

Effectiveness of community-based marine reserves in small-scale fisheries

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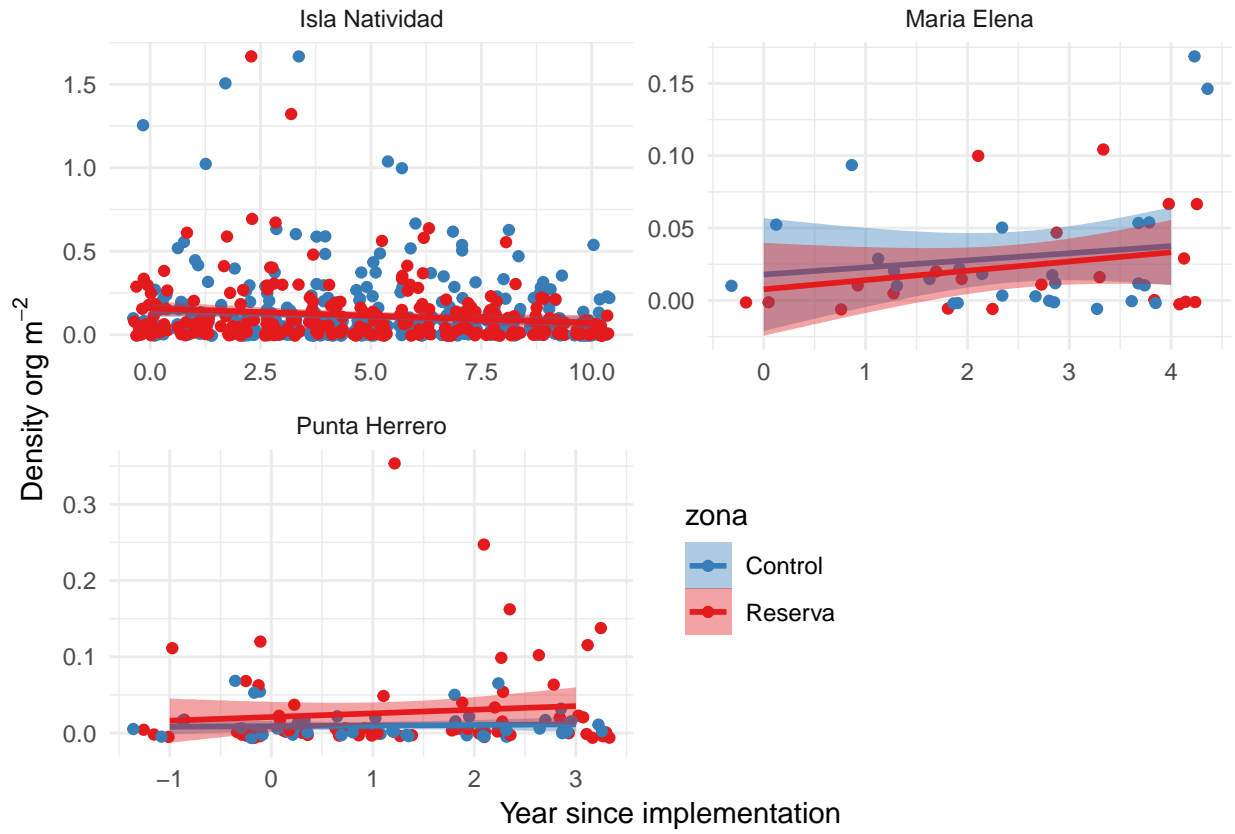
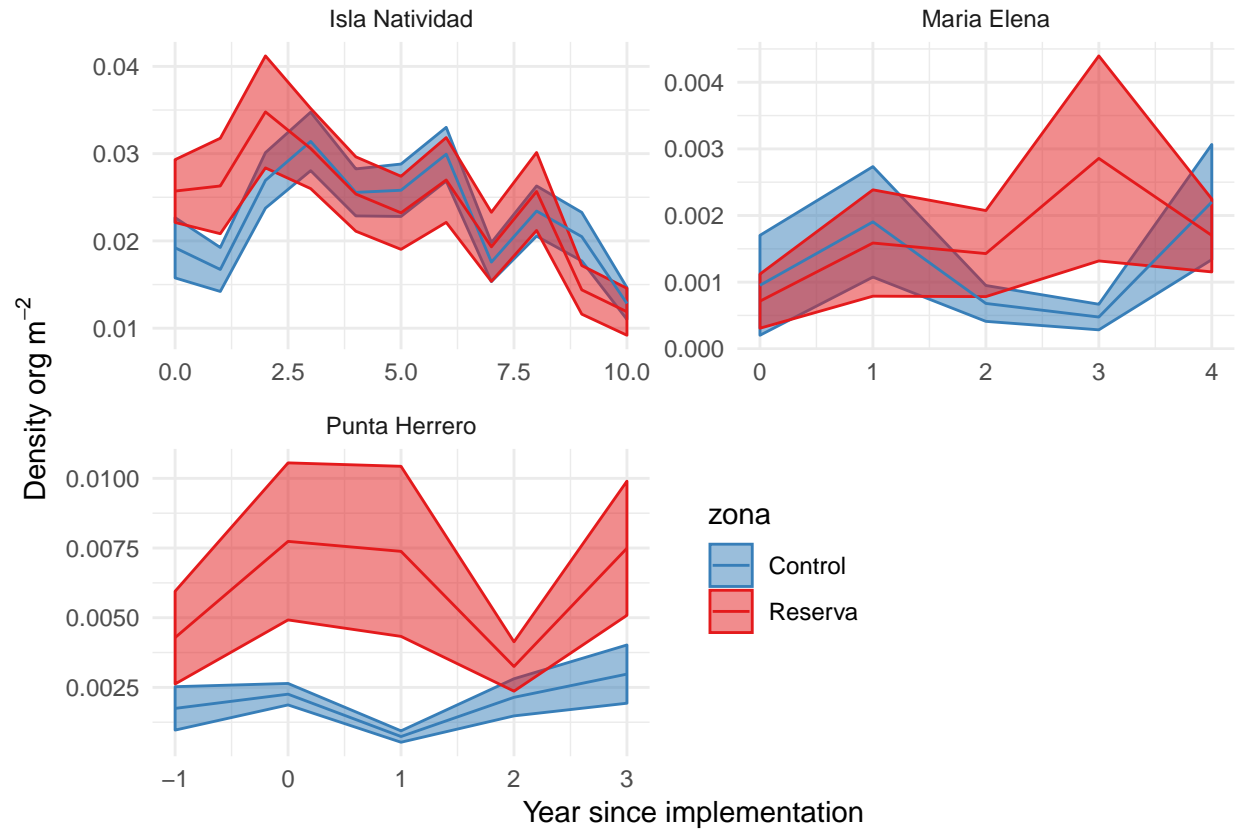


