TRIUMPH GULF COAST, INC. PRE-APPLICATION FORM

APPLICANT INFORMATION:

Name of Entity/Organization: The Oyster Restoration Company & Hatchery, LLC. (TORCH)

Proposal Title: Apalachicola Bay One Billion Oyster Restoration Project

Brief Description of Entity/Organization: The Oyster Restoration Company & Hatchery (TORCH) is a privately-owned aquaculture facility founded in 2018 by local business executive Donnie McMahon at the port in downtown Pensacola. The purpose of the production facility is to supply triploid and diploid oyster seed to Florida farms as well as produce *Heritage* seed for wild stock enhancement and habitat restoration in Florida's Gulf estuaries. While expanding the aquaculture industry along the Gulf coast is a priority, the vision of success also includes revitalizing Florida's wild oyster populations to historic levels. TORCH utilizes aquaculture along with innovative products and techniques to rebuild oyster reefs for sustainable harvesting, habitat restoration, and improved water quality. To accomplish this objective, TORCH is the Gulf coast sub-licensee of Oyster Catcher™ products as well as a partner with public universities, state agencies, and NGO's for industry driven research that develops best practices. Lastly, TORCH focuses on enhancing private/public collaborations and being a facilitator of not-for-profit initiatives to expand and educate the private sector regarding the Gulf coast aquaculture industry as well as Florida estuarine restoration.

Contact Information:

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Names of co-applicants, partners or other entities, organizations that will have a role in the proposed project: TORCH and University of West Florida (UWF) are collaborators with roles defined in executive summary.

REQUIRED EXECUTIVE SUMMARY: In a maximum of three (3) pages, please describe the proposed project or program, including (i) the amount of funds being sought from Triumph Gulf Coast; (ii) the amount and identity of other sources of funds for the proposed project or program; (iii) the location of the project or program; (iv) summary description of the proposed program, including how the program will be transformational and promote economic recovery, diversification, and enhancement of the disproportionately affected counties, and (v) a summary timeline for the proposed project or program. IMPORTANT NOTICE This pre-application process will not result in an award of funding by Triumph Gulf Coast. Rather, this process is designed to facilitate submission of ideas for potential projects or programs before the Applicant expends time and/or resources to complete a full Application. All Applicants for funding are required to complete an Application, which will be scored, and then considered for award in the discretion of Triumph Gulf Coast Board.

EXECUTIVE SUMMARY

Background and Need: Apalachicola Bay has been historically and nationally synonymous with bountiful and delicious wild harvested oyster production. Oysters are not just an economic resource on which many job industries and household incomes depend; they are also the cultural centerpiece of a once thriving community. Apalachicola Bay is often referred to as part of the "Forgotten Coast", where in some regards time has stood still. This sentiment includes the community's ideology about the oyster industry and subsequent businesses that rely on wild oyster harvesting. New technologies such as floating oyster farms are rejected in favor of traditional tong harvesting of wild oysters. Families hold on to their multi-generational bottom leases in hopes that the reefs will recover and thrive once again. The old ways prevail, and while restoring this natural resource benefits the bay ecologically, revitalizes an industry, and grows the local, state, and regional economy, it also gifts a community their culture.

Funds being sought from Triumph Gulf Coast: $15,000,000

Funds for	**Costs Per Year**	**Costs for 3 Year Total**
Oysters	$3,333,333	$10,000,000
Tufts	$1,000,000	$3,000,000
Administration	$6,666	$20,000
Predator Prevention	$330,000	$990,000
Monitoring	$330,000	$990,000
Totals	**$5,000,000**	**$15,000,000**

Amount and identity of other sources of funds for the proposed project. Potential match funds will be sourced through The Nature Conservancy and University of North Carolina – Chapel Hill in the form of either in-kind contributions or cash cost-share.

Project Location: The project will take place in Apalachicola Bay, in Franklin County, Florida. Approximately 500 acres of historic oyster reefs within the bay will be revitalized with one billion sub-adult oysters. Specific restoration sites within the bay will be determined based on research and local/state agency advisement.

Project Summary**:** The purpose of this project is to rebuild the Apalachicola Bay wild oyster commercial harvest through the deployment of one billion spat over 500 acres on pre-seeded, biodegradable substrate in Franklin County over a three-year period. Indirect benefits to the ecology of the system will include improved water quality and increased finfish nursery habitat. Restoring historical oyster reefs and reigniting the wild oyster populations will reestablish landings to historic levels, as well as rebuild a culture that defines a community. Pre-seeded material expedites the development of natural reefs through an already established F1 generation, providing additional substrate for natural secondary recruitment, and adding the biomass of F2 recruitment through the spawning of the deployed seed the following season. The substrate will degrade as the natural oyster bed forms, leaving no artificial material in the ecosystem, resulting in a naturally developed and harvestable oyster reef. Similar projects are currently being funded and executed by our partners at the University of North Carolina on the Atlantic coast. Oyster Catcher™ products are currently being utilized in a large-scale oyster habitat expansion project in

the New River Estuary, North Carolina. This project included reviews by various North Carolina agencies and federal agencies, among them the U.S. Army Corp of Engineers, U.S. Fish and Wildlife Service, and National Marine Fisheries Services. The substrate has been evaluated by the N.C. Division of Marine Fisheries, who noted its ability to lure oyster larvae to settle and grow.

