

Relative abundance of the sunflower sea star (*Pycnopodia helianthoides*) in southern Puget Sound



Taylor Frierson
Subtidal Shellfish

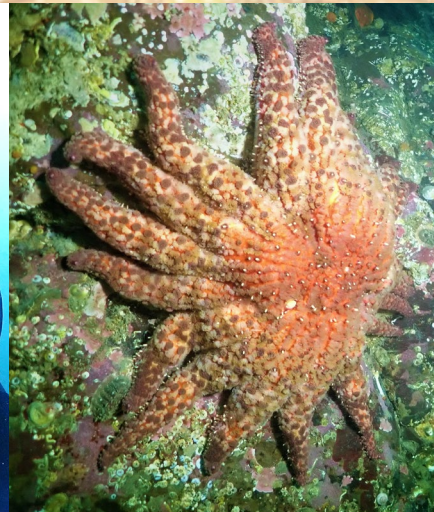


Washington
Department of
**FISH and
WILDLIFE**



Sunflower sea star – fun facts

- Among the largest and fastest sea stars in the world!
- More abundant in shallower depths
- Generation time range of 27 to 37 years (~65 max)
- Habitat generalist on all bottom types
- Prey includes molluscs, echinoderms, and crustaceans
- Important ecological role as a predator



Sunflower sea star – sad facts

- **2013-14 Sea Star Wasting Disease Outbreak**
- Coincided with marine heat wave
- 80-100% declines in abundance
- Ranged from Baja CA to AK
- Impacted populations of >20 species
- Largest marine epidemic on record



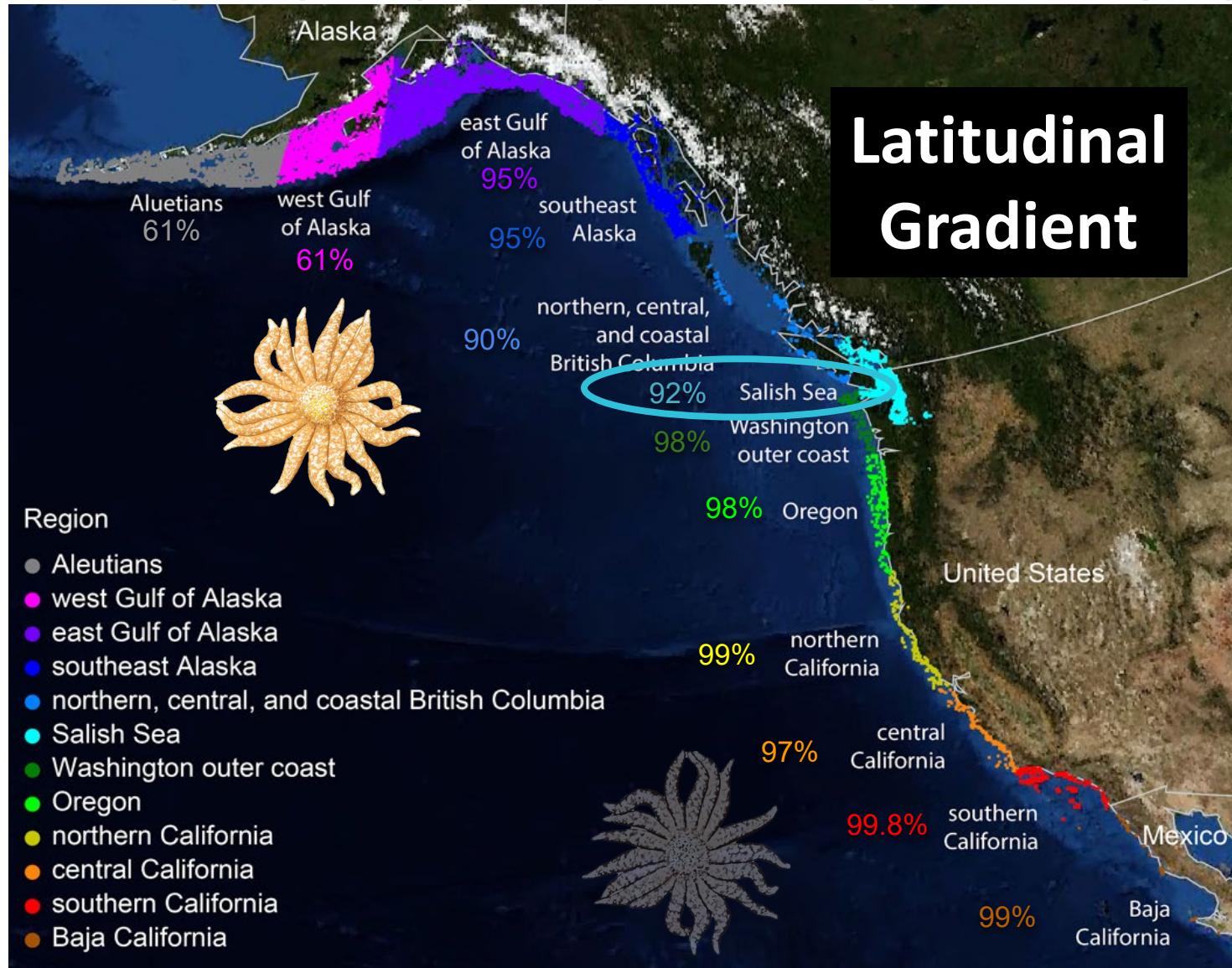
- **2020 Critically Endangered with the IUCN Red List**



