



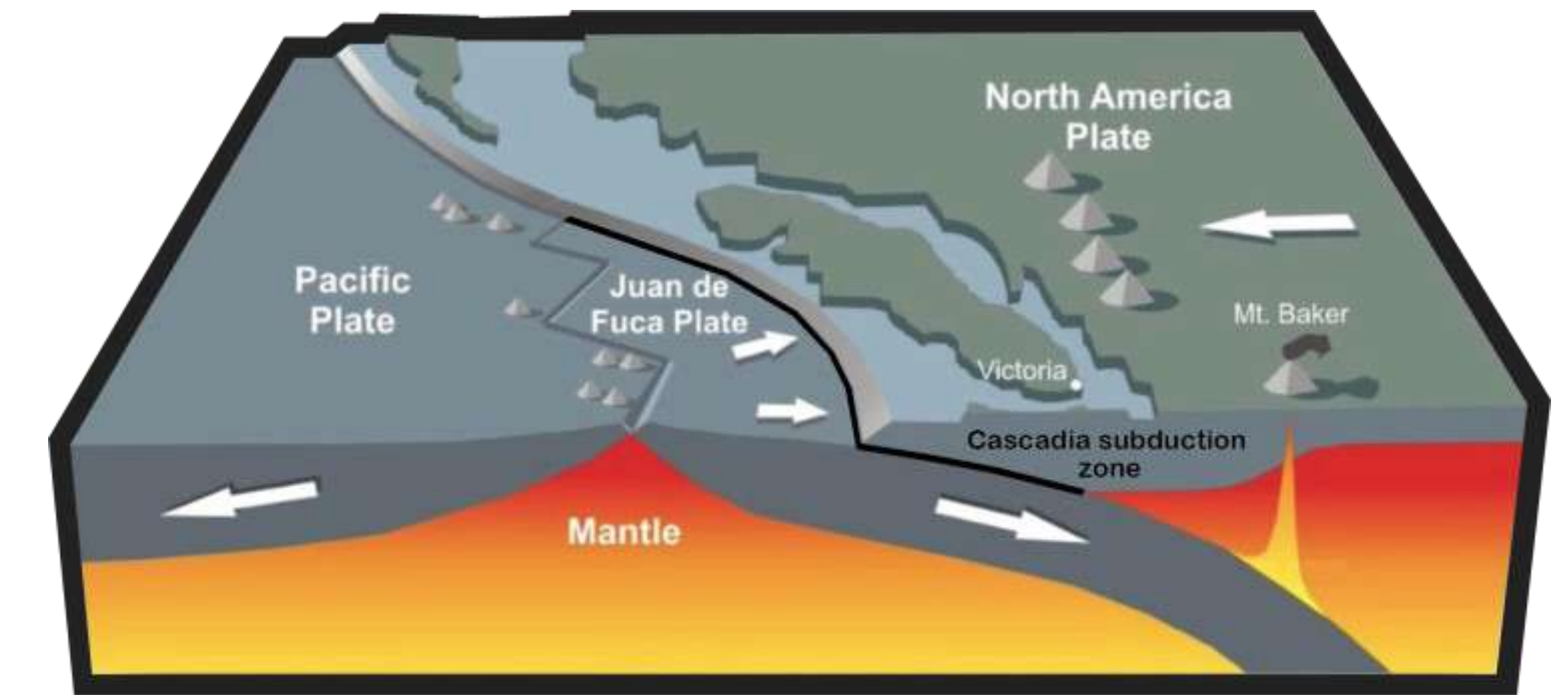
Inspiring The Next Generation, Increasing Community Resilience, and Conducting Research Through a School-Based Seismograph Network

