The Use of Photo Identification in Cetacean Research in Thailand

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Development of cetacean research in Thailand

- Background: intensive research initiated in 1993 (PMBC)

- Institutions : local universities and Department of Marine and Coastal resources collaborative with foreign researcher

- Data collection: -Newsletter information exchange

  - Stranding and by-chance sighting record

  - Direct survey

  - Web-board exchange, local & national networks

Thailand research Institutes for Cetacean

- **Government sector**

1. Department of Marine and coastal Resources (established in 2003) - Marine Endangered Species research Units
2. Department of Fisheries
3. Universities (near shore)

- **Non government (NGO)**

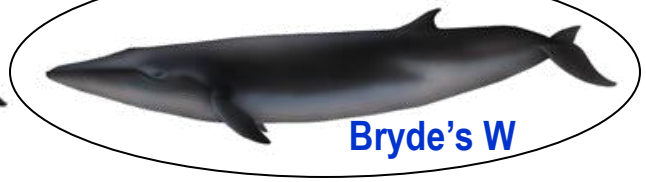
WWF Thailand

Location of research Institute

Department of Marine and Coastal Resource

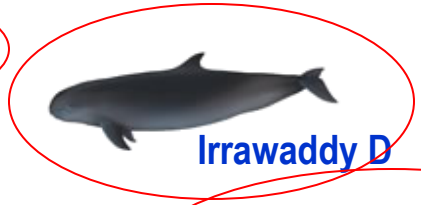
Cetaceans in Thai water


Fin W


Bryde's W


Sperm W


Finless P


Irrawaddy D


Killer W

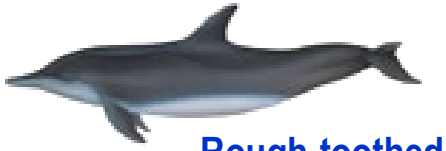

Pygmy sperm W


Dwarf sperm W


Fraser's D


Hump-backed D


False killer W


Rough-toothed D


Bottlenose D


Short-finned pilot W


Spotted D


Stripped D


Cuvier's beaked W


Ginkgo-toothed beaked W


Common D


Spinner D


Melon-headed W


Pygmy killer W

Coastal cetacean research techniques

-Direct survey by transect helps obtain information on species distribution, population size and abundance (stock assessment)

-Method of Photo-ID : obtain more on behaviours, group structure, movement patterns or site fidelity

Survey type - on shore (including high cliff and hill)
- boat (advantage on poaching)
- airplane (not much effective to clear photo)

equipments - camera with basic 35 mm lens and tele-lens
- motor drive is necessary
- binocular

Dolphin photo from a jetty

Boat survey

Jan2008-2009 :
Dolphins along
Trat Province

Dr. Ellen Hines,
Anoukchika Ilangakoon
Louisa Ponnampalam

Jan 2004-2009:

Aerial survey

Feeding on squids

Poaching to fishing boat

Photo Identification Technique

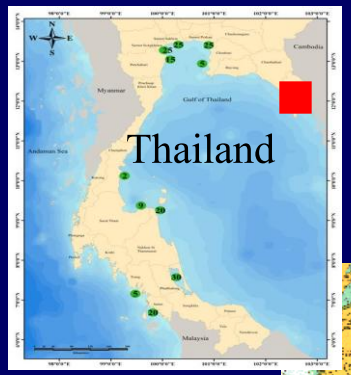
Advantage	Disadvantage
- Not usually disturbing to wild animals -Long-term data may enhance description of life cycle parameter such as age at sexual maturity, calving interval and life span of each cetacean species	-Costly (equipment) -Frequently Monitoring (monthly) -Hard works (consume man-power) -Not much effective for inconspicuous cetacean species

