



BERING SEA FISHERIES RESEARCH FOUNDATION
 23929 22ND DR SE BOTHELL, WA. 98021
 FORGING COOPERATIVE RESEARCH PARTNERSHIPS IN THE BERING SEA

NEWSLETTER – RESEARCH UPDATE

October 20, 2014

The BSFRF Board THANKS all industry voluntary contributors and supporters! With the current high levels of participation and funding, research planning is more efficient, more coordinated with cooperative partners, and current projects are completed with fewer challenges. Great job Bering Sea crabbers and processors!

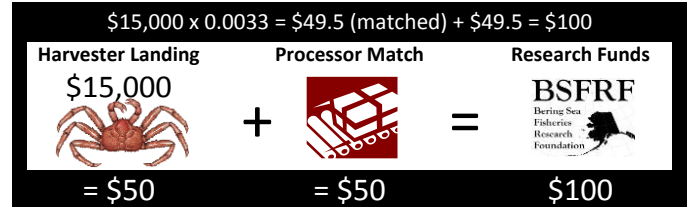
Hello Crab Industry & Interested Parties,

The BSFRF Board of Directors is providing this 3rd quarter 2014 (Q3) newsletter highlighting BSFRF **funding/spending**, **generic crab modeling (GMACs)** and an update on **research planning**. The Q3 Newsletter is part of continuing efforts to keep contributors and other parties informed about the Foundation’s important ongoing research. Our Q4 newsletter will provide summary results for our 2014 research. The Foundation has broadened its scope of research each year with projects to improve the baseline science used in management of Bering Sea crab stocks. The projects include surveys to estimate trawl selectivity parameters, development of new size-based stock assessment models, experiments to estimate crab growth and handling mortality, and studies to advance resource management policy. All these projects have been conducted in collaboration with NMFS, ADFG, and/or university scientists. Please direct any questions about the BSFRF or this Newsletter to Gary Painter (gpainter33704@gmail.com) or Scott Goodman (sgoodman@nrccorp.com). Stay in touch for later newsletters highlighting BSFRF accomplishments.

Funding and Spending

The BSFRF receives funds primarily from voluntary industry support from Bering Sea crab harvesters and processors based on the ex-vessel value of landings of Bristol Bay red king crab, Bering Sea snow and Tanner crab and St. Matthew blue king crab. At the Foundation’s inception, the Board set a fee schedule for these voluntary contributions at 0.33% of proceeds on gross harvester landings withheld and matched by processors – and this combined money is accumulated and sent to BSFRF usually by the processor. Currently, greater than 90% of Bering Sea industry participants are voluntarily contributing according to these terms.

To understand the scope of funds coming to the Foundation – it takes roughly \$15,000 of gross landings proceeds to generate \$100 to BSFRF.



Additional important support to BSFRF has come from direct contributions from the City of Unalaska, cooperative research funds from NMFS, personnel and supplies from ADF&G and from donated research-gear shipping costs from Coastal Transportation. In 2007 and 2008, BSFRF was also awarded two large research grants from the North Pacific Research Board (NPRB) totaling about \$400,000. BSFRF Board of Directors is very interested in developing future research proposals in collaboration with our research partners for submittal to NPRB for possible funding.

Funds available at the beginning of 2014 for BSFRF research was approximately \$1.5 million. A similar amount is expected for the beginning of 2015. Each year the Foundation Board reviews research options and priorities with input from cooperative research partners and develops an annual operating budget which is reviewed and approved during the first fiscal quarter.



Large research projects to date have focused on conducting cooperative crab surveys during the summer alongside annual NMFS Bering Sea groundfish and crab surveys. BSFRF research has diversified over the last several years and currently has 10 Foundation-sponsored cooperative research projects with a number of new projects on the horizon.

Recent annual budgets for BSFRF research spending have targeted between \$0.8 and \$1.1 million with about two thirds of that budgeted toward crab surveys. Consulting costs and other research projects make up the remainder. The Foundation's Board has been relatively accurate in budgeting but some substantial cost savings have been realized, in actual versus budgeted money at year end, due to the Board's active, hands-on approach to most of BSFRF's research. Current planning efforts include accurately projecting future years' research income and efficiently using funds available.

GMACs – generic crab model update

About five years ago, the Foundation and its cooperative research partners were able to recognize the importance of an independent modeling utility that would be helpful for Bering Sea crab stock assessments. The Board provided important seed funds to acquire the services of a number of modeling experts with the support of ADFG, NMFS and university leadership – and the Generalized Modeling for Alaskan Crab (GMACs) effort was begun. In our March newsletter we noted this project has been a methodical, slow-moving progression from the development, design and coding of the GMAC structure, to the review and testing of different code elements. GMAC project leadership recently reported to us that the initial generic model is about 80-90% complete and will undergo extensive review and evaluation before use as a final GMAC product.

