

PACE VAQUITA
2007-2010

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Avila-Forcada, S., Martínez-Cruz, A. L., & Muñoz-Piña, C.
(2012). Conservation of vaquita marina in the Northern Gulf of
California. *Marine Policy*, 36(3), 613-622.

2007 PILOT PROGRAM FOR PACE VAQUITA

Programa de Empleo Temporal (Temporal Labor Program)

Refrigerating rooms

Ecological paths

Ecological cabins (hotels)

Sports fishing

We discovered that senderos ecológicos was not viable.
Some fishermen were interested in refrigerators
Few fishermen were interested in building hotel rooms
No fisherman wanted to stop being a fisherman.

2008 PACE VAQUITA

(Programa de Acción para la Conservación de la Especie)

BUYOUT

RENT-OUT

SWITCH-OUT

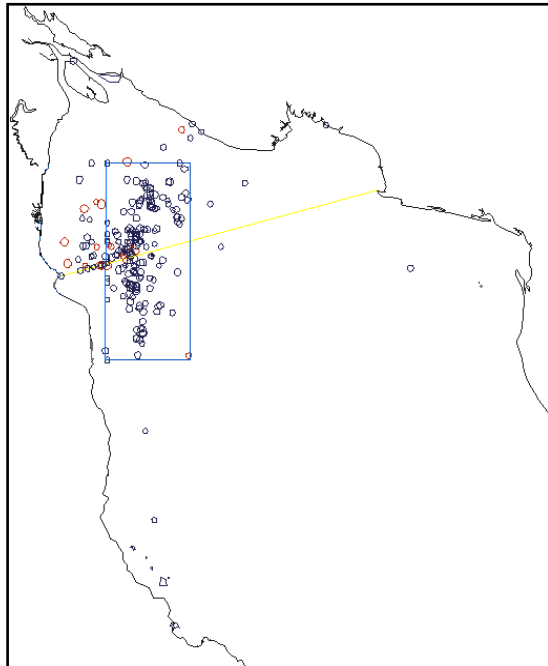
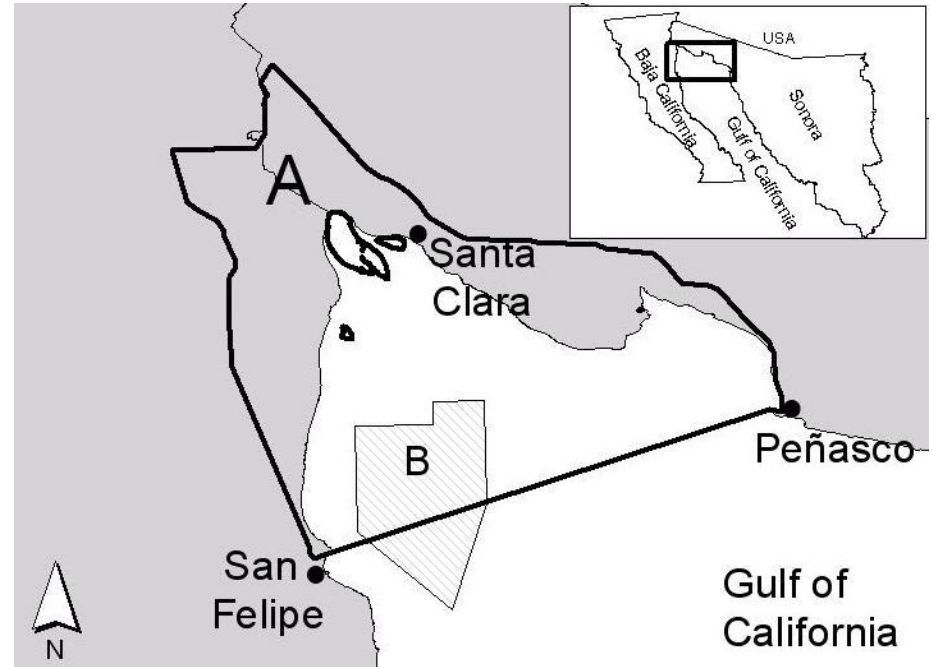


FIGURA 4. ZONA NÚCLEO DE REFUGIO PARA LA PROTECCIÓN DE LA VAQUITA.



2008 PACE VAQUITA

Program aimed to preserve vaquita

BUYOUT

Compensation for giving up the permit

SWITCH-OUT

Subsidy to accelerate technological adoption

Vaquita safe gear is not as efficient as gillnets. Fishermen get 34% of regular catch.

Permanent at first, then evolves to temporal switch out.

RENT-OUT

Similar to a payment for environmental services, in this case, conservation services. Fishermen acquire temporal contractual obligations to carry out conservation activities.

