Results for the new West Coast Rock Lobster OMP

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Introduction

The results presented here are for the current "best-performing" OMP. Results included using the "observed" 2005 somatic growth data provided by James Gaylard (OLRAC). (Note: 2005 refers to the 2005/06 season.)

The OMPs presented here are meant to be tuned so that the average commercial TAC over the 10-year period is either 2000 MT, 2200 MT, 2400 MT or 2600 MT. Due to lack of time, the current tuning is approximate with these values actually being 2030 MT, 2245 MT and 2401 MT and 2596 MT.

The OMP presented assumes that 5% of the A8 commercial TAC is transferred to super-areas A34 and A7 with a ratio of 0.20:0.80 respectively. The rationale behind this selection of TAC transfer is to attempt to get a more even spread of resource depletion/recovery across all five super-areas.

Results

Table 1 reports the OMP output for the four different tunings, as well as for a future constant catch of 2200 MT (for the total commercial sector).

Figures 1a-d show various OMP output for the four different tunings discussed above respectively. In each Figure, plot A shows the commercial TAC, plot B shows the commercial TAC annual variation, plot C shows the total recreational take and plot D shows the male biomass above 75mm trajectories.

Figures 2a-c are plots comparing the median commercial TACs, the male biomass above 75mm trajectories and plots of future effort, for the four OMPs presented. Figure 2d shows the trajectory of male biomass above 75mm for the full 1910-2016 period as well as the 1955-2016 period for one of the OMP tunings. Figure 3 compares the commercial TAC and B75 (male) trajectories for each of the five super-areas, for the "2245 MT" tuning OMP.

Table 1: Median and 5th and 95th percentile values for four candidate OMPs tuned so that average commercial TAC =2030 MT, 2245 MT, 2401 MT and 2596 MT, as well as for a constant catch CC=2200 MT option. Results are for the full stochastic integration.

