

# Southeast Alaska Ocean Products



The seafood industry is the largest private sector employer in Southeast Alaska in terms of wages, accounting for 13% of all regional wages, and 10% of all employment. However, the significance of the seafood sector to the region can sometimes get overlooked because measuring employment and wages in the Southeast Alaska seafood industry is difficult, as it is not included in Alaska Department of Labor wage and salary data.<sup>3</sup>

<sup>3</sup> To work around this, JEDC analyzed the number of those who participated in the seafood sector, and developed an "annual average" employment number for those fishermen and crew involved in the regional fisheries, using data obtained from ADOL, CFEC and ADF&G. According to this analysis, the annual average monthly employment in the seafood sector for 2009 was 2,396 (those involved in the commercial fishing industry were only counted for the months that they participated in the industry). To obtain fisheries wage data, JEDC used US Census Borough Non-employer Statistics. Non-employer Statistics originate from tax return information of the Internal Revenue Service. According to these statistics, Southeast residents captured an additional \$149.1 million in wages over the ADOL reported fisheries wages. Of course the methodology is also slightly different. The non-employer statistics capture the income of Southeast Alaska residents only regardless of where they fished (worked). DOL wages and labor statistics report wages earned by residents and nonresidents working in Southeast Alaska.

## Southeast Alaska Ocean Products Cluster

Cluster/Industry Name	NAICS Industry Code	Annual Average Monthly Employment 2003	Annual Average Monthly Employment 2009	SE Businesses 2009	SE Wages 2009	Avg. SE wage 2009
Seafood		3,680	3,845	2,396	\$199,896,080	\$51,989
Animal aquaculture	1125	136	131	16	\$4,827,371	\$36,968
Seafood product preparation and packaging	3117	1,413	1,390	44	\$43,763,787	\$31,487
Fish and seafood merchant wholesalers	424460	52	43	20	\$2,246,922	\$52,052
Fishing	na	2,079	2,281	2,316	\$149,058,000	\$65,338

### Commercial Fishing

Fishing has long been a key element of the Southeast Alaska economy. In 2009, nearly 293 million pounds of seafood were taken from Southeast waters. Southeast Alaska has several dozen fisheries conducted by a fleet of mostly small boats. Salmon remains the bedrock for Southeast's small boat fleet. In 2009, the five salmon species represented more than three quarters (77 percent) of the region's catch in terms of volume. Southeast also has a diverse array of high-value, low-volume fisheries. For example, sablefish and halibut made up 6.5 percent of the total volume caught in 2009, yet accounted for 39 percent of the total catch value.

#### **Commercial fisheries in Southeast Alaska include:**

- **Salmon:** hatchery terminal areas (primarily chums and pink, but other too), seine (primarily pinks, but some chum and sockeyes), hand and power troll fisheries (primarily kings and cohos, some chum), driftnet/gillnet (primarily sockeye, with some chum and pinks), and some setnet (primarily cohos). In addition salmon subsistence and personal use is regulated.
- **Shellfish:** sea cucumber, tanner crab, shrimp pot, geoduck, dungeness crab, sea urchin, golden (brown) king crab, red/blue king crab, and shrimp trawl. A personal use king crab fishery is also regulated by ADF&G.
- **Herring:** herring bait, herring test, herring sac roe, and herring eggs on kelp.
- **Groundfish:** halibut, groundfish, rockfish, lingcod, and sablefish.

### Seafood Processing, Mariculture, Sports Fishing and Subsistence

In Southeast Alaska there are approximately 60 seafood processing facilities; they are found from Yakutat south to Craig and range in size from grocery stores that process fish for their customers to large processing facilities that employ hundreds of workers and provide lodging and meals.

There are currently 10 productive mariculture farms located in clusters in Yakutat, Kake and Naukati Bay that produce primarily oysters and clams. In addition, thousands of visitors come to Southeast Alaska each year to enjoy the world class sport fishing, and they contribute to the economy by supporting local businesses. Fish also comprise 60 percent of subsistence foods taken each year in the state, which has been fundamental to Alaskan culture for thousands of years.

## **Ocean Products Cluster Strategy Development Process**

In February, March and April of 2011, the Juneau Economic Development Council convened a 42 member Ocean Products Cluster Working Group with representation from private industry, including private sector firms headquartered outside the region, firms headquartered in the region, local fishermen; federal, state and local government agency representatives; tribal corporation representatives; university faculty; and local economic development entities. A full roster of the Working Group membership is below:

### ***Southeast Alaska Ocean Products Cluster Working Group Members\****

<b>Name</b>	<b>Affiliation</b>	<b>Position</b>
Shannon Stevens	Alaska Airlines	Cargo Sales Manager (Seafoods/Perishables)
Mike Goldstein	Alaska Coastal Rainforest Center	Executive Director
Geron Bruce	Alaska Department of Fish and Game	Assistant Director of Commercial Fisheries
Ray Riutta	Alaska Seafood Marketing Institute	Executive Director
Doug Ward	Alaska Ship & Drydock	Director of Shipyard Development
Bart Watson	Armstrong-Keta, Inc.	Business Manager
Tim Blust	Armstrong-Keta, Inc.	Business Manager
Rick Focht	DIPAC	Director of Operations
Steve Stromme	Elfin Cove	
Ron Medel	Forest Service	Tongass Fisheries Program Manager
Don Martin	Forest Service	
Deborah Hayden	Grow Ketchikan	Economic Development Manager
Anthony Lindoff	Ha'ani/Sealaksa	leading Sealaska oyster mariculture initiative
Russell Dick	Ha'ani/Sealaksa	President
Randy Lantiegne	Icicle Seafoods	Southeast Fleet Manager
Kris Norosz	Icicle Seafoods	
Galen Tromble	National Marine Fisheries Service	Chief, Alaska Region Sustainable Fisheries
Steve Reifentstahl	Northern Southeast Regional Aquaculture	General Manager
Mike Forbush	Ocean Beauty	

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***\*Attended one or more meetings***

Name	Affiliation	Position
Mike Round	Oceans Alaska SSRAA	Assistant general manager
Patricia Phillips	Pacific Fishing Inc.	Fisherman
Julianne Curry	Petersburg Vessel Owner Assoc.	fisherman
Ian Fisk	Primo Prawns	Fisherman
Jev Shelton	Sablefish	Fisherman
Phil Doherty	SARDFA (Dive Fisheries Assoc)	
Ray Ralonde	Sea Grant Marine Advisory Program	Aquaculture Specialist
Bruce Wallace	Seiner, UFA, Silver Bay, ASMI	
Tom Gemmell	Self	
Keith Criddle	SFOS UAF	Fisheries Division Director
Garry White	Sitka Economic Development	Executive Director
Kathy Hansen	Southeast Alaska Fishermen's Alliance	Fisherman
Shelly Wright	Southeast Conference	Executive Director
Len Peterson	Taku River Reds	Founder
Heather Hardcastle	Trout Unlimited	Fisherman
Julie Decker	UFA: National Seafood Marketing Coalition	
Chris Knight	United Southeast Alaska Gillnetter's Association	Executive Director
Jim Seeland	University of AK Southeast	Assistant Professor of Fisheries Technology
Casey Campbell	Wells Fargo	Business Relationship Manager
Casey Havens	Yak Tat Kwaan	President/CEO
John Sund		mariculture advocate
Jon Martin	USDA Forest Service	Tongass Transition Framework Coordinator

Over the course of three facilitated meetings and numerous between meeting teleconferences, this diverse group worked collaboratively to identify areas where opportunity for job creation and industry development may exist within this broad sector. In addition, the group identified opportunities for collaboration and partnership to overcome current constraints that stand in the way of business growth. The group developed ten initiatives that addressed themes emerging from the Cluster discussions.

## Southeast Alaska Ocean Products Industry Opportunities and Challenges

The cluster working group was asked to develop a list of the opportunities and challenges offered by the Southeast Alaska seafood industry. The group developed the following list:

### Opportunities

Southeast Alaska's rich, clean waters are an astounding resource

- Size of the resource (raw materials, marine products, water-estuary-stream system) is huge.
- We have high quality products from pristine waters and a vibrant ecosystem.

- We have the ability to provide the freshest products.
- We need to maintain what we've got; are all products at maximum sustained yield right now?
- We must all pay attention to environmental quality to ensure Southeast Alaska ocean products are natural, healthy, and sustainable.

Southeast Alaskan residents know the ocean; this industry is compatible with our lifestyle

- The nature of the ocean products industry is compatible with our lifestyle because this represents who we are and have always been as a people.
- The seasonal nature of ocean products is compatible with the Alaskan lifestyle which places a premium on recreation and subsistence.
- Southeast Alaska is 'small'; we all know each other and this facilitates communication among us.
- We have great connections, weather, and sense of community.

The ocean products industry is resilient

- The salmon industry was severely challenged twice; once 40 years ago and then again in the 1980's. We've rebuilt and come back due to ingenuity and our capacity to work together and tackle problems when chips are down.
- Industry has a history of successfully problem-solving in partnership with government.
- People and decision-makers have opportunities to communicate and collaborate on solutions.
- We hope there can be increased collaboration between industry members (i.e.; small and large processors).

There are opportunities to add value - for both salmon and other ocean products

- This needs more attention, research, and product development.
- We need to develop value-added products, including products that utilize secondary processing.
- What opportunities can shore-side processors create to add value? We need increased innovation in this area. How can we add value to locally produced products? The target is high quality value added products produced in-state.
- One opportunity for increased value-added processing in the region is rather than block freezing and shipping raw product to China for processing, doing this here.

Underutilized species present tremendous opportunity

- These opportunities are spread throughout rural Southeast Alaskan communities.
- Some of the opportunity areas are geoducks, kelps and other seaweeds, oysters, clams, sea cucumbers, glacial silt-cosmetics, dogfish, red king crab etc.

- Additional product development should consider volume, diversity, species, and value-added opportunity.

Certain types of repair and manufacturing jobs are complementary to the ocean products industry in Southeast Alaska

- Shipbuilding and ship repair in Southeast Alaska complement the ocean products industry.
- Manufacturing fishing, processing and harvesting infrastructure and equipment in Southeast would also make sense (for example mariculture farmers buy tumblers from Tasmania now).

Southeast Alaska Branding and Marketing

- Tell the Story - Wild Alaska branding; the Alaska name is our biggest asset. We can do a much better job of attracting attention and recognition to our region, of enhancing the understanding about the incredible productivity here.
- Southeast Alaska's seafood story can attract money and higher prices. Use chain-of-custody marketing to both educate consumer and increase the product value.
- Assist the USFS in managing the Tongass as a "seafood forest."
- More marketing (and research) money needed to explain and use Southeast Alaska's regional story.

Mariculture development and growth

- Mariculture could be a \$20-\$50 million/year industry.
- Enhancing salmon production (hatcheries), and production of ocean products

Availability of a young, trainable, local workforce

- Given the ocean resources here, the presence of University of Alaska campuses, and the large federal NOAA laboratory, we should have world class research occurring regarding ocean conditions, climate change, fisheries and seafood.
- The University system in Southeast Alaska should be a lead University for seafood research, marketing, product development and testing, and food sciences.
- Why don't we have a food sciences program here?

There is great access to Lower 48 customers from Southeast Alaska;

- transportation to these markets is less expensive from Southeast Alaska than from other parts of Alaska. Some note that they pass transportation costs on directly to customers. It would be good to have lower cost shipping options.

Better and consistent utilization of fish waste is an opportunity area

- May become a business necessity as regulations change. If fish production increases fish waste, volumes increase. This is another opportunity.
- Some processors in Southeast now have meal and oil plants and are getting value out of these waste streams.
- It is not known what scale of operation is economic or if these smaller plants can take others' waste profitably.
- The goal is full utilization of all catch (waste, all fish body parts).
- Opportunities are fertilizer for food security, bone meal, bio gas, bio diesel and more.
- The seasonality of the product is a challenge as is the fact that the volume comes in big slugs.

A sea otter management plan is needed for Southeast Alaska.

- Populations here are healthy, copious and beginning to impinge on commercial and subsistence harvest of several seafood products including Dungeness crab, sea cucumber, geoduck and shrimp.
- Streamline the export permitting process.
- As an example, one CWG member said it takes 3-4 months to get permission to export a sea otter hide, and the recipient must physically be in the US to receive it.

There are abundant renewable energy resources in Southeast Alaska.

- Investment should yield lower costs in small communities in Southeast, dependent on diesel fuel.
- Reducing energy costs benefits the ocean products industries, which are largely fueled by diesel power now.

### **Challenges**

Access to water and to the resource is primary; without this nothing else is possible.

- We must increase access of rural Alaskans to wild stock.
- Support increased hatchery production (supply) allows the salmon industry to maintain high productivity.
- Access to supply is a big issue for new fisheries, both wild and cultured. There is a catch-22 where regulators don't know enough about the bio-mass to allow its utilization at levels needed to sustain business, but without research and studying the effect of utilization on the bio-mass nothing can be learned.
- ADF&G is lacking staff support for underutilized species.
- How can there be more reliable and steady access to the underutilized species bio-mass for new ideas and products? There must be a more cooperative relationship with regulators; a



collaborative team approach between government and industry is needed to both improve access and allow for wise utilization of ocean resources.

Maintaining sustainable fisheries, conservation, and restoration of habitat sustain the ocean resources industry.

- It is important to understand and stay abreast of the national perspective and requirements for sustaining ocean resources biologically and economically.

The markets are global and competition is fierce.

- Global markets determine prices and currency fluctuations affect competitiveness.
- Global food markets are often different than national markets.
- Alaska was strong on fishery research in the past, but funding decline has cost the state some regional research capacity. This limits the ability of local industry participants to enter emerging global markets.

Access to capital immediately follows access to the resource as a primary concern

- In particular, access to patient, long term capital that understands seafood and risk is needed.
- Portions of the industry are highly seasonal and only operate 2-3 months a year; investors (and regulators) need to understand this.
- Taxes can be a burden.
- Better access to capital is also needed to enable purchase that would bring limited entry permits and quota share now owned by non-Alaskans back to Southeast Alaska.
- A need for more funding for product development was cited, as was the need to fund workforce development for re-emerging sectors.
- Because the resource is owned by the state and federal governments, state and federal loan and grant programs are appropriate.
- Local governments could assist more particularly with infrastructure investment.

Cost concerns

- High costs for fuel, power, freight, transportation of product to markets, and labor are a concern.
- Rising fuel costs were cited by more than one as the largest cost concern.

More local government support is needed.

- Local governments could be more of an ally.
- Local governments need to realize the industry is providing employment and revenue in the community.



- More support for business is needed, for example some relief on property taxes as large processors only operate 60 days a year, etc.

