OCEAN ECONOMICS: THE MISSING INGREDIENT
IN COASTAL AND OCEAN POLICY
Judith Kildow's Remarks for the US Commission on Ocean Policy
Los Angeles, CA, 4/19/02

As the last speaker at the end of two long days of public hearings, I could conclude that you put economics last because you think it least important. On the other hand, maybe you saved the best for last to keep everyone here.

As the last speaker, I want to end these hearings on a positive note. I am here today to discuss opportunities not problems. I have come before you to ask you to consider the importance of economics in your deliberations – ocean and coastal economics. I don't mean that economics must dictate decisions. What I mean is that information about the coast and coastal ocean economy is an essential part of any equation when considering ocean policies, but one that has been missing. Economic data can be the bridge from science to policy, if it is understood properly. It can provide a common language between two cultures. When I use the term "ocean economy" from now on, I mean both coastal zone and the coastal oceans.

My goal is to convince you to give coastal economics high priority in your considerations and recommendations, so that our government has context for the difficult governance decisions that lie ahead.

I will begin with the importance of the economic system that supports — and is supported by — ocean-related activities. I'll explain how little we know. I'll tell you about a project I direct under NOAA and EPA sponsorship, and with generous support of the USC Wrigley Institute for Environmental Studies, to create the first comprehensive estimate of the coastal and ocean economy. I will

give you some very preliminary findings from that project. Finally, I'll recommend some things that a growing coastal constituency and I believe could benefit coastal governance.

Why is the ocean and coastal economy important?

Here are some reasons, gleaned from EPA and Federal Reserve Bank reports.

- More than half the US population lives on just 13% of the land in coastal counties.
- Income in coastal counties per square kilometer is more than eight times that of inland counties.
- A third of all Americans visit our shores each year and spend more than 44 billion dollars.
- In 1999, the cruise industry alone accounted for more than 11 billion dollars.
- And finally, a Federal Reserve report states that US wealth is driven largely by the coastal economy.

Why is it important to understand the ocean and coastal economy?

To understand what programs and policies are effective, we must be able to measure change. We have no way to do that for coastal development, that is, to determine which economic activities are failing and which are the most valuable. Biologists study ecological carrying capacity by comparing data to identify changes in coastal systems; but no one studies economic carrying capacity, because there are neither indicators nor data. We speak of the need for "Smart Growth," but if we can't measure economic or social change, how do we know when enough is enough? Or when we should do more?

This is such a crucial point, let me put it another way: We don't manage the coast. We manage the people who use the coast.

We need to know as much about people as we do about natural resources. Yet, so far we have focused on learning about resources, not people. Our fisheries managers manage people, but really only know about the fish. One key way we develop an understanding of the how people use the coast is through economics, and economics has been left out of the equation.

This commission is deliberating ocean policies. At the end of the day, ocean policies affect people and through people, they affect resources, which affect people again — through the coastal economy.

How little do we know about the coastal economy? Let me count the ways.

How big is it compared to other parts of the economy?
How is it changing?
How do changes in the economy affect natural systems-and vice versa?
We don't know the answers to these questions.

To examine a particular economic sector, we might wish to know: How many people are there in the commercial fishing industry?

Nobody knows. No government statistic measures the number of people engaged in catching fish. As little as we know about the fish, we know more about them than the people catching them.

We study storm damage, beach nourishment and other costly shoreline impacts, but we don't seek to answer the obvious question:

What does it cost us to live on the coast?

The last time government tried to answer questions like these was thirty years ago — at about the time of the last Ocean Commission. Little has been done since then to address these important questions that we must ask before we develop new policies and programs.

What is The National Ocean Economics Project doing to address the lack of information?

To be candid, we have learned more about overcoming the obstacles that impede the gathering of the data needed to answer these questions, than we have learned about the economy itself. There exists precious little archived time series economic data for the coastal economy. A good deal of what is available from the federal government is difficult to gather, often protected by entrenched bureaucratic procedures, and sometimes blocked by privacy rules. But, with the invaluable assistance of our sponsors at NOAA, particularly Margaret Davidson, we are finally making significant progress and we have learned how to navigate the rocky shoals of both federal and state bureaucracies. And we are now generating our own usable data from many raw data sources.

Our real work begins after the data is collected. There are no standards for reporting coastal economic data. The government doesn't collect it in an organized form, so we must estimate ocean-related percentages of more general economic activities, such as construction and tourism, and cobble together bits and pieces of information from many categories. Then, there are the "black holes" — employment and production categories, time frames, and geographic locations where no data exists. I tell you all of this because I want you to know that current reporting systems are inadequate; that development of good measures of the ocean and coastal economy will not be a one-time task. It will have to be a continuous process of updating and improving, if we are to have an

ongoing, reliable information system. Finally, the data we develop must also be accessible and usable, so we have to provide guidance for understanding what the data tells people and how best to use it.