Camille Brillon¹, Andrew Schaeffer^{1,2}, Edwin Nissen²

1. Natural Resources Canada, Sidney, BC 2. University of Victoria, Victoria, BC

Introduction

The Cascadia Subduction Zone is characterized by elevated earthquake and tsunami hazards but a relative paucity in felt seismicity leaving residents unaware of and under-prepared for the risks they face. In an effort to improve this situation, in 2021 the Geological Survey of Canada (GSC) and University of Victoria (UVIC) began developing SchoolShake, a school seismograph network and community science program that offers a hands-on learning experience about earthquake hazards. SchoolShake leverages the small, hobbyist-style Raspberry Shake (RS) seismographs and the Raspberry Shake data portal to bring geoscience education and awareness to communities in BC, focusing primarily on those in locations with high seismic hazard. Since 2021 the SchoolShake network has grown to 20 schools extending from Victoria to Haida Gwaii, offering learning opportunities to hundreds of students in BC. SchoolShake stations are complimentary to the Canadian National Seismograph Network (CNSN) and the GSC Research Network (PQ), effectively lowering earthquake detection capabilities, potentially resulting in increased knowledge of local crustal faults, and providing opportunities for seismic hazard research.



Cascadia Subduction Zone

Vision

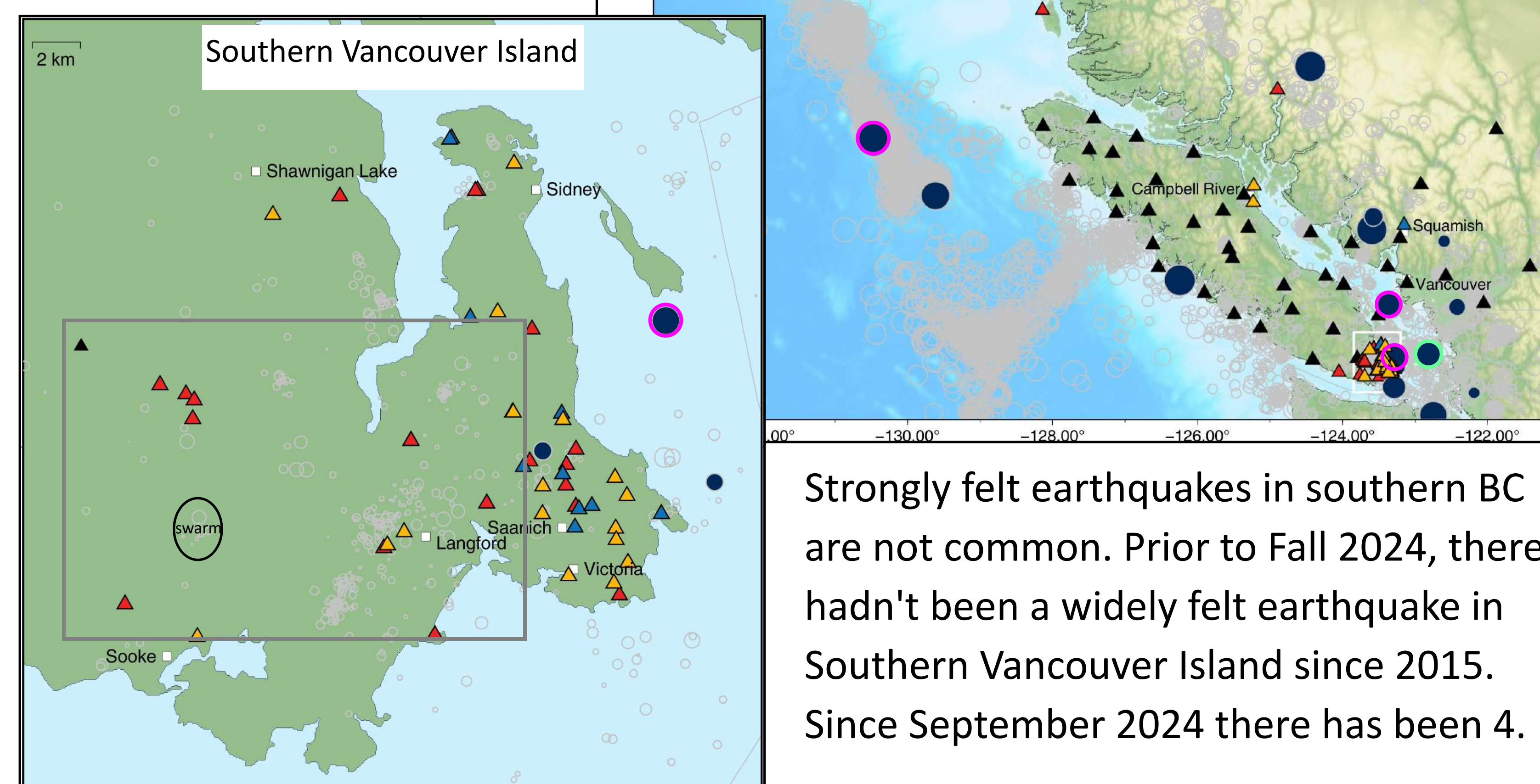
1. Engage youth in STEM subjects.
2. Highlight geoscience-related fields as an exciting and attainable career.
3. Improve earthquake education, preparedness, and community resilience from the ground up.
4. Improve local seismic hazard research

