

**FISHERIES**  
**CENTRAL PUGET SOUND**  
**FOOD SYSTEM ASSESSMENT**

**REGIONAL FOOD POLICY COUNCIL**  
**& UNIVERSITY OF WASHINGTON**  
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**PREPARED FOR THE REGIONAL FOOD POLICY COUNCIL**  
at the Puget Sound Regional Council

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# PROJECT BACKGROUND

This project represents the final product of a twenty-week graduate studio course in the Department of Urban Design and Planning at the University of Washington's College of Built Environments. The studio team members come from a range of backgrounds, including urban planning, urban design, architecture, landscape architecture, real estate development, and public affairs and policy.

The Regional Food Policy Council enlisted the University of Washington studio team to identify and pursue research topic areas examining the regional food system. The Council sought to meet two major goals: creating a common knowledge base among Council members about the region's food system and informing the development of early action items on the Council's work plan.

During the first half of this project, the studio team produced a report describing the current state of the food system in the central Puget Sound region, composed of King, Pierce, Snohomish, and Kitsap counties. Through compiling this initial conditions report, the team developed a thorough understanding of five components of the region's food system (production, processing, distribution, consumption, waste stream) and four other topics that impact, and are impacted by the region's food system (the environment and tribes, restaurants, and comprehensive plans). The team compiled existing data on each topic and identified strengths, challenges, and outstanding questions, culminating with a presentation to the Regional Food Policy Council on March 11, 2011.

During the second half of this project, the studio, in partnership with Regional Food Policy Council staff, prioritized six more specific topics for further study based on the findings from the initial conditions report. Each topic addresses an emerging issue in the food system, gaps in existing data, and policy or programmatic needs identified jointly with the Regional Food Policy Council. The studio team employed a variety of research methods, including field data collection, archival research, policy scans, geospatial analysis, case studies, and interviews with food systems stakeholders. Each element of the project is a standalone report and is described in more detail below.





### REGIONAL FOOD POLICY COUNCIL HISTORY AND CONTEXT

The Regional Food Policy Council, chaired by Seattle City Council President Richard Conlin, comprises 30 members representing all parts of the food system as well as government, social justice, anti-hunger, educational, and economic development organizations. The Regional Food Policy Council is housed within the Puget Sound Regional Council, the federally recognized Metropolitan Planning Organization for the central Puget Sound region, serving King, Pierce, Snohomish, and Kitsap counties. The Regional Food Policy Council is a working advisory committee that reports to the Puget Sound Regional Council's Executive Board and provides regional structure and coordination on food system issues.

The Regional Food Policy Council's formation reflects from the incorporation of the food system into the planning lexicon, as planners and policymakers are increasingly aware of the food system's widespread influence on the economy, environment, and society. Since convening its first public meeting in September 2010, the Regional Food Policy Council has established its vision, goals and mission statements, and is currently developing its future work plan.

#### Regional Food Policy Council Vision and Mission

**Vision:** The Regional Food Policy Council envisions a thriving, inclusive and just local and regional food system<sup>1</sup> that enhances the health of: people, diverse communities, economies, and environments.

**Mission:** The Regional Food Policy Council develops just and integrated policy and action recommendations that promote health, sustain and strengthen the local and regional food system, and engage and partner with agriculture, business, communities and governments in the four-county region.

#### Regional Food Policy Council Goals

- **Agriculture:** strengthen the economic vitality and viability of farming and promote a vibrant community of farmers; maximize opportunities for farming across scales; preserve land for farming.
- **Economic Development:** advance regionally-scaled infrastructure; enhance economic viability of local and regional food systems; support living-wage jobs and occupations.
- **Education:** foster education about and understanding of food, agriculture and environmental protection; facilitate outreach and education among elected leaders and communities.
- **Environment:** promote sustainable agriculture and protect the environment.
- **Equity:** promote equity and access to affordable, nutritious food; strengthen local and regional food systems and increase community food security.
- **Health:** improve public health through food access, nutrition and production; improve the health, safety, and welfare of workers and worker rights and reduce environmental health risks.
- **Policy:** connect local and regional efforts with statewide, national, and international efforts to strengthen local and regional food systems; develop model policies for use by jurisdictions in support of all goals; sustain Regional Food Policy Council.

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<sup>1</sup> The food system is the network of people and activities connecting growing and harvesting, processing, distribution, consumption, and residue utilization, as well as associated government and non-government institutions, regulations and programs.

# OVERVIEW OF REPORTS

## FOOD PRODUCTION

The Food Production report comprises three distinct sections: Rural Agriculture, Fisheries, and Urban Agriculture.

### **Rural Agriculture**

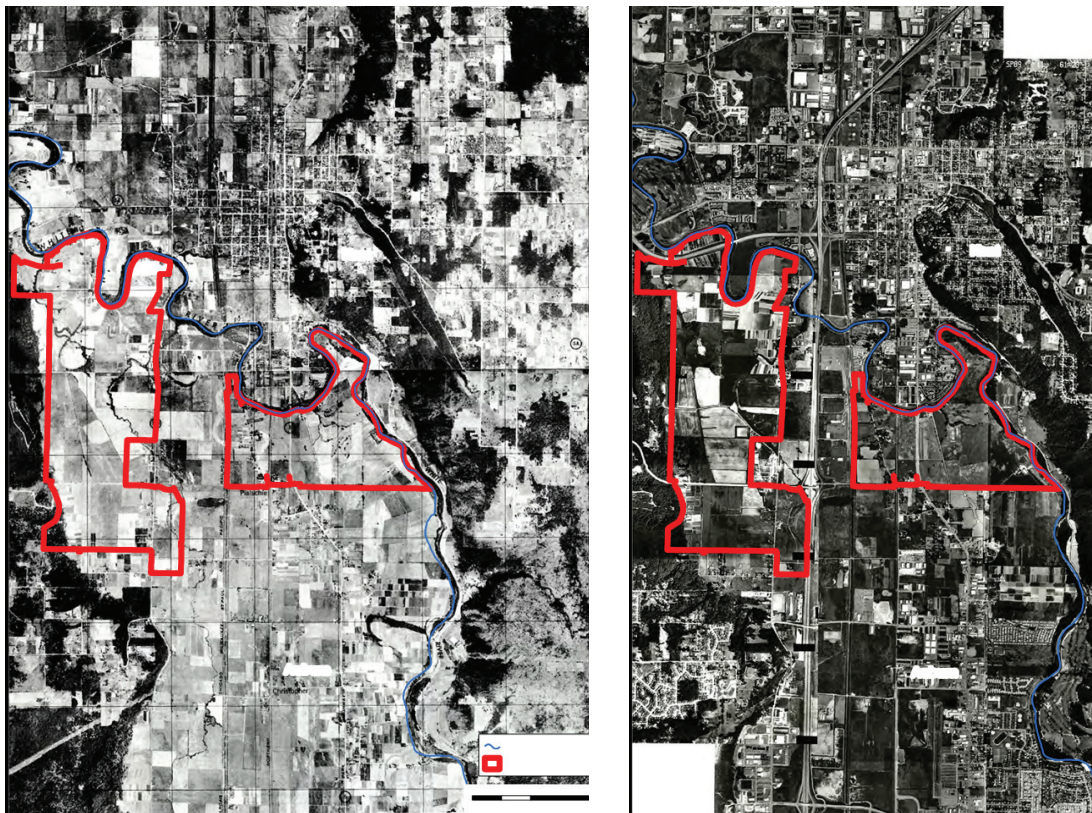
Rural agriculture is a large component of the food system within the central Puget Sound region. This section explores how each county inventories farmland. In an effort to advance the Regional Food Policy Council's *agriculture* goal, which includes farmland preservation, this section identifies key steps to understanding how farmland is classified throughout the region.

