

# **Working together to protect the management system for the world's most valuable salmon fishery**

A proposal to address eroding financial support to salmon and herring  
management in Bristol Bay, Alaska

Prepared for:

Board of Directors, Bristol Bay Science and Research Institute  
and  
Sam Cotten, Commissioner, Alaska Department of Fish and Game,

Prepared by:



Bristol Bay Science and Research Institute  
Box 1464  
Dillingham, Alaska 99576

September 2, 2016



# **Working together to protect the management system for the world's most valuable salmon fishery**

A proposal to address eroding financial support to salmon and herring  
management in Bristol Bay, Alaska

Prepared for:

Board of Directors, Bristol Bay Science and Research Institute  
and  
Sam Cotten, Commissioner of Alaska Department of Fish and Game,

Prepared by<sup>1</sup>:

Michael R. Link and Jeff R. Regnart

Bristol Bay Science and Research Institute  
Box 1464  
Dillingham, Alaska 99576

September 2, 2016

---

<sup>1</sup> With assistance from Central Region and Bristol Bay area staff of the Alaska Department of Fish and Game.

## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	ii
INTRODUCTION .....	1
PROBLEM STATEMENT.....	1
CURRENT APPROACH TO DECLINING STATE REVENUE AND OPERATING BUDGETS.....	2
Problems with the Current Approach.....	3
OTHER APPROACHES TO DECLINING BUDGETS.....	3
PROPOSED SOLUTION FOR BRISTOL BAY.....	4
Memorandum of Agreement (MOA) .....	4
Working Group (WG) .....	5
Is a Working Group Essential? .....	6
PRINCIPLES, GOALS, AND SCOPE OF A CORE PROGRAM.....	8
Core Program – Additions to the Current Suite of Projects .....	11
SUMMARY CURRENT AND ANTICIPATED FUNDING NEEDS .....	12
Current Expenditures on Fishery Management .....	13
Approximate Core Program Costs .....	13
THE USEFULNESS OF THE BBFC.....	14
PRELIMINARY FUND RAISING CONCEPT .....	14
PROPOSED NEXT STEPS.....	15
BBSRI's CAPACITY FOR THE TASK AT HAND .....	15
LITERATURE CITED .....	15
APPENDIX. Memorandum of Agreement between ADF&G and BBSRI to form the Bristol Bay Fisheries Collaborative.....	16

## **EXECUTIVE SUMMARY**

Over the last five decades the State of Alaska has developed a world-class fisheries management program for Bristol Bay fisheries. Recently, the State's fiscal crisis has led to budget cuts that have significantly eroded the capacity of fishery management in Bristol Bay. This has negatively affected the benefits from the fishery for the industry and the communities that depend on an intensively and well-managed fishery. In response, industry and local communities and organizations have been helping in recent years to shore up the program on an *ad hoc* basis. These organizations are concerned that the fiscal crisis has not ended and that by contributing informally they may only be accelerating budget cuts to the Bay program.

This proposal represents a grass-roots initiative developed by stakeholders with assistance from the Alaska Department of Fish and Game (ADF&G) to more formally shore up the Bay's commercial fisheries management program and stem further cuts, to the extent possible. We propose the formation of a **Bristol Bay Fisheries Collaborative** (BBFC) via a simple Memorandum of Agreement (MOA) between ADF&G and the Dillingham-based Bristol Bay Science and Research Institute (BBSRI). The BBFC would act as a conduit for funding from BBSRI and stakeholders, including industry, to support a "Core Program" that maintains a team of fisheries professionals and the science and monitoring tools needed to obtain the greatest benefits from the fishery.

BBFC is not a research consortium and the Core Program is not a research program; instead, it represents the fishery monitoring and staffing needs to protect the capacity of ADF&G to manage the fishery to a level that achieves biological goals and economic benefits. BBFC does not dilute or interfere with the emergency order authority of the ADF&G to manage the fishery and its participation in the regulatory process.

We estimate the approximate shortfall between the current (2016) expenditures from ADF&G and industry partners and that needed for a robust Core Program is about \$700,000; this is over and above close to ~\$550,000 in various forms of support provided by stakeholders in 2016. Under the guidance of the MOA, a jointly staffed Working Group would assist ADF&G with defining and executing the Core Program to support management of Bay salmon and herring fisheries.

This proposal is intended for organizations and individuals directly affected by the State's declining capacity to manage the Bay area fisheries and who have the capacity to support the BBFC in various ways. The proposal includes a definition of the problem, drawbacks to the current approach to dealing with the problem and a review of alternate approaches, and a proposed solution. The proposal concludes with the next steps required to make the initiative a reality.

## **INTRODUCTION**

Bristol Bay fisheries and their management systems exemplify the world-class approaches the State of Alaska has developed over the five decades since it took control of managing its fisheries. Unfortunately, the State of Alaska's fiscal crisis jeopardizes this enviable position. Recent dramatic declines in state revenue have led to significant cuts and an erosion of the management system for Bristol Bay's salmon and herring fisheries. It is clear that more cuts to the State's operating budget are coming. Unfortunately for those whose livelihoods depend on an intensively managed fishery, the State can meet its mandate with even less funding than available in 2016. We expect the state to continue to cut or attempt to tax the industry in ineffective ways. Budget cuts and a shrinking program threaten the economic viability of the fishery and communities that depend on it.

This proposal represents a grass-roots initiative developed by stakeholders with assistance from the Alaska Department of Fish and Game (ADF&G) to stem the erosion in the Bay's fishery management. If implemented, this effort will raise funding that can be dedicated to maintaining and building upon the fishery management all have been accustomed to in recent decades. The proposal is intended for organizations and individuals directly affected by the State's declining capacity to manage the Bay area fisheries. The proposal includes a definition of the problem, drawbacks to the current approach to dealing with the problem, a review of alternate approaches to the problem, and a proposed solution. It ends with the next steps required to make the initiative a reality.

## **PROBLEM STATEMENT**

- The state's fiscal crisis is continuing to significantly erode management of Bristol Bay salmon and herring commercial fisheries.
- Further cuts to the Bristol Bay management will have substantial impacts on the economic health of the fishery and the region.
  - With less funding, the State of Alaska collects less information and must then manage the fishery more conservatively.
  - More conservative management translates into:
    - lost opportunities for harvest and produces lower value products from the smaller harvest;
    - lower tax revenues to the State of Alaska; and
    - a threat to the economic viability and sustainability of the fishing industry and communities that depend on it.

