Saving the World's Most Endangered Marine Mammal: Role of Economic Incentives

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Rebecca Lent, U.S. Marine Mammal Commission; Enrique Sanjuro, WWF-MX
And all of you

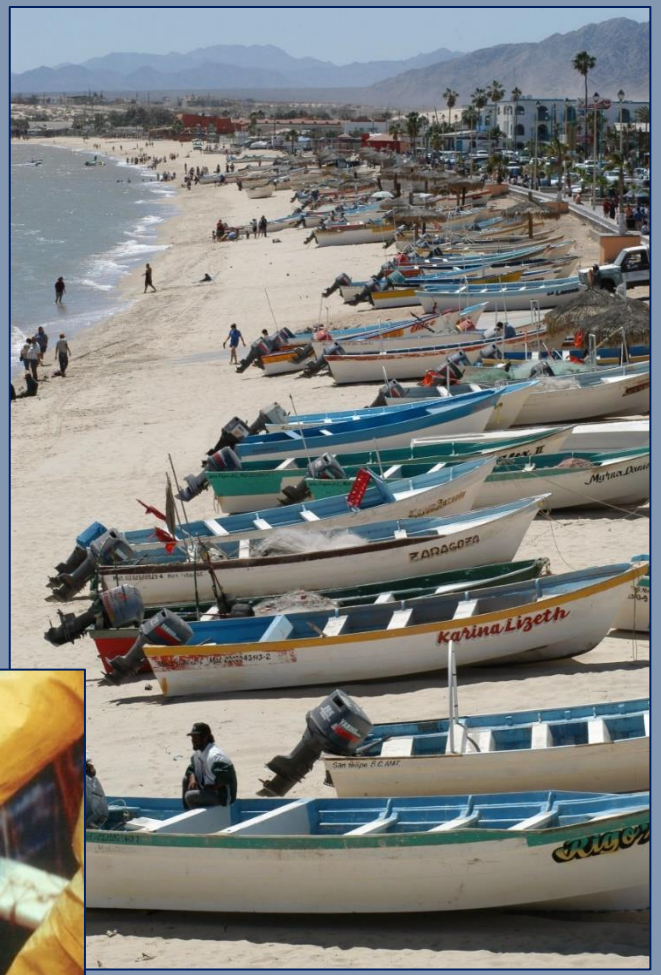
Todd Pusser, 22 Oct 2015

Vaquita are small, naturally rare and slow to reproduce

Chris Johnson, Vaquita TV

Vaquita are exquisitely adapted to a unique & highly productive marine habitat