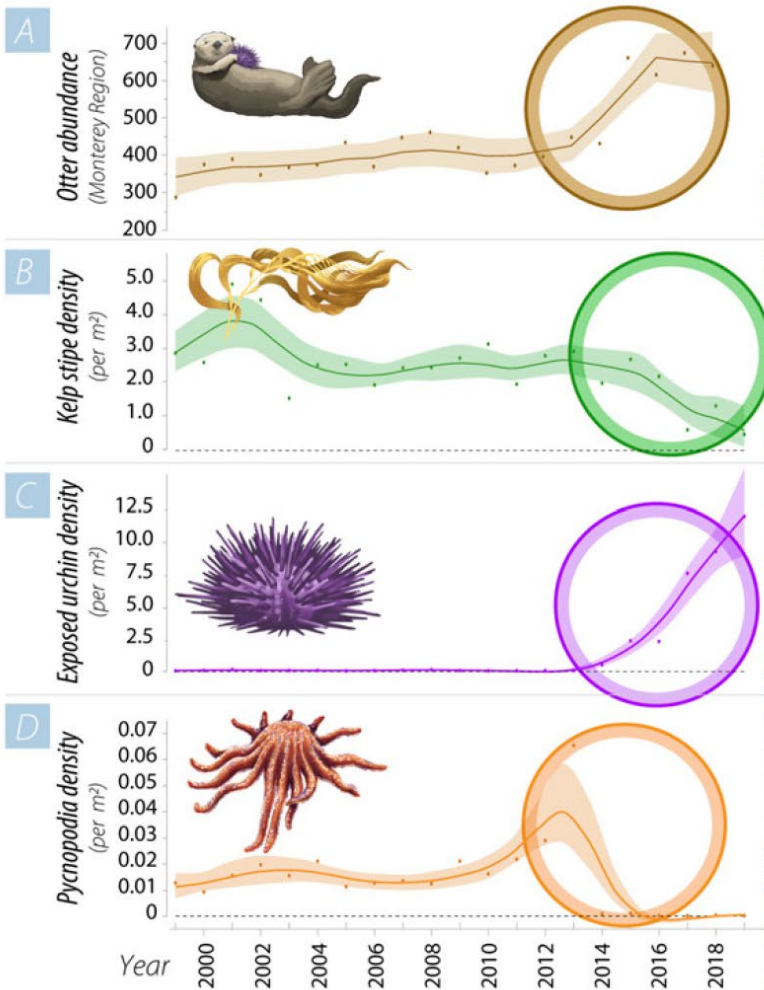
- **2021 Petition to list under ESA with NOAA Fisheries**



