East Maui Stream and Estuary Project

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Division of Aquatic Resources

Department of Land and Natural Resources State of Hawaii

Commission on Water Resource Management State of Hawaii

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SPORT FISH RESTORATION

monitoring report:

Aquatic species monitoring of East Maui streams and estuaries at 100% baseflow conditions.


Estuaries form where salt and freshwaters mix.


Streams contribute to coastal food webs.

>125 native species recorded in estuaries





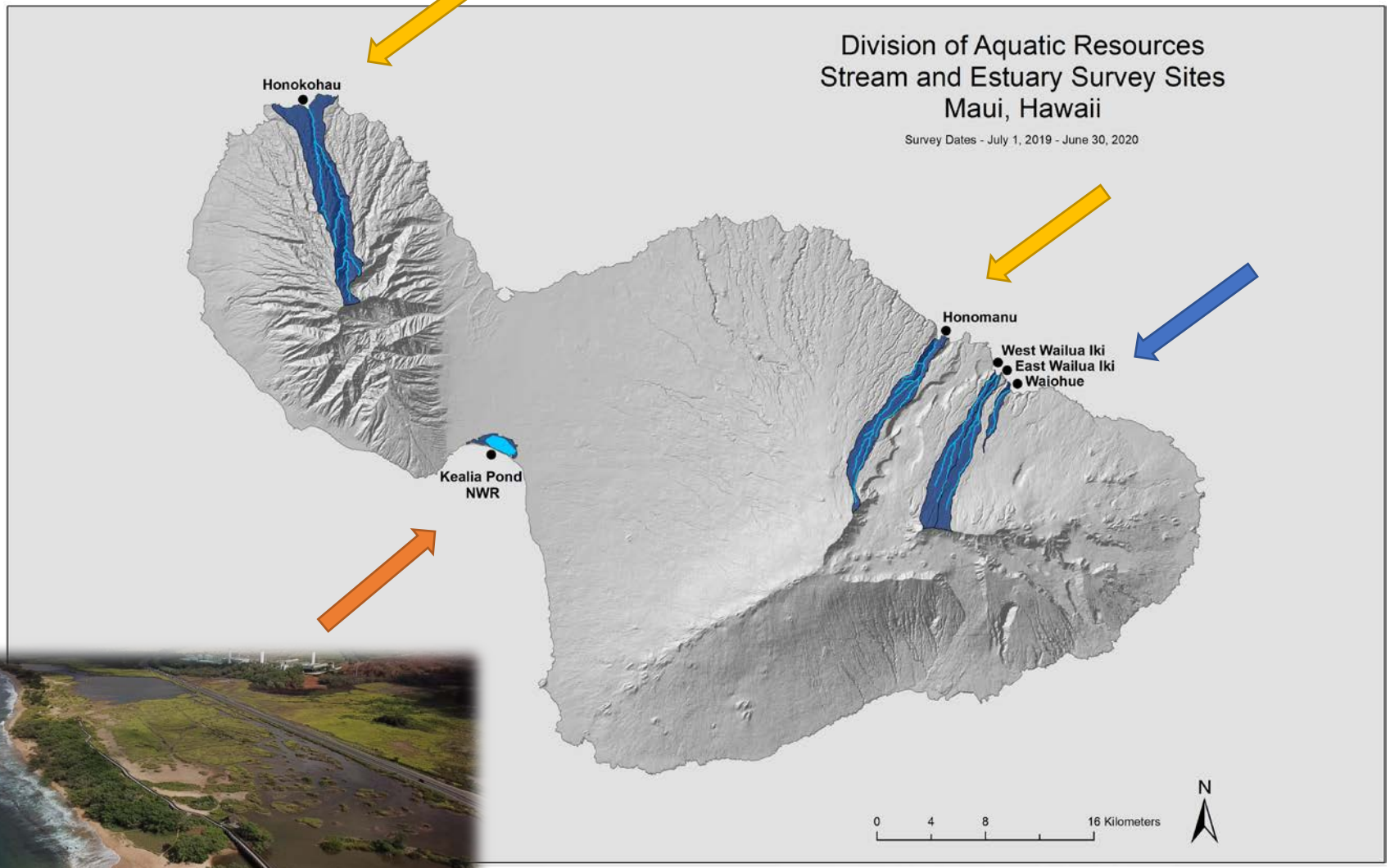







Healthy estuaries are needed for sustainable fishing.

