

# WEST COAST GOVERNORS ALLIANCE on OCEAN HEALTH

CALIFORNIA OREGON WASHINGTON

## **Sustainable Coastal Communities Action Coordination Team**

### **Final Work Plan**

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## List of Acronyms

AAPA	American Association of Port Authorities
ACT	Action Coordination Team
ARRA	American Recovery and Reinvestment Act
BMP	Best Management Practice
CAAP	Clean Air Action Plan
CERB	Community Economic Revitalization Board
CFF	California Fisheries Fund
EDA	Economic Development Administration
EPA	United States Environmental Protection Agency
FMC	Federal Maritime Commission
LID	Low Impact Development
NOAA	National Oceanic and Atmospheric Administration
BOEMRE	Bureau of Ocean Energy Management, Regulation and Enforcement (formerly Minerals Management Service)
MSA	Magnuson-Stevens Fishery Conservation and Management Act
OCMP	Oregon Coastal Management Program
OCS	Outer Continental Shelf
OPAC	Ocean Policy Advisory Council
OPWG	Ocean Policy Work Group
SBDC	Small Business Development Center
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
WCGA	West Coast Governors Alliance on Ocean Health
WRAP	Water Resources Action Plan

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## WCGA SUSTAINABLE COASTAL COMMUNITIES WORK PLAN

### **Overview**

In September 2006, the Governors of Oregon, Washington and California signed the West Coast Governors' Agreement (WCGA) on Ocean Health.<sup>1</sup> On July 29, 2008, the three states released a WCGA final action plan that outlines many activities on a range of issues important to the health and well-being of the West Coast and its communities.<sup>2</sup> The plan's Priority Area 7 is "*Foster Sustainable Economic Development in Coastal Communities.*" The plan's discussions for this area focus on building economically and environmentally vibrant and sustainable futures for our coastal communities, as illustrated by WCGA Priority Actions 7.1 and 7.2:

*Action 7.1 – Support local planning efforts for working waterfronts to promote sustainable fisheries and prioritize coastal-dependent business and infrastructure through grant processes and federal assistance programs.*

*Action 7.2 – Promote and expand environmentally responsible operations and infrastructure at ports and harbors, such as through Green Ports and Clean Marinas programs. Support revitalization efforts for struggling ports.*<sup>3</sup>

Following the completion of the plan, the WCGA Executive Committee established a Sustainable Coastal Communities (SCC) Action Coordination Team (ACT) to craft an implementation plan for actions 7.1 and 7.2.

West Coast states' coastal communities are demographically and geographically diverse, with a broad range of values and interests in planning for their futures. The intent of this work plan is to provide guidance for implementing the shared values expressed in the WCGA, while acknowledging that individual coastal communities will have unique approaches to achieving the WCGA goals. The goal of the WCGA Sustainable Coastal Community strategy is to stimulate expertise, capacity, and infrastructure support for coastal communities. Parties assisting with implementation of the work plan will seek funding from diverse sources and leverage strategic collaborations to support the projects listed in the plan.

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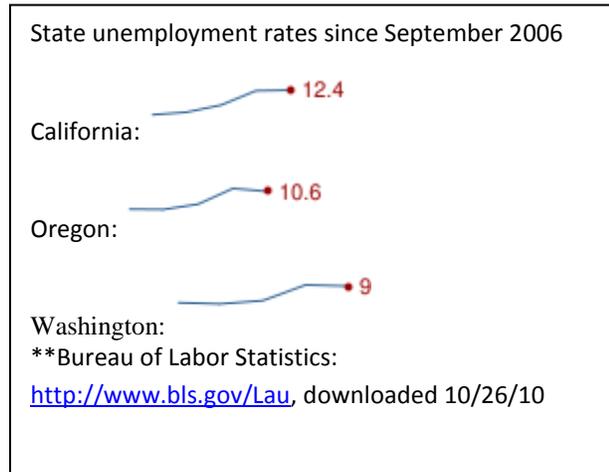
<sup>1</sup> West Coast Governors' Agreement on Ocean Health, signed September 18, 2006. Available online: <http://westcoastoceans.gov/documents/>. Note: The name of the organization changed to West Coast Governors Alliance on Ocean Health in November of 2011.

<sup>2</sup> West Coast Governors' Agreement on Ocean Health Action Plan. May 2008. Available online: <http://westcoastoceans.gov/documents/>.

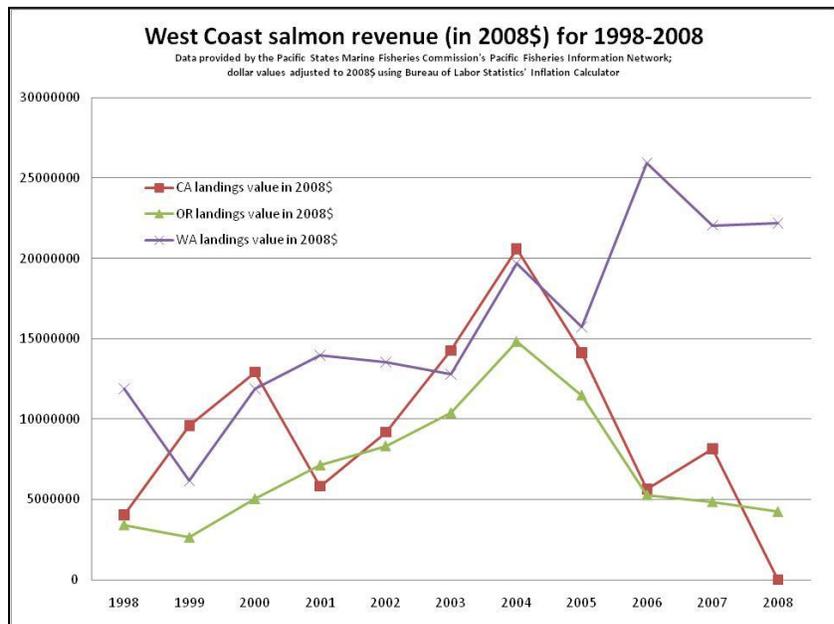
<sup>3</sup> Ibid.

**Coastal Communities' Challenges**

Since the WCGA was signed in September 2006, the U.S. economy in general, and the economies of West Coast states in particular, have suffered notable and well-publicized declines. Lower levels of employment and lower spending levels have reduced tax revenue collected by the states to varying degrees, jeopardizing state services to the public.<sup>4</sup> The Pew Center on the States has rated California and Oregon as two of ten U.S. states in the greatest fiscal distress. For Oregon in particular, the report cited declines in state timber industry income, linked to the nationwide collapse in the housing market.<sup>5</sup> Small communities along the West Coast tend to be heavily dependent on natural resource extraction industries, such as timber, with high fisheries dependencies in coastal communities. Although the Pew report did not rank Washington among those states in greatest fiscal distress, the state is predicted to have a 21.6% state budget shortfall for fiscal year 2011.<sup>6</sup> Unemployment levels in both Oregon and Washington have declined slightly from 2009, in keeping with modest improvements in the economy within those



**Figure 1**



**Figure 2**

<sup>4</sup> California State Controller's Office, California Fiscal Issues and Information Page, "Controller Releases April 2010 Cash Figures,": [http://www.sco.ca.gov/eo\\_news\\_fiscalissues.html](http://www.sco.ca.gov/eo_news_fiscalissues.html). Oregon Economic Revenue Forecast SUMMARY, March 2010: <http://courts.oregon.gov/DAS/OEA/docs/economic/presst0310.pdf>. Washington State Economic and Revenue Forecast, February 2010: <http://www.erfc.wa.gov/publications/documents/feb10pub.pdf>.  
<sup>5</sup> Pew Center on the States. November 2009. *Beyond California: States in Fiscal Peril*. Downloaded on November 16, 2009 from: [http://www.pewcenteronthestates.org/report\\_detail.aspx?id=56044](http://www.pewcenteronthestates.org/report_detail.aspx?id=56044).  
<sup>6</sup> Center on Budget and Policy Priorities, "States Continue to Feel Recession's Impact": <http://www.cbpp.org/cms/?fa=view&id=711>

two states, but both unemployment (see Figure 1) and state debt in California remain high (see sources from note 4).

All three states have coastal communities that are highly dependent on income from fishery resources, which are vulnerable to shifts in fishing-related revenues.<sup>7</sup> Since 1994, the U.S. Secretary of Commerce has declared nine fishery resource disasters or commercial fishery failures (eight for all or some portion of the U.S. West Coast salmon fisheries and one for the West Coast groundfish fisheries).<sup>8</sup>

The ports and maritime industries are considerable economic drivers in Washington, Oregon, and California. The shipping industry on the West Coast has been heavily impacted by the economic downturn, facing double-digit losses in traffic and increased competition from new ports.<sup>9</sup> For West Coast state economies to thrive, the needs of ports and shipping industries must be met.

Coastal communities rely on healthy and abundant natural resources. Human activities on land can have significant effects on the ocean and coastal environment. Through its ACTs focused on marine debris removal, polluted runoff mitigation, and *Spartina* eradication, the WCGA process offers an opportunity to address some aspects of the land-sea connection and human impacts on the marine environment. Integrated ecosystem assessment planning should also look at the land-sea connection, and at how activities affecting our rivers and streams may also affect coastal and ocean resources. West Coast planning for climate change and ocean acidification should not merely respond to expected ocean regime shifts, but also include policy planning to reduce the harmful emissions that spur these phenomena. As illustrated in Figure 3, all of the WCGA priority areas are connected to each other through their effects on and contributions from sustainable coastal communities.

The major theme that connects this report's six topic areas (economic development, sustainable fisheries, sustainable aquaculture, non-consumptive recreation and tourism, green ports, and clean marinas) is that coastal communities of all sizes need help with planning for, building and adapting infrastructure to address the large-scale economic and environmental changes discussed throughout the WCGA final action plan. The three West Coast states have each, in some way, taken on the challenge of marine spatial planning for state waters, seeking to better understand and plan for human activities in the marine environment. The federal government's recently issued National Ocean Policy calls for addressing those same issues in federal waters, divides the

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<sup>7</sup> National Marine Fisheries Service on behalf of the Pacific Fishery Management Council. 2006. Appendix A, Additional Socio-economic analyses, to the Environmental Impact Statement for the Proposed Acceptable Biological Catch and Optimum Yield Specifications and Management Measures for the 2007-2008 Pacific Coast Groundfish Fishery.

<sup>8</sup> <http://www.nmfs.noaa.gov/sfa/sf3/disaster.htm>

<sup>9</sup> Hsuan, A. (November 11, 2009). West Coast ports band together to fight global competition. *The Oregonian*. Retrieved from [http://www.oregonlive.com/business/index.ssf/2009/11/west\\_coast\\_ports\\_ban\\_together.html](http://www.oregonlive.com/business/index.ssf/2009/11/west_coast_ports_ban_together.html)

nation's marine waters so that waters off the West Coast are within one region, and explicitly notes the WCGA as an existing governance structure for the region. This ACT work plan intends to acknowledge the place and needs of communities within the larger regional planning processes, to share lessons learned from past efforts, and to facilitate coordination among the three states for future efforts that will benefit sustainable coastal communities.

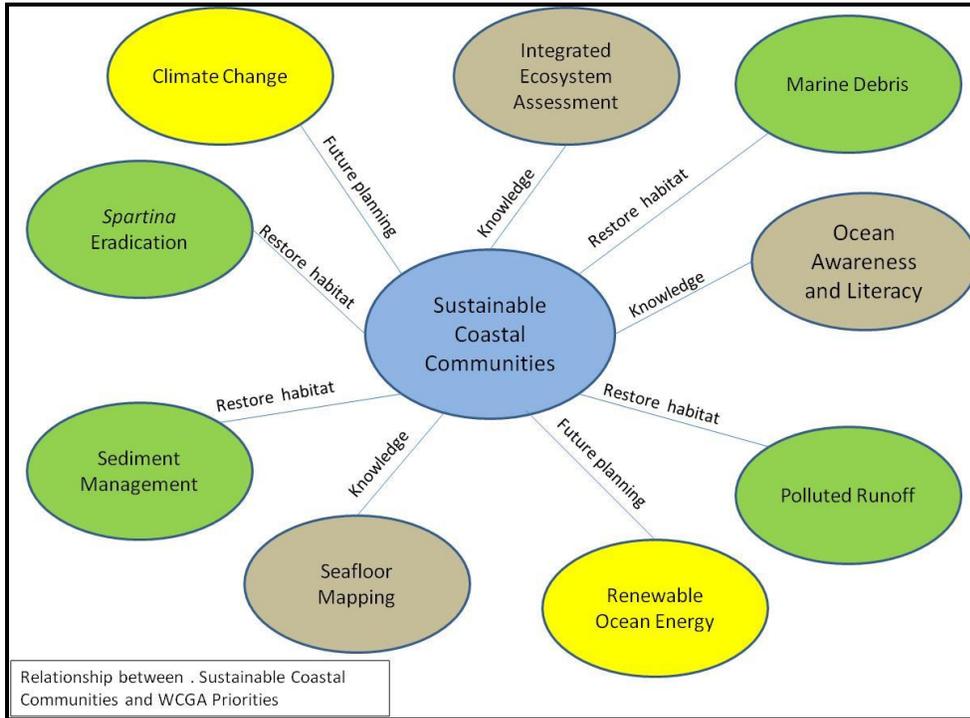


Figure 3

**Overarching Recommendations:**

1. Work through the existing ACT to provide support and momentum for implementing the recommendations put forth in the Sustainable Coastal Communities action strategy. This ACT may expand to include delegates from state ocean caucuses, as well as state, federal, local, and tribal governments, non-governmental organizations (NGOs) and industry to develop strategies to implement the action strategy and facilitate its execution.
2. Identify where overlaps occur with other ACTs (e.g. climate change, education) and pursue implementation of specific tasks in collaboration with other ACTs.
3. Support graduate- or post-graduate level fellows to assist with implementation of major components of this action strategy. These fellows could be co-located at agencies in which ACT members reside, or other appropriate agencies Suggested focus areas:
  - a. Ports and marinas
  - b. Sustainable fisheries, including aquaculture
  - c. Recreation and tourism
  - d. Community planning and economic development

## 7.1 Sustainable Fisheries and Coastal Dependent Businesses

### 1. West Coast Planning and Economic Development

#### Background

*Region-wide:* WCGA priority action 7.1 is based on the assumption that working waterfronts should be preserved so that fisheries and other coastal-dependent businesses may also be preserved. Coastal states around the country are wrestling with how to best ensure that their waterfronts continue to include space for waterfront-dependent businesses in order to protect businesses in the face of pressures to develop desirable waterfront properties. Maine, Florida, and North Carolina have passed tax relief legislation for owners of working waterfront properties.<sup>10</sup> In December 2006, Maine Sea Grant, working with Hawaii Sea Grant and the National Sea Grant network and Coastal Zone Management Programs, organized a study of coastal access issues nationwide, sharing suites of strategies used by coastal and Great Lakes states to preserve working waterfronts.<sup>11</sup> Some of the ideas generated from that study might be transferable to West Coast waterfronts.

Coastal communities across the three states have benefited from stimulus funds directed toward environmental and economic development programs through the American Recovery and Reinvestment Act (ARRA) of 2009.<sup>12</sup> In California, the single largest disbursement of ARRA funds was to the Governor's Office of Planning and Research, whose affiliated Strategic Growth Council is disbursing grant funds to assist state and local entities in planning sustainable communities while improving infrastructure systems, water quality and protecting natural resources.<sup>13</sup>

Each of the three West Coast states has small business development centers (SBDCs) that are partially funded by the U.S. Small Business Administration.<sup>14</sup> The technical assistance and consulting services offered through these SBDCs can fill a critical need in coastal areas; each state ensures that the assistance is targeted appropriately towards the unique needs of coastal community business owners.