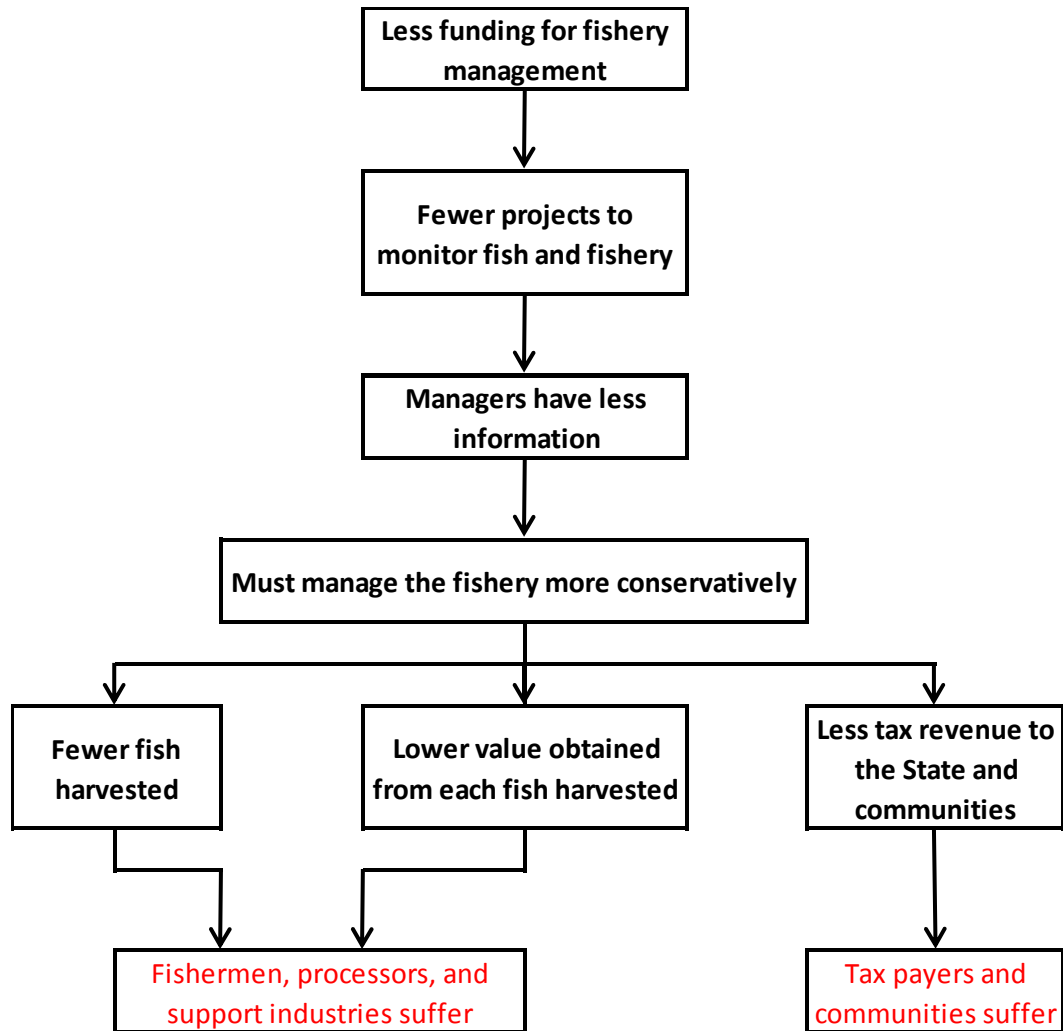


Figure 1. A diagram illustrating the problem statement associated with cuts in funding for the Bristol Bay salmon management program.

## CURRENT APPROACH TO DECLINING STATE REVENUE AND OPERATING BUDGETS

- ADF&G takes consecutive cuts to its annual budget and typically must apply these somewhat uniformly across regions, with each round further reducing the ability of ADF&G to manage fisheries.

## Problems with the Current Approach

The current response to declining budgets has many drawbacks.

- It is difficult politically for ADF&G to prioritize expenditures across regions. Cuts tend to be applied equally among regions, largely independent of the returns on expenditures to stakeholders
  - Bristol Bay, although a high-value, intensively management fishery stands to lose funding rates not very different from other regions.
- Projects (and positions) are eliminated based on the least overall damage to the agency and its ability to manage the fisheries within each of its regions.
- Private entities are often asked to provide financial and in-kind support.
  - However, these entities cannot be provided any assurance that funds they contribute won't simply accelerate budget cuts from the State; on the contrary, contributions will likely accelerate future budget cuts.
- More generally, ADF&G remains in a reactive mode and this creates an uncertain future; the Department has little opportunity to invest in ways to improve management and in ways to maintain capacity with lower overall expenditures.

In summary, under the *status quo* approach to the fiscal crisis the capacity of ADF&G to conduct a robust Bay program will continue to decline. Considerable capacity has already been lost over the last several years and we see this trend difficult to reverse.

## OTHER APPROACHES TO DECLINING BUDGETS

- *Reverse the decline in state revenue*
  - Larger state budgets are unlikely given the state is shifting from oil-revenue funded to publically tax-funded.
- *Raise the raw fish tax or other taxes*
  - Increased fish taxes cannot be earmarked for fisheries management. Given the fiscal crises in other areas, we can expect funds collected in the Bay to return to manage its fishery at a fraction of its magnitude collected at the source.
- *Raise money by selling uncaught fish to processors* – Raising money via “cost-recovery fishing” (AKA test fish fund authority) can be an inefficient, and potentially regressive way to fund fishery management.
  - Inefficient – In Bristol Bay, about \$1.5M landed value of fish must be caught (and taken from the industry) to provide ADF&G with ~\$400,000 for its operations.
  - Regressive, and not sustainable – The *de facto* tax rate (%) from cost-recovery fishing is regressive because it increases with smaller runs and catches. In times of small runs in Bristol Bay, this form of taxation could represent a significant portion of fishermen's net incomes. As a result, it is not likely to be sustained. Instead, it will be eliminated in a reactive way when runs are small, placing us back into fiscal crisis mode.



- *Ad hoc shift of responsibility to private entities* – Private entities pick up ADF&G’s discontinued projects and develop a parallel system. For example, BBSRI and its industry partners have already begun to do this (Togiak and Igushik towers in 2016), and could feasibly continue to pick up and operate projects as they are cut by ADF&G. This is probably the best of the alternatives outlined above. However, it creates a dual monitoring system and will likely lead to a less efficient and less leveraged approach than if stakeholders partner more formally and synergistically collaborate with ADF&G.

