

Digital Aerial Surveys for dolphins in the ETP

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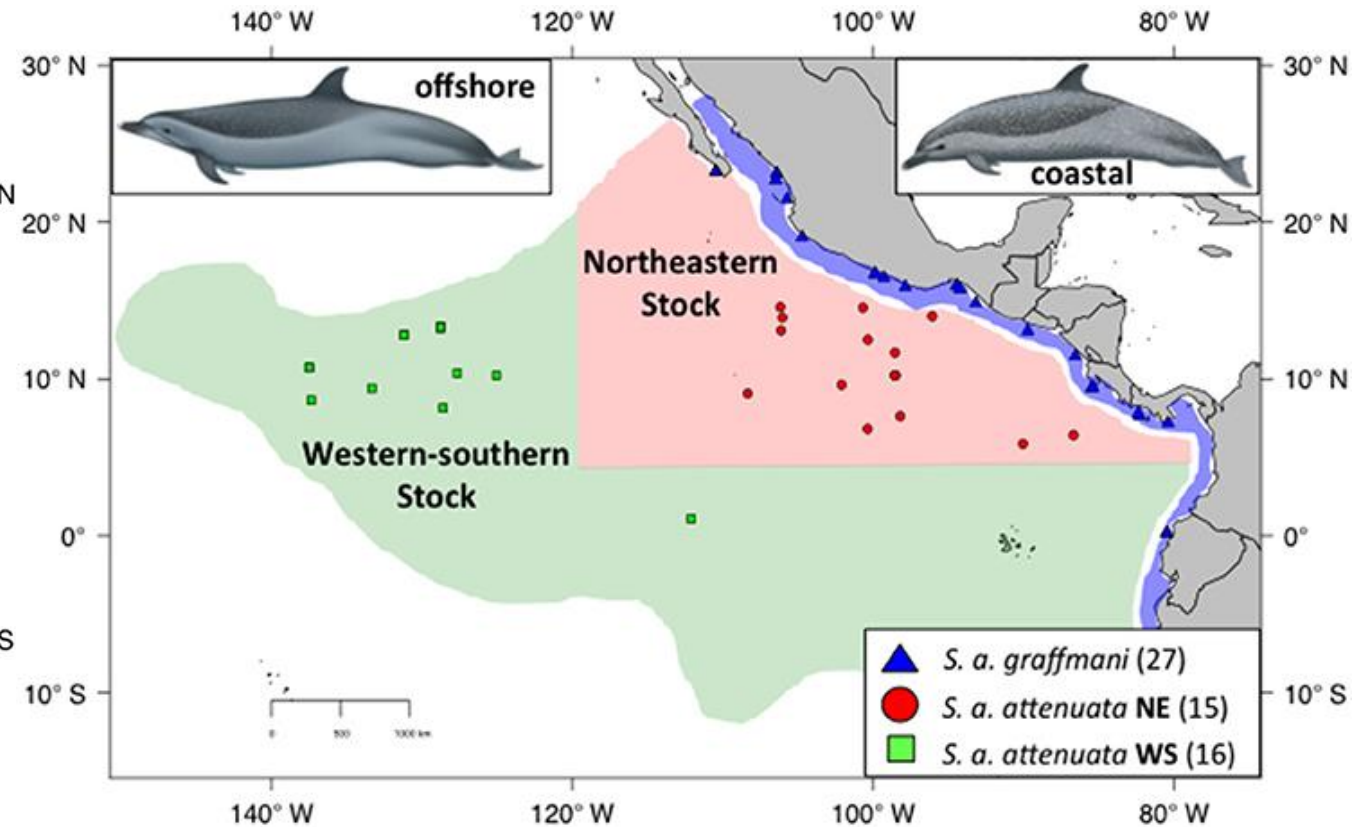
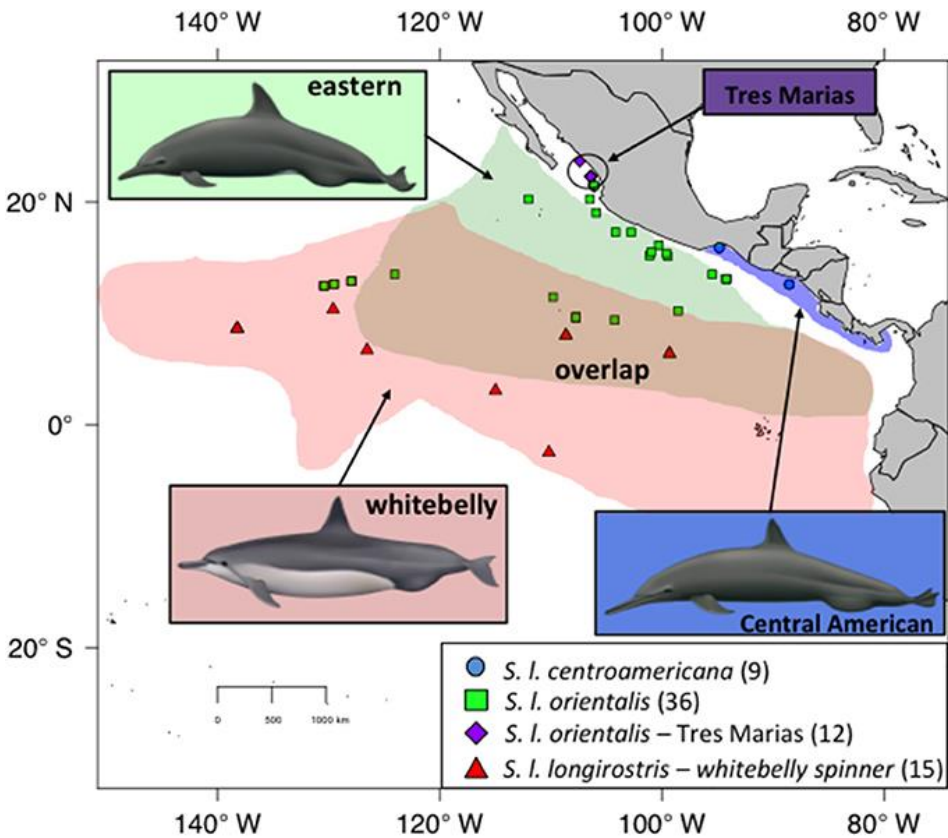
IATTC - 2nd Workshop on methods for
monitoring the status of eastern tropical
pacific ocean dolphin populations, 9-10 May
2024