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<sup>10</sup> Maine's Working Waterfront Tax Law, Maine Revenue Services, State of Maine Department of Administrative and Financial Services. (Accessed online, November 20, 2009: <http://www.maine.gov/REVENUE/forms/property/pubs/workingwaterq&a.htm>.) Florida Working Waterfront Plan (Accessed November 20, 2009: <http://www.cuesfau.org/toolbox/subchapter.asp?SubchapterID=120&ChapterID=4>) and Florida Code 342.07. North Carolina General Statutes § 105 - 277.14 (Accessed November 20, 2009: [http://www.ncga.state.nc.us/EnactedLegislation/Statutes/HTML/ByChapter/Chapter\\_105.html](http://www.ncga.state.nc.us/EnactedLegislation/Statutes/HTML/ByChapter/Chapter_105.html)).

<sup>11</sup> Access to the Waterfront: Issues and Solutions Across the Nation. 2007. Maine Sea Grant. (Accessed online, November 20, 2009: <http://www.seagrant.umaine.edu/files/pdf-global/07access.pdf>)

<sup>12</sup> Public Law 111-5.

<sup>13</sup> Recovery.gov "track the Money-State/Territory Summary-California" Retrieved from <http://www.recovery.gov/transparency/RecipientReportedData/Pages/statesummary.aspx?StateCode=CA>

<sup>14</sup> <http://www.sba.gov/aboutsba/sbaprograms/sbdc/sbdclocator/index.html>

Additionally, communities in each West Coast state qualify for assistance through several United States Department of Agriculture (USDA) Rural and Community Development programs.<sup>15</sup> Among these programs, the Rural Business Opportunity Grants are targeted to support economic development planning in small communities.<sup>16</sup> Of particular relevance to traditionally resource-dependent coastal communities, the Economic Development Administration's (EDA) Economic Adjustment Assistance Program is designed to provide a wide range of technical, planning and infrastructure assistance in regions experiencing adverse economic changes that may occur suddenly or over time through a Revolving Loan Fund Program.<sup>17</sup> Further EDA assistance is available through public works and economic development investments, the Research and National Technical Assistance Program, the Local Technical Assistance Program, the Planning Program and the University Center Economic Development Program.

Stakeholder engagement in strategic planning processes is beneficial to coastal communities. For example, the West Coast Sea Grant programs led a broad effort to identify *West Coast Regional Marine Research and Information Needs*<sup>18</sup> by soliciting input from over 1,000 stakeholders at sixteen local workshops in 2007 and 2008. Results from these workshops can inform future WCGA efforts since they are focused on the vitality of coastal communities and maritime operations, fisheries, aquaculture, and other issues of interest to the WCGA process. Other locally centered strategic planning efforts, such as Kitsap County, Washington's 20/20 Action Plan<sup>19</sup>, Tillamook County, Oregon's 2020 Strategic Vision<sup>20</sup>, and Skagit County, Washington's ongoing Envision Skagit 2060<sup>21</sup> project may be worth replicating in West Coast coastal communities.

*Washington:* Planning funds have been made available in Washington through the Community Economic Revitalization Board,<sup>22</sup> the Public Works Board,<sup>23</sup> Rural Washington Loan Fund, Community Development Block grants, and Coastal Revolving Loan Fund.<sup>24</sup> All of these programs are available to coastal communities, although some are not available to Washington's urban counties. Each program has its own specific requirements and intended uses.

During the 2009 Washington State legislative session, many of the aforementioned programs received significantly reduced funding or were temporarily suspended without plans for future funding. However, Washington has demonstrated a commitment to focusing on coastal issues

<sup>15</sup> [http://usda.gov/wps/portal/!ut/p/\\_s.7\\_0\\_A/7\\_0\\_1OB?navtype=SU%navid=RURAL\\_DEVELOPMENT](http://usda.gov/wps/portal/!ut/p/_s.7_0_A/7_0_1OB?navtype=SU%navid=RURAL_DEVELOPMENT)

<sup>16</sup> <http://www.rurdev.usda.gov/RBS/BUSP/rbog.htm>

<sup>17</sup> <http://eda.gov/AboutEDA/RLF.xml>

<sup>18</sup> <http://seagrant.oregonstate.edu/research/RegionalPlanning/>

<sup>19</sup> <http://www.kitsapeda.org/default.asp?ID=62>

<sup>20</sup> [http://www.tillamookfutures.org/docs/tc\\_vision\\_plan\\_news021808.pdf](http://www.tillamookfutures.org/docs/tc_vision_plan_news021808.pdf)

<sup>21</sup> [www.skagitcounty.net/Common/asp/default.asp?d=EnvisionSkagit&c=General&P=main.htm](http://www.skagitcounty.net/Common/asp/default.asp?d=EnvisionSkagit&c=General&P=main.htm)

<sup>22</sup> <http://www.choosewashington.com/business/financing/revitalization/Pages/default.aspx>

<sup>23</sup> <http://www.pwb.wa.gov/>

<sup>24</sup> <http://www.choosewashington.com/business/financing/loans/Pages/default.aspx>

through its State Ocean Caucus,<sup>25</sup> which prioritizes activities and solves problems related to the ocean environment by carrying out the recommendations of the Washington State Ocean Policy Work Group (OPWG).<sup>26</sup> From 2005 through 2006, the OPWG conducted extensive policy research and gathered stakeholder input to make recommendations for improving protection and management of Washington State's ocean resources on the outer coast and Strait of Juan de Fuca. Similar efforts by the Puget Sound Partnership resulted in the release of an action agenda to prioritize the clean up, restoration, and protection of Puget Sound by 2020.<sup>27</sup> Furthermore, each town, city or county in Washington with shorelines of the state<sup>28</sup> is required by the Shoreline Management Act of 1971 to adopt local policies that regulate the use and development of shorelines in a manner that balances preferred and appropriate shoreline uses, protection of shoreline natural resources, and public access to shorelines.<sup>29</sup> Efforts to support planning and development in Washington's coastal areas should be aligned with the priorities identified through these comprehensive efforts.

*Oregon:* There are multiple coastal community planning and development programs in Oregon, run primarily through entities such as the Department of Land Conservation and Development, the Infrastructure Finance Authority (IFA), and Business Oregon. These agencies provide grant funds to local governments for a variety of planning and capital improvement projects. The IFA can assist coastal communities through Community Development Block Grants and the Main Street Program<sup>30</sup>, while ports are targeted via the Marine Navigation Improvement Fund, the Port Revolving Loan Fund, and the Port Planning and Marketing Fund.<sup>31</sup> The Oregon Department of Transportation's Connect Oregon program provides funds for multimodal transportation projects that service marine ports.<sup>32</sup>

The Oregon Coastal Management Program (OCMP), housed within the Department of Land Conservation and Development, used to offer small-scale construction and acquisition grants to improve public access to coastal sites; by the end of 2006, more than 70 local projects had been supported with funds from this source. While small-scale construction and acquisition grants are no longer available, OCMP also offers technical assistance and basic planning grants for high priority coastal resource management and critical planning needs identified by local planners as well as state and federal agency representatives. Oregon's Statewide Planning Goal 16,

<sup>25</sup> <http://www.ecy.wa.gov/programs/sea/ocean/oceangroup.html>

<sup>26</sup> [http://www.ecy.wa.gov/programs/sea/ocean/pdf/OPWG\\_Recommendations.pdf](http://www.ecy.wa.gov/programs/sea/ocean/pdf/OPWG_Recommendations.pdf)

<sup>27</sup> [http://www.psp.wa.gov/aa\\_action\\_agenda.php](http://www.psp.wa.gov/aa_action_agenda.php)

<sup>28</sup> See definition 2(e) "Shorelines", Revised Code of Washington 90.58.030. (Accessed October 4, 2011: [http://apps.leg.wa.gov/rcw/default.aspx?cite=90.58.030.](http://apps.leg.wa.gov/rcw/default.aspx?cite=90.58.030))

<sup>29</sup> Introduction to the Shoreline Management Act. Washington State Department of Ecology. (Accessed October 4, 2011: [http://www.ecy.wa.gov/programs/sea/sma/st\\_guide/intro.html.](http://www.ecy.wa.gov/programs/sea/sma/st_guide/intro.html))

<sup>30</sup> <http://www.orinfrastructure.org/Learn-About-Infrastructure-Programs/Interested-in-a-Water-or-Wastewater-Improvement-Project/community-development-block-grant/>; [http://www.oregon4biz.com/Grow-Your-Business/Business-services/Main-Street/.](http://www.oregon4biz.com/Grow-Your-Business/Business-services/Main-Street/)

<sup>31</sup> <http://www.oregon.gov/OBDD/IF/program/mnif.shtml>; [http://www.oregon.gov/OBDD/IF/program/ppmf.shtml.](http://www.oregon.gov/OBDD/IF/program/ppmf.shtml)

<sup>32</sup> [http://www.oregon.gov/ODOT/COMM/CO/overview.shtml.](http://www.oregon.gov/ODOT/COMM/CO/overview.shtml)

“Estuarine Resources,” requires all cities and counties with coastal areas to establish policies and priorities for appropriate use of coastal areas in their comprehensive plans<sup>33</sup>. Areas must be categorized into natural, conservation, or development (both shallow and deep-draft) management units and permissible uses must align with the priorities of that designation. The estuary classification system ensures a range of water-related and water-dependent uses along Oregon’s shorelines. The Oregon Community and Economic Development Department recently completed an industrial site inventory;<sup>34</sup> data from the inventory could assist coastal communities in developing more effective master plans that consider water-dependent and water-related industries.

Somewhat analogous to Washington’s State Ocean Caucus, Oregon’s Ocean Policy Advisory Council (OPAC) is a legislatively mandated marine policy advisory body to the Governor of Oregon.<sup>35</sup> While much of OPAC’s recent energy has been focused on marine reserves, wave energy, and a territorial sea plan, this body could conceivably form work groups to focus attention on other issues, such as sustainable coastal community planning and development.

*California:* Unique among the West Coast states due to its offshore oil and gas production facilities, California has access to funds from the Coastal Impact Assistance Program, which distributes funds to Outer Continental Shelf (OCS) oil and gas producing states to mitigate the impacts of OCS oil and gas activities through activities such as implementation of a federally-approved marine, coastal or comprehensive conservation management plan, onshore infrastructure projects, and public service needs.<sup>36</sup> The California Natural Resources Agency developed a Coastal Impact Assistance Program Plan, authorized by the then U.S. Minerals Management Service (now the Bureau of Ocean Energy Management or BOEM) in July 2009 to detail proposed projects for a variety of state agencies and local jurisdictions that will compete for the funds from BOEM<sup>37</sup> While this funding source is not accessible to Oregon and Washington, successful projects and best management practices worthy of replicating should be documented and shared among the WCGA states.

The California State Coastal Conservancy initiates and funds “creative approaches between government, citizens, and the private sector to preserve California’s coast and San Francisco Bay lands for future generations. The Coastal Conservancy’s non-regulatory, problem-solving approach complements the work of the California Coastal Commission, a distinct agency that regulates land use along the coast and issues development permits.”<sup>38</sup>

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<sup>33</sup> Oregon’s Statewide Planning Goals & Guidelines, Goal 16: Estuarine Resources. (Accessed October 4, 2011: [www.oregon.gov/LCD/docs/goals/goal16.pdf](http://www.oregon.gov/LCD/docs/goals/goal16.pdf).)

<sup>34</sup> <http://www.sedcor.org/pdfs/orcertsites0308.jpg>

<sup>35</sup> <http://www.oregon.gov/LCD/OPAC/>

<sup>36</sup> State of California, *Coastal Impact Assistance Program, Final Plan 2009*. Accessed at [http://resources.ca.gov/ocean/CIAP/Final\\_CIAP\\_Plan.pdf](http://resources.ca.gov/ocean/CIAP/Final_CIAP_Plan.pdf)

<sup>37</sup> [http://www.doi.gov/news/09\\_News\\_Releases/071309a.html](http://www.doi.gov/news/09_News_Releases/071309a.html)

<sup>38</sup> <http://www.coastalconservancy.ca.gov/About/about.htm>

The California Ocean Protection Council (OPC) allocates resources toward a broad array of ocean and coastal planning, coordination, and protection purposes.<sup>39</sup> In the past 5 years, the OPC has invested over \$8 million in preserving California's fisheries through community-based collaborations, innovative market approaches, and building capacity and data for improved fishery management. One of the earliest projects the OPC provided funding for was the California Fisheries Fund, a revolving loan fund that invests in innovative projects "undertaken by fishery organizations, ports, processors, and individual fisherman that are likely to increase stewardship and conservation, add value to fisheries, and promote long-term asset-building."<sup>40</sup>

In November of 2008, California initiated Global Entrepreneurship Week with the first-ever Conference on Small Business & Entrepreneurship.<sup>41</sup> Future efforts could include breakout sessions focused on coastal business leaders.

### **Priorities and Needs**

Sustainable coastal communities strive to manage development responsibly, offer citizens a high quality of life, protect natural resources, and provide appropriate infrastructure to meet current and future needs. Achieving sustainability means providing for a community's long-term economic, social, and environmental stability. However, many coastal communities are struggling due to issues that include but are not limited to:

- Aging port and other infrastructure (see action 7.2);
- Limited funding for strategic planning and economic development efforts;
- Low capacity to navigate complex permitting and business development protocols;
- Insufficient fisheries support facilities, such as:
  - Community docks, ice houses, fuel docks, and hoists;
  - Inspected handling and processing facilities with cold storage;
  - Gear storage facilities
- Low availability of technical assistance for coastally-oriented low impact development (LID);<sup>42</sup>

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<sup>39</sup> <http://bondaccountability.resources.ca.gov/plevel1.aspx?id=49&pid=>

<sup>40</sup> <http://www.californiafisheriesfund.org/about.html>

<sup>41</sup> <http://gov.ca.gov/press-release/11091/>

<sup>42</sup> "Low Impact Development (LID) is an approach to land development that uses various land planning and design practices and technologies to simultaneously conserve and protect natural resource systems and reduce infrastructure costs. LID still allows land to be developed, but in a cost-effective manner that helps mitigate potential environmental impacts." U.S. Department of Housing and Urban Development, Office of Policy

- Concerns about the opportunities and challenges for communities that may be affected by development of ocean energy infrastructure;
- Sparse marine technology and maritime trade workforce development opportunities;
- Potential loss of working waterfront area due to consolidation of fisheries or decreases in port activity. Working waterfront area generally does not get re-established once lost to gentrification or non water-dependent use.
- Challenges protecting natural resources and maintaining environmental stability.
- Integrating information about possible future climate impacts into planning and development decisions.
- Predicting and responding to the impacts of physical and biological conditions (such as increasing wave heights or harmful algal blooms) on coastal communities.

While coastal communities are facing myriad challenges related to planning and economic development listed above, because of capacity and expertise, the Sustainable Communities ACT is focusing on the following recommended actions.

### **Recommended Actions – West Coast Planning and Economic Development**

ED1. Share successful strategies for marine sector workforce development, technical improvement, and business retention and expansion with an emphasis on best practices, sustainable and efficient staffing and supply chains, and green and emerging technologies.

ED2. Share successful strategies for meeting coastal community-oriented infrastructure, planning and economic development needs between states.

ED3. Evaluate options for improving dredging activity in small ports where working waterfronts are a vital to employment and economic activity. (See action 7.3 task two deliverables in Sediment Management work plan. The Sediment Management and Polluted Runoff ACTs directly address many of these issues and the SCC ACT will collaborate with these other two WCGA ACTs to address this recommendation.)

