



LA Creel/MRIP Red Snapper Private Mode Landings Calibration Procedure

Office of Fisheries
Louisiana Department of Wildlife and Fisheries

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Overview

Methods to calibrate LA Creel and MRIP private mode red snapper landings estimates are needed for adjustment of the Louisiana portion of the allowable catch limit established in SEDAR 52. Landings estimates are only available for comparison for the single year (2015) each surveys dockside and effort components were conducted simultaneously.

This calibration procedure differs from the LDWF calibration established for non-federally managed species that is used to adjust MRIP landings estimates prior to 2014 into LA Creel currency for LDWF stock assessment and management purposes. In that calibration, catch rates of inshore state managed species are assumed equivalent between surveys based on the similarity of the 2015 estimates allowing a reasonable calibration of landings from differences in the available effort estimates (2015-2017) only.

In contrast to the common inshore species, rates of private mode red snapper catches differ substantially between surveys (Table 1, Figure 1). Ignoring these differences and adjusting the allowable catch limit solely from differences between each surveys effort estimates would lead to a biased adjustment for the Louisiana recreational red snapper fishery.

Calibration Method

The 2015 LA Creel private mode estimates are transformed into estimates equivalent to the MRIP private mode by separating and removing the shore component of the LA Creel estimates.

The 2015 private mode estimates of red snapper landings (numbers of fish), effort (angler trips), and red snapper catch rates (numbers of fish per trip) of each survey are presented by bimonthly period and annually (Table 2, Figure 2). MRIP estimates are CHTS/APAIS derived estimates and represent A+B1 catches.

The ratio of the annual 2015 landings estimates can be used to calibrate between surveys by assuming the difference between the point estimates is consistent through time.

Another calibration option would be to use the MRIP CHTS private mode effort estimates available in 2016 and 2017 to estimate the corresponding annual landings and compare the mean 2015-2017 landings estimates between surveys. This method was considered but requires further estimation of the 2016 and

2017 MRIP catch rates along with the assumption that the 2015 MRIP CHTS/APAIS effort distributions used to allocate the 2016 and 2017 CHTS effort estimates across modes of fishing and areas fished are representative of the other two years as well. Due to the additional estimation and assumptions required, this method was considered not optimal.

The ratio of the 2015 LA Creel and MRIP CHTS/APAIS private mode annual landings estimates (1.06, Table 2) is considered the best available quota adjustment factor.

It should be noted that the 2015 MRIP effort estimates in Waves 5 and 6 are much higher than the corresponding LA Creel effort estimates (Table 2, Figure 3), and the Wave 5 estimate seems biased high when compared to the historical seasonal MRIP effort distribution along with the recent LA Creel seasonal effort distribution (Figure 4). The use of these data in the landings calibration between surveys is not optimum. We believe those estimates are biased upward resulting in a biased adjustment of the Louisiana catch limit. If further landing calibration evaluations are required, we strongly recommend that utility of those effort estimates be re-evaluated.

Tables

Table 1: 2015 LA Creel and MRIP CHTS/APAIS private mode catch rate estimate comparisons for red snapper and inshore state managed species in units of numbers per angler trip. MRIP estimates represent A+B1 catches. Estimates for inshore species include shore catches. Proportional standard errors (PSE) are presented.

Species	LA Creel		MRIP		Ratio
	Catch Rate	PSE	Catch Rate	PSE	
Red snapper	0.084	12.1	0.057	20.4	1.48
Black drum	0.085	8.61	0.094	12.5	0.91
Red drum	0.436	5.90	0.414	8.77	1.05
Sheepshead	0.100	9.46	0.105	12.7	0.95
Spotted seatrout	1.570	6.60	1.577	10.5	1.00

Table 2: 2015 LA Creel and MRIP CHTS/APAIS private mode red snapper landings (numbers of fish), effort (angler trips), and catch rate (numbers of fish per trip) estimate comparisons. MRIP estimates represent A+B1 catches. Proportional standard errors (PSE) are presented.