Major findings from this report include:

- Each county in the central Puget Sound region uses different tools to inventory agricultural land, including Open Space Tax Classification, windshield surveys, and community outreach.
- Each of these tools offers benefits and limitations. For example, windshield surveys can provide an accurate survey of crop types but consume large amounts of staff time. The Open Space Tax Classification method (allowing owners of farm and agricultural land to have their property valued at current use rather than highest and best use) enables counties to identify farms whose land owners want to save money on taxes, but some farmland owners do not desire the land use restrictions and criteria associated with this classification.
- If each county uses similar data collection methods, the Regional Food Policy Council could have a better understanding of rural agriculture across the central Puget Sound region. It would be helpful for the Regional Food Policy Council to convene managers of county agricultural data collection to share best practices. Additionally the Regional Food Policy Council can support uniform data collection and suggest base farmland data that each county can collect.







The change in agriculture lands in King County from 1944 to 1989

Additionally, the studio team provided a geographic analysis of land cover patterns in three time periods: 1944, 1989-1991 (pre-Growth Management Act), and 2001-2002 (post-Growth Management Act). This analysis demonstrates visually how land use has changed in response to the policies in place during those time periods. Aerial photography shows urban and suburban development near the borders of county-designated agricultural lands. Alongside designated agricultural lands, the maps demonstrate infill of non-designated, undeveloped lands between the early 1990s and early 2000s. This visual analysis articulates the history of rural farmlands and the development pressures that cause land use change.

### **Fisheries**

The state of fisheries has changed greatly since the early 1900s, but minimal data is currently available on the precise role of commercial fishing in the central Puget Sound region. Today, fewer fishing vessels have a home port in the region, the estimated value of the fisheries has decreased, and the average ex-vessel<sup>2</sup> price per pound for Puget Sound's iconic salmon is less than in 1950. The purpose of this report is to further the Regional Food Policy Council's *economic development* goal through an inventory of commercial fishing vessels, as a starting point, to better understand the economic impact the local fishing fleet has on the region.

Major findings from this report include:

- In recent years, there has been an overall decrease in the number of commercial fishing vessels the central Puget Sound region.

<sup>2</sup> Ex-vessel prices are the amount a commercial vessel makes when it unloads its catch, rather than how much is received at market



## PUGET SOUND FOOD SYSTEM ASSESSMENT

- Economic impact studies of the Port of Seattle's Fishermen's Terminal show that a fishing vessel has a significant impact on the region's economy. For example, *The 2007 Economic Impact of the Port of Seattle*, prepared by Martin Associates (2009) estimates one purse seiner (a type of commercial fishing boat) contributes approximately \$220,000 annually. A commercial crabber contributes approximately \$550,000 annually.
- The number of commercial fishing vessels with a home port at Fishermen's Terminal in Seattle declined from 370 to 250 vessels between 2003 and 2007.
- Similarly, the number of jobs these commercial vessels supported declined from 5,524 to 3,424 jobs between 2003 and 2007.
- This decline impacts the local economy: in 2003 the vessels at Fishermen's Terminal brought in \$179.6 million to local businesses, compared to only \$43.8 million in 2007.
- It is difficult to determine the number of fishing vessels moored in each of the four counties, due to the nature of how the Washington Department of Licensing collects data. As a result, it is difficult to clearly understand what social and economic impacts these fishing vessels have on their home ports and markets in the region (beyond the recent economic impact study of Fishermen's Terminal in Seattle).
- Efforts could be taken to ensure that the region maintains a large fleet. Instead, a combination of factors has caused fisherfolk to relocate from the region or quit fishing altogether. Many vessels are moving north to the Port of Bellingham where local officials have realized the benefit of having a large fleet and are lowering moorage rates, enhancing amenities, and providing convenient access to nearby processors and icehouses.





### Urban Agriculture

This section uncovers opportunities for urban agriculture in the central Puget Sound region that coincide with the Regional Food Policy Council's goals of *agriculture, economic development, education, environment, equity and health*. The studio team examined urban agriculture based on the Community Food Security Coalition's definition, in which urban agriculture "refers to the production, distribution and marketing of food and other products within the cores of metropolitan areas...and at their edges." The studio team focused its research primarily on the five metropolitan cities in the region as designated under *VISION 2040*—Bellevue, Bremerton, Everett, Seattle, and Tacoma—but believes the framework and methodologies it created can be extended to smaller suburban cities for future assessment.

The goals of this section are:

- To broaden Regional Food Policy Council's understanding of the potential scope of urban agriculture in North America
- To explore the current practices in the central Puget Sound region
- To identify where area comprehensive plans can address urban agriculture
- To identify future opportunities for more urban agriculture regionally

Major findings from this report include:

- North American urban agriculture takes many forms beyond traditional community gardening, including backyard garden programs for food-insecure residents, prison gardens, and commercial rooftop farms.
- Each of the five metropolitan cities (Bellevue, Bremerton, Everett, Seattle, Tacoma) addresses urban agriculture in different ways (e.g., through city ordinances, specific codes/zones, and plans). Tacoma has the most detailed comprehensive plan and urban agriculture-related policy coverage, which may serve as a model for other cities in the region.
- The studio team proposes a new methodology, based on existing land use data and aerial photography, to determine potential sites for implementing urban agriculture. This site assessment considers:
  - environmental characteristics (e.g., steep slopes and other ecological barriers),
  - community needs (e.g., residential density and proximity to existing community gardens),
  - accessibility factors (e.g., parking availability and pedestrian access), and
  - differences in land use ownership (e.g., private, public, and institutional lands).



From Left to Right:  
University Of  
Washington  
Tacoma -  
Giving Garden  
Urban Chickens  
University  
P-Patch

### FOOD DESERTS

Food deserts are areas “with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower-income neighborhoods and communities,” according to the 2008 U.S. Farm Bill. This report focuses on identifying food deserts in the central Puget Sound region, with a focus on how transportation networks can aid or interfere with access to healthy food. The studio team further defined access to “affordable and nutritious food” through availability of the following food retail outlets:

1. Full-service grocers, which provide access to a full range of healthy food
2. Specialty foods outlets, which provide access to some healthy foods but not a full range (butcher, bakery, etc.)
3. Cultural grocers, which provide ethnically significant food access points

The studio team employed a geographic information systems analysis to locate census blocks lacking the specified food retail outlets within a quarter mile from bus stops in King, Pierce, Snohomish, and Kitsap Counties. The analysis incorporates data on bus line and stop data, income, vehicle ownership, locations of elderly populations, and locations of the three types of grocers described above.