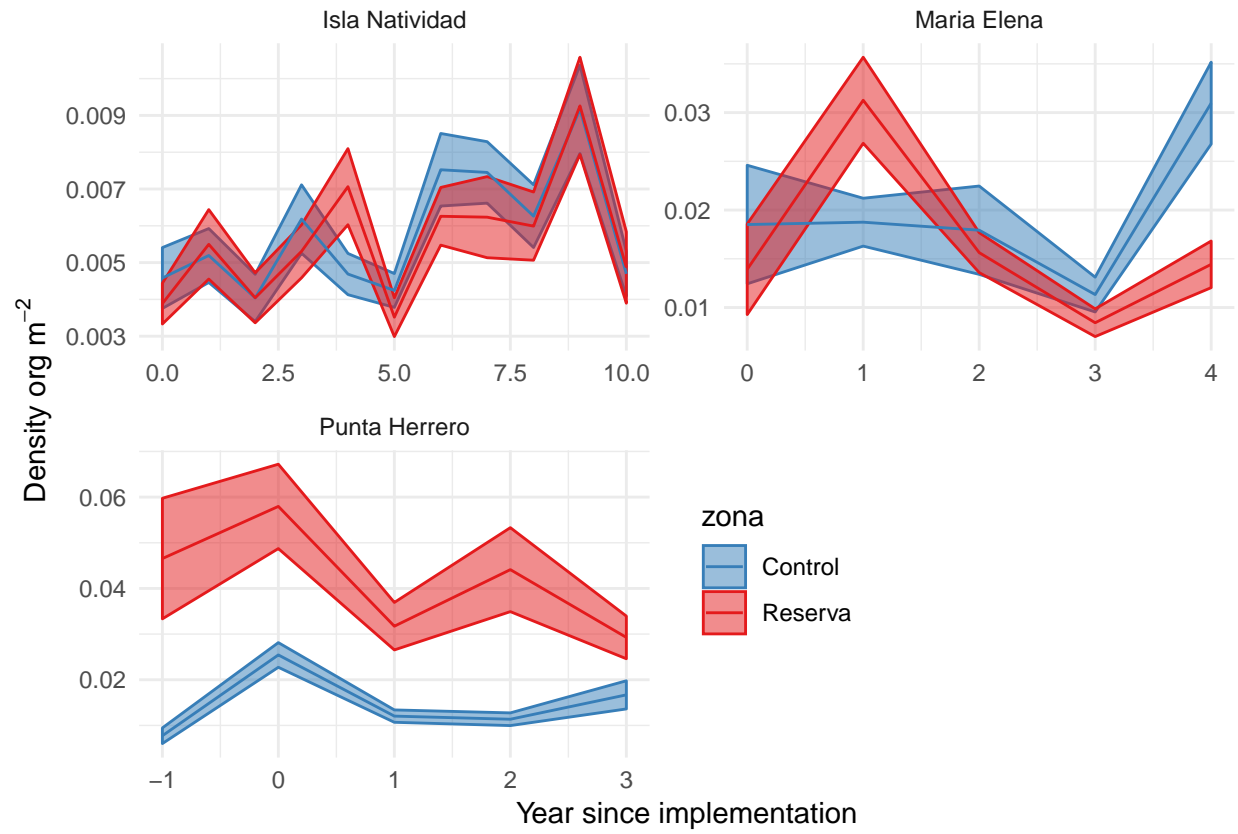
Table 1: Number of invertebrate transects performed in each site of each community.