**Table 1: West Coast Planning and Economic Development Deliverables**

Number	Deliverable	Timeline	Resources (funding needed & potential sources)	Lead
ACTION: Share successful strategies for marine sector job creation, technical improvement, and business retention and expansion with an emphasis on best practices, sustainable and efficient staffing and supply chains, and green and emerging technologies.				
ED1	Convene one or more workshops or conferences that bring together marine-sector technical or economic development professionals to share program and policy needs and resources within and between states.	24 months	\$50,000	federal, state, and local agencies, industry, NGOs, and tribal governments
ACTION: Share successful strategies for meeting coastal community-oriented infrastructure, planning and economic development needs between states.				
ED2a	Connect coastal communities with planning and development needs to technical assistance opportunities such as NOAA Coastal Service Center trainings, EPA Smart Growth Implementation Assistance, NEMO <sup>43</sup> network trainings, etc.	24 months	In-kind commitment and collaboration from all involved	federal, state, and local agencies, industry, NGOs, and tribal governments
ED2b	Share innovative measures that help preserve, repair, or improve working waterfront infrastructure and encourage economic growth (such as: working waterfront conservation easements, land trust acquisitions, local ordinances and licensing practices/policies etc.) between states.	24 months	Funded internship, fellowship, or research assistantship (up to \$35,000); In-kind commitment and collaboration from all involved	federal, state, and local agencies, industry, NGOs, and tribal governments
ACTION: Evaluate options for improving dredging activity in small ports where working waterfronts are a vital to employment and economic activity. (See action 7.3 task two deliverables)				
ED3	Identify and create a list of ports and coastal communities that have an unmet need of dredging and/or technical assistance to obtain dredging funds and permits.	18 months	In-kind commitment and collaboration from all involved	federal, state, and local agencies, industry, NGOs, and tribal governments

<sup>43</sup> Non-point Education for Municipal Officials.

## 2. Sustainable Fisheries

### Background

WCGA's priority action 7.1 highlights West Coast support for sustainable fisheries management and seafood production.<sup>44</sup> The three West Coast states work together in several arenas, including the Pacific States Marine Fisheries Commission and the Pacific Fishery Management Council, to ensure that fishery management priorities are integrated across the region.<sup>45</sup> However, the West Coast's multiple fishery resource disaster declarations (most of which were for salmon fisheries) and the collapse of northern California salmon runs, emphasize the need for state and regional management entities to use new, innovative approaches (such as ecosystem-based fishery management plans) to resource management efforts to build a more sustainable future for West Coast coastal and ocean resources.

The governors call for promoting sustainable fisheries and coastal-dependent businesses in priority action 7.1. Sustainable fishing communities require healthy and productive wild fish stocks, which are dependent on a productive marine ecosystem. To achieve sustainable fisheries, fishery resource managers, scientists, and stakeholders must together consider the range of effects that human activities on land and in the water have on coastal and ocean ecosystems (For example, see box on *Klamath River Disaster*). Healthy coastal and ocean ecosystems help coastal communities maintain both commercial fishing revenue and tourism revenue associated with recreational fishing, bird watching, and affiliated activities. Sustainable recreational and commercial fisheries lead to increased revenue, employment, and infrastructure improvements to their harbors.

#### Klamath River Disaster

In 2002, the water flow and volume in the northern-California Klamath and Trinity Rivers was significantly lowered in order to provide upstream water for power plants, irrigation diversions, and other uses. The low flow and volume in these rivers caused significant disease outbreak among the adult salmon and steelhead returning to the rivers in September 2002, resulting in the deaths of at least 33,000 adult fish. The premature deaths of these adult fish prevented them from spawning, ultimately affecting returns for subsequent salmon generations. Significantly lower salmon returns to these rivers in 2005 and 2006 ultimately led to the 2006 Klamath River Salmon fishery federal fishery disaster declaration. Coastal communities rely on healthy salmon runs for income, for enjoyment of wild places, and for cultural identity. These values are enhanced when the natural resource management process embraces the connection between human activities on land and their effects on the sea.

*California Department of Fish and Game. 2004. September 2002 Klamath River Fish-Kill: Final Analysis of Contributing Factors.*

<http://www.nmfs.noaa.gov/sfa/sf3/disasters/klamath/>

<sup>44</sup> WCGA May 2008 Action Plan.

<sup>45</sup> <http://www.pcouncil.org/>; <http://www.psmfc.org/>.

Fisheries in federal waters (3-200 nautical miles offshore) are managed under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), which recognizes the importance of fishery resources to fishing communities, and the importance of those communities to the management process. Under the MSA, fishery conservation and management measures shall, consistent with conservation requirements, take into account the importance of fishery resources to fishing communities by using economic and social data to: provide for the sustained participation of such communities in the fisheries, and to the extent practicable, minimize adverse economic impacts on such communities.<sup>46</sup> Improving the state of the best available economic and social science characterizing West Coast fishing communities and the importance of fishery resources to those communities is important to better understand the effects of state and federal fishery management actions on communities.

The WCGA's priority area 3 is to "Promote the Effective Implementation of Ecosystem-Based Management."<sup>47</sup> Taking an ecosystem-based approach to coastal and marine resource management is central to sustaining the economic and environmental health of coastal communities. Each of the WCGA's priority areas is important to improving the health and well-being of those communities, when the communities are considered in the context of their biophysical ecosystems. In recognition of connections between communities and their natural environments, the three states are working within the Pacific Fishery Management Council process on West Coast ecosystem-based fishery management planning that would integrate fishery-target species management planning with predator, prey, and habitat management priorities.<sup>48</sup> Ecosystem-based management incorporates information about the socioeconomic characteristics of fishery-dependent communities. Community dependency upon fishery resources and vulnerability to changes in resource availability are indicators of the economic well-being of those communities and their place within their ocean ecosystems. The WCGA Sustainable Coastal Communities ACT notes that the WCGA's Integrated Ecosystem Assessment ACT draft work plan appropriately addresses the need for social science data, assessments, and indicators in considering the place of humans within the California Current ecosystem.

Regional fishing associations, as mentioned in the MSA, and other mechanisms for community-based fisheries management coordinate well with principles and scientific needs of ecosystem-based management. Cobb et al. define community-based fishery management as "a process where citizens actively participate in local management efforts through setting needs and goals, and making decisions through an inclusive and transparent process."<sup>49</sup> Community-based fishery management is intended to work within and complement existing state and federal management

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<sup>46</sup> 16 U.S.C. 1851, National Standard 8

<sup>47</sup> WCGA May 2008 Action Plan

<sup>48</sup> <http://www.pcouncil.org/ecosystem-based-management/background-information/>

<sup>49</sup> Cobb, L., C. Gibson, and P. Stauffer. 2007. Port Orford: Implementing Community-Based Ocean Management on the Oregon Coast. Proceedings of Coastal Zone 07: Portland, Oregon, July 22-26, 2007.

programs. In practical terms, examples of community-based fishery management range from formal fishery quota sharing and management programs authorized by federal or state law, to fishery participants in a particular port collaborating on the design of a new pier, to cooperative collection of scientific samples from regionally-abundant fish species.

Some West Coast fishing ports are already participating in community-based fishery management. For example, the Central Coast Groundfish Project<sup>50</sup> and San Luis Obispo Science and Ecosystem Alliance<sup>51</sup> in California and the Port Orford Ocean Resource Team<sup>52</sup> in Oregon address important science and resource management issues at the local level, where appropriate, and seek to promote greater local stewardship of West Coast fisheries. The value of Columbia River tribal fisheries has increased significantly in the last decade due to renewed attention to bringing a high quality resource to market through delivery systems that rely on positive and effective community and business relationships.<sup>53</sup>

Many West Coast fishing communities are interested in improving their participation in the science and policy dialogue on fisheries management. Fishery participants are concerned with the way that small scale, place-based management issues fit into the larger coastwide fishery management process. For example, local development or restoration options for a particular estuary may be important to the coastwide abundance of a federally-managed fish species, but clear avenues for fishing communities to help local land managers and federal ocean resource managers understand how their decisions affect each other are lacking. Fishery participants are also interested in how they might contribute to larger-scale science efforts by helping with localized data-gathering. For example, could some West Coast fishing vessels be used for carrying climate data-gathering instruments? Ultimately, communities have a two-way communication goal: to educate fishery participants about how to fish sustainably to build longer-lived coastal dependent businesses, and to educate resource managers and scientists about the needs and vulnerabilities of resource dependent and place-based businesses.

Recent pilot projects incorporating collaborative fisheries research projects have produced promising results. In November 2010, the California Ocean Protection Council began a Collaborative Fisheries Research institute (CFR West).<sup>54</sup> The organization is in the process of developing, soliciting, and funding projects with the goal of creating partnerships between fishermen and scientists to collect fisheries data necessary for state and regional fisheries agencies. This program has shown that it can serve as a model for other areas that are trying to

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<sup>50</sup> <http://www.nature.org/wherewework/northamerica/states/california/initiatives/ccgp.html>

<sup>51</sup> <http://www.slosea.org/>

<sup>52</sup> <http://www.oceanresourceteam.org/>

<sup>53</sup> L. Brown, personal communication, November 20<sup>th</sup>, 2009.

<sup>54</sup> <http://www.opc.ca.gov/2010/08/collaborative-fisheries-research-organization>

implement collaborative research and that collaborative research can greatly contribute to the realization of community-based co-management of marine resources. Projects such as this throughout the West Coast can help diversify the portfolio of smaller coastal fishing communities to help weather economic downturns and fish stock fluctuations.

### **Priorities and Needs**

Multiple factors threaten the existence of sustainable fisheries, coastal-dependent businesses, and working waterfronts, such as:

- Lack of stable access to harvest or stable regulatory regime impedes business planning and effective local resource stewardship;
- Degradation of habitat necessary to support harvestable populations of some species, such as salmonids listed under the Endangered Species Act;
- Lack of public understanding of the land-sea connection;
- Lack of opportunities or perceived lack of opportunities for marine stakeholders to engage in policy processes on land-based human activities;
- Limited representation of community participation (as separate from individual or business) participation in state- or federal-level management decision-making;
- Reduction of port access points resulting from decreased frequency of dredging and related sediment management activities;
- Coastal community master plans require data on water- and coastal-dependent industry needs; some planning efforts in the region (e.g. water-use planning for the Columbia and Klamath River watersheds) do not adequately account for these needs;
- In some ports, the decline of fisheries income has indirectly resulted in insufficiently maintained port infrastructure to support reliable fishery delivery and storage systems and workforce access;
- Lack of opportunities for and improve awareness of purchase locally-sourced seafood;
- Challenges in implementing sustainable seafood commodity certification programs—through both transaction costs and low public awareness;

Given the extent of priorities and needs, the SCC ACT is strategically focused on the following recommended actions.

## **Recommended Actions – Sustainable Fisheries**

SF1. Conduct port inventories of seafood-related infrastructure limitations in coastal communities such as: berths, processing plant access, ice availability, storage facilities, buying stations, boat yards and public hoists. Determine where opportunities exist for improvement of fisheries-related harbor facilities.

SF2. Improve social and economic data analysis and collection to better characterize West Coast coastal communities' dependence upon fishery resources, and vulnerability and resilience to shifts in fishery resources. In 2006, NOAA assessed West Coast fishing communities' dependence on groundfish fishery resources, so that the Pacific Fishery Management Council and West Coast fisheries management agencies could better understand the potential effects of rebuilding overfished groundfish on specific fishing communities. This analysis was useful to decision-makers and the public because it made managers more aware of the tradeoffs between different groundfish rebuilding plans and the needs of particular fishing communities. The SCC ACT will request a letter from the WCGA Executive Committee to the appropriate state and federal agencies requesting that the 2006 analysis be updated and expanded to include information on community dependencies on other fishery resources so that future fisheries management decisions makers have the opportunity to craft management programs that better account for the needs of the diverse West Coast fishing communities.

SF3. Provide assistance to various members of the seafood industry so that they can increase profitability and sustainability of their industry. Provide existing and new seafood-related businesses the resources needed to establish business plans that reflect sustainability in the ocean and in the marketplace. Programs of this nature are currently offered by Sea Grant programs,<sup>55,56</sup> the Seafood Consumer Center,<sup>57</sup> the Oregon State University Seafood Research Laboratory,<sup>58</sup> and the Community Seafood Initiative.<sup>59</sup>

SF4. Research mechanisms and report out on regulatory authorization of community-based cooperative fishery management efforts, such as Regional Fishery Associations. Assess whether state and federal fisheries policy-making processes could facilitate more policy input and research data from fishing communities.

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<sup>55</sup> <http://www.wsg.washington.edu/mas/econcomdev/trade.html>

<sup>56</sup> <http://www.wsg.washington.edu/mas/econcomdev/seafood.html>

<sup>57</sup> <http://www.seafoodschoool.org/products.htm>

<sup>58</sup> <http://osuseafoodlab.oregonstate.edu/>

<sup>59</sup> <http://csipartners.org/>

**Table 2: Sustainable Fisheries Deliverables**

Number	Deliverable	Timeline	Resources (funding needed & potential sources)	Lead
ACTION: Investigate fisheries-related infrastructure limitations in coastal communities.				
SF1	Request state and federal agencies: assess fisheries related infrastructure and facilities in coastal communities (such as: berths, processing plant access, ice availability, storage facilities, buying stations, boat yards and public hoists) and recommend opportunities for improvement of fisheries-related harbor facilities;	6 months	In-kind	SCC ACT
ACTION: Improve social and economic data analysis and collection to better characterize West Coast coastal communities' dependence upon fishery resources, and vulnerability and resilience to shifts in fishery resources.				
SF2	The SCC ACT will request a letter from the WCGA Executive Committee to the appropriate state and federal agencies requesting that the 2006 analysis of West Coast fishing communities' dependence on groundfish fishery resources be updated and expanded to include information on community dependencies on other fishery resources, and asking that the agencies develop processes for educating decision-makers about those analyses. <sup>60</sup>	6 months	In-kind	SCC ACT
ACTION: Provide existing and new seafood-related businesses the resources needed to establish business plans that reflect sustainability in the ocean and in the marketplace. Support the development of networks of fishermen, processors, distributors, retailers, restaurant owners, and others who can work together to increase the profitability and sustainability of fishing.				

<sup>60</sup> See: National Marine Fisheries Service. 2006. Appendix A, Additional Socio-Economic Analysis for the Pacific Fishery Management Council's Draft Environmental Impact Statement for Amendment 16-4 to the Pacific Coast Groundfish Fishery Management Plan.