		CC = 2200 MT	OMP Tuning 2030 MT	OMP Tuning 2245 MT	OMP Tuning 2401 MT	OMP Tuning 2596 MT
10-yr Ave commercial TAC	A1-2	30 [30; 30]	30 [30; 30]	30 [30; 30]	30 [30; 30]	30 [30; 30]
	A3-4	230 [230; 230]	166 [130; 209]	186 [2145; 234]	203 [158; 252]	222 [174; 267]
	A5-6	40 [40; 40]	40 [40; 40]	40 [40; 40]	40 [40; 40]	40 [40; 40]
	A7	590 [590; 590]	573 [460; 710]	633 [490; 774]	677 [523; 832]	728 [570; 866]
	A8	1310 [1310; 1310]	1216 [1013; 1451]	1340 [1092; 1578]	1438 [1162; 1666]	1540 [1253; 1738]
	T	2200 [2200; 2200]	2030 [1679; 2393]	2245 [1830; 2587]	2401 [1954; 2744]	2596 [2115; 2838]
2007-2009 Ave commercial TAC	T	2200 [2200; 2200]	2043 [2021; 2144]	2100 [2021; 2229]	2151 [2021; 2229]	2223 [2048; 2229]
10-yr Ave offshore TAC	A1-2	0 [0; 0]	0 [0; 0]	0 [0; 0]	0 [0; 0]	0 [0; 0]
	A3-4	140 [140; 140]	75 [40; 120]	96 [55; 144]	113 [68; 162]	132 [84; 177]
	A5-6	0 [0; 0]	0 [0; 0]	0 [0; 0]	0 [0; 0]	0 [0; 0]
	A7	590 [590; 590]	573 [460; 710]	633 [490; 774]	677 [523; 832]	728 [570; 866]
	A8	910 [910; 910]	817 [613; 1051]	940 [692; 1178]	1038 [762; 1266]	1140 [853; 1138]
	T	1640 [1640; 1640]	1438 [1080; 1812]	1655 [1241; 1997]	1811 [1364; 2165]	2005 [1526; 2248]
Ave Total Recreational Take	T		228 [188; 279]	262 [202; 294]	281 [214; 308]	298 [232; 320]
Ave V commercial	A1-2	0 [0; 0]	0 [0; 0]	0 [0; 0]	0 [0; 0]	0 [0; 0]
	A3-4	0 [0; 0]	12 [9; 16]	13 [10; 18]	14 [11; 19]	16 [12; 20]
	A5-6	0 [0; 0]	0 [0; 0]	0 [0; 0]	0 [0; 0]	0 [0; 0]
	A7	0 [0; 0]	17 [13; 22]	17 [14; 22]	18 [14; 22]	19 [15; 22]
	A8	0 [0; 0]	7 [5; 10]	7 [5; 9]	6 [4; 9]	6 [4; 9]
	T	0 [0; 0]	9 [7; 11]	9 [6; 11]	9 [6; 11]	9 [7; 10]
B_m(16/06)	A1-2	0.77 [0.48; 1.31]	0.80 [0.51; 1.33]	0.79 [0.50; 1.32]	0.78 [0.50; 1.31]	0.77 [0.49; 1.31]
	A3-4	1.00 [0.55; 2.56]	1.11 [0.66; 2.62]	1.06 [0.62; 2.58]	1.02 [0.58; 2.56]	0.99 [0.54; 2.53]
	A5-6	1.75 [0.58; 11.26]	1.79 [0.62; 11.31]	1.77 [0.61; 11.30]	1.77 [0.60; 11.28]	1.75 [0.59; 11.27]
	A7	1.29 [0.42; 3.44]	1.39 [0.49; 4.47]	1.26 [0.36; 3.26]	1.16 [0.26; 3.12]	1.07 [0.18; 2.99]
	A8	0.96 [0.21; 2.86]	1.18 [0.54; 2.98]	1.01 [0.39; 2.83]	0.90 [0.25; 2.69]	0.77 [0.13; 2.55]
	T	1.24 [0.53; 2.98]	1.36 [0.73; 3.10]	1.26 [0.62; 3.00]	1.16 [0.52; 2.92]	1.07 [0.43; 2.81]
B_m(16/80)	A1-2		0.25 [0.16; 0.42]	0.25 [0.16; 0.42]	0.25 [0.15; 0.42]	0.24 [0.15; 0.42]
	A3-4		0.76 [0.45; 1.82]	0.72 [0.42; 1.79]	0.70 [0.39; 1.78]	0.68 [0.37; 1.76]
	A5-6		0.39 [0.13; 2.45]	0.39 [0.13; 2.45]	0.39 [0.13; 2.45]	0.38 [0.12; 2.44]
	A7		0.61 [0.21; 1.48]	0.54 [0.15; 1.40]	0.51 [0.11; 1.34]	0.45 [0.07; 1.27]
	A8		1.34 [0.61; 3.40]	1.14 [0.44; 3.24]	1.03 [0.28; 3.09]	0.88 [0.15; 2.94]
	T		0.78 [0.41; 1.82]	0.72 [0.35; 1.76]	0.68 [0.30; 1.70]	0.61 [0.24; 1.64]
B_m(16/1910)	A1-2		0.01 [0.01; 0.02]	0.01 [0.01; 0.02]	0.01 [0.01; 0.02]	0.01 [0.001; 0.02]
	A3-4		0.04 [0.02; 0.09]	0.04 [0.02; 0.09]	0.03 [0.02; 0.09]	0.03 [0.002; 0.009]
	A5-6		0.02 [0.01; 0.15]	0.02 [0.01; 0.15]	0.02 [0.01; 0.15]	0.02 [0.01; 0.15]
	A7		0.03 [0.01; 0.07]	0.02 [0.01; 0.06]	0.02 [0.004; 0.06]	0.02 [0.003; 0.06]
	A8		0.07 [0.03; 0.17]	0.06 [0.02; 0.17]	0.05 [0.01; 0.16]	0.04 [0.01; 0.15]
	T		0.04 [0.02; 0.09]	0.04 [0.02; 0.09]	0.03 [0.02; 0.09]	0.03 [0.01; 0.08]
Effort(15/06)	T		0.55 [0.25; 1.12]	0.72 [0.33; 1.72]	0.90 [0.37; 2.42]	1.16 [0.46; 3.76]