We need to tell the Southeast Alaska regional story better in marketing and education

- We need to tell the story of our region and raise its profile as one that has built upon and stabilized by the seafood industry.
- Market the unique attributes of Southeast Alaska Seafood to help increase its value: from pristine waters, wild and sustainable.
- We are ocean people here in Southeast Alaska, fishery harvest has been an intrinsic part of our lifestyle and our families for generations.
- Many Alaskan politicians don't understand the direct and indirect employment and revenue that commercial fishing and the seafood industry provides, nor the challenges it needs assistance overcoming.

Workforce availability, development, and education were mentioned several times as obstacles.

- This affects different parts of ocean product industries from seasonal processing plant workers to year-round farmers.
- How do we attract workers to our smaller Southeast Alaskan communities? We need to do a better job of marketing the lifestyle, assets and advantages living in Southeast Alaska's rural community living.
- Workforce training specific to ocean products existing and emerging industries is needed.

Both federal and state regulations are an obstacle, a big challenge

- Moving through permitting process is daunting and costly.
- De-regulation would induce private investment.
- There needs to be an alignment of regulations with necessary or desired results, there is significant room for improvement.
- Work is needed to achieve and maintain a simple, flexible regulatory environment.

The regulatory environment is especially a challenge and obstacle to emerging industries and opportunities.

- ADF&G needs to find ways to allow some access to new ocean products while the research on the resource is under investigation. A better industry-public partnership is needed; it has to be a team approach.
- A dual regulatory system is needed: The needs and interest of large private seafood industry players drive the regulatory process, which creates conflicts and hardships for smaller emerging businesses and opportunities.

- We have to work with the state and federal agencies because they manage the resource, but the regulatory environment and attitude needs to be how can we facilitate, rather than how can we obstruct.
- Challenges to developing a mariculture industry are lack of access to water and leases; regulatory oversight/dual tracking; capital/startup costs are very high; and need to attract both private sector investors and individual farmers.

Ocean products businesses are diversified and as such rely upon a diversity of products. Ocean products businesses are also integrated, but could be more so. For example, the idea of creating a better hub and spoke system for catching, processing, and adding value to Southeast Alaska ocean products was mentioned. What would this look like; could this create more revenue and jobs for the region; if so how and with what investments? One idea was having cold storage/freezer capacity in Juneau, Sitka and other areas, then shipping blocks of frozen raw product or waste to these areas for thawing and processing later in the year to provide year-round processing and value-added jobs. The ocean products industry includes underutilized cultured products, underutilized wild products, full utilization of fish waste and parts, more value added opportunities, and enhanced production (which supports all of the above).

## **Ocean Products Action Initiatives**

The following pages present the ten action initiatives supported with full consensus by the Working Group for inclusion in the regional strategic plan, based on their assessment of a positive contribution toward growing and promoting the Ocean Products Cluster. Each initiative identifies a champion, or co-champions, who have committed to coordinating further work to complete the planning and carry forward the implementation in late summer or early fall.

### **The initiatives with full consensus by the Cluster Working Group at this time are:**

1. Develop a Sea Otter Management Program in Southeast Alaska
2. Establish a Marine Industry Technology and Workforce Improvement Consortium
3. Ensure Southeast's Fishing Future: Targeted Education and Training in the Acquisition and Financing of Fishing Permits, Quota and Fishery Businesses
4. Increase Wild Salmon Production Through Habitat Restoration
5. Include the Seafood Industry In USDA Programs (Regulatory Review)
6. Enhance Salmon Production
7. Study the Conversion of Southeast Alaska Fish Byproduct to Biogas and Fertilizer through Anaerobic Digestion
8. Further Develop Renewable Energy
9. Protect Long Term Assured Access To Fishery Resources For Both Current and Developing Fisheries:

- a. Erosion Of The Fisheries
  - b. Marine Spatial Planning
  - c. Protecting Long-Term Assured Access To Fishery Resources Through Research
  - d. Protecting Long Term Assured Access To Fishery Resources Through Appointment Process/Conflict Of Interest
10. Establish Region-Wide Mariculture Zoning

The initiatives which did not have full consensus of the Cluster Working Group are below:

- 10. Simpler, Flexible Regulatory Environment for Direct Market Producers And Small Floating Processors
- 11. Rural Community Permits



## Action Initiative 1: Develop a Sea Otter Management Program in Southeast Alaska

<b>Cluster Working Group:</b>	Ocean Products
<b>Champion:</b>	Phil Douherty, SARDFA (Dive Fisheries Assoc)
<b>Initiative Development Team</b>	SARDFA (Executive Director – Phil Doherty) has played a lead role in attempting to establish a SOUTHEAST AK Sea Otter Task Force. Several other organizations are also involved including Petersburg Vessels Owners Association, Southeast Alaska Fishermen's Alliance, the Central Council of Tlingit and Haida, and several towns and communities of Southeast Alaska.
<p><b>Description &amp; Motivation:</b></p> <p>Department of Fish and Game (ADF&amp;G) reintroduced 412 sea otters into Southeast Alaska: populations remained low until 1987 when a period of rapid growth with annual rates of increase documented between 15.7% and 23.3% (pg. 16 Pritchett). Recent surveys conducted by the U.S. Fish and Wildlife Service (USFWS) now indicated that the sea otter population in Southeast Alaska is approximately 20,000 animals and growing. Sea otters are efficient predators, eating almost any invertebrate they can find and catch. They must be efficient, for they need to eat the equivalent of almost 26% of their body weight every day. Sea otters can grow larger than four feet and weigh up to 90 pounds. In areas with rocky bottoms the preferred species are sea urchins, sea cucumbers and abalone. In areas with softer bottoms they eat geoduck clams and crabs. All of these species are vitally important to subsistence, personal use, and commercial harvesters in coastal Southeast Alaska.</p> <p>One of the first of the shellfish species to fall prey to the sea otter's appetite was the abalone fishery on the outer coast of Southeast Alaska. It is now obvious that sea urchins, geoduck clams, sea cucumbers, and crab are being impacted. Shrimp are also impacted to an unknown degree.</p> <p>SARDFA along with other organizations in Southeast Alaska such as the Southeast Conference, Petersburg Vessels Owners Association, Southeast Alaska Fishermen's Alliance, United Fishermen of Alaska, and various native organizations and tribes are coming together to begin a sea otter management plan in Southeast Alaska. By working with the state and federal government, all of the organizations can develop a realistic plan which will help protect the subsistence, personal use, and commercial fisheries of the people that depend on shellfish in Southeast Alaska.</p>	
<p><b>Objective:</b></p> <p>Southeast organizations have begun to form a Task Force composed of USFWS members, ADF&amp;G members, commercial fishing organizations, and Southeast Alaska native tribes and organizations to look at realistic management approaches to protect important</p>	

## Action Initiative 1: Develop a Sea Otter Management Program in Southeast Alaska

shellfish species and to allow a less restrictive harvest of sea otters by Alaskan natives. Southeast organizations are requesting the Federal and State agencies examine the impact of sea otters on the subsistence, personal use, and commercial harvest of sea cucumber, sea urchin, geoduck clam, and crab with the ultimate goal of an ecosystem-based sea otter management plan benefiting all users of shellfish resources protecting shellfish resources from depletion, and allowing effective subsistence harvest of sea otters by the Alaska Native people. Currently there are many groups interested in researching the depletion of resources by sea otters and returning the rights of Native Alaskans to sell intact sea otter pelts but there to date has not been the coordination necessary to prevent the duplication of efforts or exchange of ideas, solutions and information. The development of a task force would form a core group to coordinate efforts and provide for an exchange of information and consolidate efforts so that we work together on common initiatives.

### ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
Develop a working Task Force to develop a management plan for Southeast Alaska.	SARDFA, PVOA, SEAFSA, USFWS, ADF&G, Sitka Tribe, Tlingit/Haida Council, Sealaska, Jon Bolling, Zac Hoyt, members of towns and villages of Southeast Alaska.	A cooperative approach by all of the entities involved. Continued communication. At this time there does not seem to be a budgetary need, but one should be developed that reflects travel time.	Spring of 2011
Support clarifying the definition or changing regulation to allow the Alaska Native people the traditional right to make further use of subsistence sea otter catches.	USFWS, Sitka Tribe, Tlingit/Haida Council, Sea Alaska.		Spring of 2011

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Develop an effective sea otter management plan to allow increased subsistence take of sea otters by the Alaska Native people.	SARDFA, PVOA, SEAFSA, USFWS, ADF&G, Sitka Tribe, Tlingit/Haida Council, SeaAlaska		Spring of 2012
Support continued University of Alaska and USFWS research on Southeast Alaska sea otters.	Zac Hoyt, Doug Burn, Verena Gill, Phil Doherty, Julianne Curry, Sonny Rice.		Spring of 2011

### Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
Sea otters are protected under the Marine Mammal Protection Act (MMPA). Alaska Natives under the MMPA are denied the customary and traditional ability to sell intact sea otter pelts. By working with the Federal Government to allow the Alaska Native people the right to make further use of subsistence sea otter catches or work with the Congressional delegation to amend the MMPA to allow the sale of intact sea otter pelts, we can work towards more effective harvest. Development of an effective management plan will come by working with Federal agencies and the Task Force.	USFWS must take a lead role on this. That agency must continue to work with tribal entities in Southeast Alaska and other groups and towns that are being impacted by the growing sea otter population.



## Action Initiative 1: Develop a Sea Otter Management Program in Southeast Alaska

### Funding:

Phase:	Budget:	Funding Source:
<p>Cost would be minimal; perhaps some travel money within the region and meeting room rental. Costs would be borne by individual groups or municipalities to start with. Costs would increase due to necessary trips to Washington DC, or the use of a lobbyist to support legislation.</p>	<p>N/A</p>	

### Outcome/Results:

The first objective is to develop a SE Otter Task Force. Development of the task force with designated members would be the first measurement.

The second objective is to develop an effective management plan for increased subsistence take of sea otters by the Alaska Native people.

The third objective is to allow the Alaska Native people the right to make further use of subsistence sea otter catches. Allowing the sale of intact sea otter pelts will be the second measurement.

## Action Initiative 2: Establish a Marine Industry Technology and Workforce Improvement Consortium

<b>Cluster Working Group:</b>	Ocean Products
<b>Champion:</b>	Doug Ward, Director of Shipyard Development, Alaska Ship & Drydock, Inc. Jason Custer, City of Saxman Deborah Hayden, Grow Ketchikan
<b>Initiative Development Team:</b>	Patricia Phillips, Fisherman, Pacific Fishing, Inc.
<b>Description &amp; Motivation:</b>	
<p>Southeast Alaska's long term decline in population and school enrollments is well documented and projected to continue to at least 2034 (Alaska Dept. of Labor Research and Analysis, Economic Trends, December 2010 Population Projections: 2010 to 2034). A decline in opportunity for growth in the regions basic and priority industries has accompanied the population decline. The maritime industries sector, so far an unrecognized industry sector in Alaska, offers employment and economic development opportunities that can mitigate conditions that have produced declines in economic and employment growth.</p> <p>Alaska's marine industry sector is not recognized as an industry sector in state, regional, or local planning and resource allocation initiatives. Where subsectors of Alaska's Marine Industry Sector are tracked, some appear to have high non-resident employment rates and relatively few Alaska owned businesses. Marine and Maritime Industry Sectors cut across (cross sectors) nearly all of Alaska's industry sectors suggesting opportunities for value adding growth in existing and attracting new marine industry businesses that could located in the region. The 2009 study titled, "The role of Maritime Clusters to enhance the strength and development in European maritime sectors," by the European Commission's Directorate – General for Maritime Affairs and Fisheries and the Oceans Technology Cluster in St. John's, Newfoundland, provide starting points for assessment of Southeast Alaska's Marine Industry Sector.</p> <p>Enhancements to the efficiency and capacity of Southeast Alaska's maritime industry sector can result in net positive economic gains which are shared by the wide array of industries reliant upon marine transportation (such as forest products, ocean products, and mining businesses). Enhancements can also generate environmental and social benefits for rural communities which suffer from socioeconomic disparity and depend upon high environmental quality to support subsistence activities. Such cross-cutting benefits will support the responsible development of Alaska's economy and increase America's overall economic competitiveness.</p> <p>In addition to enhancing existing businesses activities, a healthy and capable regional Maritime Industry Cluster is vital to supporting emerging opportunities, such as development in the renewable energy, energy efficiency, Arctic shipping and intra and inter-state shipping.</p>	

## Action Initiative 2: Establish a Marine Industry Technology and Workforce Improvement Consortium

As an example, enhancing Alaska's port/harbor capacity to accommodate marine vessels operating in the region can allow rural businesses to capitalize on fuel savings and energy efficiencies associated with maritime support activities. Fuel savings also result in decreased greenhouse gas emissions, which supports the high environmental quality needed to ensure continuation of subsistence activities, which play vital economic and cultural roles in rural communities. The knowledge, skills and abilities required to operate, build, and repair marine vessels translates well to other career opportunities in all forms of energy exploration, production, transportation, ocean products, mining and other resource industry sectors.

The Ketchikan Gateway Borough's Planning Liaison Economic Development Advisory Committee Economic Development Action Plan for the Maritime Industry Sector can serve as a reference for this regional initiative.

### ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
<p>1. Map the businesses and physical assets that comprise the Southeast Alaska Maritime Industry Cluster. Develop electronic and physical platforms which maritime industry cluster members can utilize to exchange best practices, coordinate funding requests, ensure transparent flow of information, and collaborate in promotional advocacy efforts. Included in this effort would be Identification of existing and potential stakeholders for advocacy, funding, and implementation of action items. This deliverable can be used to identify gaps in regional maritime service, products, or infrastructure requirements and to prevent over capitalization or undesirable employment and opportunity relocation within the region.</p>	<p><b>Project coordination:</b> Identify long term regional program management entity with adequate resources and contacts to sustain operation for regional benefit.</p> <p>Key contact lists for the following businesses, organizations and agencies will be developed as this project progresses. Identify entities willing to provide advocacy, funding, or technical assistance.</p>	<p>1. Funding and staff to research and produce a relational cluster map delineating cluster sectors, subsectors, and businesses. See Ocean Technologies map, St. Johns, Newfoundland. Funding for mapping software, customization and data collection and input.</p>	<p>1 18 months to get through gap analysis</p>

## Action Initiative 2: Establish a Marine Industry Technology and Workforce Improvement Consortium

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
<p>2. Identify regional, state, national, and international trade, resource, or energy -</p> <ul style="list-style-type: none"> <li>a. development initiatives and opportunities in which Southeast Alaska Maritime Industries can provide value added services or products (modernization of Bering Sea Groundfish fleets through recent revisions to the American Fisheries Act is an example) and,</li> <li>b. planning and/or assessment efforts that impact Southeast Alaska Maritime Industry sector and insert value propositions for utilization of regional maritime businesses and assets.</li> </ul> <p>3. Using the Southeast Alaska Marine Industry Cluster as the driver for new investment, create a marine and maritime infrastructure plan that would leverage public investment, public and private investments with effective private partnerships to accelerate expansion of Southeast Alaska ports, harbors, marine vessels and industrial support capacity to increase regional participation in development of Alaska's resource and energy</p>	<p><b>Advocacy:</b></p> <p><b>Local:</b> Marine businesses, Chambers of Commerce and economic and workforce development institutions, School Boards, Universities, Technical Centers, tribal governments, and municipalities.</p> <p><b>Regional:</b> Marine businesses, economic and workforce development organizations (SE Conference, Central Council of the Tlingit and Haida Indian Tribes of Alaska (Central Council)), University and Technical centers, and foundation funders.</p> <p><b>State:</b> Marine businesses, trade and business organizations, Governor's Office and regional legislators, state Chambers of Commerce and Economic and Workforce Development</p>	<p>2. Funding for staff to interview marine businesses and agencies to identify initiatives, opportunities, or assessments to be analyzed and develop SE Regional input where appropriate.</p> <p>3. Funding for staff to collect project information from local, regional, and state sources and test drive scoring system from Task 5.</p>	<p>2. 3 months</p> <p>3. 6 months</p>

## Action Initiative 2: Establish a Marine Industry Technology and Workforce Improvement Consortium

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
<p>projects. See Task 5 for development of criteria.</p> <p>4. Workforce Investment System - Pilot a regional, industry led collaborative funding partnership around the Marine Industry Sector using the National Fund for Workforce Solutions (NFWS) model for linking Economic and Workforce Development initiatives. Develop performance measures in economic and workforce development that are related to increased productivity, competitiveness, prosperity, and competence for new human and physical investments.</p> <p>The five strategic approaches guide how the NFWS sites develop their regional approach:</p> <ul style="list-style-type: none"> <li>a. Create regional funding collaboratives:</li> <li>b. Organize workforce partnerships:</li> <li>c. Develop strategies for specific industry sectors:</li> <li>d. Build career pathways:</li> <li>e. Align local workforce programs:</li> </ul> <p>This pilot project could be incorporated in the Alaska Workforce Investment Boards (AWIBS) role to advise</p>	<p>Organizations, Alaska Native Corporations, and foundation funders.</p> <p><b>National:</b> Marine, resource, or energy business operating in Alaska, Alaska Congressional Delegation, economic and workforce development organizations, trade and business organizations, federal funding agencies concerned with economic and workforce development and marine and maritime issues, foundation funders and other regional examples of best practices for cultivating regional industry clusters focusing on maritime.</p> <p><b>International:</b> International businesses with a maritime component and working in Alaska's resource or energy industry sectors, Universities and</p>	<p>4. Funding for staff to support a regional conference with representatives of National Fund for Workforce Development (NFWD). Travel and expenses for NFWD staff. Set up effective video conferencing for region.</p>	<p>4. 2 months for conference followed by 2 months for recommendations to regional economic development organizations and AWIB</p>

## Action Initiative 2: Establish a Marine Industry Technology and Workforce Improvement Consortium

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
<p>the Governor on regional workforce investments.</p> <p>5. Incorporate the findings, outcomes, and products of this initiative to support creation of a statewide Maritime Policy.</p> <p>Develop rational criteria for investment and policy decisions based on guidelines that support competitiveness and attraction of new investment as priority goals.</p>	<p>other maritime regions that have developed best practices for marine or related industry cluster development.</p>	<p>5. Funding for staff research and develop regional criteria for project and policy selection and implementation</p>	<p>5. 2 months early in project and 2 month to develop policy after test driving Tasks 1-4.</p>

### Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
<p>Obstacle: Marine Industry Sector is not defined in Alaska.</p>	<p>This initiative will identify the existing Marine Industry Cluster in Southeast Alaska.</p>
<p>Obstacle: Southeast Alaska marine industry vendor and</p>	<p>An effective marine industry development strategy that will link</p>

## Action Initiative 2: Establish a Marine Industry Technology and Workforce Improvement Consortium

STEP:	Help needed:
subcontractor base has contracted over the last 15 years of regional economic decline as has population and school enrollment.	existing marine enterprises and new marine investments with effective workforce investment system programs that will lead to a stable, globally competitive workforce producing marine services and products.  Regional available facilities and businesses.
Obstacle: Municipal, State, and Federal procurement rules and policies often do not provide competitive advantage for SE Alaska's regional marine industries.	Evaluate and implement municipal and state HUB Zone contracting programs.
Obstacle: Legislative and local government do not understand value of maritime industry sector investments.	Education of and eventual advocacy from the listed entities in column 2 will lead to more effective strategic funding decisions.
Increase public / government awareness of the cross-cutting role the maritime industry cluster plays in Alaska's economy.	Develop and publicize industry sector map.
Reduce redundancies in planning efforts and overcapitalization of marine industry infrastructure.	Develop policies and criteria to make policy and project selections and recommendations.

### Funding:

Phase:	Budget:	Funding Source:
Task 1 - Asset Mapping & Gap Analysis	\$200,000	Federal or State programmatic or appropriations; seek local, foundation or industry match.
Task 2 – Identify opportunities and policy/ planning efforts impacting the regional maritime industries. Post on interactive website.	\$75,000	Federal or State programmatic or appropriations; seek local, foundation or industry match.
Task 3 – Identify projects and programs to accelerate expansion of regional maritime industries – test drive criteria.	\$50,000	Federal or State programmatic or appropriations; seek local, foundation or industry match.



## Action Initiative 2: Establish a Marine Industry Technology and Workforce Improvement Consortium

Phase:	Budget:	Funding Source:
Task 4 – Regional workforce investment system supporting maritime industries; could include other industry sector.	\$125,000	Federal or State programmatic or appropriations; seek local, foundation or industry match.
Task 5 – Recommendations and advocacy for State of Alaska Maritime Policy – selection criteria	\$30,000	State, Local, tribal governments, local businesses industry match in training, Foundations.

## Action Initiative 2: Establish a Marine Industry Technology and Workforce Improvement Consortium

### Outcome/Results:

Task 1 – Availability of an interactive Industry Sector map identifying regional service and product providers with gap analysis leading to new investment opportunities.

Task 2 – Availability of a public access document center identifying development opportunities and policy or planning initiatives that impact the regional maritime industries.

Task 3 – Inventory of regional needs for expansion and improvement of regional maritime industry.

Task 4 – Pilot a regional workforce development system supporting the maritime industries and develop recommendations for economic and workforce development stakeholders (AWIB).

Task 5 – Develop guidelines and criteria for selection of infrastructure, product, service, policy, or planning initiatives and recommendations for a statewide maritime policy.

### Action Initiative 3: Ensure Southeast's Fishing Future: Targeted Education and Training in the Acquisition and Financing of Fishing Permits, Quota and Fishery Businesses

<b>Cluster Working Group:</b>	Ocean Products
<b>Champion:</b>	Casey Campbell, Business Relationship Manager, Wells Fargo
<b>Initiative Development Team:</b>	<p>Bruce Wallace, Seiner, UFA, Silver Bay, ASMI</p> <p>Galen Tromble, Chief, Alaska Region Sustainable Fisheries, National Marine Fisheries Service</p> <p>Keith Criddle, Fisheries Division Director, SFOS UAF</p> <p>Kathy Hansen, Fisherman, Southeast Alaska Fishermen's Alliance</p> <p>Jim Seeland, Assistant Professor of Fisheries Technologies, University of Alaska Southeast</p> <p>Kate Sullivan, Program Director, Fisheries Technologies, University of Alaska Southeast</p>

**Description & Motivation:**

The issue is known as the "graying of the fleet". As boat/permit owners (fish business owners) age and seek retirement, we see these businesses purchased by non-locals and the businesses leave the community. As a result, the economic base of our communities is eroding and this brings instability.

Each fishing business that is purchased and relocated outside of our community has a negative impact on the entire community through the loss of jobs, revenue from fish delivered and processed, local taxes, goods purchased, population, etc. These impacts can also extend regionally depending on the type of business and where it is relocated.

**Objective:**

The objective is to develop the awareness and capability of the local population to capitalize on economic opportunities within their communities. The industry has transformed over the years in both equipment and property rights. The next generation of business owners needs a new skill set to compete. They need to be innovative in structuring business deals, and proficient in financing to purchase these businesses.

This initiative will provide residents with the necessary skills to acquire and operate successful businesses in the region. If this initiative is successful, local ownership of the businesses associated with the Ocean Products CWG will at a minimum be stable and hopefully

### Action Initiative 3: Ensure Southeast's Fishing Future: Targeted Education and Training in the Acquisition and Financing of Fishing Permits, Quota and Fishery Businesses

increase.

Develop education program to teach future business owners how to participate and invest in opportunities. Work with existing business owners to increase partnerships and joint ventures. Teach interested individuals how to finance business acquisitions.

The long-term benefits will increase the local share of the revenue generated by these businesses. Those revenues will circulate throughout the economy more as residents spend income throughout the year on various local goods and services. As the economic multiplier increases, local wealth will increase as well.

Another long-term benefit will result from the invested interest residents have in the success of the community and region in which they live. Local ownership deepens the relationship between business and community.

#### ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
1. Identify knowledge gaps			On-going
2. Develop targeted training to address 1. with the business community.	JEDC, UAF-MAP (Paula Cullenberg, Sunny Rice), UAS (Steve Krause, Kate Sullivan), Cooperative Extension (Fred Schlutt), Alaska Council for Economic Education	Salary and operating budget for MAP or Coop Ext agent to offer classes in SE and to work with High Schools to implement business/finance curriculum or after-school programs	On-going

### Action Initiative 3: Ensure Southeast's Fishing Future: Targeted Education and Training in the Acquisition and Financing of Fishing Permits, Quota and Fishery Businesses

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
3. Implement education/training programs within the school systems. Also consider afterschool programs such as DECA.	UAS Fisheries Technology Program (Kate Sullivan, Jim Seeland)	Some instructional resources already exist but they need to be put together and promoted. Add one faculty/fisheries professional to UAS Fish Tech Program	On-going
4. Publicize training and education programs.	UAS Fisheries Technology Program (Kate Sullivan, Jim Seeland), MAP	Contained in #1,2 above	On-going
5. Institute a public awareness campaign on the benefits of keeping businesses locally owned and the need to support these businesses. (Whether they are fishery related or not)	UAS Fisheries Technology Program/MAP	Contained in #1,2 above	On-going

#### Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
Getting young people to accept fishing as a career choice and to see it as a business venture.	<i>(They need exposure to our industry and encouragement.)</i> Need to invest some time, get into classrooms and also gets students out of the classroom setting and in contact with industry professionals. Develop clear pathways for them and provide constant support.
State and federal labor laws prevent kids under 18 from working around machinery, knives, and driving boats.	<i>(This is an obstacle to exposing young people to our industry.)</i> Make it clear what can and can't be done within the industry – more education and outreach, working with industry.
The acceptance of the initiatives programs as they relate to	<i>(Get acceptance by the School Board to include in curriculum;</i>

### Action Initiative 3: Ensure Southeast's Fishing Future: Targeted Education and Training in the Acquisition and Financing of Fishing Permits, Quota and Fishery Businesses

STEP:	Help needed:
<p>traditional education might be an obstacle. It is expected that education will take place in middle schools and high schools to encourage students to seek opportunity located within their region and to give them basic business skills to allow them to succeed.</p>	<p><i>consider after school program like DECA to promote business skills</i>). This kind of work is already being done on various levels through the UAS school of Career Education. We can build on what is in place by increasing staff, providing some travel funding (for both students to visit sites and also for personnel to visit students). Again, clear pathways to achieve goals are imperative.</p>
<p>How do we get folks to attend training/education when it is provided?</p>	<p>Provide some funding to get them to attend. Travel even from Juneau to Ketchikan for instance can be expensive. At least some form of supplemental funding for travel will need to be provided. Also need to be mindful of the seasonality for meetings to assure constituency is able to access meetings.</p>
<p>Another obstacle will be with current and future business owners and their willingness to participate in programs developed by the initiative. The success will depend heavily on the willingness of current business owners to teach and provide opportunity.</p>	<p>One of the first steps is to poll the industry and find out how much support there is and what they would like to see as a result. We have found tremendous support by industry to support programs which encourage secondary schools to get involved in AK's fisheries.</p>
<p>Need to convince people there is value/ benefit to selling their business to someone local and keeping the business in town rather than just selling to anyone who has the money first.</p>	<p><i>(Can someone act as a "bridge" to putting local sellers together with local buyers?)</i> Do we know what the impact is? Are there economic studies done that indicate a trend here (McDowell, for instance)? If not, this needs to be compiled and is a good starting point.</p>
<p>Long-term funding may also be an obstacle as many education programs (including Marine Advisory Program, MAP) are competing for limited funding. Many small businesses do not have the spare funds to invest in a program. The transition for businesses takes time and will require a steady effort which requires a long-term approach.</p>	<p>A possible funding source for secondary school outreach programs is the Carl Perkins Fund. UAS Fish Tech Program is using a 3 year grant to create "career pathways" for instance. These grants are competitive but bridging secondary school to careers in fisheries is very consistent with the objectives of this grant source. Industry very likely would be willing to support this initiative as well – avoiding government funded grants altogether.</p>

### Action Initiative 3: Ensure Southeast's Fishing Future: Targeted Education and Training in the Acquisition and Financing of Fishing Permits, Quota and Fishery Businesses

**STEP:** **Help needed:**

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Long term access to the resource is a huge concern for those looking to make a major investment in the fisheries. Lots of volatility hinders investment.

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**Funding:**

Phase:	Budget:	Funding Source:
Extension/MAP specialist w/ operating budget for travel and program development	\$150,000/yr	
Support for HS teachers for DECA or CEE after-school programs in SE communities	\$20,000/yr/community	
Add one position to UAS Fisheries Technology program – either faculty of fisheries professional. Create a travel fund to facilitate participation	\$75,000/yr	USDA or perhaps Perkins Grant
	\$20,000/yr	USDA?

**Outcome/Results:**

When business ownership stays with community or regional residents instead of being sold to outside owners.

When businesses which were once owned by non-residents are now owned by residents.

High school students graduate with good business skills and a sense for career path.

A well-defined annual evaluation should be established at the outset to assure goals are being met. Group should meet on a scheduled basis (semi-annual? Annual?) to assure funds are being spent efficiently and tasks are effective.