Example of Food Desert Analysis

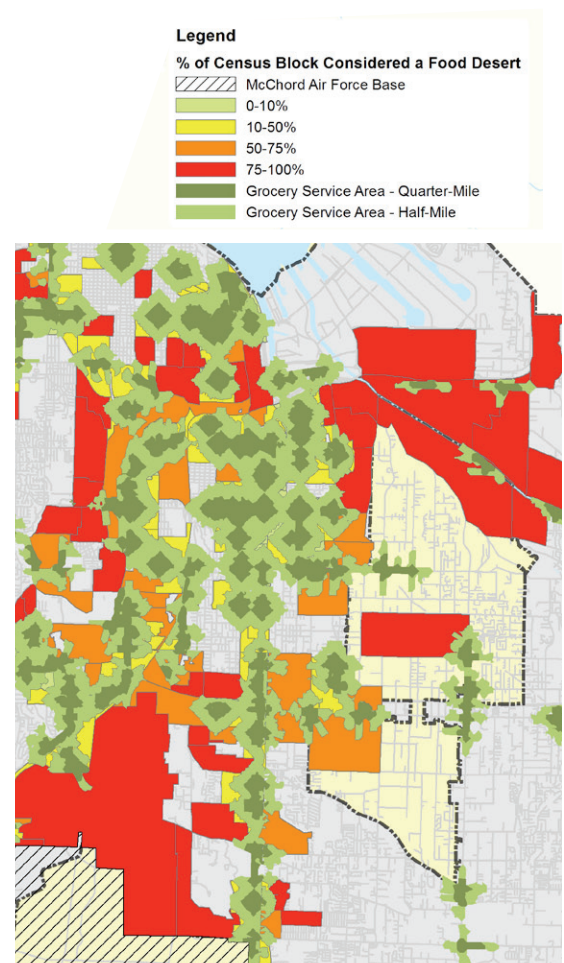
Major findings from this report include:

- Urban cores tend to have greatest access
- Urban peripheries are facing food access challenges
- Transit lines have a substantial effect on food access
- Bring together community groups and government to best address local concerns and situations

Policy considerations to improve access include:

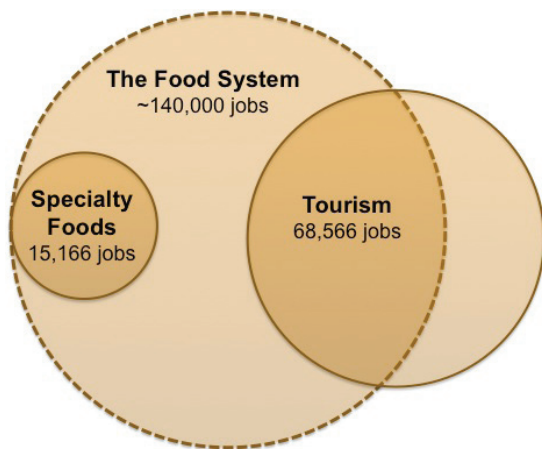
- Coordinate transit systems with food access points
- Educate riders on location of grocery stores
- Promote community level programs including farmers markets, community gardens, mobile food carts

This report is intended to serve as a starting point for future efforts to monitor and address food deserts in the region. The hope is for this work to be easily replicable as the Regional Food Policy Council moves forward with its *equity, health, and policy* goals.



## WAGES

In order to advance the Regional Food Policy Council's *economic development* goal of supporting living wage jobs, this report seeks to understand the current state of food system employment. The production, processing, and retail sectors of the food system provide about 165,000 jobs in the central Puget Sound region in 2009. The analysis reveals that the majority of these jobs do not provide a living wage, which is the wage rate necessary to meet minimum standards of living. This report also presents key considerations for supporting economic development through the creation of living wage jobs in the food system as possible ways to address this challenge.



The number of jobs in various job sectors in the Central Puget Sound Region

Major findings from this report include:

- About 80 percent of non-farm food system workers earn wages below the lowest living wage standard used in this report (\$13.33 per hour, tips included).
- The lowest paid occupations are bussers as well as counter, cafeteria, coffee, and concessions servers. All make about \$9.25 per hour and number about 23,000, a significant share of regional food system employment.
- The highest paid occupations are purchasing agents and food scientists. Both make roughly \$29 per hour, though these occupations account for less than 0.2 percent of the 165,000 workers in the regional food system.

## FOOD HUBS

This report provides guidance for policymakers and food systems stakeholders on food hubs, an emergent tool intended to sustain small and midscale farmers, to promote regional economic development, and to fulfill demands for locally and regionally produce food in a more efficient way. The U.S. Department of Agriculture's working definition of a food hub is "a centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products."

Food hubs may help advance the Regional Food Policy Council's *agriculture* goal by focusing on support for small and midscale farmers, which may in turn provide incentives to preserve farmland and improve the regional viability of farming. Food hubs may also help to advance the *economic development* goal by providing employment opportunities in the areas they serve and opening up access to new retail and wholesale markets that smaller farmers struggle to reach.

Major findings from this report include:

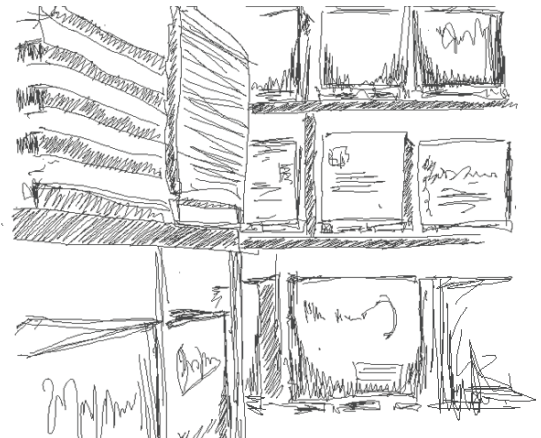
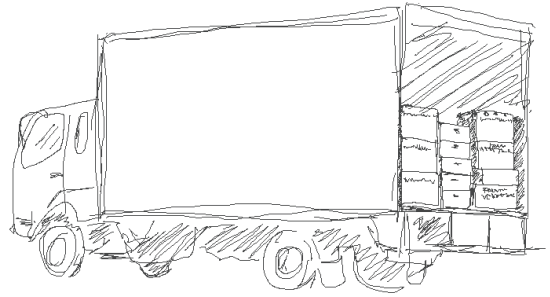
- Food hubs are gaining national momentum, as evidenced by U.S. Department of Agriculture's extensive and growing work on the topic in concert with local food systems organizations nationwide. More than 100 food hubs exist nationwide, averaging more about \$1 million in annual sales. More than half started within the last five years.



