

**BC's Ocean Economy:
link to our past, bridge to our future**



BC's Ocean Economy: link to our past, bridge to our future

Our Connection to the Ocean

British Columbians are a coastal people. The ocean is integral to our food, culture, livelihoods, leisure, and our very identity. It supports a rich, complex web of marine and coastal ecosystems on which we all depend.

The BC economy was built around ocean-based resource industries, notably ship building, marine transport, fishing, and coastal logging. Today, these traditional activities have been joined by emerging sectors such as ocean recreation and marine technology development as drivers of the provincial economy.

While the ocean environment offers tremendous economic opportunities, it also faces considerable challenges from pollution, climate change, and the resulting threats to marine and coastal species. All British Columbians have a vital stake in ensuring that we use our ocean resources in a way that protects valuable ecosystems and the services they provide for present and future generations.

An Economic Analysis

In April 2007, the Canada/British Columbia Oceans Coordinating Committee released a study on the economic contribution of the ocean in BC. The purpose of the study was to define and describe the "ocean sector" and to estimate its economic impacts on the province.

This summary report outlines our findings. The analysis focused on the market value of marine-based activities and did not consider the broader ecosystem and other "non-market" benefits. These non-commercial values are essential to a full appreciation of the ocean's worth to British Columbians and therefore merit further inquiry.

The results presented here are meant as a first step in advancing our understanding, to help governments, businesses, organizations and the public better comprehend the importance of our ocean economy.



Defining the Ocean Economy

The ocean sector encompasses all individuals and entities that rely on the ocean – to conduct operations, extract raw materials, transport goods and services, pursue leisure activities, and derive non-use benefits like the enjoyment of natural scenery and wildlife conservation.

For our analysis, seven key private sectors involved in marine-related activities were identified: seafood, forestry, ship and boat building, marine construction, high technology, recreation and tourism, and transportation. Within the public sector, the federal and provincial governments are both major players in the ocean economy.

We also endeavoured to improve on other studies of the ocean economy by including universities and colleges and research and environmental organizations. These groups have a crucial and growing role in ocean-related research, technology development, and environmental stewardship.

Measuring the Impacts

The private sector economic impacts were evaluated using published data sources and, in some cases, judgment to isolate the marine component of industry spending. For the public and non-government sectors, interviews were conducted with a sample of organizations to assess their ocean-related activities.

Economic impacts are expressed in terms of four aggregate indicators: Gross Output, Gross Domestic Product (GDP), Labour Income, and Employment (see page 7 Definition of Terms).



OCEAN-BASED ACTIVITIES: SOME EXAMPLES

Seafood – commercial fisheries, aquaculture, processing

Forestry – log sorting, dewatering, and loading operations

Ship and boat building and repair

Marine construction – ports, docks, wharves

Ocean high tech – underwater sensing and imaging technology, marine communications, ocean renewable energy, marine surveying and engineering services

Ocean recreation – saltwater angling, ferry and cruise ship travel, whale watching

Marine transport – shipping, tugboats, barges, freight services

Government – ocean-related regulation and policy, parks and protected area development

Academic and research institutions – seamanship and aquaculture training, marine biology and climate change research

Environmental groups – environmental stewardship, marine planning, public education



BC's Ocean Economy: link to our past, bridge to our future

Importance of the Ocean Economy

The ocean is an important contributor to the BC economy. Marine-based activities create jobs and wealth through the people and businesses directly involved in these activities. They also give rise to substantial economic spin-offs as goods and services are purchased from other sectors and wages are respent.

These "multiplier" ripples (indirect and induced effects) mean that the ocean sector, as a whole, makes twice the contribution to total economic measures of its direct impacts alone.

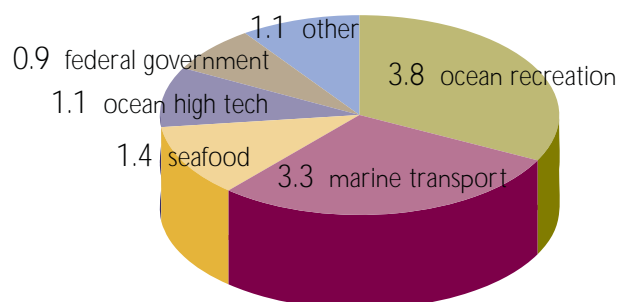
Our analysis suggests that the ocean economy comprises in the order of 7 to 8 per cent of provincial economic activity when these broader effects are included.