Figure 1a: OMP results for the tuning of average commercial **TAC = 2030 MT**. **Plot A** is the commercial TAC showing the median, with 50%-iles (black), 75-iles (dark-grey) and 90-iles (light grey). **Plot B** is the commercial TAC annual variation, showing the median, with 50-iles, 765-iles and 90%iles (shading as for plot A).
Plot C shows the total recreational take showing the median with the 5^{th} and 95^{th} percentiles. **Plot D** indicates the male biomass above 75mm trend showing the median with 5^{th} and 95^{th} percentiles. In each plot, the vertical hashed line indicates the start of the projection period.

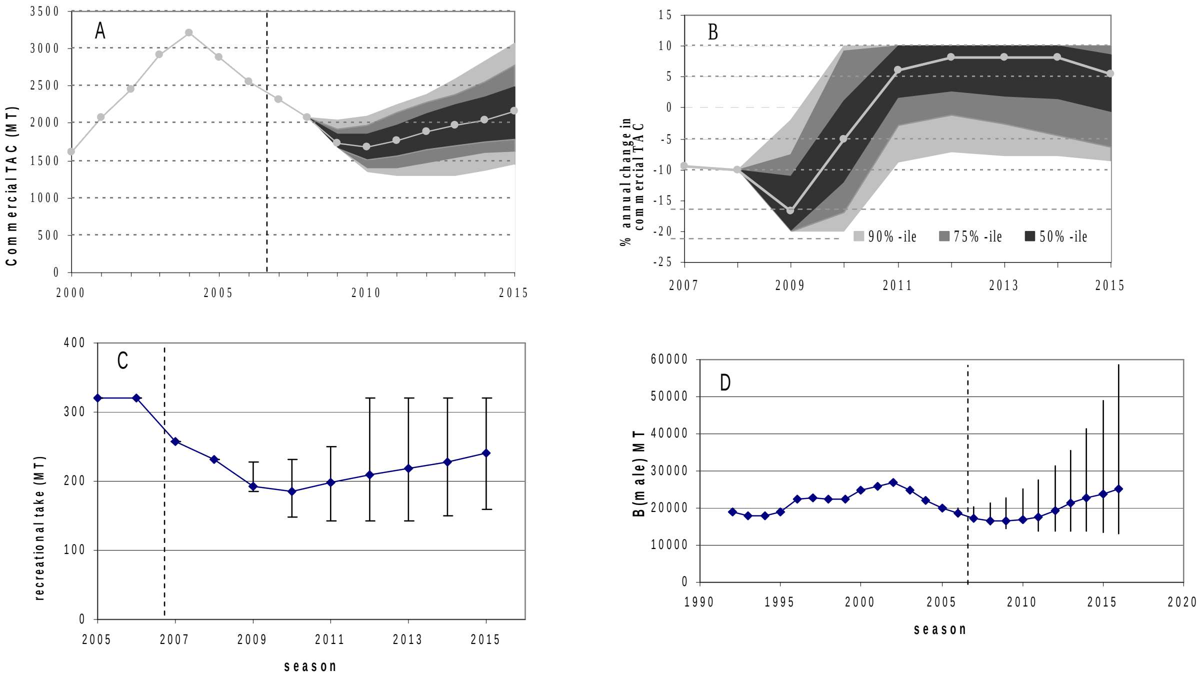


Figure 1b: OMP results for the tuning of average commercial **TAC = 2245 MT**. **Plot A** is the commercial TAC showing the median, with 50%-iles (black), 75-iles (dark-grey) and 90-iles (light grey). **Plot B** is the commercial TAC annual variation, showing the median, with 50-iles, 765-iles and 90%iles (shading as for plot A).
Plot C shows the total recreational take showing the median with the 5th and 95th percentiles. **Plot D** indicates the male biomass above 75mm trend showing the median with 5th and 95th percentiles. In each plot, the vertical hashed line indicates the start of the projection period.