Execution

1. Provide RS to interested schools at no cost to the school.
2. Create lessons tailored to the BC curriculum and offer support from local experts at no charge.
3. Make real-time waveforms and automatic earthquake locations available to the public by streaming data to RS and the SchoolShake server.
4. Increase regional seismic monitoring to lower the detection magnitude and improve knowledge of regional crustal faults.

Network

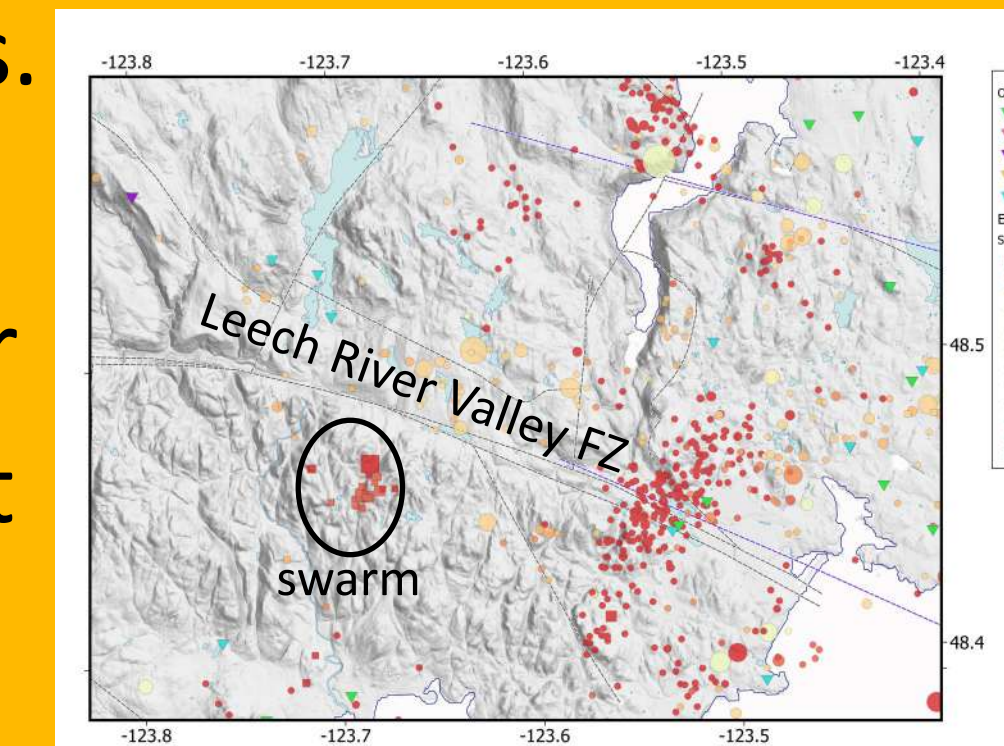
- 20 schools
- 4 community
- 13 private homes



Strongly felt earthquakes in southern BC are not common. Prior to Fall 2024, there hadn't been a widely felt earthquake in Southern Vancouver Island since 2015. Since September 2024 there has been 4.

