

Working with Charlotte County to protect sportfish nursery habitat using a Vulnerability Index

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Juvenile Tarpon Habitat Program Manager

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Recreational Saltwater Fishery



- ECONOMIC IMPACT >**\$11 BILLION/YEAR**
- DEPEND ON HEALTHY AND AVAILABLE HABITATS
 - 44% OF WETLANDS LOST
 - 50% OF MANGROVES STATEWIDE
 - 85% IMPOUNDED ON EAST COAST



Recreational Saltwater Fishery



ATLANTIC TARPON

- HIGHLY PRIZED GAMEFISH
- MASSIVE BODY SIZE
- FUN TO CATCH
- ECONOMICALLY VALUABLE



COMMON SNOOK

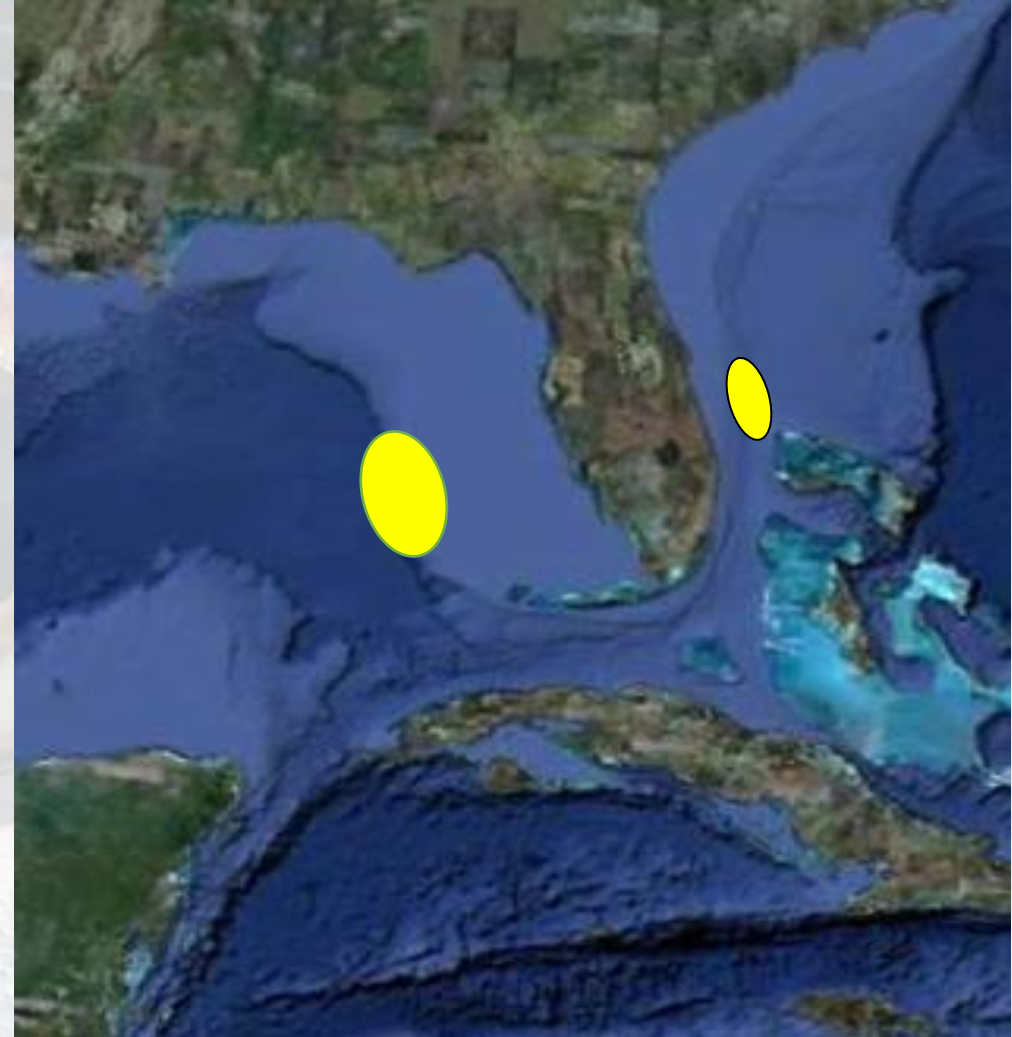
- CULTURALLY IMPORTANT THROUGHOUT FLORIDA – DRIVING TOURISM
- SPECIES OF INTEREST BY FWC

