

## Adjustments made to recent catches and CPUE for West Coast Rock Lobster in Areas 3+4 and 5+6.

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### Introduction

It was noted at a recent West Coast Rock Lobster Working Group meeting that during the 2017/18 fishing season catches made in Area 3+4 by trapboats were landed in Area 5+6 as hoopnet catches. As a result of this practice the catches from those two areas have been adjusted by applying the methodology reported below.

### Assumptions and Methodology

Given indications from Compliance and Industry that some 50% of the Area 5+6 landings for the 2017<sup>1</sup> season were actually made in Area 3+4, it is assumed that 50% of the catches made by hoopnets in Area 5+6 belonged to trapboats fishing in Area 3+4. It seems that this is a fairly recent circumstance, but not confined only to the 2017 season. To reflect that, it is assumed that area allocation for the 2015 season were accurate, but that the situation for the 2016 season was intermediate. Accordingly, it is assumed that 25% of the 2016 catches reported by hoopnets in Area 5+6 belonged to trapboats fishing in Area 3+4.

The catches for those two areas and seasons are thus proposed to be adjusted accordingly by applying the following equations:

$$C_{seas}^{hoops(near)*,A5+6} = pC_{seas}^{hoops(near),A5+6} \quad (1)$$

$$C_{seas}^{hoops(IR)*,A5+6} = pC_{seas}^{hoops(IR),A5+6} \quad (2)$$

where:

$C_{seas}^{hoops(near),A5+6}$  is the hoopnet catch for the nearshore sector in Area 5+6 for the relevant season,

$C_{seas}^{hoops(IR),A5+6}$  is the hoopnet catch for the Interim Relief sector in Area 5+6 for the relevant season,

$p=0.75$  and  $0.50$  for  $seas = 2016$  and  $2017$  respectively,

$C_{seas}^{hoops(near)*,A5+6}$  is the revised hoopnet catch for the nearshore sector in Area 5+6, and

$C_{seas}^{hoops(IR)*,A5+6}$  is the revised hoopnet catch for the Interim Relief sector in Area 5+6.

The differences between  $C_{seas}^{hoops(near),A5+6}$  and  $C_{seas}^{hoops(near)*,A5+6}$ , and between  $C_{seas}^{hoops(IR),A5+6}$

and  $C_{seas}^{hoops(IR)*,A5+6}$  are then added to the Area 3+4 trapboat catches:

$$C_{seas}^{traps*,A3+4} = C_y^{traps,A3+4} + (C_{seas}^{hoops(near),A5+6} - C_{seas}^{hoops(near)*,A5+6}) + (C_{seas}^{hoops(IR),A5+6} - C_{seas}^{hoops(IR)*,A5+6}) \quad (3)$$

<sup>1</sup> 2017, for example, refers to the 2017/18 fishing season.

The resulting catches per Area are reported in Table 1.

The CPUE indices for the two Areas were also adjusted by applying the following equations (noting that there is currently no CPUE index for IR):

$$CPUE_{seas}^{traps*} = \frac{C_{seas}^{traps*,A3+4}}{C_{seas}^{traps,A3+4}} CPUE_{seas}^{traps} \tag{4}$$

and

$$CPUE_{seas}^{hoops(near)*} = \frac{C_{seas}^{hoops(near)*,A5+6}}{C_{seas}^{hoops(near),A5+6}} CPUE_{seas}^{hoops(near)} \tag{5}$$

where:

$CPUE_{seas}^{traps}$  is the existing Area 3+4 standardized CPUE value for traps for the relevant seasons and  $CPUE_{seas}^{traps*}$  is the revised value as determined by equation (4). The same applies for equation (5) except that it relates to the hoopnet CPUE index in Area 5+6. The resulting revised standardized CPUE values are reported in Table 2 and plotted in Figure 1.

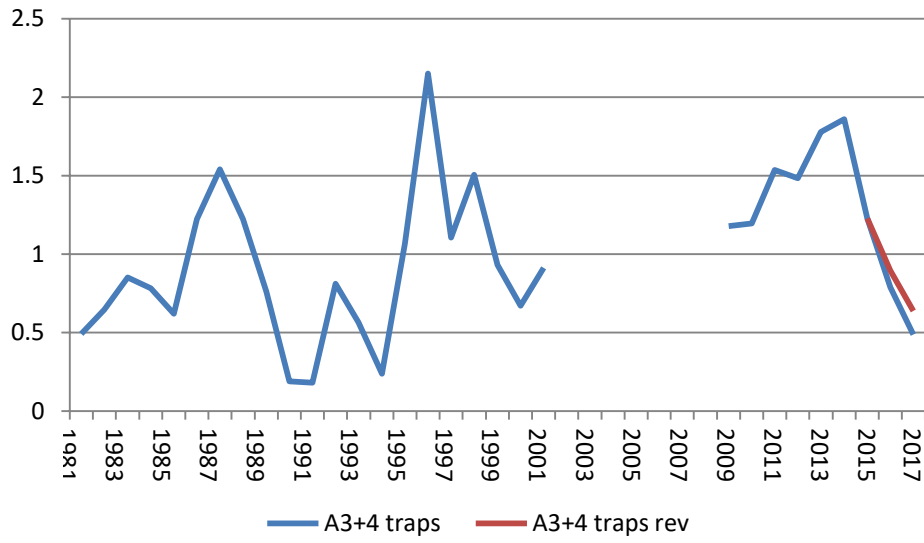
**Table 1: Previous and revised Area 3+4 trapboat and Area 5+6 hoopnet catches.**