### Action Initiative 4: Increase Wild Salmon Production through Habitat Restoration

<b>Cluster Working Group:</b>	Ocean Products
<b>Champion:</b>	Chris Knight, Executive Director, United Southeast Alaska Gillnetter's Association Don Martin, U.S. Forest Service
<b>Initiative Development Team:</b>	Kathy Hansen, Fisherman, Southeast Alaska Fishermen's Alliance Steve Reifentuhl, General Manager, Northern Southeast Regional

**Description & Motivation:**

Past management activities have resulted in negative impacts to salmon habitat. By performing restoration activities, wild salmon production can be improved. Increased salmon production results in increased opportunity for commercial, sport, and subsistence harvest.

**Objective:**

1. Repair and improve salmon habitat through restoration activities.
2. Increase the number of productive salmon streams from existing salmon systems that are low producing or non-producing due to damage caused by past management activities or natural blocks.
3. Increase the number of jobs directly and indirectly stemming from wild salmon production for all sectors for salmon industries in SE Alaska.
4. Temporarily increase the number of jobs for salmon restoration efforts 5 annually, and 20-30 seasonally.
5. Increase the economic output of the SE region from wild salmon harvests for all sectors of the fishing industry. Increase the number of processing jobs in the region. Increase the number of jobs directly and indirectly relating to salmon harvests in SE Alaska while raising the overall value of the resource for all users.

## Action Initiative 4: Increase Wild Salmon Production through Habitat Restoration

### ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
1. Identify current wild salmon systems in need of habitat restoration on state, federal and native lands.	USFS, ADFG, and local user groups, Native Tribes	Project coordinator with USFS, and Native Tribe. Teleconferencing system, GIS mapping(contract)	6months –one year.
2. Fund contractually teams to work with ADFG, Native Land Managers, and USFS to rehabilitate wild salmon systems.	USFS, Native Lands, ADFG-contractual entities to do restoration	Funding for restoration	2-10 years depending on number of systems identified for restoration
3. Monitor the success of projects. Some systems may require back-planting quicken stock recovery.	USFS, ADFG, Native Land Managers, local hatcheries	Funding for wild salmon production	1-10 years depending upon species.
4. Future monitoring after restoration and back planting has occurred to maintain baseline data for future salmon production.	USFS-1 person, two to three seasonal staff.	Monitoring, assessment and counting of wild salmon production on restoration systems	5 years

## Action Initiative 4: Increase Wild Salmon Production through Habitat Restoration

### Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
Funding from USFS and other programs to complete restoration activities.	USFS, and Native Land managers secure more funding for restoration activities.
	ADFG interaction
	Participation by local user groups

### Funding:

Phase:	Budget:	Funding Source:
Phase 1-Identify systems in SE in need of restoration	\$100,000	USFS
Phase 2-Contract out and project coordinate	\$4-20 million	USFS
Phase 3-backplanting of salmon	\$1 million	USFS
Phase 4-monitoring and assessment	\$400,000	USFS

### Outcome/Results:

Systems are producing wild salmon. Monitoring that shows fish from restored systems are being caught in existing fisheries adding to and increasing the number of jobs and economic output of the region.

### Action Initiative 5: Include the Seafood Industry in USDA Programs (Regulatory Review)

<b>Cluster Working Group:</b>	Ocean Products
<b>Champion:</b>	Julie Decker, UFA: National Seafood Marketing Coalition
<b>Initiative Development Team:</b>	Julianne Curry, Fisherman, Petersburg Vessel Owner Assoc. Patricia Phillips, Fisherman, Pacific Fishing Inc.

**Description & Motivation:**

The USDA FY11 budget is \$149 billion, up from FY08's budget of \$93 billion. However, the U.S. seafood industry is not included in many USDA programs which help support other food producers in the U.S. Even when the industry is technically included, many times there are still bureaucratic roadblocks (e.g. regulatory definitions) which prevent the industry from utilizing the programs. However, the U.S. seafood industry still competes with these other food producers in the marketplace which has severely hampered the seafood industry from making the investments and improvements necessary to compete with the rest of the U.S. food producers.

**Objective:**

The objective is to change the regulatory definitions of fish, farm, farmer, rancher, livestock, agricultural operation, and co-producers (and any other regulations identified in the process) in order to include (rather than exclude) the seafood industry in USDA programs. These are changes that could be made administratively, thus not requiring Congressional action. This would benefit those directly involved in the industry (commercial fishermen, hatcheries, shellfish farmers, and processors) as well as those indirectly involved (suppliers, support sectors, local communities). The benefits would be felt in Southeast Alaska and across the nation primarily in coastal areas. These changes would allow access to all USDA programs such as FSA operating loans, beginning farmers/ranchers (to address "graying of the fleet"), specialty crops, insurance, organic, food security, disaster assistance, etc. Access to these programs would: 1) help stabilize some of the natural volatility of the industry, 2) help the industry compete on a level playing field with other U.S. food producers, 3) help the industry invest in improvements which will yield tangible economic benefits, 4) help stabilize coastal communities.

**Economic Benefits:**

The economic impacts of the seafood industry are listed below:

<u>Sector</u>	<u>Sales Impacts</u>	<u>Income Impacts</u>	<u>Job Impacts</u>
<b>U.S. Seafood Industry (2008)*</b>	<b>\$104,034,970,000</b>	<b>\$44,943,002,000</b>	<b>1,488,880</b>

## Action Initiative 5: Include the Seafood Industry in USDA Programs (Regulatory Review)

<b>Alaska Seafood Industry (2007)**</b>	<b>\$3,600,000,000</b>	<b>\$2,200,000,000</b>	<b>78,519</b>
<b>Southeast AK Seafood Industry (2007)**</b>	<b>\$400,000,000</b>	<b>\$200,000,000</b>	<b>13,000</b>

The benefits of these regulatory changes would be felt nationally, statewide, and within the Southeast Region. In Southeast Alaska, the seafood industry accounts for approximately 13% of jobs, compared with construction (3.9%), logging (1.7%), mining (1.0%), and oil/gas (0.1%)†, making it a significant economic driver in the region.

Although projecting numerical economic benefits as a result of these changes is difficult, areas of potential can be identified. For instance, these changes are likely to encourage investment in areas which increase utilization of harvested resources, increase efficiency of production, increase the development of new products, and increase production of farmed and enhanced species. These investments would likely contribute to extracting more value for these resources, which will further trigger additional investment in upgrades, safety, and support services.

Taken in collaboration with additional strategic infrastructure investment in the region by USDA Rural Development (e.g. cold storages, refrigerated transportation hubs, marine repair facilities, job training, shellfish hatcheries/nurseries, etc.), these regulatory changes could significantly increase the economic impacts from the seafood industry and the numbers of jobs related to the industry.

\*NOAA, *Fisheries Economics of the U.S.*, 2008, April 2010.

\*\*Northern Economics, *The Seafood Industry in Alaska's Economy*, January 2009.

†TCW Economics, *Economic Contributions and Impacts of Salmonid Resources in Southeast Alaska*, January 2011.

## Action Initiative 5: Include the Seafood Industry in USDA Programs (Regulatory Review)

### ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
6. Form stakeholder working group to conduct USDA regulatory review	Reps from: USDA agencies (FSA, FAS, RD, etc.), seafood industry (UFA, ASGA, hatcheries, processors, JEDC/SEC, Gov Office)	Teleconference, or meeting space & travel expenses	1 month
2. Complete exhaustive delineation of USDA regulations and programs, identifying areas where the seafood industry is currently excluded and potential regulatory fixes.	Either USDA designates a staff person or a hire a contractor	USDA staff, or \$25,000 to hire contractor	3 months
3. Report back to stakeholder working group on results of Step 2; discuss potential regulatory fixes; agree on package of regulatory fixes to put forward to Secretary of USDA.	Stakeholder working group from Step 1	Teleconference, or meeting space & travel expenses (minimum 2 meetings)	3 months
7. Complete internal USDA process required to change regulations	USDA staff	USDA staff, political will/desire to make the changes	3 months?

#### Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
Step 1: USDA needs convincing this is a significant problem with a solution that is beneficial.	Need help articulating the problem (providing adequate support documentation).
Step 4: USDA needs the political will/desire to accomplish this. There could be push-back from the farm lobby which may view it as a threat or dilution to their programs.	Need to provide political support from those affected through letters of support to both Secretary of USDA and Congressional Offices.

## Action Initiative 5: Include the Seafood Industry in USDA Programs (Regulatory Review)

### Funding:

Phase:	Budget:	Funding Source:
Stakeholder workgroup meetings/travel	\$25,000	USDA
Regulatory review by contractor or USDA	\$25,000	USDA
Regulation drafting by USDA	USDA staff	USDA

### Outcome/Results:

SHORT-TERM: Are more USDA programs available to the US seafood industry?

- # of newly available programs
- potential value (\$) of programs now available to seafood industry
- # of seafood industry participants utilizing the newly available programs

LONG-TERM: Have the economics of the seafood industry been positively impacted over time?

- \$ value of sales impacts, \$ value of income impacts, # of jobs
- # of product forms produced

## Action Initiative 6: Enhance Salmon Production

<b>Cluster Working Group:</b>	Ocean Products
<b>Champion:</b>	Steve Reifentstahl, General Manager, Northern Southeast Regional

<b>Initiative Development Team:</b>	<p>Kathy Hansen, Fisherman, Southeast Alaska Fishermen's Alliance</p> <p>Bart Watson, Business Manager, Armstrong-Keta, Inc.</p> <p>Chris Knight, Executive Director, United Southeast Alaska Gillnetter's Association</p> <p>John Burke, SSRAA, ADF&amp;G State Fishery Scientist PNP Section Chief.</p> <p>Additional people that should be brought in are Alex Wertheimer, retired NMFS scientist; Jeff Hard NMFS geneticist, &amp; a University of Alaska fisheries scientist; John Garner, Trident Seafoods.</p>
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### Description & Motivation:

The market demand for salmon is strong and growing. Japan has large chum production facilities (~2 billion fry) and Russia has large natural pink production but is also building large hatchery facilities to boost production. This combination leaves Alaska potentially in third place as a producer of chum and pink salmon. In order to increase market share new Alaska production is necessary to stay competitive. Second, southeast Alaska's communities depend on fish resources for stability and growth; hatchery production of salmon is a major economic engine in these communities.

In Southeast Alaska where communities are shrinking in population and per capita earning power, salmon enhancement is a proven and readily available strategy that can improve the economic environment, which is critical to reversing the current trend.

### Objective:

The objective of the initiative is to improve the economy of Southeast fishermen and the communities in which they live.

To lay the groundwork for additional permitted chum, pink, or sockeye salmon production on the order of 200 million eggs/fry using existing facilities where feasible and/or constructing new facilities where necessary. The benefits would begin with construction of a \$10 to



## Action Initiative 6: Enhance Salmon Production

\$15 million facility or perhaps two. Most importantly, when returns reach full production potential in approximately 8 to 10 years the first wholesale value would be \$40,000,000 per year. First wholesale value would show benefits to fishermen, processors, and workers, but significant benefits accrue in transportation, fuel, goods and services (see McDowell report for NSRAA, SSRAA, DIPAC combined). Based on McDowell's 2009 NSRAA economic report, total job equivalents for direct and indirect impacts a program of this size would provide 700 to 800 jobs in all sectors combined. Additional tax benefits are realized by state and local governments.

A second objective is to define new sockeye production opportunities whether hatchery or lake based.

### ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
8. Work with ADF&G on two fronts: Commissioner on policy side of issue and biological/management/science staff regarding research, monitoring, & evaluation.	Steve Reifentstahl John Burke All enhancement groups ADF&G staff	ADF&G, NSRAA, SSRAA,	One to ten years. This will be a long term effort.
2. Design research program that attempts to answer genetic questions regarding fitness of F1 & F2 generation hatchery/wild crosses. Design monitoring program and/or continue existing monitoring program to document straying of chum salmon in southeast Alaska. Research should include addressing meta-population concept for chum.	ADFG Eric Volk & staff NMFS Geneticist Jeff Hard John Burke & Steve Reifentstahl	ADF&G, NSRAA, SSRAA, NMFS, other	One to ten years. This will be a long term effort.
3. If solutions can be found in the policy arena expand production at current and new facilities	NSRAA, SSRAA, DIPAC	Organizations will fund	One to ten years. This will be a long term effort.
4. Even if solutions can be found at policy level continue research as in #2 above. These fundamental	NSRAA, SSRAA, DIPAC, ADF&G,		One to ten years. This will be a long

## Action Initiative 6: Enhance Salmon Production

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
questions need to be understood better in the science community.			term effort.
5. Find funding for research.	NSRAA, SSRAA, DIPAC, ADF&G, NMFS, University of Alaska	\$1,000,000	One to ten years. This will be a long term effort.
6. As research and monitoring supply answers, ramp up production.	NSRAA, SSRAA, DIPAC	\$10,000,000 to \$20,000,000	One to ten years. This will be a long term effort.
7. USFS needs to provide clear guidelines that reflect ANILCA Title 13 law for wilderness area enhancement activities and also new Roadless Rule areas. LUD II cannot be equal or more restrictive than Alaska Wilderness. Currently inconsistent USFS policy guidelines discourage enhancement activities whether on or near Alaska Wilderness or LUD II or Roadless Rule areas.	Chris Knight, Steve Reifensstuhl, Kathy Hansen, USFS Forest Supervisor	Organizations in-kind	One to two years

## Action Initiative 6: Enhance Salmon Production

### Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
<p>Primary obstacle is ADF&amp;G permitting of new facilities and new production.</p>	<p>Biological concerns regarding straying and genetic impact ( a red herring) need to be addressed through research and education.</p> <p>Obstacles can be overcome by good science, government leadership, and favorable research results. Therefore there are two prongs in this effort: government policy and research programs that focus on genetic effects.</p> <p>Policy needs to be addressed through the governor's office, commissioner of ADF&amp;G, legislature, Board of Fish, public relations, and education.</p> <p>Research needs to be addressed through the scientific community within ADF&amp;G, University of Alaska, National Marine Fisheries and the aquaculture associations.</p>
<p>Another obstacle of primary importance is access to land and sites. Although ANILCA has specific section enabling enhancement and hatchery construction (TITLE 13 Section 1315 Wilderness) in Alaska wilderness areas, it has been nearly impossible to get sites permitted. Similarly the 'Roadless Rule' seems to have the hallmarks of no entry. Some conservation groups threaten to sue if projects are proposed in areas with these land designations.</p>	<p>USFS needs to develop policies that fit the law (TITLE 13 Section 1315 Wilderness) rather than allow personal interpretation in each district office dictate policy.</p>
<p>USFS project permitting has been an obstacle in some cases. This takes several forms – special use permitting in wilderness and also LUD II is turned down because project is not 'aesthetically pleasing'. In one case a '60-day' USFS permitting process extended to a year and a half and was then denied for aesthetics. We need a consistent and clear policy from the USFS for permitting and land uses that are in sync with the law. Enhancement can only be done in habitats where very specific biological parameters exist and in</p>	<p>USFS recognition that ANILCA and LUD II land designations provide for enhancement and policies need to synchronize with the law. Much of the planning for fisheries development on the Tongass occurs at the Regional Planning Team, a group of ADFG and regional association biologists, and fishermen. The RPT has a Comprehensive Salmon Plan which the USFS participated in at one time. The wildlife and fisheries program manager from the USFS Petersburg office held an ex-officio seat on the RPT for many years.</p>

## Action Initiative 6: Enhance Salmon Production

<b>STEP:</b>	<b>Help needed:</b>
some cases that opportunity may only occur in LUD I or II areas.	Therefore during those years communication was much better with the USFS; this should be resurrected by the USFS.