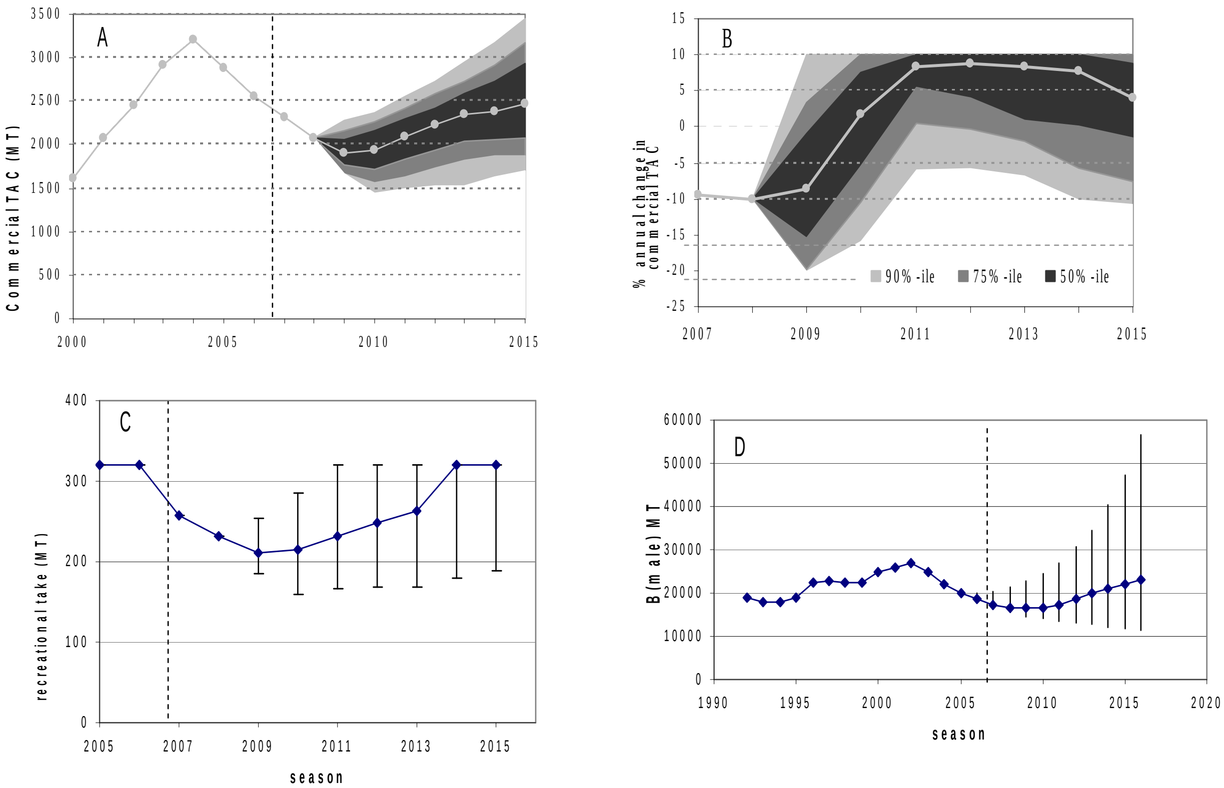


Figure 1c: OMP results for the tuning of average commercial **TAC = 2401 MT**. **Plot A** is the commercial TAC showing the median, with 50%-iles (black), 75-iles (dark-grey) and 90-iles (light grey). **Plot B** is the commercial TAC annual variation, showing the median, with 50-iles, 765-iles and 90%iles (shading as for plot A). **Plot C** shows the total recreational take showing the median with the 5th and 95th percentiles. **Plot D** indicates the male biomass above 75mm trend showing the median with 5th and 95th percentiles. In each plot, the vertical hashed line indicates the start of the projection period.

