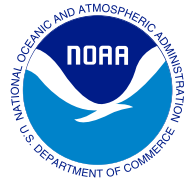
NOAA Report on the U.S. Ocean and Great Lakes Economy



Office for Coastal Management
ECONOMICS

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 2015 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 2017) and the Bureau of Economic Analysis' GDP by State data (released in June 2017).

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Highlights

The U.S. ocean and Great Lakes economy, which focuses on six economic sectors that depend on the oceans and Great Lakes, is an important and resilient part of the national economy. In 2015, the ocean economy accounted for

- 152,000 business establishments
- 3.2 million employees
- $128 billion in wages
- $320 billion in gross domestic product

In 2015, employment in the ocean economy increased 3.2 percent (adding 97,000 jobs). This was faster than the national average employment growth of 2.1 percent.

The ocean economy's contribution to gross domestic product grew by 5.7 percent between 2014 and 2015. This was twice as fast as the U.S. economy as a whole (which grew by 2.7 percent).

In 2015, the ocean economy's contribution to gross domestic product grew by 5.7 percent—twice as fast as the U.S. economy as a whole.

Introduction

The oceans and Great Lakes support the lives, lifestyles, and livelihoods of all Americans. We fish from their waters, vacation on their edges, ship cargo on their surface, and extract oil, gas, sand, and gravel from their seafloors.

Ocean and Great Lakes-dependent activities are important contributors to the nation's economy. Oil and gas production provides energy. Seafood production and processing meet the demands of restaurants and seafood markets. Tourism and recreation support millions of part-time and entry-level jobs. Marine construction, marine transportation, and ship building provide access to global markets.

The oceans and Great Lakes also provide 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. Coastal and ocean 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 oceans and Great Lakes that result in jobs and wages and that contribute 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 oceans and Great Lakes 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.

Data presented in this report are from the

National Oceanic and Atmospheric Administration's Economics: National Ocean Watch (ENOW) data set. ENOW data are produced by NOAA in partnership with the Bureau of Economic Analysis, Bureau of Labor Statistics, and Bureau of the Census, and are derived from some of these agencies' most respected and commonly used data.

The consistency of ENOW's representation of the ocean economy with these data sets is one of its primary advantages. Another is the fact that it is produced in a manner that yields results that are comparable across time and from place to place. Gross domestic product figures are also updated each year for past years, so that the results are consistent with the Bureau of Economic Analysis' annual improvements of national and industrial data. ENOW data are available for the years 2005 through 2015 for about 400 coastal counties, 30 coastal states, 8 regions, and the nation.

The ocean economy, as represented in the ENOW data, includes six economic sectors that depend in various ways on the oceans and Great Lakes:

- living resources
- marine construction
- marine transportation
- offshore mineral extraction
- ship and boat building
- tourism and recreation

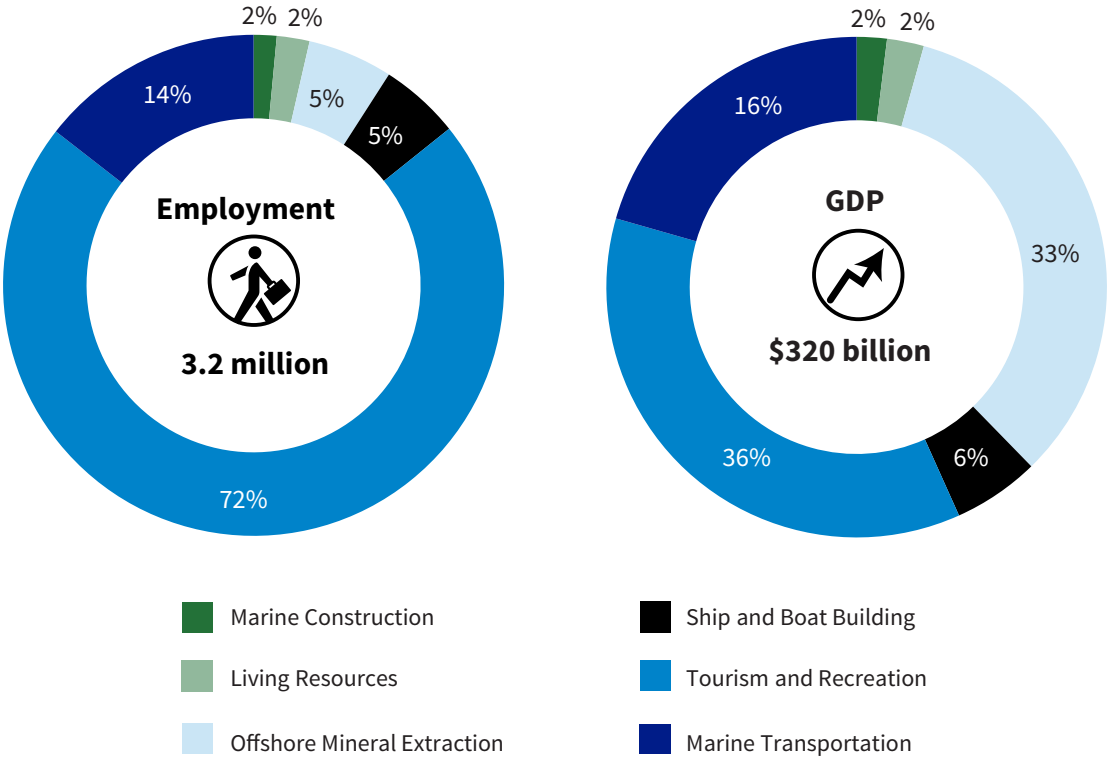
A review of this list underscores the complexity and importance of effective use, management, and governance of the oceans and Great Lakes. Some economic activities, like commercial fishing (part of the living resources sector), depend on the health of coastal and ocean ecosystems. Yet all of the sectors include activities that have the potential to harm these ecosystems, putting jobs, wages, and gross domestic product (as well has human life and well-being) at risk.

Maintaining the strength and sustainability of these ocean-based activities requires that we exercise good stewardship and care for the systems that support them.

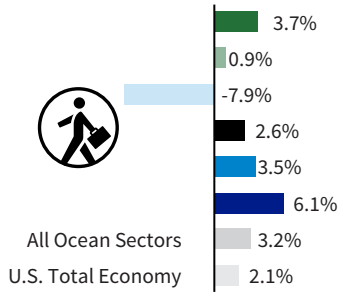
2015 U.S. Ocean and Great Lakes Economy

National Summary

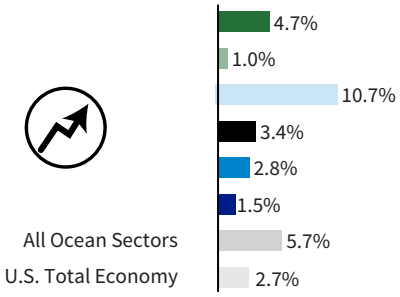
The ocean economy accounted for 2.3% of total employment and 1.8% of total GDP in the United States



Annual Growth in Employment



Annual Growth in GDP



Economics: National Ocean Watch (ENOW)

coast.noaa.gov/digitalcoast/data/enow

National Profile

The Importance of the Ocean Economy

In 2015, the ocean economy's 152,000 business establishments employed about 3.2 million people, paid $128 billion in wages, and produced $320 billion in goods and services. This accounted for about 2.3 percent of the nation's employment and 1.8 percent of its gross domestic product.