## **PROPOSED SOLUTION FOR BRISTOL BAY**

Dillingham-based Bristol Bay Science and Research Institute (BBSRI) and industry partners would provide significant financial and human resources in a manner to:

- create a net increase in funding from 2016, and other resources to help ADF&G manage the fishery;
- protect stakeholders’ investments to the degree possible by matching ADF&G’s expenditures;
  - expect a matching environment to impact the logic associated with applying cuts to the region by future legislatures and administrations;
- create incentives to invest to improve the economy of management by avoiding the annual “use it or lose it” approach to annual state funding; and
- create a collaborative environment for defining and/or conducting projects that support ADF&G’s management, which will have a long-term positive impact on fishery management in the Bay.
  - Funders will have a seat at the table to help direct resources and better understand the costs and value of fisheries management activities.
  - The value of additional investments will be more apparent to stakeholders and they will be more likely to invest than they would under the *status quo* of limited or no involvement in how the money is expended.

## **Memorandum of Agreement (MOA)**

We propose that ADF&G and BBSRI join forces via a simple Memorandum of Agreement (MOA) to jointly support and oversee fish and fishery monitoring, and closely associated research tasks required to maintain world-class, economically viable fisheries in Bristol Bay. Under this arrangement, BBSRI could act as a conduit for funding from its industry partners. We propose a working title for the initiative as the “**Bristol Bay Fisheries Collaborative**”. This title reflects the intent to *collaborate* and not in any way to co-manage the fishery.

The MOA would not in any way transfer or dilute ADF&G authority to open and close the fishery, or interfere with any other functions associated with Emergency Order authority granted to Area Managers by the Commissioner of ADF&G, adherence to the SSFP, or regulations promulgated by the Alaska Board of Fisheries.

The essential features of the MOA are to articulate:

- parties to the agreement and their respective missions;
- common goals of signatories;
- basis for taking action and agreement on the conditions precipitating action;
- purpose of the agreement;
- cost-sharing formula that will be robust in a dynamic funding environment;
  - including ways to leverage the funds from stakeholders to reduce further cuts by the State;
- terms of reference of a “Working Group” to oversee implementation of the MOA; and
- “off-ramps” for either party to exit the agreement in an orderly fashion so as to provide sufficient time to minimize impacts to the Bay’s management (e.g., an 18-month notice).

The MOA would be an agreement between ADF&G and BBSRI, and the leadership of these entities would be ultimately responsible for the functioning of the collaborative. The “Parties’ Leadership” would be the Commissioner of ADF&G and the Board of Directors of BBSRI, or their delegates. As elaborated on in a draft MOA (Appendix A), the Parties’ Leadership would meet annually to review the performance of the collaborative. Our intention is to keep the MOA as simple as possible.

The MOA would formalize and add transparency to a process of providing funding to monitor and manage the fish and fishery. This general approach of collaboration is not without precedence in Bristol Bay. The funding and operation of the Port Moller Test Fishery (PMTF) has worked well over the last 15 seasons, and mirrors in several respects what we envision for BBFC – Processors, fishermen (RSDA), and BBSRI contribute funding to the cause. BBSRI then works with ADF&G to define the scope and operate the PMTF. An MOA would enable and facilitate support for the entire Core Program.

### **Working Group (WG)**

A Working Group (WG) comprised of two representatives from each party to the MOA would work together to establish and monitor the effectiveness of a core suite of monitoring/research projects. The WG would be a decision-making body that would provide non-binding recommendations and would have to work within (and be possibly constrained by) the State’s procurement protocols and labor agreements. The mandate of the WG would be to develop the best management program with the available funding.

Parties to MOA would appoint and support participation of its two WG members. Qualifications for individuals to serve on the WG include considerable familiarity with management and/or science of Bristol Bay fisheries (e.g., 5 or more years), and a track record of working constructively with multiple parties in an agency-industry environment.

Parties to the MOA commit to avoid making the WG cumbersome or bureaucratic. The scope of the WG’s task is not complex. Success of this initiative will be heavily dependent on

the WG achieving a collaborative and synergistic environment, both of which are hindered by large groups and bureaucratic environments. The WG group would provide an annual report to its benefactors (funders), and others that summarizes a general accounting of funds, programs conducted and review of any possibly upcoming changes to the program. This transparency is common sense but would be essential to a robust WG process.

We envision the scope of the WG's responsibilities to include oversight to monitor the suitability and efficacy of the annual and multi-year research and monitoring projects, and to ensure that the funds are being expended in the most judicious and efficient manner. Program review and decisions about which projects and programs to support would be done on an annual basis and would require WG members collate and prepare information for review outside of meetings. We envision two or more WG meetings annually. A first draft of the WG Terms of Reference is provided as an Appendix of the MOA, which is included in this proposal.

Figure 2 provides a graphical representation of the relatedness and roles of the Parties Leadership, the WG, the Core program and roles outside of the BBFC.

### **Is a Working Group Essential?**

Yes. The reason for having the WG stems from the need of stakeholders to have input to how their investments in fishery monitoring are expended. Recall that ADF&G could manage the Bay fisheries without any stakeholder funds and achieve its mandate of "sustained yield". In fact, the State could achieve its mandate with less funding than it had in 2016. However, all, including the State's fishery managers, agree that the fishery will provide fewer economic benefits under more conservative management.

Stakeholders are providing additional funds so as to capture additional benefits from a more intensively managed fishery. Stakeholders have meaningful input to the types of programs that improve the economic returns from the fishery. In a sense, funders are willing to "buy" additional capacity for the management system to improve benefits from the fishery, and simply want to have some input to what should be done with the additional resources being spent for their benefit. Without a working group, ADF&G is alone left to decide on how best to improve the economic benefits from the fishery.