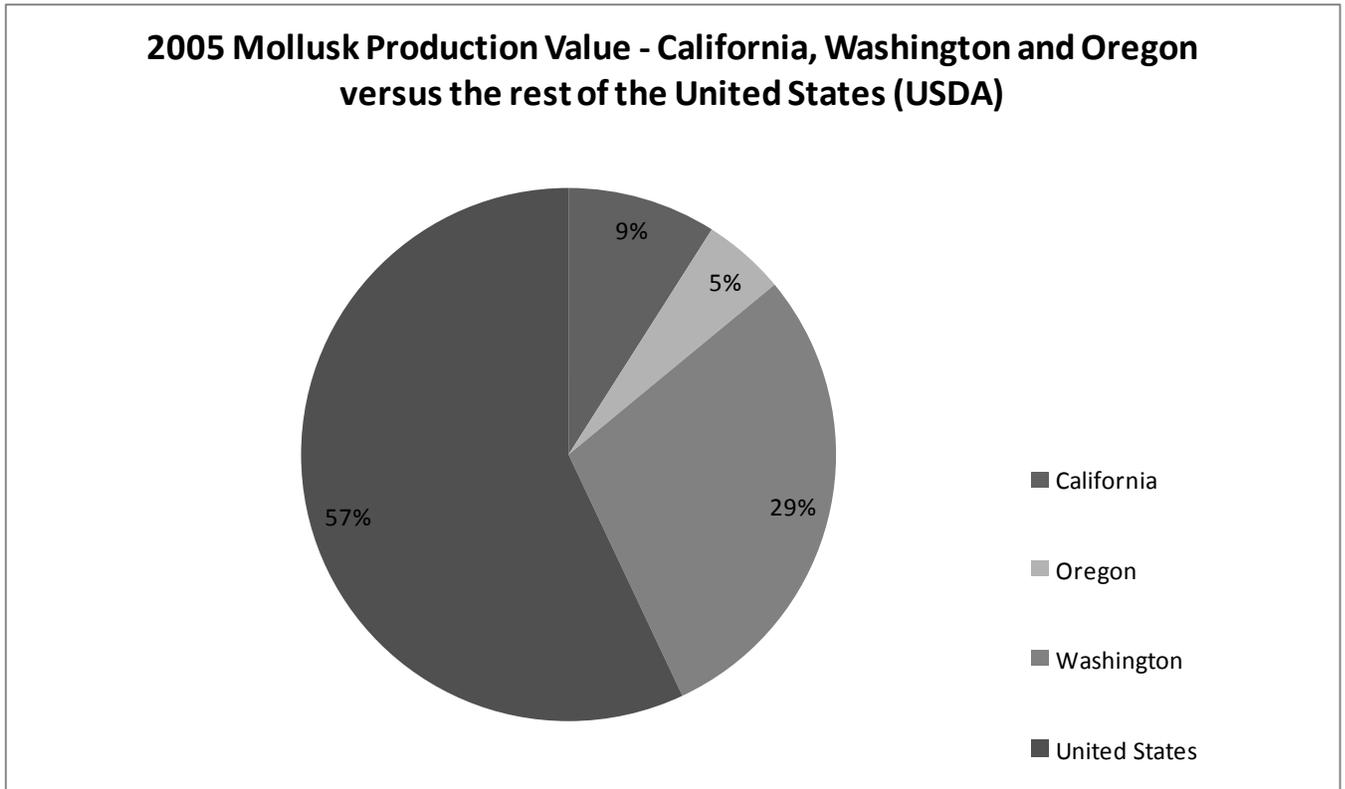
SF3a	Request directors of WA, OR and CA Sea Grant programs and appropriate state and federal agencies: (1) integrate, coordinate and expand their seafood marketing trainings, technical assistance, and business plan development efforts; (2) review opportunities and needs for fishing industry networking programs, such as the Fisheries Business Network or the Wild Seafood Exchange, and for sponsorship of a workshop convening fishermen, chefs, and buyers across the three states, and; (3) cooperatively sponsor and facilitate a workshop on local, place-based fishery science, management, and marketing projects to assess the challenges and needs of those projects, facilitate a learning opportunity among projects, and gather information for a report to state and federal managers about new opportunities to engage with coastal communities.	6 months	In-kind commitment and collaboration from all involved	SCC ACT
SF3b	Investigate options for generating, supporting or publicizing inventories of community-based fish markets or locally-sourced seafood.	18 months	In-kind commitment and collaboration from all involved	SCC ACT, Fellows , partner organizations
SF3c	Establish academic programs (4-year and community colleges) that provide classes for teaching the principles and values of sustainable fishing--policy, marketing, safety, navigation, mechanics, research and finance.	24 months	In-kind commitment and collaboration from all involved	SCC ACT, partner organizations and institutions
ACTION: Research mechanisms and report out on regulatory authorization of community-based cooperative fishery management efforts, such as Regional Fishery Associations. Assess whether state and federal fisheries policy-making processes could facilitate more policy input and research data from fishing communities.				
SF4a	Identify agencies or non-governmental organization(s) willing to design and implement a collaborative process to educate fishing communities about bringing more local involvement to fishery science, management and marketing.	12 months	In-kind commitment and collaboration from all involved	SCC ACT

SF4b	The SCC ACT will create an inventory of West Coast community-based fisheries science and management organizations, to be made available online, and create networking opportunities between organizations and the public with the aim of educating coastal communities about developing their own plans for sustainability.	12 months	In-kind commitment and collaboration from all involved	SCC ACT
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### 3. Sustainable Aquaculture

#### Background

According to NOAA’s Aquaculture Program, aquaculture refers to “the breeding, rearing, and harvesting of plants and animals in all types of water environments.”<sup>61</sup> Marine aquaculture includes the production of shrimp and salmon, as well as shellfish such as oysters, clams, and mussels. Most U.S. marine aquaculture is shellfish while a small percentage of production is marine finfish. On the West Coast, marine aquaculture primarily takes place in bays and estuaries, as opposed to offshore areas, and largely involves shellfish species.<sup>62</sup>



In coastal communities and economies, today’s shellfish aquaculture businesses support a range of benefits , such as supporting local seafood markets and contributing to the nation’s overall seafood trade deficit. These coastal-dependent businesses have a 100+ year production history in several West Coast communities that rely on healthy estuarine habitats. Although aquaculture businesses in the three states generate a relatively small proportion of overall U.S. aquaculture

<sup>61</sup> <http://aquaculture.noaa.gov>

<sup>62</sup> Oregon decision-makers have traditionally expressed caution about offshore aquaculture, largely because Oregon has a policy of prioritizing the maintenance and restoration of sustainable naturally produced native fish. In addition, the holding or release of fish in Oregon is evaluated for effects on existing fish populations.

revenue, 15 percent in 2005<sup>63</sup>, they represent a strong proportion of the nationwide cultured mollusk revenues, 43 percent in 2005.<sup>64</sup>

The West Coast's existing shellfish aquaculture facilities provide on-the-water jobs in many rural coastal counties. For example, in southwest Washington's Mason and Pacific Counties alone, annual wages for shellfish related jobs top \$27 million.<sup>65</sup> Shellfish aquaculture is the largest private employer in Pacific County, and second in Mason County.<sup>66</sup> These aquaculture facilities use many of the same support services as wild commercial fisheries (vessel moorage, processing, fuel, docks, etc.). Many of the port and harbor infrastructure concerns described for sustainable fisheries above also affect sustainable aquaculture businesses. Similarly, West Coast aquaculture product sales can benefit from some of the same seafood marketing and education programs on local seafood. An estimated \$110 million dollars worth of shellfish is produced annually on West Coast farms, much of which is sold outside the region,<sup>67</sup> with increasing export volumes helping to reduce the country's \$9 billion dollar seafood trade deficit.<sup>68</sup>

Research on aquaculture is well established

#### Ocean Acidification

The WCGA's Climate Change Action Coordination Team's action plan mentions ocean acidification along with other climate change phenomena. The world's oceans have absorbed much of the carbon dioxide released into the atmosphere over the last 200+ years, resulting in a lowering of the ocean's pH levels. Increased acidity of ocean water is expected to have significant effects on the marine food web, including constraining the ability of marine zooplankton to grow their protective calcareous shells. For the West Coast, ocean acidification is expected to negatively affect salmon and other higher-order predators that consume marine zooplankton. In shellfish aquaculture, the effects of ocean acidification will likely be more direct, by reducing the ability of oysters, clams, and other shellfish to create their own shells in larval states, ultimately delaying or preventing maturity. The WCGA process offers an opportunity for the action teams and others to work across disciplines to determine how West Coast states can best prepare for the ocean acidification's effects on the estuarine and marine environments.

*National Oceanic and Atmospheric Administration Pacific Marine Environmental Lab. 2009. What is Ocean Acidification?*

(<http://www.pmel.noaa.gov/co2/OA/background.html>)

*Talmage, S.C. and C. J. Gobler. 2009. The effects of elevated carbon dioxide on concentrations on the metamorphosis, size, and survival of larval hard clams (*Mercenaria mercenaria*), bay scallops (*Argopecten irradians*), and Eastern oysters (*Crassostrea virginica*). *Limnology and Oceanography* 54: 2072-2080.*

<sup>63</sup> United States Department of Agriculture. 2005. Census of Aquaculture:

[http://www.agcensus.usda.gov/Publications/2002/Aquaculture/aquacen2005\\_01.pdf](http://www.agcensus.usda.gov/Publications/2002/Aquaculture/aquacen2005_01.pdf)

Values are based on "production methods, surface water acres and sources, production, sales, point of first sale outlets, aquaculture distributed for restoration, conservation, or recreational purposes, and farm labor." [http://www.agcensus.usda.gov/Publications/2002/Aquaculture/aquacen2005\\_intro.pdf](http://www.agcensus.usda.gov/Publications/2002/Aquaculture/aquacen2005_intro.pdf)

<sup>64</sup> United States Department of Agriculture. 2005. Census of Aquaculture:

<http://www.agcensus.usda.gov/Publications/2002/Aquaculture/index.asp>

<sup>65</sup> Puget Sound Partnership. *Shellfish economy; treasures of the tidelands*. June 2003. Accessed at

[http://www.psparchives.com/publications/our\\_work/waste/shellfish/fact\\_sheets/economy\\_web1.pdf](http://www.psparchives.com/publications/our_work/waste/shellfish/fact_sheets/economy_web1.pdf)

<sup>66</sup> Ibid.

<sup>67</sup> [http://www.pcsqa.org/pub/farming/farm\\_benefits.shtm](http://www.pcsqa.org/pub/farming/farm_benefits.shtm)

<sup>68</sup> <http://aquaculture.noaa.gov/us/welcome.html>

on the West Coast. Regional universities and government agencies are strong contributors to internationally important research on improving aquaculture's viability and sustainability through improved feeding, broodstock selection, disease control, and waste reduction and processing. For example, Oregon State University, working in partnership with Oregon Sea Grant, the U.S. Department of Agriculture and the West Coast oyster industry, is conducting long-term research into Pacific oyster broodstock selection and productivity to improve oyster farm yields in the region.<sup>69</sup> Beyond public research efforts, private aquaculture technology firms with West Coast bases of operations are exporting technology and ideas that have improved aquaculture productivity and sustainability worldwide.<sup>70</sup> However, if the existing West Coast aquaculture facilities are to remain productive, additional research is needed in the areas of disease outbreaks and effects on habitat, as well as regarding potential effects of climate change and ocean acidification on shellfish, estuaries and marine ecosystem productivity.

In addition to their regular commercial activities, shellfish growers are helping with native shellfish and habitat restoration projects. The Puget Sound Restoration Fund is working with local shellfish growers on a project intended to mitigate nutrient loads in Vashon Island's Quartermaster Harbor by experimenting with a shellfish growing raft stocked with native mussels, natural filtering agents.<sup>71</sup> In Oregon, The Nature Conservancy is partnering with the Whiskey Creek Shellfish Hatchery, Oregon State University, and local oyster growers, in rearing native Olympia oysters in Netarts Bay to build shell reefs and help improve water quality. The Sustainable Coastal Communities Action Coordination Team will work with the Polluted Runoff Action Coordination Team to investigate opportunities to build capacity for additional West Coast projects.

In June 2011, the Department of Commerce and NOAA released national marine aquaculture policies intended to help the U.S. meet increasing demands for healthy domestically-produced seafood, create jobs in coastal communities, and protect vital ecosystems. One of the first programs to be developed under the new national policies will be a National Shellfish Initiative to increase commercial production of shellfish, which would create jobs, provide locally-sourced food, restore shellfish populations and habitats, and improve water quality. West Coast aquaculture industry members are participating in the development of this new shellfish initiative.

### **Priorities and Needs**

Multiple factors affect the existence of sustainable aquaculture facilities and associated West Coast rural community employment opportunities, including:

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<sup>69</sup> <http://hmsc.oregonstate.edu/projects/mbp/index.html>

<sup>70</sup> e.g. OceanSpar fish pens: <http://www.oceanspar.com/>

<sup>71</sup> <http://www.restorationfund.org/projects-mussels.php>

- Lack of comprehensive local and regional aquaculture development planning to assist with finding suitable sites in coastal areas where aquaculture could be compatible with or does not compete with many other coastal uses;
- Lack of adequate infrastructure such as boat ramps, moorage, docks and processing facilities;
- Lack of sufficient monitoring and research on the potential effects of climate change and ocean acidification on aquaculture species and operations;
- Technology development, training, research and management practices to ensure that various types of production systems are compatible with marine and estuarine ecosystems, including cultured-wild stock interactions;
- Lack of opportunities to purchase locally-sourced seafood;
- Lack of coordinated aquatic animal health regulations restricts interstate movement of broodstock and seed;
- Challenges in implementing sustainable seafood commodity certification programs, such as the Food Alliance shellfish certification program — through both transaction costs and low public awareness.

The SCC ACT is limited in addressing all of the listed challenges, and will focus efforts on the following recommended actions.

### **Recommended Actions – Sustainable Aquaculture**

SA1. Investigate infrastructure limitations in coastal communities for existing aquaculture operations such as: farm access to docks and ramps, refrigeration and storage facilities, and post-harvest processing capacity. Determine where opportunities exist for improvement of aquaculture-related facilities.

SA2. As appropriate in state or regional efforts, investigate the use of coastal and marine spatial planning as a process to reduce potential user or resource conflicts related to aquaculture activities.

SA3. Integrate, coordinate and expand WA, OR and CA Sea Grant aquaculture technology development, research, technology transfer and outreach to support sustainable shellfish aquaculture activities.

SA4. Prioritize West Coast marine aquaculture research needs using guidance from Sea Grant's 2009 West Coast Regional Marine Research and Information Needs report, the Pacific Shellfish Institute's research project portfolio, the Western Regional Aquaculture Center's Regional

Research and Outreach Project, and other national and regional aquaculture research needs analyses as appropriate.

SA5. Establish a West Coast aquaculture disease working group to evaluate the National Aquatic Animal Health Plan<sup>72</sup> and consider how it could be implemented on the West Coast. This will provide a coordinated, consistent effort to prevent the spread of disease and treat disease outbreaks while allowing appropriate levels of continued economic activity if and when diseases are discovered.

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<sup>72</sup> [http://www.aphis.usda.gov/animal\\_health/animal\\_dis\\_spec/aquaculture/downloads/naahp.pdf](http://www.aphis.usda.gov/animal_health/animal_dis_spec/aquaculture/downloads/naahp.pdf)

**Table 3: Sustainable Aquaculture Deliverables**

Number	Deliverables	Timeline	Resources (funding needed & potential sources)	Lead
ACTION: Investigate aquaculture-related infrastructure limitations in coastal communities such as: farm access to docks and ramps, refrigeration and storage facilities, and post-harvest processing capacity. Determine where opportunities exist for improvement of aquaculture-related facilities.				
SA1	If the appropriate agencies take on SF1, ensure that the inventory of port infrastructure and facilities also assesses whether ports are viable as supports for aquaculture or for seafood industries in general.	24 months (same as SF 1)	In-kind commitment and collaboration from all involved	Federal, state, and local agencies, industry, NGOs, and Tribal governments
ACTION: To reduce potential user or resource conflicts, ensure that sustainable aquaculture planning is integrated into state and federal coastal marine spatial planning efforts.				
SA2a	The SCC ACT will request a letter from the WCGA Executive Committee to the appropriate state and federal agencies requesting aid from the NOAA aquaculture program in support of comprehensive sustainable aquaculture management planning in coordination with other West Coast states.	6 months	In-kind, negligible	SCC ACT
SA2b	Prepare a letter from the WCGA SCC ACT to the WCGA Executive Committee recommending inclusion of aquaculture planning in any marine spatial planning efforts to facilitate aquaculture siting and reduce user/resource conflicts.	6 months	In-kind, negligible	SCC ACT
ACTION: Integrate, coordinate and expand WA, OR and CA Sea Grant aquaculture technology development, research, technology transfer and outreach to facilitate sustainable aquaculture development and community education.				

