo itself. Including cargo values would not be an appropriate measure of the direct contribution of marine transportation to the national economy, but the \$1.60 trillion of vessel cargo that was both imported and exported through our ports in 2017 is indicative of the large indirect effects of our coastal ports.<sup>8</sup> Water remains the leading mode to transport foreign goods for trade; ships moved goods accounting for 34.0 percent of U.S.–international freight trade as measured by value and 73.4 percent as measured by weight.<sup>9</sup> These effects are realized across the nation, accruing as benefits to the producers of agricultural and manufactured products that are sold in international markets and to the manufacturers and retailers whose businesses rely on imported goods.

In the marine transportation sector, about 21.1 percent of employment and 25.9 percent of real gross domestic product are supported by California. The rest is distributed across the nation, concentrated around major seaports.

<sup>8</sup> U.S. Census Bureau. “FT920: U.S. Merchandise Trade: Selected Highlights, December 2017.” Accessed at [census.gov/foreign-trade/Press-Release/2017pr/12/ft920/index.html](https://census.gov/foreign-trade/Press-Release/2017pr/12/ft920/index.html).

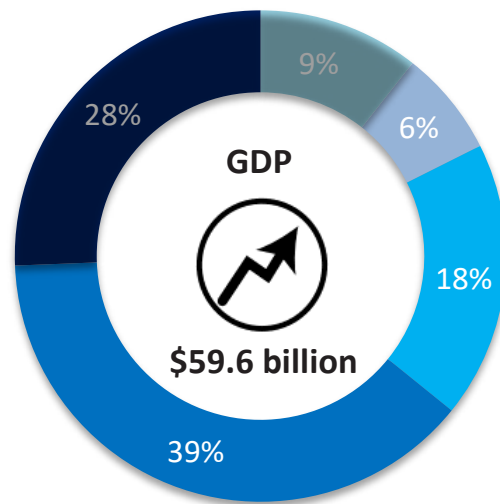
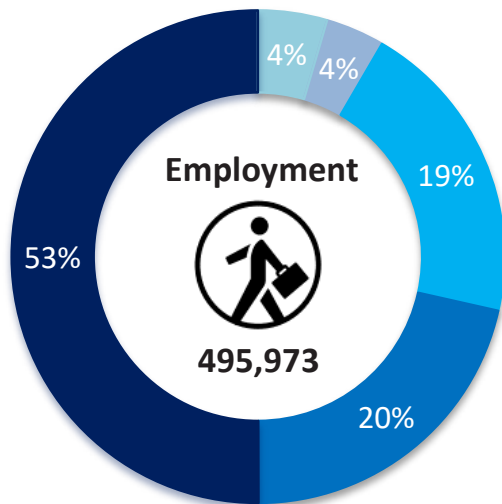
<sup>9</sup> U.S. Department of Transportation’s Bureau of Transportation Statistics. “Freight Facts & Figures, International Freight Gateways.” Accessed at [datahub.transportation.gov/stories/s/International-Freight-Gateways/4s7k-yxvu](https://datahub.transportation.gov/stories/s/International-Freight-Gateways/4s7k-yxvu).

## 2017 U.S. Marine Economy

# Marine Transportation Sector

### Annual Totals

This sector accounted for 15.0 % of total employment and 20.2 % of total GDP in the marine economy



- Marine Freight
- Marine Transportation Services
- Warehousing

- Marine Passenger Transportation
- Search and Navigation Equipment



### Annual Changes in Employment, 2016-2017



### Annual Changes in GDP, 2016-2017



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**2020**