Most important, we must ensure that the data we develop is consistent, accurate, and clearly documented. And therein lies another formidable task. Much of the data we seek we must gather from multiple sources in the public and private sectors because traditional government indicators used in the National Income and Product Accounts are based on a limited framework developed in 1933, when the national income and product accounts began. Although government reporting is gradually modernizing, we have had to create some new categories. We are expanding the traditional metrics to determine value added from inputs and outputs of the industries measured, from ocean resource assets and from non-traditional services not yet measured by government data centers, such as the value of clean waters.

But now, our core data from Federal sources are opening up to us. Funding from Federal and state sources are beginning to become available. We now anticipate completing the first phase of our work by the end of this calendar year, providing the nation and each coastal state with estimates of the contribution of the coastal sector to the GDP based on the values gleaned from a number of federal and state data sources. We hope to have a preliminary report on the ocean and coastal economy of the nation and states for your use sometime this summer. We will be able to complete the rest of our work within two years — detailed studies of the eight economic market sectors we have defined, natural resource values and some non-market values. And we have plans for updating and maintaining the information system.

We do all of this under the advice and guidance of an illustrious National Board of Advisors, including a Nobel laureate in economics, Robert Solow of MIT.

Here are a few examples of what we have learned so far about the coastal economy:

a. Federal marine expenditures in 2000 were less than half of what they were (in constant dollars) in 1970, when last a report such as yours was issued. We will also compile state and local marine expenditures so we can obtain the full public investment.

b. If you look at traditional manufacturing sectors, the coastal economy is not the fastest growing part of the US economy. This is partly because of declines in shipbuilding and fishing, and partly because the coasts were settled first, so new growth takes place inland.

c. The service sector is dominated by tourism and recreation. The tourist sector is believed to be one of the largest in the US. Coastal tourism generates 85% of tourist dollars in the US. 180 million people visit the coasts annually, with revenues in the billions.

d. The coastal economy has its own high-tech sector. The 1997 Economic Census lists the search and navigation equipment industry with the largest value added among the few recognizably-ocean-related industries recorded in the census. Add ocean monitoring and observation systems and real-time availability of data over the Internet, and the ocean joins the information economy.

Studies now underway will compile data on the value of ocean observation information. The value of climate and ocean pollution information dovetails with our data collection and analysis.

Because we have learned much, I'd like to pass along a few recommendations:

First, our government needs to assess the coastal economy as carefully and completely as the rest of the economy.

Second, There should be reporting standards for all sectors, as there are for the National Income and Product Accounts.

Third, This assessment of the coastal economy requires continuous, reliable funding.

Fourth, Decisions about methodology and data collection must be at arms-length from government. The Federal commitment should support research about how to measure and should develop routine measurements as indicators. Careful consideration should be given to who should have responsibility for the database — where it is housed, maintained, refined and updated - to avoid politicizing it. The Bureau of Economic Analysis experienced censorship when it tried to modernize data collection in the early nineties.

And finally, a federal entity must take responsibility for supporting the activity. NOAA/NOS has been our principal sponsor. EPA has now joined in support. Both agencies understand the importance of the outcome.

My research colleagues at the University of Southern Maine, Professor Charles Colgan, and Dr. Hauke Kite-Powell of the Woods Hole Oceanographic Institution, as well as the cooperating agencies in many of the coastal states, believe our job through the NOEP is:

One, to figure out how to do the measurements and what to measure;
Two, to get the first set of ocean accounts completed;
Three, to put the data into an information system that can be queried, and
Four, to make the databases available to the public on the Internet.

But, ultimately, it is the Federal government that must make this system operational and then institutionalize it.

I promised to leave you on a positive note:

Imagine a computer map of the US where you could click on any portion of the shoreline —onshore or offshore —and receive information from many sources:

- from remote sensing cameras about the topography,
- from scientists about the natural environment,
- from geographers about political and other divisions and demographic patterns and movements.

You would be able to locate commercial and industrial centers along the coast, offshore rigs, beaches, and locations of natural resources.

And for all of these, you could readily find all the relevant economic information for the past several decades. You would be able to trace sources of problems; target opportunities and you would have —at last —the Big Picture from which rational and robust decisions could emerge.

Through **The National Ocean Economics Project** you will soon have all of this. I hope we will have the opportunity to update you on our progress in the near future. For more information, please see our website www.OceanEconomics.org

Thank you.