Life History of Tarpon



SPAWNING

- DURING FULL AND NEW MOONS
- LATE SPRING – SUMMER (HIGH WATER)
- OFFSHORE DEEP WATERS (80-100 MI)
- BROADCAST SPAWN



Life History of Tarpon



LARVAL

- LEPTOCEPHALUS
- TRANSPARENT WITH LARGE EYE
- ABOUT 30 DAYS



Life History of Tarpon



LARVAL

- LARVAE MOVE BACK INSHORE INTO ESTUARIES AND TIDAL CREEKS AND OTHER INLAND COASTAL HABITATS



Juvenile Sportfish Nursery Habitat



JUVENILES

- BACKWATER SYSTEMS
- TIDAL
- EPHEMERALLY CONNECTED



Juvenile Sportfish Nursery Habitat



THREATS

- NUTRIENT RUNOFF
- SEPTIC LEACHING
- ALTERED FRESHWATER FLOWS
- HABITAT DEGRADATION OR ALTERATION
- TOTAL HABITAT LOSS



Juvenile Sportfish Nursery Habitat



FRAMEWORK OF SOLUTIONS

- SEPTIC TO SEWER CONVERSION
- FRESHWATER FLOW MANAGEMENT
- PROTECT NATURAL HABITATS
- HABITAT RESTORATION



Juvenile Tarpon Habitat Mapping



IDENTIFY NURSERY HABITATS

- ESTABLISHED JANUARY 2016
- TARGET TARPON 12 IN AND UNDER
- MUST BE CURRENT LOCATION
(2 YEARS OR LESS)



BONEFISH & TARPON TRUST
Juvenile Tarpon Habitat Mapping

Juvenile Tarpon Habitat Mapping



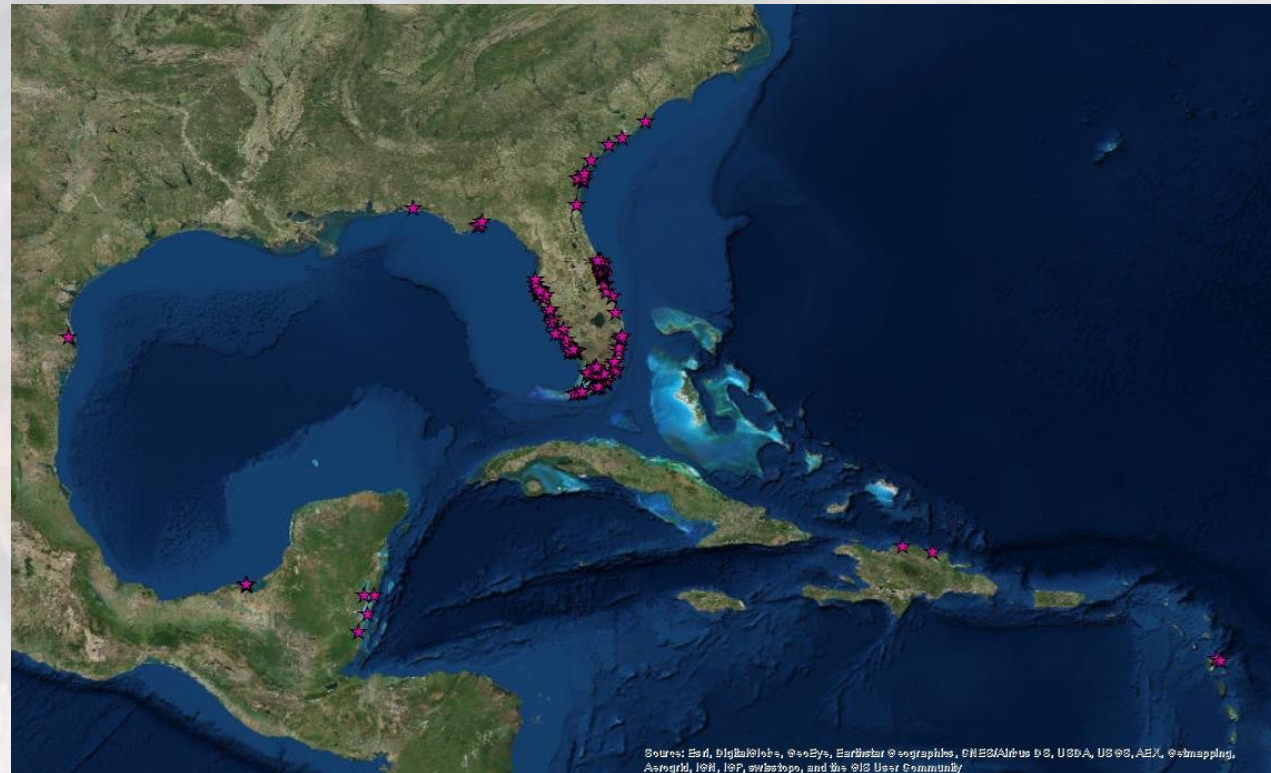
- LATITUDE/LONGITUDE
- WHAT SIZE FISH? (MULTIPLE SIZE CLASSES)
- WHAT MONTHS OUT OF THE YEAR?
- NATURAL OR ALTERED?