Wave	LA Creel		MRIP		Ratio
	Landings	PSE	Landings	PSE	
1	0		0		
2	22,286	27.3	17,558	46.3	1.27
3	83,826	16.9	65,080	30.0	1.29
4	38,563	20.4	34,208	33.6	1.13
5	6,090	44.8	21,170	64.3	0.29
6	1,914	49.1	6,344	101.6	0.30
Total	152,679	11.5	144,360	19.7	1.06

Wave	LA Creel		MRIP		Ratio
	Trips	PSE	Trips	PSE	
1	133,515	13.0	278,891	16.0	0.48
2	220,457	10.2	401,595	14.1	0.55
3	412,959	9.5	518,789	12.1	0.80
4	458,766	6.6	432,182	10.7	1.06
5	321,415	7.7	523,911	11.1	0.61
6	271,614	9.8	391,956	13.6	0.69
Total	1,818,726	3.9	2,547,324	5.2	0.71

Wave	LA Creel		MRIP		Ratio
	Catch Rate	PSE	Catch Rate	PSE	
1	0		0		
2	0.101	29.1	0.044	48.4	2.31
3	0.203	19.4	0.125	32.4	1.62
4	0.084	21.4	0.079	35.3	1.06
5	0.019	45.4	0.040	65.3	0.47
6	0.007	50.0	0.016	102.5	0.44
Total	0.084	12.2	0.057	20.4	1.48

Figures

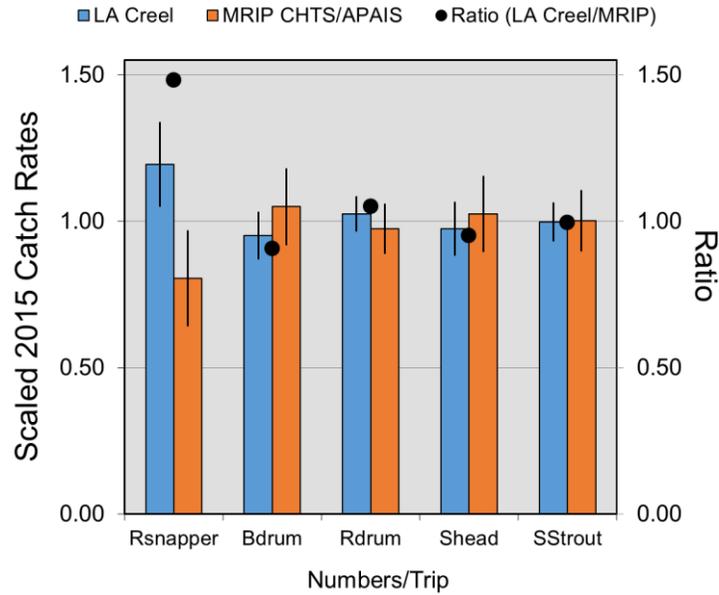


Figure 1. 2015 LA Creel and MRIP CHTS/APAIS private mode catch rate estimate comparisons (numbers of fish per angler trip) for red snapper and inshore state managed species. Estimates are scaled to 1 for comparison. MRIP estimates represent A+B1 catches. Estimates for inshore species include shore catches. Error bars represent \pm one standard error.