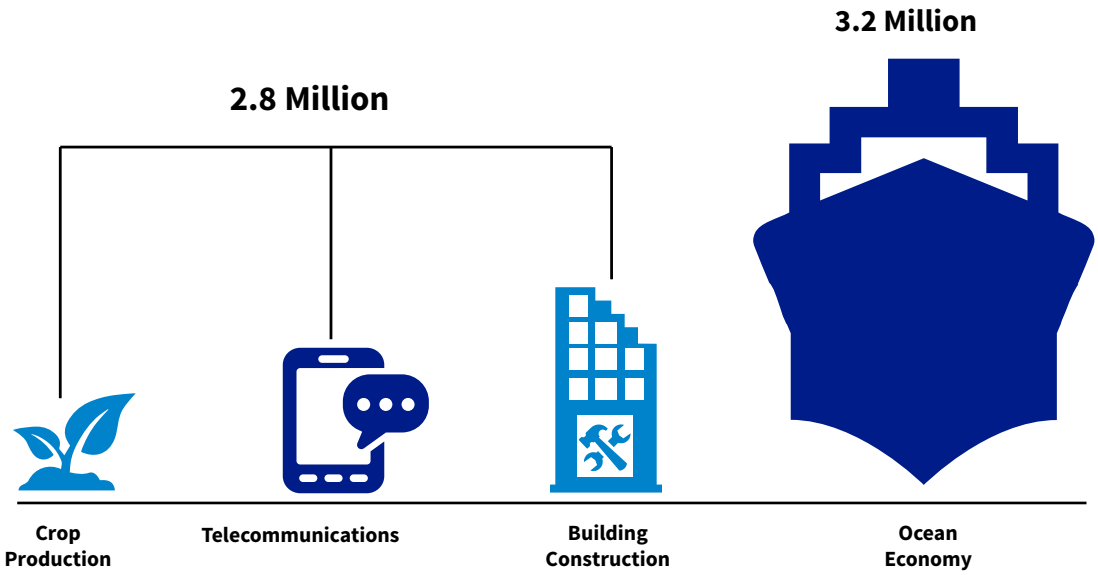
The U.S. ocean and Great Lakes economy accounted for

152,000	3.2 million	$128 billion	$320 billion
Establishments	Employees	Wages	Goods and Services

in the U.S. ocean and Great Lakes economy in 2015

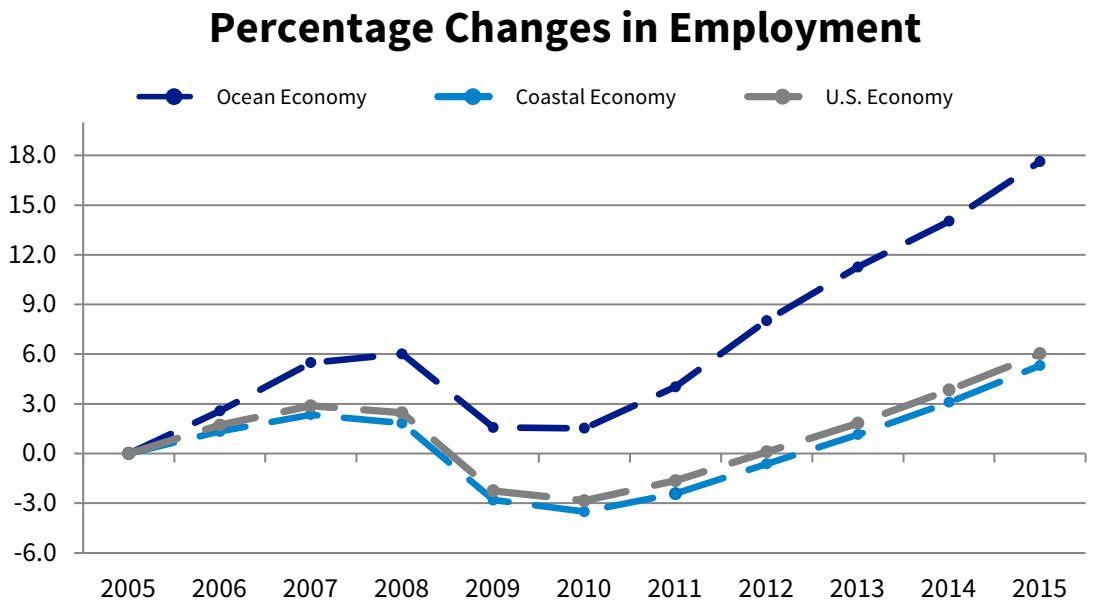
This seems small, but our nation's economy is diverse and includes many "small" but integral parts. Most people, for example, have some sense of the importance of better-known economic activities like crop production, telecommunications, and building construction. In 2015, the ocean economy employed more people than these three sectors combined.

U.S. Total Employment Comparison



The Resilience of the Ocean Economy

The ocean economy weathered the recession of 2007 to 2009 better than the U.S. coastal economy[1] and total economy as a whole.



In 2015, employment in the ocean economy increased by 11.5 percent from pre-recession levels (2007), while employment in the U.S. economy as a whole grew about 3.0 percent since 2007. From 2014 to 2015, the ocean and Great Lakes economy gained about 97,000 employees, an increase of 3.2 percent—more than the U.S. economy as a whole, which grew by 2.1 percent during the same period.