Major distinctive features

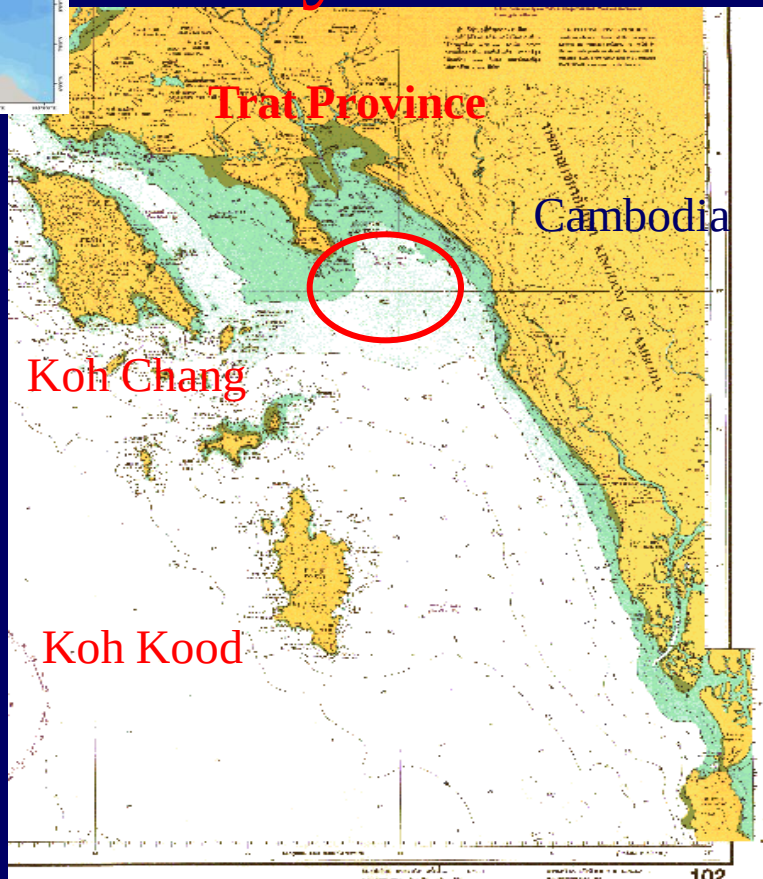
species	Major distinctive feature
- Killer whale (Orcar)	- Dorsal fin shape and nick , Scar on back
-Indo-Pacific Humpbacked	-Scar on dorsal fin, back and flank, pigment pattern
-Irrawaddy D	- Scar on dorsal fin and back
-Finless porpoise	-Scar on back and head

Thailand's project Photo ID : in 2009-2010

- using boat survey every 1-2 months (3 days/trip)
- Trip 1 : 8-10 April 2009
- Trip 2 : 11-13 May 2009
- Trip 3 : 19-21 July 2009
- Trip 4 : 27-29 Sep 2009
- Trip 5 : 16-18 Dec 2009
- Trip 6 : 14-16 Jan 2010
- Trip 7 : 1-3 Feb 2010



Study site

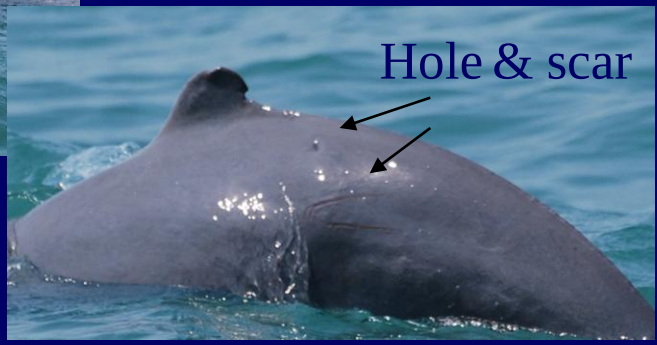


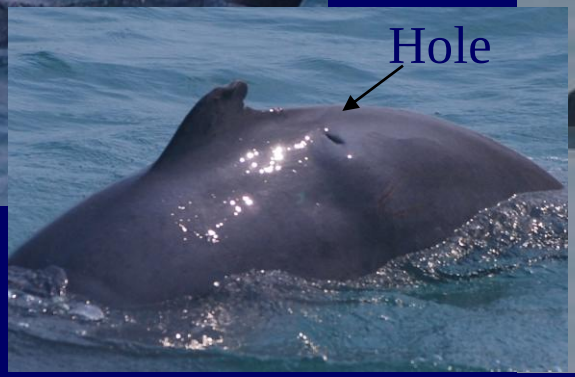
- behavior record
- compare and identify dolphins by photo
- create photo database