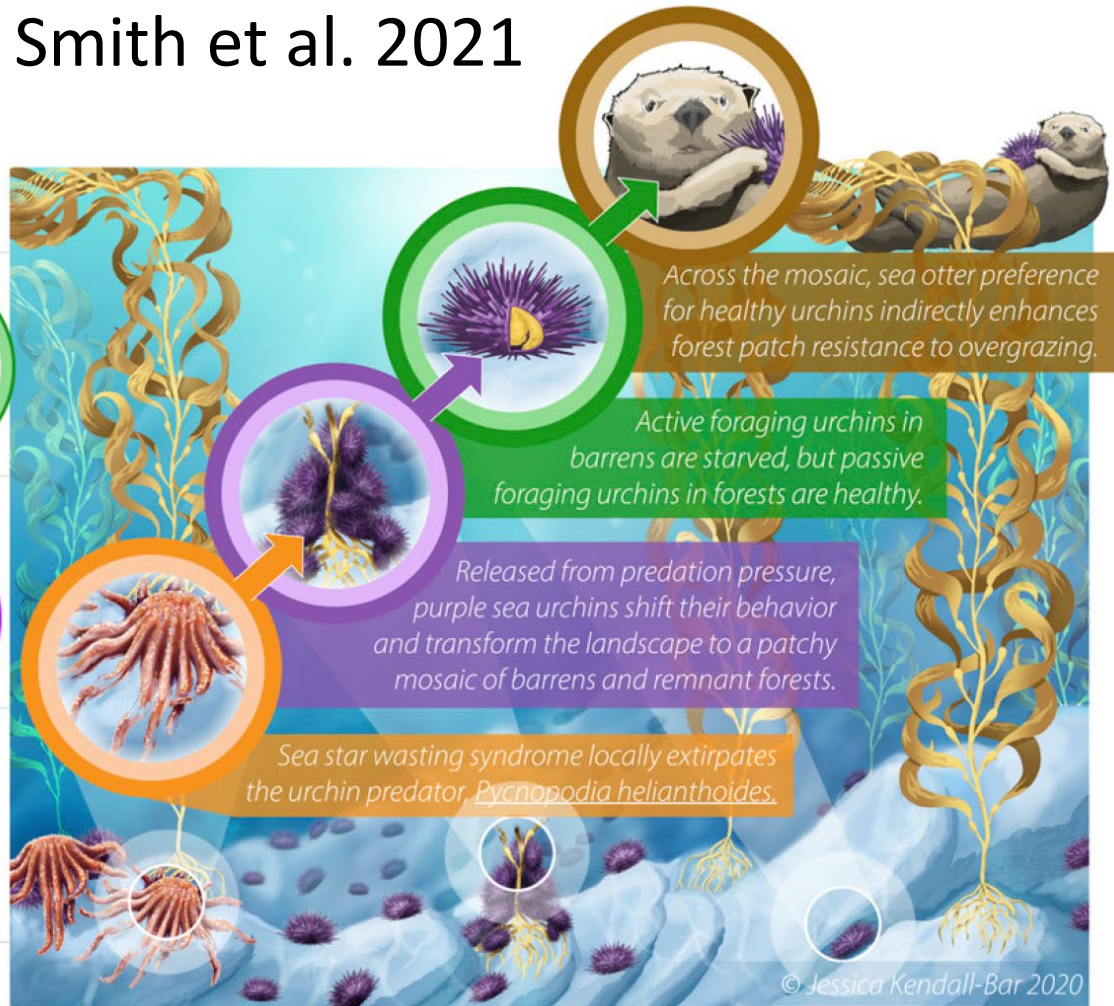
Sunflower sea star – sad facts



Sunflower sea star – sad facts



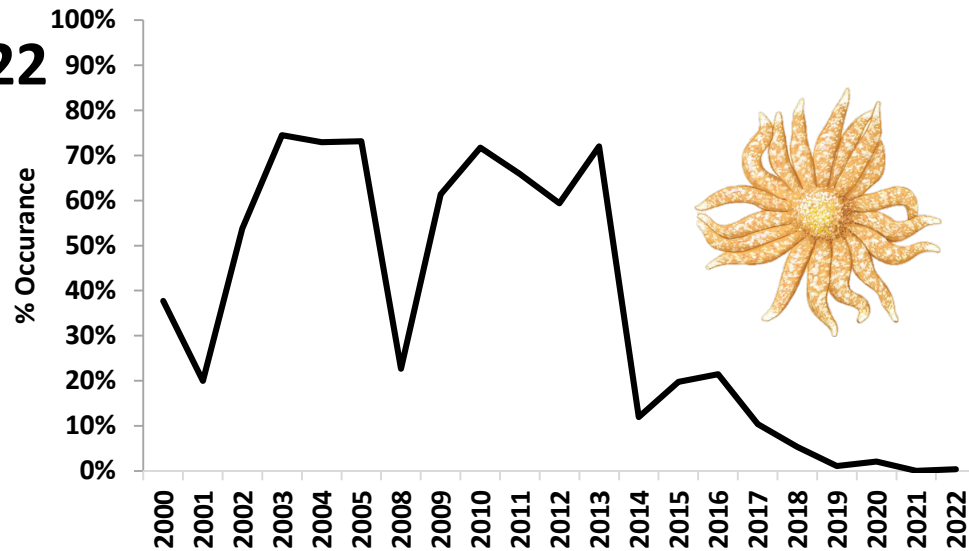
Smith et al. 2021



Sunflower sea star – South Sound