<b>Funding:</b>		
<b>Phase:</b>	<b>Budget:</b>	<b>Funding Source:</b>
Planning-this has begun both within ADF&G and in partnership with ADF&G.		Costs are being borne by agencies in-kind.
Implementation – genetic studies will take a decade or more and will cost in the high hundreds of thousands. Straying studies are ongoing and will become part of ADF&G's operating budget and cost between \$50,000 and \$100,000 annually. Straying studies will become part of the cost of new production for enhancement organizations, and therefore will raise the cost of production. Additional cost is likely to be in the tens of thousands per program.		Sources of funding beyond ADF&G and enhancement organizations are NPRB, NMFS, congressional, other granting organizations

<b>Outcome/Results:</b>
Measurement is straight forward: an increase in salmon egg permitted capacity on the ADF&G books will demonstrate success. Production of eggs/fry is the measure, but true success is the number of adults that return and are caught by fishermen, processed in local plants, and shipped all over the world.

## Action Initiative 7: Study the Conversion of Southeast Alaska Fish Byproduct to Biogas and Fertilizer through Anaerobic Digestion

<b>Cluster Working Group:</b>	Ocean Products
<b>Champion:</b>	Heather Hardcastle, Fisherman; Fishermen's Daughters Ecofuels & Trout Unlimited Alaska Program

<b>Initiative Development Team</b>	Len Peterson, Fisherman; Taku River Reds; Garry White, Executive Director, Sitka Economic Development Association
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<p><b>Description &amp; Motivation:</b></p> <p>Fish byproduct is a liability for most seafood processors because of the costs and regulations involved with the storage and disposal of significant amounts of offal (byproduct can total up to 50% of incoming seafood weight). Additionally, the regulation of fish byproduct discharge by Alaska Department of Environmental Conservation (ADEC), Alaska Department of Transportation (ADOT) and the Federal Aviation Administration (FAA) may become more costly and restrictive now that ADEC (and not the EPA) has primacy over seafood discharge in state waters. The current requirement for processors to grind byproduct to less than 0.5" and dump this waste offshore may no longer be allowed in the near future.</p> <p>The utilization of fish byproduct would not only help processors to be compliant with seafood discharge regulations and to potentially lower or eliminate costs associated with this discharge. Fish byproduct utilization also presents a tremendous market opportunity in Southeast Alaska because an estimated 60 million pounds of salmon byproduct alone are annually generated by seafood processors and hatcheries in the region. In order to capitalize on this largely unrealized market opportunity, however, firms need to fully understand and contend with the composition, quantity, seasonality, locations and chemical nature (stabilization requirements) of this byproduct.</p> <p>Alaska Protein Recovery (APR) is one firm that has been able to realize the value of fish byproduct by converting salmon offal to food-grade oil and hydrolyzed salmon protein concentrate aboard a processing vessel that's stationary for the summer season (Ketchikan). Additionally, beginning in 2012, several processors in Sitka, Petersburg and Excursion Inlet plan to pool their fish byproduct at a Sitka shore-based plant and convert this byproduct to fishmeal, food-grade oil and sulfate-rich chondroitin gelatin with technology developed by Sitka, Meal, Oil and Gelatin (SMOG). Both the APR and SMOG efforts involve large volumes of fish</p>
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## Action Initiative 7: Study the Conversion of Southeast Alaska Fish Byproduct to Biogas and Fertilizer through Anaerobic Digestion

byproduct in fairly centralized locations (although some byproduct is transported by vessel to the processing facilities). The focus of this Action Initiative, however, is on investigating how relatively small (or large) volumes of fish byproduct in *isolated* locations can be utilized cost-effectively so that byproduct doesn't necessarily have to be stored and transported to centralized processing facilities in order to be utilized.

Heather (Peterson) Hardcastle and Kirsten (Shelton) Walker of Taku Renewable Resources, Inc. (DBA: Fishermen's Daughters Ecofuels) completed an Alaska Energy Authority-funded study in 2010 that assessed the feasibility of converting Juneau Area commercial fisheries byproduct into biodiesel (in the study, "Juneau Area" included seafood processors and hatcheries within the City and Borough of Juneau (CBJ), as well as Ocean Beauty's Excursion Inlet facility). The team ultimately concluded that biodiesel production from local fish byproduct is not feasible for the following reasons: (1) High Economic/Energetic Cost: Economic and energetic cost to collect, transport, stabilize, store and process fish byproduct is more than the economic and energetic benefit of final biodiesel product; (2) Low Volume: When biodiesel production from only CBJ fish byproduct was analyzed separately from Excursion Inlet fish byproduct, CBJ biodiesel production was wildly cost-prohibitive because of the relatively low volume of fish byproduct generated by processors in this centralized location. The team calculated that biodiesel production from only Excursion Inlet fish byproduct could be economically and energetically feasible. However, the team also concluded that biodiesel production alone is not the best use of the byproduct because it doesn't appear to be a hugely profitable venture, even given the relatively large volume of byproduct generated at the Ocean Beauty facility. Two additional issues also became apparent: (3) Disposal of Non-oily Byproduct: Biodiesel is produced through a transesterification process with only the oil that is extracted from byproduct through high-heat rendering or ensiling (acidification); thus, once the oil is removed from the byproduct, one still needs to further process or dispose of the rest of the byproduct *without* oil (water, protein and ash/bone); (4) Failure to Meet ASTM Standard: Salmon oil is not an ideal biodiesel feedstock because the long Omega-3 and Omega-6 fatty acid chains lead to a high carbon residue value in final fuel testing. Because the team found the carbon residue value of salmon oil-based biodiesel is 13-20 times higher than ASTM requirements, this fuel does not meet the official biodiesel standard, ASTM D6751. Thus, this fuel product does not qualify the biodiesel producer for a critical \$1/gal. federal tax credit.

The following are additional conclusions of the Fishermen's Daughters Ecofuels' (FDE) study that inform future fish byproduct utilization work in Southeast Alaska, including the Action Initiative proposed here:

**BYPRODUCT COMPOSITION:** Between 75-100% of the byproduct generated by Southeast Alaska processors is salmon. At most processing facilities, waste of all fish species (and all body parts) are mixed together and not separated.

**BYPRODUCT QUANTITY:** Up to 50% of incoming seafood weight is discharged byproduct, and amount and type of byproduct (i.e. heads/skins/frames/viscera vs. heads/viscera only) varies with incoming quantity and type of final product produced (i.e. fillets vs.

## Action Initiative 7: Study the Conversion of Southeast Alaska Fish Byproduct to Biogas and Fertilizer through Anaerobic Digestion

H&G fish).

**BYPRODUCT SEASONALITY:** Because the majority of byproduct is salmon, the vast majority of byproduct is generated at processing facilities in June, July and August.

**BYPRODUCT STABILIZATION:** To control enzymatic and microbial decomposition of fish offal (and resulting unpleasant odors), it is critical to stabilize fish byproduct within 30 hours of seafood processing and the byproduct generation. The two most common stabilization methods are high heat rendering ("wet reduction") and ensiling ("acidification"). The high heat rendering of byproduct involves heating the offal to >160-180° for at least twenty minutes to break down the cellular structure of the byproduct. The heated slurry is then separated into high quality, clarified oil, fishmeal ("press cake" that is largely protein) and stick water. Because of high capital and operating costs, high heat rendering is the chosen stabilization method for large amounts of byproduct (more than 50,000 pounds per day).

Ensiling involves the addition of a strong acid (usually the strong antimicrobial agent, formic acid) to the byproduct to counter bacterial production and to drive down the pH of the fish offal. At an ideal pH of 3.5-4.0, proteins become soluble enough that the byproduct autolyzes without spoiling. Within a week, proteins and bone sink to the bottom of the mixing tank and oil rises to the surface. This acidified waste, or "silage," can be stored at room temperature for up to three months prior to further processing. Ensiling can also be a means to extract the majority of lower quality, unclarified oil from byproduct prior to processing the liquid silage into compost, or using the silage as a liquid fertilizer. Ensiling for the purpose of storage or rudimentary oil collection requires the addition of formic acid at a concentration of at least 3%. Ensiling, the stabilization method of choice for smaller amounts of byproduct (usually much less than 50,000 pounds per day), is not currently employed at a commercial scale in Alaska. At \$30/gal., the use of high volumes of formic acid quickly becomes cost prohibitive.

Other, potentially more expensive and/or highly specialized fish byproduct stabilization methods include freezing, APR's process of enzymatic hydrolysis at low temperatures and the first stages of SMOG's "Montlake Process."

### FINAL RECOMMENDATION:

Because the FDE study identified the high cost of extracting oil from relatively small quantities of byproduct as the major hurdle to biodiesel production, biogas (methane) production presents a promising alternative use for the salmon offal. From what FDE witnessed in Finland, biogas production can be scaled to the level of the available waste, and the production of methane (for both heating and electrical generation) and fertilizer (additional co-product produced through the anaerobic digestion process), are two

## Action Initiative 7: Study the Conversion of Southeast Alaska Fish Byproduct to Biogas and Fertilizer through Anaerobic Digestion

potential revenue streams.

Furthermore, byproduct collection for the eventual placement of waste inside an anaerobic digester isn't limited by the short 30-hour timeframe discussed in this study. Not needing to transport and stabilize waste within 30 hours of byproduct generation should dramatically reduce byproduct collection and stabilization costs. The high capital and operating costs for a rendering plant are also not required for bacteria to digest byproduct (and form methane) in anaerobic conditions.

### Objective:

The objective of the initiative is to determine at what scale(s) the conversion of fish byproduct to biogas (methane) for combined heat and power (CHP) and inorganic fertilizer through anaerobic digestion is feasible. Thus, this initiative will allow the ocean products industry cluster to determine if and how this method of fish byproduct utilization can meet the individual needs of a single processor, cluster of processors or entire community. Such a study will also include the identification of the specific bacteria ("psychrophiles") that currently break down fish waste in, and are uniquely adapted to, the anaerobic conditions [and pressure, depth, temperature and salinity] of Southeast Alaska waterways.

If this initiative is successfully accomplished, several benefits to the Ocean Products Industry cluster could be realized in the long-term, including the following:

**-RENEWABLE ENERGY DEVELOPMENT:** Development of a source of cost-effective renewable energy (electricity and heat) for participating isolated seafood processors and/or communities.

**-FERTILIZER PRODUCT:** The inorganic, odorless material that results from the anaerobic digestion process, in addition to methane, can be marketed and/or utilized in community greenhouses as a nutrient-rich fertilizer product (calcium from ash/bone is particularly important for plant growth).

**-LOWER BYPRODUCT DISPOSAL COSTS:** Elimination or minimization of the costs currently incurred by participating seafood processors to dispose of fish byproduct.

**-REGULATORY COMPLIANCE:** Assured compliance with ADEC (and ADOT and FAA) regulations governing seafood waste discharge



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by participating processors.

**-SE AK BECOMES AN R&D HUB:** Southeast Alaska becomes a center of wild fishery “wet biomass” renewable energy research and development, with a focus on anaerobic digestion by local psychrophiles.

**-IMPROVED MARINE ENVIRONMENT:** Less fish byproduct will be discharged into Southeast Alaska waterways in high volumes in localized areas (which has lead to anoxic “dead zones” in some cases), and fewer fossil fuels will be burned.

**-PROMOTIONAL OPPORTUNITY:** Not only is byproduct (“waste”) utilization a selling point on its own, but the utilization of some of this byproduct as a renewable energy source allows a company to promote their smaller carbon footprint.

## Action Initiative 7: Study the Conversion of Southeast Alaska Fish Byproduct to Biogas and Fertilizer through Anaerobic Digestion

### ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
<p>1. Resume conversations with multiple individuals, companies, organizations and laboratories who have expressed interest in the past with investigating the potential of biogas production from fish waste in SE AK: Leading biogas research and production company in Finland (produces biodiesel and biogas from millions of tons of fish byproduct annually in a climate similar to SE AK), USDA ARS researchers based in Fairbanks and Albany, CA, researchers at Pacific Northwest National Lab (PNNL) in Richland, WA, and others. Determine which individuals and entities are interested in helping conduct (and potentially have resources to contribute to) a fish byproduct-to-biogas pilot study.</p>	<p>Motivated Southeast Alaska seafood businesses, including Taku Renewable Resources, Inc.–“TRRi” (DBA: Taku River Reds; DBA: Fishermen’s Daughters Ecofuels)–that has had introductory conversations with entities to the left.</p>	<p>Time and energy</p>	<p>Immediate – by Nov. 2011</p>
<p>2. Resume conversations with Dr. Katey Walter Anthony, aquatic ecosystem ecologist at UAF’s Water and Environment Research Center, who specializes in lake-bed psychrophiles, and who has assisted Cordova high school students for a number of years with their project to develop small anaerobic digesters with which individual households can produce biogas to power appliances from relatively small amounts of organic waste. Determine if Dr. Anthony is still interested in</p>	<p>Motivated Southeast Alaska seafood business(es), including TRRi, that has already had introductory conversations with Dr. Anthony and Mr. Vance.</p>	<p>Time and energy</p>	<p>Immediate – by Nov. 2011</p>

## Action Initiative 7: Study the Conversion of Southeast Alaska Fish Byproduct to Biogas and Fertilizer through Anaerobic Digestion

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
working on a Southeast Alaska fish byproduct-to-biogas study, including helping to identify the species of bacteria that break down organic waste in the Southeast Alaska marine environment. Also reach out to Eric Vance of Capital Disposal (Juneau landfill) on this topic again.			
3. Design and seek funding for a pilot study that examines how and if biogas production from fish byproduct at various scales is feasible [identification of small or medium-sized seafood processor(s) that is/are willing to participate in such a study]	Motivated Southeast Alaska seafood business(es), including TRRi, and USDA ARS researchers and UAF's Alaska Center for Energy & Power (ACEP) researchers. A small or medium-sized processor will need to be recruited to participate in this pilot study. Juneau's Alaska Glacier Seafoods is one such potential processor.	Time and energy	Nov. 2011 – March 2012
4. Design and seek funding for a study that strives to identify the species (or multiple species) of psychrophile bacteria that break down organic waste in Southeast Alaska anaerobic, marine conditions AND to determine how/if bacteria species can be cultured and eventually nurtured in an anaerobic digestion unit.	Motivated Southeast Alaska seafood business(es), including TRRi, as well as USDA ARS researchers, ACEP researchers and Dr. Katey Walter Anthony (and/or another Alaskan ecologist she recommends), ideally in collaboration with Finnish and PNNL researchers.	Time and energy	Nov. 2011 – March 2012
9. Conduct studies outlined in (3) and (4) above.	Motivated Southeast Alaska seafood business(es), including TRRi, at least	Time, energy, grant funds and in-	May 2012 – Sept.