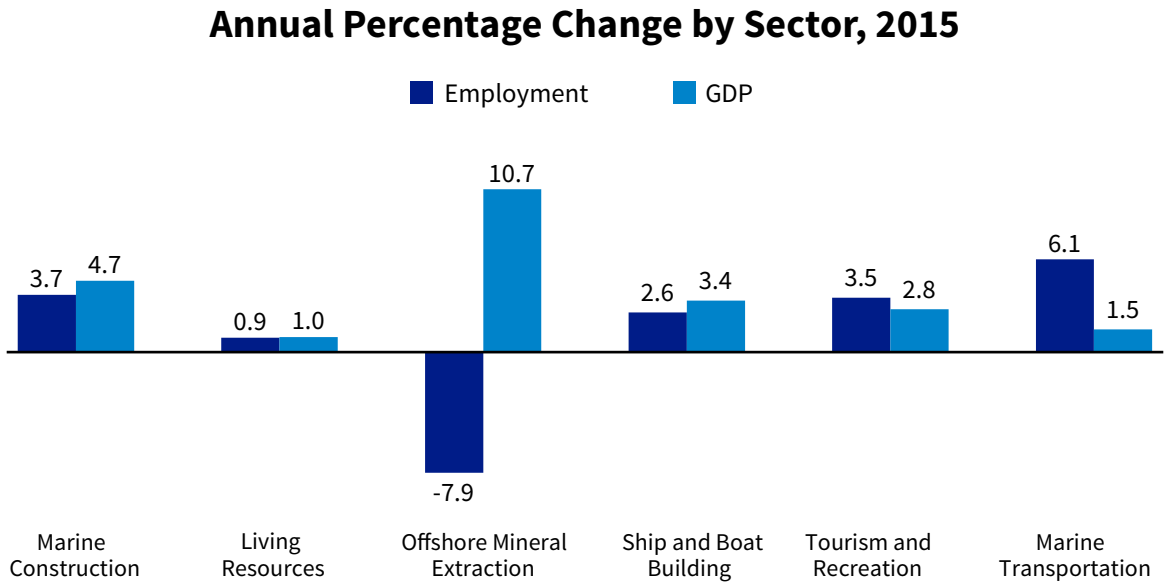
Trends in gross domestic product also show the resilience of the ocean economy. In 2015, inflation-adjusted gross domestic product in the ocean economy was 26.1 percent higher than pre-recession levels (2007), contrasted with a 9.1 percent increase in the U.S. economy as a whole. In just one year, from 2014 to 2015, the ocean economy's Inflation-adjusted gross domestic product grew by 5.7 percent—twice the rate of growth experienced in the nation as a whole (2.7 percent).

An important contributor to the ocean economy's strong performance in terms of gross domestic product in 2015 was the offshore mineral extraction sector, where inflation-adjusted gross domestic product increased by 10.7 percent. This growth was concentrated in the Gulf of Mexico where offshore oil production increased by 8.4 percent (measured in barrels of oil).[2] Employment in the marine transportation sector showed the highest rate of increase (6.1 percent), but employment in the tourism and recreation sector grew the most (79,000 jobs).

In 2015, gross domestic product in all six ocean sectors increased, and employment increased in all sectors except offshore mineral extraction.

1 U.S. Coastal Economy represents the total economy in the shoreline counties.

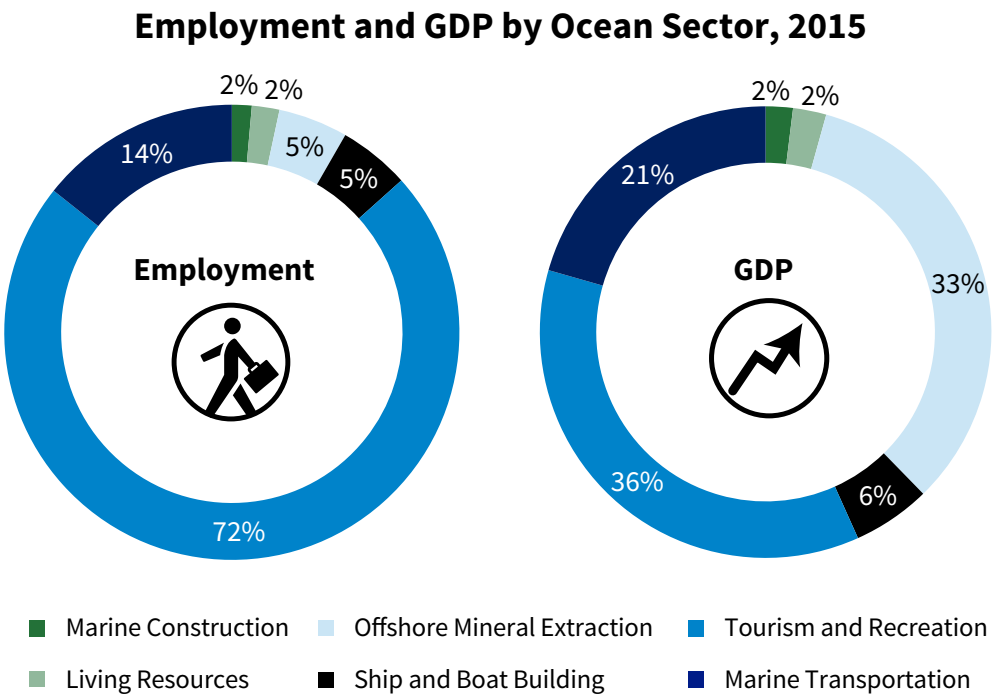
2 U.S. Energy Information Administration. "Crude Oil Production, Feb 2018" and "Natural Gas Gross Withdrawals and Production, Feb 2018." Accessed at *https://eia.gov*.



The Diverse Composition of the Ocean Economy

The six ocean-dependent 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, like 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 ocean economy (72.3 percent) than would be expected in light of its much smaller contribution to gross domestic product (36.1 percent). On the other hand, capital-intensive industries, like offshore mineral extraction, yield high levels of gross domestic product with a relatively small workforce (4.9 percent). In 2015, offshore mineral extraction was the second largest sector of the ocean economy in terms of gross domestic product (33.4 percent).

An important distinction should be made about the relationship of these economic activities to the ocean resources and ecological systems that support them. Some ocean sectors make non-consumptive use of the oceans. Marine transportation, ship and boat building, and marine construction are ocean-dependent because they require proximity to the ocean and involve activities that do not consume or "use up" ocean 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 ocean resources (recreational fishing) and non-consumptive uses (beachgoing).



