When Pig-fish Fly
The Sex Life of Harbor Porpoises in San Francisco Bay

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Future Efforts
Long-term studies will gain insights into:
- the harbor porpoise mating system:
  - behavior that confirms/challenges sperm competition
  - female choice: responses that help/hinder copulation
- stereotyped male approach: anatomical asymmetry?
- male aerial behavior: failed mating attempt, display of fitness, or test of female receptivity?
- whether some sexual events are male-male
- reproductive parameters:
  - length and timing of the breeding season
  - calving rate (annual or biennial)

Acknowledgments
Our thanks go to Mary Jane Schramm of the Gulf of the Farallones National Marine Sanctuary.

References

Methods
Observations and photo-identification of individuals are being conducted primarily from the Golden Gate Bridge, as well as from our research vessel.

Preliminary Results
Most sexual activity involved only 2 adults. In 69% of the events (n=22), presumed males pursued presumed females, or females with calves (n=8). In 25% of the events (n=8), another adult was seen near (<10 m) the mating pair. Mating also occurred within a group of 4 adults, and in a group of 5. No direct male-male interactions were observed.

32 sexual events were photographed from January 2010 to October 2011. Sexual activity was documented year-round, with peaks suggested in July (n=8) and October (n=6).

Gender was determined either when the penis was visible (n=15), or by the presence of a young calf (n=8). Copulation was noted twice, and the other 30 events were presumed mating-related based on the similarity of behavior:
- males rapidly approached females from below and behind, surfacing next to the female (n=28)
- all male approaches were made from the female’s left side (31/31 events)
- all part of the male’s body emerged from the water (n=28)
- reactions by females (or presumed females) include rolling towards or away, or raising flukes up (“kickouts”)
- events are rapid, lasting approximately 2 seconds

Arrows points to tip of penis

Sexual activity often involves aerial behavior by the male

Sequence of typical behavior as a male approaches a presumed female from behind, and to her left

Investigators are authorized under NMFS LOC 15477 for close approach of harbor porpoises

Introduction
Behavior of harbor porpoises (Phocoena phocoena) has been little studied, with basic biology described mostly through post-mortem examination. Almost nothing is known of their mating behavior.

This species is characterized by:
- synchronized seasonal breeding (late spring/summer)
- sexual dimorphism, males averaging 1.5 m are 5-10% shorter than females
- seasonal enlargement of testes into “megatestes”
- a relatively large penis (~0.5 m) for a small odontocete
- probable promiscuity
- predicted high level of sperm competition

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