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The National Ocean Economics Project (NOEP)
Estimating the Contribution of the Coast and Ocean to the U.S. Economy
www.OceanEconomics.org

Many decisions about the coastal zone and marine resources hinge on economic assumptions that revolve around conflicting statements about the real or perceived "value" of the oceans. There is no systematic accounting of marine market and non-market values to resolve these arguments. Reports proliferate, assigning values to coastal resources, real estate, recreation and tourism, transportation and fisheries. There are estimates of the cost of erosion and other shoreline damage, estimates that generally have large margins of error. As a result, planners in coastal cities and towns struggle to manage unprecedented growth without sound economic data to support their decisions. While businesses multiply to meet the needs of growing populations, little knowledge of economic or environmental carrying capacities support this growth. Waterfront property values climb steeply — along with questions about the implications. When beaches close from storm drain overflows, local economies suffer, but few know the true cost or the values of those beaches when open.

Helping to answer these questions and many others is the task of a multi-year project to determine the contribution of the coast and ocean sectors to the US economy. Work over the past 20 years has demonstrated that it is possible to construct a framework of economic valuation and measure the ocean economy. Currently the pieces to this puzzle are scattered and inconsistent. Past studies have valued ocean-related GDP from 2.6% to 35% of total U.S. GNP — clearly a problem

At the root of the problem is the limited scope of the national income accounting system of the United States -- the system from which measures such as GDP and GNP are derived. These National Income and Product Accounts (NIPA) tabulate the overall size of the U.S. economy, but include incomplete information about recreational and environmental resources. For example, conversion of a coastal wetland to a housing development appears as a positive change in the national income accounts: investment in housing stock is measured, but reduction in the stock of coastal habitat is not. Or, someone who bicycles to the beach does not show up in the national income accounts, while the neighbor who buys gasoline to drive does – even though both have similar recreational experiences.

Our project team is assembling five broad categories of data to draw a complete picture of the economic values associated with the ocean:

1. Those derived primarily from NIPA and the source data sets used to measure GDP, allow the value of the ocean and associated industries to be compared with other subsets of economic activity. The data will include employment, expenditures, revenues, and selected multipliers for these ocean-related industries:

- offshore energy and minerals;
- living marine resources (including fishing and aquaculture);
- coastal tourism, recreation;
- coastal real estate;
- maritime transportation;
- ship and boat building;
- coastal construction, restoration, repair and maintenance;
- marine science, research and technology development.

2. Regional accounts for coastal states, counties and other jurisdictions, capturing ocean-related economic values tied to specific coastal locations through the myriad interactions of the economy.

3. The value of the ocean as "capital:" its ability to produce income in the future. This allows assessment of the oceans' ability to provide a sustainable flow of economic value involving:

- offshore oil and gas;
- other marine minerals;
- fisheries;
- other living marine resources and aquaculture.

4. Values that are not measurable in market transactions but which are important nonetheless, such as a day at the beach. This extends the national income accounting approach. Greater understanding of the economic values of the ocean, not set in market transactions will enhance understanding of the ocean's value. The following are examples of what we plan to measure:

- coastal and marine amenities;
- assimilative capacity of coastal and ocean waters.

5. Government marine expenditures at national and state levels, e.g. how much government invests.

Together this information will describe the "ocean economy" from the perspective of traditionally measured economic activity as well as the values not measured in market transactions. *This will be the fundamental task of this project: to integrate traditional ocean economic measures with the coastal and ocean values not included in the national income accounts.* The consistent, integrated accounting framework underway is needed to make this information useful to the public and decision-makers.

Once formed, this information system will be an ongoing, updated source of objective and accurate data from which all involved in environmental debates may build their cases. As coastal populations grow and coastal real estate values escalate, conservation of coastal lands becomes increasingly difficult and expensive, although the importance of biodiversity has become clear. Conservation efforts are gaining considerable political legitimacy, but in many cases the economic benefits of conservation are not yet well understood. Therefore, it is important to build a bridge between relevant scientific information about the coastal environment and policy decisions that will affect that environment.

The enormity of this task precludes generating new economic data. Rather, this is a meta-study, drawing from hundreds of data sources and assessing them for reliability and relevance. The end product will be a set of accounts for the coast easily accessible to the public over the Internet.

This project will provide the first major comprehensive, in-depth analysis of the size and composition of the U.S. ocean economy over the past 30 years. It will form an important element of the U.S. statistical information infrastructure by providing data on ocean-related economic activities and resource trends useful for conflict resolution, investment and management decisions involving environmental groups, governments, businesses and individuals as they try to balance growth and conservation in coastal areas.

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