

Acuerdo sobre el Programa Internacional para la Conservación de los Delfines (APICD)
Agreement on the International Dolphin Conservation Program (AIDCP)



DESIGN OF A SURVEY FOR EASTERN TROPICAL PACIFIC DOLPHIN STOCKS (MOP-39-01 ADDENDUM 1)

DISEÑO DE UN ESTUDIO DE LAS POBLACIONES DE DELFINES DEL PACIFICO ORIENTAL TROPICAL

Reuniones Anuales del APICD—Annual Meeting of the AIDCP
15-16 Jul, 2019 - Bilbao, España—Spain

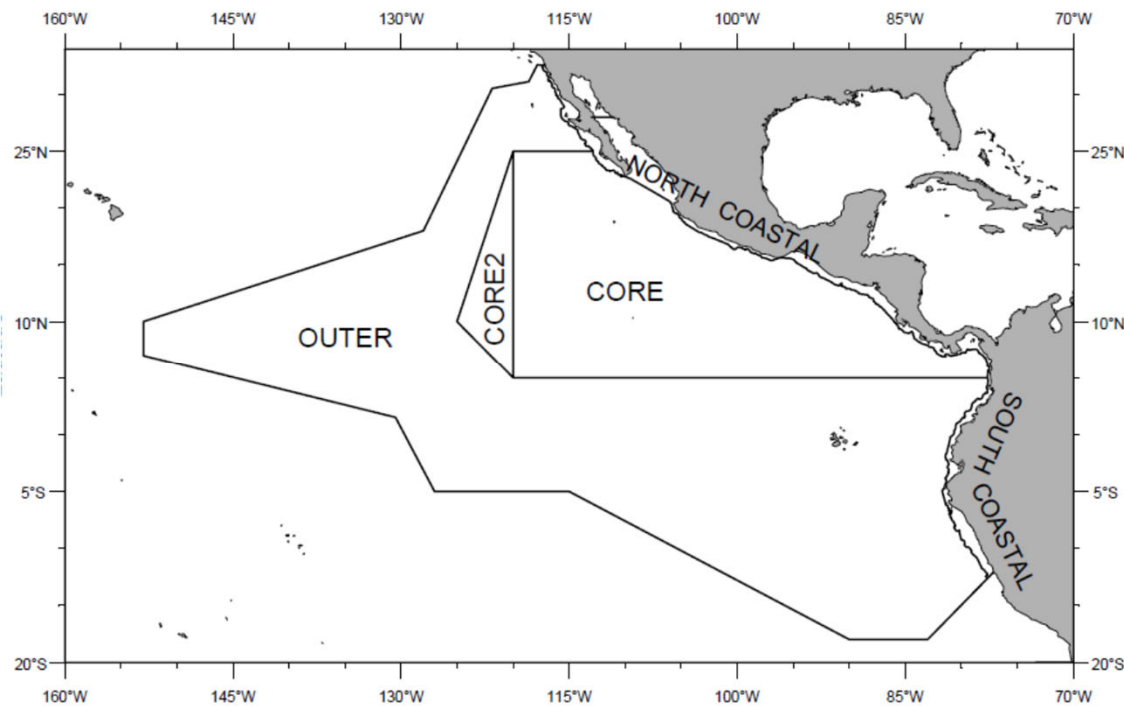
MOP-39-01 Addendum 1

- Provides a revised budget for a trial survey and a main survey for the northeastern offshore spotted dolphin and the eastern spinner dolphin.
- **Presenta un presupuesto Revisado para un estudio de prueba y un estudio principal del delfín manchado nororiental de altamar y el delfín tornillo oriental.**
- One-vessel survey to estimate both absolute and relative abundance (Design 3, main survey option 1, addressing Objectives 1 and 2, for priority stocks B; see MOP-37-02).
- **Usando un buque de investigación para estimar tanto la abundancia relativa como la absoluta (Diseño 3, opción 1 del estudio principal, abordando los objetivos 1 y 2, para las poblaciones prioritarias B; ver MOP-37-02).**



Survey Area- Área de Estudio

- The survey area covered under Design 3 is the combination of the NMFS survey areas: CORE, CORE2 and NORTH COASTAL
- El área de estudio bajo el diseño 3 es la combinación de las áreas de estudio del NMFS: CORE, CORE2 y NORTH COASTAL.