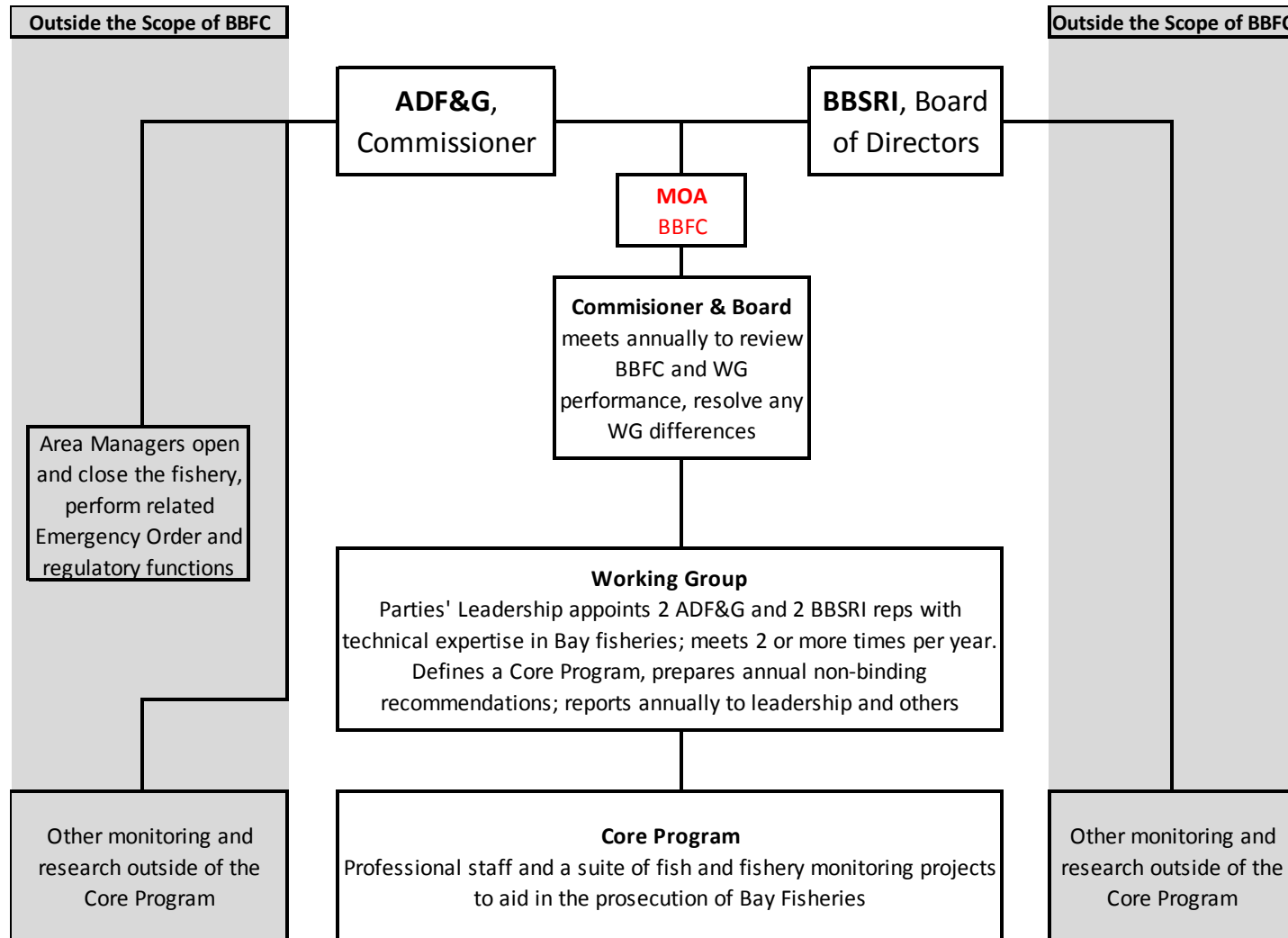


Figure 2. Organizational relationships of parties and roles of the Bristol Bay Fisheries Collaborative (BBFC) and responsibilities and duties outside of BBFC.

## **PRINCIPLES, GOALS, AND SCOPE OF A CORE PROGRAM**

We define the core suite of monitoring, research, and management activities as a “**Core Program**”. The scope and cost of a Core Program are fairly well understood among those involved in Bay management. In a review of the Bristol Bay salmon program, Clark (2005) looked at historical and then current expenditures, and defined what he saw as a basic suite of projects to manage the fishery. During preparation of this proposal, we met with ADF&G managers and research staff to seek input on the matter. Below, we provide an initial scope of the Core Program that the WG could refine.

**BBFC is not a research consortium and the Core Program is not a research program.** Instead, its scope more simply addresses the annual needs for fishery monitoring and staffing to protect the capacity of ADF&G to manage the fishery to a level that achieves both biological and economic goals.

The overarching guiding principle of the Core Program is to create a management program that can protect assets that support the fisheries of Bristol Bay, while providing the greatest social and economic benefits to the fisheries’ participants. Assets of the Bay fishery include the habitat and the fish stocks that populate the habitats, and the professionals who understand the fish and fisheries to make beneficial management decisions in an intensively managed fishery. The focus of a Core Program for BBFC would be to monitor the fishery and annual fish returns to ensure long-term sustainability and healthy fisheries, and maintain a team of professionals to make the most of that information.

To reiterate, the Core Program is not a research consortium or research program, and we expect research efforts by the Parties and others to continue outside of the efforts of the BBFC. The focus of the Core Program is monitoring fish and fisheries, and making the best decisions using that information. We expect ADF&G, BBSRI, and others to continue to tackle research questions outside of the purview of the BBFC and its WG. We envision the possibility of these or other groups developing and proving up alternative approaches to existing information needs outside the Core Program and then petitioning the WG to have them added to it.

We believe a Core Program for the Bay should take into account possible future states of the fishery and environment. The fishery and its individual stocks have waxed and waned over the last 130 years. Climate-driven changes in ocean conditions over time (i.e., the Pacific Decadal Oscillation) have resulted in some stocks supporting significant harvests for decades followed by periods of low productivity only to later again return to higher levels of productivity. We cannot know now which stocks will be the most valuable in the future, but maintaining knowledge of the status, productivity, and potential capacity of the area’s fish stocks ensures that the “Golden Goose” – Bristol Bay watersheds and all their races of fish that have adapted to local conditions – will be able to sustain healthy fisheries in perpetuity.

Therefore, we include in our draft of the Core Program, all the major salmon (and herring) producing stocks that can be affected by management or affect prosecution of the fisheries.

Stemming from the principle of “Protecting the Golden Goose” are four goals of a Core Program. We outline these below and summarize the total and relative cost of these components in terms of actual and predicted expenditures in Table 1. The two % numbers for each component below reflect the approximate current fraction of total expenditures (2016), and fraction of the cost of the proposed Core Program.

