

Acoustic Enrichment for Dolphins



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in cooperation with

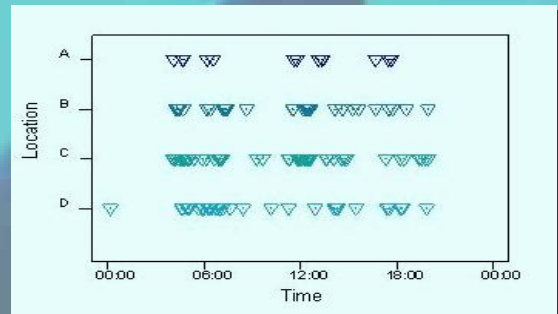


Objective

The bottlenose dolphin (*Tursiops truncatus*) has an advanced biosonar system. A pool is an acoustically bare and static environment. Three enrichment devices encouraging activities associated with sonar use were introduced in a pool holding twelve bottlenose dolphins.

Methods

- Four digital Porpoise Detectors (PODs) recording sonar clicks, were deployed in the pool complex.
- The acoustic target strength of a kelp-algae imitation was improved.
- A hose was set in motion by high pressure running water in response to sonar sound.



Sonar clicks recorded by PODs in four locations over a 24-hour-period show that the general sonar activity was low and almost none during night hours.

Results

- PODs in open surroundings and kelp with improved acoustic target strength recorded high sonar activity. This indicates that objects with good acoustic reflection in bare surroundings were used as landmarks.
- The hose triggered hunting correlated displays, such as long intensive click trains locked on target and hunting group formations.

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Conclusions

- The dolphins responded positively to tested acoustic enrichment additions, indicating that this kind of enrichment should be further exploited.
- Appropriate enrichment should be developed and implemented in existing pools to improve the acoustic aspect.
- The acoustic conditions should be considered when designing pool facilities for sonar dependent odontocetes.