BSFRF is committed to helping improve the science for sustainably managing crab stocks and our awareness of some modeling concerns in this year's assessment cycle has helped to renew the importance of GMAC progress. Based on presentations and review of the GMAC effort at recent Crab Plan Team meetings we are continuing to understand more about the GMACs project and alter our expectations to align with recent progress reports. We now expect that the GMACs project will provide a number of benefits: at the least, it should provide tools to run simulation-tests of assessment models and therefore efficiently identify sensitivities and help identify research needs; and at most, it will enable the development of alternative

assessment models that could replace current crab models. The Board will continue to provide updates on GMACs and we strongly believe this effort will improve the accuracy and efficiency of crab modeling and hopefully avoid gaps in transparency.

Research Priorities and Planning

Since our last Newsletter update, BSFRF has had two important research planning meetings with cooperative research partners. On July 15 the Board and its science advisors hosted three principal crab researchers/fishery managers from ADF&G for a planning workshop in Seattle. The meeting was the first for BSFRF where our discussions were directly with ADF&G to solicit their feedback and have a dialog about cooperative research between BSFRF and ADF&G.



The meeting was productive in that ADF&G recognized the substantial science that BSFRF has hosted or participated in, endured through some challenges, and is continuing to plan and conduct sound science as part of ongoing cooperative research. Time limited an extensive exchange on specific research ideas but there were some key projects identified and discussed. These discussions were a good step forward for future cooperative research with ADF&G. The Board expects to have future collaborative research with ADF&G conducted under Cooperative Agreements with the state of Alaska. These projects will likely include NMFS or university researchers as well.

A second research planning meeting was convened more recently at the end of the Crab Plan Team week with both NMFS and ADF&G crab researchers. The Foundation's intent was to take the opportunity to meet with cooperative research partners face-to-face and discuss concerns, research ideas, and other recent crab research identified in the CPT meeting. The meeting was limited to a short afternoon session but again was

effective in that it identified some current research shortcomings, provided some basis for continuing current research projects, and also projected some further definition for near term research projects. The Board will be following up with NMFS/ADF&G from both of these recent meetings and internally will be meeting again soon for continued research planning. We expect our year end (Q4) newsletter will provide some positive updates on research planning progress made.

Current Research Update

The Foundation Board has reviewed current crab survey research projects' status and received an update from science advisors. Currently the analysis of the 2014 Bristol Bay red king crab cooperative surveys is continuing with collaboration between BSFRF, NMFS and ADF&G. The year-2 results (2014) for the RKC side-by-side work were inconsistent with catch ratios (CPUE comparisons) seen in 2013. The *Nephrops* trawl used during BSFRF surveys had much more similar RKC standard catches compared to the NMFS 83-112 survey trawl. Both survey charters (NMFS and BSFRF) followed standard crab survey protocols in both years but each also used a new vessel in 2014. A number of gear and environmental variables are being reviewed to better understand some of the apparent differences between the two years. At this point we believe another year of this research is warranted.



Both the NMFS survey and the BSFRF cooperative crab survey showed bottom water temperatures at the time of the survey that were nearly as high as ever recorded during the summer survey season. A comparison across the two years, 2013-2014, of completed RKC side-by-side surveying shows that bottom water temperature at some stations sampled varied by more than 4

degrees C between the 2 years. The influence of this strong temperature change is unknown at this time but will be included in analyses. BSFRF science advisors are leading the collaborative summaries and are expecting to provide further results to the CPT in May 2015. The Board will provide further updates as they become available.

Brief History

Strong alliances have been built by the Foundation with several industry and cooperative research partners since its inception in 2004. The Foundation's efforts to help inform and improve the sustainable management of Bering Sea crab resources have been very successful and 2013 marked the 10th field season of research. Each year since 2004, BSFRF has gained momentum with our cooperative research, partnering with the NMFS and ADF&G. Final results from a number of BSFRF research projects have been incorporated into the management of Bering Sea snow/*bairdi* Tanner and Bristol Bay red king crab and are improving the science used to manage Bering Sea crab stocks. BSFRF is primarily funded by voluntary contributions from the Bering Sea crab industry but has received important funding and other support from the North Pacific Research Board (NPRB), NMFS, ADF&G and other public/private sources.







The BSFRF Website is:
www.bsfrf.org

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