1. **A team of professionals to collect and interpret information on the status of the fish stocks and regulate fishing effort (55%/45%).** The cornerstone of ADF&G’s management is the team of professionals who have the appropriate knowledge and experience to prosecute the fishery.
  - a. Three full-time Area Management Biologists (FBIII) and one assistant (FBI), two research biologists (FB II and III), 33-50% of two area management coordinators (FBIV), and a regional supervisor, as well as several admin staff, office space, and IT functionality. There is a large cadre of seasonal staff and we associate those with implementation of monitoring and research projects (#2 and #3 below).
2. **Protect weak stocks while exploiting productive stocks to the extent possible (35%/36%)** – A Core Program provides managers and industry with tools to prosecute the fishery in a manner that distributes effort and harvests across time within and among seasons to the greatest extent possible. This is done with field projects, historical datasets, and analytical tools that help managers to predict the remaining run so that escapement goals can be met and harvests can be distributed through time. This goal represents effort greater than simply providing a “sustained yield”; it includes effort to maintain the economic health of the fishery.
  - a. **Port Moller Test Fishery** – Provides indices of abundance and genetic based stock composition from a sampling project 6-9 days travel from the inshore fishing districts. This allows managers additional time to protect weak stocks and exploit abundant stocks before fish have passed the fishing districts.
  - b. **District test fishing, in-river test fishing, and aerial surveys** – Managers recruit commercial fishermen to conduct test fishing within districts and operate in-river test fishing projects just upstream the fishing districts on the Ugashik, Egegik, and Kvichak rivers. Managers regularly fly the districts and river systems to gauge run strength prior to enumeration at upstream enumeration sites. Overall herring biomass and its distribution are determined by aerial surveys.
  - c. **Salmon escapement enumeration** – The Core Program would include towers on the Togiak, Igushik, Wood, Kvichak, Alagnak, Naknek, Egegik and Ugashik rivers, and the Portage Sonar project on the Nushagak River.
3. **Maintain all existing stock-specific brood tables (3%/8%)** – much of the data for this comes from projects listed in #2 above. This category represents the additions and marginal costs to maintain brood tables. These datasets, many of them covering five

decades, enable us to track the health and productive capacity of all major salmon and herring stocks in the Bay. The data also provide the information to evaluate escapement goals, a fundamental cornerstone of fisheries management in the Bay. Finally, these data provide inputs to annual preseason forecasts, which assist fishery management and industry planning. Projects required to maintain brood tables include:

- a. **AWL sampling**— Biological sampling at all enumeration projects and in the commercial salmon and herring catches.
  - b. **Catch apportionment** – Age composition and genetic-based assignment of district salmon catches to river of origin.
4. **Provide for regular program evaluation and investment in tools to lower program costs, and expand and/or improve the value of fishing opportunities (~5%).** A Core Program should invest in regular review of the performance, cost effectiveness, and overall value of the specific monitoring projects. This makes “business” sense. With millions of dollars expended on the management program annually, periodic and rigorous reviews of the efficacy and benefits from individual components makes “business sense” to all who fund the program. The program should provide some resources to evaluate new tools and new opportunities to obtain more benefits from the fishery. This goal includes such tasks as the evaluation of escapement goals based on the latest brood table data. We do not propose specific projects in this proposal and see it as a responsibility of the WG. For illustration only, examples of tasks might include the following.
- a. *Professional development of fishery managers and research staff* – A core program includes on-the-job training and succession planning for the area management and research staff.
  - b. *Evaluate the benefit/cost ratios of alternative enumeration and survey methods.*
  - c. *Investments in more cost-effective genetic or other methods to estimate stock composition.*
  - d. *Identify monitoring requirements to expand fishing opportunities in a manner compliant with the SSFP.*
  - e. *Evaluate the effectiveness of various options to protect weak stocks amid productive stocks.*

Table 1. Components and approximate costs associated with different goals of the current and proposed Core Program for managing the Bristol Bay salmon and herring fisheries.

Goal	Core Program Components*	Thousands Dollars		% of Program	
		Current	Core Prog.	Current	Core P.
1 Team of professionals to manage the fishery and collect and interpret information, IT, and offices.	3 Area Managers, 1 Assistant 2 Research Biologists <i>Maintenance technician</i> <i>Administrative program tech.</i> 33-50% of 3 regional coordinators/supervisors Salaries Infrastructure	1500 200	1640 200	55% 7%	45% 6%
2 Protect weak stocks while harvesting productive stocks to the extent possible	District and in-river test fishing, aerial surveys Towers: <i>Togiak, Igushik, Wood, Kvichak, Alagnak, Naknek, Egegik, Ugashik</i> Nushagak sonar June to mid Aug. Port Moller Test Fishery	945	1165	35%	36%
3 Maintain all existing stock-specific brood tables (in addition to #2)	AWL sampling in catch and escapement, <i>catch apportionment by genetics</i> <i>Herring aerial surveys and biosampling for ASA model</i>	90	270	3%	8%
4 Provide regular evaluation and investment in tools to lower program costs, and expand and/or improve the value of fishing opportunities, and contingency to run projects	<i>Periodic evaluation, R&amp;D for new cost-effective methods for above programs, address aging infrastructure, contingency to deal with anomolous runs and conditions.</i>	0	160	0%	5%
		2,735	3,435	100%	100%
Additional (\$k)			700		

\* Items in italics are either additions in the Core Program or have been augmented from the current expenditures.

### Core Program – Additions to the Current Suite of Projects

For discussion, we have developed a draft of the Core Program based on our knowledge of the fishery, and with input from ADF&G and stakeholders. We envision the first order of



business of a WG appointed under the MOA would be to refine and finalize the Core Program. Our suggested additions to current (2016) program to form a Core Program are as follows.

- **Management support** – Add an assistant management biologist (FBI) and some additional office and maintenance staff resources.
- **Togiak and Igushik towers** – Although funded and operated by stakeholders in 2016, we include these in a future Core Program. The tower data is used for management, and these stocks are sufficiently large to warrant maintaining their brood tables.
- **Alagnak tower** – Although the tower count data might not directly affect in-season management decisions, the tower provides escapement enumeration for the stock's brood table for one of the State's largest sockeye salmon stocks.
- **Extend Nushagak sonar** – Operate Portage sonar through the coho and pink salmon runs (i.e., mid-August).
- **Annual genetic-based catch apportionment** – Used to reconstruct total runs by stock from all districts, which is essential for useful brood tables (other methods can be used but they are less accurate). Support for this task has been reduced recently, and a Core Program would bring the appropriate scope back to what is needed to do it fully.
- **Togiak herring** – Conduct aerial surveys of Togiak herring to estimate biomass, biosampling of catch and spawning fish to estimate age-specific biomass, and use this in age-structured models to forecast an annual total allowable catch.
- **Shore up existing field projects** – Add modest additional resources (~10-15% increase) for many of the towers, in-river test fish projects, Portage sonar, etc. where incremental cuts over the last 3 years have substantially affected the quality of the projects and the data they produce.
- **Program review and R&D.** Provide funds to conduct review and invest in program improvements, including professional development of staff.

These components are italicized in the descriptions in Table 1.

## **SUMMARY CURRENT AND ANTICIPATED FUNDING NEEDS**

Over the spring and summer of 2016, BBSRI worked with ADF&G to identify the costs of the existing program components, and that of a Core Program as outlined above. The Core Program is larger than what was conducted in 2016 and we estimate the additional cost of upgrading to a Core Program would be ~\$700k (Table 1).

This is a high-level overview; additional detail would need to be worked out and agreed upon by a WG before any recommendation for a 2017 program would be made. Again, our purpose here to put the approximate magnitude of what a Core Program would require so that potential partners (BBSRI and industry) can gauge the level of financial assistance sought via the BBFC.