## Action Initiative 7: Study the Conversion of Southeast Alaska Fish Byproduct to Biogas and Fertilizer through Anaerobic Digestion

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
	one participating processor and researchers at USDA ARS, ACEP, UA campuses, the Finnish company and PNNL, etc.	kind/cash donations	2013

### Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
(1) Identifying a small or medium-sized processor(s) that wants to participate in (and potentially contribute in-kind or cash donations for) a fish byproduct-to- biogas pilot study. <i>(possible obstacle)</i>	Outreach to processors and communities to explain potential benefits of this research
(2) Culturing, and transferring to an anaerobic digestion unit, large colonies of psychrophile bacteria. <i>(possible obstacle)</i>	Collaboration and information-sharing with Finnish researchers and researchers at labs specializing in biogas studies (i.e. PNNL)
(3) Acquiring the equipment and expertise necessary to compress and store biogas for future CHP use. <i>(possible obstacle)</i>	Establish lease agreements for equipment rentals to use in pilot study with Pacific Northwest companies or labs (i.e. PNNL)

## Action Initiative 7: Study the Conversion of Southeast Alaska Fish Byproduct to Biogas and Fertilizer through Anaerobic Digestion

### Funding:

Phase:	Budget:	Funding Source:
Phase I – Pilot Study: Biogas production from fish byproduct generated by small or medium- sized processor, including how to compress and store biogas for future use as a heat or electrical source and estimated value of fertilizer co-product.	\$500,000	USDA (Rural Development? SBIR?) grant with in-kind or cash donations from businesses and/or community partners
Phase I – Associated Research Project:  Identify the species (or multiple species) of sychrophile bacteria that break down organic waste in Southeast Alaska anaerobic, marine conditions. Determine how/if bacteria species can be cultured and eventually nurtured in an anaerobic digestion unit.	\$200,000	USDA or National Science Foundation or Alaska's Emerging Energy Technology Fund grant(s)?

### Outcome/Results:

In consultation with Finnish engineers and chemists, USDA ARS researchers will be able to design and conduct a pilot study with willing participating seafood processor(s). The outcome of this study will be a determination of the scale at which biogas production from fish byproduct is feasible, one of the objectives of this initiative. Additionally, the second objective of this study can be met through the identification of the specific psychrophiles that break down organic waste in the anaerobic, biophysical conditions of the Southeast Alaska marine environment.

## Action Initiative 8: Further Develop Renewable Energy

<b>Cluster Working Group:</b>	Ocean Products
<b>Champion:</b>	Bart Watson, President, Armstrong-Keta, Inc.
<b>Initiative Development Team:</b>	<p>Mike Round, Assistant General Manager, Southern Southeast Regional Aquaculture Assn.; Oceans Alaska</p> <p>Garry White, Executive Director, Sitka Economic Development Council</p> <p>Mike Goldstein, Executive Director, Alaska Coastal Rainforest Center</p> <p>Mike Forbush, Ocean Beauty Seafoods</p> <p>Bruce Wallace, seiner; United Fishermen of Alaska; Silver Bay Seafoods; Alaska Seafood Marketing Institute</p> <p>Heather Hardcastle, fisherman; Trout Unlimited</p>
<p><b>Description &amp; Motivation:</b></p> <p>Energy use is a major component of the ocean products industry in Southeast Alaska. Most of that energy is currently derived from fossil fuels, which are subject to increasing worldwide competition, driven by fast-developing emerging market demand. At the same time, global supplies have peaked or will do so soon, and in any case are getting more expensive to extract. The SE Alaska ocean products industry is highly vulnerable to rising price trends, price spikes, fossil fuel shortages and supply disruptions.</p> <p>SE Alaska is also endowed with a bounty of renewable energy resources: hydro, wind, geothermal, tidal, wood and biofuels. Hydropower is commonly cheaper than diesel generated electricity and is currently in widespread use, notably in all the larger communities in SE as well as a few small ones. Even so, existing hydro generation capacity still supplies only a minor portion of our total energy use. Hydropower electricity is relatively inexpensive and prices are relatively very stable. There is a great deal of untapped hydropower potential still available along with other types of renewable energy resources, and no SE communities are completely powered by hydro or any combination of renewable energy, meaning that substantial quantities of fossil fuels must still be imported. At the end of a very long supply chain, SE will be increasingly at risk for major economic dislocations from world energy problems until we develop our local Renewable Energy resources.</p> <p>The initiative to develop SE renewable energy is key not only to the ocean products industry, but also to maintaining an affordable quality of life for all residents of the region. This is an especially critical issue in rural SE communities, where the price of fossil fuels has become especially burdensome to both local residents and small processors.</p>	

## Action Initiative 8: Further Develop Renewable Energy

### Objective:

The development of significant additional renewable energy resources will be a major boon to the ocean products as well as other energy intensive industries in SE Alaska in several ways: 1) renewables can currently generate power more inexpensively than fossil fuels in many areas of SE, especially smaller rural communities where the seafood industry is often the economic mainstay; 2) while requiring upfront capital investment, renewables protect against future fossil fuel price increases and disruptions by utilizing free fuels or (in the case of wood and biofuel feedstock) inexpensive waste products; 3) as the world copes with higher fossil fuel prices, a region like SE Alaska that has the potential to run 100% on renewable energy will gain a major competitive advantage for both harvesting and processing locally; and 4) the development of renewable energy to power Southeast Alaska will add considerable value over the long term to our locally harvested and grown ocean products, while lower energy costs and stable supply will be an important economic factor in creating more and better-paid jobs for this industry and this region.

SE Alaska cannot compete on the basis of low labor costs in other seafood producing and processing areas of the world, such as Asia, but if we could convert to affordable clean energy to power our industry, we could gain a significant competitive edge.

In addition, the ocean products industry in Alaska is highly dependent on maintaining pristine waters and healthy ecosystems. The switch from fossil fuels to renewable energy sources will contribute to the preservation of these natural resource assets, helping to minimize potential impacts from oil spills, air pollution, climate change and ocean acidification.

From a marketing perspective, Alaskan seafood products fetch a premium price over competing products from other areas of the world due to consumer perceptions of Alaska as a clean, healthy, natural and sustainable ecosystem. Southeast Alaska has an opportunity to build on this reputation and enhance its price advantages by marketing the region's reliance on clean renewable energy. In coming years we are likely to witness the rapid growth globally of consumer awareness of this issue.

## ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
1. Educate the public, and especially municipal and state leadership, on the advantages of planning ahead to create energy independence for SE	This is such a fundamental and pervasive issue in our region that it is really up to each of us –	Personal time and energy.	The sooner the better to start this long-term

## Action Initiative 8: Further Develop Renewable Energy

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
Alaska based on developing our renewable energy resources. Contact the governor, legislators, mayors, and city council members. Write letters to the editors. Speak to business groups. Inform our co-workers and friends.	those of us who recognize the looming crises and see the potential for a renewable energy solution need to become active advocates.		ongoing process.
2. Collaborate with electrical utilities to refocus their strategic planning on the development of renewable energy resources.	RE business owners and advocates; chambers of commerce when they can be brought on board; electrical utility CEO's.	Cost/benefit analyses highlighting fossil fuel price instability and rising trends can be most influential in showing utilities the path forward.	There's no time like the present for planting the seeds, followed by frequent cultivation.
3. Foster development of a regional Renewable Energy industry. Specific steps include pushing the AEA to adopt regulations governing utilities' purchase of Renewable Energy power from Independent Power Producers, lobbying the legislature and governor to support net metering to encourage small-scale innovation and local Renewable Energy generation, and encouraging legislative and administrative support for additional Renewable Energy legislation and funding along the lines of the good programs passed by the legislature over the past two years. Ensure that public/private hydro development partnerships qualify for state and federal funding. Establish a revolving loan fund for financing conversions to efficient electrical heat pump heating systems. Also work to make federal	Our legislators are key players in this arena and have been very active (and are now relatively well educated) on these issues. The current governor is another matter, myopically favoring the oil companies, pushing to reduce our oil income dramatically, and vetoing half of last year's Renewable Energy Grant Fund appropriation.	A few phone calls, letters and meetings to the appropriate politicians can be significant. Funding for new projects is a major challenge, and the Alaska legislature has been developing loan and grant programs for this purpose.	Lobbying during both the legislative session and the interim can be effective, but the push for this legislature needs to occur before the end of next year's legislative session in April 2012.



## Action Initiative 8: Further Develop Renewable Energy

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
<p>regulations more conducive to developing hydropower in designated wilderness areas. Creating a supportive environment for entrepreneurs to tap into our Renewable Energy resources, develop locally appropriate technologies and build financial interests will spur the transition to renewables regionally.</p>			
<p>4. Work to improve federal regulations to make them more appropriate to specific conditions in Alaska. Currently, hydropower is not considered a renewable resource at the federal level; efforts are underway to remedy that exclusion for Alaska. The reinstatement of the "Roadless Rule" in SE Alaska needs to be modified to encourage the development of renewable energy within USFS lands. Federal regulations should similarly be made more conducive to low-impact hydro and geothermal projects within designated wilderness areas.</p>	<p>Our congressional delegation can help reshape federal legislation to support hydropower and other renewable energy development. State and local politicians can add their voices to the requests.</p>	<p>Citizen lobbying, likely to be especially effective if the proposed changes are carefully crafted to garner the support of local and national environmental advocacy groups on the basis of shifting to green energy.</p>	<p>Ongoing long-term initiatives. Particularly important to collaborate with environmental groups to get them on board.</p>
<p>5. Create a regional energy transportation system tying together electric generation and consumption throughout SE Alaska. Such a system can balance supply from diverse interruptible Renewable Energy sources (e.g., wind, tidal), disseminate the benefits from major hydro projects and create markets for Renewable Energy production where the resources are located. The system could be an electric power transmission line grid or a fuel produced by</p>	<p>Governor, legislators, mayors, city councils, utility CEO's, business groups.</p>	<p>Cost/benefit analyses and citizen lobbying. The funding for a SE grid would likely come from a legislative appropriation negotiated as part of a bill creating a new</p>	<p>Ongoing long-term initiatives. Intense lobbying push whenever the legislature begins to focus on a comprehensive Railbelt energy bill.</p>

## Action Initiative 8: Further Develop Renewable Energy

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
Renewable Energy generation, such as anhydrous ammonia. However, the high costs of constructing such a system must be balanced against the benefits of separate local Renewable Energy projects serving isolated communities.		energy source (such as Susitna or Chakachamna) for the Railbelt.	
6. Evaluate and promote the potential benefits of an electric transmission intertie between SE Alaska and the North American grid via BC. The vast markets for electric power could stimulate development of additional Renewable Energy resources in SE, especially as prices rise. The caveat is that legislation must firmly control the incentives to sell all power produced here to the highest bidders, subjecting SE consumers to electricity prices that vary with global energy prices and negating our potential competitive edge based on affordable and stable energy supplies. Anhydrous ammonia production may be an alternative way to reach major markets.	Federal and state governments; utility companies.	Such an intertie would be hugely expensive and would depend on federal and/or state appropriations. As Renewable Energy advocates, we could help evaluate whether this is the best place to invest limited financial resources. The AEA should carry out a major study of the anhydrous ammonia option.	Whenever the iron is hot.
7. Make the necessary moves now to invest in new renewable energy production, instead of waiting for crises to strike in fossil fuel prices or availability. Energy efficiency also needs greater emphasis in businesses and residences throughout the region, since renewables are most cost effective when	State and local governments; utilities.	Political leadership; feasibility studies; project financing.	The sooner the better to initiate multi-year processes and prepare for inevitable energy shocks.

## Action Initiative 8: Further Develop Renewable Energy

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
paired with their efficient use.			
8. Submit Action Initiative 8 to Southeast Alaska Integrated Resource Plan.			

### Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
1) Public education.	Our own personal commitment to fight the inertia that characterizes human activities; time invested in contacting key players.
2) Work with electric utilities.	Enlist Renewable Energy experts to help create persuasive cost/benefit analyses. Go public in your community to build pressure on utilities to plan ahead.
3) Promote regional Renewable Energy industry.	Legislative support to ensure the regulatory climate is favorable.
4) Improve federal regulations.	Congressional support to ensure the regulatory climate is favorable.
5) Create a regional energy transportation system.	Cost/benefit analyses; the political will to provide the public funding required. Support the Alaskan Renewable Energy advocacy groups in their work.
6) Electric transmission intertie to North American grid.	Cost/benefit analyses; the political will to provide the public funding required. The utilities and AEA will be key in these analyses.
7) Investment now to prepare for future energy stability and affordability.	Political and utility leadership open to change. In the case of intransigence, working to change leadership. We are the voters.

## Action Initiative 8: Further Develop Renewable Energy

### Funding:

Phase:	Budget:	Funding Source:
Local education.	Minimal expenditures are required; personal involvement is key.	Grants, memberships and donations to appropriate advocacy groups can be a big help.
Government support of Renewable Energy industry.	Same as above.	Same as above.
Creation of energy transportation systems.	Massive.	State and federal governments.

### Outcome/Results:

Renewable energy production in Southeast Alaska will likely be tracked by utilities and state agencies. Every incremental gain in this direction will be positive. Complete success will be when SE is running 100% on sustainable and affordable Renewable Energy with virtually no fossil fuel use for heating and transportation.