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

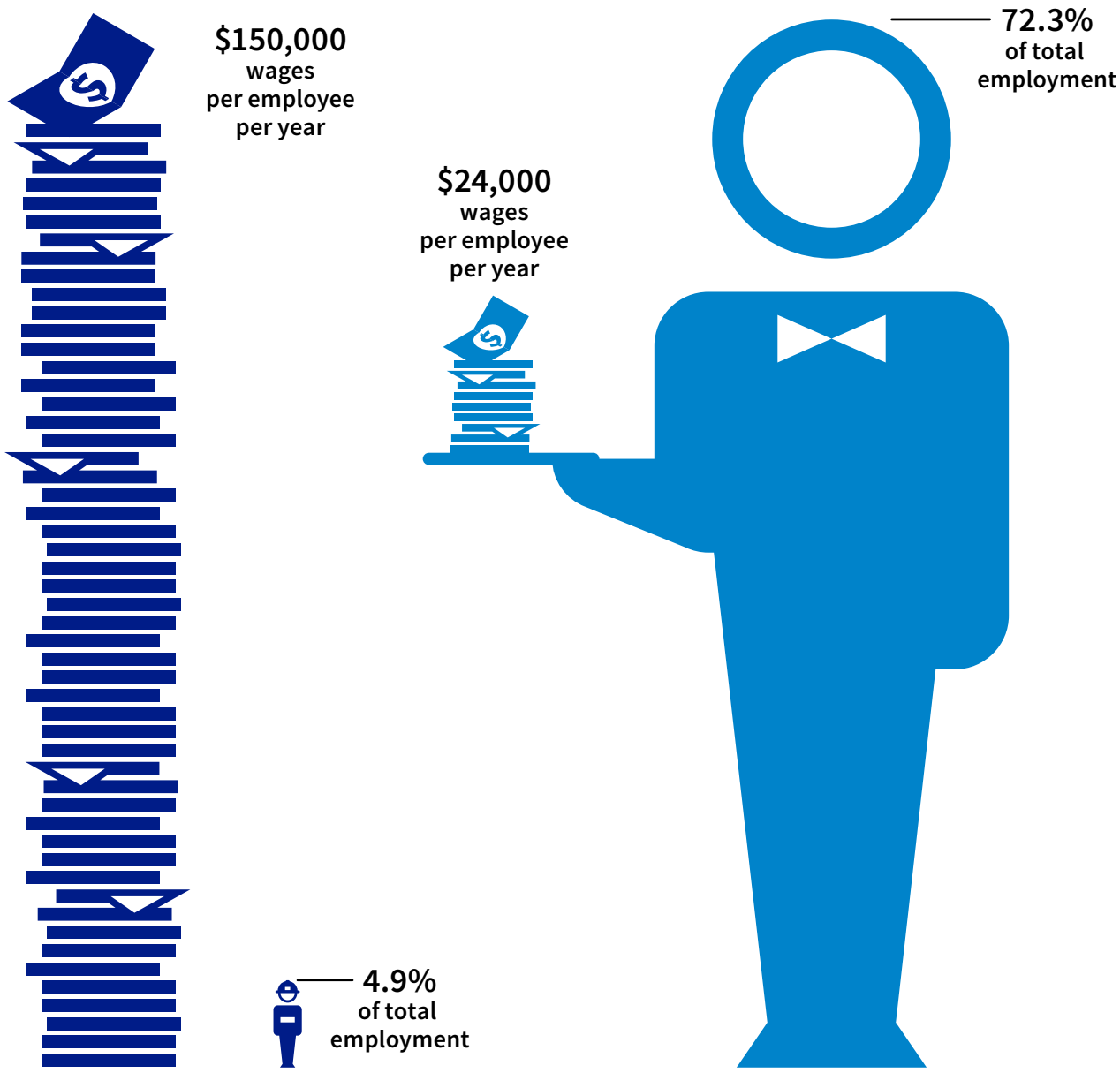
The Importance of Ocean-Dependent Jobs

Average wages across the ocean economy vary greatly. In 2015, offshore mineral extraction paid the highest wage per employee ($150,000) in the ocean and Great Lakes 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 ($24,000) of all ocean 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.[3]

The living resources sector also paid an average wage ($42,000) that was lower than the national average of $53,000. 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 2015 national average.

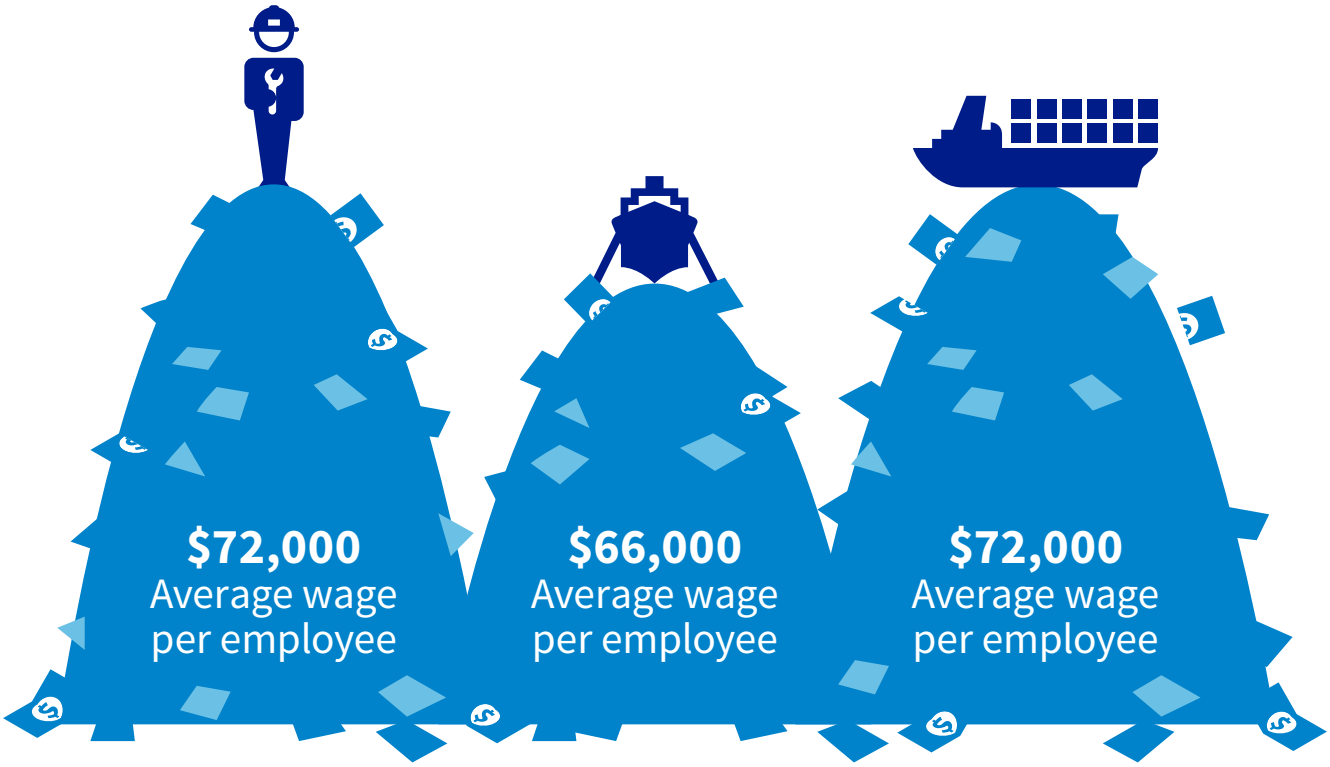
3 U.S. Census Bureau. 2015. Quarterly Workforce Indicators (QWI) Data. Longitudinal-Employer Household Dynamics Program. Accessed at *http://lehd.ces.census.gov/data/#qwi*.

2015 Employment versus Wages



2015 Wages per Employee Working on the Water

All three sectors paid an average wage per employee above the national average of $53,000



Sector Profiles

Marine Construction

The marine construction sector accounts for the heavy construction activities associated with dredging of 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 ocean economy. The effect of this omission is most prominent in the Gulf of Mexico and Alaska.

The Marine Construction Sector accounted for

3,080	44,557	$3.2 billion	$6.2 billion
Establishments	Employees	Wages	Goods and Services

in the U.S. ocean and Great Lakes economy in 2015

Marine construction accounted for 1.4 percent of the employment and 1.9 percent of the gross domestic product in the U.S. ocean and Great Lakes economy. While the sector represents a small percentage of the ocean economy, it is an integral component, paying one of the highest average wages per employee of $72,000, much higher than the national average of $53,000. 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 2014 to 2015, gross domestic product in this sector reversed a two-year downward trend, growing by 4.7 percent, much higher than the overall U.S. economy growth rate of 2.7 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.

