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INTRODUCTION

- Largetooth sawfish (*Pristis pristis*) are listed as Critically Endangered by the IUCN
- Sawfish are poorly studied. Even basic growth and life-history data is limited
- Low abundance makes studying living fish difficult and often unethical
- Preserved rostra may contain critical data on growth, size, age, and behavior in the structure and chemistry of their rostral teeth which grow throughout life
- This morphological and chemical information may provide important data to improve conservation

METHODS

- **Samples**
  - From Brazilian Amazon Coast (n=121)
- **Rostrum Morphology**
  - Developed ImageJ measurement protocol
  - Measurements
    - Tooth count
    - Standard Rostral Length (tip to last set of teeth)
    - Tooth Length
- **Tooth Internal Structure**
  - MicroCT images of 7 teeth were taken using a Bruker SkyScan 1173 at UW Friday Harbor Labs
  - 3D reconstruction protocol using 3D Slicer software is in progress

RESULTS
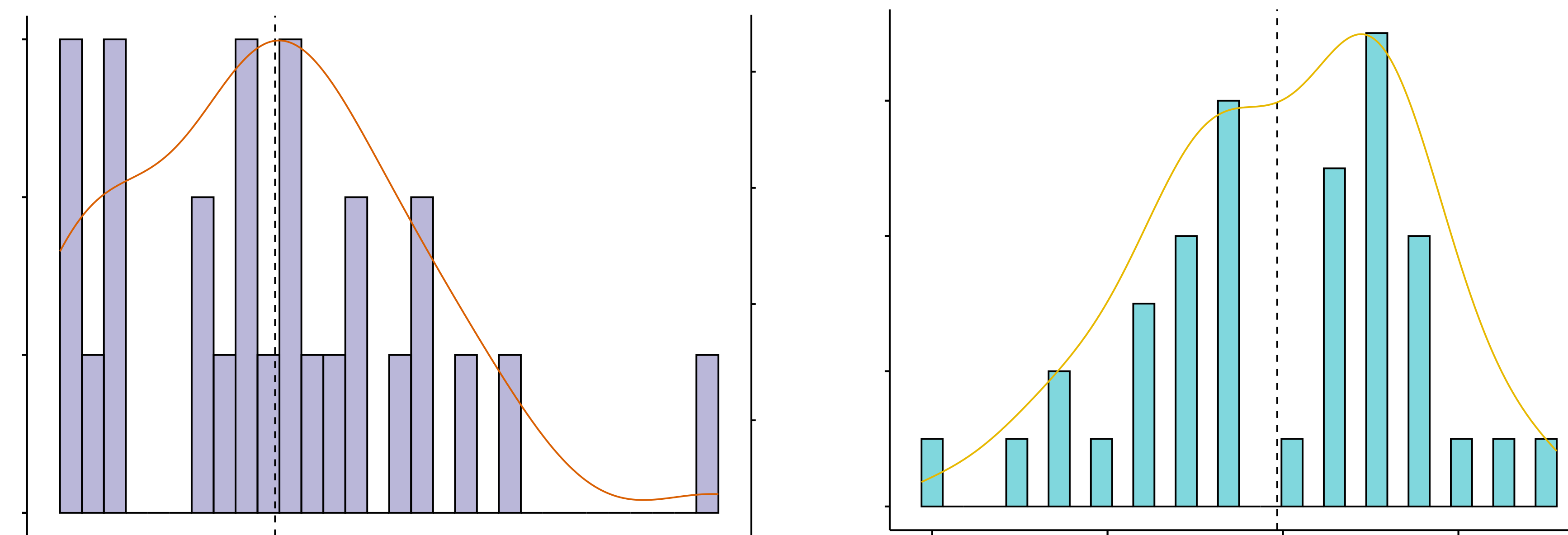
Wear/Growth Measured by Standardized Tooth Length

Potentially bimodal distribution of tooth counts

Juvenile Largetooth Sawfish (*Pristis Pristis*)

Photo Courtesy David Morgan, Sawfish Conservation Society

Internal pore structures are organized in ring-like patterns. New pores added with age, potentially quantifiable for age or growth

Near base (newest material)