SA3	Prepare a letter from the WCGA SCC ACT to the directors of WA, OR and CA Sea Grant programs urging integration, coordination and expansion of their aquaculture technology development, technical transfer and outreach efforts.	6 months	In-kind, negligible	SCC ACT
ACTION: Prioritize West Coast marine aquaculture research needs using guidance from the June 2009 West Coast Regional Marine Research and Information Needs report, the Pacific Shellfish Institute's research project portfolio, the Western Regional Aquaculture Center's Regional Research and Outreach Project, and other national and regional aquaculture research needs analyses as appropriate.				
SA4	Request a letter from the WCGA Executive Committee to the directors of WA, OR, and CA Sea Grant programs asking those programs to cooperatively sponsor and facilitate an effort to consolidate and prioritize a list of marine aquaculture research needs.	12 months	In-kind commitment and collaboration from all involved.	WA, OR, CA Sea Grant programs, federal, state, and local agencies, industry, NGOs, and tribal governments
ACTION: Establish a West Coast aquaculture disease working group to evaluate the National Aquatic Animal Health Plan and consider how it could be implemented on the West Coast. This will provide a coordinated, consistent effort to prevent the spread of disease and treat disease outbreaks while allowing appropriate levels of continued economic activity if and when diseases are discovered.				
SA5	Establish a West Coast aquaculture disease working group to work on regional implementation of the National Aquatic Animal Health Plan.	12 – 24 months	In-kind commitment and collaboration from all involved	Lead agencies for aquatic animal health in WA,OR and CA, and West Coast tribes, and appropriate aquatic animal health experts and industry representatives

## ***Non-consumptive Recreation and Tourism***

### **Background**

The diversity of the ocean and coastal environments along the West Coast offers extensive non-consumptive recreational opportunities for residents and tourists alike. This includes an array of outdoor activities, such as: bird-watching, use of water trails via non-motorized watercraft, water sports (SCUBA, surfing, etc.), sailing, wildlife viewing, hiking, and camping. Resource extraction sectors such as forest industries in some rural coastal communities have seen declines,<sup>73</sup> while tourism has been increasing in importance as a growth sector for many West Coast coastal communities,<sup>74</sup> a trend identified over a decade ago in a statement in a NOAA paper developed for the 1998 Year of the Ocean conference:

“Of all the activities that take place in coastal zones and near-shore coastal ocean, none is increasing in both volume and diversity more than coastal tourism and recreation. Both the dynamic nature of this sector and its magnitude demand that it be actively taken into account in government plans, policies, and programs...”<sup>75</sup>

Participation in outdoor recreation activities by travelers and recreation seekers often generates large economic benefits for coastal states through direct salary and wage income, as well as contribution to local tax bases. In the ten-year period from 1994-2004, Washington, Oregon and California showed an increase in ocean-dependent economic sectors, with a 47% average increase in gross domestic product (GDP) for the tourism and recreation sector.<sup>76</sup>

According to the National Ocean Economics Program, in 2004, coastal tourism and recreation accounted for 277,185 jobs and \$12 billion (GDP) in California; 10,613 jobs and \$297.4 million (GDP) in Oregon; and 106,764 jobs and \$4.1 billion (GDP) in Washington.<sup>77</sup> However, these figures do not capture the relative importance of recreation and tourism to smaller coastal communities. For example, Washington experienced a 24% decline in the number of living resources-related jobs from 1990-2004; Oregon and California also experienced employment declines in this sector over the same time period; these figures are comprised from “industries related to commercial fishing, seafood markets and aquaculture.”<sup>78</sup> In some states, as resource

<sup>73</sup> University of Washington, College of Forest Resources, “Economic Contribution of the Forestry and Forest Products Industries in Washington State.” [www.cfr.washington.edu/nwef/documents/economiccontribution.pdf](http://www.cfr.washington.edu/nwef/documents/economiccontribution.pdf), retrieved July 11, 2011.

<sup>74</sup> <http://www.oczma.org/detail.php?item=30>

<sup>75</sup> [http://www.yoto98.noaa.gov/yoto/meeting/tour\\_rec\\_316.html](http://www.yoto98.noaa.gov/yoto/meeting/tour_rec_316.html)

<sup>76</sup> Lester S.E., et al., 2010. Science in support of ecosystem-based management for the US West Coast and beyond. *Biological Conservation* 143, 576-587.

<sup>77</sup> <http://www.oceaneconomics.org/NationalReport/>

<sup>78</sup> Kildow, J et al. (2009). State of the U.S. Ocean and Coastal Economies. pp. 29-30. Retrieved from <http://www.oceaneconomics.org/NationalReport/>

extraction-dependent economies decline, tourism presents itself as a sector with growth potential.<sup>79</sup>

Research by other organizations indicates similar economic contributions from the tourism and recreation sector. For example:

- Among the thirty coastal and Great Lakes states, California ranks number one in employment in tourism and recreation.<sup>80</sup> World famous sandy beaches and favorable weather conditions of Southern California make coastal tourism & recreation an important component of California's economy in general, and the overall tourism industry of the state in particular. Coastal tourism and recreation has been the fastest growing activity, both in volume and diversity, in the coastal zone.<sup>81</sup> As of 2000, tourism was one of the major growth engines not only for coastal counties, but for the entire state.<sup>82</sup> The coastal zone accounts for a significant share of population density and economic activity here and is shaped by patterns in tourism and recreation.<sup>83</sup> Coastal tourism also makes California's position competitive in international tourism as studies have shown that beaches are the leading international tourist destination.<sup>84</sup>
- In the state of Washington, "an estimated three million people participated in some form of coastal recreational activity in or near the Pacific Ocean, bays, sounds, straits, or tidal portions of rivers in 2000."<sup>85</sup>
- In Oregon, which is less populated and offers a less developed tourism economy than California and Washington (whose coast includes the Puget Sound region), "wages and salaries in travel-related industries totaled \$363.8 million for the coastal counties in 2003."<sup>86</sup> In terms of full time equivalent jobs (at \$27,000 per year salary), this is equivalent to 13,200 annual jobs in the tourist industry."<sup>87</sup> By contrast, the seven coastal counties in Oregon generated 16,601 total timber-related jobs in 2003<sup>88</sup> while total full-

<sup>79</sup> <http://www.oczma.org/detail.php?item=30>

<sup>80</sup> Kildow, J. and C. Colgan. 2005. *California's Ocean Economy*, Report to the Resource Agency, State of California. Prepared by The National Ocean Economics Program.

<sup>81</sup> *1998 Year of the Ocean: Coastal Tourism and Recreation*.

[http://www.yoto98.noaa.gov/yoto/meeting/tour\\_rec\\_316.html](http://www.yoto98.noaa.gov/yoto/meeting/tour_rec_316.html)

<sup>82</sup> California Lodging Industry Association, "California Tourism's Contributions to the California Economy, 1998-2002." <http://www.clia.org/tourism.cfm>, Accessed 24 July 2011.

<sup>83</sup> C. Cunningham, and Walker, K. 1996. "Enhancing Public Access to the Coast through the CZMA." *The Journal of Marine Education*, Volume 14, No.1. pp 8-11.

<sup>84</sup> J.R. Houston, 1996. "International Tourism and U.S. beaches." *Shore and Beach*.

<sup>85</sup> Hadley, Nina and Rachel Gregg. *Coastal Tourism in Washington*. Seattle: Washington Sea Grant.

<sup>86</sup> *A Demographic and Economic Description of the Oregon Coast: 2006 Update*, pp. IV-6-7.

<http://www.oczma.org/detail.php?item=30>

<sup>87</sup> Ibid. p. III-6-7

<sup>88</sup> Ibid. p. III-36.

and part-time coastal employment constituted 102,723 jobs.<sup>89</sup>

- A survey about non-consumptive ocean recreation administered to residents throughout Oregon and in four southwest Washington counties estimates that “about four million permanent residents take over 27 million trips annually and spend about \$2.4 billion” in the seven Oregon coastal counties.<sup>90</sup>

One of the challenges for policy and planning officials across administrative boundaries is to support efforts to increase tourism and outdoor recreation activities in a manner that ensures the net benefits are captured locally. Emerging tourism and outdoor recreation businesses in rural communities feel that they often compete with out-of-area tourism operators.<sup>91</sup> This creates a scenario where out-of-area businesses and distant communities reap the benefits offered by well-maintained marine environments, while contributions to support them are diminished.

One market opportunity for coastal economies is tourism revenue from birdwatchers. On a national scale, bird-watching trip and equipment expenditures of nearly \$36 billion in 2006 generated over \$82 billion in total industry output, which “includes the direct, indirect and induced effects of the expenditures associated with bird watching.”<sup>92</sup> Birdwatching rates for both resident and non-residents in the Pacific Northwest are lower than those in the Midwest and South.<sup>93</sup>

With greater investment in attracting more participation in this and other activities, coastal economies stand to benefit by capturing a portion of the national market. Specific regional examples of the non-extractive tourism economies in many coastal communities include:

- In 2002, recreation occurring at eighteen surveyed Oregon coastal and river ports contributed \$75 million in trip spending, \$31 million in durable goods purchases, \$41 million in personal income and supported 1,670 jobs.<sup>94</sup>
- In the 12 counties bordering the San Francisco Bay estuary, “revenues from maritime activities exceed \$5.4 billion each year, and marinas annually generate some \$167

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<sup>89</sup> Ibid. p. II-13.

<sup>90</sup> LaFranchi, Chris and Collin Daugherty, March 2011. *Non-consumptive Ocean Recreation in Oregon: Human Uses, Economic Impacts & Spatial Data*.

[http://oregon.surfrider.org/files/2011/03/OregonNonconsumptiveStudy\\_comp.pdf](http://oregon.surfrider.org/files/2011/03/OregonNonconsumptiveStudy_comp.pdf). Accessed July 11, 2011.

<sup>91</sup> M. Hinz presentation to Tillamook County Board of Commissioners,

<http://www.co.tillamook.or.us/documents/bocminutes/2006/minutes%2009-06-06.pdf>

<sup>92</sup> United States Fish and Wildlife Service, *Birding in the United States: A Demographic and Economic Analysis*. Report 2006-4, July 2009. [http://library.fws.gov/Pubs/birding\\_natsurvey06.pdf](http://library.fws.gov/Pubs/birding_natsurvey06.pdf). Accessed July 11, 2011.

<sup>93</sup> Ibid.

<sup>94</sup> Chang, Wen-Huei and R. Scott Jackson. *Economic Impacts of Recreation Activities at Oregon Coastal and River Ports*. August 2003. <http://el.erdc.usace.army.mil/elpubs/pdf/trel03-12.pdf>. Accessed July 11, 2011.

million. Tourism, which generates over \$4 billion annually, is likewise strongly tied to the aesthetic values of the estuary.”<sup>95</sup>

- In 2004 and 2006, National Wildlife Refuges in Fish and Wildlife Service Region 1 (WA, OR, CA, ID, and NV) were determined to attract between 5,414,101 and 3,757,019 visitors and support 3,195 and 2,533 jobs, respectively.<sup>96</sup>

Without a healthy marine habitat, many coastal uses would be threatened, changed or lost entirely. Therefore, the maintenance of a healthy, thriving ocean and coastal ecosystem is of paramount importance for coastal communities to retain net benefits from non-consumptive recreation and tourism in their area.

### **Priorities and Needs**

Factors explaining the economic success of non-consumptive tourism and outdoor recreation include: information sharing and integration of services between relevant agencies, protected land and water resources, and investments in new infrastructure targeted specifically at non-consumptive recreational needs. For example, a partnership between the City of Tacoma, the Washington State Recreation and Conservation Office, the Foss Waterway Development Authority, Foss Landing Marina & Boat Storage and Metro Parks Tacoma resulted in the installation of a new float, ramp, gangway and concrete landing on the Foss Waterway at Waterway Park in Tacoma, Washington to provide access for non-motorized boats such as kayaks and rowing shells—a milestone project that advocates supported for years before it became a reality.<sup>97</sup> Tourism and outdoor recreation businesses in rural communities often feel that they compete with out-of-area tourism operators.<sup>98</sup> In order to make tourism a successful generator of local economic activity, a variety of key local players should be integrated into tourism development activities.<sup>99</sup> Coastal communities have identified a range of challenges and needs to successfully support and increase non-consumptive forms of tourism and recreation:

- Lack of technical expertise to navigate zoning and land use regulations among partner organizations hoping to improve infrastructure to meet changing non-consumptive

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<sup>95</sup> 1998 *Year of the Ocean: Coastal Tourism and Recreation*.

[http://www.yoto98.noaa.gov/yoto/meeting/tour\\_rec\\_316.html](http://www.yoto98.noaa.gov/yoto/meeting/tour_rec_316.html)

<sup>96</sup> United States Fish and Wildlife Service. *Banking on Nature 2004: The Economic Benefits to Local Communities of National Wildlife Refuge Visitation*. September 2005.

<sup>97</sup> <http://www.metroparkstacoma.org/page.php?id=842>

<sup>98</sup> M. Hinz presentation to Tillamook County Board of Commissioners, September 6, 2006.

<http://www.co.tillamook.or.us/documents/bocminutes/2006/minutes%2009-06-06.pdf>

<sup>99</sup> UNEP, Priority Actions Programme. 2009. *Sustainable Coastal Tourism, An Integrated Approach*. Page 18. Accessed at: <http://www.unep.fr/shared/publications/pdf/DTIx1091xPA-SustainableCoastalTourism-Planning.pdf>. July 28, 2011.

recreation and tourism needs;<sup>100</sup>

- Limited funding to adapt existing infrastructure to support new economic opportunities;<sup>101</sup>
- Challenges coordinating among agencies whose cooperation is required to generate cohesive vision, generate plans, develop and market non-consumptive recreation and tourism opportunities and infrastructure;<sup>102</sup>
- Limited relevant, current and comparable economic and demographic data on tourism and recreation activities;<sup>103</sup>
- Amenities insufficient to meet the needs of aging coastal visitor populations;<sup>104</sup>
- Lack of information about existing natural capital assets and their potential to support tourism and recreation activities;<sup>105</sup>
- No regional standards to assess, monitor and regulate the negative impacts of tourism and recreation activities.<sup>106</sup>
- Limited access to real-time data and forecasts that would improve the operational safety and efficiency of non-consumptive water-based activities (e.g. kayaking, surfing, kite boarding, etc.).

Efforts will be focused on the following recommended actions.

### **Recommended Actions – Non-consumptive recreation and tourism**

RT1. Identify gaps, inconsistencies and areas for improvement in collection of data relevant to non-consumptive recreation and tourism in Washington, Oregon, and California. If data types are identified that could bolster non-consumptive recreation and tourism planning and development, recommend adoption of common data collection methods across the region that measure and express metrics in consistent ways over time; for example, by differentiating data that catalogues the value of tourism, non-consumptive recreation, and bird-watching as opposed to aggregating that information with consumptive recreation data (such as hunting and fishing).

RT2. Develop a list of infrastructure and other capital investments needed to support non-extractive coastal recreational activities (such as bird-watching, wildlife viewing, scuba diving, sailing, coastal hang gliding/paragliding) in key areas with untapped or under-appreciated natural capital. Evaluate usefulness of a database to assess or inventory: natural capital; current

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<sup>100</sup> Greenwood, Kevin. Port Manager, Port of Garibaldi. Stakeholder Interview. Tillamook, OR. October 2009

<sup>101</sup> Ibid.

<sup>102</sup> [http://www.yoto98.noaa.gov/yoto/meeting/tour\\_rec\\_316.html](http://www.yoto98.noaa.gov/yoto/meeting/tour_rec_316.html)

<sup>103</sup> Ibid.