Aims

- Explore capabilities and constraints of digital aerial surveys in the ETP
- Potential surveys
- Logistics
- Cost effective surveys of ETP dolphin stocks

Spinner and spotted dolphin stocks



Survey strata

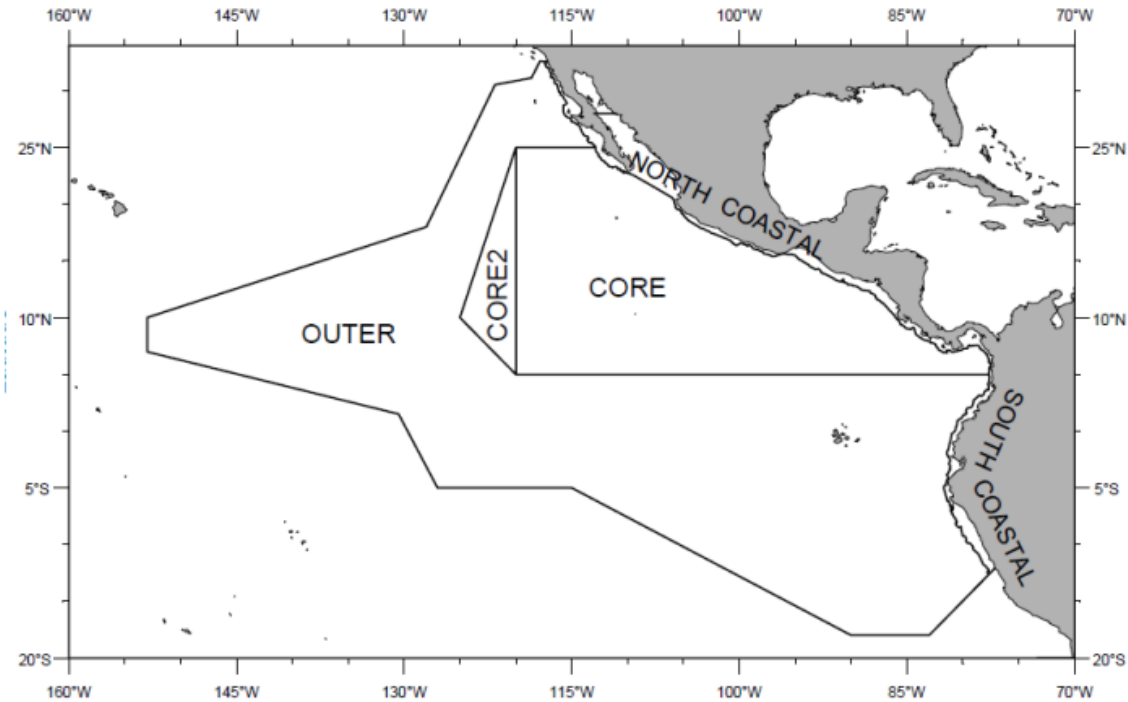
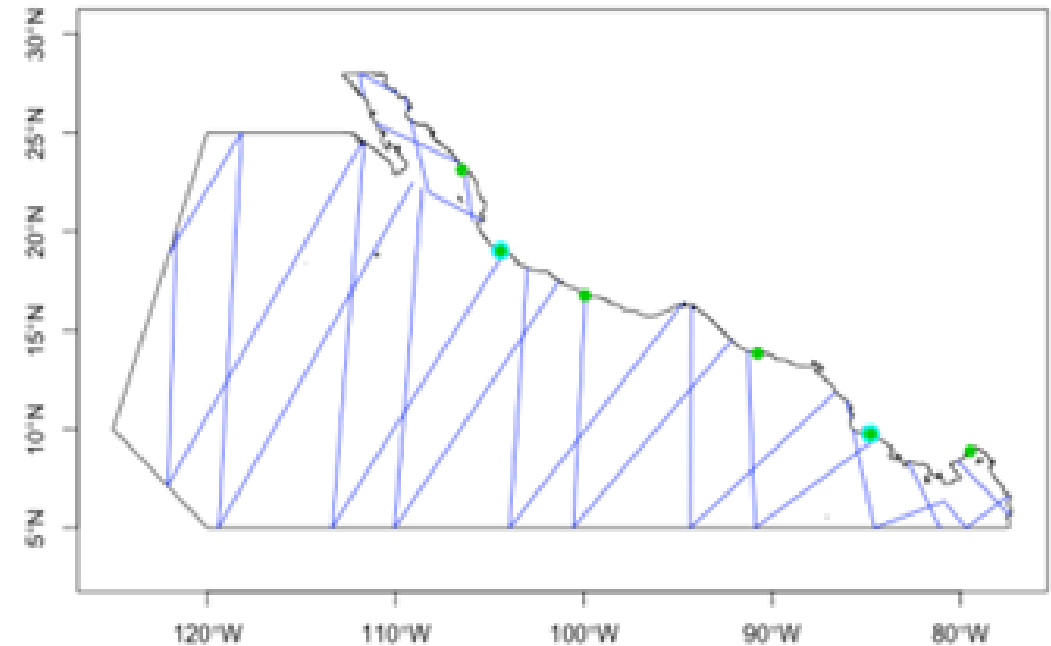


