

Advancing Fisheries Monitoring: Scaling AI Tools to Modernize Data Collection and Analytical Practices of Electronic Monitoring Videos



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How this started:

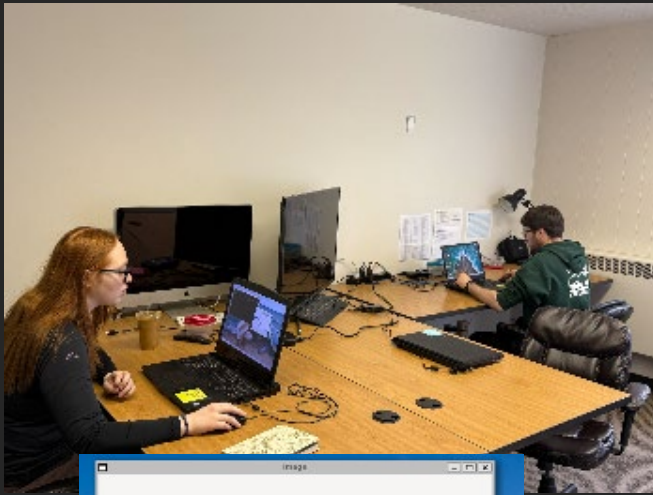


- **Using longline EM data to detect Pacific sleeper sharks (*Somniosus pacificus*)**
 - *Able to identify 96 of 97 sleeper sharks*
- **Sleeper shark length-estimation model estimated shark lengths**
 - *Performance varied among vessels*
- **Enhancing the value of EM data for stock assessment of data-limited species**
 - *Converting EM-derived counts into estimated biomass*
 - *Improving accounting of large sharks, which can be difficult to quantify accurately even with at-sea observers*



Photo courtesy of NPGOP

Expanding beyond a small research project:



Photos by Sarah Williamson

- 🐟 Scale up machine-learning detection
- 🐟 Improve fish-length estimation
- 🐟 Integrate project outputs into stock assessments and catch accounting
- 🐟 Define any operational constraints and data quality
- 🐟 Expand into other fisheries
 - 🐟 Alaska EM trawl
 - 🐟 Other regions

Outlook:

- 🐡 Plan to hold outreach meetings
- 🐡 Give updates throughout the project
- 🐡 Incorporate feedback as we go
 - 🐡 Feedback is essential to develop the most applicable research products

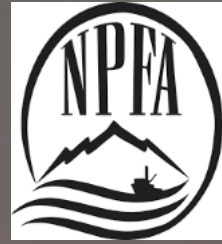


Survey photo

Wrap up:



- 🦈 Past research had a high success of shark detections with length accuracy
 - 🦈 Expanding research
 - 🦈 Species identification
 - 🦈 Species length
 - 🦈 Other gear types
 - 🦈 Develop tools for stock assessment and catch accounting
 - 🦈 Outreach and incorporate feedback
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WITH SIGNIFICANT CONTRIBUTIONS FROM STUDENTS AT APU, STAFF AT PSMFC, FMA, AT-SEA OBSERVERS, AND COUNTLESS VESSELS AND OPERATORS FOR THEIR DATA CONTRIBUTIONS AND HELP

Any Questions?

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