Contribution by Subsector

Today's ocean economy is concentrated in four private sector industry groups: marine recreation and tourism, ports and shipping, ocean high tech, and seafood. Together with the federal government, these subsectors account for more than 90 per cent of economic output.

Still, all of the ocean subsectors are vital to shaping a dynamic, diversified economy for coastal British Columbia.

BC Ocean Sector Output, 2005 (\$ billion)



BC OCEAN ECONOMY AT A GLANCE, 2005

Initial Spending: **\$11.6 billion** Gross Output

Total Impacts: **\$11.1 billion** GDP

\$7.6 billion Labour Income

167,805 Employment

BC Ocean Sector

PRIVATE SECTOR

	seafood	forestry	ship and boat building	marine construction	ocean high tech	ocean recreation	marine transport
OUTPUT	1,380	283	398	216	1,125	3,791	3,330
GDP	790	108	175	93	565	1,820	1,510
LABOUR INCOME	475	60	139	69	365	1,220	1,180
EMPLOYMENT	12,900	910	2,490	1,330	5,730	32,200	20,700

An Engine for Growth

There are significant opportunities to grow the province's ocean economy. BC companies and universities have developed world-class expertise in marine research, technology, and services. Innovation and new infrastructure are also helping to transform and enliven traditional subsectors such as seafood and marine transport.

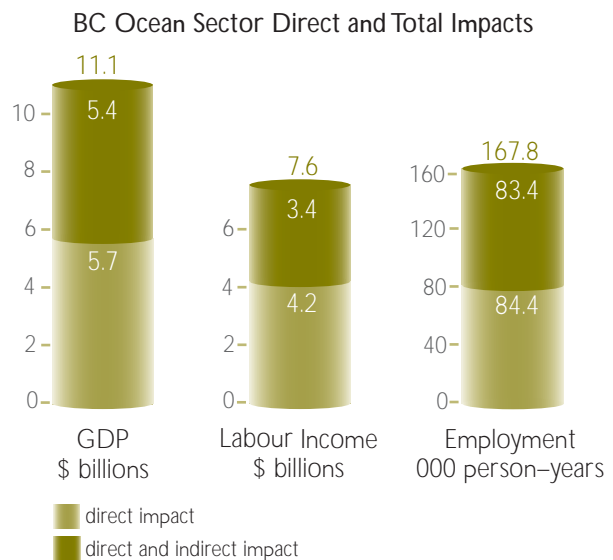
Ocean high tech, marine recreation, and ports and shipping are expected to continue as fast-growing areas over the next decade. This growth will be driven by global technology demands, BC's strategic location on the Pacific Rim, and greater awareness of our ocean amenities among British Columbians and visitors to the province.

In addition, the ocean offers exciting potential for the development of renewable energy sources, such as wind, wave, and tidal power, to help fuel our economic future and address climate change.

What We've Learned

From the analysis, it appears that the ocean economy is much larger than previously thought – with total output almost double an earlier estimate. As well, the ocean sector is broader and more diversified than indicated by previous findings.

Our understanding of the gaps in knowledge about the ocean economy has increased. Better information on the marine component of industries like tourism and recreation is clearly needed. We also know little of the non-market values of our ocean – for example, cultural and spiritual benefits and the ocean's value as a carbon sink.



Direct Impacts, 2005

PUBLIC SECTOR

federal government	provincial government
854	153
580	32
580	32
7,010	430

NON-GOVERNMENT SECTOR

academic and research	environmental groups
60	27
39	15
39	15
370	360

all sectors direct impact

OUTPUT	11,617 (\$ millions)
GDP	5,727 (\$ millions)
LABOUR INCOME	4,174 (\$ millions)
EMPLOYMENT	84,430 person-years

BC's Ocean Economy: link to our past, bridge to our future

Improving Our Understanding

Just as we need to know more about the ocean's vast resources, so too must our understanding of its economic role and potential be improved. This analysis has sought to advance the coverage and measurement techniques for evaluating the ocean economy; however, much more work is required.