FIGURE 1. Strata for the STAR06 cruise (Gerrodette *et al.* 2008). The CORE area was expanded to include the CORE2 area during the 2003 and 2006 surveys.

Size of entire survey area is ~6,698,771 km²



Core, Core 2 & North Coastal area transect length ~31,000 km

Potential air service providers

	Piper Aztec	Piper Chieftan / Navajo	King Air 360	King Air 360ER
Cruise Speed over ground	193 km/h	265 km/h	320 km/h	320 km/h
Maximum Range	1,351 km	1,500 km	2,100 km	3,100 km
Flight time (endurance)	7 hours	6 hours	6 hours	8 hours

Survey capabilities and constraints

Based on **current aircraft providers**:

Option 1: Plane endurance given full tank ~1150 km

220 km/hr

~ 4.5 hrs on transect

~1000 km on transect / day (+ transit)

1.5 hrs before/after sunset / sunrise

Identified but not yet approached aircraft provider:

Option 2: Plane endurance given full tank ~2100 km (e.g. King Air)

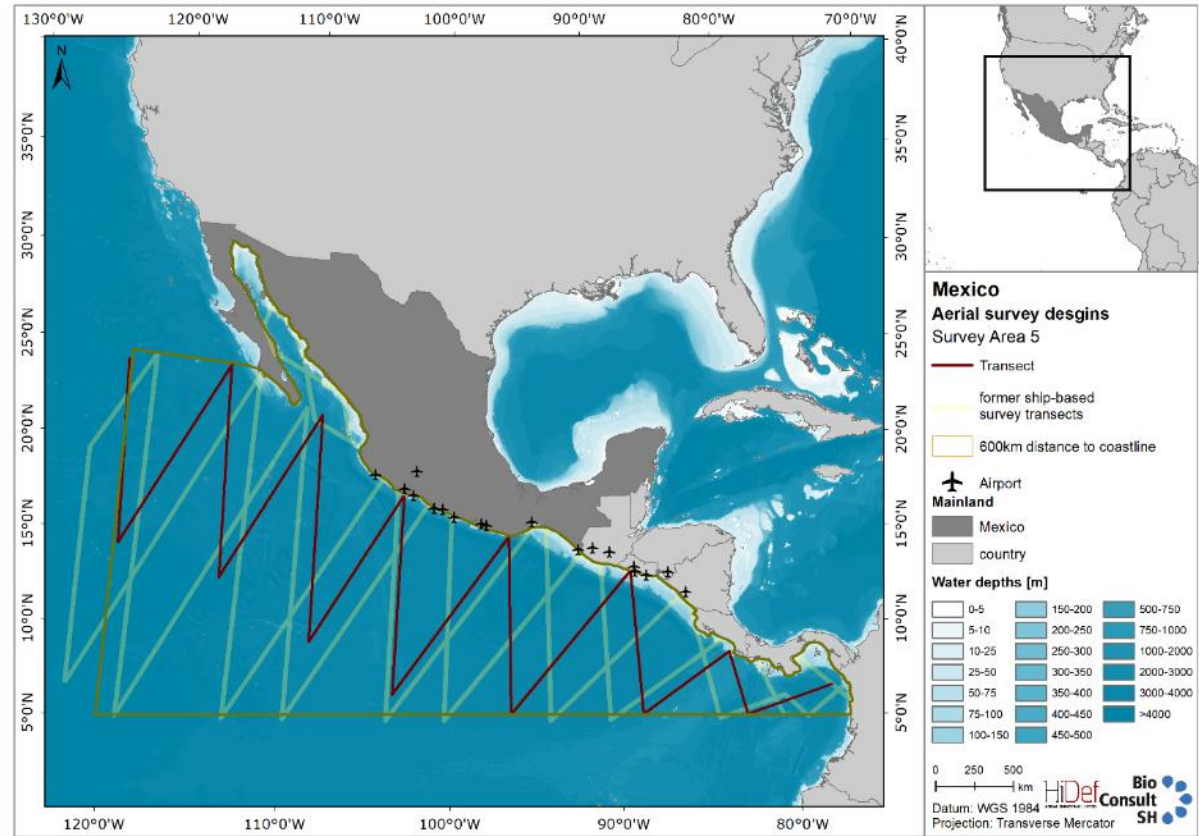
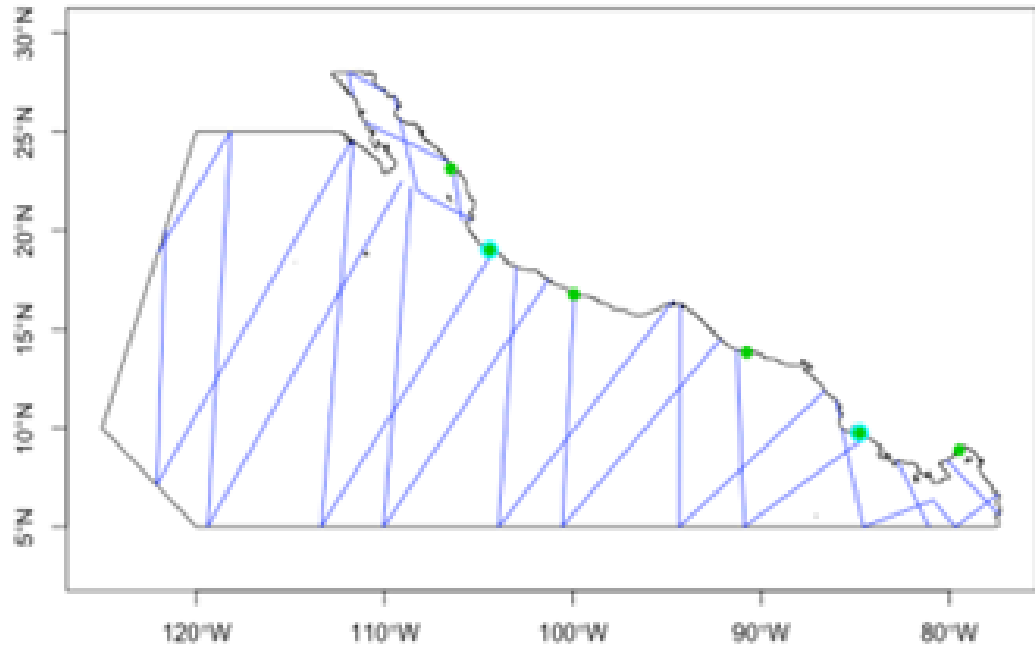
320 km /hr

~ 6 hrs on transect

~ 2000 km on transect/day (+ transit)