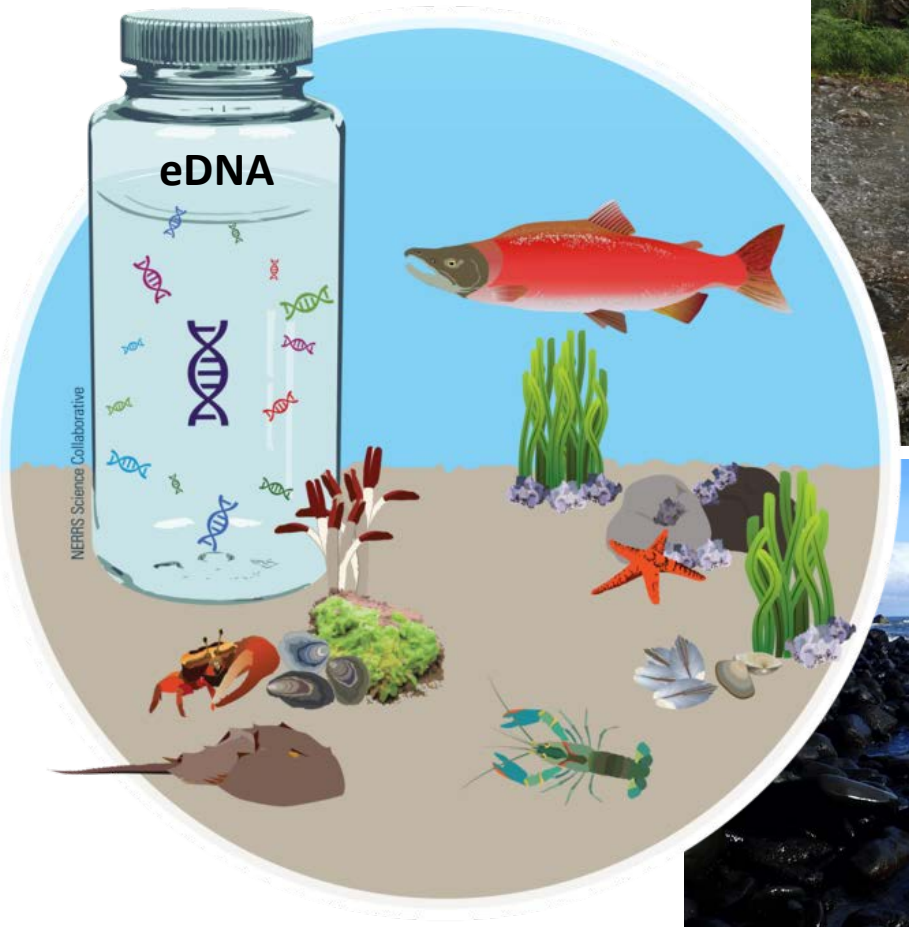
Six sites were monitored.

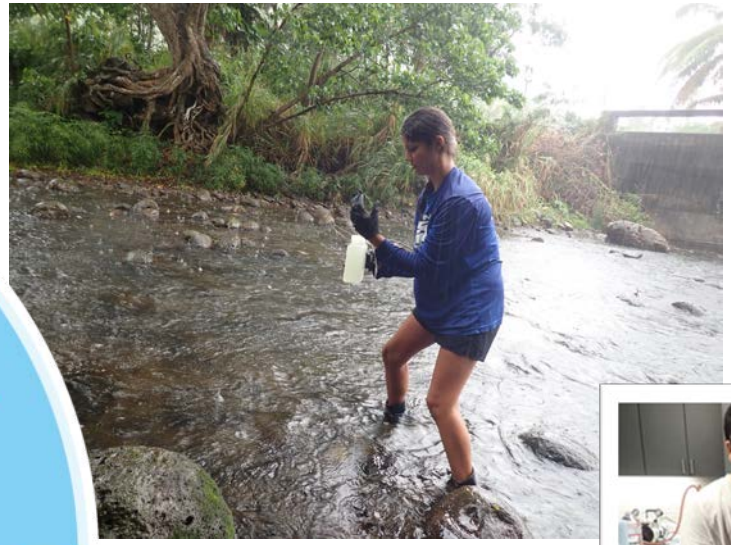


Stream methods

Cast net surveys – 2 methods

Why Environmental DNA?



