



~ November 2012 update ~

Prepared in collaboration with



Monitoring of lobster blood protein levels, shell hardness and moult stage was initiated in the summer 2004 with pre-season, during and post-season sampling. Since June 2004, approximately 117,500 lobsters were sampled in 15 different sites in LFAs 33/34. The information collected for this project is available on the Internet and allows the user to look at lobster sex, size, blood protein (Brix), moult stage and shell hardness by sampling location or dates.

Below is a breakdown of some of the pre-season sampling sites for **2012** compared to similar dates in 2011, 2010 and 2009.

Sampling date	Lobster Bay				Jacquard's Ridge				Sambro			
	Nov 02 2012	Oct 27 2011	Oct 28 2010	Oct 28 2009	Nov 03 2012	Oct 28 2011	Oct 30 2010	Oct 27 2009	Nov04 2012	Oct 24 2011	Oct 30 2010	Oct 27 2009
Mean protein levels	9.5	8.8	10.3	8.5	11.6	8.8	9.9	9.3	10.0	8.8	10.4	10.2
% active pre-moult	0%	1.6%	0%	0%	0%	1.6%	0%	0%	0%	0%	0%	0%
% hard-shell	71.2%	78.4%	80.0%	65.6%	82.4%	77.6%	86.6%	71.2%	89.6%	80.0%	92.0%	87.2%

Sampling date	Yarmouth Inside				Yarmouth Outside				Port Latour			
	Oct 29 2012	Oct 26 2011	Oct 26 2010	Oct 28 2009	Oct 28 2012	Oct 25 2011	Oct 25 2010	Oct 27 2009	Nov 03 2012	Oct 26 2011	Oct 27 2010	Oct 29 2009
Mean protein levels	10.4	8.0	8.6	9.4	9.9	7.8	8.3	8.8	9.9	8.1	6.6	7.6
% active pre-moult	4.8%	3.2%	0%	0%	2.4%	0%	0.8%	0%	2.4%	1.6%	1.6%	0%
% hard-shell	37.1%	68.8%	93.1%	80.0%	54.1%	76.0%	88.0%	72.0%	75.2%	78.4%	83.2	95.2%

Sampling date	Cape Sable Island Inside				Cape Sable Island Outside				St. Mary's Bay			
	Nov 05 2012	Oct 28 2011	Oct 26 2010	Oct 28 2009	Nov 4 2012	Oct 27 2011	Oct 25 2010	Oct 27 2009	Nov 04 2012	Oct 28 2011	Oct 29 2010	Oct 29 2009
Mean protein levels	9.6	6.3	6.9	6.3	9.9	6.0	6.1	6.6	10.6	10.9	11.4	9.4
% active pre-moult	0%	0.8%	0.8%	1.5%	0%	0.8%	0.8%	1.0%	0%	1.6%	0%	0%
% hard-shell	71.2%	91.2%	84.0%	96.8%	72.8%	92.0%	76.0%	98.4%	62.4%	80.0%	79.2%	69.6%

Sampling date	Moose Harbour			
	Nov 03 2012	Oct 27 2011	Oct 29 2010	Oct 30 2009
Mean protein levels	8.3	7.9	8.1	8.3
% active pre-moult	0%	0%	0%	0%
% hard-shell	56.0%	48.8%	58.4%	68.8%



# What can we expect from the 2012 fall season?

Depending on the location, we have between 5-8 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 once the season opens at the end of November 2012. 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 levels such as moult cycle, water temperature, health, diet, handling, etc.** and therefore, caution must be used when making predictions.

**BLOOD PROTEIN LEVELS - BRIX INDEX** - When looking at the 2011 pre-season sampling conducted in those 10 sites, we see that lobster blood protein levels are above 8 on the Brix index in every site. Additionally, only one site, St. Mary's Bay, has blood protein levels slightly lower than last year's pre-season levels, although the 2012 levels are the second highest of all sites sampled. The trend analyses of Brix levels were very similar in all sites, with the 2012 levels being consistently higher than the corresponding levels of 2011 from the summer on. Therefore, based on blood protein levels alone, the 2012 pre-season sampling points toward a similar or faster recovery from the moult compared to the 2011 season.

**SHELL HARDNESS & MOULT CYCLE** - Overall, very few lobsters assessed were in active pre-moult. This is suggesting that the majority of lobsters have already moulted, while only a small proportion will be moulting in the weeks or days surrounding the opening of the fall season. When looking at shell hardness, five of the ten sites have a significantly lower proportion of lobsters classified as 'hard-shelled' in the 2012 pre-season sampling compared to last year; Yarmouth Inside & Outside, Cape Sable Island Inside & Outside, and St. Mary's Bay. Yarmouth Inside also showed the highest proportion of lobsters in active pre-moult, although that proportion is still less than 5%. Similar to previous years, approximately half of the lobsters sampled out of Moose Harbour were hard-shelled. Based on the shell hardness alone, the 2012 pre-season sampling indicates that the proportion of softer lobsters at the start of the fall season could be similar or more significant than in previous years, especially out of Yarmouth.

When looking at the quality parameters from the 2012 pre-season sampling, we get conflicting results. The lobster blood protein levels are pointing towards a faster recovery from the moult in almost every sampling location, while shell-hardness is suggesting that we could see higher proportion of soft-shelled lobsters being landed at the start of the season in some of the sampled sites. While shell hardness assessment is not as objective as measuring blood protein, there is a rigorous and consistent procedure in place to ensure that the results are accurate and precise. Lobsters coming out of Port La Tour, Lobster Bay, Jacquard's Ridge, Moose Harbour and Sambro could be in similar of better condition than lobsters landed in the same areas at the start of the season last year. Lobsters coming out of Yarmouth Inside & Outside, Cape Sable Island Inside & Outside and St. Mary's Bay should have better blood proteins at the start of the season compared to last year, but could still show a high proportion of soft shells. As advised in the past, extra caution should be taken when deciding what product can be stored for later sale.

Note: Only the latest sampling dates are shown here. All size categories are part of the analysis, including sub-legal lobsters with carapace lengths of 70-80 mm. The overall pattern throughout the year for the parameters monitored was considered when predicting the quality of the LFAs 33/34 2012 fall season. Confidence is highest for those locations where sampling was done closest to the start of the season. The spatial coverage of the sampling is very limited and therefore, the results from each location may not necessarily be generalized to the entire LFA.



## WWW.LOBSTERMOUT.CA

FISHERMEN & SCIENTISTS RESEARCH SOCIETY

P.O. Box 25125 · Halifax · NS · Canada · B3M 4H4

Tel: (902) 461-8119, (902) 876-1160 Fax: (902) 461-0541 info@fsrs.ns.ca www.fsrs.ns.ca