## PUGET SOUND FOOD SYSTEM ASSESSMENT

- Food hubs typically have three major components:
  1. wholesale aggregation/distribution,
  2. active coordination with food producers, and
  3. permanent facilities.
- Some food hubs provide additional services, such as space for wholesale and retail vendors, health and social service programs, community kitchens, and community meetings.
- Key considerations in starting a food hub include demand for locally and regionally produced food, creativity with funding, seamless systems for distribution and sales, careful market analysis, and review of policies to determine whether financial or regulatory incentives may aid food hub development.
- The planned Everett Farmers Market in Everett, Washington, which combines retail and wholesale sales of agricultural products, commercial kitchen facilities, distribution, education, and other elements, offers lessons for planning future regional food hub efforts.
- Two detailed case studies illustrate how food hubs have developed in two areas that share some of the central Puget Sound region's demographic and physical characteristics: the Local Food Hub, a non-profit food aggregator, distributor, and educational farm located in Charlottesville, Virginia; and The Wedge, a cooperative business with a retail store, distribution warehouse and educational farm located in Minneapolis, Minnesota.
- In recent years, all four counties in the central Puget Sound region have identified various barriers for smaller farmers, ranging from marketing and economic development to access to commercial kitchens to mechanisms for garnering wholesale clients. Food hubs may help to meet these needs while filling demonstrated consumer demands for locally and regionally produced food.

Core Food Hub Components:  
Distribution, Warehousing and  
Aggregation, Processing, and Retail Sales



### POLICY

This report is intended to provide information to policymakers, food systems stakeholders, and advocates that can guide future action and policy development. The aim of this section is twofold:

- To increase communication, information-sharing, and education about policy work and policy opportunities region-wide
- To provide relevant model food systems policy language for use in support of the Regional Food Policy Council goals

As a whole, this report aims to advance the *policy* and *education* goals of the Regional Food Policy Council. First, this report summarizes policies contained in countywide plans that specifically address food system activities. Next, this report provides sample comprehensive plan and municipal code language for a variety of food systems activities. Jurisdictions can tailor these policies to their individual needs and situations. Then, this report discusses policies related to three food system topics: agricultural land preservation, food processing for economic development, and on-farm alternative energy production.

Major findings from this report include:

- There are small and simple policy changes that municipalities can make as a first step to enable food systems activities:
  - including food systems goals in comprehensive plan elements;
  - creating a streamlined permit for small farmers markets;
  - enacting food systems-supportive resolutions;
  - establishing farmers markets as approved land uses;
  - establishing community gardens as approved land uses or open space sub-districts;
  - enabling interim, temporary, or vacant land use agreements for community gardening or urban agriculture uses; and
  - establishing “healthy food zones” near schools.
- Agricultural land preservation policies are best understood in the context of a “package” of ten policy tools that work best when used in combination with each other. These tools are:
  - Agriculture zoning
  - Agriculture districts
  - Comprehensive plans
  - Conservation easements
  - Differential assessment of farmland
  - Private land trusts
  - Purchase of development rights
  - Right-to-farm law
  - Transfer of development rights
  - Urban growth boundaries
- Local food processing facility development and renovation can be enhanced by applying for and supporting the continuation of underutilized U.S. Department of Agriculture funding resources, such as the Community Facilities Fund.
- Encouraging government procurement of locally-grown foods increases processing demand by midscale farms as well as funding available for processing facility development (e.g. food hubs).
- Technical assistance and incentives can assist the agricultural community with undertaking renewable energy and energy efficiency projects.

## ROAD MAP TO A GREENER RESTAURANT

Because the restaurant industry is a major component of the food system, it is important to consider the role of restaurants in achieving environmental, economic, and social goals. Developed in partnership with Seattle Chefs Collaborative, the *Road Map* provides guidance for new and existing restaurants on how to become more aware and responsive to sustainability issues. Users of the *Road Map* will find information and resources in six topic areas: food sourcing, water use, energy and the built environment, waste management, cleaning green, community and economy issues. The *Road Map* includes links to local resources that serve as supplementary material to the recommendations and incentives that the aforementioned categories offer. The completion of the *Road Map* signifies the first step in providing outreach to area restaurants; Seattle Chefs Collaborative will use the *Road Map* as the basis for future communication and marketing initiatives.

Major components of the *Road Map*:

- There are 35 self-assessment questions for restaurant operators covering the six topic areas. Examples of questions include “Do you compost food and other organic waste?” and “Do you use non-toxic cleaning products?”
- Each question contains at least two action items that restaurants can implement along with at least one resource, often more, that helps restaurants to think about sustainability. Examples of action items include giving food waste to farmers for animal feed and making your own non-toxic cleaning products.
- The *Road Map* provides region-specific resources, such as information about rebates offered by area cities, links to local harvest schedules, and local entrepreneurs who are involved with sustainable restaurants.
- The icons next to each question indicate at least one benefit—economic, environmental, or social—that can be achieved by taking the actions listed; many questions have multiple benefits.





## CONCLUSION

The common thread binding this project's eight distinct reports is attention to the Regional Food Policy Council's goals. The reports described above:

- provide new qualitative and quantitative data,
- identify social and economic implications of this project's work,
- offer policy ideas, and
- suggest needs for future work where applicable.

The intent is to provide information that will assist Regional Food Policy Council members as they work toward their vision and mission of developing “just and integrated policy and action recommendations” toward a “thriving, inclusive and just local and regional food system.” The reports can stand alone and need not be read in any particular order. However, reading the entire set can provide an understanding of challenges and opportunities in the food system that is as diverse as the central Puget Sound region itself.

View the studio team's full reports at <http://courses.washington.edu/studio67/psrcfood>.

# INTRODUCTION

Fisheries have a long history in the central Puget Sound. Local tribes were the first to depend on the region's abundant resources. Their diets included, but were not limited to shellfish, salmon, cod, seal and various sea plants. As non-native settlers began to descend on the region, they quickly realized the value of the abundance of fish and seafood in the region. According to the Washington State Fish Commissioner Kershaw, by 1902 there were thousands of fishing boats on the Puget Sound and the annual value of the salmon catch was just over \$3.2 million.<sup>1</sup> That value would be nearly \$84 million in current US dollars.

The state of fisheries has changed greatly since 1902. Today, the Puget Sound fisheries are much less active. Fewer fishing vessels have a homeport in the region, the estimated value of the fisheries has decreased and the average per pound price fisherfolk received for Puget Sound's iconic salmon is .74 cents less than in 1950. These changes shaped our teams research questions.

Our research began with broad questions related to inventory and aggregation of existing data that could help explain the current condition of the region's fisheries. The purpose was to paint a "big picture" perspective of the fishing industry in the region. However, it became clear in the initial phase of the research that existing data is insufficient to paint such a picture. Our question then became: What data exists and how accurate is the data? We chose two topics in which to focus these questions: Current quantity of commercial fishing vessels in the region and economic impact and value of the central Puget Sound fishery.

Methods for conducting research included interviews and content analysis of reports describing various fisheries. We interviewed fisherfolk, port employees and staff at non-governmental organizations. We scanned several reports from state departments and independent research groups. We also conducted a physical inventory of fishing vessels moored at the Port of Everett and Fishermen's Terminal in Seattle.

