



LFAs 33/34 Moulting & Quality Monitoring Project

~November 2009 Update~

Monitoring of lobster blood protein levels, shell hardness and moult stage has now been ongoing since the summer 2004 with pre-season, during and post-season sampling. The monitoring currently includes 15 areas in LFAs 33/34 with more than 81,500 lobsters sampled to date. The information collected for this project is available on the Internet and allows people to look at lobster sex, size, blood protein, moult stage and shell hardness by sampling location or dates.

Below is a breakdown of some of the pre-season sampling locations for 2009 compared to similar dates in 2008, 2007 and 2006.

Sampling date	Lobster Bay				Jacquard's Ridge				Sambro			
	Oct 28 2009	Oct 31 2008	Oct 24 2007	Nov 08 2006	Oct 27 2009	Nov 01 2008	Nov 09 2007	Nov 07 2006	Oct 27 2009	Nov 04 2008	Nov 06 2007	Oct 27 2006
Mean protein levels	8.5	10.0	10.3	9.4	9.3	9.8	9.7	8.8	10.2	9.5	9.9	7.4
% active pre-molt	0%	1.5%	0%	0%	0%	4.0%	0%	30.5%	0%	0.5%	10%	0.5%
% hard-shell	65.6%	70.5%	72.5%	59.5%	71.2%	77.5%	71.5%	46.5%	87.2%	85.0%	n.a.	77.8%

Sampling date	Yarmouth Inside				Yarmouth Outside				Port Latour			
	Oct 28 2009	Oct 30 2008	Nov 01 2007	Nov 09 2006	Oct 27 2009	Oct 28 2008	Oct 31 2007	Oct 25 2006	Oct 29 2009	Oct 14 2008	Oct 16 2007	Oct 10 2006
Mean protein levels	9.4	9.4	9.6	8.7	8.8	9.5	8.2	8.1	7.6	8.1	7.7	8.4
% active pre-molt	0%	0%	1.5%	0%	0%	0%	0.5%	0.5%	0%	0%	0.5%	0%
% hard-shell	80.0%	69.0%	62.5%	63%	72.0%	32.1%	57%	45.5%	95.2%	75.5%	93.0%	72.0%

Sampling date	Cape Sable Island Inside				Cape Sable Island Outside				St Mary's Bay			
	Oct 28 2009	Nov 01 2008	Nov 12 2007	Nov 07 2006	Oct 27 2009	Oct 31 2008	Nov 13 2007	Nov 06 2006	Oct 29 2009	Oct 24 2008	Nov 08 2007	Nov 06 2006
Mean protein levels	6.3	7.9	7.7	8.5	6.6	7.8	7.5	8.6	9.4	10.7	11.5	11.4
% active pre-molt	1.5%	0%	1.5%	0%	1.0%	0.5%	2.0%	0%	0%	0%	7.0%	0%
% hard-shell	96.8%	47.5%	42.5%	61.0%	98.4%	52.0%	11.5%	51.0%	69.6%	83.5%	81.5%	71.5%

Sampling date	Bay of Fundy			
	Oct 30 2009	Oct 25 2008	Nov 09 2007	Nov 01 2006
Mean protein levels	8.5	9.8	10.3	7.5
% active pre-molt	1.0%	0%	1.5%	0.5%
% hard-shell	62.4%	68.5%	72.5%	44.0%



What can we expect from the 2009 fall season?

This monitoring project is still in its infancy in terms of predictive value. Depending on the location, we have between 3-5 years of continuous data. We have looked at the information collected so far and tried to see if we could predict with some level of certainty what will be coming out of the water come the last week of November. With an increasing number of companies and individual fishermen using blood proteins as an indicator of quality, it is important to keep in mind that several factors can influence blood protein such as water temperature, moult cycle, health, diet, etc. and therefore, caution must be used when making prediction.

Based on the 2009 pre-season sampling, lobsters landed at the start of the season in Southwest Nova Scotia could be of a lower quality compared to what was seen over the last couple of years. While there could be less soft-shell lobsters at the start of the season this year compared to last year, mean blood protein levels could be lower than in previous years.

When looking at the 2009 pre-season sampling conducted in those 10 sites, we notice that three sites, Cape Sable Island Inside, Cape Sable Island Outside and Port Latour have mean blood protein levels below 8 (using Brix refractometer). Both Cape Sable Island Inside and Cape Sable Island Outside were also the only two sites in 2008 with mean blood protein levels below 8. Additionally, when comparing this year pre-season sampling with last year, we can observe that the mean protein levels are only higher this year in Sambro while they remained at the same level in Yarmouth Inside. All other sites show lower mean blood protein levels in the 2009 pre-season samples compared to 2008. Therefore, based on blood protein levels alone, it appears that the 2009 pre-season sampling points toward a slower recovery from the moult, and extra caution should be taken when deciding what product can be stored for later sale.

When looking at the shell hardness, three sites had less than 70% of the pre-season sample in 2009 classified as hard-shell: Lobster Bay, St. Mary's Bay and the Bay of Fundy. In 2008, we had 5 out of the 10 locations with the proportion of hard-shell lobsters below 70%. Overall, the proportion of lobsters with hard-shell is significantly higher in our pre-season sampling in 2009 compared to 2008. Therefore, based on the shell hardness alone, the 2009 pre-season sampling indicates that the proportion of soft-shell lobsters at the start of the fall season should be less than what has been observed in previous years.

Note: Only the latest sampling dates are shown here. The overall pattern throughout the year for the parameters monitored was considered when predicting the quality of the LFAs 33/34 2009 fall season. Confidence is highest for those locations where sampling was done closest to the season start.

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