## Action Initiative 9: Project Long Term Access to Fishery Resources for both Current and Developing Fisheries.

<b>Cluster Working Group:</b>	Ocean Products
<b>Champion:</b>	Kathy Hansen, Fisherman, Southeast Alaska Fishermen's Alliance

<b>Initiative Development Team:</b>	Steve Reifensuhl, General Manager, Northern Southeast Regional Bruce Wallace, Seiner, UFA, Silver Bay, ASMI Tom Gemmell, Self Julianne Curry, Fisherman, Petersburg Vessel Owner Assoc. Jev Shelton, Fisherman
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### 9A - Access to The Resource - Erosion Of The Fisheries

#### Description & Motivation:

Although commercial fishing has existed in Alaska for over 100 years, limited entry permits and Quota Share programs only grant the owner the privilege to harvest a resource with a specific gear type in a certain area and the right to revoke the program is contained within law – federal for Quota Share programs and State for limited entry permits. The value of these permits and quota shares depends on healthy resources and stable allocations between commercial and sport fishery.

There is a growing desire to turn Alaska and particularly Southeast Alaska into “a playground” for those coming to Alaska. But vibrant industries need to exist in Southeast Alaska including access to our natural resources whether they are Ocean products or access to the lands in Alaska.

The erosion of commercial fisheries by reallocation is another threat to the existence of vibrant and economically viable commercial fisheries. For example, the Chatham blackcod fishery is the highest value groundfish fishery in Southeast Alaska with approx. 100 permit holders fishing yearly with 2-4 crewmen per vessel. A growing sport fishery was developing on this fishery while the commercial fleet was facing continually declining harvest limits, and because ADFG wasn't aware of the growing fishery, they didn't factor it in the model for

## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

setting appropriate harvest limits because the growth of the sport fishery was unknown.

With larger human populations in Alaska and increased tourism, unregulated and/or unmonitored ocean resources are being harvested at greater rates than in the past, and perhaps are unsustainable. With this growth comes the need for accurate accounting of removals of all species in the recreational, personal use and subsistence fisheries in order to maintain sustainable populations. The current system of a statewide harvest survey is a measurement of TREND and not actual accounting. It doesn't measure all species, and the survey is sent out up to a year later and memory is not always the best by then. Plus there is a large proportion that doesn't even bother to return their survey when sent to them. Creel Sampling is used in addition to the Statewide harvest survey but the state employed creel samplers have to receive permission before stepping onto private property so large amounts of harvest are not sampled, particularly from remote lodges where a substantial portion of the harvest is occurring.

The definition of "guided fishing" needs to be changed in order to better represent all models of tourism client fishing, and make sure they are being documented and accounted for. Assisted unguided fishing, bare-boat, motherships, and Canadian style self-guided are all models of fishing that the guided sport fishing industry currently has that need registration and accounting of harvest. SB 24 was introduced in 2011 in Alaska State legislature. A portion of this legislation defines and would require "outfitters" and "transporters" to register and could require logbooks etc. The legislation also contains a lot more that is not necessary for the management of accountability of ocean resources. SB 24 has been stalled, a legislature sub-committee will be holding hearings on this issue in the fall. The current sport fish guide licensing and log book program is being extended one year at a time with some sport fish guides lobby against renewal of the program as being unnecessary.

Maintaining and increasing research along with an appropriate level of funding for ADFG management is a necessary component of maintaining access to and gaining access to developing fisheries. One area of research and development needed is to determine release mortality for hook and release landing of different species of fish and then establish a reliable sampling procedure for establishing the volume of hook and release occurring.

A strength of managing Alaska's ocean resources is that the State Constitution requires "Sustainable" management of the resources, we have a good public process including the Board of Fish and North Pacific Fisheries Management Council, with a local fish and game advisory committee system to support the Board of Fish process. Unfortunately this good managing system that is upheld as a model for other states and countries is only as good as the caliber of the people who volunteer to serve on the committee or appointed to the Board, and their ability to let science, policy and standards guide their actions and not let personal agendas and politics to trump.

Board of Fish conflict of interest policy prevents fishermen serving on the board in the region they fish from participating in the discussion and sharing the knowledge that they have on the subjects in front of the board. The legislature uses the following standard for conflict of interest "that if a bill affects an entire group of citizens the same, then it is not considered a conflict of interest under Alaska law." Although the regulations and statutes have not changed at all over the years the interpretation by law advisors to the Board of Fish has changed so

## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

now the Board of Fish member has to actually join the audience before they will deliberate on a proposal. Only commercial fishermen are viewed to have a direct financial interest if they hold any limited entry permits or QS along with any family members including brothers and sisters, sons and daughters, parents etc will cause a conflict to be declared if a proposal on that fishery is being deliberated on.

New developing fisheries have their own set of difficulties in trying to develop opportunities on un-utilized and under-utilized fisheries. A policy was being developed at one time for a process to use for new developing fisheries but the process was unwieldy and never finished at the board of fisheries.

### Objective:

Maintain viable access to fishery resources so that viable and vibrant commercial fisheries exist throughout Southeast Alaska, particularly in smaller rural communities where commercial fisheries are/were the backbone of the community. Let science be the driving force for decisions made in our management agencies based on the abundance of the resource. Commercial fishermen do not object to declining harvest limits when science based rather than a response to uncontrolled growth of sportfishing. The benefit to the region is the continuation of thousands of small businesses, maintaining important infrastructure within the communities such as harbors and processing facilities etc.

## ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
Encourage the State of Alaska Legislature to fund ADFG and provide funding for research needs.	ADFG, UFA, Fishing Associations, Processors, SEC and local municipalities		Yearly event
Encourage the Board of Fish, State of Alaska Legislature to develop an accounting system that accounts for all removals of the resource so that the fisheries can be sustainably managed. Part of this	ADFG, UFA, Fishing Associations, Processors, SEC and local municipalities. Individuals will be		

## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
would be to allow access by enforcement and creel samplers to remote lodges.	particularly important to speak up.		
<p>Develop a reliable sampling procedure for establishing the volume of hook and release landing with associated data-based estimates of resulting mortality. Ask for funding through the legislature and the regulatory authority for program developed.</p> <p>Work on closing the loophole regarding “assisted unguided” either through SB 24 or other legislation.</p> <p>Document the fishing sector, vessels, crew, processing industry, fishery dependent businesses and document the footprint/grounds we use and the value of the resources</p> <p>Stabilize allocation process and hold sectors to their allocation.</p>	<p>ADFG would have to be involved with fishermen,</p> <p>State of Alaska Legislature</p>		

### Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
<p>Acknowledging that you must have vibrant and viable commercial fisheries, along with other industries and that Southeast Alaska cannot survive locked up to become a playground only for the well off.</p>	<p>PR efforts can help</p>
<p>Accounting of harvests – while commercial fishermen can understand how a fishery can be sustainably managed for the long-</p>	<p>Encourage individual Alaska sport fishermen and the sport fishing industry to understand the need for the accounting and to ask the</p>



## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

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**STEP:**

term, there is this perception that an individual angler in the rowboat with his one fishing pole doesn't hurt anyone. But when you multiply by the number of people out fishing and factor in that an individual sport fishing, if they take all sport fish species available to them, will have a daily bag limit of 33 fish.

**Help needed:**

legislature to fund and implement a system so that we don't follow the path of other coastal states that crashed their fisheries such as Washington, Oregon and California. When commercial fishermen and associations bring up this issue it is viewed that we are doing it for selfish and allocation reasons. It's possible with accurate accounting that commercial fishermen will lose significant access and allocation, but at least the resources will be protected and maintained for the future.

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**Funding:**

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**Phase:**

All phases

**Budget:**

This is one of those initiatives that can have zero funds and still move forward to 100K + dollars for PR campaigns to sell the importance of commercial fishing industry to Southeast AK and the State of AK, hire lobbyists, travel to attend hearings/meetings etc.

**Funding Source:**

Unknown

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**Outcome/Results:**

There is still an economically viable commercial fishing industry along with processors and supporting businesses within the communities spread out throughout Southeast Alaska including the smaller rural communities.

## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

### 9B - Access to the Resource - Marine Spatial Planning

#### Description & Motivation:

Commercial fishing in Alaska has existed for over 100 years and is the backbone to the coastal rural communities. Commercial fishing and access to the resource is slowly being eroded from multiple directions.

President Obama in July 2010 signed an Executive Order for Stewardship of the Ocean, Our Coasts and the Great Lakes which includes "coastal and marine spatial planning" (i.e. ocean zoning) as a top down process on a nationwide basis.

Marine spatial planning is driven by mineral and development interests, where these organizations are able to easily identify the value of specific places and resources.

#### Objective:

Maintain access to fishery resources for viable and vibrant commercial fisheries throughout Southeast Alaska, particularly in smaller rural communities where commercial fisheries are/were the backbone of the community. Within the marine spatial planning, make sure that Alaska commercial fisheries footprint is documented and assured.

### ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
Work with the State of Alaska and develop comments for submittal by the April 29 <sup>th</sup> deadline that encourages any ocean planning to be done from the ground up within the region. Use the current regulatory bodies and processes and don't allow for an additional layer of bureaucracy to form.	Doug Vincent-Lang is ADFG lead person on marine spatial planning, work with other Commercial fishing associations around SE and United Fishermen of Alaska. Use forums such as this and SEC to notify the communities of this initiative.	Communication and letter writing for this particular stage.	April 29 <sup>th</sup> for comments at this stage but will continue into the future.

## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
	Pass the message to the Forest Service that they should also encourage a local ground up view and not Washington, DC agency top down mandates.		
Document the footprint of the Alaska commercial fishery and subsistence uses of the resources.  Document the fishing sector (vessels, crew, processing, fishery dependent businesses).	ADFG, NPFMC , Univ. of AK, Sea Grant, UFA, Fishing Associations, ASMI, State of Alaska, Forest Service		Next several years
Monitor the Marine Spatial Planning process and participate as each step moves forward.	ADFG, NPFMC , Univ. of AK, Sea Grant, UFA, Fishing Associations, ASMI, State of Alaska	Unknown – as we don't know what will happen from the results of Step one.	

Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
Acknowledging that you must have vibrant and viable commercial fisheries, along with other industries.  Understanding and having in one easily accessible place information on the fishery resources, their value, uses, particularly	PR efforts can help

## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

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**STEP:**

**Help needed:**

commercial but also sport and subsistence

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**Funding:**

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**Phase:**

**Budget:**

**Funding Source:**

All phases

This is one of those initiatives that can have zero funds and still move forward to 100K + dollars for PR campaigns to sell the importance of commercial fishing industry to Southeast AK and the State of AK, hire lobbyists, travel to attend hearings/meetings etc.

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Unknown

**Outcome/Results:**

There is still an economically viable commercial fishing industry along with processors and supporting businesses within the communities spread out throughout Southeast Alaska including the smaller rural communities.

## 9C - Access to the Resource – Protecting Long-Term Assured Access To Fishery Resources Through Research.

### **Description & Motivation:**

Although commercial fishing has existed in Alaska for over 100 years, and is still the State of Alaska's number one private employer, one of the top exports of the state, produces the majority of wild harvest of fishery resources in the country, less and less funding and research is occurring to maintain and protect the resources we are dependent upon.

Maintaining and increasing research along with an appropriate level of funding both at the State and Federal level is a necessary component of maintaining access to and gaining access to developing fisheries.

There are many areas of research necessary including changes to the habitat and ecosystems, additional life cycle information, interaction of prey and predator species, marine mammals. Also, there is a need to determine release mortality for hook and release landing of different species of fish and then to establish a reliable sampling procedure for establishing the volume of hook and release occurring.

### **Objective:**

Maintain viable access to fishery resources so that viable and vibrant commercial fisheries exist throughout Southeast Alaska, particularly in smaller rural communities where commercial fisheries are/were the backbone of the community. Let science be the driving force for decisions made in our management agencies based on the abundance of the resource. The benefit to the region is the continuation of thousands of small businesses, maintaining important infrastructure within the communities such as harbors and processing facilities etc.

Increased research would lead to an increase in jobs.

## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

### ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
Encourage the State of Alaska Legislature to fund ADFG and provide funding for research needs.	ADFG, UFA, Fishing Associations, Processors, SEC and local municipalities		Yearly event
Encourage Forest Service to continue with salmon research at Little Port Walter and/or	Forest Service		
Develop a world class research facility in Southeast Alaska.	Forest Service		
Develop a reliable sampling procedure for establishing the volume of hook and release landing with associated data-based estimates of resulting mortality.	ADFG or federal agency would have to be involved along with fishermen		

#### Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:	
Acknowledging that you must have vibrant and viable commercial fisheries, along with other industries and that Southeast Alaska cannot survive locked up to become a playground only for the well off.	PR efforts can help	
Accounting of harvests		
Funding:		
Phase:	Budget:	Funding Source:
World class research facility and/or continuation of salmon research at Little Port Walter	Don't have the knowledge to adequately determine	Forest Service

## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

### Outcome/Results:

Providing research necessary to support the sustainability of the fisheries, understand life cycles of species important to commercial fishermen. Better research protects and provides for better management of the fisheries, which maintains an economically viable fishery, along with processors and supporting businesses within the communities spread out throughout Southeast Alaska including the smaller rural communities. Providing jobs in the field of fishery research.

## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

### 9D - Access to the Resource - Protecting Long Term Assured Access To Fishery Resources Through Appointment Process/Conflict Of Interest.

#### Description & Motivation:

Commercial fishing in Alaska has existed for over 100 years and is the backbone to the coastal rural communities. The erosion of commercial fisheries by reallocation is another threat to the existence of vibrant and economically viable commercial fisheries.

A strength of managing Alaska's ocean resources is that the State Constitution requires "sustainable" management of the resources. We have a good public process including the Board of Fish and North Pacific Fisheries Management Council, with a local fish and game advisory committee system to support the Board of Fish process. Unfortunately, this good managing system, that is upheld as a model for other states and countries, is only as good as the caliber of the people who volunteer to serve on the committee or are appointed to the Board or NPFMC, and their ability to let science, policy and standards guide their actions, rather than let personal agendas and politics to trump.

Board of Fish conflict of interest policy prevents fishermen serving on the board in the region they fish from participating in the discussion and sharing the knowledge that they have on the subjects in front of the board. The legislature uses the following standard for conflict of interest "that if a bill affects an entire group of citizens the same, then it is not considered a conflict of interest under Alaska law." Although the regulations and statutes have not changed at all over the years the interpretation by law advisors to the Board of Fish has changed, so now the Board of Fish member has to actually join the audience before they will deliberate on a proposal.

Only commercial fishermen are viewed to have a direct financial interest if they hold any limited entry permits or QS along with any family members including brothers and sisters, sons and daughters, parents, etc., and will cause a conflict to be declared if a proposal on that fishery is being deliberated on.

New developing fisheries have their own set of difficulties in trying to develop opportunities on un-utilized and under-utilized fisheries. A policy was being developed at one time for a process to use for new developing fisheries but the process was unwieldy and never finished at the board of fisheries.