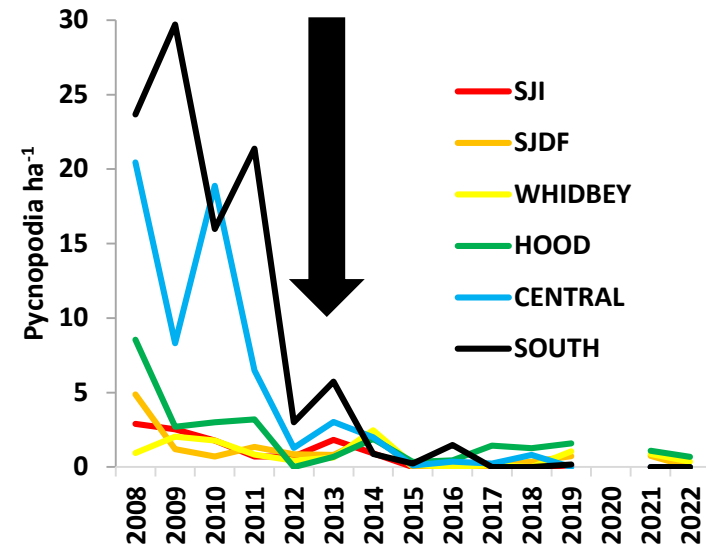
WDFW dive surveys 2000 - 2022

- Geoduck and sea cucumber
- Different areas each year
- Depths: 15ft to 70ft
- Present on/near transect



