



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543-1026

January 15, 2016

MEMORANDUM FOR: A.I.S., Inc.,
East West Technical Services,
Fathom Research LLC, and
Industry Funded Scallop Observers

FROM: Amy S. Martins 
Branch Chief, Fisheries Sampling Branch (FSB)

SUBJECT: New "Poor Quality Scallop" and Highgrading Protocols

The scallop industry has become concerned about the observed distribution and magnitude of poor quality scallops during the 2015 fishing year. Grey meat scallops and scallops with nematodes (possibly *Sulcascaris sulcata*) in the Mid-Atlantic Access Area were reported to the NEFMC Scallop PDT (Plan Development Team) and were documented during the VIMS (Virginia Institute of Marine Science) 2015 Mid Atlantic survey. These poor quality scallops can significantly impact the vessel price received for a trip. Also of importance, industry members believe that high grading of scallops during the 2015 fishing year may be increasing scallop mortality rates and impacting the resource.

To address these issues FSB are adjusting the protocols for IFS observers by increasing detailed biological sampling when grey meats and/or parasites are encountered. Current observer protocol is to conduct biological sampling for one basket of kept scallops per on-watch period. Sampling includes recording the round weight and shell heights, obtaining the weight and volumetric measurements of the shucked sample, and applying that weight to all baskets of kept, round scallops for that on-watch period.

If the crew encounters grey meat and/or parasites they should notify the observer, who will increase biological sampling to at least two (2) times per on-watch period. The observer should follow protocols for handling grey meat scallops. (See attached training slides for a reminder.) After shell heights are taken, have the crew shuck and separate the dressed scallops into two categories: the normal kept scallops, and any poor quality scallops. Record separate meat weight and volumetric data for the kept and discarded (grey/parasite) scallops and use that information on all hauls in that watch period until another detailed biological scallop sample is collected. A new disposition code "030" is now available to indicate scallops are "poor quality, grey meat/parasites observed". If any changes to scallop catch composition occurs during the on-watch period the observer should take a new detailed biological sample. Additional sampling should be done as time allows. FSB understands that deckloading situations or other factors may inhibit observers from taking more than one sample even when grey meats and/or parasites are observed. Observers should prioritize this extra sampling *after* collecting actual weights per haul, but *before* collecting shell lengths for kept scallops as described in the FSB Biological

Sampling Manual, (page 17)

http://www.nefsc.noaa.gov/fsb/manuals/2013/NEFSC_Biological_Sampling_Manual.pdf

Observers will indicate via haul log comments on a per haul basis that “Grey scallops and/or parasites observed”. If the crew indicates that poor quality scallops are no longer present during a watch period, the observer should obtain another detailed biological sample for the “clean” scallops. Monthly summary tables and maps will be produced and published on the FSB Industry Funded Scallop website that will indicate grey meat/parasite regions and numbers of trips where observers are documenting these poor quality scallops.

Each watch period observers should freeze 3-4 poor quality scallops in a bag, labeled with the haul info. For watch periods where *grey meats* are observed, observers should also (separately) freeze several white, “normal” scallops from the same haul for comparison. (White meats *do not* need to be sent in for hauls where nematodes/parasites are observed.) The frozen samples should be shipped to FSB following biological sampling protocols, within seven (7) days of landing, and will be sent to Susan Inglis at SMAST and David Rudders at VIMS to help further their research on grey meat and parasite infections.

If a boat is *keeping* poor quality scallops, the protocols for determining weights of grey/parasite meats per bushel should still be utilized, and observers must add a comment explaining the estimated weight of the poor quality meats. Using the example on the attached slides: 6.2lbs of dressed meat weight was obtained, with 0.5lbs of that being grey meats. On haul 1 the crew kept 51 bushels. The (rounded) basket count of kept weight will be 51 bushels x 6.2lbs = 316lbs. Observer will comment on haul 1 “0.5lbs grey x 51 bushels = 26lbs kept grey meat.”

The Scallop Committee, PDT, and Industry are also concerned that highgrading events occur after market-sized scallops spend time on the deck of a vessel, but are ultimately discarded because of the large price difference between medium (10-20+) and large (U-10) sized scallops. Scallop mortality is higher during the summer when scallops are left on deck in the heat. On multi-day access area trips and day boat trips observers should use the “063” fish disposition code, “Vessel retaining only certain size for best price due to *trip quota* in effect” to describe why these scallops were discarded. Because of the high price difference this may also occur on open area trips where there is no trip quota. FSB has implemented the new disposition code “064” for “Vessel retaining only certain size for best price due to price difference” which can be used to identify highgrading on open area multiday trips. These disposition codes may help managers track sources of scallop mortality by scallop fleet and area fished.

Continued cooperation from the scallop industry will be pivotal to the success of additional sampling, as well as helping FSB to better understand and document highgrading situations. Observers will be reminded of highgrading scenarios, and new disposition codes, and will be given methods for estimating poor quality and highgraded scallops during the mandatory scallop prebrief prior to each trip.

