



Engaging Local Communities to Establish the First Acoustic Telemetry Network in Cambodia



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Presenter:
Jack Eschenroeder
Fisheries Biologist

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In Cambodia:

- Young Eco Ambassadors (YEA)
- Inland Fisheries Research and Development Institute (IFReDI)
- Provincial Fisheries Administration (FiA) Cantonments

Simultaneous telemetry project in Lao PDR:

- Mekong River Commission's Joint Environmental Monitoring (JEM) Program



Project Overview

- **Primary objectives:**
 - Document transboundary movement of migratory fish
 - Gather data on when and where fish are moving in the Mekong + Sekong, Sesan, and Sre Pok (3S)
- Important in the context of current and planned dam development
 - Lower Sesan II – completed in 2018
 - Don Sahong – completed in 2020
 - Dam in Sekong – Construction imminent
 - Potential dams in mainstem – Sambor + Stung Treng

Building an Acoustic Network in the Mekong

- Many logistical considerations and challenges
 - Identification of suitable sites
 - Floating versus sunken receivers
 - Contending with fluctuating flows
 - Preventing theft and vandalism
 - Maintenance and data downloads



The Answer: A Community-Supported Approach

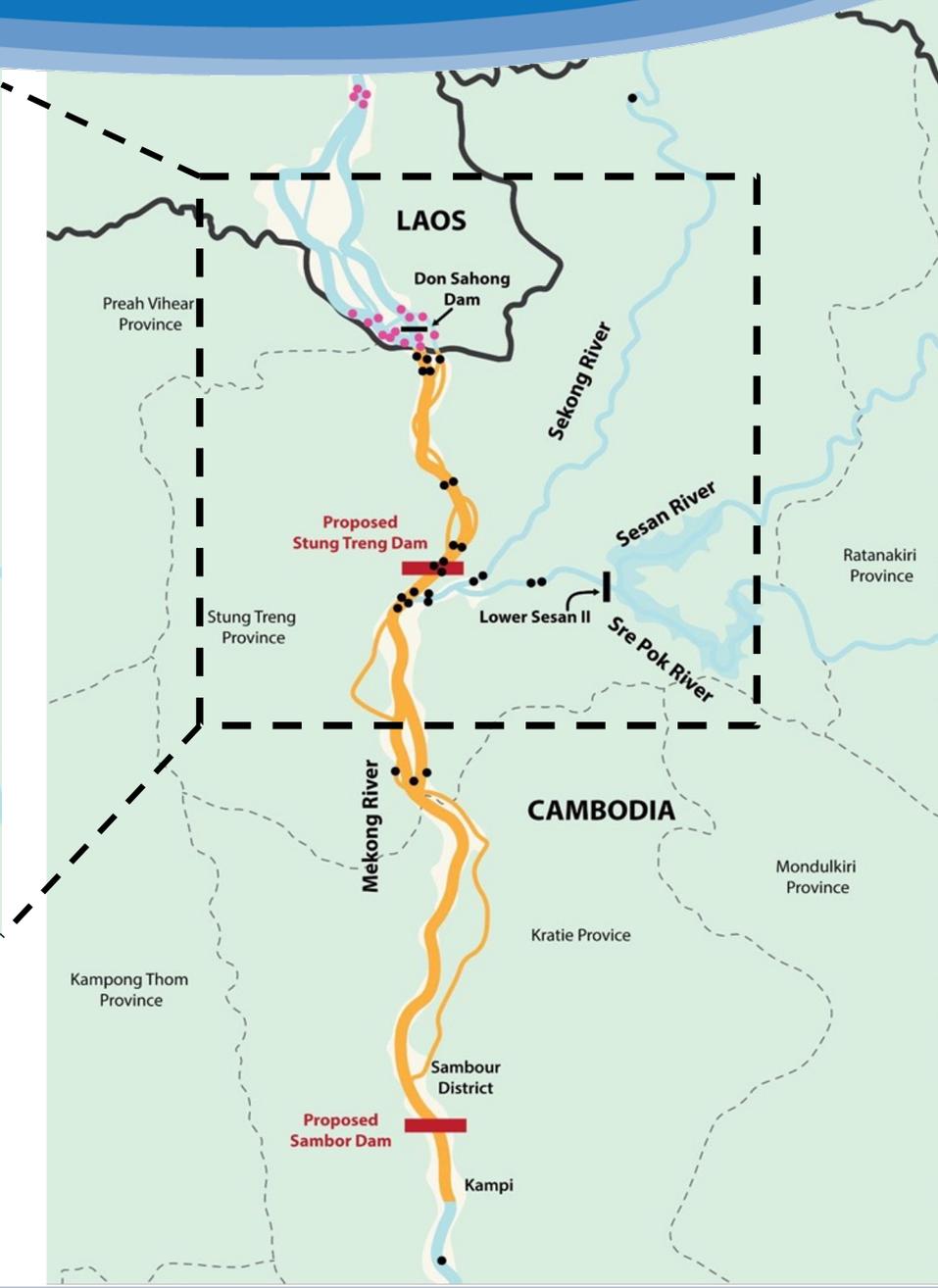
- Focuses on building community network to support network installation and maintenance
- Leverages local knowledge
- Allows for rapid communication of any issues
- Improves likelihood of recapture reporting