Fishermen are compensated if they agree to suspend all gillnet fishing inside Vaquita Refuge Area. –Rather compensate for the ban in the Refuge Area- Associated with a 10% decline in total catch (for the surface area).

--SIMILAR TO TODAY'S BAN--

2008 PACE VAQUITA

Program aimed to preserve vaquita

OPTION	YEAR
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Buy-out	
Permanently quit fishing	2008
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Permanent switch-out	
Permanent use of vaquita-safe net	2008
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Temporal switch-out	
Use of vaquita safe net for one year	
a) fisher buys vaquita-safe net	2009
b) fisher rents vaquita safe-net	2010
c) use of prototype net for one year	2010
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Rent-out	
Suspension of fishing activities in no-fishing zone for one year	2008
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2008 PACE VAQUITA

Program aimed to preserve Vaquita
Compensation in 2010 USD

OPTION	Number of permits, location of beneficiary	Compensation (thousand US\$)		
		2008	2009	2010
Buy-out				
Permanently quit fishing	1, anywhere	40	40	30
	2, anywhere	50	50	35
	3+, anywhere	60	60	40
Permanent switch-out				
Permanent use of vaquita-safe net	1, anywhere	30	30	30
Temporal switch-out				
Use of vaquita safe net for one year				
a) fisher buys vaquita-safe net	1, anywhere	--	17.0	17.0
b) fisher rents vaquita safe-net	1, anywhere	--	--	9.0
c) use of prototype net for one year	1, anywhere	--	--	12.0
Rent-out				
Suspension of fishing activities in no-fishing zone for one year	1, San Felipe	4.5	4.5	6.0
	1, Santa Clara	3.5	4.5	6.0
	1, Peñasco	3.5	4.5	6.0

2008 PACE VAQUITA

Multinomial Logit

Variable	Specification I (LNPROFITS)					
	Rent-out		Switch-out		Buy-out	
	Coeff	t-test	Coeff	t-test	Coeff	t-test
Fisherman's characteristics						
AGE	0.00	018	0.04	1.15	0.16 ^c	3.59
EDUCATION	-0.07	-1.16	-0.04	-0.39	0.15 ^a	1.73
CHILDREN	-0.02	-0.11	0.20	0.47	0.99 ^b	2.59
HOUSEHOLD	0.07	0.70	0.12	0.61	0.42	2.35
FELIPE	-0.52	-0.92	0.46	0.47	-1.62	-1.96
OWNER	1.15 ^b	2.41	1.79 ^b	2.01	1.00	1.31
LEADER	-0.45	-0.71	0.52	0.58	-0.96	-0.94
Fisherman's attitudes						
GOVERNMENT	-0.46	-0.89	0.44	0.50	-0.04	-0.06
Fisherman's alternative sources of income						
TOURISTIC F	0.69	0.89	0.75	0.51	3.77 ^c	3.10
TOURISTIC NF	-0.96	-1.27	1.15	1.20	4.37 ^c	4.31
NONTOURISTIC	-0.63	-0.98	1.88 ^b	2.02	3.82 ^c	3.88
Fisherman's wealth						
SAVINGS	1.44 ^c	3.15	-0.52	-0.70	-0.11	-0.15
WORK	0.27	0.35	0.67	0.60	1.40	1.40
Fisherman's financial liabilities						
LOAN	0.32	0.82	-0.95	-1.30	-0.89	-1.34
STUDY	-0.39	-0.57	-0.42	-0.38	-1.92	-1.65
Fishing-related variables						
BOATS	-0.10	-1.14	0.21 ^b	2.45	0.36 ^c	3.77
LNPROFITS	0.10	0.87	-0.36 ^a	-1.77	-0.03	-0.16
Constant	-0.59	-0.49	-5.84 ^b	-2.43	15.63 ^c	-4.43
Log-likelihood	-164.43					
Pseudo R2	0.43					

Who participated?

- The buyout alternative preferred by older fishermen. Participation only in 2008 and 2009. No participation in 2010.
- Fisherman switching out are also older.
- Fishermen who engaged in any of these alternatives owned more than one vessel.
- Fishermen are more likely to participate in the buyout if they have skills on non-fishing activity.
- Wealthier fishermen participate more on the rent-out option.**
- Cooperative leaders did not participate more than other permit-owners.

- Lemons are older or in- need of repair vessels. They are less productive. Lemons did not choose the buyout alternative. Less productive vessels engaged in the switch out option.
- 68% of switch out participants were from San Felipe.
- Switch out implies more conservation than rent out.
- (Assumption: Rent out implies a 10% reduction in fished quantity, switch out implies a 65% reduction in fished quantity with prototype)

SUGGESTION BACK IN 2010

–GIVEN THAT WE ALREADY HAD A SUBSIDY --

- Increase buyout payment
- Increase switch out payment.
- Lower rentout
- Force switch out?
- Increase research and development of alternative gear.