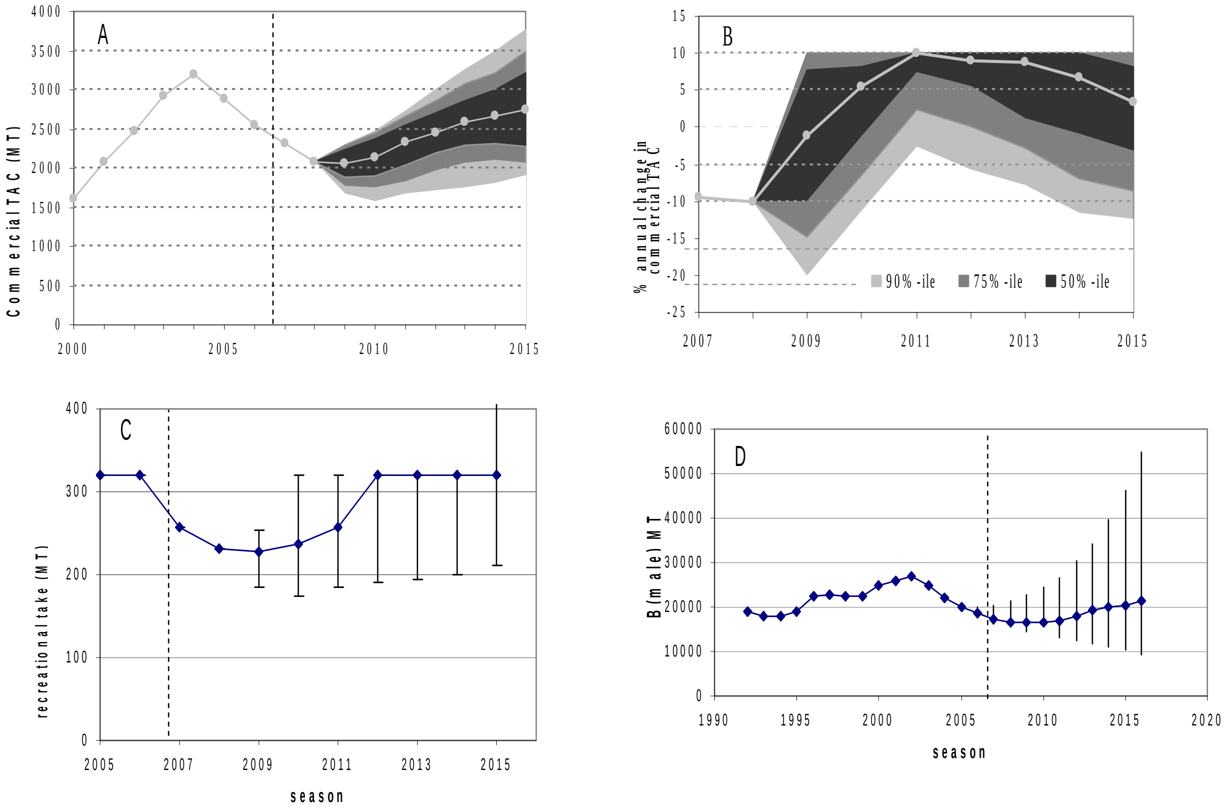


Figure 1d: OMP results for the tuning of average commercial **TAC = 2596 MT**. **Plot A** is the commercial TAC showing the median, with 50%-iles (black), 75-iles (dark-grey) and 90-iles (light grey). **Plot B** is the commercial TAC annual variation, showing the median, with 50-iles, 765-iles and 90%iles (shading as for plot A).
Plot C shows the total recreational take showing the median with the 5th and 95th percentiles. **Plot D** indicates the male biomass above 75mm trend showing the median with 5th and 95th percentiles. In each plot, the vertical hashed line indicates the start of the projection period.

