

# Supporting Individual Penguin Observation in Aquarium Exhibits Through Sketching Abdominal Spot Patterns



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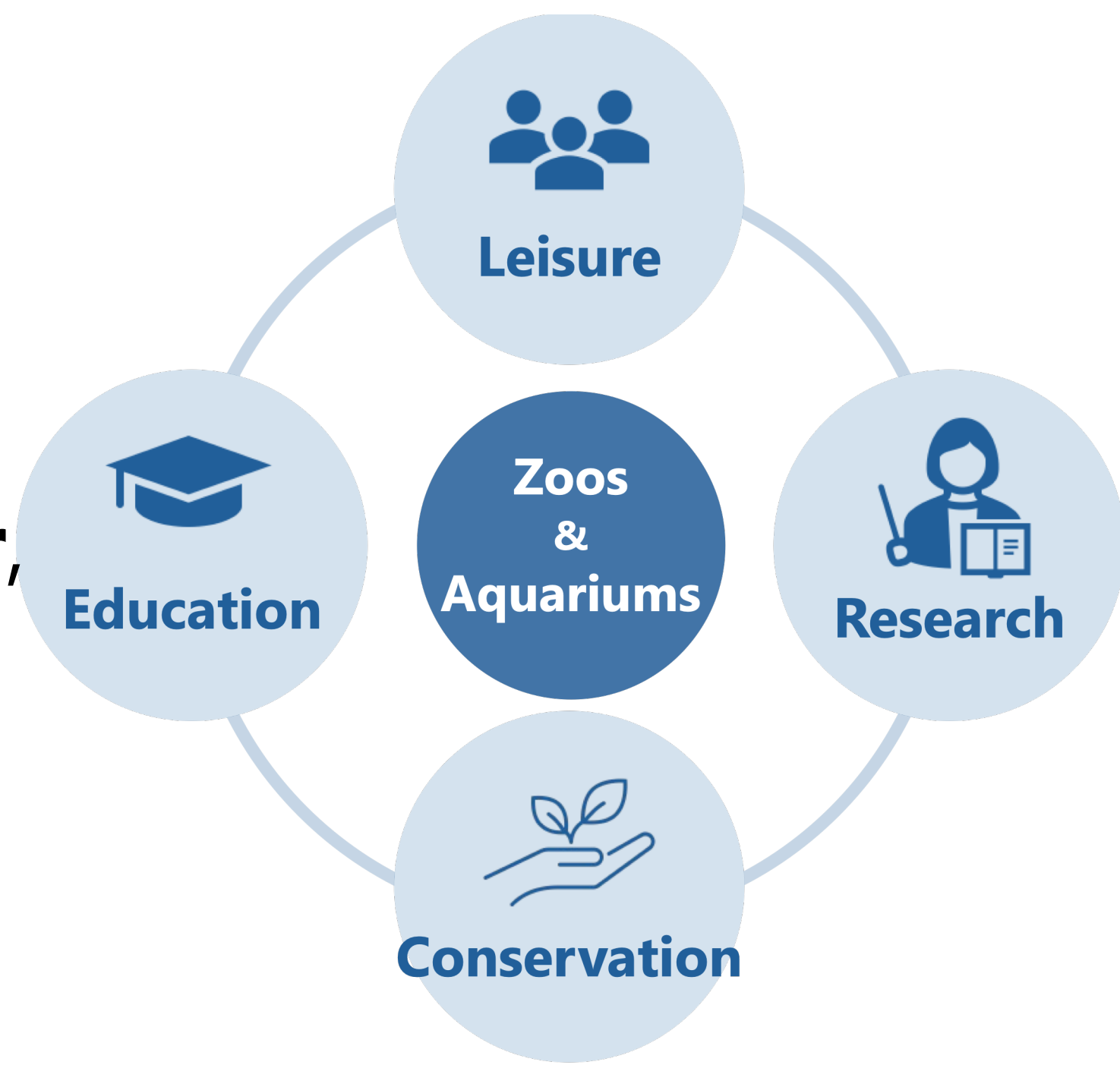
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## Motivation

Zoos and aquariums play important roles in **education, research and conservation**. Identifying individual animals is known to deepen empathy and conservation awareness.

Yet typical exhibits, especially penguin enclosures, house **dozens of individuals together**, which leads visitors to observe as a whole. Existing cues for focusing on individuals, such as name panels and flipper bands, are difficult for visitors to match with specific penguins among many.

As a result, visitors pay limited attention to individual characteristics and behaviors.



## Research Goal

Design an interactive experience for active, individual-level animal observation.



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## System / Method



## Field Study

**SITE** Sunshine aquarium in Japan  
**SPECIES** Cape (African) penguins  
**PERIOD** 2 one-week deployments  
**PARTICIPANTS** General visitors, free use



## Findings

340 weekly users  
122 same-day repeats  
23 multi-day users

- ◆ **Careful observation**  
Noticing individual features and pattern differences
- ◆ **Conversation**  
Sharing search results and using penguins' names
- ◆ **Repeated engagement**  
Staying longer, revisiting the exhibit, and feeling closer to individual penguins

## Future Work

- Long-term / multi-site**  
Evaluate sustained impact across different aquariums.
- Animal welfare**  
Feed visitor-generated data back to keepers and explore links to welfare.
- Other species / Wild populations**  
Extend the approach beyond penguins and to field surveys in natural habitats.