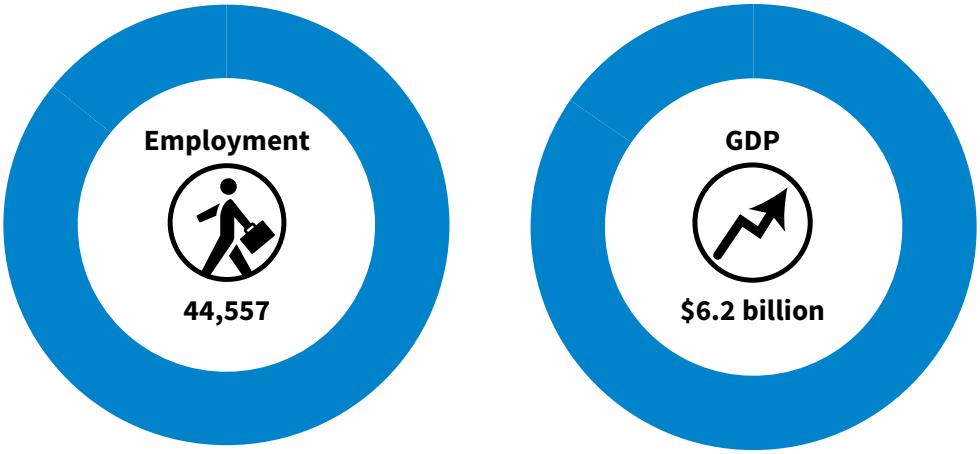
Marine construction activities occur in most regions of the U.S., but they are highly concentrated in Texas, Florida, California, and Louisiana, which together in 2015 accounted for about 55.9 percent of the employment and about 53.9 percent of the gross domestic product in this sector.

2015 U.S. Ocean and Great Lakes Economy

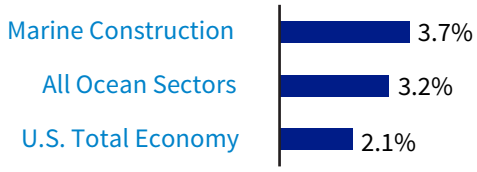
Marine Construction Sector

Annual Totals

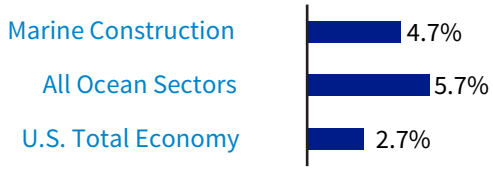
This sector accounted for 1.4% of total employment and 1.9% of total GDP in the ocean economy



Annual Changes in Employment



Annual Changes in GDP



Economics: National Ocean Watch (ENOW)

coast.noaa.gov/digitalcoast/data/enow

Living Resources

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

The Living Resources Sector accounted for

6,119	62,156	$2.6 billion	$7.6 billion
Establishments	Employees	Wages	Goods and Services

in the U.S. ocean and Great Lakes economy in 2015

The living resources sector accounted for only 2.0 percent of the employment and 2.4 percent of the gross domestic product of the U.S. ocean and Great Lakes economy, with the second lowest average wage of the ocean 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 industry in the living resources sector, accounting for 58.3 percent of the sector's employment and 57.0 percent of the gross domestic product. This industry accounts for most of the employed workers in the sector.

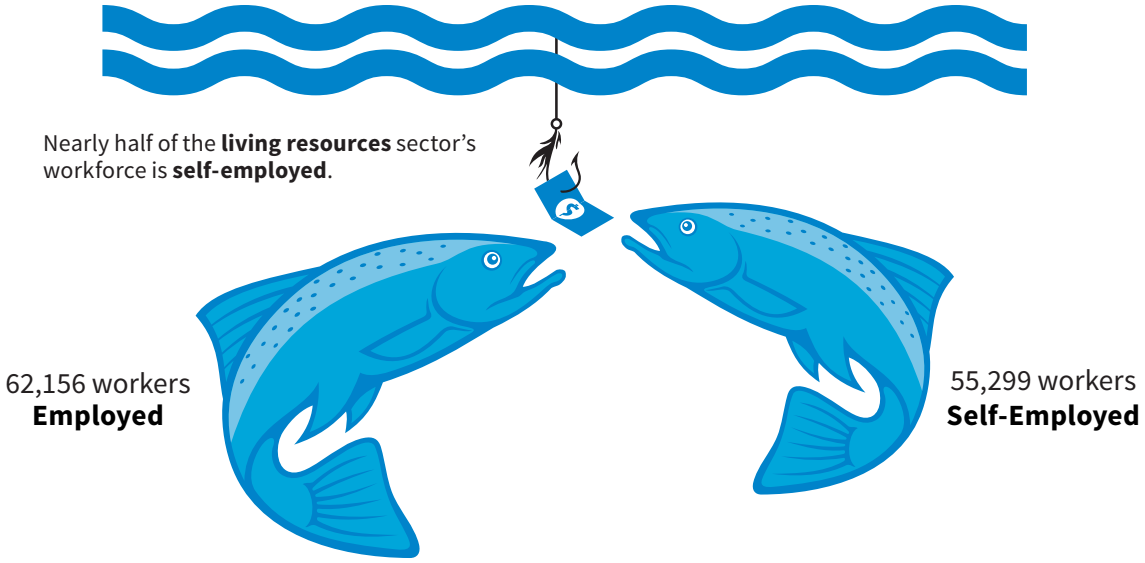
From 2014 to 2015, employment in the sector increased by 0.9 percent, and gross domestic product (adjusted for inflation) grew by 1.0 percent. As with the offshore mineral extraction sector, gross domestic product in the living resources sector is sensitive to the global price of the resource being harvested. This sector recovered more slowly than the U.S. total economy, with the number of business establishments and employment well below pre-recession levels.

An important attribute of this sector is its reliance on the health of coastal and ocean 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 ocean-dependent activities, which underscores the need for wise use, conservation, and management of ocean, 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."[4] 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.

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.

