



# Recovery effort status of black abalone at Mud Creek

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Monterey Bay National Marine Sanctuary

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AMERICA'S UNDERWATER TREASURES

# Location of Mud Cr slide



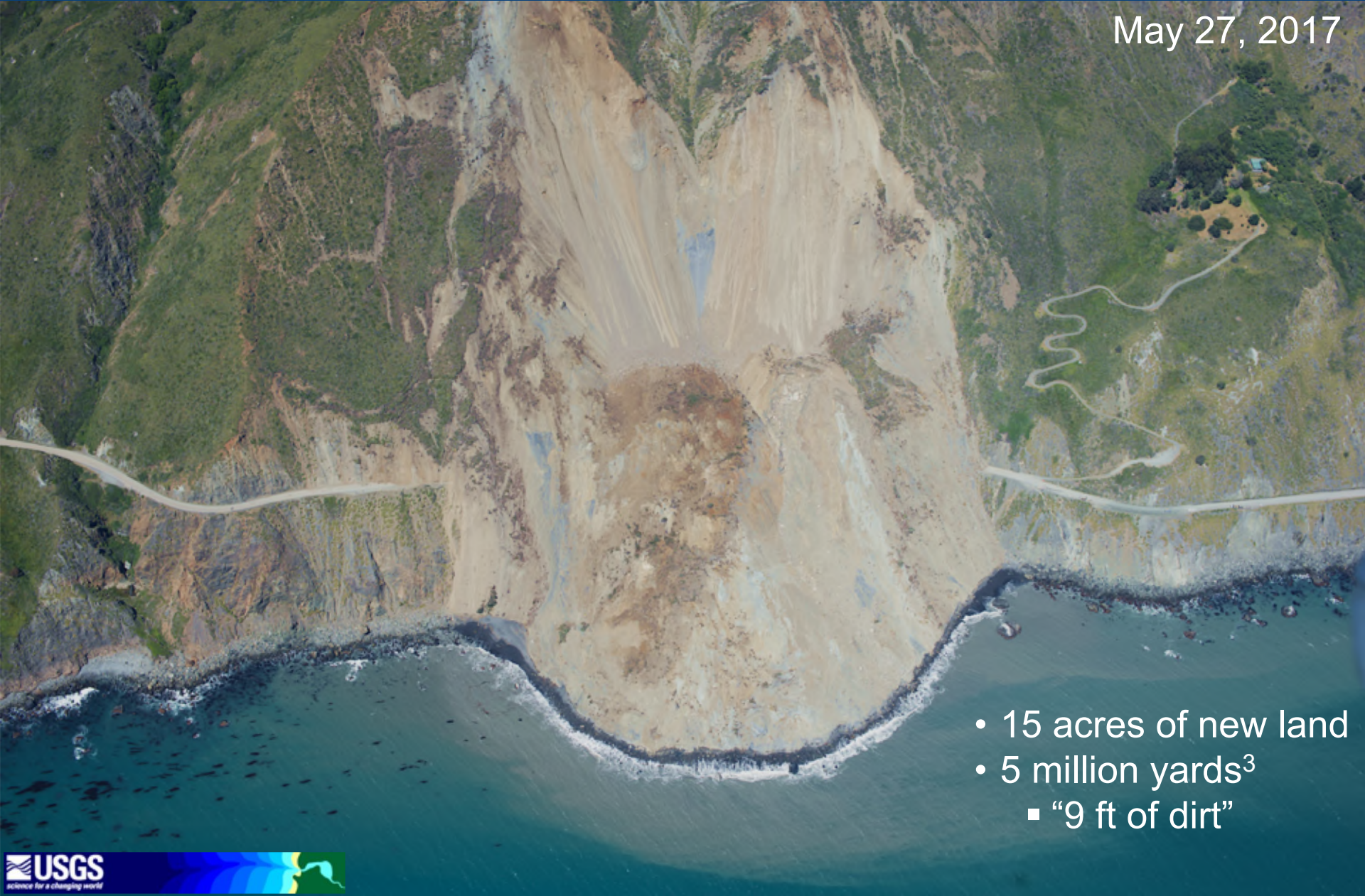
# Mud Creek: before

May 18, 2017



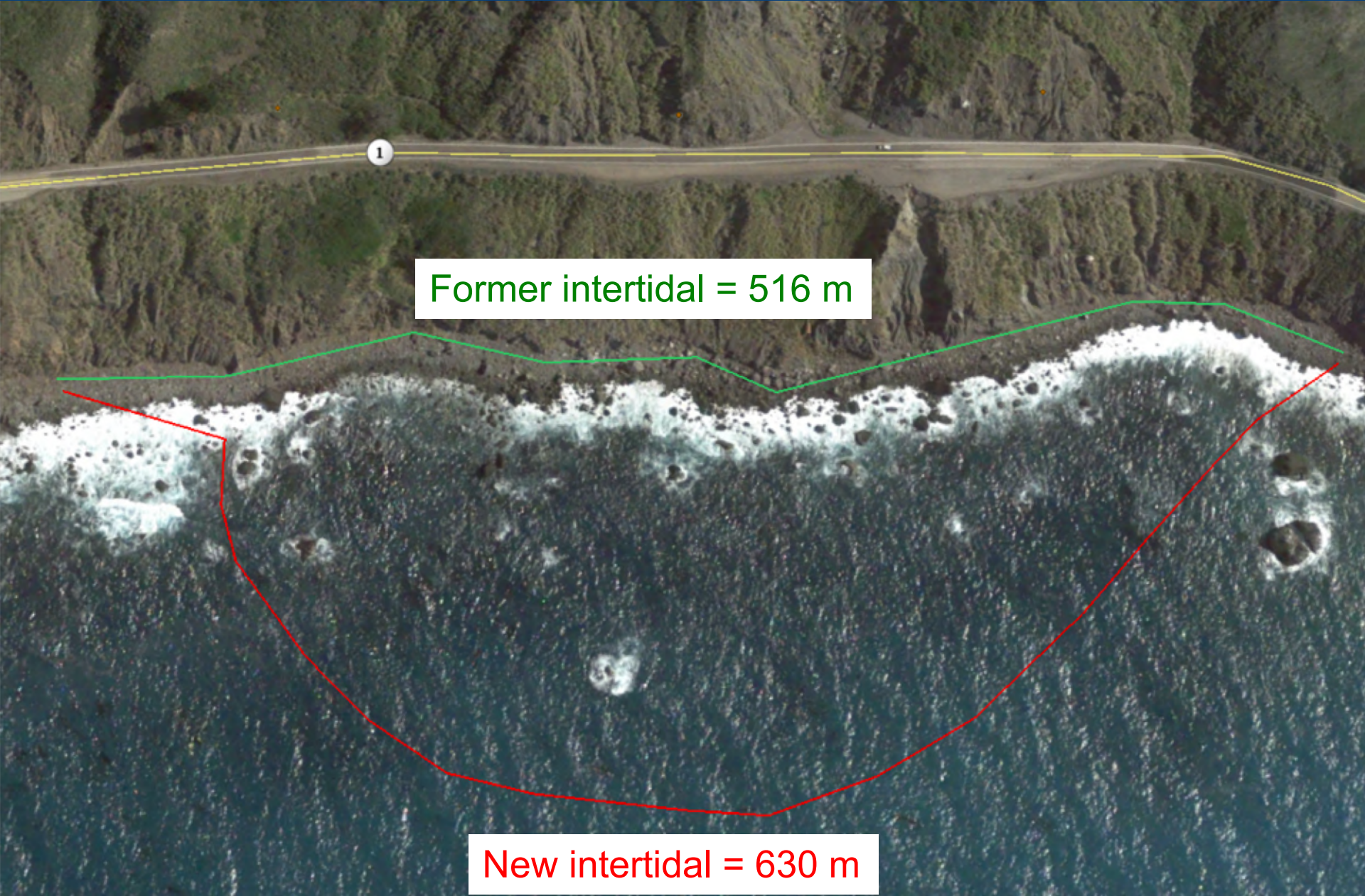
# Mud Creek: after

May 27, 2017



- 15 acres of new land
- 5 million yards<sup>3</sup>
  - “9 ft of dirt”