Community	Control	Reserve
Isla Natividad	415	244
Maria Elena	27	21
Punta Herrero	51	73

Table 2: Number of fish transects performed in each site of each community.

Community	Control	Reserve
Isla Natividad	400	240
Maria Elena	44	45
Punta Herrero	82	85





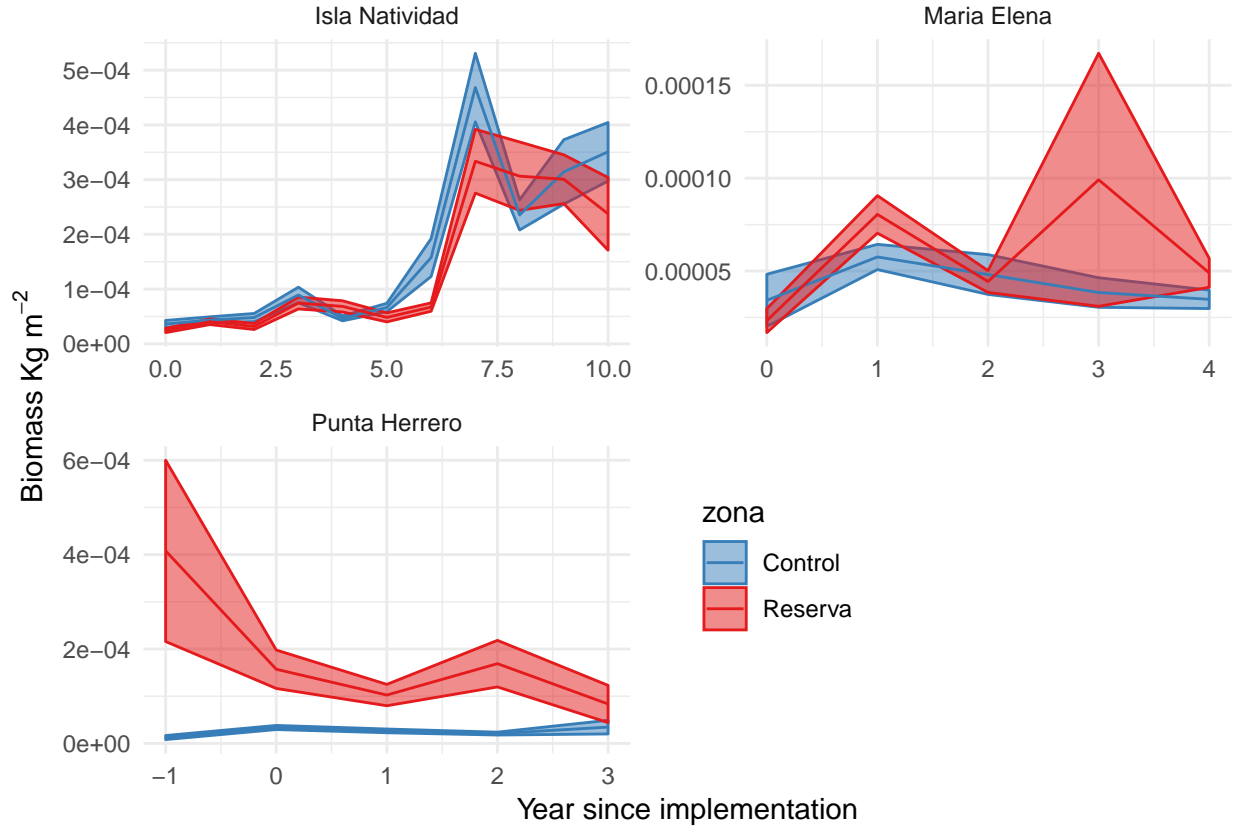


Table 3: Coefficient estimates of biological indicators for Isla Natividad.

	Dependent variable:			
	Lobster abundance (1)	Fish biomass (2)	Invertebrate abundance (3)	Invertebrate biomass (4)
zonaReserva	-0.011 (0.058)	-0.0001 (0.0002)	0.007 (0.004)	-0.001 (0.001)
year1	0.032 (0.067)	0.0001 (0.0002)	-0.002 (0.004)	0.001 (0.001)
year2	0.0002 (0.077)	0.0001 (0.0002)	0.008* (0.004)	-0.001 (0.001)
year3	0.023 (0.072)	0.0003* (0.0002)	0.012*** (0.004)	0.002 (0.001)
year4	-0.030 (0.058)	0.0001 (0.0002)	0.006 (0.004)	0.0001 (0.001)
year5	-0.006 (0.061)	0.0002 (0.0002)	0.007 (0.004)	-0.0003 (0.001)
year6	-0.014 (0.062)	0.001*** (0.0003)	0.011** (0.004)	0.003*** (0.001)
year7	-0.021 (0.060)	0.004*** (0.001)	-0.002 (0.004)	0.003*** (0.001)
year8	-0.026 (0.059)	0.002*** (0.0003)	0.004 (0.004)	0.002* (0.001)
year9	-0.038 (0.057)	0.003*** (0.001)	0.001 (0.004)	0.005*** (0.001)
