APPENDIX C3. Comparison of surfclam and ocean quahog catches in tows with poor dredge performance during the 2002 and 2005 NEFSC clam surveys and 2002 cooperative survey tows (prepared by John Womack, Wallace and Associates, Ltd.)

2002 Stock Assessment Survey Results

Total # of DE2 Survey Stations = 556
Total # of Stations Reviewed = 213
Total # of Stations Labeled Good = 181
% of total Stations Reviewed = 85.0%
Total # of Stations Labeled Poor = 32 (Any Reason, Visual Inspection of Plots)
% of total Stations Reviewed = 15.0%
Total # of Stations Labeled Poor = 11 (Intake Blockage)
% of total Stations Reviewed = 5.2%
Total # of Stations Labeled Poor = 1 (Manifold Blockage)
% of total Stations Reviewed = 0.5%
Total # of Stations Labeled Poor = 0 (Dredge Angle)
% of total Stations Reviewed = 0.0%
Total # of Stations Labeled Poor = 20 (Early Pump Shutoff)
% of total Stations Reviewed = 9.4%
Average # of Surfclam per Good Tow - 24.2
Average # of Surfclam per Poor Tow - 28.5
Average # of Quahogs per Good Tow - 69.3
Average # of Quahogs per Poor Tow - 64.3

Poor Stations, Intake Blockage - 4, 52, 76, 218, 250, 386, 394, 458
Poor Stations, Manifold Blockage - 382
Poor Stations, Early Pump Shutoff - 32, 42, 44, 45, 82, 90, 101, 103, 104, 106, 111, 118, 125, 137, 140, 141, 254, 278, 360, 368, 496, 498, 506

Comments on Review of Pump Manifold Pressure (See Figure 1)

For initial portion of the cruise, station 0-230, the pump voltage was about 388 VAC. During this part of the cruise the pump manifold pressure followed a similar value and decrease in pressure pattern, i.e. normal wear, as was seen in the 2005 survey.
After about station 230 the pump voltage suddenly rises to about 400 VAC till about station 300. The pump manifold pressure also showed a small increase over the first portion of the cruise from about 34 PSI to about 35-36 PSI.
After station 300 this rise can not be tracked as voltage data is lost from around station 300 till around station 400.
At around station 400 the pump voltage suddenly rises to about 417 VAC This voltage rise lasted till the survey end. The pump manifold pressure also showed a significant increase over the first portion of the cruise from about 34 PSI to about 40 PSI.
The total voltage rise from cruise start to end is about 7.5%. The power the pump was drawing also showed a similar increase from 11.87 to 12.79.

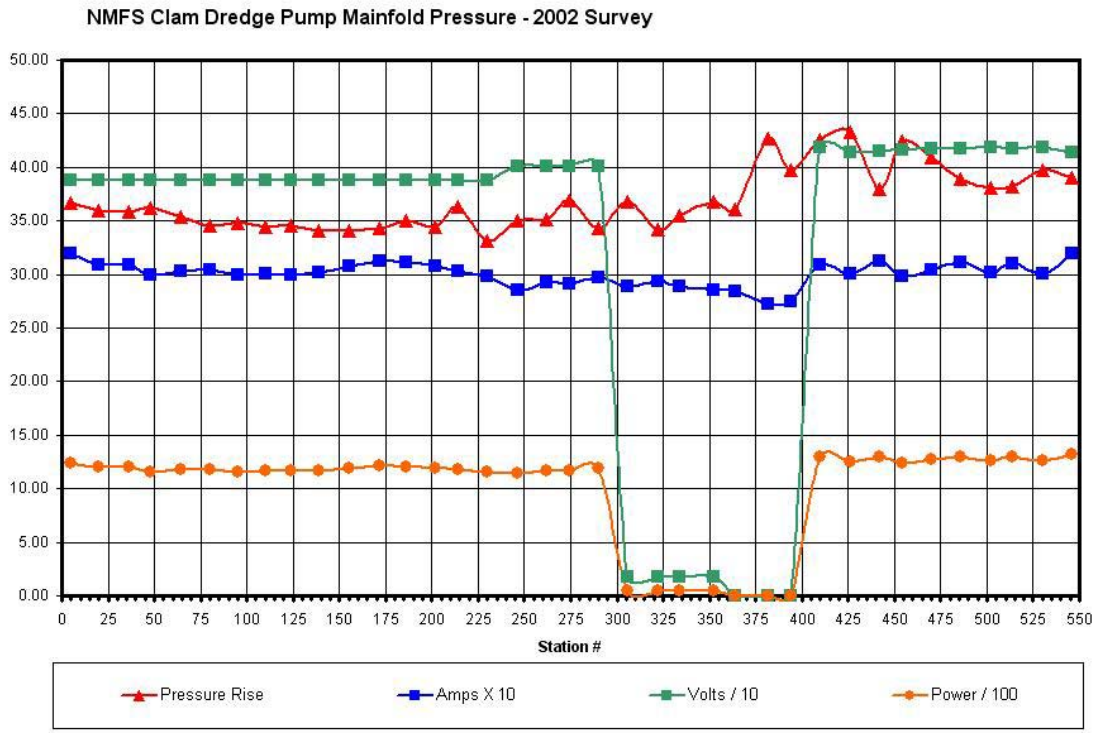


Figure 1 (Appendix C3)