# Sanctuary coastline increases



Former intertidal = 516 m

New intertidal = 630 m



Boulder fields, small pockets of cobble beach

# Intertidal: 1 week after

May 27, 2017

New  
sandy  
beach





Boulder field habitat replaced with sandy beach





# North revetment & beach



Nov 2, 2017



# 272 m of new beach



# Black abalone





# July 24, 2017 survey

## North Mud Creek Black abalone and habitat characterization surveys

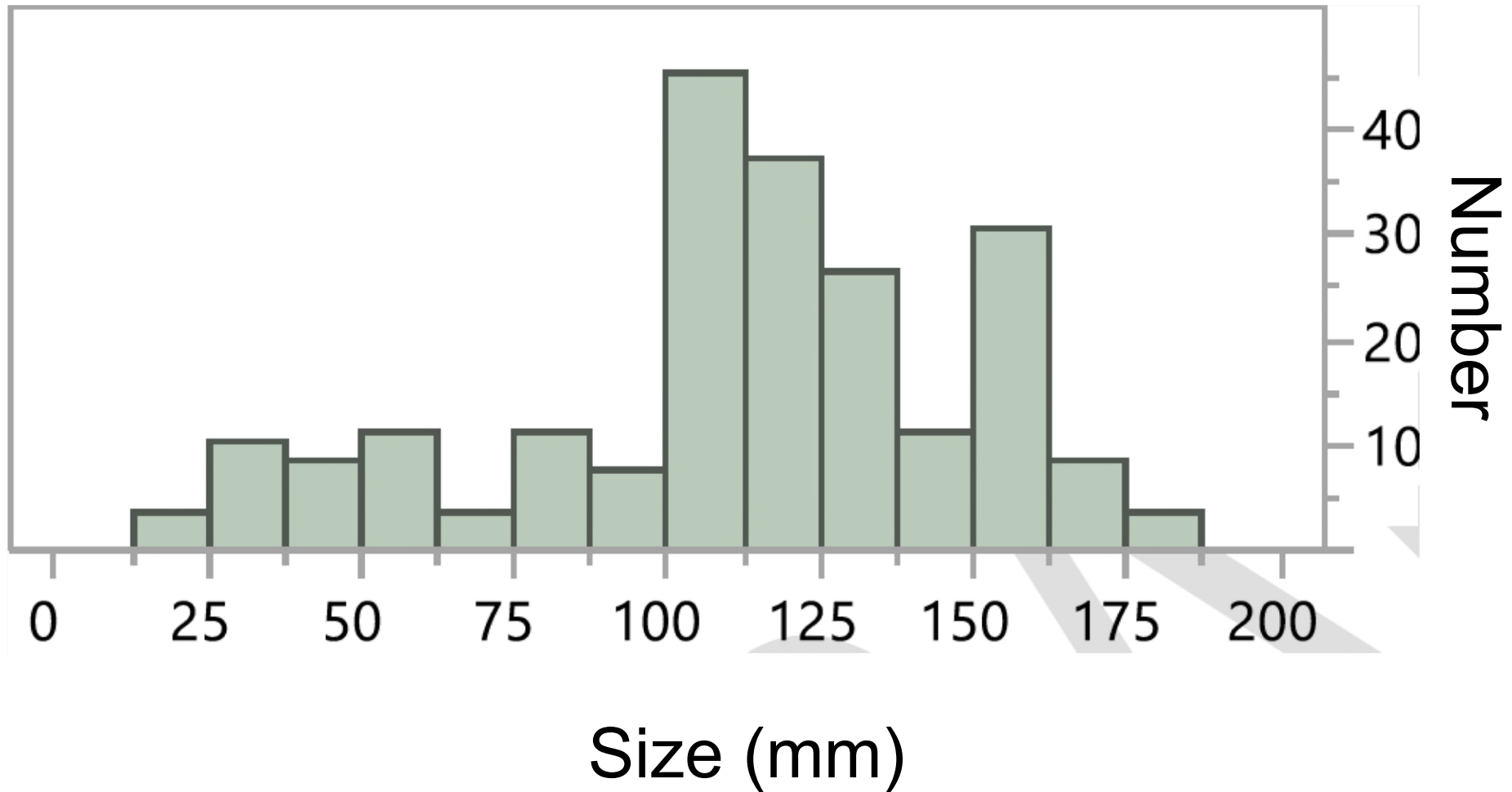
Blue lines are GPS tracks of areas surveyed July 24-25, 2017.