Having provided those caveats, we are comfortable that we have obtained a level of precision of plus or minus 10% for the projects specified which translates into plus or minus ~\$150k. Where this could be greater or less than this \$150k would be if the WG added or removed entire projects from the preliminary Core Program we described above.

### **Current Expenditures on Fishery Management**

In calendar year 2016, ADF&G, BBSRI, and industry will spend approximately **\$2.735 million** on projects, administration, and regional and area staff to prosecute the Bristol Bay salmon and herring fisheries (Table 1). This represents expenditures on items seen as part of a future Core Program and does not include research and studies like the Nushagak River tagging study, smolt enumeration projects, and other studies conducted by ADF&G, BBSRI, and others. This estimate includes the cost of dedicated and fractional cost of shared full-time staff (e.g., regional and administrative managers), seasonal field staff, and associated administrative overhead, as well as building maintenance.

The State of Alaska's General Fund (GF) provides about \$2.1 million of the \$2.7 million spent in calendar year 2016. The remaining ~\$600k has come from a combination of Test Fish revenue and stakeholders (processors, the RSDA, villages, and BBSRI). In 2016, the Bristol Bay Regional Seafood Association (RSDA) provided ADF&G ~\$250k in place of having ADF&G conduct dedicated cost recovery fishing (another ~\$75k is revenue from true test fishing activities, including outside, district, and in-river test fisheries).

### **Approximate Core Program Costs**

We estimate the cost of a Core Program outlined above to be about **\$3.4 million** annually. *Without* further cuts to State GF or test fish revenue, the Core Program would require ~\$700k in new money. However, the RSDA's buyout of the cost recovery fishing in 2016 is not likely to happen again in future years. Therefore, if dedicated cost recovery fishing was not done in the future, the additional funding required for the Core Program is approximately \$950k. Of course, ADF&G has retained its "test fish authority" from the legislature and cost recovery fishing remains an option to raise funds for management.

The new \$950k is in addition to the ~\$300k already spent on projects with the Core Program suite by RSDA, BBSRI, and processors, bringing the overall BBSRI/Industry contributions that would be needed to \$1.25 million. This would be ~38% of the total cost of managing the fishery with a Core Program. A further cut to ADF&G budget would grow this shortfall dollar for dollar (e.g., an entirely possible \$250k cut by ADF&G to Bay operations) would grow the shortfall to \$1.5 million. An option to reduce the size of the need from stakeholders would be to seek a budget increase to ADF&G from the legislature.

Finally, the \$1.25 million represents to entire outside support from BBSRI/industry and is not the net increase over what was provided in 2016. Moving forward, we use this entire number so as to avoid multiple and confusing requests to "dip" into the pot. BBFC would eliminate the various project-specific fund raising efforts done each year (e.g., Port Moller,

Igushik and Togiak towers, extended tower operations, etc.). If providing funds, stakeholders would provide a single installment and no additional funds would be requested on an *ad hoc* basis like in recent years.

## **THE USEFULNESS OF THE BBFC**

It seems likely that the aspiration to achieve a world-class Core Program will quickly fade from memory if budget cuts to ADF&G continue at the pace anticipated. The difference between what funding the State can provide and what is needed for a Core Program will likely grow quickly beyond what is doable. If state funding levels were to fall to ~\$1.5M over the next year or two, a Core Program would require \$1.8-1.9 million annually from stakeholders. Funding by ADF&G at this lower level is entirely possible and legally defensible from the perspective of the Sustainable Salmon Fisheries Policy.

Herein lies the impetus for this collaborative and its timing; “plug the leak in the dyke” *before* too much money has leaked out. The mechanism we envision is that stakeholders provide funds to ADF&G’s in a matching arrangement to discourage/stymy further cuts to Bay operations. The logic of leverage can be applied both at the legislative level and within ADF&G as we expect cuts within the Department would be applied to areas of least impact.<sup>2</sup>

All stakeholders who we discussed this initiative with do not support simply abandoning the effort if BBFC fails to develop. Those who support the BBFC approach see it as the *best* way to achieve a world-class and efficient management program for the Bay. If it fails to develop, we expect stakeholders will resort, to the extent possible, to conducting program components that ADF&G discontinues due to budget shortfalls. At a minimum, this would be a less efficient process than the BBFC.

## **PRELIMINARY FUND RAISING CONCEPT**

A formula to raise funds among stakeholders has yet to be worked out. A preliminary concept would be for BBSRI to offer to match on a 1:1 basis those contributions from the processing and fishing industries up to a maximum amount determined by the overall need for outside funding (currently estimated to be \$1.25M). These funds could be provided to the BBFC effort to support the Core Program in a 1:1 match with ADF&G, based on the 2016 current expenditure. Any decreases in the ADF&G from 2016 would result in a commensurate reduction in the BBSRI/Industry contribution on a 1:1 basis. This doubles the magnitude of cuts by ADF&G<sup>3</sup>.

---

<sup>2</sup> We believe there are limits to the value of logic in all this, but it’s better than hope alone.

<sup>3</sup> Of course, there remains the potential that leveraging is much greater than 1:1. If ADF&G funding were to be cut substantially and at great detriment to the health of the fishery, BBSRI and industry partners could terminate their involvement in BBFC. Presumably, they would attempt to develop some sort of a parallel support system of sorts, but that is not the goal of the BBFC or this proposal.

## **PROPOSED NEXT STEPS**

If ADF&G and BBSRI leadership support this initiative as outlined above, we envision the following step be taken in the last four months of 2016.

1. Leadership in ADF&G and BBSRI review and finalize the MOA.
2. Appoint a Work Group (WG).
3. WG finalizes scope and cost of the Core Program.
4. BBSRI works with industry to reach the fund raising goal to support a Core Program.
5. Implement a reasonable version of the Core Program in 2017.

## **BBSRI's CAPACITY FOR THE TASK AT HAND**

Bristol Bay Science and Research Institute is a 501.c.3 corporation incorporated in 1998. BBSRI is a subsidiary of the Bristol Bay Economic Development Corporation (BBEDC). BBSRI has been active in fishery monitoring, management, and research in the Bay since 2002. It has collaborated with ADF&G on many of the Bay programs and for over a decade it has brought significant financial and human resources to Bay fishery management.