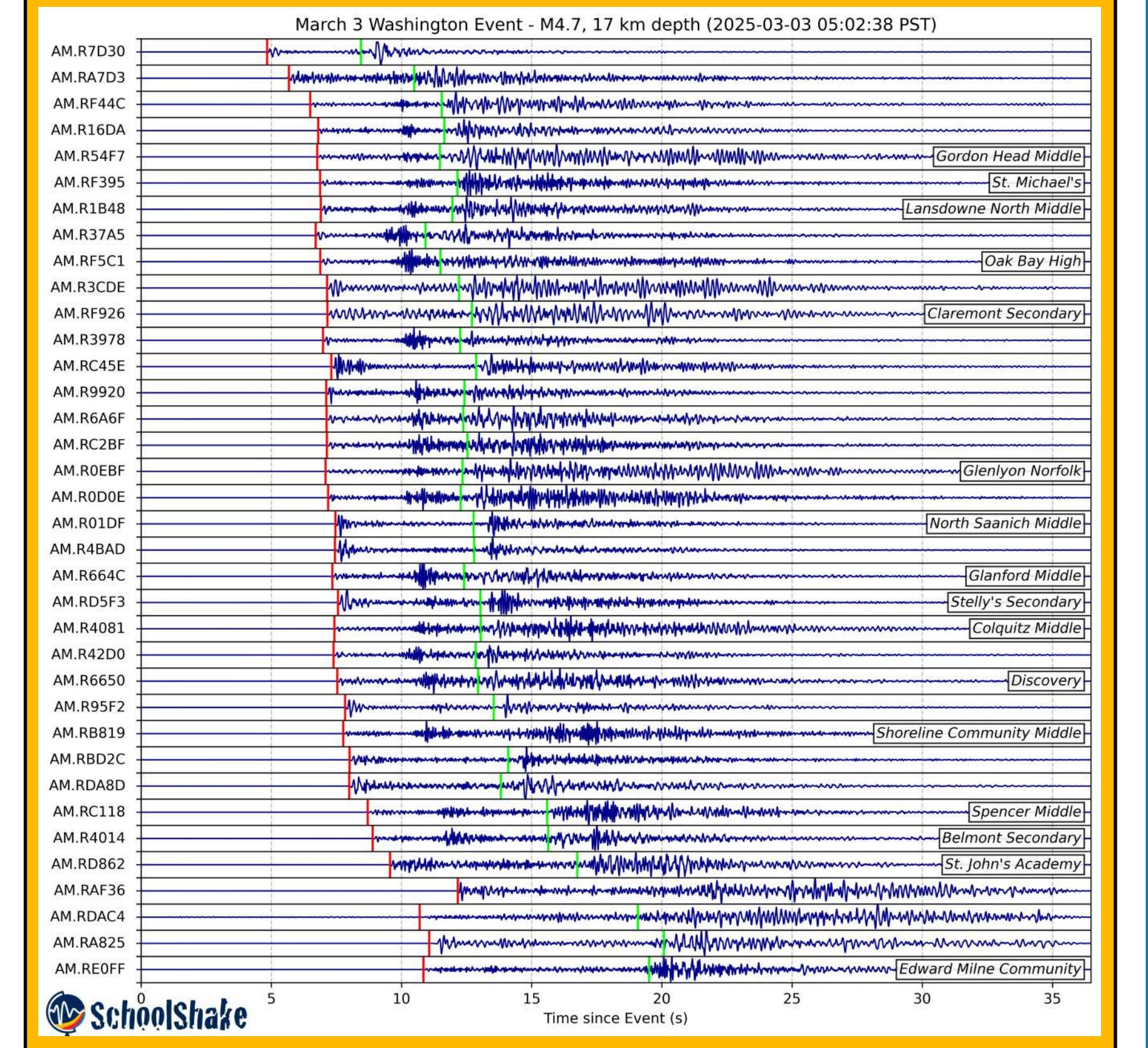
Events of Interest (refer to central maps for locations)

- Sooke Swarm - May 8-9 2023**
- 34 well-located earthquakes $0.01 < M < 2.07$ within 5 km².
 - 12 events located with the 3 nearby CN stations.
 - 22 events required SchoolShake and PQ stations.
 - Nearby Leech River Valley Fault Zone



- Fall 2024**
- 09/15/2024 M6.5 60 km south of Haida Gwaii (1st EEW alert)
 - 09/26/2024 M3.8 11 km east of Vancouver Island.
 - 10/04/2024 M3.8 30 km west of Vancouver.
 - All widely felt, well recorded, and discussed in classrooms.

- San Juan Island - March 3, 2025**
- Perceived shaking was longer than previous events of this magnitude.
 - SchoolShake stations show a reflected phase between P and S arrivals between 219°-256°.



Thanks for your support!