Production of 1,000,000,000 oysters will occur over three years at a rate of approximately 333 million oysters and deployed on 167 acres each year. The resource investment per acre of $26K provides an initial return of $174K with a conservative estimate of 25% oyster survival. Expected survival utilizing the proposed innovative techniques will increase significantly in comparison to traditional restoration methods. The market value return based on an anticipated 50% survival increases to $374K per acre or $185M overall. However, the overall economic impact will reach much farther than the value of the harvestable resource. Investing that value into the community will drive industry expansion in terms of the number of jobs created in oyster harvesting, expansion of the oyster market supply chain, the need for new processing houses, fleet maintenance, ecosystem services, and tourism. An economic impact assessment will be provided in the full application.

Materials and Methods Overview: Pre-seeded Oyster Catcher™ Tufts will serve as substrate and be deployed on historical oyster beds. This product consists of jute strands that are coated in specially cured Portland cement and shaped in three dimensional bunches for optimal surface area (Figure 1).

Figure 1. A – Unseeded form of the biodegradable cultch called a "tuft". B – View of an oyster-coated tuft deployed in the Newport River, NC from June through August 2018. C – Pre-seeded substrate at TORCH, 1" in size at five months

Advantages of using Oyster Catcher™ Tufts as substrate are numerous, including:

- being biodegradable, deployed over sandy or muddy bottoms, easily deployed and easily harvested, and silt resistant
- they provide predation protection through rugosity of design
- ecological development is expedited as substrate is pre-seeded
- natural recruitment increases biomass to the bed; and subsequent generational spawning will further increase biomass. i.e., the reef will develop exponentially sooner than passively waiting for attracted natural recruitment to occur.

Tufts will be seeded using Apalachicola *Heritage* spat – TORCH's unique method of spawning native broodstock from the estuary that is to be restored. Apalachicola Bay wild harvested diploid oysters will

be conditioned and spawned, the larvae reared, and the substrate seeded at TORCH. Seeded oyster tufts will be deployed on historical oyster beds within the bay.

The pre-seeded substrate will subsequently be protected with research supported predator prevention equipment and protocols to further increase survival through grow-out, to the point of market size. Traps will be strategically deployed within and surrounding the project areas. The combination of predator prevention, the unique substrate structure, and less-susceptible size of the oysters deployed will considerably increase the success of restoration in comparison to traditional reseeding techniques.

UWF researchers will conduct monitoring in three contexts: the status of the oyster population, predator abundance and predation rates on oysters, and environmental variables (e.g., salinity and temperature) that may influence oysters and their predators. Monitoring the oyster population will assess the viability of the seeded oyster population, as well as when the population may be sufficiently robust for sustainable harvest. UWF will follow accepted protocols to collect data on oysters, such as live oyster density, oyster size-frequency distribution, and mortality. Monitoring will include measures of density and size-frequency distribution on a quarterly basis, but we can adjust this based on local conditions, any significant environmental fluctuations (e.g., large rain events), and any trends observed in the data. UWF will also quantify mortality due to predation (we will include predator exclusion devices to measure predation impacts) and evaluate the cost-benefits of predator control for this and future oyster-seeding projects.

This project will be a private/public collaborative effort between TORCH and UWF with support and input from Florida Department of Environmental Protection, Florida Fish and Wildlife Commission, Florida Department of Agriculture and Consumer Services – Division of Aquaculture, The Nature Conservancy, local government, and stakeholders.

Outreach:
TORCH will engage stakeholders by conducting quarterly town hall meetings and providing marketing materials such as videos and presentations for tourism and hospitality support. Upon completion, an ArcGIS map of reestablished reefs and seeded acreage will be created and made available to stakeholders. All research and data will be available as either published peer-reviewed literature or formatted for educational outreach. Large quantities of an oyster drill harvest could result in marketing the nuisance species as an exotic food source in craft markets (http://eatalabamaseafood.com/articles/the-nuisance-group-trash-fish/), similar to the lionfish initiative successfully being executed in Florida and along the Gulf coast.

Timeline

TORCH is currently capable of full-scale operation with seed and substrate production beginning Y1/Q1 and continuing through Y3/Q3. Predation prevention will begin Y1/Q1 and continue throughout. Seed deployment will begin Y1/Q3 and will occur until Y3/Q4. UWF monitoring will begin Y1/Q1, continue throughout the three-year project, and may continue in subsequent years pending match and other sources of funding. The Apalachicola Bay One Billion Oyster Restoration Project will be completed, and its economic impact felt prior to any currently funded Triumph Gulf Coast projects located in the area beginning their operations. The revolutionary approach will serve as a blueprint for future restoration projects in Apalachicola Bay as well as all other Florida estuaries, rebuilding economies and industries founded on the natural resource.