### Legend

-  approximate footprint of slide
-  potential max fill



# BA size-frequency (n=186)



- Black abalone buried and killed
- Critical habitat was lost
  - >500 m by initial burial
  - ~270 m by beach formation (upcoast)
- Beach formation is on-going
- Unclear when system may equilibrate

**EMERGENCY**



# Rescue effort: collection



# Tag and sample all BA





# Translocate BA to PBLs



# BA in new location





# Summary of rescue

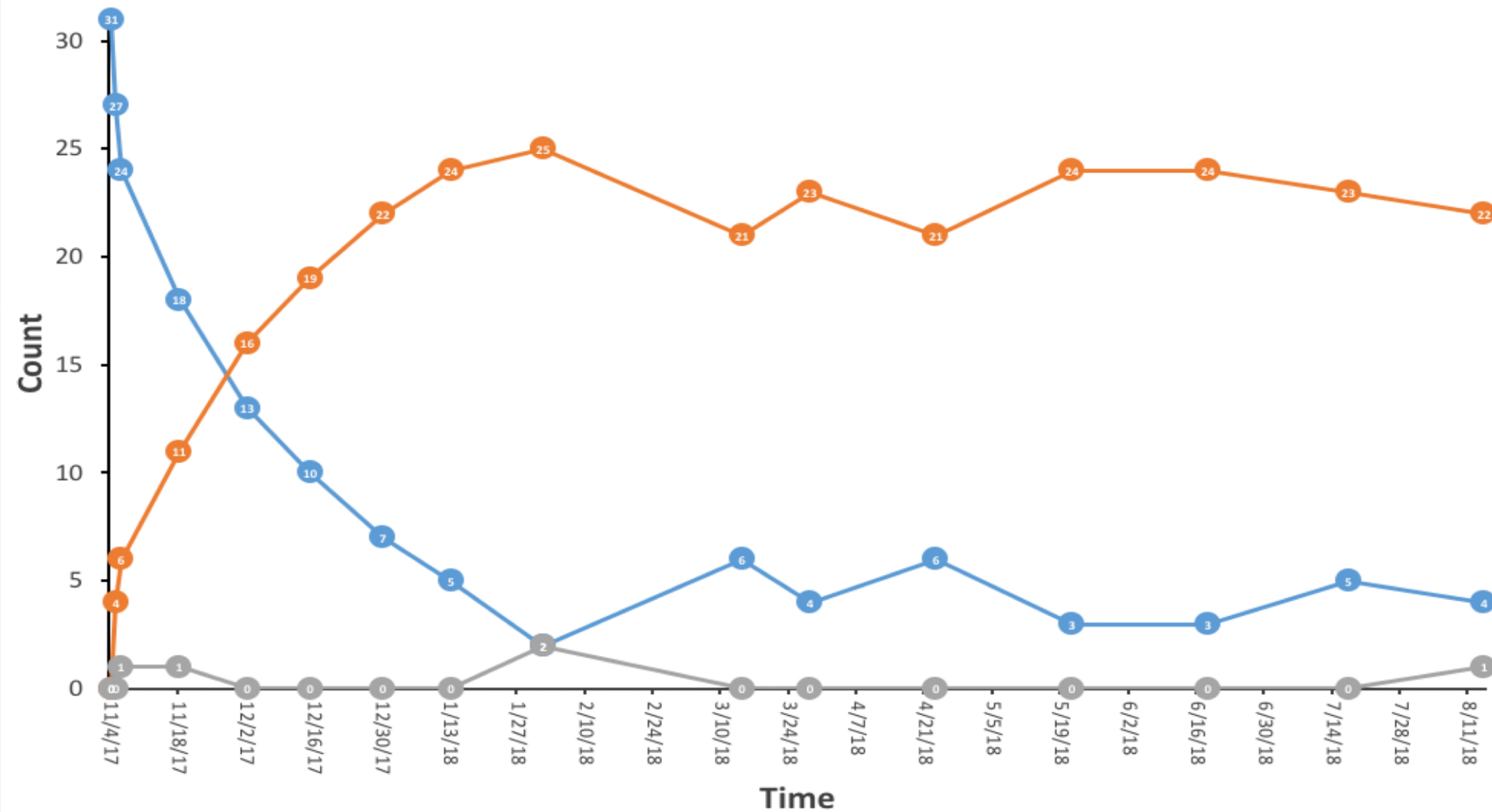


- 45 black abalone collected Nov 2, 2017
- 5 sacrificed (3 withered, 2 injured)