<sup>104</sup> [http://egov.oregon.gov/OPRD/PLANS/docs/scorp/2008\\_Scorp\\_Final\\_Web.pdf](http://egov.oregon.gov/OPRD/PLANS/docs/scorp/2008_Scorp_Final_Web.pdf)

<sup>105</sup> United States Fish and Wildlife Service. September 2005. *Banking on Nature 2004: The Economic Benefits to Local Communities of National Wildlife Refuge Visitation.*

<sup>106</sup> [http://www.yoto98.noaa.gov/yoto/meeting/tour\\_rec\\_316.html](http://www.yoto98.noaa.gov/yoto/meeting/tour_rec_316.html)

recreation and tourism infrastructure and activities; infrastructure gaps; methods for dissemination of catalogue information (e.g. through state coastal atlases, tourism web sites, etc.). Database input would be solicited from all relevant state, federal and local agencies.

RT3. Ensure that natural areas and key non-consumptive recreation and tourism activities are identified and integrated into each state's coastal atlas.

**Table 4: Non-consumptive Recreation and Tourism Deliverables**

Number	Deliverables	Timeline	Resources (funding needed & potential sources)	Lead
<p><b>ACTION:</b> Identify gaps, inconsistencies and areas for improvement in collection of data relevant to non-consumptive recreation and tourism in Washington, Oregon and California. If data types are identified that could bolster non-consumptive recreation and tourism planning and development, recommend adoption of common data collection methods across the region that measure and express metrics in consistent ways over time; for example, by differentiating data that catalogues the value of tourism, non-consumptive recreation, and bird-watching as opposed to aggregating that information with consumptive recreation data (such as hunting and fishing).</p>				
RT1	<p>Convene an inter-agency working group to identify existing recreation and tourism-oriented data sources and gaps; consider relevant, unified and consistent data collection standards; develop data collection methods; assign data collection responsibilities, and a web-based location for public dissemination of this information.</p>	24 months	In-kind commitment and collaboration from all involved	federal, state, and local agencies, industry, NGOs, tribal governments, academic institutions, and/or consulting firms
<p><b>ACTION:</b> Develop a list of infrastructure and other capital investments needed to support non-extractive coastal recreational activities (such as bird-watching, wildlife viewing, scuba diving, sailing, coastal hang gliding/paragliding) in key areas with untapped or under-appreciated natural capital. Evaluate usefulness of a database to assess or inventory: natural capital; current recreation and tourism infrastructure and activities; infrastructure gaps; methods for dissemination of catalogue information (e.g. through state coastal atlases, tourism web sites, etc.). Database input would be solicited from all relevant state, federal and local agencies.</p>				
RT2a	<p>Task a working group, graduate student(s), or fellow with developing a list of key recreation &amp; tourism infrastructure/ capital investment needs in areas with natural capital.</p>	24 months	TBD	Academic institution + relevant guiding federal, state, and local agencies, industry, NGOs, and Tribal governments

RT2b	Recommend the identification of land or water areas that are likely candidates for future protection based on their non-consumptive recreation and tourism potential in state, regional, or federal marine spatial planning efforts.	6 months	In-kind commitment and collaboration from all involved	SCC ACTSCC ACT + federal, state, and local agencies, industry, NGOs, and tribal governments
ACTION: Ensure that natural areas and key non-consumptive recreation and tourism activities are identified and integrated into each state's coastal atlas.				
RT3	Work with agencies responsible for coastal atlases to ensure that natural areas and key non-consumptive recreation and tourism activities are identified and integrated into each state's coastal atlas.	24 months	TBD	Academic institution + relevant guiding federal, state, and local agencies, industry, NGOs, and Tribal governments

## 7.2 Green Ports and Clean Marina Programs

### Background

West Coast waterfront communities benefit from seaports, marinas and other facilities that serve as the foundation of the region's diverse working waterfronts. Facilities range from large, industrial seaports that are the hubs of international trade to small-scale marinas that promote tourism in rural communities. Regardless of size, these facilities serve as key economic generators in the communities they serve and produce benefits that include job creation, access to supply chains and tourism opportunities. As community institutions, they seek to balance this activity with stewardship. Therefore, the actions and strategies that may affect these communities must be scaled appropriately and developed in a manner that supports local decision-making and encourages best practices.

Although shipping is a tremendous economic engine, the industry was deeply affected by the recent global downturn in trade, which began during the fall of 2008. As a result, many West Coast ports face double-digit, year-over-year decreases in shipping traffic<sup>107</sup> creating even more competition in an industry that was already extremely competitive. Like many other sectors of the economy, ports along the West Coast have experienced reduced labor hours, staff reductions and other downsizing measures.<sup>108</sup> Since trade is a major economic driver along the West Coast, policy development must be sensitive to the demands placed on seaports and to the important role they play in economic productivity.

Additionally, West Coast ports face increasing competition from ports in Canada and along the Gulf and East Coasts of the United States.<sup>109</sup> To address the serious threat of losing cargo to other ports, the West Coast ports have begun to work collaboratively to attract and retain cargo flows via trade missions and other efforts. In 2009, six major US West Coast ports and two western railroads collaboratively promoted the U.S. West Coast Ports' position as the preferred gateway for Asia cargo to and from the U.S. Midwest and U.S. cities further east at the World Shipping Summit in Qingdao, China.<sup>110</sup> West Coast ports are also working to increase their competitiveness through infrastructure improvements, which will ensure a faster and more reliable goods movement network. A federal initiative has been launched to double U.S. exports in the next five years.<sup>111</sup> Infrastructure improvements will also be necessary to meet this goal.

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<sup>107</sup> Hsuan, A. (2009, November 11). West Coast ports band together to fight global competition. *The Oregonian*. Retrieved from [http://www.oregonlive.com/business/index.ssf/2009/11/west\\_coast\\_ports\\_ban\\_together.html](http://www.oregonlive.com/business/index.ssf/2009/11/west_coast_ports_ban_together.html)

<sup>108</sup> Ibid.

<sup>109</sup> Ibid.

<sup>110</sup> Ibid; World Shipping (China) Summit 2009, November 12-13, 2009, Qingdao, China, <http://www.shippingsummit.com/en/index.jsp>.

<sup>111</sup> <http://www.whitehouse.gov/the-press-office/executive-order-national-export-initiative>

Ports along the West Coast generally strive to create a balance between economic development and environmental stewardship. For example, some ports have developed infrastructure to accommodate more efficient cargo-handling operations, championed air quality improvements and organized biological, industrial and internal environmental programs.<sup>112</sup> These principles are practiced during planning, design and construction, and throughout operations and maintenance of port facilities and structures. Port operations address numerous issues in the development of their sustainability programs. Some of these issues include: air quality, dredging, wildlife impacts, oil collection, energy consumption and greenhouse gas emissions.

Smaller facilities, such as marinas, are also key components of thriving coastal communities. The Clean Marina Initiative is a voluntary, incentive-based program promoted by NOAA and others that encourages marina operators and recreational boaters to protect coastal water quality by engaging in environmentally-sound operating and maintenance procedures.<sup>113</sup> While Clean Marina programs vary from state to state, all programs offer information, guidance, and technical assistance to marina operators, local governments, and recreational boaters on Best Management Practices (BMPs) that can be used to prevent or reduce pollution. Marinas that participate in the Clean Marina Program are recognized for their environmental stewardship.

Marinas support recreational boating, which is a popular activity in many coastal areas. Because marinas are located along the water's edge, special consideration is given to processes that prevent toxins from negatively effecting water quality. Therefore, it is important to promote operation and maintenance practices that will prevent pollution from entering coastal waterways, including non-regulatory activities to promote BMPs. For example, educational outreach that encourages the use of oil pads and the recycling of oil, coolant, and other toxic chemicals can be instrumental towards protecting our ocean and coastal ecosystems.<sup>114</sup>

## **1. Green Port Programs at West Coast Ports**

West Coast ports recognize that the movement of goods results in certain environmental and health impacts on the surrounding communities and natural environment. Ports reduce environmental impacts through a variety of activities that include: remediation of legacy contaminants, clean air programs, clean water strategies, mitigation and other approaches. Ports are as diverse as the communities they serve, so it is important to support local decision-making and flexible approaches that celebrate the diversity of port communities. Some examples of local port projects include the following:

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<sup>112</sup> [http://www.portoflosangeles.org/idx\\_environment.asp](http://www.portoflosangeles.org/idx_environment.asp)

<sup>113</sup> <http://coastalmanagement.noaa.gov/marinas.html>

<sup>114</sup> Gordon, M. Matuk, V. (May, 2004) *California Clean Marina Toolkit, A resource for environmentally sound marina management and operation.*

### *I. San Pedro Bay Clean Air Action Plan*<sup>115</sup>

The two largest ports in the United States – the Port of Long Beach and the Port of Los Angeles – are engaged in a major effort to reduce criteria air pollutants including nitrogen oxide and diesel particulate matter in Southern California.<sup>116</sup> In 2006, the ports of Long Beach and Los Angeles voluntarily created and approved the San Pedro Bay Ports Clean Air Action Plan (CAAP). The CAAP provides the overall strategy for dramatically reducing air pollution emissions from port-related cargo movement. The original CAAP was focused on the near-term, five-year planning window between fiscal years 2006 and 2011 and included specific targets for reducing diesel emissions from trucks, emissions from large ocean-going vessels, improving the efficiency of harbor craft, and reducing emissions from cargo-handling equipment.<sup>117</sup> The ports have proposed the 2010 CAAP Update, which builds off of the initial CAAP by establishing new “San Pedro Bay Standards” that will set ambitious and comprehensive air quality and health risk goals, including cancer risk reductions by 2020, as well as a series of emissions reductions by 2014 and 2023.<sup>118</sup> To achieve the targets set in the CAAP, the Port of Long Beach has made multi-million dollar investments in programs like the Clean Trucks Program, the Green Flag Vessel Speed Reduction Program, and its Technology Advancement Program, which demonstrates use of cleaner technologies that exceed current regulatory standards.

The Port of Long Beach is also taking steps to reduce greenhouse gas emissions. In September 2008, the Port of Long Beach adopted a resolution for Establishing a Framework for Reducing Greenhouse Gas Emissions, which adopted several measures to reduce GHG emissions, including reducing vessel emissions through speed reductions and improved use of shore power, replacement of diesel drayage trucks with electric and natural gas trucks, and improved energy efficiency at terminals.<sup>119</sup>

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<sup>115</sup> <http://www.cleanairactionplan.org/>

<sup>116</sup> A criteria air pollutant is an air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. Examples include: [ozone](#), [carbon monoxide](#), [nitrogen dioxide](#), [sulfur dioxide](#), and [PM10](#) and [PM2.5](#). The term "criteria air pollutants" derives from the requirement that the [U.S. EPA](#) must describe the characteristics and potential health and welfare effects of these pollutants. The U.S. EPA and CARB periodically review new scientific data and may propose revisions to the standards as a result.

<sup>117</sup> Ports of Long Beach and Los Angeles. 2006. San Pedro Bay Ports Clean Air Action Plan. Available online: <http://www.cleanairactionplan.org/reports/documents.asp>

<sup>118</sup> Ports of Long Beach and Los Angeles. 2010. Draft 2010 Update, San Pedro Bay Ports Clean Air Action Plan Technical Report. Available online: <http://www.cleanairactionplan.org/reports/documents.asp>

<sup>119</sup> Port of Long Beach. 2009. Greenhouse Gas Emission Reduction Program Guidelines for the Port of Long Beach. Available online: <http://www.scribd.com/doc/18647241/52-Greenhouse-Gas-GHG-Emission-Reduction-Program-Guidelines-for-the-Port-of-Long-Beach>

## *II. Port of Long Beach and Port of Los Angeles' Water Resources Action Plan*<sup>120</sup>

In August 2009 the Ports of Long Beach and Los Angeles adopted the Water Resources Action Plan (WRAP), which is a joint effort by the Ports to establish an organized and scientifically based plan for water and sediment quality improvement in San Pedro Bay. The ports, their cities, the U.S. Environmental Protection Agency (EPA), and the Los Angeles Regional Water Quality Control Board cooperated in the preparation of the WRAP. The main goals of the WRAP are to support the attainment of full beneficial uses of harbor waters and sediments by addressing the impacts of past, present, and future port operations, and to prevent port operations from degrading existing water and sediment quality. The main drivers of the WRAP include the ports' need to achieve their broad mission to protect and improve water and sediment quality, and the imminent promulgation of Total Maximum Daily Loads (TMDLs) for harbor waters and associated Clean Water Act permits. The WRAP's purpose is to provide the framework and mechanisms for the Ports to achieve the goals and targets that will be established in the relevant TMDLs and to comply with the Industrial Activities, Construction Activities, and Municipal permits issued to the Ports and their respective Cities and tenants through the National Pollutant Discharge Elimination System program.<sup>121</sup>

## *III. Northwest Ports Clean Air Strategy*<sup>122</sup>

Developed in 2007, the strategy will reduce maritime and port-related emission that affect air quality and climate change in the Pacific Northwest via a collaboration between the Port of Seattle, the Port of Tacoma, and Port Metro Vancouver (British Columbia, Canada). In creating the strategy, the ports worked together with state and federal agencies, which supported this partnership approach believing that cooperation is the best way to achieve significant air emission reduction as early as possible. The strategy aims to reduce emissions in both the short term (through 2010) and long term (through 2015). The approach has resulted in initiatives such as: the At-Berth Clean Fuels program at the Port of Seattle which gives incentives to berthing vessels to use cleaner burning fuels<sup>123</sup>; a clean truck program created in conjunction with the Puget Sound Clean Air Agency<sup>124</sup>; and the Port of Seattle's "Green Gateway" initiative, which considers the carbon footprint of Asia-to-North America trade routes.<sup>125</sup>

<sup>120</sup> Ports of Los Angeles and Los Angeles. 2009. Water Resources Action Plan. Available online: <http://www.polb.com/civica/filebank/blobload.asp?BlobID=6610>.

<sup>121</sup> Ibid, p. 4.

<sup>122</sup> Ports of Seattle, Tacoma, and Vancouver. 2008. Northwest Ports Clean Air Strategy. Available online: [http://www.maritimeairforum.org/news/NW\\_Ports\\_Clean-AirStrategy\\_Final-01\\_22\\_2008.pdf](http://www.maritimeairforum.org/news/NW_Ports_Clean-AirStrategy_Final-01_22_2008.pdf)

<sup>123</sup> <http://www.portseattle.org/about/publications/environmentalreport/air/index.shtml>

<sup>124</sup> <http://www.portseattle.org/seaport/cargo/CleanTrucks.shtml>

<sup>125</sup> <http://www.portseattle.org/seaport/cargo/GreenGateway.shtml>

#### *IV. Ongoing National and International Green Port Initiatives:*

In its effort to promote green port concepts, in 2008 the Governors of California, Oregon, and Washington supported the passage of HR 802, the Maritime Pollution Prevention Act. HR 802 led to the eventual establishment of the 2010 North American Emission Control Area, which protects the health of people living near ports by mandating stringent international emission standards for ships off U.S. coasts. WCGA SCC ACT is also promoting green port concepts by coordinating its Recommended Actions with the ongoing efforts of other national and international maritime industry entities. For example, the American Association of Port Authorities' (AAPA) Harbors, Navigation and Environment Committee have several subcommittees tasked with information exchange and advocacy for dredging, air quality, and sustainability practices and policy issues.<sup>126</sup> In addition, the Federal Maritime Commission (FMC) recently announced the formation of the FMC Maritime Environmental Advisory Committee, which will assist the Commission in keeping abreast of new green developments, provide a forum for the industry to share the latest green initiatives, and provide an information clearinghouse for ports, terminal operators and others.<sup>127</sup>

#### **Priorities and Needs**

- Green Ports are not fully recognized for their role in economic productivity of sustainable coastal communities
- Need more strategies that encourage the flow of cargo through Green Ports
- Limited support for port-led initiatives in the areas of air and water quality and climate change adaptation
- Limitations to outreach of Green Port concepts at all major ports on the West Coast, so that all ports are working to increase sustainability and reduce their environmental footprint.