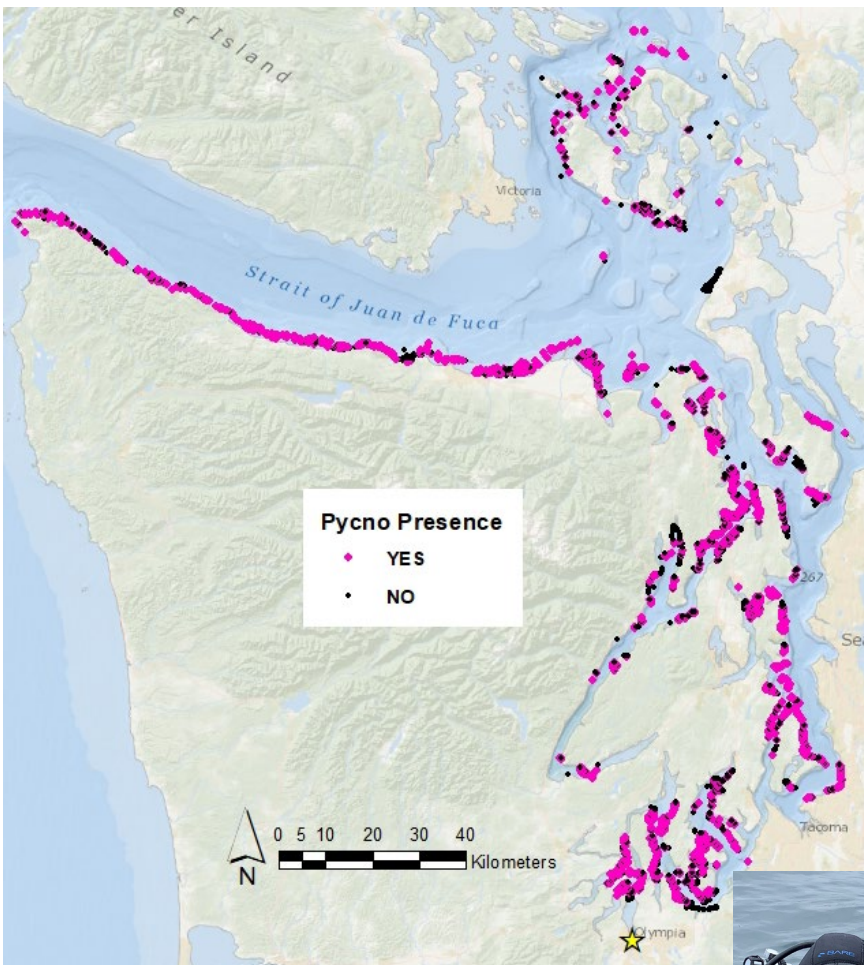
WDFW trawl surveys 2008 - 2022

- Bottomfish + benthic community
- Same index sites each year
- Depths: 30ft to 600ft
- Density (n/hectare)

