**Eastern Bering Sea Shelf**

**Name of Requestor / Point of Contact:** Pam Jensen

**Email:** Pam.Jensen@NOAA.gov

**Daytime Telephone:** 206-526-4122

**Affiliation of Requestor:** AFSC – Kodiak

**Data Types:** Biological specimen

**Title:** Collection of *C. opilio* for Bitter Crab studies

**General Description and Justification:** Please provide a succinct (500 words maximum) description and justification for your proposed project or collection. Please be sure to detail the goals of the project, how the data or specimens will be used, and why it is important for this project to take place at this time (opposed to during future surveys, other available research platforms, etc.).

Bitter crab syndrome (BCS) is a potentially fatal disease of commercially important *Chionoecetes* spp. in the eastern Bering Sea (EBS) and is an emerging disease worldwide in other decapod hosts. The disease is caused by a parasitic dinoflagellate, *Hematodinium* sp., that renders the meat inedible and unmarketable, thus making BCS an industry concern. The transmission of *Hematodinium* sp. and progression of BCS in snow crabs is not well understood. In the fall, we will be conducting experiments at the AFSC Kodiak laboratory with *Hematodinium*-infected crabs to improve our understanding of mortality rates from the parasite in *C. opilio*. We will require uninfected crabs to serve as experimental controls.

The goal of this project is collect live *C. opilio* during Leg 3 of the Bering Sea survey for subsequent transport to Kodiak. The collection stations will be outside the Index sites used by Pathobiology to sample crabs for BCS.

**Data Types**

Biological specimen

**Fish Crab or Invertebrate?**

Crab

**Species to be collected:** List species by scientific names

*Chionoecetes opilio*

**Detailed collection procedure:** Provide a detailed description of collection procedures including the use of any special equipment and forms. Be as specific as possible and include the desired sampling location(s). If your protocol is graphical and/or cannot be described in text, e-mail the file, including your project title, to RACE.Surveycollections@noaa.gov. For accepted projects, the applicant will be asked to provide an updated full draft of the protocols for inclusion in the At-Sea Operations Manual and a ‘cheat sheet’ for deck operations along with an example of any special data forms.If e-mailing a file, please reference the title of your project in the filename and list below in the provided box.

During Leg 3 Kodiak staff will select 50 immature male *C. opilio* between 50 & 75 mm carapace width that appear to be in good shape & place them in the holding tank for transport to Kodiak at the end of the survey. Collection will occur outside of the Index sites used by Pathobiology to sample crabs for BCS. Kodiak staff will be responsible for offloading & shipping the crab.

**METADATA**

**Geographic Region of Collection** Can your collection be distributed throughout the entire survey area? If not and the sampling area is more restricted than the general survey terms of Gulf of Alaska or Eastern Bering Sea Shelf then please provide bounding coordinates and name of region (if known) in the fields provided below.

Place keywords: Example: Bristol Bay, Kodiak, Shumagin,Yakutat

Leg 3 Eastern Bering Sea

**Northern Boundary** Lat/Long

**Eastern Boundary** Lat/Long

**Western Boundary** Lat/Long

**Southern Boundary** Lat/Long

**SAMPLE DESIGN**

**Target Quantity:** How many specimens do you want collected?

50 crabs total

**If the requested amount or frequency of specimens is not achieved, will the request still be useful?**

Yes

**Estimated Time:** In general, how much time does it take to set up, collect, record, and preserve each sample ?

Approximately 2 minutes per sample at sea, plus time to pack up crabs for transport at the end of the survey.

**Sampling Design**\*Please select a sampling method that best describes your project. DO NOT SUBSAMPLE = collect every one that comes up in the net; SUBSAMPLE RANDOMLY = the specimens do not need to meet ANY set criteria and therefore will be collected at random across the collection area; SUBSAMPLE SELECTIVELY = Collect only those specimens that meet the criteria set by you in the next question. SUBSAMPLE RANDOM STRATIFIED = specimens will be collected randomly from each of the strata you designate in the next question.