C Faesi, Proyecto Vaquita, El Golfo, 1992



San Felipe, circa 2003

The fate of vaquita has long been tied to the fate of the totoaba

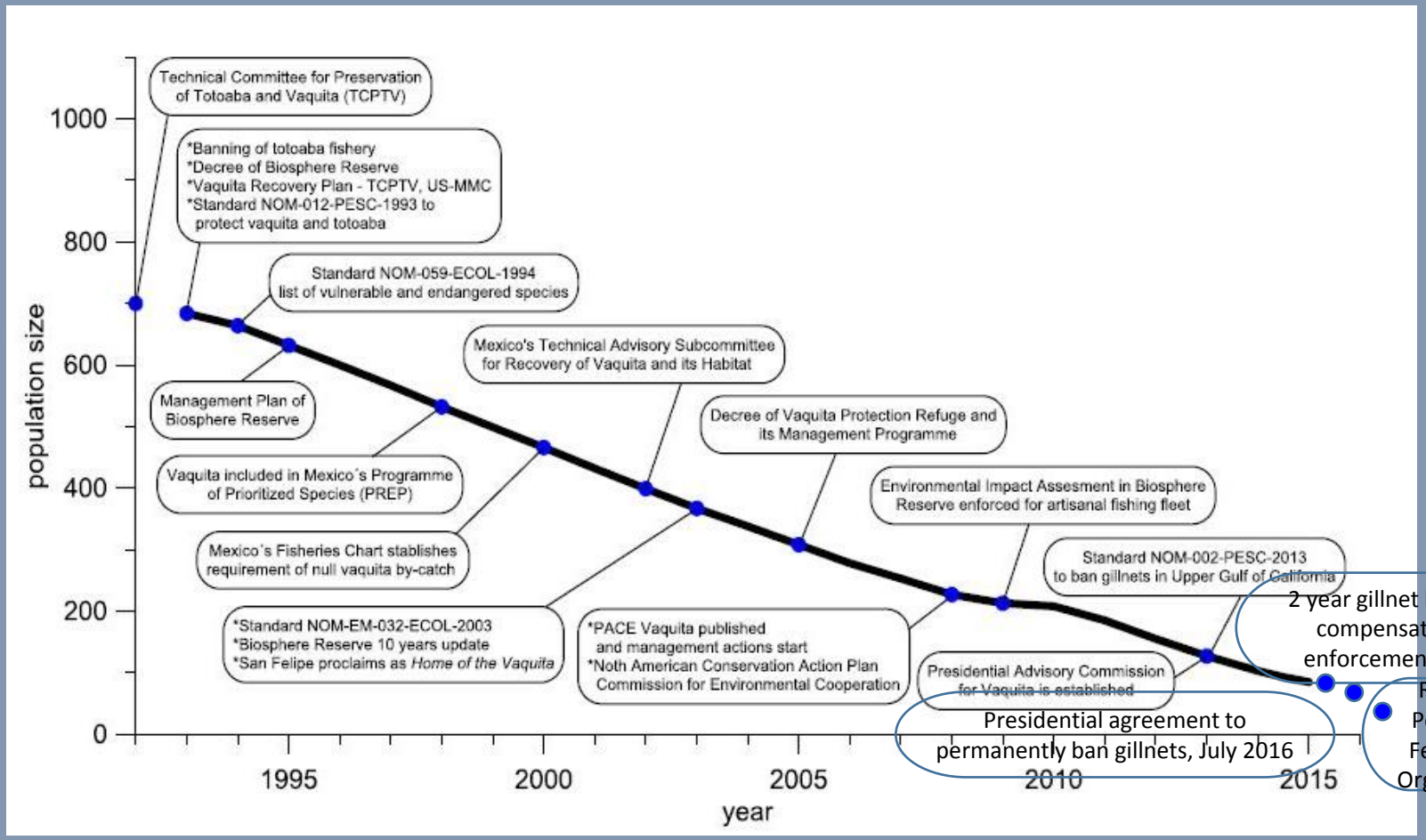
Bycatch vaquita and totoaba, 1991/1992,
El Golfo. Photo: Omar Vidal

Dead totoaba in illegal gillnet.
Sea Shepherd, 5 Feb 2016

Totoaba swim bladder for sale.
Photo: Environmental Investigation Agency

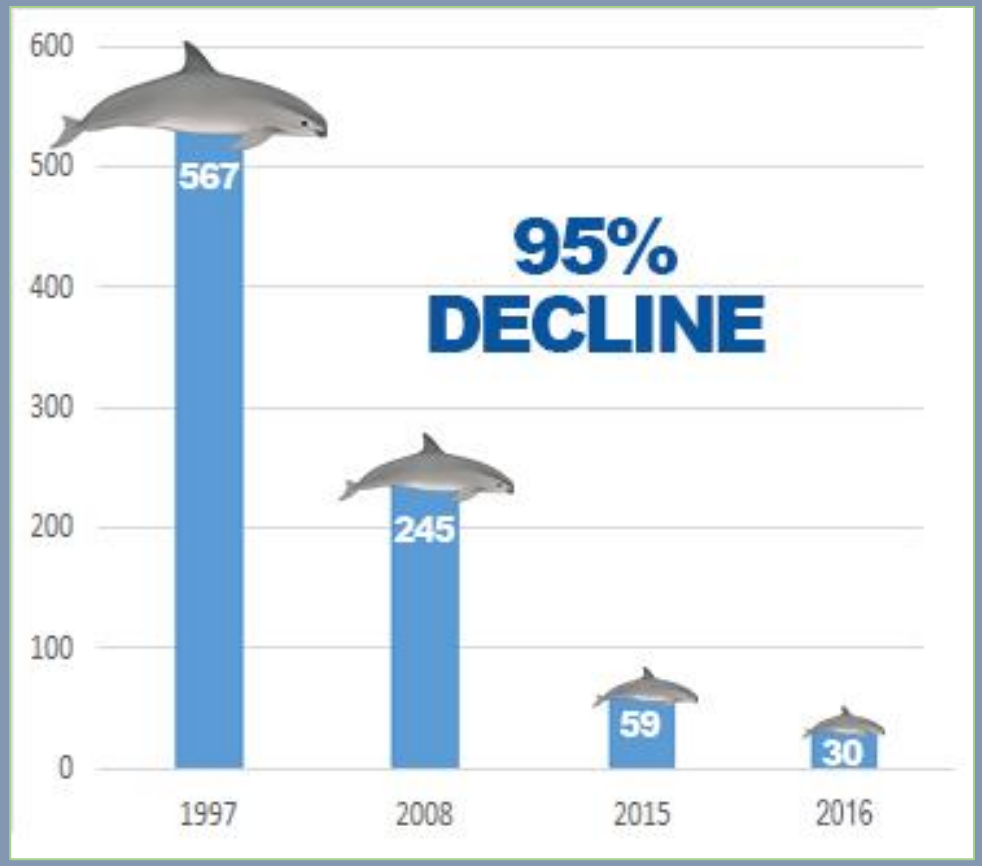
Ca. $3000-$8000 kg on the beach
Ca. $10,000 - $20,000 a piece in China