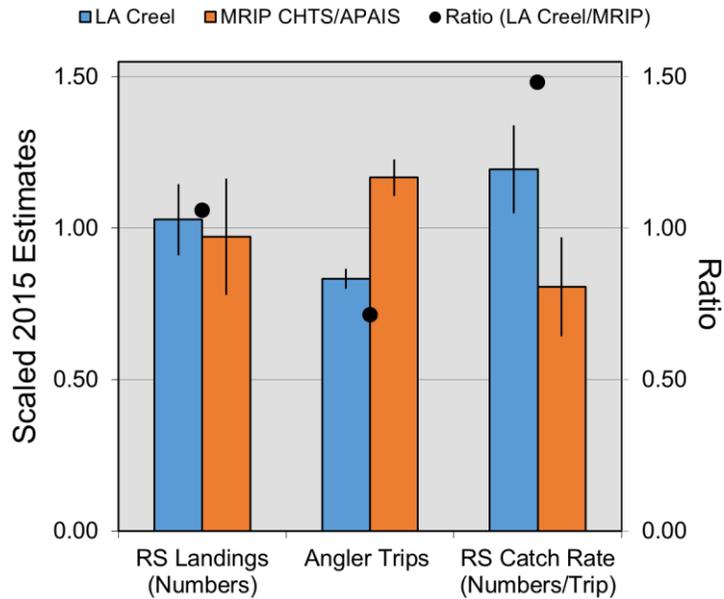


Figure 2: 2015 LA Creel and MRIP CHTS/APAIS private mode red snapper landings (numbers of fish), effort (angler trips), and catch rate (numbers of fish per trip) estimate comparisons. Estimates are scaled to 1 for comparison. Error bars represent \pm one standard error.

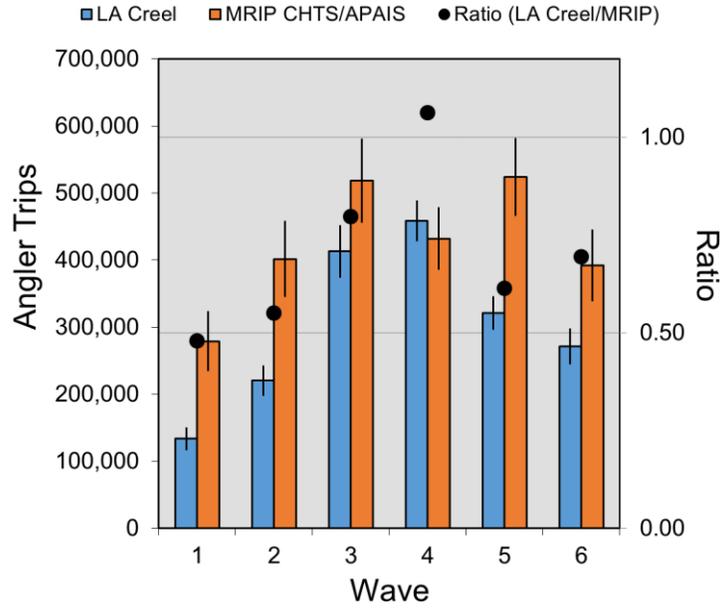


Figure 3: 2015 LA Creel and MRIP CHTS/APAIS private mode effort (angler trips) estimates by wave. Error bars represent \pm one standard error.

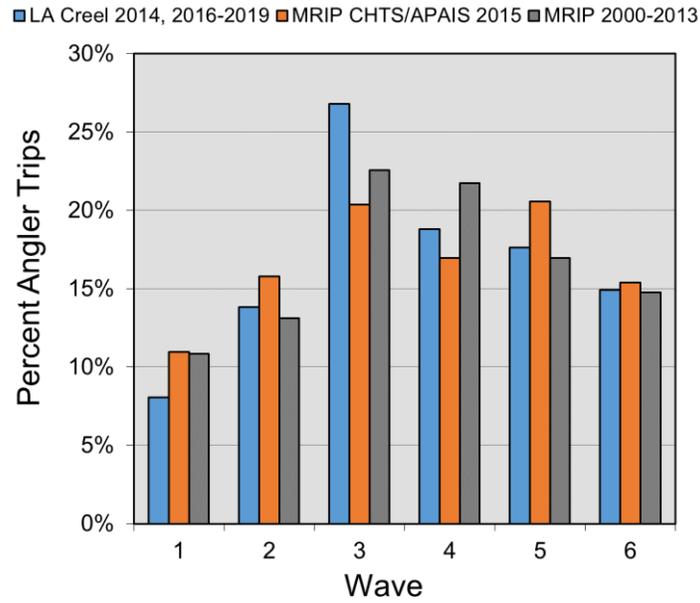


Figure 4: LA Creel and MRIP CHTS/APAIS effort estimate comparison by wave: mean 2014, 2016-2019 LA Creel percent angler trips and the 2015 and mean 2000-2013 percent MRIP angler trips.