The purpose of the research is to inform the Regional Food Policy Council about existing data and potentially flawed methods used to describe the economic

# VESSEL INVENTORY

value and impact of the region's fisheries. It is also to inform the RFPC of the economic development opportunity fisheries present.

The purpose of conducting an inventory of commercial fishing vessels is to better understand the economic impact the local fishing fleet has on the region. Economic impact studies of Port of Seattle's Fishermen's Terminal show that a fishing vessel has a significant impact on the region's economy. For example, Port of Seattle's 2007 economic impact report estimates one purse seiner (type of fishing vessel) contributes approximately \$220,000 annually.<sup>2</sup> A commercial crabber contributes approximately \$550,000 annually.<sup>3</sup>

In 2003, 370 commercial fishing vessels were moored in Fishermen's terminal.<sup>4</sup> It was estimated that local businesses received \$179.6 million of revenue from purchases by the fleet, including expenditures related to the operation, maintenance and repair of the vessels.<sup>5</sup> Besides expenditures, a commercial fishing fleet provides jobs, both directly and indirectly, related to operating, maintaining and repairing a vessel. It is estimated that in 2003, Fishermen's Terminal's fleet supported 5,524 jobs.<sup>6</sup> Port of Seattle's economic impact reports link the following industries to the maintenance of the vessels: Haul out/paint, engine repair/propulsion, packaging, shipyard, gear/factory equipment, insurance, electronics, ship stores and fuel.<sup>7</sup> The reports do not specify how many jobs are related to each industry.

According to Fishermen's Terminal's 2007 economic impact report, there were 120 less commercial fishing vessels in Fishermen's Terminal.<sup>8</sup> The number of jobs related to operating, maintaining and repairing the fleet decreased by 2100. The revenue generated by local purchases decreased by 40 percent (Table FI-1).

**Table FI-1 Economic Impact of Commercial Fishing Fleet at Fishermen's Terminal**

	2003	2007	% Change
Commercial Vessels	370	250	-43%
\$ Spent Locally	\$179.6 million	\$43.8 million	-40%
Jobs Supported	5,524	3,424	-38%

Source: Martin Associates. *The 2007 Economic Impact of the Port of Seattle*. Prepared for Port of Seattle. February 2009.

Source: Martin Associates. *The 2003 Economic Impact of the Port of Seattle*. Prepared for Port of Seattle. September 2004.

Fishermen's Terminal is one marina in King County. There are 28 other marinas in King County where vessels potentially homeport.<sup>9</sup>

Given the economic impact of Fishermen's Terminal's commercial fishing fleet on the local economy we decided to conduct an inventory of fishing vessels in the central Puget Sound region.



According to the Washington Department of Licensing, there are 1289 commercial fishing vessels in the central Puget Sound region that are registered in the state of Washington. However, the Department of Licensing's total does not take into account a number of factors. For example, Department of Licensing's records show there are 297 commercial fishing vessels in Snohomish County, but they disaggregated the State total into a county total by using the home address of the vessel owner.<sup>10</sup> The home address does not indicate the vessel's homeport and the vessel may be moored in another county or state.<sup>11</sup>

This is further complicated by the way in which vessels are registered:

- Federal Documentation: If a commercial fishing vessel has a cargo capacity of at least 5 net tons and is built in the United States the vessel must register with the United States Coast Guard and not register within a state.<sup>12</sup>
- State of primary use: A vessel may be registered in the state where it is primarily used, which may be different from its homeport. For example, a vessel moored in Seattle that primarily fishes in Alaska, can register in Alaska.<sup>13</sup>

Given the complexity of determining the number of vessels based on registration, we conducted a physical inventory. We wanted to know the total number of fishing vessels in each county. We also wanted to look at trends in the number of vessels moored in the region. We limited our inventory to Snohomish County and Fishermen's Terminal.

We obtained a list of marinas for each county at marina.com. We located each marina on a Google map, last updated in 2011, and scanned the shoreline of each county to determine the thoroughness of the lists. The list for Snohomish County was complete and the number of marinas was within our capacity. We included Fishermen's Terminal (King County) because it is widely recognized as the homeport to the majority of fishing vessels in the region.

### **Fishermen's Terminal**

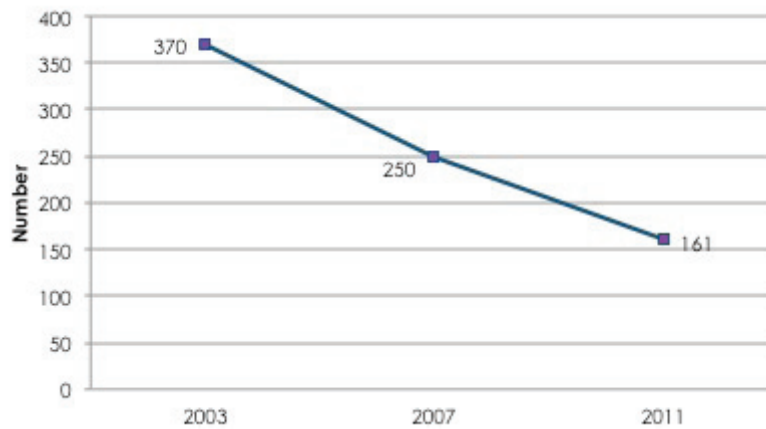
In May 2011, there were 161 commercial fishing vessels moored at Fishermen's Terminal.<sup>14</sup> The number of vessels moored at Fisherman's terminal fluctuates by month and in June many vessels leave for the summer fishing season in Alaska, although some still pay for moorage through the summer.

A visual overview of the vessels moored at Fisherman's Terminal in May 2011 showed that of the 161 vessels, 158 were tied to the dock at the time of our inventory. 124 vessels were federally registered, 8 were registered in Alaska and 23 were registered in Washington.<sup>15</sup>

At Fishermen's Terminal we were able to compare the number of vessels to the number reported in the economic impact reports of 2003 and 2011 and the number of vessels at the time of our inventory (Figure FI-1). At the time we

inventoried Fishermen's Terminal the decrease in the number of vessels since 2003 was over 56 percent.

**FIGURE FI-1 Number of Commercial Fishing Vessels in Fisherman's Terminal**



Source: Martin Associates. *The 2003 Economic Impact of the Port of Seattle*. Prepared for Port of Seattle. September 2004.

Source: Martin Associates. *The 2007 Economic Impact of the Port of Seattle*. Prepared for Port of Seattle. February 2009.