These priorities and needs are addressed in the following recommended actions.

#### **Recommended Actions - Green Port Programs at West Coast Ports**

Many West Coast ports have initiated Green Port programs. The following strategies identify areas where the West Coast Governors Alliance on Ocean Health may be able to support the ongoing sustainability efforts of the large West Coast ports:

GP1. Promote air quality and water quality strategies at industrial ports.

Encourage ports or port tenants to implement new and emerging air emission reduction technologies for all air emission sources, including trucks, trains, harbor craft, ocean-going vessels and cargo-handling equipment. Encourage ports or port tenants to implement control measures aimed at improving water quality. Where appropriate, support ongoing efforts by the

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<sup>126</sup> <http://www.aapa-ports.org/Committees/content.cfm?ItemNumber=1087>

<sup>127</sup> [http://www.fmc.gov/speeches/newsrelease.asp?SPEECH\\_ID=295](http://www.fmc.gov/speeches/newsrelease.asp?SPEECH_ID=295)

International Maritime Organization, the EPA, and other regulatory agencies to develop stricter air emission and water quality standards.

GP2. Identify infrastructure and remediation projects that are essential for the environmental and economic vitality of ports. Identify priority infrastructure and remediation projects, including the expansion of rail, grade separations, and dedicated truck lanes. Such improvements in infrastructure will allow for goods movement that is safer, more efficient, and more environmentally sound.

GP3. Support efforts to attract cargo to West Coast gateway ports. Many of the green port initiatives carried out by West Coast ports to date are voluntary programs which exceed regulatory compliance. The success of these programs has relied heavily on the ports' abilities to fund these programs. Consequently, the ability of West Coast ports to continue to implement green initiatives is highly dependent on the economic health of ports, which in turn is highly dependent on cargo flowing through the ports. To foster green port initiatives at West Coast ports, the WCGA could support the ports' newly emerging cooperative efforts to attract and retain cargo. Specifically, West Coast ports could be encouraged to develop a common message or platform with key talking points aimed at encouraging shippers to move cargo through the West Coast Gateway.

GP4. Encourage ports to share best practices in effective communication of their environmental stewardship efforts. Ports have an important role to play as community partners, and have the potential to make valuable environmental, social, and economic contributions to their local communities. Some West Coast ports have made great strides in expanding their role as environmental stewards and engaged community partners. There are important lessons to be shared from these success stories related. The WCGA can foster West Coast ports' ongoing environmental stewardship efforts by providing a forum for ports' communications specialists to share their experiences of successful outreach initiatives. Through such a forum, lessons learned could be shared and ports could work towards codifying a set of best practices for effective communication with local communities on port-related environmental issues. The WCGA efforts could coordinate with and complement the AAPA's Awareness Initiative, which works to increase awareness of the critical importance of ports, as well as the AAPA's Environmental Committee, which could be an excellent forum for this information exchange.<sup>128</sup> The WCGA could also collaborate with other West Coast organizations who are actively engaged in improving ocean literacy, such as the West Coast Integrated Ocean Observing Systems, to increase community awareness of Ports.

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<http://www.aapa-ports.org/Committees/content.cfm?ItemNumber=17962&token=63136&userID=5820>

GP5. Encourage ports to prepare for sea level rise. Ensuring that the large West Coast ports will be adequately protected against projected sea level rise in the second half of the 21<sup>st</sup> century is extremely important for national security and for the nation's economy. In these challenging economic times, most ports lack the resources to begin preparing for the considerable impacts associated with sea level rise. The WCGA could support the ports by encouraging the federal government to provide financial or technical assistance to ports to prepare for sea level rise. Ports could also benefit from technology development for climate change adaptation, specifically technological innovations that will allow ports to adapt their berths to sea level rise.

**Table 5: Deliverables for Green Port Programs at West Coast Ports**

Number	Deliverables	Timeline	Resources (funding needed & potential sources)	Lead
ACTION: Promote air quality and water quality strategies at industrial ports.				
GP1a	Solicit West Coast ports for a list of priority funding needs to implement water quality control measures, and to implement new and emerging air emission reduction technologies for all emission sources, including trucks, trains, harbor craft, ocean-going vessels and cargo-handling equipment that can be transmitted to WCGA Executive Committee.	6 to 12 months	Requires staff resources for administration	ACT members / potential project for interns or Fellows
GP1b	Where appropriate, request that the WCGA Executive Committee continue to write comment letters supporting the development of stricter air emission standards by the International Maritime Organization, the EPA, and other regulatory agencies.	Ongoing	No additional resources required	WCGA Executive Committee

Number	Deliverables	Timeline	Resources (funding needed & potential sources)	Lead
ACTION: Identify infrastructure and remediation projects that are essential for the environmental and economic vitality of ports.				
GP2	Solicit West Coast ports for a list of priority infrastructure and remediation projects that can be transmitted to WCGA Executive Committee	6 to 12 months	Administrative staffing required	ACT members / potential project for interns or Fellows
ACTION: Support efforts to attract cargo to West Coast gateway ports.				
GP3	Organize information-sharing forum for West Coast ports to develop a common message or platform with key talking points aimed at encouraging shippers to move cargo through the West Coast Gateway.  Collaborating with other organizations (i.e., AAPA) is recommended.	12 to 18 months	Resource needs will depend on the type of forum. For example, a Webinar would only require administrative staffing, but a workshop would require additional monetary resources.	WCGA Executive Committee
ACTION: Encourage ports to share best practices in effective communication of their environmental stewardship efforts.				
GP4a	Provide a forum for ports' communications specialists to share experiences of successful outreach initiatives, encouraging ports to work toward codifying a set of best practices for effective	Ongoing	No additional resources required	Ports communication specialists, ACT members

Number	Deliverables	Timeline	Resources (funding needed & potential sources)	Lead
	communication with local communities on port-related environmental issues.			
GP4b	Collaborate with other West Coast organizations who are actively engaged in improving ocean literacy, such as the West Coast Integrated Ocean Observing Systems, to increase community awareness of Ports.	Ongoing	No additional resources required	WCGA Executive Committee, ACT Chairs and members
ACTION: Encourage ports to prepare for sea level rise.				
GP5	Encourage WCGA Executive Committee to write a letter to the EPA (and/or other federal entities) to encourage the federal government to provide financial or technical assistance to ports to prepare for sea level rise.	6 months	No additional resources required	WCGA Executive Committee

## 2. Clean Marina Programs

### Background

Marinas and recreational boating are increasingly popular uses of coastal areas. The U.S. Coast Guard reported a 14% increase in recreational boating during the last decade.<sup>129</sup> Because marinas are located right along the water's edge, pollutants created by marina activities are released directly into the water. Although not a leading source of polluted runoff, pollution from marinas can have a significant impact on local water quality. Therefore, it is important to promote operation and maintenance practices that will prevent pollution from entering coastal waterways.<sup>130</sup>

On the West Coast, Clean Marina programs have been in existence since 2004.<sup>131</sup> NOAA recognizes that the Clean Marina initiative can serve a valuable role in protecting coastal waters from nonpoint source pollution and has promoted the program as a way for states to meet many of the marina management measure requirements under the Coastal Nonpoint Source Pollution Program.<sup>132</sup>

The main objective of the West Coast Clean Marina programs is to assist recreational marinas to comply with both state and federal environmental laws, because most marinas do not have the knowledge or resources to evaluate their facilities for such criteria. In addition, voluntary components of the programs give marinas the option to go above and beyond minimal compliance measures. The three West Coast states have set up Clean Marina program administration in different ways, resulting in varying levels of financial support and dedicated staff oversight. Below is a summary of each state program.

*Washington:* Started in 2005, this program is administered by staff from both the Puget Soundkeeper Alliance and Washington Sea Grant. The program is funded via grant funds from the Washington Department of Ecology and pays for about half of one staff person's time. The availability of these grant funds changes from year to year, rendering future program viability unstable due to potentially inadequate staffing levels. A seven-member Clean Marina Washington Partnership group identified the need for funding for a full-time staff position to properly implement the Washington Clean Marina program.<sup>133</sup>

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<sup>129</sup> <http://coastalmanagement.noaa.gov/marinas.html>

<sup>130</sup> Description of Clean Marina Programs accessed April 19, 2010 at <http://coastalmanagement.noaa.gov/marinas.html>

<sup>131</sup> Based on principles developed by East Coast states in consultation with NOAA when the program was conceptualized in the late 1990s.

<sup>132</sup> <http://coastalmanagement.noaa.gov/nonpoint/welcome.html>; <http://www.epa.gov/nps/coastnps.html>

<sup>133</sup> Wilke C., Washington Clean Marina Program Coordinator. Personal communication 10/23/09.

To date, 60 marinas out of approximately 300 marinas in Washington have been certified in the clean marina program.<sup>134</sup> This represents over 15,000 boat operators that are impacted by the Clean Marina program through marina education/outreach, stricter best management practices and stewardship policies and the availability of recycling and waste disposal facilities. In addition to the technical assistance given to marina managers, the program also works to coordinate, encourage, and implement clean boating education efforts that directly target recreational boaters with environmental messaging.

*Oregon:* The Clean Marina Program in Oregon started in 2006 and is administered by the Oregon State Marine Board. The Marine Board is the state recreational boating agency. The Clean Marina Coordinator operates in a non-regulatory manner to implement the program. The agency's budget supports one full time staff person through a semi-stable funding source. However, Oregon's funding for this work is at a basic program level. To date, there are 48 certified Clean Marinas out of approximately 190 marinas in total throughout the state of Oregon.<sup>135</sup> In addition to marina technical assistance work, the Clean Marina Coordinator is also involved with education and outreach efforts to recreational boaters through the Oregon Clean Boater program that encourages environmental stewardship activities while boating.

*California:* The California Clean Marinas program is set up as a partnership of private marina owners, government marina operators and yacht clubs. California's program started in 2004. Marina review teams are trained by the partnership members and scheduling of Clean Marina evaluations are completed through the Marina Recreation Association with help from the California Association of Harbor Masters & Port Captains. Volunteers administer the program with help from the Marina Recreation Association and the San Diego Port Tenants Association. To date, there are 108 certified clean marinas out of over 500 marinas in California.<sup>136</sup>

Distinct from the California Clean Marina program is a statewide boater education and technical assistance program called the Boating Clean and Green Program, conducted by the California Department of Boating and Waterways and the California Coastal Commission.<sup>137</sup> Since 1997, the program has promoted environmentally sound boating practices to marine businesses and boaters. Funding for this activity comes from various grants obtained from federal, state and local agencies. To help reach boaters, this program has trained volunteers to conduct one-on-one outreach at boating facilities around the state. The volunteers, referred to as "Dockwalkers," are trained to encourage environmental stewardship practices among the boating public.

*Current Regional Coordination:* On the West Coast, representatives from states and provinces involved with clean boating outreach (CA, OR, WA, BC, AK) have collaborated on education efforts to recreational boaters for the prevention of small oil spills. This team is referred to as the

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<sup>134</sup>Olsson E., Washington Clean Marina Program Coordinator. Personal communication 3/20/2011

<sup>135</sup>[www.boatoregon.com/OSMB/Clean/certified\\_facilities.shtml](http://www.boatoregon.com/OSMB/Clean/certified_facilities.shtml)

<sup>136</sup>[www.cleanmarina.org/cleanlist.html](http://www.cleanmarina.org/cleanlist.html)

<sup>137</sup>[www.coastal.ca.gov/ccbn/ccbndx.html](http://www.coastal.ca.gov/ccbn/ccbndx.html)

Pacific Oil Spill Prevention Education Team (POSPET).<sup>138</sup> A West Coast oil spill reporting number has been established (1-800-OILS-911) that automatically forwards a reporting party's phone call to the appropriate state agency regardless of the caller's location. POSPET meets twice annually to discuss clean boating activities and has served as a good opportunity to stay informed of what neighboring states are doing on this topic.

**Priorities and Needs:**

Current efforts to implement activities within Clean Marina Programs occur with very limited budgets. Basic programs have been developed and implemented in the three WCGA states, but these efforts need to be expanded to make substantial gains in protecting coastal resources. The West Coast Clean Marina Programs have identified several priorities and needs related to program funding and staffing:

- Full time program coordinators are a vital element to program success.
- Technical assistance, in the form of on-site marina evaluations and best management practice recommendations, is a key program element to maintain and expand.
- Financial assistance to marinas is needed for the implementation of pollution prevention projects such as: used oil collection centers, fish cleaning stations, oil absorbent exchange centers, used fishing line and net recycling centers, boat wash areas, pet waste disposal stations, garbage recycling containers, bilge water disposal facilities, zinc anode and expired flare disposal centers, and stormwater runoff treatment projects. These types of projects are not currently high priorities for granting organizations, and therefore, limited numbers of projects are funded. Generally speaking, recreational marinas have limited operating budgets and a funded grant program would be of great value to this industry.
- In addition to working with marina managers, there is a need to maintain and expand efforts to perform outreach and education directly with recreational boaters. Efforts to reach boaters at public events and through incentive-based reward programs (i.e. distributing free boater environmental kits) are effective methods of reaching boaters with appropriate messages.<sup>139</sup> Changing recreational boater habits to incorporate environmentally-conscious behaviors is vital to ensuring that the future activities of boaters will better protect coastal resources.

Businesses that repair boats and build new vessels ("boatyards") do not typically fit into the Clean Marina programs, but they have their own unique set of challenges in meeting environmental regulations. There are several priorities and needs related to assisting boatyards through the Clean Marina programs:

- Each of the three states implements different environmental regulations that affect these

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<sup>138</sup> <http://www.oilspilltaskforce.org/pospet.htm>

<sup>139</sup> Glenn Dolphin, former Oregon Clean Marina Coordinator, personal communication, May 2010.

businesses; there is a need to better engage this industry to determine how to best help them with environmental compliance issues.

- Any offer of technical assistance to this industry should engage the facilities in a non-regulatory fashion to foster improved relations between environmental regulators and boat yard managers.

Of growing concern to recreational marinas is the threat to the environment from abandoned boats.<sup>140</sup> Delinquent owners that cannot afford to maintain their boats abandon the boat at a marina or other location rather than take it to an upland disposal facility. In many cases, delinquent owners eliminate any markings on the boat that identify ownership, or the owner disappears with no forwarding contact information. The three West Coast states have abandoned boat recovery programs, but there are challenges and needs associated with these programs:

- Removing abandoned vessels can be expensive and often the demand outweighs the available financial resources to address all identified abandoned or derelict vessels.
- Often focus on the threat of boats to waterway navigation channels over environmental threats (Washington State does have criteria for prioritizing removal due to pollution threats and contract with shipyards that specialize in dealing with abandoned vessels). Abandoned boats may also be removed from waterways because of threats to the environment, but the approach to this issue varies from state to state.
- State environmental agencies may be able to remove petroleum products and hazardous wastes, but they may not have the resources to handle the remaining derelict vessel waste streams.

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<sup>140</sup> Bach, D. "In economy's wake, state grapples with more abandoned boats than ever" Three sheets Northwest. April 15th, 2010. Accessed May 25, 2010 at <http://threesheetsnw.com/blog/archives/9112>.

**Recommended Actions - Clean Marinas**

CM1. Assess federal mechanisms for providing consistent, long-term funding for existing Clean Marina Programs.