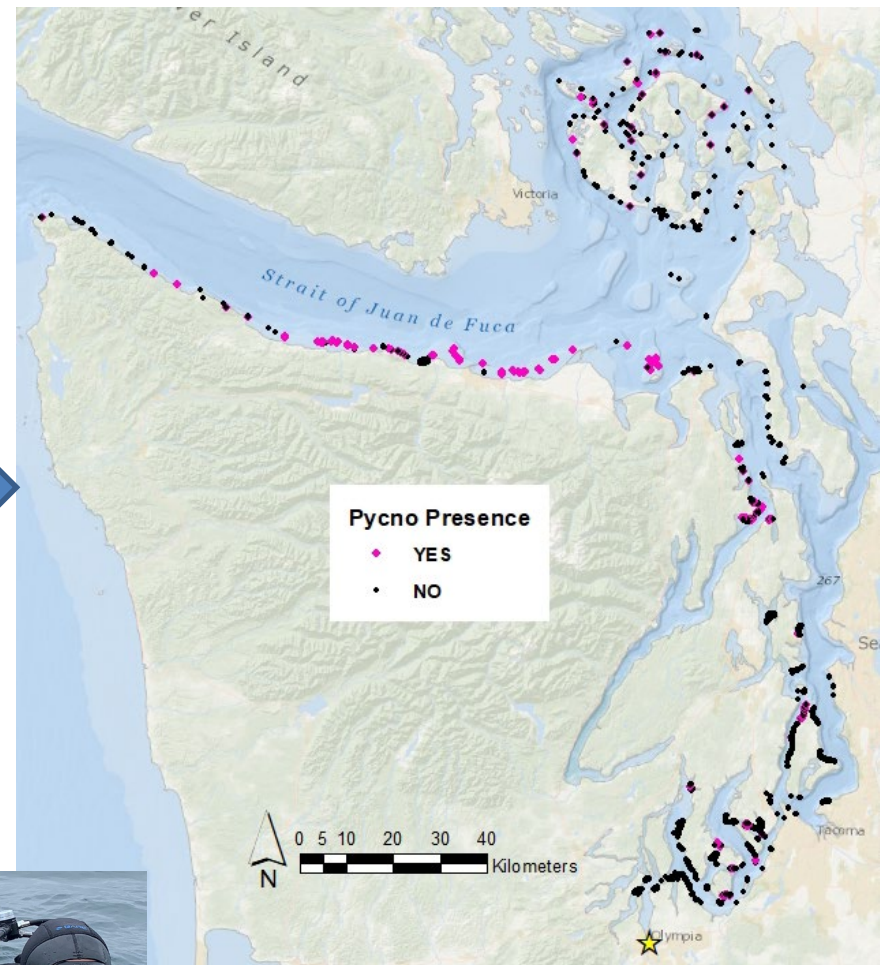


Sunflower sea star – Dive Surveys

1984 - 2013

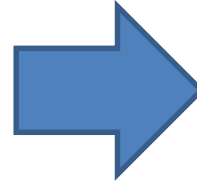
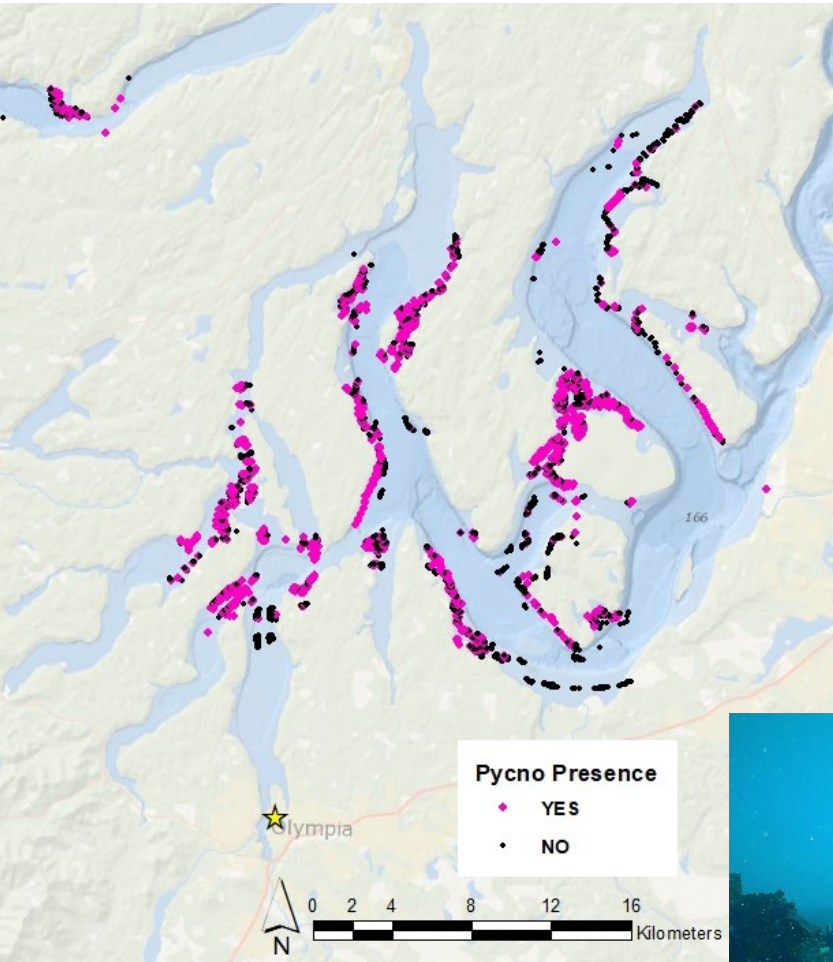