Management actions and the decline of the vaquita



CIRVA 2014

Vaquita are rapidly declining: extinction is imminent



CIRVA 2017

CIRVA (International Recovery Team) Feb 2017:

- Half the remaining population was lost in the last year - despite ban, compensation and increased enforcement
- Rampant illegal fishing continues
- Given the dire situation, CIRVA recommends that some vaquita be put in temporary sanctuary until gillnets are removed

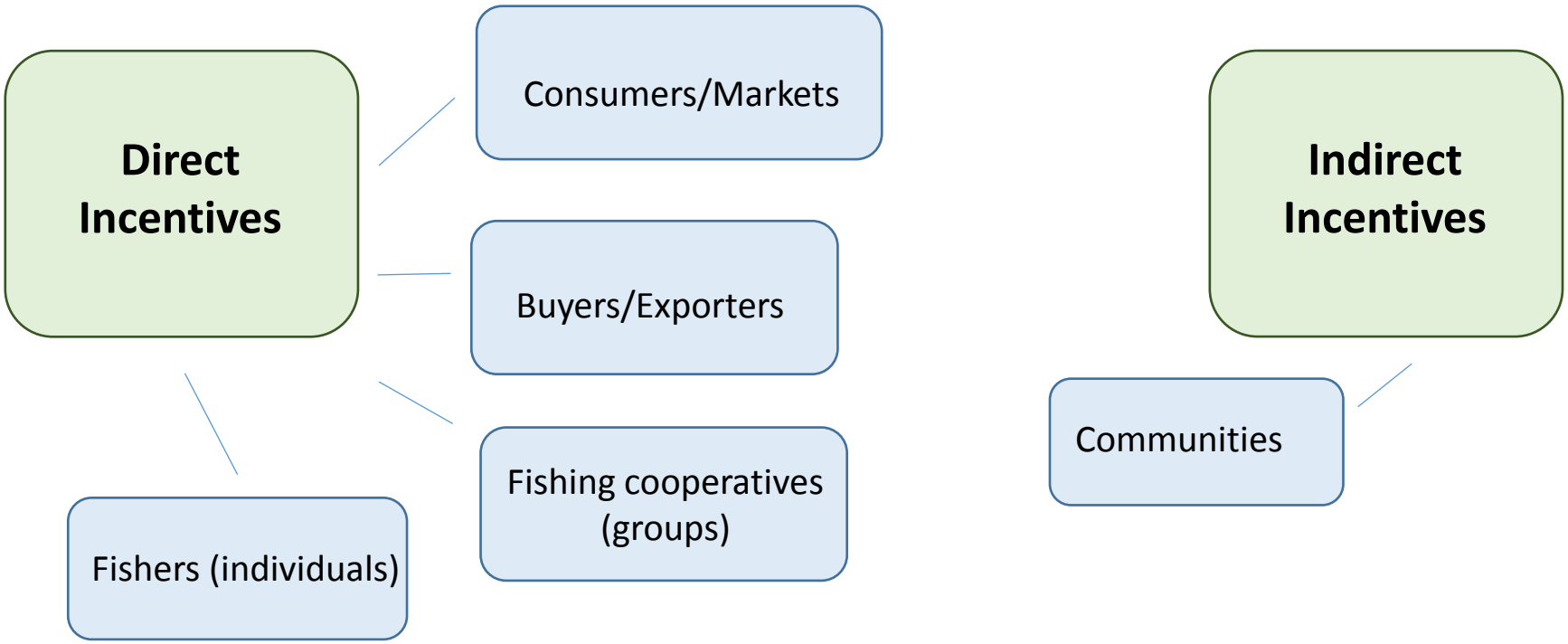
The situation is deteriorating: riots, boycotts and three more dead vaquita in the past couple of weeks; lack of governmental clarity on the continuation of the gillnet net ban


To save the vaquita, the science is clear: nets must go.