Interaction between fisheries and dolphins


Belly
Mating ??
Jumping
Herd breeding behaviors

Marks on the body





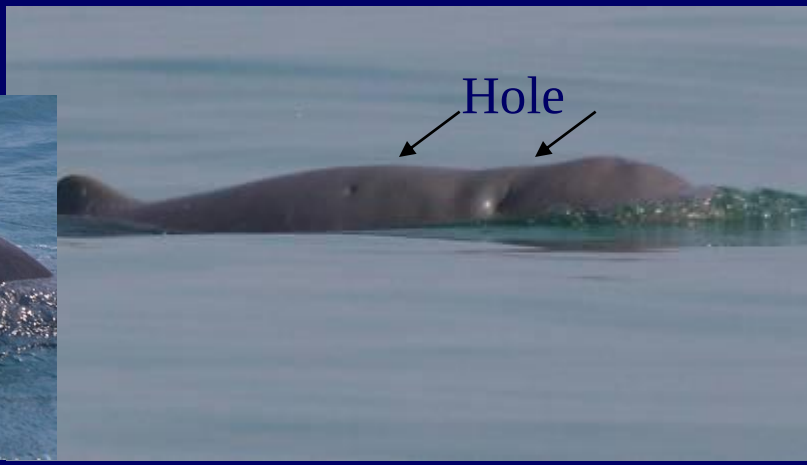
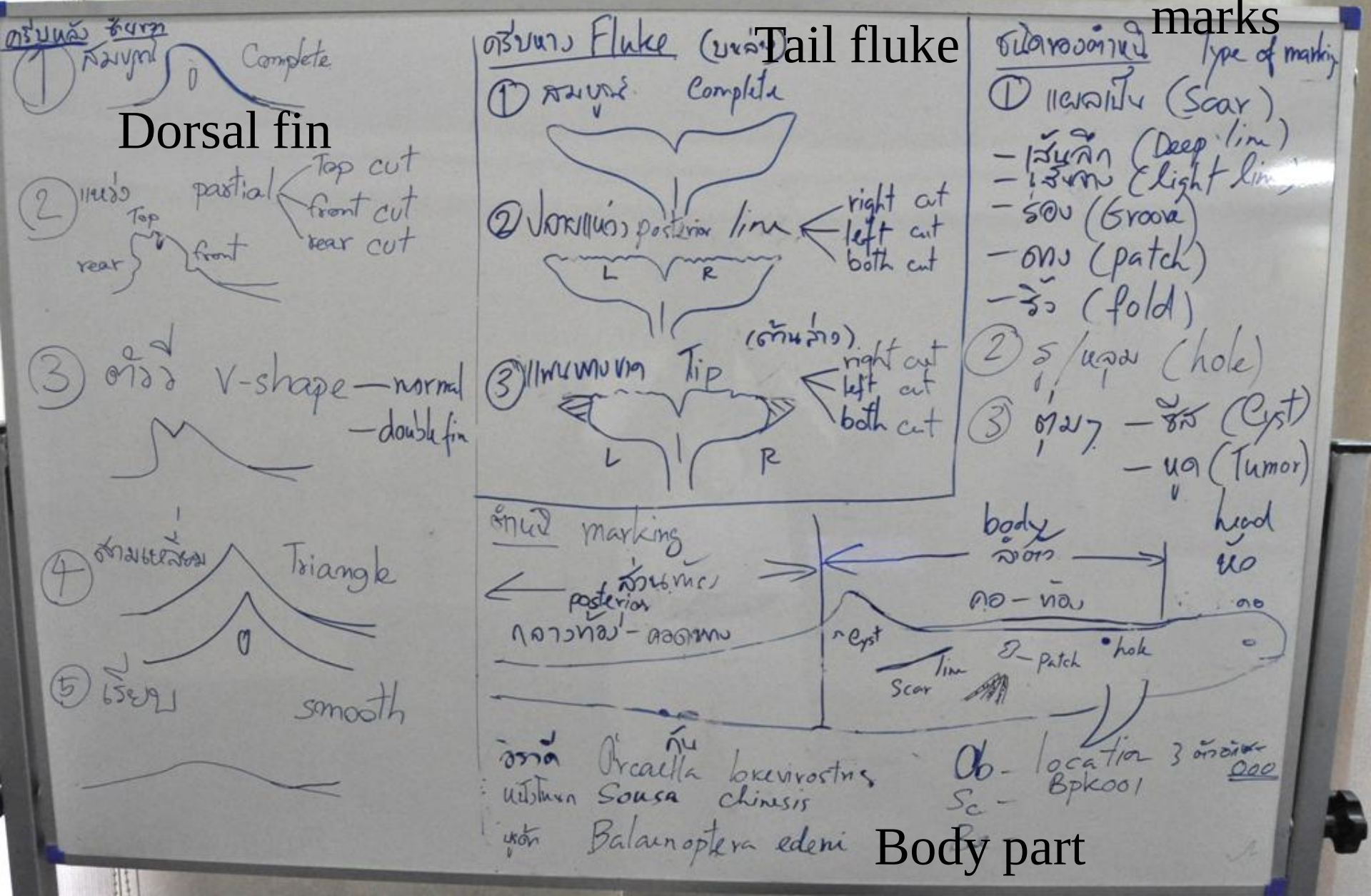