If you have any questions please call.

Chad Keith - (508) 495-2067

Lacey Bluemel – (508) 495-2188

Tyler Staples – (508) 495-2129

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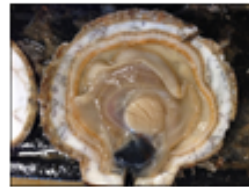
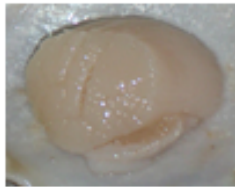
Grey Meat Example

6.2 lbs total dressed
meat weight



5.7 lbs dressed meat weight Kept (DISP 100), 3050 ml vol measure

0.5 lbs dressed meat weight Discarded (DISP 030 with comment "discarded due to grey meats"), 150 ml vol measure



Gray photo courtesy of SMAST

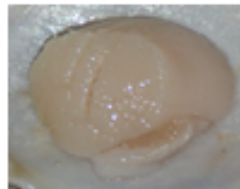
Grey Meat Example

SPECIES NAME	Sea Scallop
DISP CODE	900
MEAT CODE	
SAMPLE WEIGHT (G)	6.2
AGE SAMPLE TYPE CODE	
# SAMPLES	3200
MEASUREMENTS:	
Finfish - gms	15 - 14 170 - 174 19
Shellfish - mm	15 - 19 175 - 179 15
	20 - 24 180 - 184 28
	25 - 29 185 - 189 15
NEX CODES:	
0=Unknown	30 - 34 190 - 194 3
1=Male	35 - 39 195 - 199 5
2=Female	40 - 44 200 - 204
	45 - 49 205 - 209
AGE SAMPLE TYPE CODES:	
0=None	50 - 54 210 - 214
1=Scales	55 - 59 215 - 219
2=Otoliths	60 - 64 220 - 224
3=Shells	65 - 69 225 - 229
4=Whole	70 - 74 230 - 234
5=Vertebrae	75 - 79 235 - 239
6=Dorsal Spines	80 - 84 240 - 244
7=Scales & Otoliths	85 - 89 245 - 249
8=Head	90 - 94 250 - 254
9=Other	95 - 99 255 - 259

COMMENTS

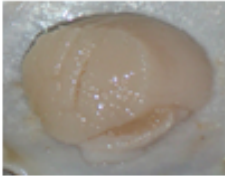
Total meat weight: 5.7 lb Kept (100), 0.5 lb Discarded (030) grey meats

Volumetric measure: 3050 ml (100), 150 ml (030)




Grey Meat Example

6.2 lbs total dressed meat weight



5.7 lbs dressed meat weight Kept (DISP 100)

H1: 51 baskets * 5.7 lbs = 291 lbs
H2: 42 baskets * 5.7 lbs = 239 lbs
H3: 49 baskets * 5.7 lbs = 279 lbs



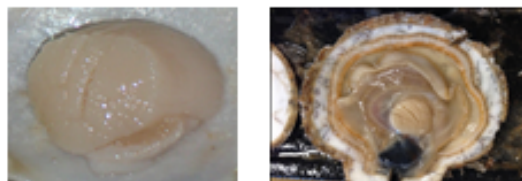
0.5 lbs dressed meat weight Discarded (DISP 030 with comment "discarded due to grey meats")

H1: 51 baskets * 0.5 lbs = 26 lbs
H2: 42 baskets * 0.5 lbs = 21 lbs
H3: 49 baskets * 0.5 lbs = 25 lbs

- Note: Do NOT include sample basket in basket count
- Will be accounted for on Haul Log w/ '900' Disp Code

Grey Meat Example (Haul 1 Log Example)

SPECIES		SUB-SAMPLE WEIGHT	POUNDS	DISP CODE	WEIGHT	
NAME	CODE				D/R	EST METHOD CODE
Sea Scallops	8009		291	100	D	03
Sea Scallop			26	030	D	03
Sea Scallop			6.2	900	D	01



- Need to Comment on Disp Code '030' and '900'
- '900' weight must match sample weight on LF Log



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NORTHEAST FISHERIES OBSERVER PROGRAM OBSERVER SAMPLING IN THE SCALLOP FISHERY: WHAT TO EXPECT DURING AN OBSERVED TRIP

**National Marine Fisheries Service – Northeast Fisheries Science Center
166 Water Street – Woods Hole, MA – 02543**

<http://www.nefsc.noaa.gov/fsb/>

Program Information: 508-495-2266 – Office of Law Enforcement – 508-495-2147

Industry Funded Scallop Observers shall perform the following duties, at a minimum:

- Conduct a pre-trip safety inspection of the vessel
- Communicate with vessel personnel about observer duties and data collection
- Ask the captain and/owner of the vessel for some economic information, such as trip costs (price of fuel, ice, etc.); dealer, and VTR number
- Collect information on fishing gear, including, but not limited to dredge frame type and size, presence or absence of turtle chains, twine top/ codend mesh measurements, measurements of bag ring sizes; and obtain photographs of each dredge frame and chain mat used
- Collect tow-by-tow information, such as depth, water temperature, wave height, and location and time when fishing begins and ends
- Record all kept and discarded catch on observed hauls, and obtain species, weight, and disposition reason
- Record shell heights for both kept and discarded scallops every other observed haul, obtain shucked meat weight, and volume of meats for one crew filled basket of kept scallops per on-watch period
- Complete an off-watch log with the captain's assistance for hauls when observer is not on effort out on deck, to include number of hauls not observed, locations, average number of bushels/weight of kept scallops caught
- (Depending on the watch schedule) the observer should switch watches halfway through the trip to ensure proper data collection, and should be respectful of the crew's off-watch time
- Conduct detailed biological sampling at a minimum of once per watch period by collecting otoliths, spines, scales, etc.
- Collect information, biological samples, measurements, and photographs of any interaction with a protected species, such as sea turtles, porpoise, dolphins, whales, and birds (also called incidental takes)

At the completion of a trip, Observers should provide the Captain with this sheet and a:

- Data Release Form to request a photocopy of the observer's trip logs
- Fishermen's Comment Card with pre-paid postage
- NEFOP program brochure (upon request)

Observers should NOT:

- Provide advice about fishing regulations
- Accept any gifts or direct payment in any form from the vessel operator, owner, or crew
- Participate in commercial fishing activities during the trip, such as shucking scallops, or standing wheel watch
- Hinder or slow fishing operations unless necessary to obtain critical discard or incidental take information
- Use personal recording devices, such as camcorders, cameras, cell phones, and diaries
- Use the vessel's communication equipment for personal purposes
- Discuss the observed trip with anyone other than program staff
- Handle the EPRIB in any manner, including removing housing

The Captain's legal responsibilities include, but are not limited to:

- Ensure the vessel has a current U.S. Coast Guard Commercial Fishing Vessel Safety Examination decal and other essential non-expired safety devices, provide the observer with a safety orientation, and maintain a wheel watch throughout the trip
- Cooperate with the observer in the performance of the observer's duties including assisting the observer in obtaining EPRIB expiration dates mandatory for the Pre-Trip Vessel Safety Checklist, allowing the observer access navigation equipment as necessary to perform observer duties, and providing true vessel locations by latitude and longitude upon request by the observer
- Provide the observer with VTR Serial Numbers and VMS Fishing Activity Codes if requested; Notify the observer when commercial fishing operations are to begin and end
- Provide the observer with living quarters, meals, and amenities comparable to a crew member; Allow the observer access to areas of the vessel and gear necessary to conduct observer duties
- Bring aboard marine mammals, sea turtles and sea birds that were killed during fishing operations if requested by the observer
- Provide refrigerated storage space for observer-collected specimens within reason

It is illegal for Captains and Crew to:

- Assault, harass or sexually harass, intimidate or attempt to influence observers
- Interfere with or impede observer duties
- Fish without an observer or official waiver once selected by the NMFS Industry Funded Scallop Observer Program

Observers should bring the following, along with other scientific gear:

C.P.R. Card, personal identification, proof of insurance, immersion suit and Personal Floatation Device, appropriate clothing, length frequency board for finfish and scallops, volumetric measuring cup for scallop meats, spring or motion-calibrated platform scales, thermometer, calipers and tape measure, buckets and/or baskets to sample, work-issued camera, logs, manuals, and field guides



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Photos of Nematodes and
Grey Meat Scallops
Courtesy of SMAST



Sampling Protocol Changes To Investigate Poor Quality Scallops

Research Set Aside (RSA) scallop surveys conducted in 2015 raised some concern over the presence of “poor quality” Atlantic sea scallops in the Mid Atlantic region.

These “poor quality” scallops may contain nematode parasites and/or “grey meats” which can make them less marketable and more likely to be discarded.

Members of the New England Fishery Management Council (NEMFC) Scallop Advisory Panel and the Scallop Committee requested an increase in observer biological sampling of scallops when these poor quality meats are observed on a trip. This will help managers and the fishing industry to better understand the distribution, prevalence, and source of this problem. Observers will be collecting scallop samples for Virginia Institute of Marine Science (VIMS) and University of Massachusetts (SMAST) for analysis.

Continued cooperation from captains and crew members will be essential to the success of the research. Results of this research will be shared with the NEFMC Advisory Panel and Committee. If these poor quality scallops are encountered vessels should:

1. Notify the observer who will increase biological sampling of scallops
2. Observers will obtain shell heights and ask the crew to shuck and separate the scallops into “good” meats and “poor quality” meats (i.e. the meats are grey and/or have nematode worms)
3. Observers will obtain meat weights and volumetric measurements from the shucked samples
4. Observers may ask to freeze a small sample of the meats for analysis

If you have any questions please contact the National Marine Fisheries Service Industry Funded Scallop Observer Program.

Chad Keith: 508-495-2067
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For more information or questions regarding observer coverage requirements, visit www.nefsc.noaa.gov/femad/fsb/