

# **C.R.I.S.-** Coral Regeneration and Integration System

### Approach

It is estimated that 50% of our coral reefs have been lost since 1957. We wanted to create an ROV design that could assist with coral restoration and regeneration. To do this we created CRIS (Coral regeneration and integration system) CRIS uses a mechanical claw to grab coral and transports it to more sustainable areas



#### Abstract

For this years goal we wanted to incorporate coral restorations into our design. To do this the SeaPerch needed to be able to help coral. Our team decided on using a claw to grab and relocate coral into safer waters.

Statista. (n.d.). Under threat: The world's reef-building corals [Graph]. https://www.statista.com/chart/17126/reef-building-corals-under-threat/

NASA. (n.d.). Vanishing corals: NASA data helps track coral reefs. NASA Science. https://science.nasa.gov/earth/climate-change/vanishing-corals-nasa-data-helps-track-<u>coral-reefs/</u>

National Oceanic and Atmospheric Administration. (n.d.). Coral reefs. NOAA Office for <u>Coastal Management. https://coast.noaa.gov/states/fast-facts/coral-reefs.html</u>

## **3D Model**





### **Current Robotic use with coral restoration**

Scientists now use underwater robots and ROVs to move healthy coral fragments to areas with better conditions, like cooler water and less pollution. Some of the robots that are being used are the LarvalBot, RangerBot, and Jason II ROV. This method, known as coral transplantation, helps reefs recover faster. Studies show that transplanted corals can survive and even start reproducing within a few years. These techniques are especially useful in places where natural recovery is too slow due to climate change or human impact.

# Aknowledgments/ References

We would like to thank our teacher and club sponsor Mrs Diana Dworzan.

# The Sharknado's Apollo Middle School, Hollywood FL, Broward County

# **Conclusion**/ Overview

Overall, we have created a design for an **ROV that would transport coral to more** sustainable areas. This would vastly increase the amount of successfull coral reefs. The design would use a claw-like machine which grips onto the coral and transports it.



#### Next Steps

For now, this is just a conseptual design. In the future, we would like to actually build an ROV that can go a farther range and that can be controlled autonomously. This would allow us to make a larger impact on the coral reefs. If we are successfull, we can make our modified ROV available to lots of people to make a greater impact on the coral reefs.

# Background/ Discussion

We chose this project because we were inspired by and passionate about this years theme. When we became aware of this problem, we knew we wanted to help. Thats when we created CRIS (Coral regeneration and integration system).