2018 - 2022

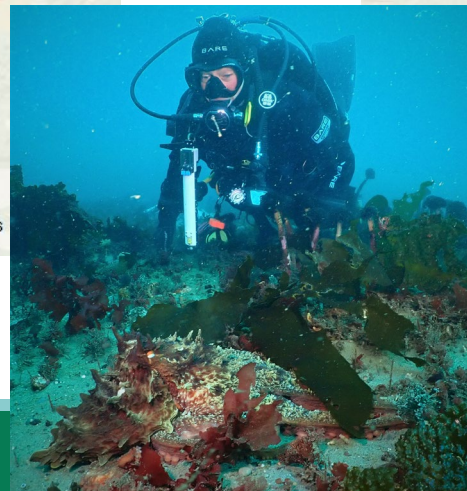
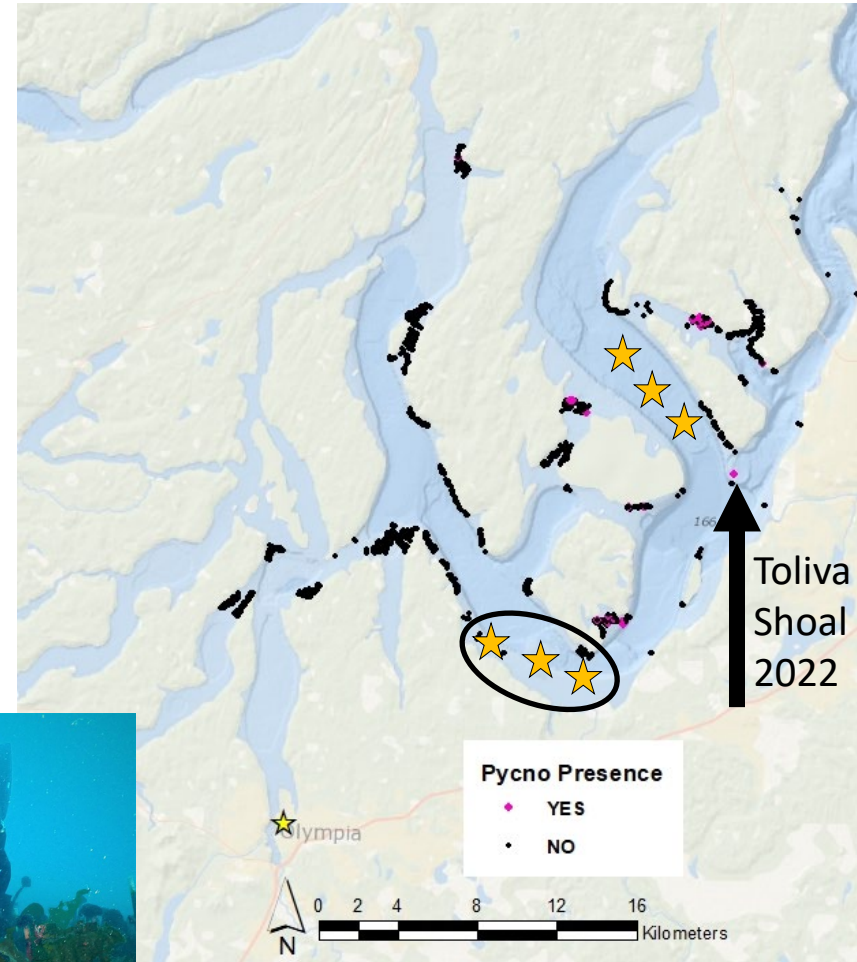


Sunflower sea star – Dive Surveys

1984 - 2013



2018 - 2022



What's next?

- **ESA petition decision to be announced soon...**
 - What could ESA listing implications be for South Sound and WA?
- **The Nature Conservancy – Roadmap to Recovery for the sunflower sea star**
- **Captive rearing and/or translocations are being discussed**
- **WDFW assisting research to determine causative agent & genetic resistance**
- **WDFW will continue to monitor recovery in South Sound and rest of the State**





“We’re all in this together!”