Led by a Board of Directors and Executive Director from the region with extensive experience in the fishery, the Institute regularly contracts fisheries scientists, biologists, technicians, economists, and computer scientists to conduct monitoring and research projects in the Bay. Michael Link has provided technical leadership and program management to BBSRI since 2002. In the late 1990s Michael worked briefly with ADF&G as research project leader for Bristol Bay salmon. Jeff Regnart, former Director of ADF&G's Commercial Fisheries Division, has worked in Bristol Bay management since 1990; Jeff has provided BBSRI with a range of support, including with our search for fiscal stability and a sustainable future to management in the Bay. Michael and Jeff have collaborated numerous times over the last 15 years, including recently on a multi-disciplinary study of the economics of alternative escapement goals for Bristol Bay sockeye salmon. Michael and Jeff bring complementary experience and skillsets to the task at hand.

## **LITERATURE CITED**

Clark, J.H. 2005. Bristol Bay Salmon, A Program Review. Spec. Pub. No. 05-02. Alaska Department of Fish and Game. Div. Commercial Fisheries, Juneau, AK.

**APPENDIX. Memorandum of Agreement between ADF&G and BBSRI to form the  
Bristol Bay Fisheries Collaborative**

# **MEMORANDUM OF AGREEMENT**

**Between**

**ALASKA DEPARTMENT OF FISH AND GAME  
P.O. BOX 115526  
JUNEAU, ALASKA 99811**

**and**

**BRISTOL BAY SCIENCE AND RESEARCH INSTITUTE  
P.O. BOX 1464  
DILLINGHAM, ALASKA 99576**

This Memorandum of Agreement (MOA) is made and entered into by and between the Alaska Department of Fish and Game, hereinafter referred to as ADF&G and Bristol Bay Science and Research Institute, hereinafter referred to as BBSRI. ADF&G enters into this agreement under authority of AS 16.05.050 (12).

## **A. PURPOSE:**

The purpose of this Memorandum of Agreement is to provide a framework upon which ADF&G and BBSRI may jointly plan, fund and accomplish mutually beneficial projects and activities within the Bristol Bay watershed. Such activities and projects will complement the missions of ADF&G and BBSRI and be in the best interest of the fishery resources and communities within the Bristol Bay watershed.

Together ADF&G and BBSRI will consider projects and activities that achieve these common goals:

1. Maintain and enhance a world-class, collaborative fisheries management program in Bristol Bay to benefit all stakeholders, including communities and residents of the region.
2. Stabilize and secure funding for annual research and monitoring programs used to manage the fisheries of Bristol Bay.

## **B. BACKGROUND:**

WHEREAS, the State of Alaska, acting through its agents in ADF&G, is constitutionally responsible for the sustainability of all wildlife and fish within its borders, regardless of land ownership or designation, and it has the statutory authority, jurisdiction, and responsibility to manage, control, and regulate wildlife and fish populations, including for subsistence purposes, unless specifically preempted by Federal law.

WHEREAS, the State of Alaska is facing fiscal challenges with dramatic declines in revenues, and this has already significantly affected management of Bristol Bay fisheries.

WHEREAS, the Bristol Bay salmon and herring fisheries occur over short periods and as a result an information-intensive management system has evolved since statehood.



WHEREAS, ADF&G must seek to manage all renewable resources on the sustained yield principle for the common use of all people, subject to preferences among beneficial uses, and the State may enter into cooperative agreements with other organizations to benefit these resources and uses, but it cannot surrender its responsibility to manage fisheries resources to them.

WHEREAS, ADF&G's mandate and mission do not require it to maximize or optimize the economic benefits from the fish stocks and ecosystems.

WHEREAS, the fishery can be more conservatively managed than it is currently and still meet the requirements of Alaska's Sustainable Salmon Fisheries Policy (SSFP, 5 AAC 39.222). However, less real-time information on the status of the fish stocks, and post-season run reconstruction/apportionment to maintain meaningful preseason forecasts, will require that ADF&G manage fishing effort more conservatively, and that in turn will result in less overall harvest and/or value of harvest by distributing effort and catch less favorably across days within seasons.

WHEREAS, BBSRI undertakes scientific projects to facilitate a greater understanding of the environment and fisheries resources of the Bristol Bay region and to pursue projects that will foster the economic health and vitality of the region and its inhabitants.

WHEREAS, over the last 15 years BBSRI has brought resources and focus to important topics and research needs that agencies have been unable to address because of declining budgets or narrow mandates. The State of Alaska is responsible for ensuring that the Bristol Bay salmon fishery provides a sustained yield over time, but no agency (state or federal) has a mandate to ensure economic vitality of the fishery. Much of BBSRI's work has been toward fostering the economic health and vitality of the region and its residents.

WHEREAS, processors and fishermen support fisheries monitoring activities in Bristol Bay through financial and in-kind support and they bring valuable knowledge and information to ADF&G fishery managers to assist in the prosecution of the fishery.

**NOW THEREFORE**, with this five-year agreement, ADF&G and BBSRI recognize that it is mutually beneficial to work collaboratively to ensure the wellbeing of the fishery resources and the people who use them within the Bristol Bay watershed. Both parties envision leveraging one another's resources for the greater good of the fisheries and the science that supports its management.

- This MOA formalizes BBSRI's and other participating stakeholders support and input to projects and activities used to manage the Bristol Bay fisheries. This formalization is preferable to the current *ad hoc* nature of assistance from BBSRI and other stakeholders.
- This MOA does not intend in any way to transfer or dilute ADF&G authority to open and close the fishery, or interfere with any other functions associated with Emergency Order authority granted to Area Managers by the Commissioner of ADF&G, adherence to the SSFP, or regulations promulgated by the Alaska Board of Fisheries.
- This collaboration between ADF&G and BBSRI will be referred to as the **Bristol Bay Fisheries Collaborative (BBFC)**.

### **C. GENERAL PROVISIONS:**

1. Both parties agree to comply with all applicable federal or state laws regulating ethical conduct of public officers and employees.
2. Nothing herein is intended to conflict with federal, state, or local laws or regulations, or limit the current policies, bylaws, laws, or authorities of ADF&G or BBSRI. If there are conflicts, this agreement will be amended at the first opportunity to bring it into conformance with laws or regulations.
3. Addendums to this agreement can be made by mutual written consent of BBSRI and ADF&G.
4. If any part of this agreement is determined to be in violation of law, all other parts not so determined shall remain in full force and effect.
5. This agreement is executed as of the last date shown below, and shall expire or be renewed five years from that date; however, either party may withdraw from the Agreement 18 months after providing written notice to the other party.

### **D. PARTNERS:**

#### Alaska Department of Fish and Game

Alaska Department of Fish and Game is an entity within the State of Alaska which has the constitutional responsibility for the sustainability of all wildlife and fish within state borders, regardless of land ownership or designation, and it has the statutory authority, jurisdiction, and responsibility to manage, control, and regulate wildlife and fish populations, including for subsistence purposes.