CM2. Expand existing Clean Boater outreach efforts to recreational boaters.

CM3. Develop a list of potential grant opportunities for clean marina programs to assist facilities that want to implement best management practices.

**Table 6: Clean Marina Program Deliverables**

Number	Deliverables	Timeline	Resources (funding needed & potential sources)	Lead
ACTION: Assess federal mechanisms for providing consistent, long-term funding for existing Clean Marina Programs.				
CM1	Begin to assess federal grants or projects that would lead to long-term funding for Clean Marina programs along the West Coast.	12 months	Require in-kind staff time to develop program funding details.	State Clean Marina Program Coordinators
ACTION: Expand existing Clean Boater outreach efforts to recreational boaters.				
CM2	Develop educational materials to expand outreach efforts to recreational boaters about Clean Marinas.	12 months	Require in-kind staff time to develop program funding details as well as cost for educational materials.	State Clean Boating program coordinators and other relevant entities
ACTION: Assess potential funding opportunities for clean marina programs to assist facilities that want to implement best management practices.				
CM3	Develop a potential list of grant opportunities for clean marina grant programs to implement BMP projects.	12 months	Require in-kind staff time to inventory programs.	State Clean Marina Program Coordinators

*Summary Table of All Actions/Deliverables<sup>141</sup>*

<b>West Coast Planning and Economic Development</b>				
<b>Number</b>	<b>Deliverable</b>	<b>Timeline</b>	<b>Resources (funding needed &amp; potential sources)</b>	<b>Lead</b>
ACTION: Share successful strategies for marine sector job creation, technical improvement, and business retention and expansion with an emphasis on best practices, sustainable and efficient staffing and supply chains, and green and emerging technologies.				
ED1	Convene one or more workshops that bring together marine-sector technical or economic development professionals to share program and policy needs and resources within and between states.	24 months	\$50,000	federal, state, and local agencies, industry, NGOs, and tribal governments
ACTION: Share successful strategies for meeting coastal community-oriented infrastructure, planning and economic development needs between states.				
ED2a	Connect coastal communities with planning and development needs to technical assistance opportunities such as NOAA Coastal Service Center trainings, EPA Smart Growth Implementation Assistance, NEMO network trainings, etc.	24 months	In-kind commitment and collaboration from all involved.	federal, state, and local agencies, industry, NGOs, and tribal governments
ED2b	Share innovative measures that help preserve, repair, or improve working waterfront infrastructure and encourage economic growth (such as: working waterfront conservation easements, land trust acquisitions, local ordinances and licensing practices/policies etc.) between states.	24 months	Funded internship, fellowship, or research assistantship (up to \$35,000); In-kind commitment and collaboration from all involved.	federal, state, and local agencies, industry, NGOs, and tribal governments
ACTION: Evaluate options for improving dredging activity in small ports where working waterfronts are a vital to employment and economic activity. (See action 7.3 task two deliverables)				

<sup>141</sup> NOTE: Many of these tasks will require funds, staff resources, or the formation of targeted groups of experts. The source of all such resources has not been pre-determined.

ED3	Identify and create a list of ports and coastal communities that have an unmet need of dredging and/or technical assistance to obtain dredging funds and permits.	18 months	In-kind commitment and collaboration from all involved	federal, state, and local agencies, industry, NGOs, and tribal governments
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## Sustainable Fisheries

Number	Deliverable	Timeline	Resources (funding needed & potential sources)	Lead
<b>ACTION:</b> Investigate fisheries-related infrastructure limitations in coastal communities				
SF1	Request state and federal agencies: assess fisheries related infrastructure and facilities in coastal communities (such as: berths, processing plant access, ice availability, storage facilities, buying stations, boat yards and public hoists) and recommend opportunities for improvement of fisheries-related harbor facilities.	6 months	In-kind	SCC ACT
<b>ACTION:</b> Improve social and economic data analysis and collection to better characterize West Coast coastal communities' dependence upon fishery resources, and vulnerability and resilience to shifts in fishery resources.				
SF2	The SCC ACT will request a letter from the WCGA Executive Committee to the appropriate state and federal agencies requesting that the 2006 analysis of West Coast fishing communities' dependence on groundfish fishery resources be updated and expanded to include information on community dependencies on other fishery resources, and asking that the	6 months	In-kind	SCC ACT

	agencies develop processes for educating decision-makers about those analyses. <sup>142</sup>			
<p><b>ACTION:</b> Provide existing and new seafood-related businesses the resources needed to establish business plans that reflect sustainability in the ocean and in the marketplace. Support the development of networks of fishermen, processors, distributors, retailers, restaurant owners, and others who can work together to increase the profitability and sustainability of fishing.</p>				
SF3a	Request directors of WA, OR and CA Sea Grant programs and appropriate state and federal agencies: (1) integrate, coordinate and expand their seafood marketing trainings, technical assistance, and business plan development efforts; (2) review opportunities and needs for fishing industry networking programs, such as the Fisheries Business Network or the Wild Seafood Exchange, and for sponsorship of a workshop convening fishermen, chefs, and buyers across the three states, and; (3) cooperatively sponsor and facilitate a workshop on local, place-based fishery science, management, and marketing projects to assess the challenges and needs of those projects, facilitate a learning opportunity among projects, and gather information for a report to state and federal managers about new opportunities to engage with coastal communities.	6 months	In-kind, negligible	SCC ACT
SF3b	Investigate options for generating, supporting or publicizing inventories of community-based fish markets or locally-sourced seafood.	18 months	In-kind commitment and collaboration from all involved	SCC ACT, fellows, partner organizations
SF3c	Establish academic programs (4-year and community colleges) that provide classes for teaching the principles and values of sustainable fishing--policy, marketing, safety, navigation, mechanics, research and finance.	24 months	In-kind commitment and collaboration from all involved	SCC ACT, partner organizations and institutions

<sup>142</sup> See: National Marine Fisheries Service. 2006. Appendix A, Additional Socio-Economic Analysis for the Pacific Fishery Management Council's Draft Environmental Impact Statement for Amendment 16-4 to the Pacific Coast Groundfish Fishery Management Plan.

<p><b>ACTION:</b> Research mechanisms and report out on regulatory authorization of community-based cooperative fishery management efforts, such as Regional Fishery Associations. Assess whether state and federal fisheries policy-making processes could facilitate more policy input and research data from fishing communities.</p>				
SF4a	Identify agencies or non-governmental organizations willing to design and implement a collaborative process to educate fishing communities about bringing more local involvement to fishery science, management and marketing.	12 months	In-kind commitment and collaboration from all involved	SCC ACT
SF4	The SCC ACT will create an inventory of West Coast community-based fisheries science and management organizations, to be made available online, and create networking opportunities between organizations and the public with the aim of educating communities about developing their own plans for sustainability.	12 months	In-kind commitment and collaboration from all involved	SCC ACT

<b>Sustainable Aquaculture</b>				
<b>Number</b>	<b>Deliverables</b>	<b>Timeline</b>	<b>Resources (funding needed &amp; potential sources)</b>	<b>Lead</b>
<p><b>ACTION:</b> Investigate aquaculture-related infrastructure limitations in coastal communities such as: farm access to docks and ramps, refrigeration and storage facilities, and post-harvest processing capacity. Determine where opportunities exist for improvement of aquaculture-related facilities.</p>				
SA1	If the appropriate agencies take on SF1, ensure that the inventory of port infrastructure and facilities also assesses whether ports are viable as supports for aquaculture or for seafood industries in general.	24 months (same as SF 1)	In-kind commitment and collaboration from all involved	Federal, state, and local agencies, industry, NGOs, and Tribal governments
<p><b>ACTION:</b> To reduce potential user or resource conflicts, ensure that sustainable aquaculture planning is integrated into state and federal coastal marine spatial planning efforts.</p>				

SA2a	The SCC ACT will request a letter from the WCGA Executive Committee to the appropriate state and federal agencies requesting aid from the NOAA aquaculture program in support of comprehensive sustainable aquaculture management planning in coordination with other West Coast states.	6 months	In-kind, negligible	SCC ACT
SA2b	Prepare a letter from the WCGA SCC ACT to the WCGA Executive Committee recommending inclusion of aquaculture planning in any marine spatial planning efforts to facilitate aquaculture siting and reduce user/resource conflicts.	6 months	In-kind, negligible	SCC ACT
ACTION: Integrate, coordinate and expand WA, OR and CA Sea Grant aquaculture technology development, research, technology transfer and outreach to facilitate sustainable aquaculture development and community education.				
SA3	Prepare a letter from the WCGA SCC ACT to the directors of WA, OR and CA Sea Grant programs urging integration, coordination and expansion of their aquaculture technology development, technical transfer and outreach efforts.	6 months	In-kind, negligible	SCC ACT
ACTION: Prioritize West Coast marine aquaculture research needs using guidance from the June 2009 West Coast Regional Marine Research and Information Needs report, the Pacific Shellfish Institute's research project portfolio, the Western Regional Aquaculture Center's Regional Research and Outreach Project, and other national and regional aquaculture research needs analyses as appropriate.				
SA4	Request a letter from the WCGA Executive Committee to the directors of WA, OR, and CA Sea Grant programs asking those programs to	12 months	In-kind commitment and collaboration from all involved. Overall expected cost: \$150,000	WA, OR, CA Sea Grant programs, federal, state, and local agencies,

	cooperatively sponsor and facilitate an effort to consolidate and prioritize a list of marine aquaculture research needs.			industry, NGOs, and tribal governments
<p><b>ACTION:</b> Establish a West Coast aquaculture disease working group to work on regional implementation of the National Aquatic Animal Health Plan on the West Coast. This will provide a coordinated, consistent effort to prevent the spread of disease and treat disease outbreaks while allowing appropriate levels of continued economic activity if and when diseases are discovered.</p>				
SA5	Establish a West Coast aquaculture disease working group to work on regional implementation of the National Aquatic Animal Health Plan.	12 – 24 months	In-kind commitment and collaboration from all involved	Lead agencies for aquatic animal health in WA, OR and CA, and West Coast tribes, and appropriate aquatic animal health experts and industry representatives

**Non-consumptive Recreation and Tourism**

Number	Deliverables	Timeline	Resources (funding needed & potential sources)	Lead
<p><b>ACTION:</b> Identify gaps, inconsistencies and areas for improvement in collection of data relevant to non-consumptive recreation and tourism in WCGA states. If data types are identified that could bolster non-consumptive recreation and tourism planning and development, recommend adoption of common data collection methods across the region that measure and express metrics in consistent ways over time; for example, by differentiating data that catalogues the value of tourism, non-consumptive recreation, and birdwatching as opposed to aggregating that information with consumptive recreation data (such as hunting and fishing).</p>				
RT1	ACT will convene an inter-agency working group to identify existing recreation and tourism-oriented data sources and gaps; consider relevant, unified and consistent data collection standards; develop data collection	24 months	In-kind commitment and collaboration from all involved	federal, state, and local agencies, industry, NGOs, and tribal governments

	methods; assign data collection responsibilities, and a web-based location for public dissemination of this information.			
<p><b>ACTION:</b> Develop a list of infrastructure and other capital investments needed to support non-extractive coastal recreational activities (such as birdwatching, wildlife viewing, scuba diving, sailing, coastal hang gliding/paragliding) in key areas with untapped or under-appreciated natural capital. Evaluate usefulness of a database to assess or inventory: natural capital; current recreation and tourism infrastructure and activities; infrastructure gaps; methods for dissemination of catalogue information (e.g. through state coastal atlases, tourism web sites, etc.). Database input would be solicited from all relevant state, federal and local agencies.</p>				
RT2a	Task a working group, graduate student(s), or fellow with developing a list of key recreation & tourism infrastructure/ capital investment needs in areas with natural capital.	24 months	TBD	Academic institution + relevant guiding federal, state, and local agencies, industry, NGOs, and Tribal governments
RT2b	Recommend the identification of land or water areas that are likely candidates for future protection based on their non-consumptive recreation and tourism potential in state, regional, or federal marine spatial planning efforts.	6 months	In-kind commitment and collaboration from all involved	SCC ACTSCC ACT + federal, state, and local agencies, industry, NGOs, and tribal governments
<p><b>ACTION:</b> Ensure that natural areas and key non-consumptive recreation and tourism activities are identified and integrated into each state's coastal atlas.</p>				
RT3	Work with agencies responsible for coastal atlases to ensure that natural areas and key non-consumptive recreation and tourism activities are identified and integrated into each state's coastal atlas.	24 months	TBD	Academic institution + relevant guiding federal, state, and local agencies, industry, NGOs, and Tribal governments

<b>Green Ports</b>				
<b>Number</b>	<b>Deliverables</b>	<b>Timeline</b>	<b>Resources (funding needed &amp; potential sources)</b>	<b>Lead</b>
<b>ACTION:</b> Promote air quality and water quality strategies at industrial ports.				
GP1a	Solicit West Coast ports for a list of priority funding needs to implement water quality control measures, and to implement new and emerging air emission reduction technologies for all emission sources, including trucks, trains, harbor craft, ocean-going vessels and cargo-handling equipment that can be transmitted to WCGA Executive Committee.	6 to 12 months	Requires staff resources for administration	ACT members / potential project for interns or Fellows
GP1b	Where appropriate, request that the WCGA Executive Committee write comment letters supporting the development of stricter air emission standards by the International Maritime Organization, the EPA, and other regulatory agencies.	Ongoing	No additional resources required	WCGA Executive Committee
<b>ACTION:</b> Identify infrastructure and remediation projects that are essential for the environmental and economic vitality of ports.				
GP2	Solicit West Coast ports for a list of priority infrastructure and remediation projects that can be transmitted to WCGA Executive Committee	6 to 12 months	Administrative staffing required	ACT members / potential project for interns or Fellows
<b>ACTION:</b> Support efforts to attract cargo to West Coast gateway ports.				
GP3	Organize information-sharing forum for West Coast ports to develop a common	6 to 12	Depends on type of forum.	WCGA Executive

<b>Green Ports</b>				
<b>Number</b>	<b>Deliverables</b>	<b>Timeline</b>	<b>Resources (funding needed &amp; potential sources)</b>	<b>Lead</b>
	<p>message or platform with key talking points aimed at encouraging shippers to move cargo through the West Coast Gateway.</p> <p>Collaborating with other organizations (i.e., AAPA) is recommended.</p>	months	A webinar would require administrative staffing; a workshop would require additional funds.	Committee
ACTION: Encourage ports to prepare for sea level rise.				
GP4	Encourage WCGA Executive Committee to write a letter to the EPA (and/or other federal entities) to encourage the federal government to provide financial or technical assistance to ports to prepare for sea level rise.	6 months	No additional resources required	WCGA Executive Committee

<b>Clean Marinas</b>				
<b>Number</b>	<b>Deliverables</b>	<b>Timeline</b>	<b>Resources (funding needed &amp; potential sources)</b>	<b>Lead</b>
ACTION: Assess federal mechanisms for providing consistent, long-term funding for existing Clean Marina Programs.				
CM1	Begin to assess federal grants or projects that would lead to long-term funding for Clean Marina programs along the West Coast.	12 months	Require in-kind staff time to develop program funding details.	State Clean Marina Program Coordinators
ACTION: Expand existing Clean Boater outreach efforts to recreational boaters.				
CM2	Develop educational materials to expand outreach efforts to recreational boaters about Clean Marinas.	12 months	Require in-kind staff time to develop program funding details as well as cost for educational materials.	State Clean Boating program coordinators and other relevant entities
ACTION: Assess potential funding opportunities for clean marina programs to assist facilities that want to implement best management practices.				
CM3	Develop a potential list of grant opportunities for clean marina grant programs to implement BMP projects.	12 months	Require in-kind staff time to inventory programs.	State Clean Marina Program Coordinators