Source: Ray Giometti, Operations Manager at Fishermen's Terminal, interview by Travis English, Fishermen's Seattle, May 4, 2011

### Snohomish County

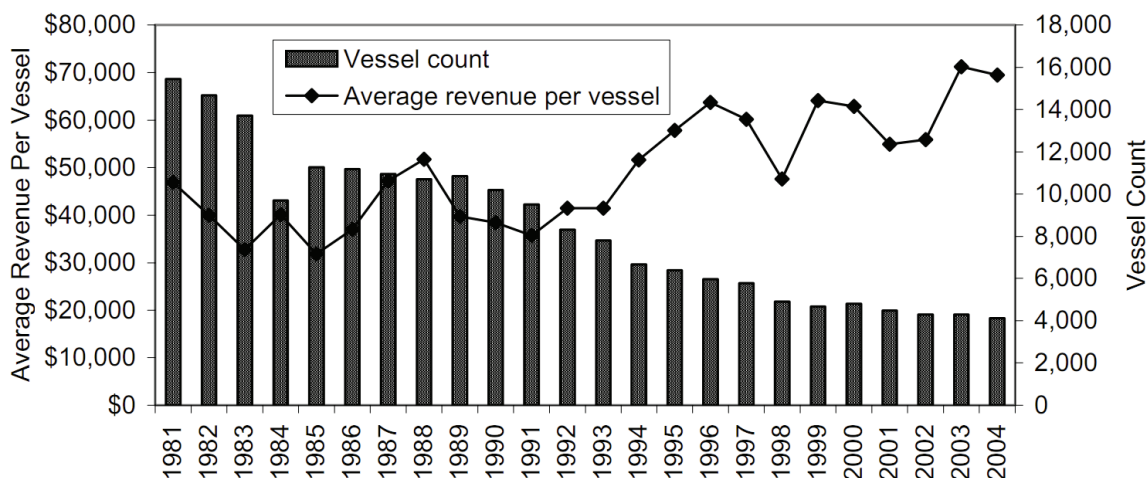
The Port of Everett maintains the largest fishing fleet in Snohomish County. In May of 2011 there were 23 commercial fishing vessels moored at the Port. A physical inventory determined that 17 of the 23 vessels were tied to the dock at the time of this inventory. Of those, 9 were federally registered, 1 was registered in Alaska and 7 were registered in Washington. Six of the other seven marinas in Snohomish County were contacted for this report and only six other commercial fishing vessels were moored in the county. Interviews with Port staff and commercial fishers indicated that the number of vessels in the region has decreased.

In Snohomish County we interviewed the former owner/operator of Geddes Marina.<sup>16</sup> Mr. Geddes explained to us, "In the 1950s we had over 40 fishing vessels that called our marina homeport. In 2002, we had two. Today, I can tell you there are none (Pull out and highlight this quote."<sup>17</sup> He said this has been the trend throughout the region. Our interviews at the Port of Everett confirmed the trend. A report commissioned by the Pacific State Marine Fisheries Commission shows this trend occurring along the entire West Coast (Figure FI-2).

When we asked about the causes of the decrease in vessels we were given several answers that were consistent with each location, which need to be further researched and verified. The most common answer was fuel cost. The cost of fuel has forced many fisherfolk to leave their vessels in Alaska and bring them to Washington every 2-3 years for repairs and maintenance. The second common answer was related to the cost of moorage. Fisherfolk

said the cost of moorage continues to rise and is slowly pricing fisherfolk out of Everett and Seattle. Each said the moorage in Bellingham is much more affordable. A third cause, is that a number of fisherfolk have stopped fishing. A fourth cause, more relevant to Everett, is a lack of amenities for fishing vessels. The Port of Everett recently remodeled their marina and removed net sheds, storage lockers and a work area for fishing vessels. Their purpose is to attract recreational vessels, which are charged higher moorage rates.<sup>18</sup>

**Figure FI-2 U.S. West Coast Home-Port Vessel Counts and Annual Average Revenue Per Vessel 1981 to 2004**



Source: The Research Group. *Review of the West Coast Commercial Fishing Industry in 2004*. Prepared for Pacific States Marine Fisheries Commission. September 2006.

### Findings

- A commercial fishing vessel plays a significant role in strengthening the region's economy and in job creation. As shown, there is an exponential decrease in jobs and local purchases as the amount of vessels decrease.
- We were unable to find aggregated data describing the number of commercial fishing vessels with homeports in each county. The most reliable source for such data is available from individual marinas and ports.
- Commercial fishing vessels are leaving the central Puget Sound region. According to Port staff and fisherfolk, factors include: fuel costs and moorage rates. Interviews also indicated that vessels were migrating north to Bellingham and Alaska. Bellingham began a pilot program this year to attract commercial fishing vessels. They lowered their moorage rate to \$5.90 per foot, compared to Fishermen's Terminal's \$6.08 per foot. More importantly, Bellingham is increasing the number of amenities fishing vessels, such as net sheds, and reducing the cost of amenities.

According to one fisherman, the fuel cost for a one-way trip from Seattle to Alaska is currently \$2000. Because of this, many fisherfolk are leaving their vessels in Alaska and only returning south every few years for repairs and maintenance.



# ECONOMIC IMPACT OF THE REGION'S FISHERIES

It has been shown that a fishing vessel adds significantly to the local economy but we have yet to look at the most significant aspect of the region's fisheries, the catch. In this section our main research questions were: How is the monetary value of the region's fisheries calculated and how is the economic impact of fisheries determined?

We discovered that the method used to calculate the value actually undervalues the region's fisheries and the impact it has on the region's food system. We interviewed staff at the Washington Department of Fish and Wildlife and Washington State Department of Revenue to understand the methods used to capture data about the value of fisheries. We also relied on fisherfolk to help prepare our interview questions.

In 2008, Fish and Wildlife released a report called, *Economic Analysis of the Non-Treaty Commercial and Recreational Fisheries in Washington State*.<sup>19</sup> In the report they provide data about various categories of fish. For each category they list the number of pounds landed and the value. For example, in 2006, approximately 9.78 million pounds of fish were landed in South Puget Sound (Table FI-2). This includes shellfish, salmon and groundfish (includes cod, haddock and flounder). The estimated value was \$12.25 million.<sup>20</sup>

**Table FI-2 Pounds Landed and Value of Commercial Fish Landings in Non-Treaty Fisheries in 2006 (in thousands of pounds and dollars)**