#### Bristol Bay Science and Research Institute

Bristol Bay Science and Research Institute is a 501.c.3 corporation incorporated in 1998. BBSRI is a subsidiary of the Bristol Bay Economic Development Corporation (BBEDC). BBSRI has been active in fishery monitoring, management, and research in the Bay since 2002. It has collaborated with ADF&G on many aspects of the Bristol Bay fishery program, and has provided financial and human resources to Bay management for over a decade.

Together, the Commissioner of ADF&G and the Board of Directors of BBSRI constitute the **Parties' Leadership**.

### **F. IT IS MUTUALLY AGREED THAT:**

1. Either party(s) in writing may terminate the instrument in whole, or in part, at any time before the date of expiration with 18 months written notice.
2. Both parties will provide funding, in ADF&G's case subject to appropriation by the legislature and in BBSRI's case subject to approval by its Board of Directors, on an annual basis that will be used in the operation of the Bristol Bay fisheries. Each party will be responsible in ensuring that their annual commitment is commensurate with their own fiscal abilities.



3. Reductions by one party in annual commitments to support a core program may result in a commensurate reduction by the other party.
4. This MOA in no way restricts ADF&G or BBSRI from participating in similar activities with other public or private agencies, organizations, and individuals.
5. Meetings between the Parties Leadership', the BBSRI Board of Directors (or its designate) and the Commissioner of ADF&G (or his/her designate) will be held at least annually to review the agreement, the Work Group performance and appointees, and discuss, identify, and coordinate the various activities pursuant to this MOA, or to discuss, identify and coordinate future opportunities that fall within the area of common benefits and interests.
6. A "Work Group" (WG) will be comprised of two representatives from each of ADF&G and BBSRI.
7. Each party will appoint its WG members, in consultation with the other party to the MOA to ensure WG members are appropriately qualified.
8. The WG will work collaboratively to define the scope of a "Core Program" and will develop non-binding recommendations on how to allocate available resources among monitoring and research tasks on an annual basis. The WG will also regularly review specific projects and overall program performance. The mandate of the WG is to obtain the best management program with the funds available.
9. A Terms of Reference for the WG provides scope and structure to the entity (Appendix A).
10. The principal contacts for this instrument are:

<b>ADFG Administrative Contact</b>	<b>Cooperator Administrative Contact</b>
Amy Moselle Administrative Operations Manager	Keggie Tubbs Executive Director
Alaska Department of Fish and Game	Bristol Bay Science and Research Institute
1255 W. 8 <sup>th</sup> Street Juneau, Alaska 99801	Box 1464 Dillingham, Alaska 99708
Phone: 907-465-6158	Phone: 907-842-4370
E-mail: <a href="mailto:amy.moselle@alaska.gov">amy.moselle@alaska.gov</a>	Email: <a href="mailto:keggie@bbedc.com">keggie@bbedc.com</a>

**G. SIGNATORIES, BRISTOL BAY FISHERIES COLLABORATIVE**

**For the Alaska Department of Fish and Game**

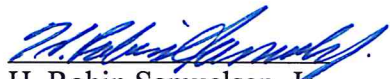


Sam Cotten  
Commissioner

10-21-16

Date

**For the Bristol Bay Science and Research Institute**



H. Robin Samuels, Jr.  
Chairman, Board of Directors

10-12-16

Date

## **Appendix A to the BBFC MOA**

### **TERMS OF REFERENCE**

#### **Working Group for the Bristol Bay Fisheries Collaborative**

##### **OVERVIEW**

The Bristol Bay Fisheries Collaborative (BBFC) is a joint effort to fund and implement the monitoring and management activities for salmon and herring stocks in Bristol Bay, Alaska. It is organized under a Memorandum of Agreement (MOA) between the Alaska Department of Fish and Game (ADF&G) and the Bristol Bay Science and Research Institute (BBSRI), herein referred to as the “Parties”. “Industry Partners” are companies and organizations who participate in the collaborative through funding and input to the components of the management program.

The ADF&G-BBSRI MOA formally sets out terms for contributing funding and participating in the BBFC. The MOA mandates that a Working Group (WG) be formed to discuss, review, and recommend a suite of activities that it defines as a “Core Program” for the Bay area fisheries. The Core Program represents what both Parties identify as essential projects and activities to maintain world-class fisheries and management systems. This *Terms of Reference* defines the scope and duties of the WG, its membership, meeting frequency, decision making processes, and deliverables.

##### **SCOPE OF WORK AND DUTIES**

- Defining and regularly reviewing the scope of the annual monitoring and research activities for Bay area salmon and herring fisheries managed by ADF&G.
- Ensuring the efficacy and suitability of the annual and multi-year research and monitoring projects for Bay area fisheries.
- Ensuring that to the extent possible BBFC’s collective funds are being expended in the most judicious and efficient manner, taking into account “full-cost accounting principles” (i.e., taking into account all sources of costs to conduct various functions/projects and not just the marginal costs).
- Conducting regular reviews of individual projects/functions and any potential projects to update the content of a Core Program.
- Meeting at least twice annually, as well as work outside meetings to collate and prepare information for review at meetings, and for briefing the Parties’ Leadership (BBSRI Board of Directors and Commissioner of ADF&G, or their delegates).
- Providing non-binding recommendations to the Parties’ leadership on the makeup of the Core Program for the upcoming season.



## **MEMBERSHIP**

- The WG will be comprised of two representatives from each of the Parties.
- Each Party will appoint its WG members annually in consultation with the other Party to ensure WG members are appropriately qualified.
- The Parties' Leadership will review the performance of the WG and its individual members as often as once annually.
- Each Party to the MOA will financially support the participation of its WG members.
- Minimum qualifications for individuals to serve on the WG include considerable familiarity with management and/or science of Bristol Bay fisheries (e.g., 5 or more years working in the Bay fisheries), and a demonstrated track record of working constructively with multiple parties in an agency-industry environment. This minimum qualification can be waived for a particular individual by mutual consent of the Parties.

## **MEETING FREQUENCY**

- The WG shall meet a minimum of twice per calendar year with additional work occurring outside of the WG meetings.

## **DECISION MAKING**

- The WG work products, including its annual recommendations, will be based on consensus-based decision making. Recommendations of the WG must be compliant with the State of Alaska's procurement procedures and labor agreements.
- The WG will make every attempt to resolve differences to achieve consensus. Should consensus not be achieved among the WG members, the relevant matter will go to the Parties' Leadership for final determination.

## **DELIVERABLES**

- The WG group will provide an annual report to its benefactors (funders), other stakeholders in the fisheries, and the general public that summarizes a general accounting of funds, programs conducted, and review any possibly upcoming changes. This report will be provided by March 31 each year.