Deploying the Receiver Platforms

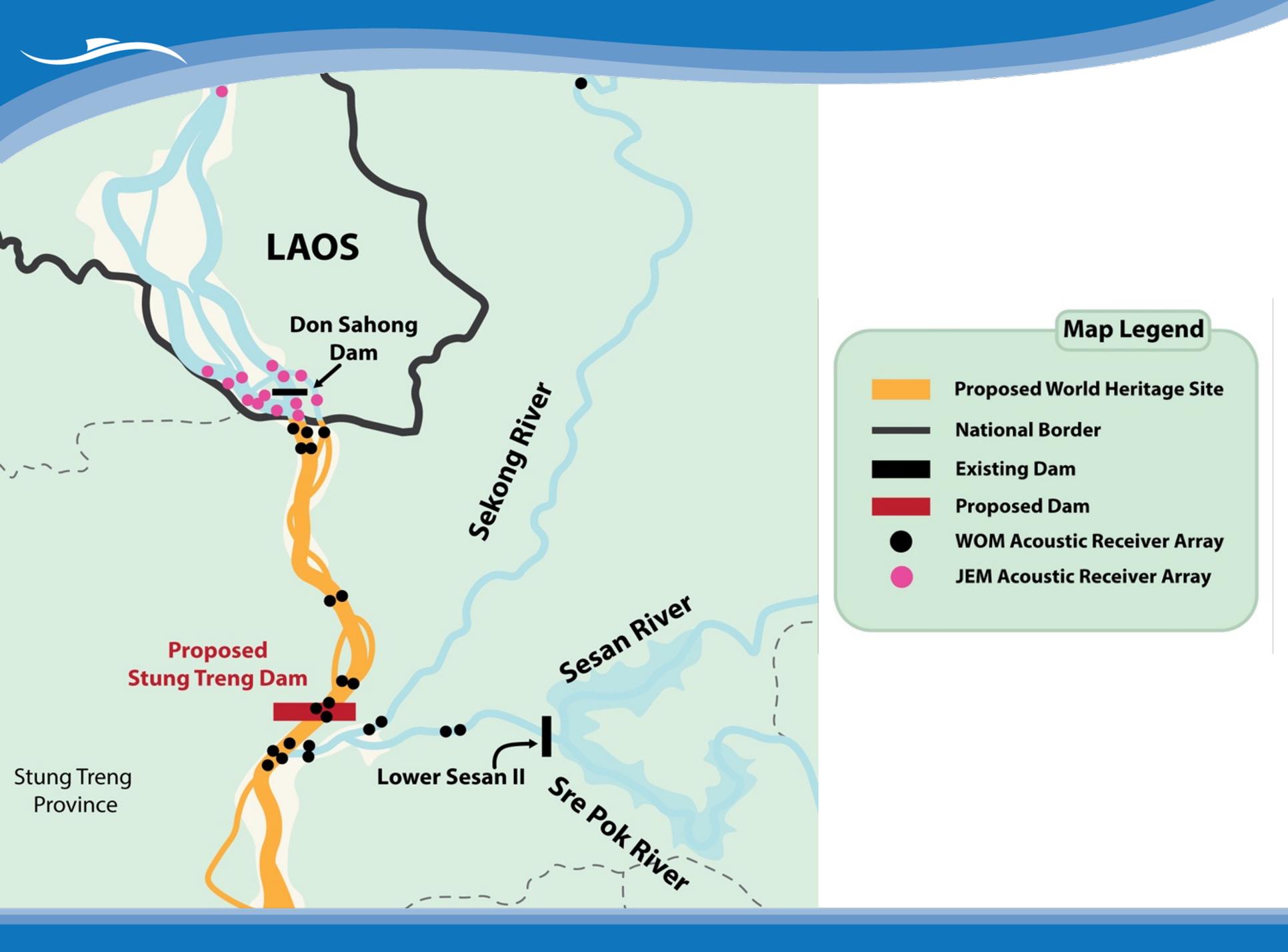
- Deployed 39 receivers across 14 sites
- ~284 river kilometers in mainstem Mekong from border to Kampong Cham
- ~96 river kilometers in 3S Basin
- Most on floating platforms, some mounted to docks