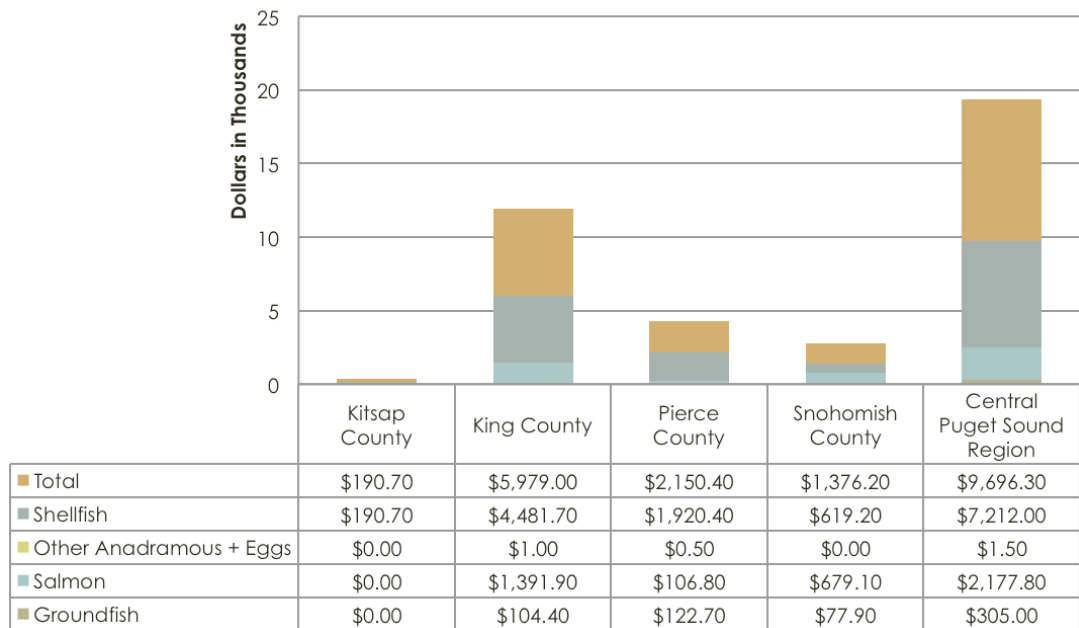
	North Puget Sound		South Puget Sound		Puget Sound	
	Pounds Landed	Value	Pounds Landed	Value	Pounds Landed	Value
Groundfish	647	\$203	643	\$199	1,291	\$402
Salmon	3,256	\$2,909	6,469	\$3,777	9,725	\$6,687
Shellfish	3,374	\$6,207	2,666	\$8,274	6,041	\$14,482
<b>Total</b>	<b>7,277</b>	<b>\$9,320</b>	<b>9,779</b>	<b>\$12,250</b>	<b>17,056</b>	<b>\$21,570</b>

Source: TCW Economics, *Economic analysis of the non-treaty commercial and recreational fisheries in Washington State*. Prepared for Washington Department of Fish and Wildlife. December 2008.

Fish and Wildlife is able to disaggregate their data to represent total value of landings by port in each county. Fish and Wildlife also breaks down the numbers based on six regions: North and South Puget Sound, Strait of Juan De Fuca, Coast, and lower and upper Columbia River. We used data from both these scales to best understand the conditions in the Central Puget Sound.

Data on the pounds landed was not available for each county. Only the monetary value is present in the report. According to Fish and Wildlife's report, fisherfolk with homeports in King, Kitsap, Pierce and Snohomish counties combined landed a total value of \$9.47 million in fish (Table FI-3).

**Table FI-3 Value (ex-vessel) of Commercial Fish Landings from Washington Fisheries in 2006, by Port County of Origin**



Source: TCW Economics, *Economic analysis of the non-treaty commercial and recreational fisheries in Washington State*. Prepared for Washington Department of Fish and Wildlife. December 2008.

According to Fish and Wildlife's report, in 2006, a total of 17.05 million pounds of fish were landed in North and South Puget Sound combined (Table FI-2). The estimated value was \$21.57 million. The value is determined by multiplying the landed pounds by the lowest price per pound established by processors that purchase the fisherfolk's catch. For example, the most recent price processors were offering fisherfolk for Sockeye salmon was \$1.50 per pound.<sup>21</sup> If a fisherfolk reports to Fish and Wildlife that they caught 10,000 pounds of sockeye salmon then the estimated value is \$15,000 (10,000 pounds x \$1.50).

These numbers do not reflect the price fisherfolk receive when they direct sell. WDFW also told us that the price to determine the value is set before the fish are caught and does not change to reflect the most current price. The price may be higher and fisherfolk may receive a bonus for their catch. Fish and Wildlife record neither the price change nor bonuses.<sup>22</sup>

In Fish and Wildlife's report it is estimated that commercial fisheries in Washington State are worth \$65.1 million and generates 3524 jobs.<sup>23</sup>

During interviews with fisherfolk we were told that Fish and Wildlife's method for calculating value is flawed and undervalues the fisheries. We researched why this might be the case.

Most apparent is the discrepancy in the number of jobs generated by commercial fisheries. The economic impact report for Fishermen's Terminal states that the terminal alone is responsible for generating 3424 jobs, Fish

and Wildlife claims that the entire state of Washington generates only 3524 jobs.<sup>24</sup> Wholesale and retail values are also not factored into the overall value. Also apparent, the report excludes tribal fisheries and fish caught in non-Washington waters. Because of time constraints we were only able to research the latter – fish caught in non-Washington waters.

We used a local fish company as a case study to understand how their catch is recorded.

Characteristics:

- Homeport is Fishermen's Terminal
- Primary fishing grounds are in Alaska
- Permits for Alaska catch are issued by Alaska
- Catch is reported in Alaska
- Catch is transported to Bellingham, WA
- Catch is sold directly to consumers, mostly in Washington

Interviews with Fish and Wildlife revealed that they have no means of recording fish that are caught outside of Washington waters. Interviews with Washington State Department of Revenue revealed that the fish company's sales are lumped into a general wholesale category. They did not have data that showed the amount of fish sales that are taxed by the state. This means that fisherfolk that are direct selling their Alaskan catch in Washington are not being counted in Fish and Wildlife's report. This holds true for fish that are caught in Alaska and sold to local processors.

The Puget Sound Salmon Commission is a coalition of fisherfolk that mainly fish in Alaskan waters and direct sell their catch in the Puget Sound region.<sup>25</sup> Their membership consists of representatives of over 100 fishing vessels.<sup>26</sup> We interviewed staff at the commission and learned that they struggle to understand the economic impact of their fleet. The data recorded by the State is insufficient and they lack the resources to conduct their own study.

### Key Findings

- The Washington Department of Fish and Wildlife's value of the Central Puget Sound is approximately \$9.7 million. Fish and Wildlife only includes the value of the fish.
- Port of Seattle claims that local purchases made by the fleet at Fishermen's Terminal is \$48.3 million. To spend this money, fisherfolk would need to earn, at least, the same amount in fish sales. This over six times greater than what Fish and Wildlife calculate for the value of fish in all of central Puget Sound.
- Fish and Wildlife's economic analysis of Washington fisheries is incomplete. In particular, they do not have the means to understand the impact of fish caught in non-Washington waters but that are sold in Washington.
- Fish and Wildlife's prices used to calculate the value of fish landings does not reflect the actual price fisherfolk receive for their catch. While processors may set the price at \$1.50 per pound, some fisherfolk direct market their catch and receive a higher price. Some fisherfolk



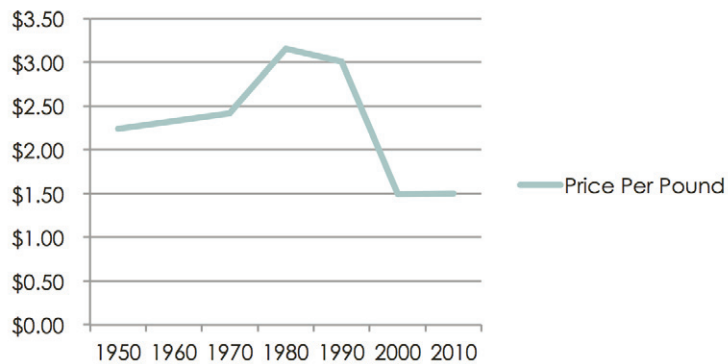
also receive a higher price than what is recorded and may receive a bonus.