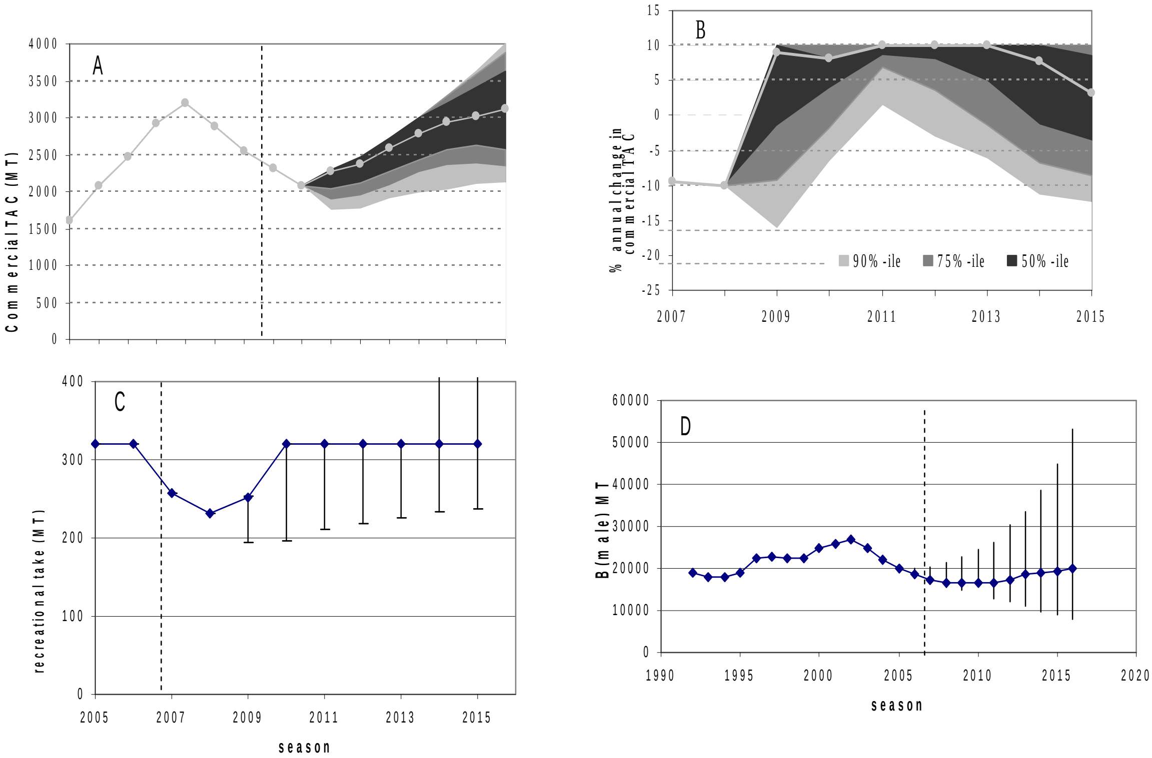


Figure 2a: Comparative plots of commercial TAC for the four OMPs presented. Only medians are indicated. The vertical hashed line indicates the start of the projection period.

