Central California Current Ecosystem

A

B

SST (°C)

14 15 16 17 18

MBNMS

MARS

Monterey Bay

North Pacific

40 km
A day in the life of an ocean soundscape
Methods:
- Semi-automated analysis
- Signal processing
- Machine Learning
  - Automated detection & classification

The Mysticete Symphony in 3D

Whale artist: Larry Foster
Blue and fin whales: signal processing

**A**

Median spectrum level (dB re 1 μPa² Hz⁻¹) vs Frequency (Hz)

- Blue whale
- Fin whale

**B**

Daily mean spectrum level (dB re 1 μPa² Hz⁻¹) vs Month (Jun to Jun)

- Background
- Call

Methods:
- Semi-automated analysis
- Signal processing
- Machine Learning
A Convolutional Neural Network for Automated Detection of Humpback Whale Song in a Diverse, Long-Term Passive Acoustic Dataset
Humpback whales: machine learning

Methods:
- Semi-automated analysis
- Signal processing
- Machine Learning

Ted Cheeseman
Happywhale.com
Six years of daily acoustic detection

Methods:
- Semi-automated analysis
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Six years of daily acoustic detection
Interannual patterns

Methods:
- Semi-automated analysis
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A

B

C

Humpback song detection (percent of recording time)

- day
- dusk/dawn
- night

Year
1 2 3 4 5 6

Acoustic presence (% of days) or day:night ratio (%)

Humpback whale visual presence (unique identifications per day)

Humpback (unique identifications per day)
Methods:
- Semi-automated analysis
- Signal processing
- Machine Learning

An ecosystem-level view

Forage availability [log(catch+1)]

- krill
- anchovy
- sardine

NOAA California Current Integrated Ecosystem Assessment
An ecosystem-level view

A

Forage availability [log(catch+1)]

- krill
- anchovy
- sardine


B

δ¹⁵N (‰)

δ¹³C (‰)

2017 2019

blue humpback

NOAA California Current Integrated Ecosystem Assessment
Access to data and analysis tools

Registry of Open Data on AWS

Pacific Ocean Sound Recordings

Description
This project offers passive acoustic data (sound recordings) from a deep-ocean environment off central California. Recording began in July 2015, has been nearly continuous, and is ongoing. These resources are intended for applications in ocean soundscape research, education, and the arts.

Update Frequency
daily

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Documentation
https://docs.mbari.org/pacific-sound/

Managed By
MBARI

See all datasets managed by Monterey Bay Aquarium Research Institute.

Contact
dcline@mbari.org

How to Cite
Pacific Ocean Sound Recordings was accessed on DATE from https://registry.opendata.aws/pacific-sound.

Usage Examples
Tutorials

Resources on AWS

Description
original 256 kHz audio recordings year 2015

Resource type
S3 Bucket

Amazon Resource Name (ARN)
arn:aws:s3:::pacific-sound-256khz-2015

AWS Region
us-west-2

AWS CLI Access (No AWS account required)
aws s3 ls --no-sign-request s3://pacific-sound-256khz-2015/

Description
original 256 kHz audio recordings year 2016

Resource type
S3 Bucket

Amazon Resource Name (ARN)
arn:aws:s3:::pacific-sound-256khz-2016

AWS Region
us-west-2

AWS CLI Access (No AWS account required)
aws s3 ls --no-sign-request s3://pacific-sound-256khz-2016/