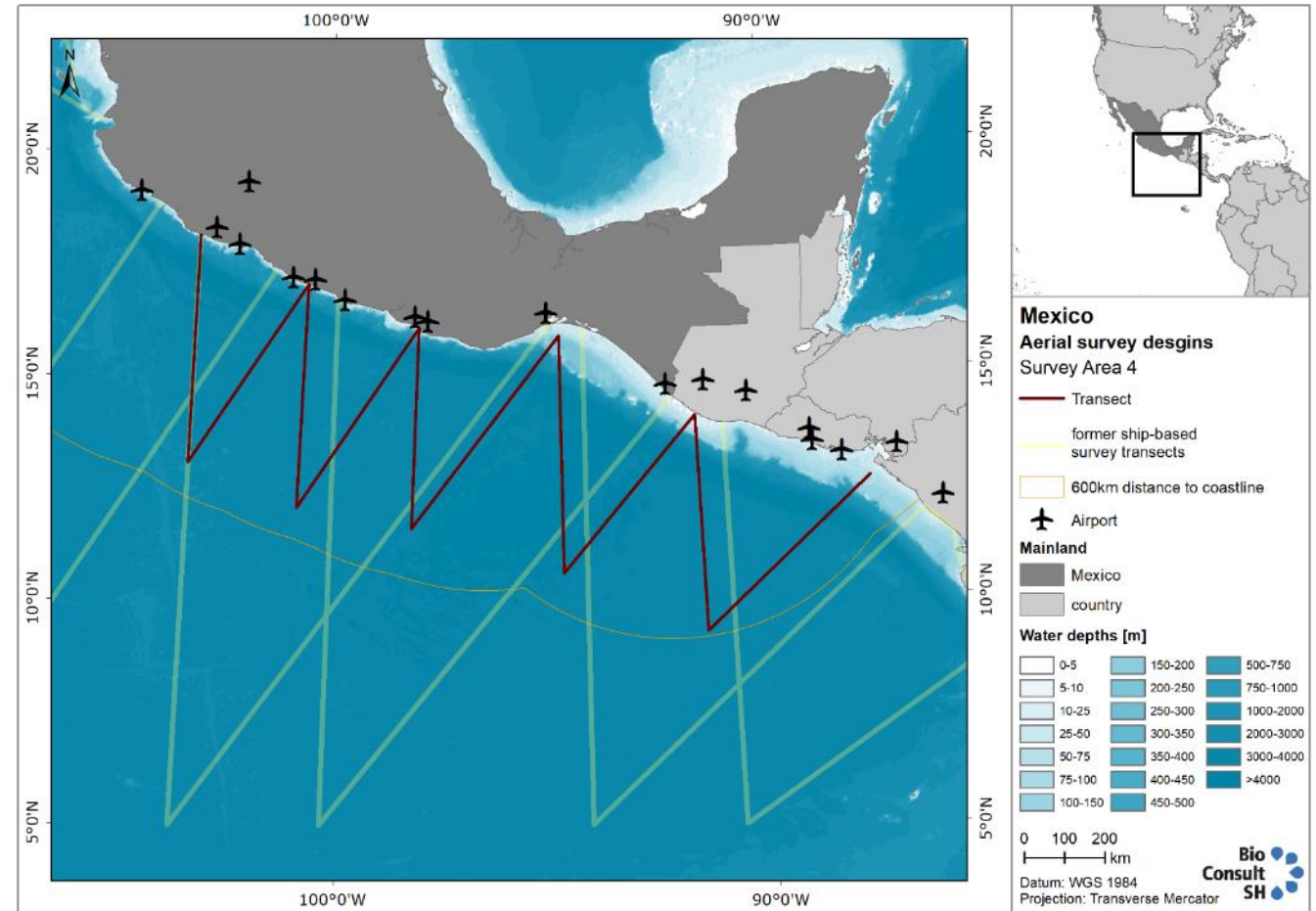
1.5 hrs before/after sunset / sunrise

Potential survey extent (illustrative)



Logistics

- Airport locations key – close to transect start/end points to maximise flight time on transect
- Multiple-country approvals for flights



Cost considerations

	HiDef	Ship	
Charter per day (\$ 000)	850	33	
Transect surveyed (km)/ day		150	
Charter length for 15,000 km (days)		100	
Subtotal (\$ 000)		3,300	
HiDef stand-by fees/day			
Airport fees /day			Mob / demob
Crew T&S /day			Observers
Hardware			
Data acquisition			
manual review			
manual ID			
Subtotal (\$ 000)			
Total cost (\$ 000)	850	>3,300	

Timing considerations

- Country access
- Platform availability & suitability
- Weather
- Species distribution / movements
- Statistical framework development for visibility bias