2015 Employed and Self-Employed



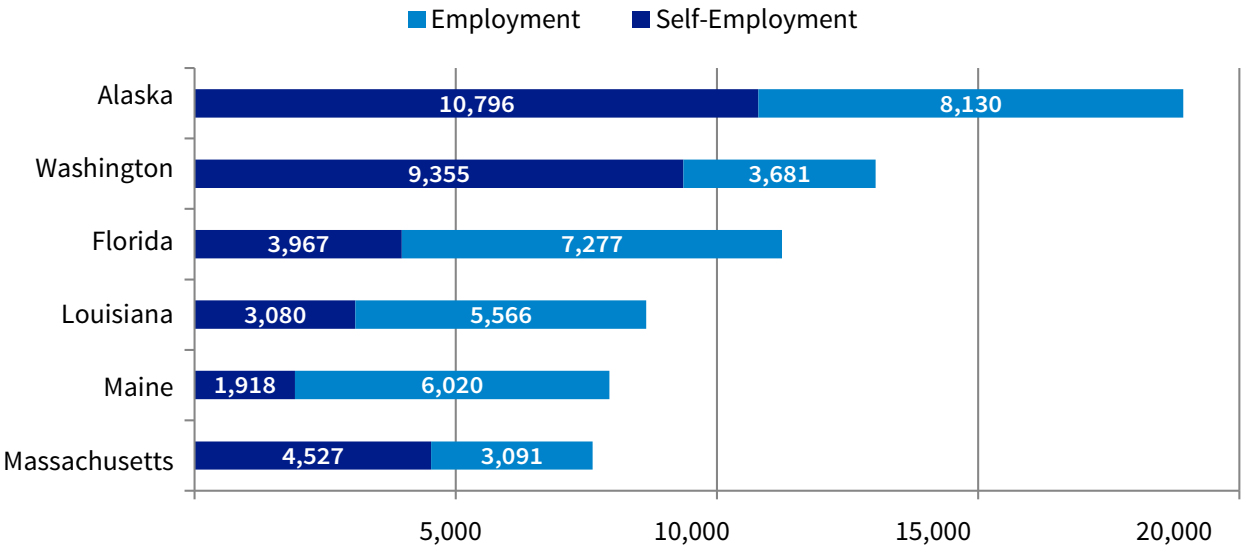
But perhaps the most distinctive attribute of this sector is the importance of self-employed workers in seafood harvesting. Even though fishing vessels require multiple crew members, these individuals are frequently not employed by the owner but work for a share of the catch. At a national level, roughly 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 2015, self-employed fishermen accounted for 55,299 jobs, bringing the total number of jobs in the living resources sector to more than 117,000.

In 2015, more than $3.2 billion in gross receipts was reported by the self-employed in the living resources sector, larger than 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.

The chart below shows the combined number of employed and self-employed workers in the living resources sectors. Measured in these terms, the leading centers of the living resources sector are Alaska and Washington. Both states have high levels of employment relative to self-employed workers. Self-employed workers in Florida, 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, 2015



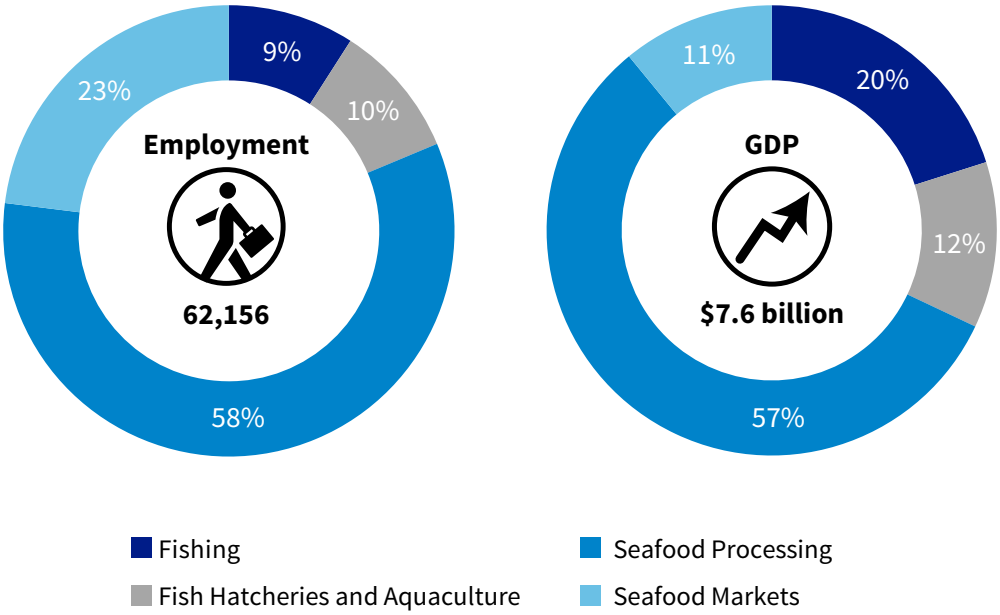
Since self-employed workers are such a large part of this sector, combining the self-employed workers with employed workers provides a more accurate and complete picture of the sector. The remainder of this report, however, looks exclusively at the component of ENOW data that focuses on businesses with employees, since self-employed workers account for only 4.0 percent of the total jobs in the ocean economy, with 41.6 percent of those jobs in the living resources sector.

2015 U.S. Ocean and Great Lakes Economy

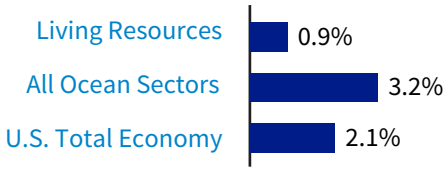
Living Resources Sector

Annual Totals

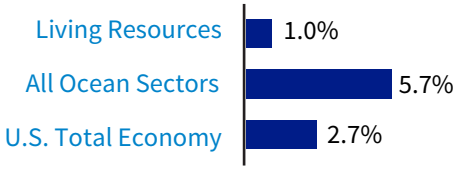
This sector accounted for 2.0% of total employment and 2.4% of total GDP in the ocean economy



Annual Changes in Employment



Annual Changes in GDP



Economics: National Ocean Watch (ENOW)

coast.noaa.gov/digitalcoast/data/enow

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.

The Offshore Mineral Extraction Sector accounted for

5,179	157,011	$23.5 billion	$107 billion
Establishments	Employees	Wages	Goods and Services

in the U.S. ocean and Great Lakes economy in 2015

In 2015, offshore mineral extraction accounted for only 4.9 percent of the total employment in the ocean economy but contributed 33.4 percent of its gross domestic product. Average wages per employee of more than $150,000 per year were more than twice 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 $66,000, 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 help account for the large contribution this sector makes to the ocean economy's gross domestic product.

Oil and gas exploration and production is the dominant industry in this sector, accounting for 96.1 percent of the employment and 98.3 percent of the gross domestic product in 2015. 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, like California, Washington, Florida, and Texas, have the greatest production of sand, gravel, and limestone.

From 2014 to 2015, employment in the offshore mineral extraction sector declined by 7.9 percent, while gross domestic product grew by 10.7 percent. The growth in gross domestic product was concentrated in the Gulf of Mexico where offshore oil production increased by 8.4 percent (measured in barrels of oil).[5],[6] 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 66.0 percent of the employment in the nation's offshore mineral extraction sector and 80.0 percent of its gross domestic product.

5 U.S. Energy Information Administration. "Crude Oil Production, Feb 2018" and "Natural Gas Gross Withdrawals and Production, Feb 2018." Accessed at *https://eia.gov*.