Economic incentives for vaquita conservation

Points of intervention and menu of incentives

(positive and negative incentives to complement command and control measures)



See: Lent and Squires 2017

Menu of economic incentives for vaquita conservation

Direct Incentives

Economic instruments that can be used on either individual vessels or supply chain firms or cooperatives:

Technological Change and Technology Standards
- **gear and vessel modification and development**
- **training in new gears**

Markets and Prices
- market access
- supply chain standards and certification
- value-added products

Incentive Payments
- **payments for ecosystem services (ban/compensation)**

Taxes and Subsidies
- taxes and subsidies on production
- taxes and subsidies on consumption

Property Rights and Credits
- tradeable bycatch credits
- tradeable property rights
- bycatch quotas with penalties and rewards

Other
- **buybacks (rent-out, switch out)**
- insurance and risk pools
- trade and port measures
- harvest priority programs
- tournaments and prizes
- voluntary approaches
- assurance bonds
- deposit-refund programs
- biodiversity offsets

Policy instruments addressing the informational externality:
- Eco-labeling & standards on final & intermediate products
- Information programs

Indirect Incentives

Alternative livelihoods and community based conservation instruments:

Sportfishing

Aquaculture
- finfish
- shellfish
- halophytes and algae

Ecotourism

Alternative Energy (wind, solar)