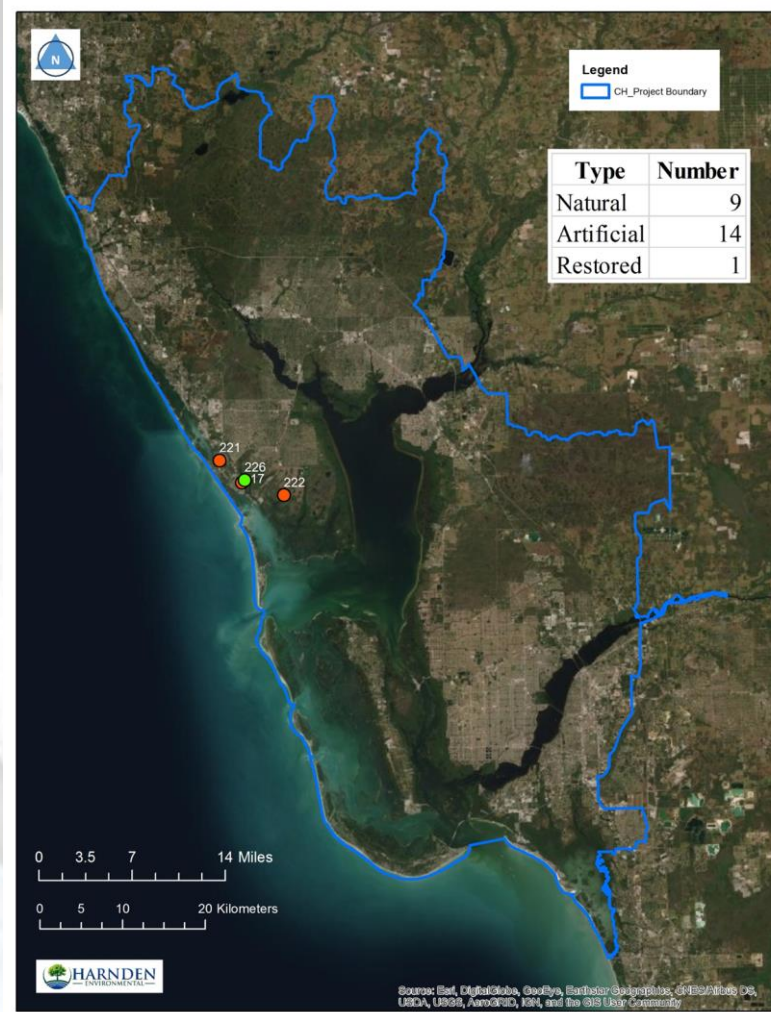
Juvenile Tarpon Habitat Mapping



- 300+ LOCATIONS
- 6 COUNTRIES
- >100 ANGLERS
 - 62% ALTERED



Juvenile Tarpon Habitat Mapping



- JANUARY 2021 BTT INTERNALLY FUNDED MAPPING
 - SPECIFIC TO CHARLOTTE COUNTY
- NATURAL SITES RECOMMENDED FOR PROTECTION
- DEGRADED SITES ARE PRIORITIZED FOR HABITAT RESTORATION
 - LAYERS USE FEASIBILITY, BIOLOGY & CONNECTIVITY