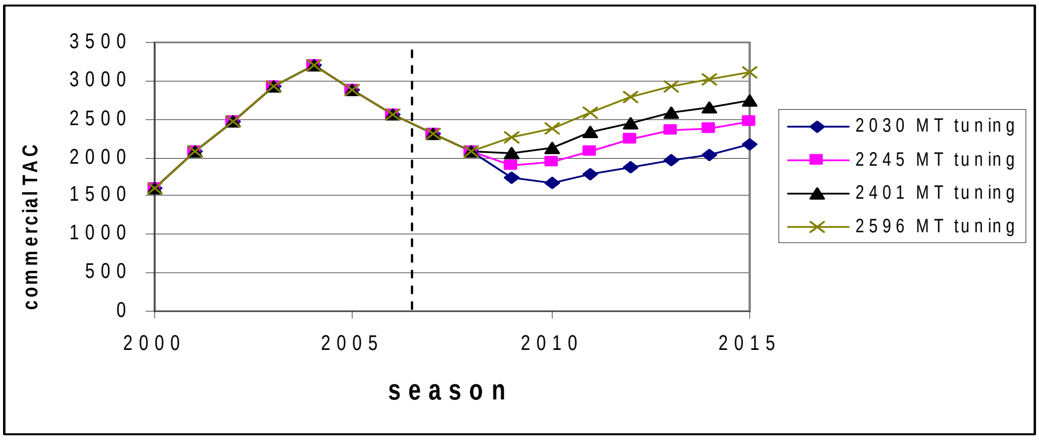


Figure 2b: Comparative plots of male biomass above 75mm for the four OMPs presented, as well as for a zero future harvest. Only medians are indicated. The vertical hashed line indicates the start of the projection period.

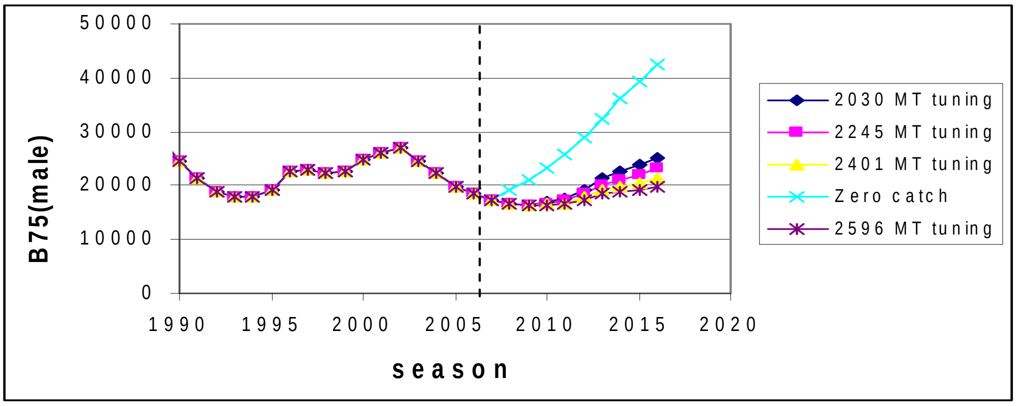


Figure 2c: Comparative plots of Effort(*y*/06) for the four OMPs presented. Only medians are indicated. The vertical hashed line indicates the start of the projection period.