Near tip (oldest material)
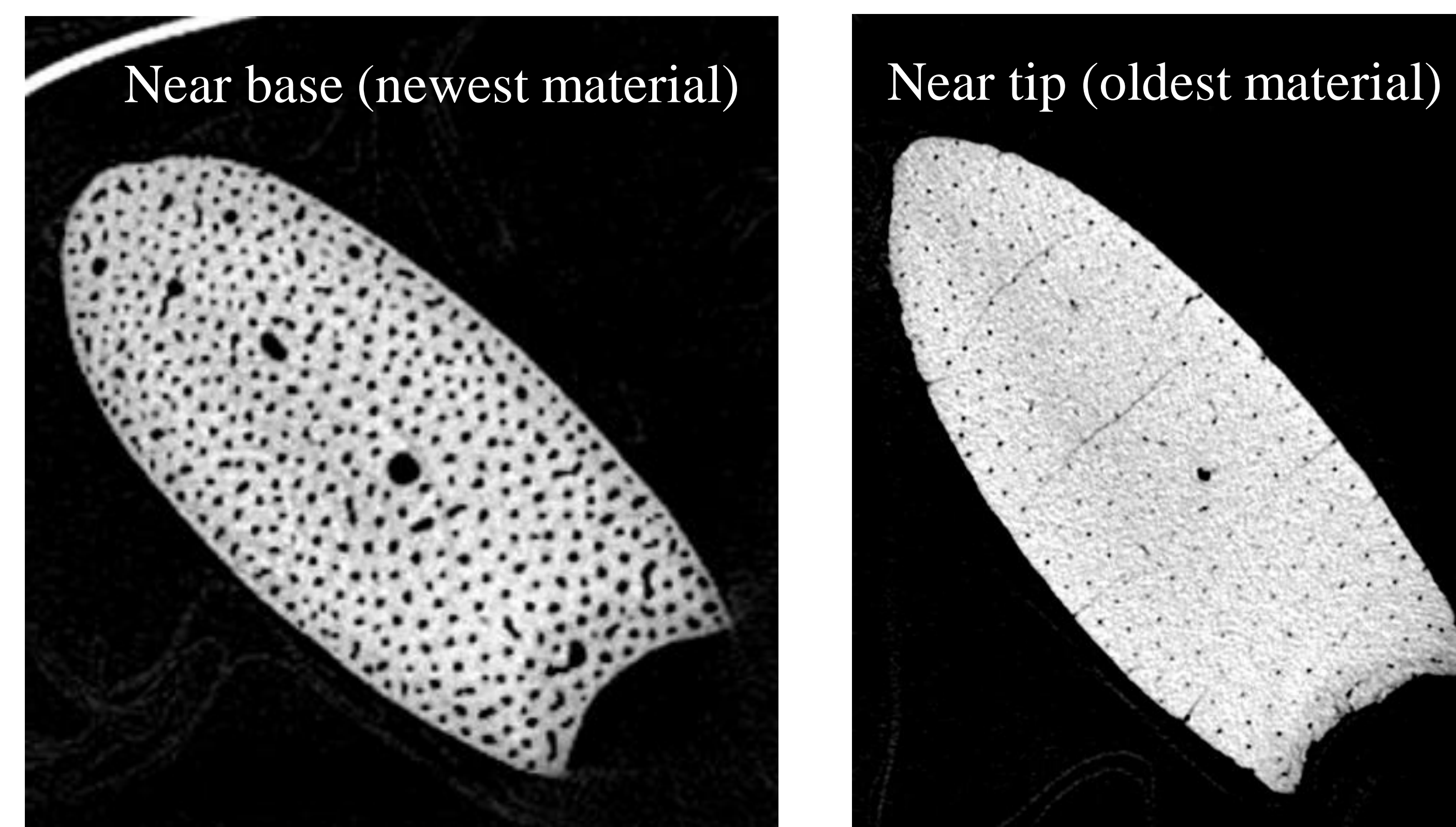
MicroCT sections at 2 different locations along rostral tooth

CONCLUSION

- Bimodal distribution of tooth counts may indicate population structure or sexual dimorphism
- Standardized tooth length indicates differences in tooth wear related to location or behavior
- Measurements of rostrum and tooth morphology allow calculation of tooth wear, which is important for future aging and isotopic analysis
- As fish age, internal pores are added in a highly organized ring-like pattern related to age or growth
- These findings are the first step in development of a precise and non-lethal model of growth and age

FUTURE WORK

- Isotopic analysis to reconstruct movement patterns across fresh & saline water
- 3D reconstruction of internal tubules
- Development of age/growth measurement protocol

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