Key areas for further investigation include:

- Targeted research on the economic contribution of the high-growth subsectors of marine tourism and recreation, high technology, and transportation
- Assessment of the non-market benefits of the ocean to British Columbians

Working together, government, First Nations, industry, and educational and environmental organizations can develop information for the better protection and use of our vast marine endowment.

To Learn More

Additional background on these issues is available in the Oceans Coordinating Committee reports:

- *Economic Contribution of the Oceans Sector in British Columbia*
- *Literature Review and Framework Analysis of Non-Market Goods and Services Provided by British Columbia's Ocean and Marine Coastal Resources*

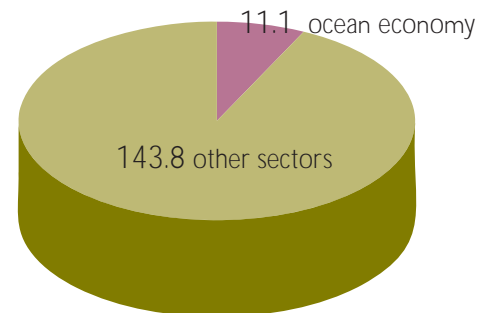
The reports can be obtained online or by contacting the BC Ministry of Environment's Ocean and Marine Fisheries Division:

www.env.gov.bc.ca/omfd/

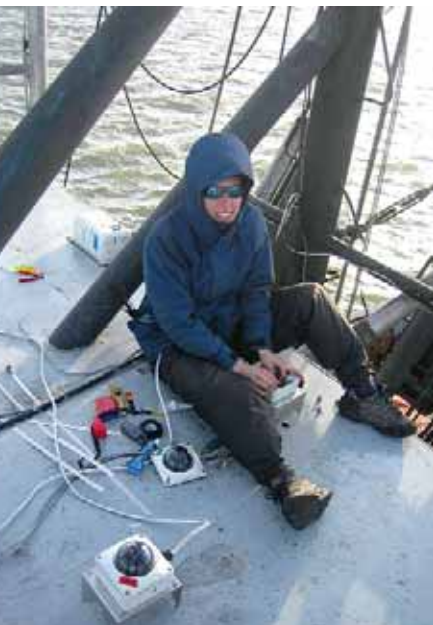
(250) 387-0389 tel

(250) 953-3401 fax

British Columbia GDP 2005 (\$ billion)



Innovative ideas like AXYS Technologies' "smart" buoys (see cover), Archipelago Marine Research's at-sea electronic fisheries monitoring (left), and the VENUS and NEPTUNE Canada cabled ocean observatories (below) led by the University of Victoria are putting BC at the forefront of ocean research and technology.



Definition of Terms

Gross Output – The value of output produced by a sector.

Gross Domestic Product (GDP) – The net value of production for a sector, measured as the value-added by producers to intermediate inputs in order to generate output, i.e., Gross Output minus intermediate purchases of goods and services.

Labour Income – Wages, salaries, and supplementary labour income (SLI), where SLI refers to employer contributions to Employment Insurance, Canada Pension Plan, private pension plans, health/dental plans, etc.

Employment – Number of equivalent full-time year-round jobs measured in person-years.

Direct Impacts – Changes in economic activity from the initial round of spending by a sector.

Indirect Impacts – Changes in economic activity from backward linkages to suppliers of goods and services.

Induced Impacts – Changes in economic activity through the respending of wages earned at the direct and indirect stages.

Total Impacts – Sum of the direct, indirect, and induced economic impacts.

Multiplier – An indicator of the size of the secondary (indirect and induced) effects, measured as the ratio of the total economic impact to the direct impact.

Photo Credits

Cover – AXYS Technologies (ocean monitoring buoys), Ian McAllister (puffin), Archipelago Marine Research Ltd. (biological inventory), Rob Parry (kayaking)

Page 6 – Archipelago Marine Research Ltd. (electronic fisheries monitoring), University of Victoria/NOAA (octopus), ROPOS (Endeavor hot volcanic vents)