Season	Area 3+4 traps (offshore)		Area 5+6 hoops (nearshore)		Area 5+6 hoops (interim relief)	
2016	Existing	133	Existing	21	Existing	49
	<b>Revised</b>	<b>151</b>	<b>Revised</b>	<b>16</b>	<b>Revised</b>	<b>37</b>
2017	Existing	84	Existing	24	Existing	28
	<b>Revised</b>	<b>110</b>	<b>Revised</b>	<b>12</b>	<b>Revised</b>	<b>14</b>

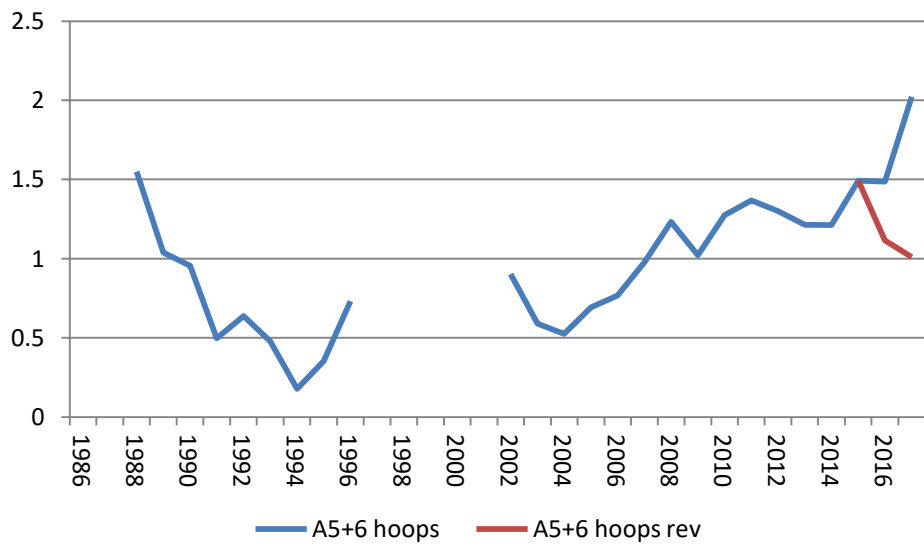
**Table 2: The current CPUE indices for Area 3+4 trapboats and Area 5+6 hoopnets, with the revised values for 2016 and 2017 reported in the green text.**

Season	A3+4 traps	A3+4 traps rev	A5+6 hoops	A5+6 hoops rev	
1981	0.493				
1982	0.646				
1983	0.852				
1984	0.782				
1985	0.620				
1986	1.224		1986	1.512	
1987	1.541		1987		
1988	1.224		1988	1.549	
1989	0.762		1989	1.037	
1990	0.190		1990	0.954	
1991	0.182		1991	0.497	
1992	0.811		1992	0.639	
1993	0.565		1993	0.478	
1994	0.238		1994	0.178	
1995	1.066		1995	0.353	
1996	2.149		1996	0.730	
1997	1.106		1997		
1998	1.505		1998		
1999	0.931		1999		
2000	0.671		2000		
2001	0.912		2001		
2002			2002	0.903	
2003			2003	0.590	
2004			2004	0.525	
2005			2005	0.691	
2006			2006	0.768	
2007			2007	0.977	
2008			2008	1.231	
2009	1.179		2009	1.021	
2010	1.195		2010	1.275	
2011	1.537		2011	1.366	
2012	1.484		2012	1.301	
2013	1.778		2013	1.214	
2014	1.859		2014	1.212	
2015	1.226		2015	1.492	
2016	0.788	0.895	2016	1.486	1.115
2017	0.487	0.638	2017	2.021	1.011

(a)



(b)



Figures 1a and b: Standardized CPUE indices for Area 3+4 trapboats and Area 5+6 hoopnets where for 2016 and 2017 the values have been revised as detailed by Equations (4) and (5) in the text.