- Different methods are used to determine the economic impact of fisheries. This results in different conclusions. Fishermen's Terminal claims that their fleet supports 3424 jobs. Fish and Wildlife claims that there are only 3524 jobs related to fisheries in all of Washington. Fishermen's Terminal claims, in 2007, their fleet spent, locally, \$179 million. Fish and Wildlife claims, in 2006, the entire Washington commercial fisheries were worth \$65.1 million. Fishermen's Terminal does not factor in the value of the fish. Fish and Wildlife does not factor in the impact from expenditures made by fishing vessels.

**DISCUSSION**

One item for discussion, which we were unable to thoroughly investigate, is the ex-vessel price of salmon. The price is lower today than it was in 1950. The ex-vessel price of salmon today is less than in 1950.<sup>27</sup> We used data from the National Oceanic and Atmospheric Administration's database to determine the ex-vessel price for Sockeye salmon in Washington State from 1950 to 2010 (Figure FI-5). We used data that shows the annual landings in pounds and ex-vessel value.<sup>28</sup> We divided the value by the pounds to determine the per pound ex-vessel price. Finally, we used an inflation calculator and converted the amounts into 2010 dollars. We learned that in 1950, Sockeye salmon had an ex-vessel price of \$2.24 per pound and climbed to a peak of \$3.16 in 1980. In 2010 the price was \$1.50 per pound (Figure FI-3).

**Figure FI-3 Price Per Pound of Sockeye Salmon**



Source: NMFS Commercial Fishery Landing Data. <http://www.st.nmfs.noaa.gov/st1/commercial/index.html> (accessed May 24, 2011)

# CONCLUSIONS AND RECOMMENDATIONS

Our research shows how difficult it is to understand the impact fisheries have on the Central Puget Sound region. The most thorough snapshot available is the economic impact report for Fishermen's Terminal but it only begins to tell us a small story of how fisheries impact the region.

It is apparent that a large commercial fishing fleet can have positive effects on the region's economy. It is also apparent that little has been done to ensure that the region maintains a large fleet. In fact, the opposite is true. A combination of factors has caused fisherfolk to relocate from the region or quit fishing altogether. Many vessels are moving north to the Port of Bellingham where local officials have realized the benefit of having a large fleet. Bellingham is lowering their moorage rates and enhancing their amenities applicable to commercial fishing. There are also a number of processors and icehouse near the Port of Bellingham that offer are convenient for fisherfolk practicing direct sales.

Discrepancies between economic impact reports have also shown that there is not a standard method for measuring such impacts. The economic impact may be much greater than is actually recorded. We may discover that fisheries are a much more important factor in our overall food system than we realize. Such a realization could impact the way local agencies regard the way in which ports provide for fishing fleets and, especially, fisherfolk who are direct selling.

Finally, our research shows that the current price received by fisherfolk for salmon is lower than in 1950. What does this say about how we value fisherfolk and the source of their livelihoods, salmon? Given the unpredictability of the region's salmon runs, the near collapse of the salmon fisheries in the 1990s and the impact salmon have on local ecosystems, one might expect their value to be much greater than in the past.

## RECOMMENDATIONS

- Develop a method for tracking the number of vessels moored in each county. Marinas and ports collect this data. Consult with marina managers and port staff to create a system to aggregate this data.
- Develop a method for thoroughly examining the economic impact of the region's fisheries. Combine the efforts of Port of Seattle and Washington Department of Wildlife so that economic impact research incorporates the value of the catch and the impact fishing vessels have on the local economy.
- Work with Fish and Wildlife and fisherfolk to create a method that captures data about fish that is caught outside of Washington but sold in Washington.
- Consult with fisherfolk about their needs. If the Regional Food Policy Council is concerned about keeping a large fleet in the region, ask fisherfolk what they need in order to efficiently conduct their business.
- Based on feedback, the Regional Food Policy Council can consult with marina managers and port staff and encourage them to follow Bellingham's lead and develop a pilot project to attract more fishing vessels

# NOTES

1. Prosser, William Farrand. 1903. *A history of the Puget Sound country, its resources, its commerce and its people: with some reference to discoveries and explorations in North America from the time of Christopher Columbus down to that of George Vancouver in 1792.* New York: Lewis Pub. Co. P.106
2. Martin Associates. *The 2007 Economic Impact of the Port of Seattle.* Prepared for Port of Seattle. February 2009.
3. Martin Associates. 2009.
4. Martin Associates. *The 2003 Economic Impact of the Port of Seattle.* Prepared for Port of Seattle. September 2004.
5. Martin Associates. 2004 .
6. Martin Associates. 2004.
7. Martin Associates. 2009.
8. Martin Associates. 2009.
9. Marina.com, <http://marinas.com/browse/marina/US/WA/> (accessed May 6, 2011)
10. Washington Department of Licensing, Statistics Department, telephone interview by Travis English, April 20, 2011.
11. They do not keep a record of the vessels homeport. Also, many vessels may be kept on a trailer and do not need to be kept in a marina. Based on the data from DOL we are not able to determine how many vessels are moored in each county.
12. United States Coast Guard, National Vessel Documentation Center, <http://www.uscg.mil/hq/cg5/nvdc/nvdcfaq.asp#02> (accessed April 20, 2011)
13. Peter Knutsen, interview by Travis English, Fishermen's Terminal, April 28, 2011.
14. We used data from Fishermen's Terminal's database. We were unable to view trends using their database because date was only available from 2008 to present. We relied on the number of vessels reported in the economic impact reports (2003 & 2007) to look at trends. We calculated the number of vessels for May 2011.
15. To obtain the number of vessels at Fishermen's Terminal registered in Washington, we physically walked each dock and documented each vessels registration type. Washington and Alaska require state registered vessels to place a registration decal at the bow of the vessel and visible from the dock.
16. Mr. Geddes recently sold Geddes Marina to the Port of Everett
17. Edward Geddes, interview by Travis English, May 5, 2001.
18. Commercial fishing vessel rate is \$6.39 per foot. Recreational vessel rates range from \$5 - \$12 per foot depending on the length of the boat and type and location of the boat slip.
19. TCW Economics, *Economic analysis of the non-treaty commercial and recreational fisheries in Washington State.* Prepared for Washington Department of Fish and Wildlife. December 2008.
20. TCW Economics. 2008.
21. Janis Harsila, interview by Travis English, May 12, 2011
22. Wasington Department of Fish and Wildlife permit office, Interview by Travis English, April 28, 2011 & May 16, 2011.
23. TCW Economics. 2008.



24. TCW Economics. 2008.

25. Puget Sound Salmon Commission, <http://www.soundcatch.org/AboutUs.aspx> (accessed May 23, 2011)

26. Janis Harsila, interview by Travis English, May 12, 2011

27. "Ex-vessel" refers to when the catch leaves the vessel. Therefore, ex-vessel price is the price fisherfolk receive when the catch leaves their boat.

28. NMFS Commercial Fishery Landing Data. <http://www.st.nmfs.noaa.gov/st1/commercial/index.html> (accessed May 24, 2011)