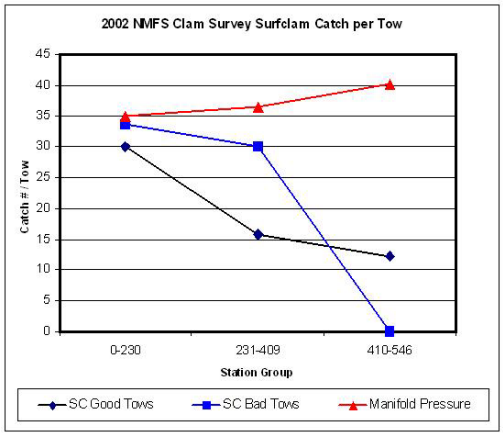
Station Number	All	0-230	231-409	410-546
Avg # of Surfclam per Good Tow -	24.2	30.1	15.8	12.3
Avg # of Surfclam per Poor Tow -	28.5	33.6	30.1	0.0
Avg # of Quahogs per Good Tow -	69.3	34.3	45.0	232.5
Avg # of Quahogs per Poor Tow -	64.3	4.1	14.3	465.8
Total # Of Good Tows	181	114	37	30
Total # Of Poor Tows	32	20	8	4

For all stations and 0-230 and 231-409 groups, the NMFS dredge appears to fish surfclam better during a poor tow, generally which was a loss of manifold pressure, than a good tow. The last group, 410-546, did not show this pattern but this could be due to the fact that it appears to be primarily composed of quahog habitat stations.

The manifold may have seen some blockage in the stations around 375 to 400 as the pressure is higher but the amps draw has dropped.

For all groups as the manifold pressure rises, the surfclam catch per tow falls significantly, over 50%. See Figure 2. Caveat, limited number of stations in last two groups and last group was likely in quahog habitat.

For all groups as the manifold pressure rises, the quahog catch per tow increases significantly. See Figure 3. Caveat, limited number of stations in last two groups and last group was likely in quahog habitat.



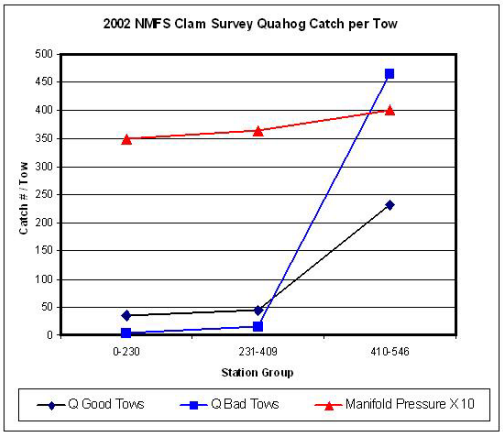


Figure 2 and Figure 3 (Appendix C3)

2005 Stock Assessment Survey Results

Total # of DE2 Survey Stations = 433	82 = 556
Total # of Stations Reviewed = 399	82 = 213
Total # of Stations Labeled Good = 366	82 = 181
% of total Stations Reviewed = 91.7%	82 = 85.0%
Total # of Stations Labeled Poor = 33 (Any Reason)	82 = 32
% of total Stations Reviewed = 8.3%	82 = 15.0%
Total # of Stations Labeled Poor = 22 (Intake Blockage)	82 = 11
% of total Stations Reviewed = 5.5%	82 = 5.2%
Total # of Stations Labeled Poor = 10 (Manifold Blockage)	82 = 1
% of total Stations Reviewed = 2.5%	82 = 0.5%
Total # of Stations Labeled Poor = 2 (Dredge Angle)	82 = 0
% of total Stations Reviewed = 0.5%	82 = 0.0%
Total # of Stations Labeled Poor = 0 (Early Pump Shutoff)	82 = 20
% of total Stations Reviewed = 0.0%	82 = 9.4%
Average # of Surfclam per Good Tow - 18.20	82 = 24.2
Average # of Surfclam per Poor Tow - 28.68	82 = 28.5
Average # of Quahogs per Good Tow - 42.91	82 = 69.3
Average # of Quahogs per Poor Tow - 1.19	82 = 64.3

General Comments on 2002/2005 Survey Tows

2002 Speed fairly smooth and consistent as opposed to 2205 survey which had more variation and steeper spikes and dips.

2002 Dredge angle relatively smooth even when pump intake was blocked or pump was shutoff early. (i.e. may have continued to fish effectively)

2002 Survey had significant changes in the dredge pump voltage and thus a significant increase in manifold pressure during the survey cruise.

NMFS Dredge fished surfclam better on poor tows then good tows for both 2002 and 2005 surveys.

2002 F/V Lisa Kim & F/V Jersey Girl Depletion Tows Review

F/V Lisa Kim Poor Tows
Station 12 - Dredge angle high. Odd as angle is about 5 degrees above normal and basically smooth throughout the tow.
Station 72 - Dredge angle very erratic varying from 0 to 25 degrees.

F/V Lisa Kim Tows with Blips, Not severe enough for a poor tow.
Station 95 - Very brief bump up in dredge angle.

F/V Jersey Girl had no Poor tows or tows with blips.