

基于水声学方法保护南海灯光罩网渔业中的点斑原海豚

目标

基于南海灯光罩网渔业中的点斑原海豚误捕现状，研发一套能有效驱赶的声波驱豚系统（acoustic deterrence system, ADS)以保护该种群。



Specification

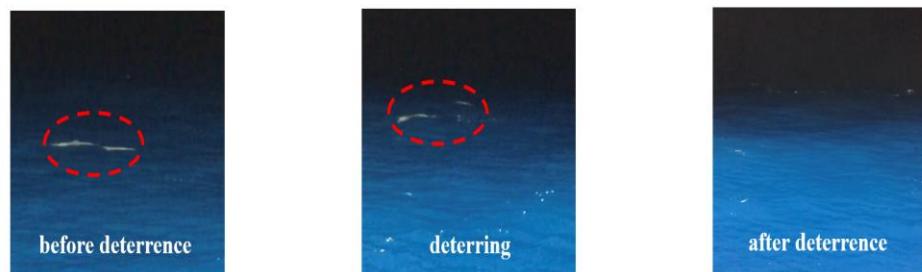
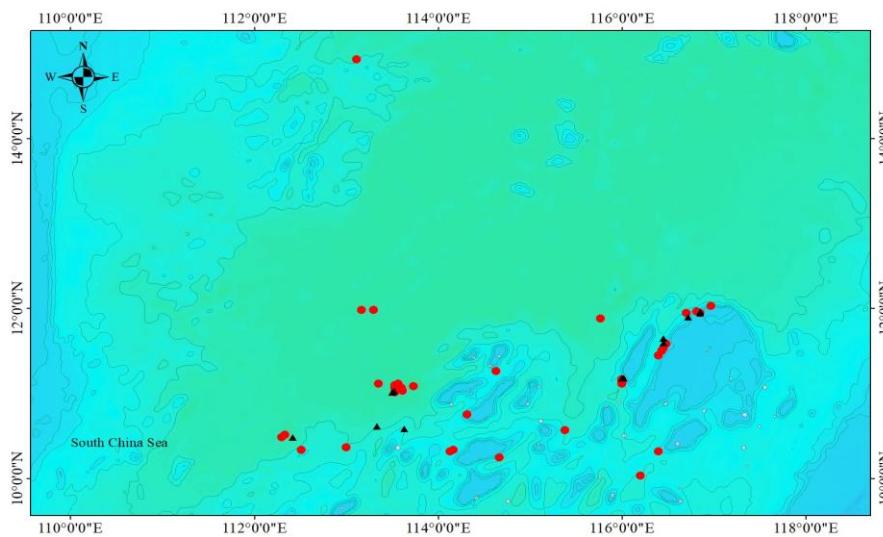
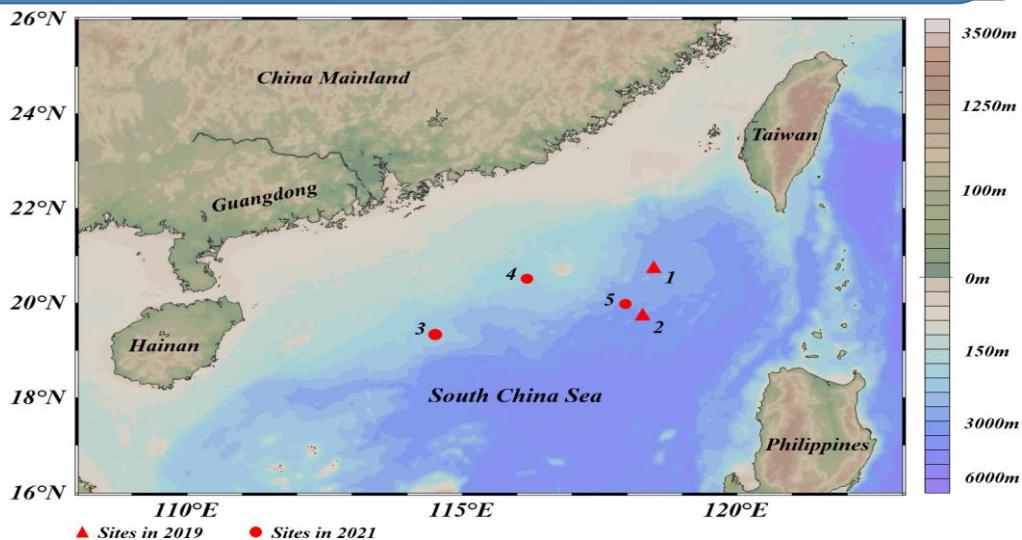
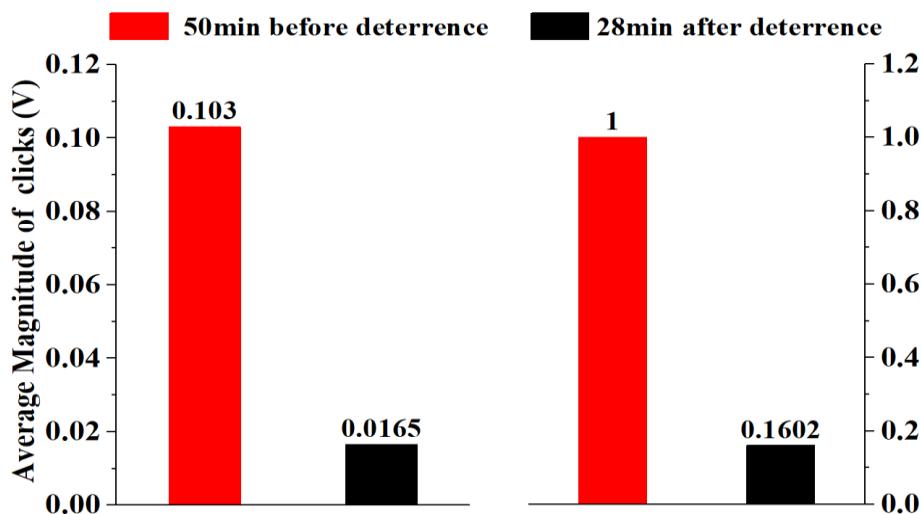
Value

Lowest deterrent frequency (kHz) 2.1

Highest deterrent frequency (kHz) 10.3

Source level (RMS SPL) 164.3

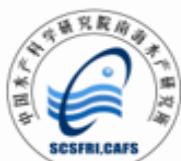
Duty cycle (%) 100.0



Date	20 min before ADS work		20 min after ADS work	
	number of dolphins	distances/m	number of dolphins	distances/m
June 2th	70 ~ 80	0 ~ 50	0	beyond visual sight
June 4th	26 ~ 30	0 ~ 50	0	beyond visual sight
June 10th	20	0 ~ 50	0	beyond visual sight

结果

- ADS系统开启后,海豚click信号次数从每分钟1502次减少到136次, 信号强度减少了84%, 即海豚远离了调查船。
- 使用ADS系统的夜晚渔船CPUE与未使用的夜晚渔船CPUE无显著性差异 ($P>0.05$)。对于使用了ADS系统的夜晚, 表明海豚被有效驱赶后, 渔获物重新聚集在渔船周围, 产量得到提高, 海豚声驱赶对于渔业没有不利影响。



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