Photo storage and analysis



Upload sheet

1. ID – Ob-XXX 000 = *Orcaella brevirostris*, Location, number
2. Date
3. Time
4. Species
5. Location
6. District
7. Province
8. Latitude
9. Longitude
10. Fin – shape (5 shapes: complete, nick, V-shape, Pyramid, smooth)
11. Fin – mark (3 patterns : Scar, Hole, Cyst) on Right-Left side
12. Fluke – type (3 types: complete, nick, tip tear) on R-L side
13. Fluke - mark (3 patterns : Scar, Hole, Cyst) on R-L side
14. Head - mark (3 patterns : Scar, Hole, Cyst) on R-L side
15. Body – mark (3 patterns : Scar, Hole, Cyst) on R-L side
16. Posterior – mark (3 patterns : Scar, Hole, Cyst) on R-L side
17. Photo (Fin R-L, Fluke Dorsal-ventral,Body R-L, Head R-L,Post R-L

Irrawaddy -Trat

Ob-TRT 001
20080108

Ob-TRT 002
20080108

Ob-TRT 003
20080108

Ob-TRT 004
20080108

Irrawaddy -Trat

Ob-TRT 005
20080108

Ob-TRT 006
20080108

Ob-TRT 007
20080108

Ob-TRT 008
20080108

Irrawaddy -Trat

Ob-TRT 009
20080108

Ob-TRT 010
20080108

Ob-TRT 011
20080108

Ob-TRT 012
20080108

Irrawaddy -Trat

Ob-TRT 013
20080108

Ob-TRT 014
20080108

Ob-TRT 015
20080108

Ob-TRT 016
20080108

Irrawaddy -Trat

Ob-TRT 017
20090115

Ob-TRT 018
20090118

Ob-TRT 019
20090118

Ob-TRT 020
20090410

Number of dolphins in photo database

Date	No. Dolphin found-photo	No. of Group	No.Dolphin recovery	Date to date recovered
April 2009	13	2		
May 2009	18	3		
July 2009	6	1		
Sep 2009	10	2	3	May-Sep
Dec 2009	16	3		
Jan 2010	15	3		
Feb 2010	14	2		
Total	**92**	**16**	**3**	