year10	-0.066 (0.057)	0.002*** (0.0005)	-0.006* (0.004)	0.0001 (0.001)
zonaReserva:year1	-0.058 (0.078)	0.0001 (0.0003)	0.003 (0.006)	0.001 (0.001)
zonaReserva:year2	0.126 (0.121)	-0.00001 (0.0003)	0.001 (0.007)	0.001 (0.001)
zonaReserva:year3	0.053 (0.093)	-0.00003 (0.0003)	-0.007 (0.006)	-0.0002 (0.001)
zonaReserva:year4	0.035 (0.065)	0.0003 (0.0003)	-0.007 (0.006)	0.003** (0.001)
zonaReserva:year5	-0.045 (0.068)	-0.0001 (0.0003)	-0.009 (0.006)	-0.00003 (0.001)
zonaReserva:year6	0.096 (0.075)	-0.001 (0.0003)	-0.009 (0.006)	-0.001 (0.001)
zonaReserva:year7	-0.030 (0.065)	-0.001 (0.001)	-0.005 (0.005)	-0.001 (0.001)
zonaReserva:year8	0.012 (0.069)	0.001 (0.001)	-0.004 (0.005)	0.0004 (0.001)
zonaReserva:year9	0.002 (0.064)	0.0004 (0.001)	-0.013** (0.005)	0.001 (0.002)
zonaReserva:year10	-0.016 (0.062)	-0.001 (0.001)	-0.007 (0.005)	0.001 (0.001)
Constant	0.122** (0.054)	-0.001*** (0.0002)	0.017*** (0.004)	-0.001 (0.001)
Observations	659	50,560	23,065	50,560
R ²	0.049	0.128	0.388	0.366
Residual Std. Error	0.189 (df = 637)	0.018 (df = 50460)	0.088 (df = 23009)	0.033 (df = 50460)

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 4: Coefficient estimates of biological indicators for Maria Elena.