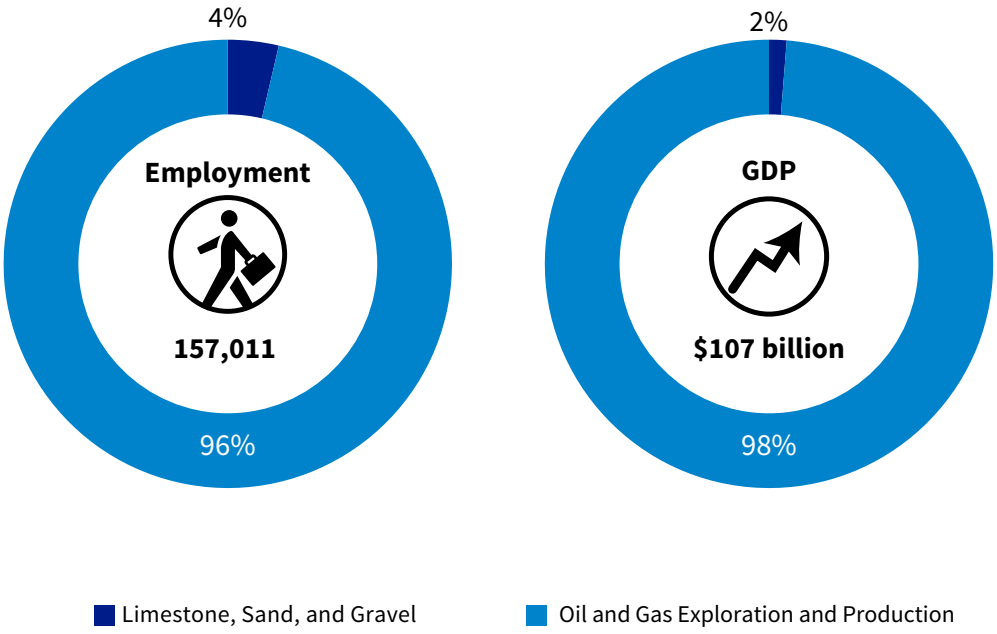
6 As reported by the Bureau of Economic Analysis, real value added (adjusted for inflation) for oil and gas extraction increased 18.7 percent for the nation as a whole from 2014 to 2015; value added (not adjusted for inflation) fell by 37.0 percent over the same period. This wide disparity reflects dramatic changes in oil prices coupled with a 7.5 percent increase in oil production nationally. Similar disparities between value added and real value added were manifested in the ocean economy statistics for the entire offshore mineral extraction sector.

2015 U.S. Ocean and Great Lakes Economy

Offshore Mineral Extraction

Annual Totals

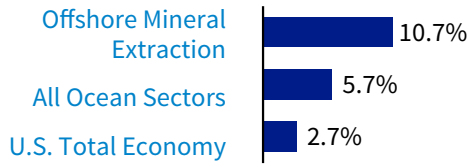
This sector accounted for 4.9% of total employment and 33.4% of total GDP in the ocean economy



Annual Changes in Employment



Annual Changes in GDP



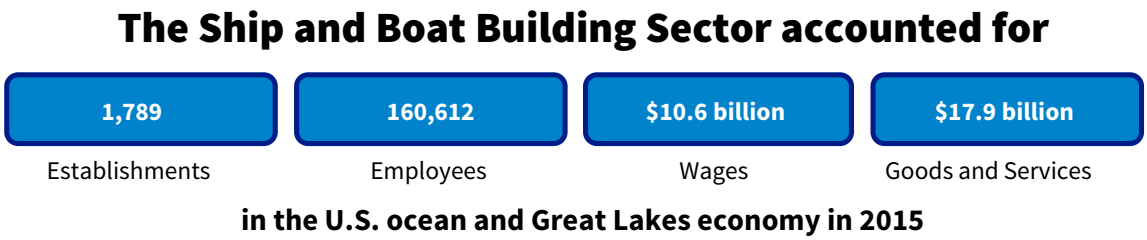
Economics: National Ocean Watch (ENOW)

coast.noaa.gov/digitalcoast/data/enow

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 2015, the ship and boat building sector accounted for 5.1 percent of the employment and 5.6 percent of the gross domestic product in the U.S. ocean and Great Lakes economy. Average wages per employee, of $66,000, were significantly higher than the national average of $53,000. The ship building, maintenance, and repair component of this sector accounted for about 83.7 percent of the employment and 84.7 percent of the gross domestic product.



The ship and boat building sector grew at a rate of 2.6 percent in employment and 3.4 percent in gross domestic product from 2014 to 2015. This sector has been experiencing some ups and downs over the years with a significant decline during the economic recession, particularly in the boat building industry.

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' ocean 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 frequented by recreational boats.

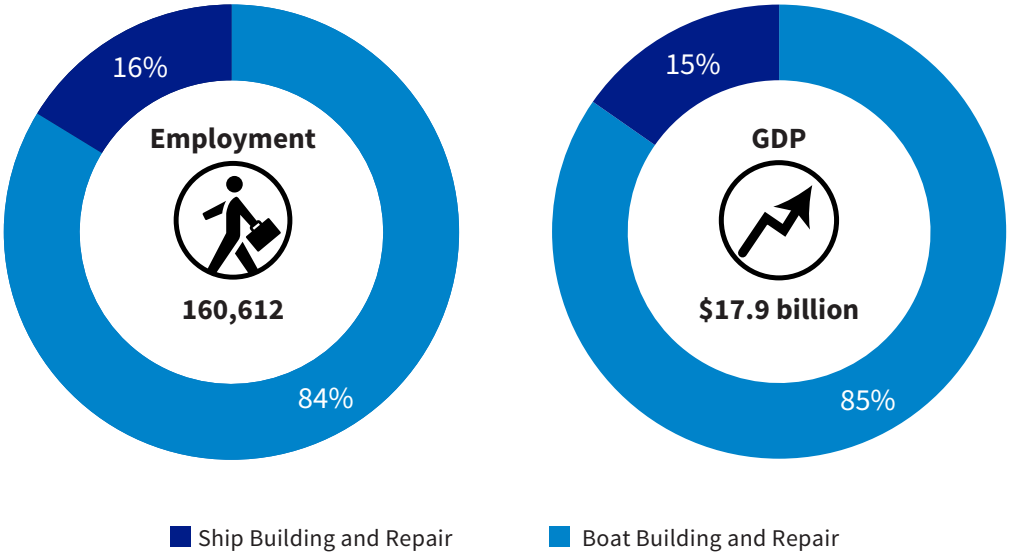
In 2015, Virginia contributed most to employment in this sector, accounting for 23.0 percent of the employment. Washington State was the largest contributor to gross domestic products in this sector, accounting for 20.7 percent of the total. Kitsap County, Washington, was the largest county in the nation's ship and boat building sector; it alone accounted for about 8.3 percent of the employment and 16.1 percent of the gross domestic product in the nation's ship and boat building sector.

2015 U.S. Ocean and Great Lakes Economy

Ship and Boat Building

Annual Totals

This sector accounted for 5.1% of total employment and 5.6% of total GDP in the ocean economy



Annual Changes in Employment



Annual Changes in GDP



Economics: National Ocean Watch (ENOW)

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Tourism and Recreation

The tourism and recreation sector has more business establishments and employs more people than all the other five sectors combined, but only accounts for about a third of the ocean economy's gross domestic product. This sector includes a wide range of businesses that attract or support ocean-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 ocean 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, like hotels and restaurants, are not always ocean-dependent, only businesses located in shore-adjacent zip codes are considered to be ocean-dependent.

