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DNA Barcoding of Deep Sea Fishes from the Oxygen Minimum Zone

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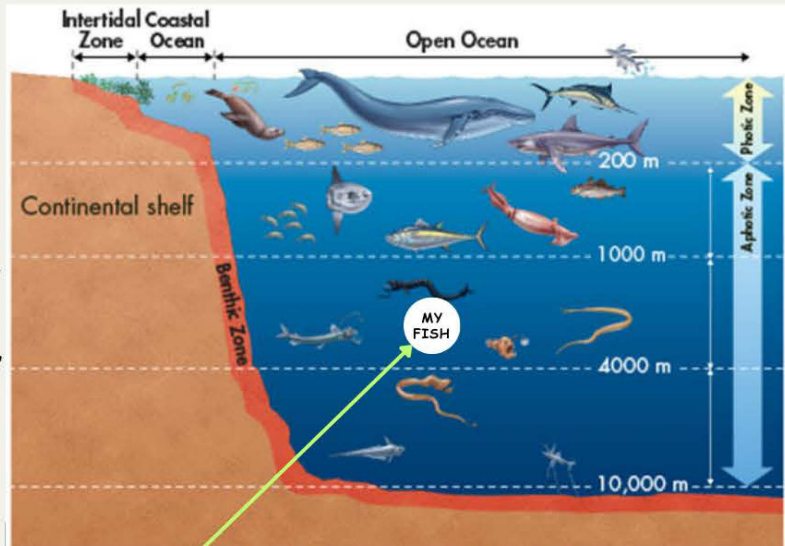
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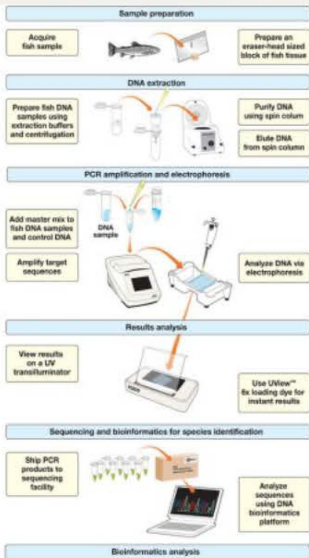
DNA BARCODING OF DEEP SEA FISHES FROM THE OXYGEN MINIMUM ZONE

INTRODUCTION

- DRAGON FISH (TACTOSTOMA MACROPUS) ARE WELL-SUITED TO LOW OXYGEN LEVELS IN THE OMZ.
- **RESEARCH QUESTION- HOW HAS THESE FISH SPECIES CHANGED THROUGHOUT TIME TO ADAPT TO THE ENVIRONMENTAL CIRCUMSTANCES FOUND IN THE OMZ?**
- **HYPOTHESIS- FISH POPULATIONS IN THE OMZ HAVE UNIQUE GENETIC MARKERS THAT SHOW THEY HAVE ADAPTED TO LOW OXYGEN LEVELS**



METHODS AND EXPERIMENTAL PLAN



- EXTRACTION OF DNA FROM FISH SAMPLES
- SETTING UP PCR REACTIONS
- ELECTROPHORESIS OF PCR PRODUCTS
- SEQUENCING PCR AMPLIFICATION
- SEQUENCING DATA ANALYSIS

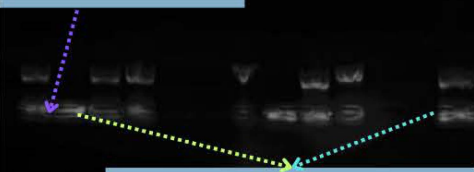
RESULTS & DISCUSSION



- PREDATORY ANIMAL
- AN ELONGATED, SLENDER BODY
- A HUGE MOUTH, AND KEEN TEETH
- CONTAINS SPECIAL LIGHT-PRODUCING ORGANS CALLED PIGMENTS ALL OVER ITS BODY

- SUCCESSFUL BARCODING OF THE FISH PROVIDED NEW INSIGHTS INTO ITS GENETIC COMPOSITION AND DIVERSIFICATION .
- SEQUENCING DATA REVEALED A HIGH PERCENT IDENTITY OF 90% FOR SPECIMENS MACROPUS.
- ACCURATELY IDENTIFIED AS THE TARGET SPECIES USING BARCODING, HIGHLIGHTING ITS EFFECTIVENESS FOR SPECIES-LEVEL IDENTIFICATION

CONTROL SAMPLE NH65
(OC1808B_NH65_MT1)



FISH SPECIES SHOWING THE MATCH

POLYMERASE CHAIN REACTION GEL LANES

BARCODING DATA SHOWED HIGH DEPENDABILITY, WITH MANY FISH MATCHING THE DESIRED SAMPLE.

YAMINI SINGH

THIS POSTER PRESENTS AN OVERVIEW OF A COLLABORATIVE LABORATORY EXERCISE OF A DEPENDENT RESEARCH THAT WAS UNDERTAKEN DURING BI361 LAB DURING FALL 2023

MARINE BIOLOGY