<i>Dependent variable:</i>				
	Lobster abundance (1)	Fish biomass (2)	Invertebrate abundance (3)	Invertebrate biomass (4)
zonaReserva	-0.033** (0.013)	-0.0002 (0.0003)	-0.0002 (0.001)	-0.005 (0.007)
year1	0.008 (0.023)	0.001*** (0.0003)	0.001 (0.001)	0.0002 (0.006)
year2	-0.019 (0.015)	0.0004 (0.0003)	-0.0003 (0.001)	-0.001 (0.007)
year3	-0.028** (0.014)	0.0001 (0.0003)	-0.0005 (0.001)	-0.007 (0.006)
year4	0.023 (0.028)	0.0004 (0.0003)	0.001 (0.001)	0.012* (0.007)
zonaReserva:year1	-0.003 (0.024)	0.001** (0.0004)	-0.0001 (0.001)	0.017** (0.008)
zonaReserva:year2	0.046* (0.024)	0.0002 (0.0004)	0.001 (0.001)	0.002 (0.008)
zonaReserva:year3	0.074*** (0.024)	0.001 (0.001)	0.003 (0.002)	0.002 (0.007)
zonaReserva:year4	0.001 (0.031)	0.0001 (0.0003)	-0.0003 (0.001)	-0.012 (0.008)
Constant	0.033** (0.013)	0.0001 (0.0003)	-0.001 (0.0005)	0.058*** (0.012)
Observations	48	7,031	1,680	7,031
R ²	0.222	0.054	0.250	0.185
Residual Std. Error	0.038 (df = 38)	0.009 (df = 6943)	0.009 (df = 1636)	0.081 (df = 6943)

Note: * p<0.1; ** p<0.05; *** p<0.01

Table 5: Coefficient estimates of biological indicators for Punta Herrero.

<i>Dependent variable:</i>				
	Lobster abundance (1)	Fish biomass (2)	Invertebrate abundance (3)	Invertebrate biomass (4)
zonaReserva	0.004 (0.009)	0.003*** (0.001)	0.005** (0.003)	0.033*** (0.009)
year-1	-0.006 (0.007)	-0.001 (0.0004)	-0.001 (0.002)	-0.018*** (0.005)
year1	-0.008 (0.005)	-0.0004* (0.0002)	-0.002 (0.001)	-0.013*** (0.003)
year2	0.004 (0.009)	-0.001** (0.0002)	-0.0001 (0.001)	-0.014*** (0.003)
year3	-0.001 (0.006)	-0.0004 (0.0003)	0.001 (0.001)	-0.009** (0.004)
zonaReserva:year-1	0.017 (0.023)	0.003 (0.003)	-0.003 (0.003)	0.006 (0.016)
zonaReserva:year1	0.018 (0.024)	-0.002* (0.001)	0.001 (0.004)	-0.013 (0.010)
zonaReserva:year2	0.019 (0.021)	-0.001 (0.001)	-0.004 (0.003)	0.0002 (0.013)
zonaReserva:year3	0.016 (0.016)	-0.002** (0.001)	-0.001 (0.004)	-0.020* (0.011)
Constant	0.011** (0.005)	0.0002 (0.0004)	-0.002*** (0.001)	0.039*** (0.011)
Observations	124	13,193	4,340	13,193
R ²	0.051	0.059	0.127	0.110
Residual Std. Error	0.049 (df = 114)	0.021 (df = 13105)	0.043 (df = 4296)	0.206 (df = 13105)

Note: * p<0.1; ** p<0.05; *** p<0.01

Table 6: Coefficient estimates of socioeconomic indicators Isla Natividad.