CHARLOTTE COUNTY PLAN

- MULTI-AGENCY
COLLABORATION

Summary of CHNEP Habitat Conservation Subcommittee Project & Report:

Knowledge Co-Production for Place-Based
Recreational Fishery Conservation in
Charlotte Harbor

Corey Anderson
Florida Fish and Wildlife Conservation Commission

Presentation to CHFI
September 14, 2022





Central Themes



Additional Research

- Fish Surveys
- Habitat Characterization
- Baseline Water Quality
- Hydrological Modeling
- Habitat Evolution Model

GIS Layers

- Zoning
- Infrastructure
- Permitted Land Use
- Density

Alternative Land Protection Strategies

- Land Acquisition
- Social Marketing
- Rolling Easements



Applying the Knowledge



VULNERABILITY INDEX (VI):

- OVERLAY HABITAT LAYERS
 - RESTORATION PRIORITIZATION
 - NATURAL HABITATS
 - HYDRODYNAMIC CONNECTIVITY
- POTENTIAL DEVELOPMENT LOCATIONS
 - HIGH - NATURAL SITE AT RISK FOR DEVELOPMENT
 - LOW - A PARCEL WITHIN A DEVELOPMENT AREA



Applying the Knowledge



WHAT ARE OUR OPTIONS?

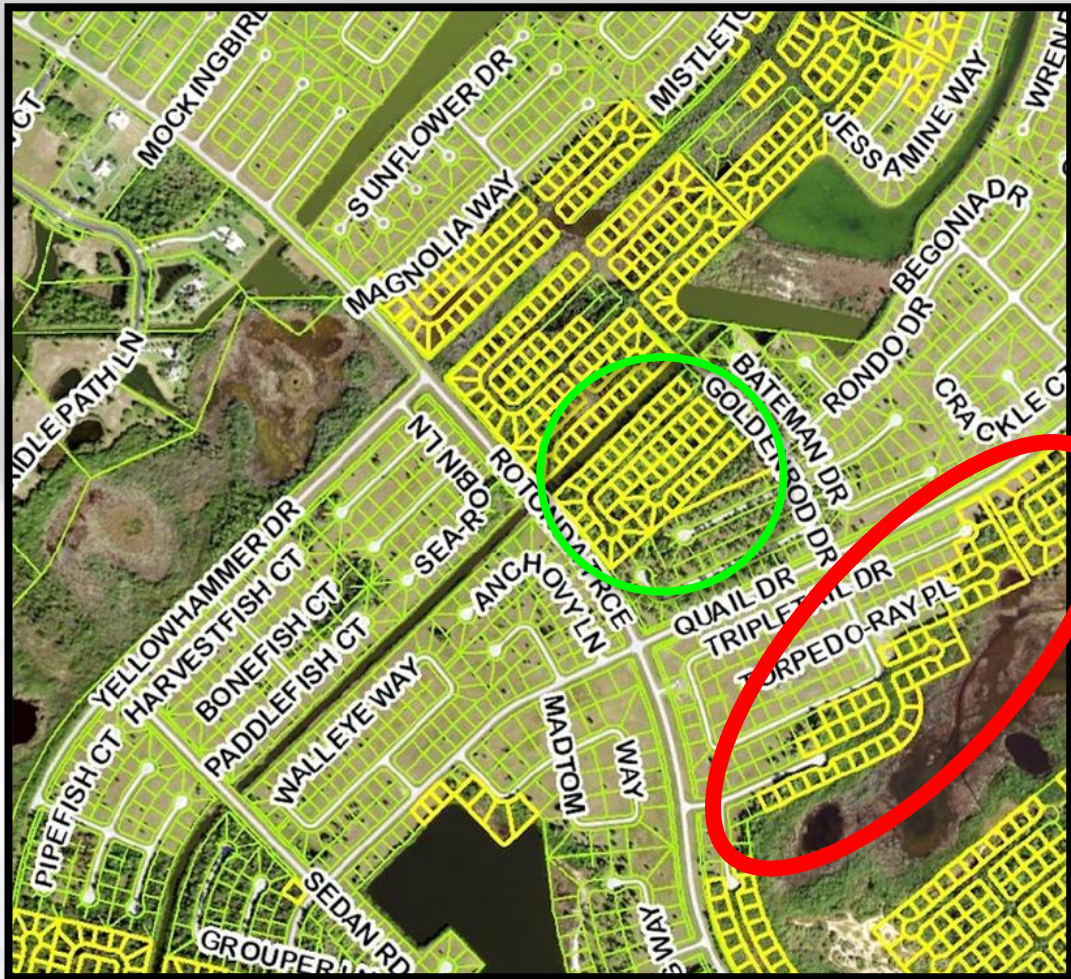
- FURTHER REVIEW BY FWC/DEP
- SHIFT DENSITY UNITS
- DEVELOPMENT DESIGN THAT LESSENS IMPACT TO HABITAT QUALITY OR WATERSHED FLOWS
- SPECIES SPECIFIC REGULATIONS
 - SCRUB JAY
 - GOPHER TORTOISE
 - JUVENILE SPORTFISH?