Map Legend

- Proposed World Heritage Site
- National Border
- Existing Dam
- Proposed Dam
- WOM Acoustic Receiver Array
- JEM Acoustic Receiver Array



Weathering Wet Seasons

- Local support is essential
 - Recovering platforms
 - Pulling platforms closer to shore during high flows
 - Removing debris



Finding Fish to Tag

- Local communities pivotal for sourcing study fish
- Availability of taggable fish depends on season and location
- Leveraged community network to learn when and where species of interest are being caught



Tagging Fish

- Trained local team (YEA and IFRReDI)
- Supported by FiA staff and villagers
- Some trial and error in developing methods
 - Sourcing (fisher gear)
 - Suitable location
 - Fish transport
 - Holding time
 - Release locations



Tagged Fish in the System

- 321 fish representing 23 species tagged by the WoM field team
- An additional 139 fish tagged and released by the JEM team in Lao PDR
- Total species tagged by both projects = 28





Lee, Dana, et al. "World Heritage, Hydropower, and Earth's Largest Freshwater Fish." *Water* 15.10 (2023): 1936. DOI:10.3390/w15101936

Initial Findings

- Tracked fish moving nearly 100 km – sometimes rapidly (e.g., >50 km in <3 days)
- Tracked fish moving upstream through Khone Falls
- 42 individuals tracked moving through proposed dam site
- Movement into 3S basin observed this wet season
- Endangered and Critically Endangered species tracked



Insights for Acoustic Research in the Mekong

- A very powerful, dynamic river system
- Variation in detection between wet and dry seasons
- Both submerged and floating receivers are feasible, but each has unique benefits and challenges



A Collaborative, International Network

- Receiver network is already being utilized by other academic institutions and conservation organizations
- Using platforms for water quality loggers
- Tracking reintroduced Siamese crocodiles



Plans for 2023-2024

- Tag additional fish during upcoming dry season
- Maintain network through next dry season (Oct 2024)
- Work with JEM team to analyze data and develop joint publication



Thank you!

jackeschenroeder@fishbio.com



FISHBIO

Oakdale, California
Chico, California



FISHBIO Laos

Vientiane Capital, Lao PDR



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Boca del Rio Sierpe
Costa Rica



bit.ly/mekong-telemetry