#### Objective:

Maintain viable access to fishery resources so that viable and vibrant commercial fisheries exist throughout Southeast Alaska, particularly in smaller rural communities where commercial fisheries are/were the backbone of the community. Let science be the driving force for decisions made in our management agencies based on the abundance of the resource. Commercial fishermen do not object to declining harvest limits when science based, rather than a response to uncontrolled growth of sport fishing. The benefit to the region is the



## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

continuation of thousands of small businesses, maintaining important infrastructure within the communities such as harbors and processing facilities etc.

### ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
Actively encourage appointment of qualified, ethical individuals to the Board of Fish and NPFMC	Governor's office, grass roots request for balanced board composition		Yearly event
Encourage the Board of Fish, State of Alaska Legislature to develop an accounting system that accounts for all removals of the resource so that the fisheries can be sustainably managed. Part of this would be to allow access by enforcement and creel samplers to remote lodges.	ADFG, UFA, Fishing Associations, Processors, SEC and local municipalities. Individuals will be particularly important to speak up.		Yearly event
Clarify the Board of Fish Conflict of Interest issue.	Governor, Legislature (maybe), fishing organizations, Processors, Municipalities, SEC and PARTICULARLY individuals will need to speak up to get this changed.		Yearly event
Work on Developing Fishery Policy so that there are clear procedures for accessing resources commercially that have not been developed before.	ADFG and fishing associations, likely Board of Fish would eventually be involved		Yearly event
Document the fishing sector, vessels, crew, processing industry, fishery dependent businesses and			

## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
<p>document the footprint/grounds we use and the value of the resources</p> <p>Stabilize allocation process and hold sectors to their allocations.</p>			

### Obstacles and Impediments Likely to Affect Implementation:

#### STEP:

#### Help needed:

Acknowledging that you must have vibrant and viable commercial fisheries, along with other industries and that Southeast Alaska cannot survive locked up to become a playground only for the well off. PR efforts can help

#### Funding:

#### Phase:

#### Budget:

#### Funding Source:

All phases

This is one of those initiatives that can have zero funds and still move forward to 100K + dollars for PR campaigns to sell the importance of commercial fishing industry to Southeast AK and the State of AK, hire lobbyists, travel to attend hearings/meetings etc.

Unknown

## Action Initiative 9: Project Long Term Access To Fishery Resources for Both Current and Developing Fisheries.

### Outcome/Results:

There is still an economically viable commercial fishing industry along with processors and supporting businesses within the communities spread out throughout Southeast Alaska including the smaller rural communities.

## Action Initiative 10: Develop Region-Wide Mariculture Zoning

<b>Cluster Working Group:</b>	Ocean Products
<b>Champion:</b>	Anthony Lindoff, Ha'ani/Sealaska

<b>Initiative Development Team:</b>	<p>Mike Round, Assistant General Manager, Oceans Alaska SSRAA</p> <p>David Mitchel, General Manager Oceans Alaska</p> <p>Casey Havens, President/CEO, Yak Tat Kwaan</p> <p>John Sund, Mariculture Advocate</p> <p>Ray RaLonde, Sea Grant Marine Advisory Program Aquaculture Specialist</p> <p>Tom Henderson, OceansAlaska Mariculture Director</p> <p>Rodger Painter, Alaska Shellfish Growers Association</p>
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### Description & Motivation:

Developing a new industry based on growing shellfish, oysters, geoduck, clams and other species takes a tremendous amount of energy, vision and leadership from the Federal Government who own 95% of the land the State who controls 100% of the water. The potential is the creation of significant economy that is environmentally sustainable, and will produce jobs for a year around based work force. The preliminary outlook shows the potential of a \$20 - \$30 million dollar annual industry that creates 400 plus jobs. The industry can develop in a fashion that has no or a minimum level of conflict with current existing uses of the land and water. This is a great opportunity for the government land owners to help create a new industry that can generate jobs in economically depressed areas of the Tongass National Forest.

The challenge is attracting new people to invest substantial amounts of private funds to build the farms, acquire the seed, buy or invent the equipment, obtain the training and education and locate the farm sites through the permit and license process of using public land and water. How to reduce the risk of failure is a major task.

The history gained over the last 10 – 20 years from the pioneers in the mariculture industry has produced a few lessons. First,

## Action Initiative 10: Develop Region-Wide Mariculture Zoning

site selection is critical. This step should include a comprehensive approach that enables entrepreneurs to decrease the risk of investment, and mariculture zoning and clustering is one approach to this issue. Currently, batch processing is done every other year for permit applications, and the burden falls upon the applicant to identify an appropriate location. The time, financial investment, and risk of the unknown are all deterrents to applying for a farm site and investing in mariculture. Mariculture zoning initiatives would help create "clusters" of farm sites. Farm clusters in proximity to each other helps reduce the cost of operations and the risk of failure. The cluster of farmers allows for creation of cooperative processing facilities that lower costs. It allows transfer of knowledge and information. The cluster provides for a flexible workforce to help on the various farms in the area. Transportation of product to market is lower because of the collective volume of production. There is the opportunity to create cooperative sales and marketing entities to help maximize the penetration of certain market places and supply steady volume of product.

Access to seed is also critical- it is impossible to farm without a secure and reliable seed supply. Transportation of materials to the farm and products from the farm to market is critical in the cost of operations. Training and education in terms of best management practices, biological advantages and threats, new technology, impact on growth yield, business management, sales and marketing are important to the success of every industry and business. But it is especially necessary in Alaska in the creation of an industry that is just getting started.

Financing the building of new farms on land and water leased from the state and federal government with very little fee simple or private ownership is difficult. The Farm Services Agency is a reliable supplier of financing to new farmers, but terms can be improved to attract new entrants to invest in a sustainable business. The creation of "clusters" or the start up of a new farm in the close proximity of existing farms or other new farms reduces the risk of failure and increases the chances of the new farmer succeeding and repaying the start up financing.

There are many challenges in creating new initiatives. The creation or identification of specific areas that will assist a new mariculture farmer succeed is imperative to attracting the entrepreneur needed to build a new industry. The mariculture zoning initiative will help establish known areas that are biologically productive for growing shellfish, located in areas that reduce or lower the cost of operations, help to lower transportation costs and provide ease of access to communities. It also will resolve many of the user issues in a comprehensive manner, and increase the likelihood of a successful application and business. It does not cover all of the challenges and issues facing a new industry such as access to secure seed supply, training and education, financing, lower transportation costs and community support and development.

## Action Initiative 10: Develop Region-Wide Mariculture Zoning

### Objective:

Create strong and sustainable mariculture industry that supports vibrant coastal communities. This is especially possible in the smaller rural communities throughout the Tongass that have been hard hit by the loss of fisheries related jobs, decline in the timber industry and slow down in tourism. The identification of the opportunity for a mariculture industry and an area for specific farm sites needs to include access to reliable seed supply, cluster development of farm sites, access to training and education and good transportation systems. These actions will help attract the new farmers and investment of private capital to build successful farms.

## ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
1. Define Mariculture Development Zone concept, including role of local residents, regulators and policymakers, and industry.	ADF&G, ADNR, ADEC, USFS, aquatic farm industry, Native organizations and local communities.	Project coordinator with USFS, teleconferencing system, and travel funds.	3 months
2. Identify candidate areas and proposed boundaries.	Aquatic farm industry, Native organizations, local communities, ADNR, USFS and ADFG.	GIS mapping, teleconferencing, USFS coordinator, travel funds.	3 months
3. Survey zones, identify potential farm sites, interact with local residents, and gather background data (land use classifications, human use, etc.).	Industry, user groups, local residents, ADFG, ADNR, USFS.	GIS mapping, teleconference, funding for field work and reporting and community meetings.	8 months

## Action Initiative 10: Develop Region-Wide Mariculture Zoning

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
4. Conduct public hearings and complete farm site classification process	ADNR	Funding for public hearings and farm site classification	1 month

### Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
Buy-in from all levels of State and Federal Government	Legislators to champion effort; Governor's cabinet State and Federal Government Agencies, who play the critical role in water and land allocation, and processes involved in leasing
Funding:	
Phase:	Budget: Funding Source:
Mariculture Conference & Buy-In	Travel & Conference Expenses      USDA/Forest Service
Community Outreach	Travel & Meeting Expenses      USDA/Forest Service
Working Group – Training, Education, Development	USDA/Forest Service

**Outcome/Results:** Create an economically viable shellfish industry

Increasing # of permitted, commercially productive farms

Mariculture Working Group that can continue to address other barriers to entry for mariculture entrepreneurs- including training and workforce development, seed security, financing, best practices, and public-private partnerships in developing the industry.

## Action Initiative 11: Simpler, Flexible Regulatory Environment for Direct Market Producers and Small Floating Processors (without full CWG consensus)

<b>Cluster Working Group:</b>	Simpler, flexible regulatory environment
<b>Prepared By:</b>	Len Peterson
<b>Date:</b>	03/31/2011

<b>Title or Name of Action Initiative:</b>	Simpler, flexible regulatory environment for direct market producers and small floating processors
<b>Initiative Champion/Implementation team members:</b>	Co-Champions: Jev Shelton, Len Peterson Team members: Heather Hardcastle, Kathy Hansen
<b>Description &amp; Motivation:</b>	<p>Multiple state agencies permit large and small salmon processors. For small vessel processors, only AK Fish and Game and AK Revenue have a common packet for permitting. All agencies have their own permit forms, instructions, definitions, and inspection/audit procedures. Particularly Department of Environmental Conservation procedures appear to be inflexible and "out of tune" with small vessel processors only heading fish destined for direct markets. The permitting and reporting structure is discouraging for small catcher/exporter processors and direct-marketers that cannot afford personnel to navigate the complicated, often inflexible, multi-agency permitting and reporting requirements. Comprehending the requirements alone can be daunting, meeting those requirements and dealing with audits/inspections becomes a year-round burden without compensation.</p>
<b>Objective:</b>	<p>There does not appear to be much growth potential for direct market salmon businesses or small floating processors to warrant extensive effort trying to simplify the permit/report processes. Prices for salmon and halibut from larger, established processors are good with risk to producers minimal. Those small businesses already successfully navigating the permitting/reporting "minefield" have adopted coping strategies that work. An objective of multi-agency cooperation is probably unrealistic and could distract from more important initiatives such as habitat protection. We propose no action steps outside the following information supplied by Kathy Hansen.</p> <p>United Fishermen of Alaska (UFA) is writing a letter requesting the Governor and Legislature to put together a multi-agency review panel with industry to review Alaska fishery regulations and statutes to try to reduce redundancy and duplicative efforts, create efficiencies, justify information that is being requested. The intent of this request is not to weaken the current regulatory regime necessary for good accounting of harvest, food safety protections, and is not committing UFA staff time.</p>



**Action Initiative 11: Simpler, Flexible Regulatory Environment for Direct Market Producers and Small Floating Processors (without full CWG consensus)**

**ACTION PLAN**

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
1.Request a multi-agency review	UFA	Time	unknown
2.Participation in multi-agency review	UFA, ADFG, DOR, DEC, DCCED		Unknown
3.Changes to regulations to implement changes suggested by review process			Unknown

**Obstacles and Impediments Likely to Affect Implementation:**

STEP:	Help needed:
Agencies reluctance to make changes – they are satisfied with current situation and don't really care about the effects on the end users	Raising awareness of the issue, helps create the demand for participation in the regulatory review.

**Funding:**

Phase:	Budget:	Funding Source:
Multi- agency review	Possible funding for travel will be needed	Unidentified at this time

**Outcome/Results:** Changes to the regulations will have been enacted.

## Action Initiative 12: Rural Community Permits (without full CWG consensus)

<b>Cluster Working Group:</b>	Rural Community Permits
<b>Prepared By:</b>	Kathy Hansen
<b>Date:</b>	3/30/11

<b>Title or Name of Action Initiative:</b> Rural Community Permits
<b>Initiative Champion/Implementation team members:</b> Kathy Hansen
<b>Description &amp; Motivation:</b> Returning State of Alaska Limited Entry Permits to rural coastal communities. This is one possible solution to turning the tide for permits and residents leaving the small rural communities but is possibly controversial.
<p><b>Objective:</b> This is an idea that Rep. Thomas mentioned once to me and I always thought it had possibilities to return permits to rural coastal communities. CQE's were an entity developed by the NPFMC to allow quota share to be held by small rural community trying to keep permits in the communities. CQE's have recently been expanded to be allowed to purchase or hold halibut charter limited entry permits. While the requirements between the two programs are slightly different they both have requirements that the community has to benefit. For example halibut charter limited entry permits have to either start or end the trip in the community. With State of Alaska limited entry permits you could make the requirement that the permit can only be leased to a community resident so the income earned by the permit holder leasing the permit benefits the community.</p> <p>If the initiative was successful you would be providing the opportunity to give a younger community member a start into commercial fishing with the intent that he would be able to eventually purchase his own permit and then another community member could be leased the permit. This would help return permit into the small rural coastal communities, would help with starting younger individual into commercial fishing, help support the processing sector and supporting businesses in the communities and the income earned with the limited entry would help the economics within the community.</p>

## Action Initiative 12: Rural Community Permits (without full CWG consensus)

### ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
1. Research Issue and see if the Constitutional Amendment for Limited Entry would allow the legislature to authorize Community Quota Entities to hold State of Alaska Limited Entry Permit	Consult with CFEC		Anytime prior to UFA Fall Board Meeting so materials would be available then
2. Consult with United Fishermen of Alaska and see if support for allowing CQE's to hold limited entry permits can gain support from around the state with fishermen.	United Fishermen of Alaska	None	Likely Fall Board Meeting is when discussion would take place
3.If Commercial Fishermen would support the idea, consult and collaborate with Native Associations & coastal communities & CQE groups to pursue the idea as legislation.	Native Associations UFA Coastal Community Leaders CQE's		November & December
4. Get the idea translated into legislation and find a legislator to carry the legislation	Representative Thomas, Representative Austerman and other Southeast Legislators		January

#### Obstacles and Impediments Likely to Affect Implementation:

##### STEP:

##### Help needed:

Largest obstacle to this issue will be gaining acceptance to the idea of allowing Limited entry permits to be held by a corporation and be leased to someone in the community rather than the permit holder on board provisions that limited entry is built upon.

Idea needs to be brought out into the open and discussed or it will go nowhere.

## Action Initiative 12: Rural Community Permits (without full CWG consensus)

### Outcome/Results:

Final measurement of the initiative is that legislation will be passed and a CQE takes advantage and holds limited entry permits.

Incremental steps are 1.) gaining support for the idea; 2.) introducing legislation; 3.) Legislation passed & signed by Governor

4.) CQE holds a limited entry permit and leases it to a community member.