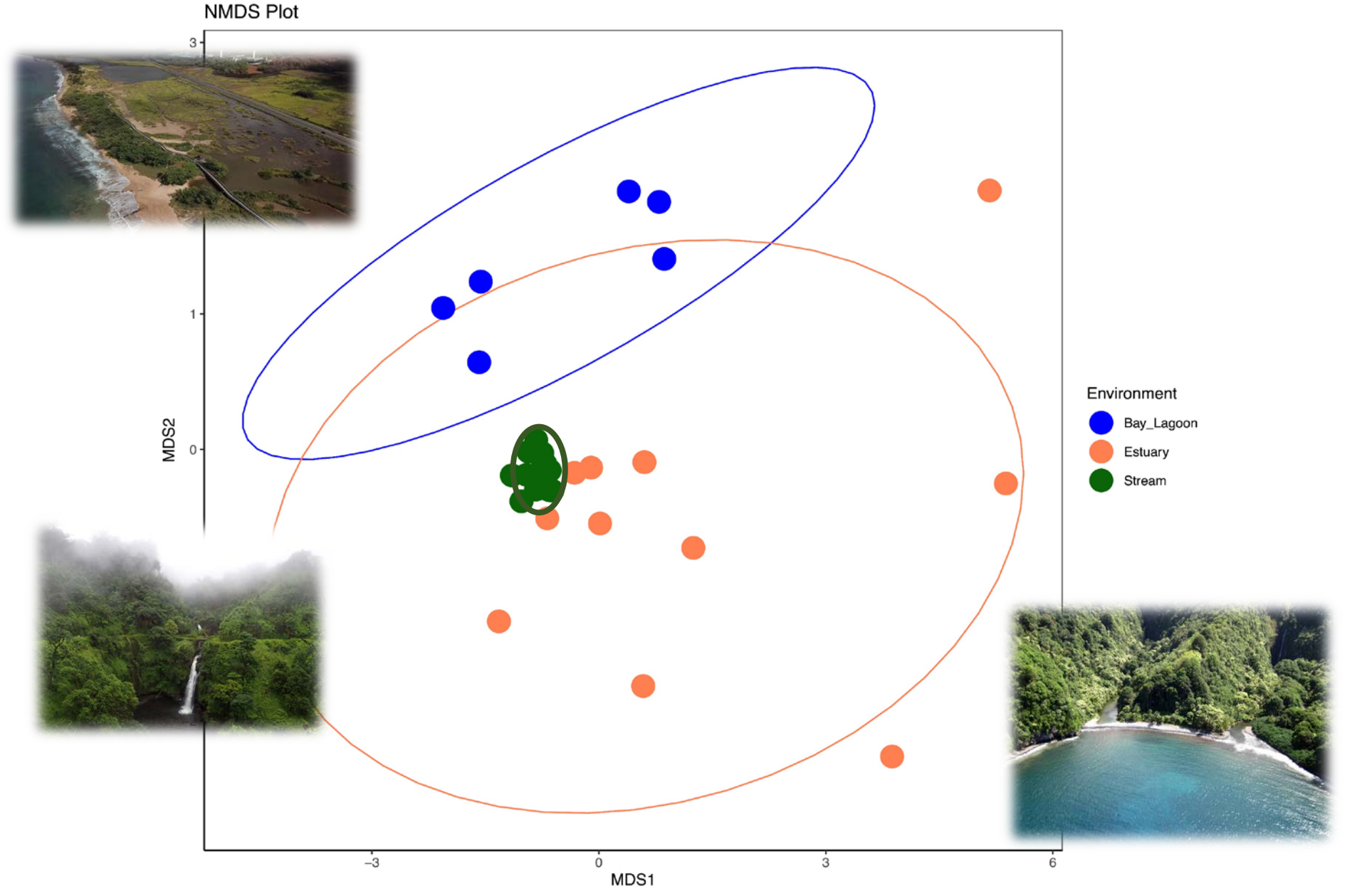


Biodiversity highlights

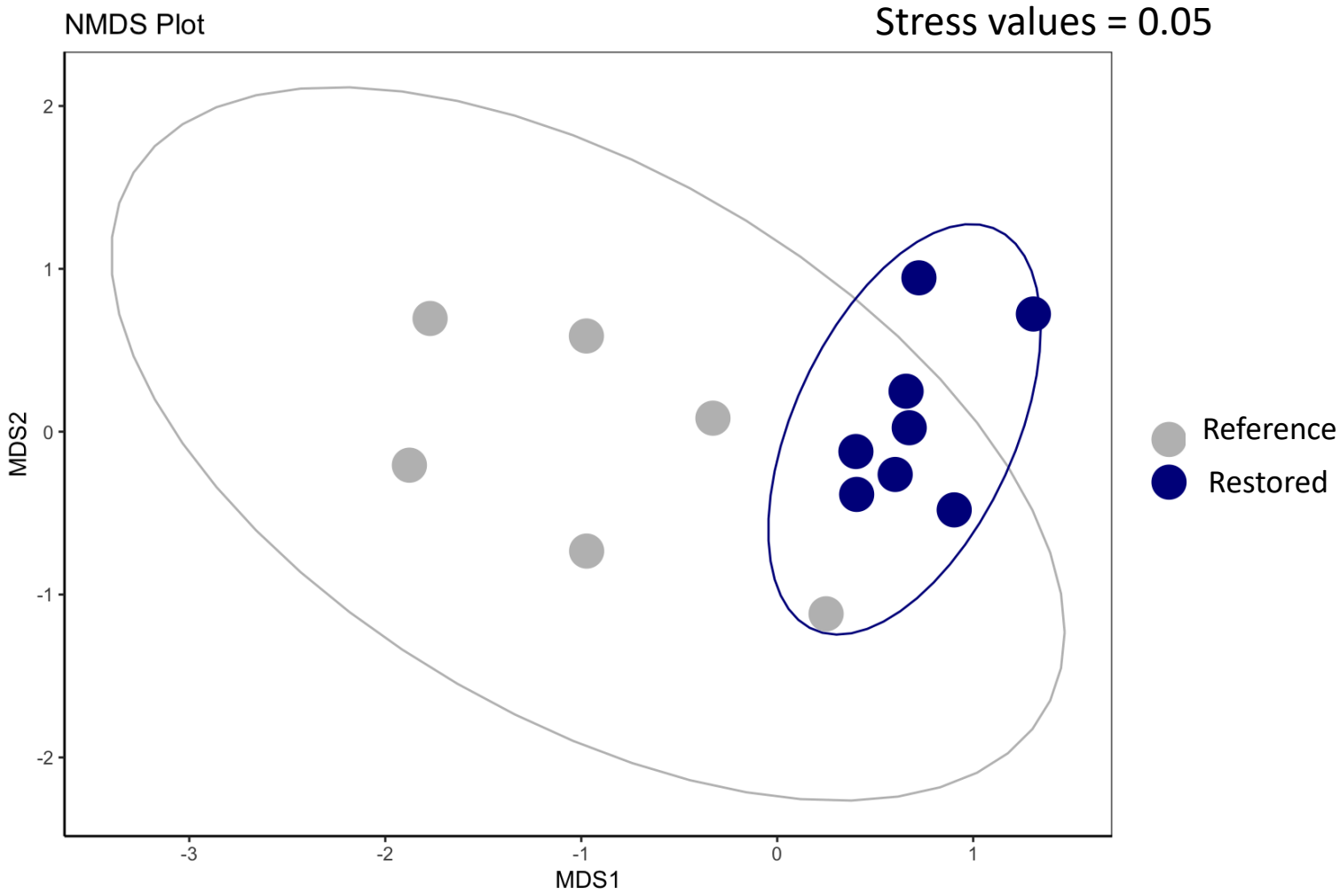
Two estuaries, Honomanu & Honokohau had >50 native fish species, biodiversity on par with coral reefs.

Two streams, Honomanu & Honokohau Stream had highest invertebrate biodiversity. Invertebrates are critical in food webs.

eDNA reveals 3 different fish communities



Fish communities in restored streams distinct from those in reference sites



Fish communities in restored estuaries are also distinct.

Stress values = 0.09

Why are these results important?

eDNA detects stressers in watersheds

Takeaways

- Juvenile recruitment is a key indicator for stream health
- Connectivity is essential for recruitment success of freshwater species
- Life cycle of freshwater species is an important source of food for juvenile fish using estuaries
- Healthy streams contribute to productive estuaries
- Stream flow impacts both streams and estuaries
- Restoring streams and estuaries can improve fishing opportunities

Next steps

- Continue to collaborate with CWRM to monitor and document how flow impacts aquatic resources
- Share lessons learned with other divisions
- Extend our monitoring to include streams and their estuaries before and after flow restoration
- Preform follow up monitoring to track how streams and estuaries respond to management actions
- Expand monitoring to other streams and estuaries statewide


MAHALO