	<i>Dependent variable:</i>	
	Landings	valor Revenues
	(1)	(2)
zonaReserva	-29.442** (11.650)	-5.560 (4.495)
year-6	-9.747 (24.616)	6.074 (6.641)
year-5	-26.548* (13.992)	2.106 (8.285)
year-4	-8.805 (29.871)	-1.665 (6.046)
year-3	29.433 (28.151)	2.834 (4.858)
year-2	-17.752 (13.634)	3.423 (5.278)
year-1	-5.421 (22.370)	1.095 (4.431)
year1	-46.722*** (16.583)	-1.873 (5.213)
year2	9.037 (11.830)	10.802** (4.612)
year3	-23.798 (21.989)	9.425** (4.566)
year4	-54.097*** (16.698)	2.816 (4.498)
year5	48.012** (22.367)	10.380* (5.667)
year6	39.160* (21.590)	12.549* (7.129)
year7	-11.992 (10.746)	10.988 (10.889)
year8	-26.265** (12.598)	14.186 (13.017)
zonaReserva:year-6	-12.067 (24.616)	-1.980 (6.641)
zonaReserva:year-5	6.214 (13.992)	-1.715 (8.285)
zonaReserva:year-4	-26.453 (29.871)	-1.237 (6.046)
zonaReserva:year-3	-18.071 (28.151)	-2.213 (4.858)
zonaReserva:year-2	5.569 (13.634)	-2.142 (5.278)
zonaReserva:year-1	-13.914 (22.370)	-1.703 (4.431)
zonaReserva:year1	-0.696 (16.583)	-1.119 (5.213)
zonaReserva:year2	1.436 (11.830)	8.758* (4.612)
zonaReserva:year3	10.607 (21.989)	12.639*** (4.566)
zonaReserva:year4	-6.110 (16.698)	2.515 (4.498)
zonaReserva:year5	-61.368*** (22.367)	0.047 (5.667)
zonaReserva:year6	-2.498 (21.590)	12.371* (7.129)
zonaReserva:year7	6.842 (10.746)	3.441 (10.889)
zonaReserva:year8	65.875 (12.598)	10.347 (13.017)
Constant	166.062*** (11.650)	16.037*** (4.495)
Observations	60	60
R ²	0.888	0.647
Residual Std. Error (df = 28)	25.072	8.460
<i>Note:</i> * p<0.1; ** p<0.05; *** p<0.01		

Table 7: Coefficient estimates of socioeconomic indicators for Maria Elena.

	<i>Dependent variable:</i>	
	Landings	valor Revenues
	(1)	(2)
zonaReserva	-38.159*** (11.296)	-6.065*** (1.413)
year-9	-15.392 (10.833)	-4.118** (1.899)
year-8	-2.753 (16.161)	-2.043 (1.515)
year-7	-1.752 (17.095)	-1.738 (1.783)
year-6	-10.495 (10.778)	-3.715** (1.593)
year-5	-1.865 (16.596)	-0.997 (2.477)
year-4	-7.648 (12.383)	1.206 (5.122)
year-3	-35.327*** (11.296)	-6.648*** (1.413)
year-2	2.857 (16.888)	-0.051 (2.635)
year-1	7.520 (11.003)	0.151 (1.212)
year1	-9.668 (28.420)	-1.990 (4.472)
year2	-7.268 (26.926)	-0.964 (4.315)
zonaReserva:year-9		
zonaReserva:year-8		
zonaReserva:year-7		
zonaReserva:year-6	-7.994 (10.778)	-0.607 (1.593)
zonaReserva:year-5	-12.027 (16.596)	-2.239 (2.477)
zonaReserva:year-4	-11.520 (12.383)	-4.595 (5.122)
zonaReserva:year-3		
zonaReserva:year-2	-18.128 (16.888)	-3.360 (2.635)
zonaReserva:year-1	-11.395 (11.003)	-2.079* (1.212)
zonaReserva:year1	-9.629 (28.420)	-2.092 (4.472)
zonaReserva:year2		
Constant	64.566*** (11.296)	11.359*** (1.413)
Observations	30	30
R ²	0.863	0.833
Residual Std. Error (df = 10)	17.000	3.244
<i>Note:</i> * p<0.1; ** p<0.05; *** p<0.01		