Dolphin Populations-Poblaciones de Delfines

- The northeastern offshore spotted dolphin stock is defined geographically by boundaries that correspond to the CORE and NORTH COASTAL areas.
- Las áreas CORE, CORE2 y NORTH COASTAL definen geográficamente los límites que corresponden a la población del delfín manchado nororiental de altamar.
- The eastern spinner dolphin stock is believed to largely contained within the CORE, CORE2 area (see 2.2 of MOP-37-02).
- Se asume que el área CORE2 contiene en gran medida la población del delfín tornillo oriental (ver 2.2 de MOP-37-02).



PRECISION- PRECISION

- The precision of estimates produced by Design 3 for these two stocks would be expected to be the same as for previous NMFS surveys.
- La precisión de las estimaciones producidas por el diseño 3, para las dos poblaciones, se espera que sea la misma de los estudios anteriores del NMFS.
- Although two survey vessels were used previously, one mostly operated in the CORE + CORE2 + NORTH COASTAL, while the other operated in the OUTER + SOUTH COASTAL.
- Aunque previamente se usaron dos buques de investigación, uno de ellos opero principalmente en CORE + CORE2 + NORTH COASTAL, mientras que el otro opero en OUTER + SOUTH COASTAL.



Survey Vessel- Buque de Investigación

- INAPESCA research vessel, B.O. Jorge Carranza, built in 2013. **Buque de Investigación del INAPESCA “Jorge Carranza” construido en 2013.**
- Has similar characteristics to the Ocean Starr (used in previous NMFS surveys). **Tiene características similares al “Ocean Starr” (usado en las evaluaciones previas del NMFS).**
- The Jorge Carranza is available for a-**el “Jorge Carranza” esta disponible para :**
 - 14-day trial survey in November 2019, and-**prueba de 14 días en noviembre 2019 y,**
 - 120-sea-days main survey in July – December 2020. **Estudio principal de 120 días en julio-diciembre de 2020.**
- On July 16, a one-day proof-of-concept trial will be conducted to demonstrate drone capabilities.-**El 16 de julio se hará una prueba de un día para demostrar las capacidades de los drones.**



In-kind funding offered by Mexico Financiamiento en especie ofrecido por México

- All costs associated with the survey vessel.
- Todos los costos asociados con el buque de investigación.
- All costs associated with the ship agent and port fees.
- Todos los costos asociados con el agente naviero y las cuotas de Puerto.
- The cost of two junior marine mammal observers.
- El costo de dos observadores junior de mamíferos marinos.
- All drone-related costs except the amount shown in Table 1 (MOP-39-01 Addendum 1).
- Todos los costos relacionados con los drones excepto las cantidades que aparecen en la Tabla 1 (MOP-39-01 adenda 1).
- All costs associated with the logistical coordinator position.
- Todos los costos asociados con el puesto de coordinador de logística.



Limitations-Limitaciones

- Design 3 is not a viable option for monitoring abundance of the other eight dolphin stocks covered by previous NMFS surveys because their distributions extend beyond, or fall outside, the combined CORE, CORE2 and NORTH COASTAL areas.
- El diseño 3 no es viable para monitorear la abundancia de las otras 8 poblaciones de delfines cubiertas en los estudios previos de NMFS porque sus distribuciones se extienden mas allá, de las áreas combinadas de CORE, CORE 2 y NORTH COASTAL.
- Using Design 3 will only allow estimating abundances of two stocks, the northeastern offshore spotted dolphin and the eastern spinner dolphin.
- Usando el Diseño 3 solo permitirá estimar las abundancia de dos poblaciones, delfín manchado nororiental de altamar y el delfín tornillo oriental.



Revised budget , trial and main surveys

Presupuesto revisado, estudios de prueba y principal

| | 14-day trial Jorge Carranza (US\$ 1000) | Main survey 1 ship Jorge Carranza (US\$ 1000) |
|---|---|---|
| Cetacean abundance | [332.95^a] | [1,019.13^a] |
| Vessels and associated costs | [0.00^a] | [0.00^a] |
| Foreign observers | 2.00 | 8.00 |
| Drones | [34.15^a] | [167.13^a] |
| School size calibration | 71.83 | 98.03 |
| Trackline detection probability | 59.07 | 116.33 |
| Equipment | 158.85 | 188.99 |
| IATTC headquarters-based contractors | 130.57 | 124.04 |
| Ship loading | 3.00 | 6.00 |
| Contingency ^c | 7.93 | 11.34 |
| Total | [800.35^a] | [1,738.99^a] |