- 9 kept at La Jolla due to injuries, 6 still alive
- 31 translocated to PBLIS

# 31 BA at PBLs

## Translocated black abalone

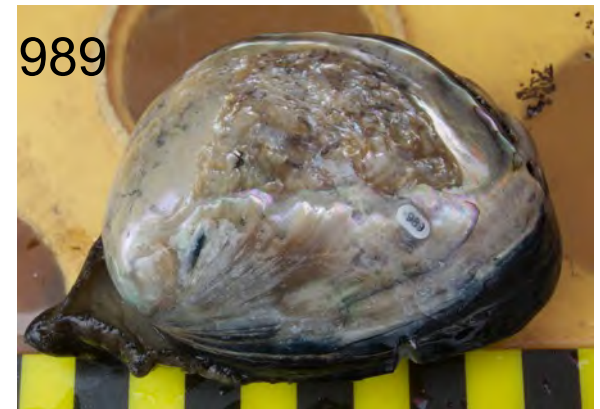
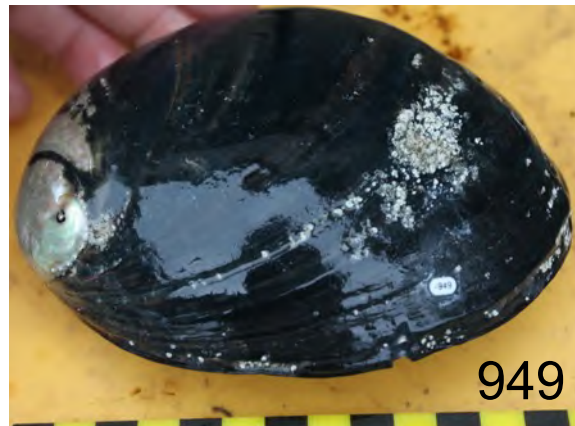
● Live ● Unaccounted ● Dead



# Individual patterns of sightings

N-17 N-17 N-17 N-17 D-17 D-17 D-17 J-18 F-18 M-18 M-18 A-18 M-18 J-18 J-18 A-18

937



# Next steps

- On-going monitoring of Mud Creek intertidal
- On-going monitoring of translocated abalone
- Conduct future rescues as necessary





# Acknowledgments



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