Small business ventures

Intrinsic Incentives

Training in business and leadership skills

Education

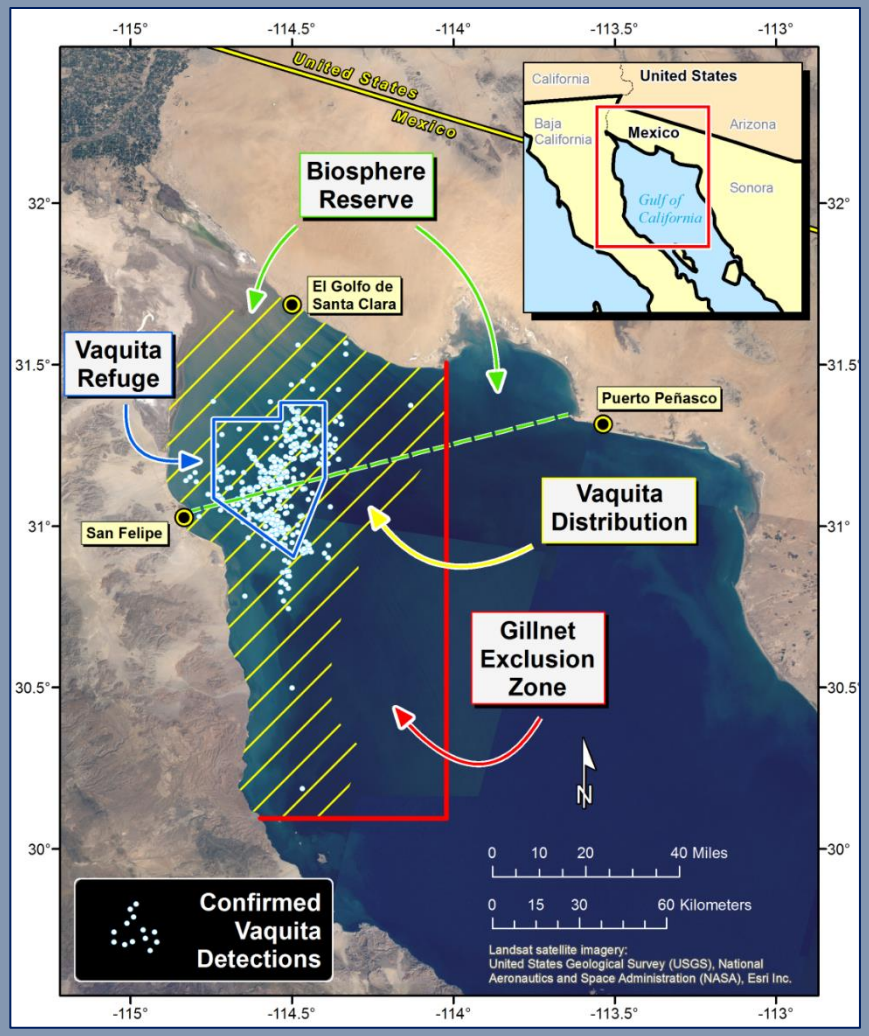
Retirement

Land-tenure

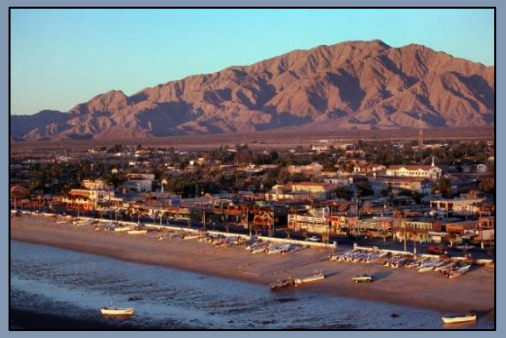
Increase awareness and pride in natural capital
- public arts
- public parks
- biodiversity festivals
- culinary events

See: Lent and Squires 2017

The Upper Gulf of CA: Demographics



CIRVA



San Felipe (ca. 16,000)
El Golfo de Santa Clara (ca. 2700)
Puerto Peñasco (ca. 31,000)

Main industries: fishing, tourism, aquaculture, agriculture
25 target fisheries (key are shrimp and curvina)

See: Cisneros-Montemayor and Vincent, 2016

What is the Role Economic Incentives in Vaquita Conservation?

Introduction: Mesnick, Sanjuro and Sainz

Presentations:

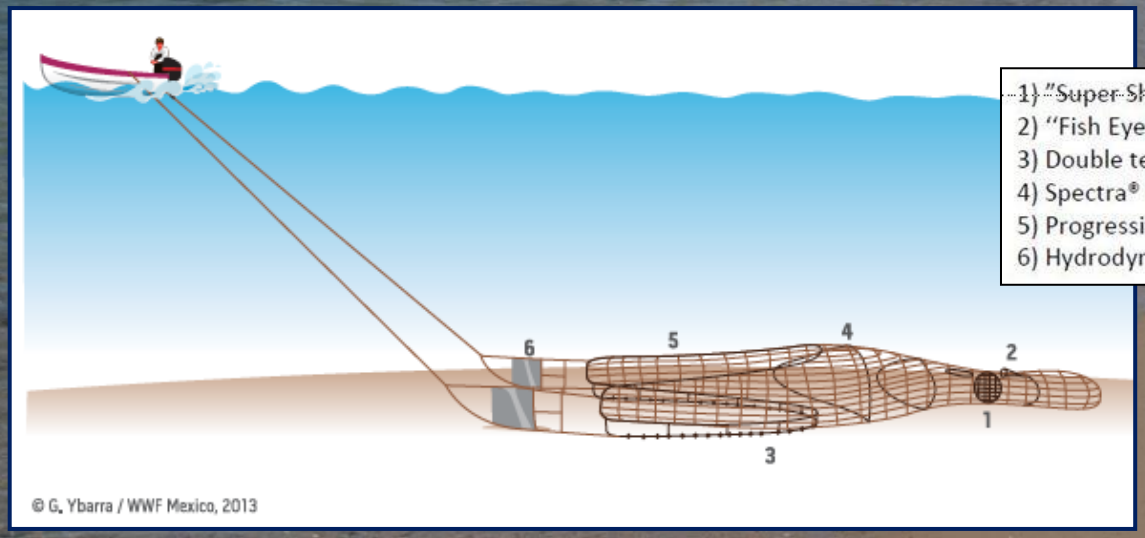
- Buybacks (Avila)
- Payments for Ecosystem Services (Sanjuro)
- Markets (Poindexter & Ramirez)
- Alternative Livelihoods (Mesnick)

Discussion

Barbara Taylor

Extra slides

Red Selectiva-INP-MEX



1) "Super Shooter" turtle excluder device.
2) "Fish Eye" bycatch reduction devices.
3) Double tensioned footropes with rollers and light steel chain.
4) Spectra® mesh material.
5) Progressive reduction in mesh size along the net body.
6) Hydrodynamic trawl doors.

Mexican fishery regulations mandate change to the new gear within three years (NOM-002-PESC-2013)

Bycatch: a global threat for marine mammals (also turtles, sharks…)

We ate our way into this problem.
Can we eat our way out?