EXAMPLE:

- ROTONDA MEADOWS
- CAPE HAZE PENINSULA
- PROPOSED DEVELOPMENT







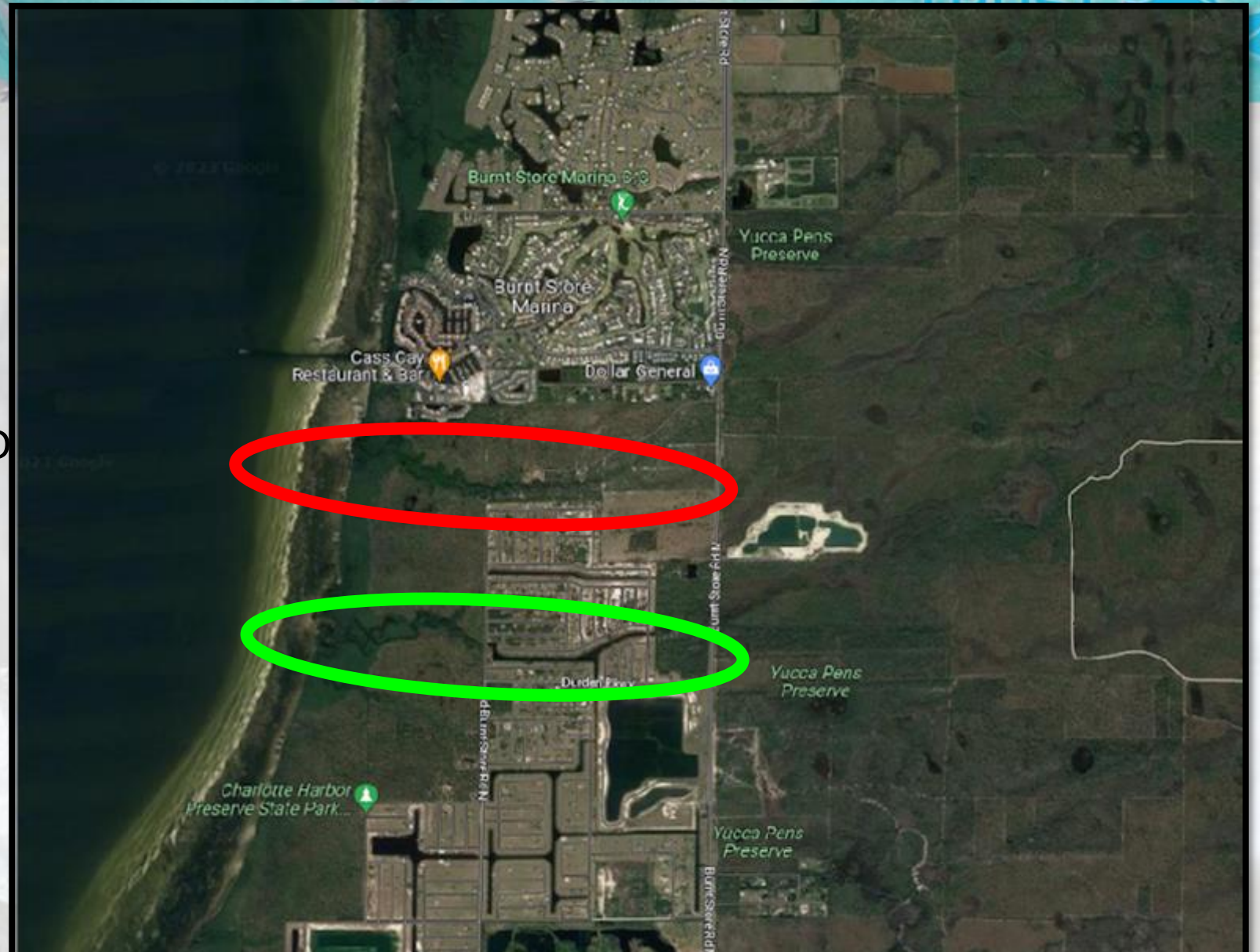
EXAMPLE:

- ROTONDA MEADOWS
- PARCELS FLAGGED IN THE SOFTWARE ALONG THE TIDAL CREEK SYSTEM

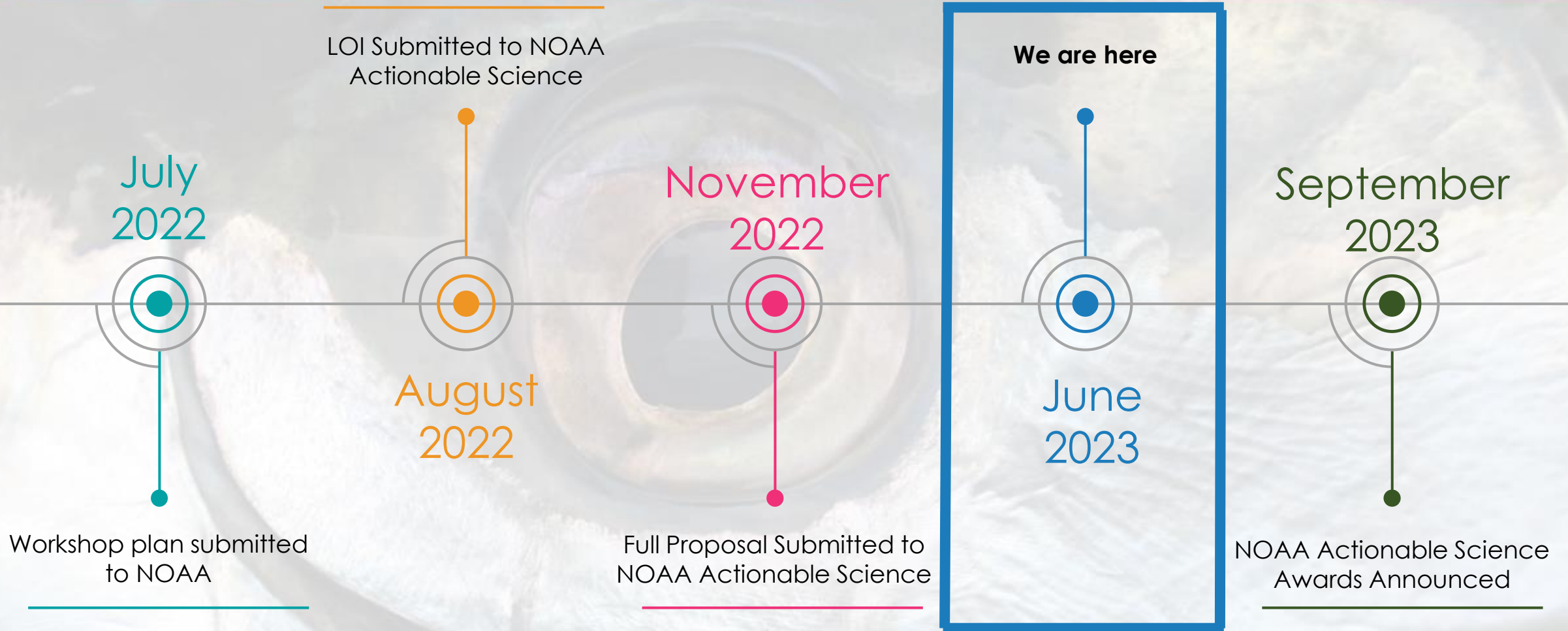


EXAMPLE:

- BURNT STORE ROAD
- IDENTICAL CREEKS
 - ONE ALREADY IMPACTED
 - ONE MORE NATURAL
- HYDROLOGIC CONNECTIONS
- LAND ACQUISITION



Grant Funding Timeline



QUESTIONS?



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