The Tourism and Recreaction Sector accounted for

125,395	2.3 million	$55.2 billion	$116 billion
Establishments	Employees	Wages	Goods and Services

in the U.S. ocean and Great Lakes economy in 2015

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 93.9 percent of the employment and 92.0 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 the drivers for tourists' visits to the coast. Vacationers stay at hotels and eat in restaurants, but the real attraction is the ocean-related recreational activities and the nonmarket activities like surfing and beach visitation.

This sector recovered rapidly from the economic recession. From 2014 to 2015, tourism and recreation gained 79,000 jobs, accounting for about four-fifths of the employment growth in the ocean economy. Gross domestic product in the tourism and recreation sector declined during the economic recession but recovered rapidly and has grown for six consecutive years, with a growth rate of 2.8 percent in 2015.

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 growth in gross domestic product of 7.4 percent in 2015. The amusement and recreation services industry grew the fastest in both employment (5.5 percent) and gross domestic product (9.3 percent) from 2014 to 2015.

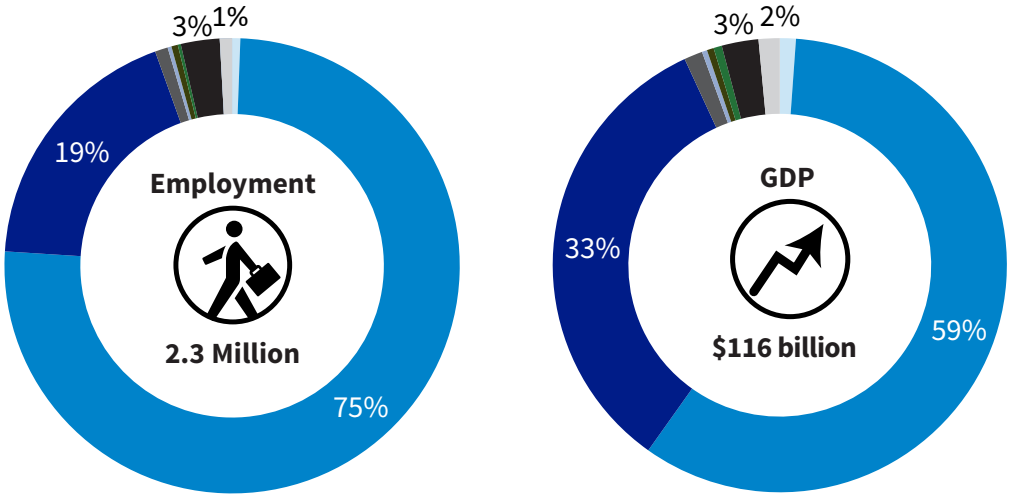
California and Florida are the two major contributors to the sector, accounting for more than one-third of its total employment and gross domestic product in 2015.

2015 U.S. Ocean and Great Lakes Economy

Tourism and Recreation

Annual Totals

This sector accounted for 72.3% of total employment and 36.1% of total GDP in the ocean economy



Annual Changes in Employment



Annual Changes in GDP



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, pipeline transportation, marine transportation services, warehousing, and the manufacture of navigation equipment. It accounted for 14.3 percent of the employment and 20.6 percent of the gross domestic product in the U.S. ocean and Great Lakes economy. While the sector represents a smaller percentage of the ocean economy than tourism and recreation or offshore mineral extraction, it is an integral component of the ocean economy, paying one of the highest average wages per employee, $72,000, in 2015.

The Marine Transportation Sector accounted for

10,084	454,117	$32.8 billion	$65.9 billion
Establishments	Employees	Wages	Goods and Services

in the U.S. ocean and Great Lakes economy in 2015

Warehousing is the largest component of the marine transportation sector in terms of employment, accounting for 46.6 percent of total employment for the sector. 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 $1.5 trillion of cargo imported or exported through our ports in 2015 is indicative of the large indirect effects of our coastal ports.[7] These goods accounted for 40 percent of U.S. foreign trade as measured by value and 69 percent as measured by weight.[8] 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 in part on imported goods.

In the marine transportation sector, about 21.4 percent of employment and 25.7 percent of gross domestic product are supported by California. The rest is distributed across the nation, concentrated around major seaports.

7 U.S. Census Bureau. "FT920: U.S. Merchandise Trade: Selected Highlights, December 2015." Accessed at *www.census.gov/foreign-trade/Press-Release/2015pr/12/ft920/index.html.*

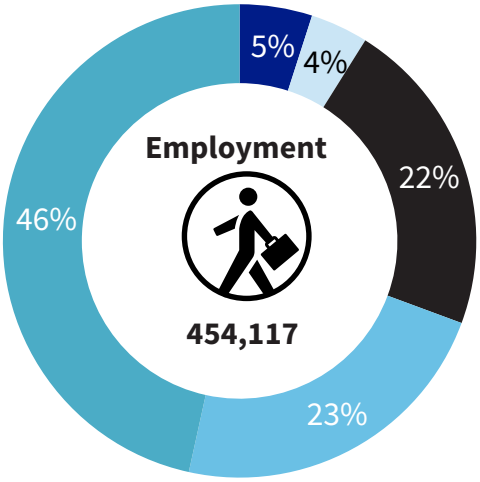
8 U.S. Department of Transportation's Bureau of Transportation Statistics. "Freight Facts and Figures 2017." Accessed at *www.bts.gov/sites/bts.dot.gov/files/docs/FFF_2017.pdf.*

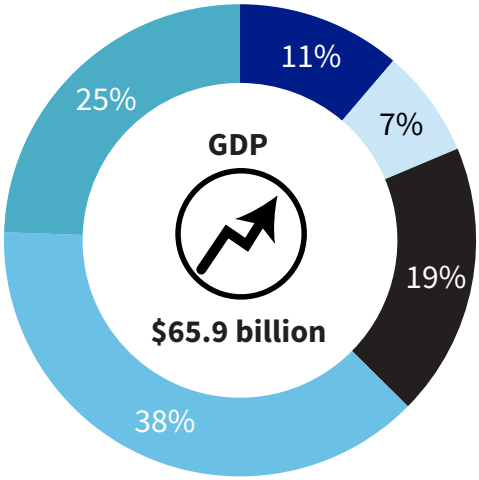
2015 U.S. Ocean and Great Lakes Economy

Marine Transportation Sector

Annual Totals

Marine transportation accounted for 14.3% of total employment and 20.6% of total GDP in the ocean economy





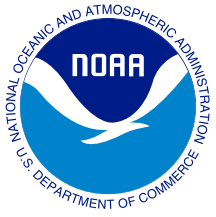
- Marine Freight
- Marine Passenger Transportation
- Marine Transportation Services
- Search and Navigation Equipment
- Warehousing

Annual Changes in Employment



Annual Changes in GDP





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