Subsample selectively

**Selective and Randomly Stratified Subsamples ONLY:** Specify The Criteria. For Choosing Specimens Examples: selective criteria could be specific size ranges, photogenic, specific depths, etc; random stratified could be specimens collected by sex/size/area;

50 immature male *C. opilio* between 50 & 75 mm carapace width outside of the Pathobiology bitter crab Index Sites.

**Specimen Type**\* The typical specimen types to be collected on the surveys are listed below. Please select the type that best describes your collection. If none meet your collection's description, select 'Other' and provide your own

whole animal collection

**Do you require individual specimen-level data to be collected?** yes = each specimen sample will be given a unique specimen number.

No

**If you answered YES to the question above, please select or enter any additional morphometrics that are required by your project.**

**length**

**weight**

**Other**

**Do you need to be able to link your project to haul data?\***If you need haul data (e.g. latitude and longitude, depth, temperature, etc) for each of your specimens, it is mandatory that the CruiseNumber, VesselNumber, and Haul numbers be recorded every time we collect your samples; any forms provided by you must contain those fields. Copies of haul data will be e-mailed to the the requestor when survey data are finalized after the end of the field season (usually by October of the same calendar year)

No

**SUPPLIES & EQUIPMENT**

**Supplies provided by the AFSC**\*Small quantities of some supplies, such as sample bags, freezer boxes, and standard chemical like ethanol and formaldehyde may be available, but applicants must arrange this specifically with survey contact(s) prior to the start of the survey. If asking for large specimens, then you must supply containers. Select supplies and equipment needed for your project or collection that AFSC will supply

Freezer space for blue ice

**Supplies provided by the requestor**\*List all remaining supplies and equipment needed for your project or collection that you will be providing

Calipers

coolers

burlap

blue ice

Chemical Hygiene\*Select or type in all chemicals and hazardous materials in your project. Please e-mail MSDS's for all chemicals other than formaldehyde, ethanol, and glycerol/thymol to RACE.Surveycollections@noaa.gov. Special haz mats will not be allowed. They must conform to those that we are already using. FAILURE to disclose chemicals and hazardous materials will terminate your project.

None

**PERMITS**

It is the responsibility of the person making the request to obtain all the necessary permits required for the collection and shipment of specimens, and the RACE Division must have copies of the permits no later than 20 April 2014. Note that RACE Division survey efforts are currently covered under ADF&G Fish Resource Permit CF-10-038 for expected levels of whole specimens or samples taken. NO LIVE ORGANISMS, TISSUES, OR VIABLE GAMETES are currently covered by this permit and will need separate permit. Please direct any questions regarding permit coverage to a particular project to RACE Deputy Director, Frank Morado (206-526-6572).

**Permits issued or pending:**

Yes

**SHIPPING INSTRUCTIONS**

In 2014: The EBS shelf, EBS slope, and AI surveys originate and terminate in Dutch Harbor, Alaska. Equipment and sample collections will be shipped to the requester from Seattle. We typically use FEDEX or Alaska AirCargo. Contacts and phone numbers of someone available 24/7 to discuss logistics and problems or authorize billings at the anticipated time of shipment (i.e., end of leg and end of survey). The person making the request will pay for all charges associated with shipping and storage including the following: 1) completed shipping company forms with the shipping account number 2) any additional packing materials such as zip lock bags 3) if samples are frozen, coolers or commercial waxed boxes must be provided.

**24/7 Contact Name**:\* Christie Lang

**24/7 Contact Phone Number**:\* 206-554-1755

**Detailed shipping instructions:** [NOTE: FedEx next-day shipping imposes some complications. If you are requesting this method of shipping, please make sure to plan carefully with the Survey Coordinator.]

Kodiak personnel will ship crabs at the end of Leg 3.