Recovery on Hump-backed -Trat

Photo Hump-backed - Trat

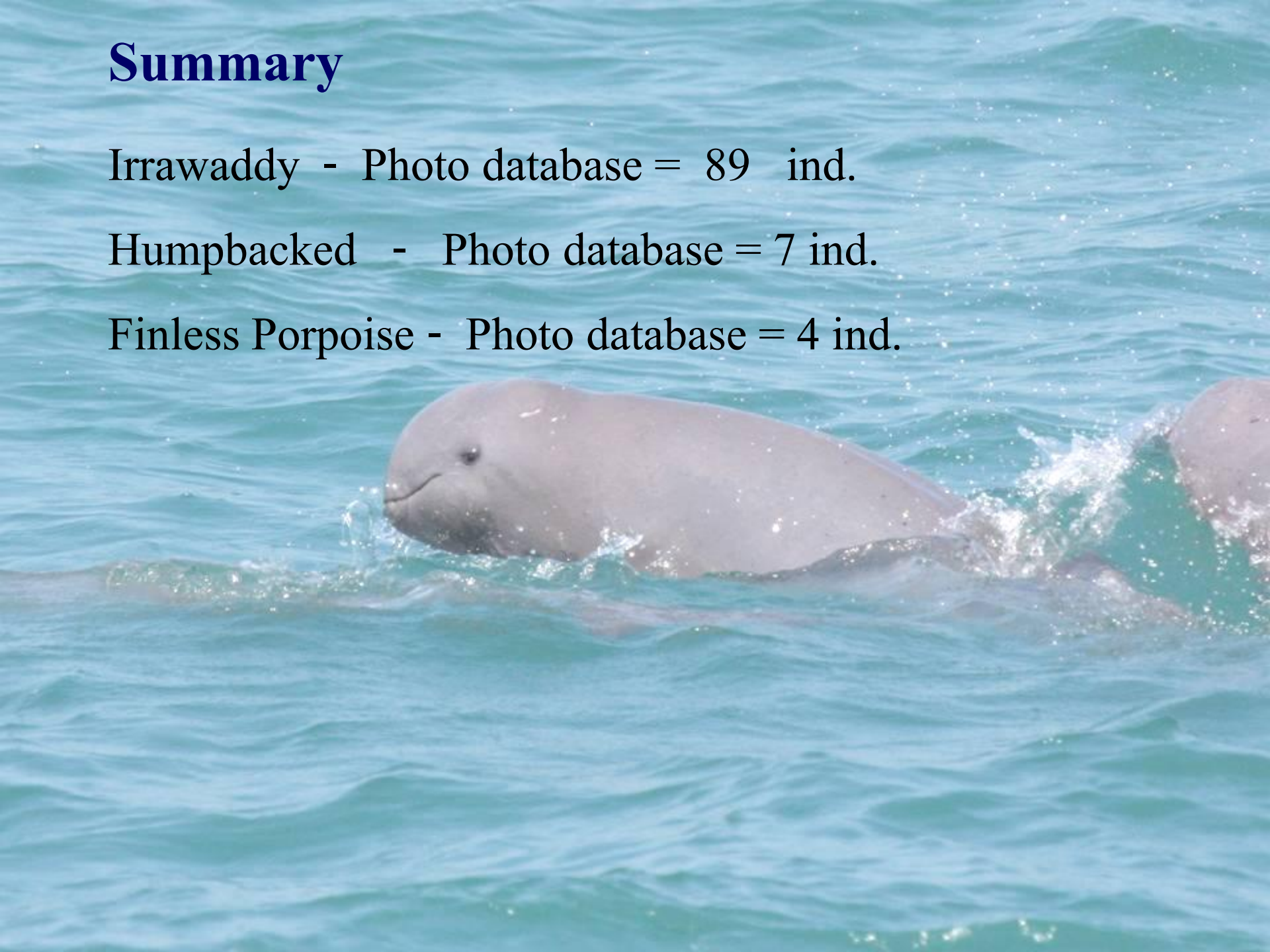
Finless Porpoise - Trat

Summary

Irrawaddy - Photo database = 89 ind.

Humpbacked - Photo database = 7 ind.

Finless Porpoise - Photo database = 4 ind.



Conclusions

Trat Bay is one of the hotspot dolphin population in Thai water and many local communities in this area have been interested to develop this area to be tourist spot for dolphin watch.

Therefore it is urgently need to gather some information and knowledge of dolphins to support local people for conservation and management in the future

Suggestion

- Gather and share photo ID databases of dolphin to the other connecting area to monitor some behavior of migration.

- study on genetic population and compare to adjacent areas or neighboring waters


Thank you
P.Sharpe '97