Survey Cost-Costo del estudio

WITH THE IN-KIND CONTRIBUTIONS TO BE PROVIDED BY THE GOVERNMENT OF MEXICO:
CON LA CONTRIBUCIÓN EN ESPECIE QUE PROPORCIONARA EL GOBIERNO DE MÉXICO:

- Cost of the trial survey: US\$800,350
- Costo del estudio de prueba:

- Cost of the main survey: US\$1,738,990
- Costo del estudio principal:

- Combined total cost: US\$2,539,340
- Costo total combinado:



Questions



Comparison of the original survey budget for Design 3 with one research vessel (Table 12 of MOP-37-02) and the revised budget

| | Original budget 14-day trial | Revised budget 14-day trial | Original budget main survey | Revised budget main survey |
|---|--|--------------------------------|--|-------------------------------|
| Cetacean Abundance | | | | |
| Chief Scientist | 99.41 | 99.41 | 280.79 | 280.79 |
| Scientific support to Chief Scientist | 87.82 | 87.82 | 181.50 | 181.5 |
| Cruise Leaders | 22.29 | 22.29 | 123.66 | 123.66 |
| Marine Mammal Observers | 98.10 | [71.43 ^a] | 477.77 | [344.42 ^a] |
| Survey Coordinator | 52.00 | 52.00 | 88.75 | 88.76 |
| | 359.62 | [332.95 ^a] | 1,152.47 | [1,019.13 ^a] |
| Vessels and associated costs | | | | |
| Survey Vessels | 720.32 [0 ^a] | [0.00 ^a] | 2,665.84 [0 ^a] | [0.00 ^a] |
| Ship agent + Port fees | 20.25 | [0.00 ^a] | 145.25 | [0.00 ^a] |
| | 740.57 [20.25 ^a] | [0.00 ^a] | 2,811.09 [145.25 ^a] | [0.00 ^a] |
| Foreign observers | | | | |
| Travel | 2.00 | 2.00 | 12.00 | 8.00 ^d |
| Drones | | | | |
| Equipment rental | 420.00 | [1.41 ^a] | 2,040.00 | [5.64 ^a] |
| Observers | 32.70 | [32.70 ^a] | 161.14 | [161.14 ^a] |
| Fuel | 0.26 | [0.04 ^a] | 1.98 | [0.35 ^a] |
| | 452.96 | [34.15 ^a] | 2,203.12 | [167.13 ^a] |
| School size calibration | | | | |
| Image analyses | 58.01 | 58.01 | 56.57 | 56.57 |
| Data cleaning and analyses | 13.82 | 13.82 | 41.46 | 41.46 |
| | 71.83 | 71.83 | 98.03 | 98.03 |
| Trackline detection probability | | | | |
| Image analyses | 38.34 | 38.34 | 61.05 | 61.05 |
| Data cleaning and analyses | 20.73 | 20.73 | 55.28 | 55.28 |
| | 59.07 | 59.07 | 116.33 | 116.33 |
| Equipment | | | | |
| Computers | 17.38 | 17.38 | 0.00 ^b | 0.00 ^b |
| Flying bridge | 104.36 | 104.36 | 0.00 ^b | 0.00 ^b |
| Communications | 17.77 | 17.77 | 164.17 | 164.17 |
| Research permits | 3.00 | 3.00 | 7.50 | 7.50 |
| Miscellaneous travel | 6.00 | 6.00 | 15.00 | 15.00 |
| IT specialist | 10.34 | 10.34 | 2.32 | 2.32 |
| | 158.85 | 158.85 | 188.99 | 188.99 |
| IATTC headquarters-based contractors | | | | |
| Accountant | 130.57 | 130.57 | 124.04 | 124.04 |
| Logistical coordinator | 112.01 | [0.00 ^a] | 106.41 | [0.00 ^a] |
| Ship loading | 242.58 | 130.57 | 230.45 | 124.04 |
| Contingency ^c | 67.35 [31.34] | 3.00 | 6.00 | 6.00 |
| | 67.35 [31.34] | 7.93 | 260.94 [127.65] | 11.34 |
| Total | 2,157.82 [1,401.49^a] | [800.35^a] | 7,079.31 [4,280.18^a] | [1,738.99^a] |