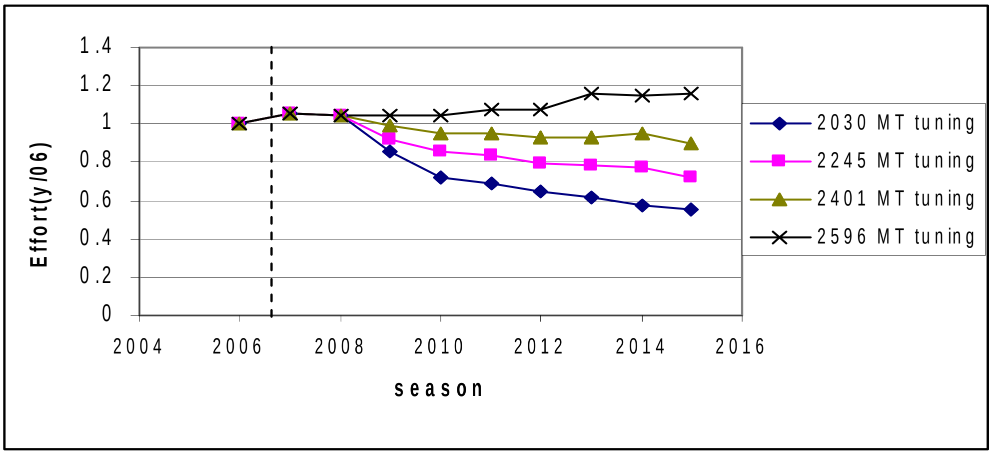
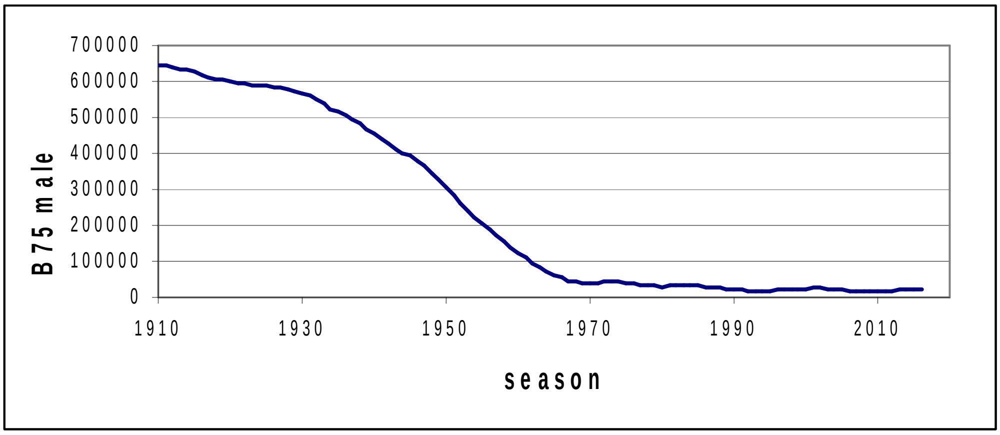


Figure 2d: Male biomass (above 75mm) trend in MT (assuming 2245 MT tuning) for the 1910-2016 period (top plot) and 1955-2016 period (bottom plot).



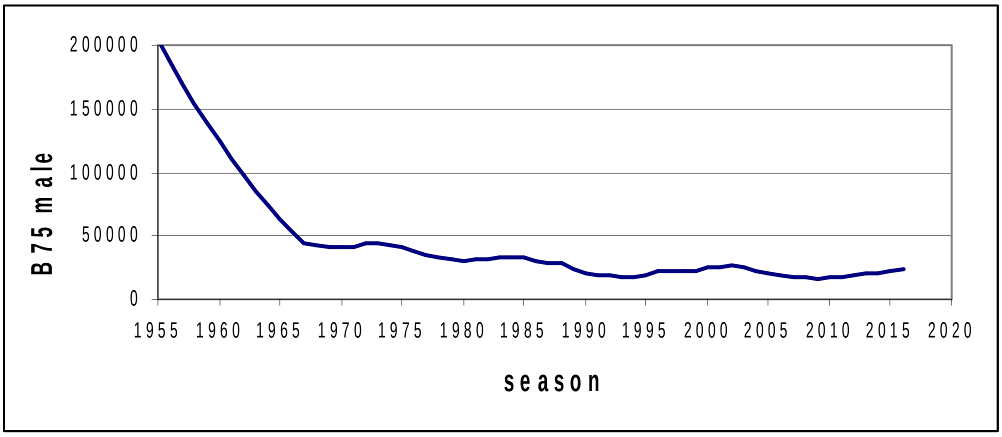


Figure 3: Median and 90% PI of commercial TAC (left panel) and *B*75(male) (right panel) for each of the five super-areas, for the "2245 MT" tuning.