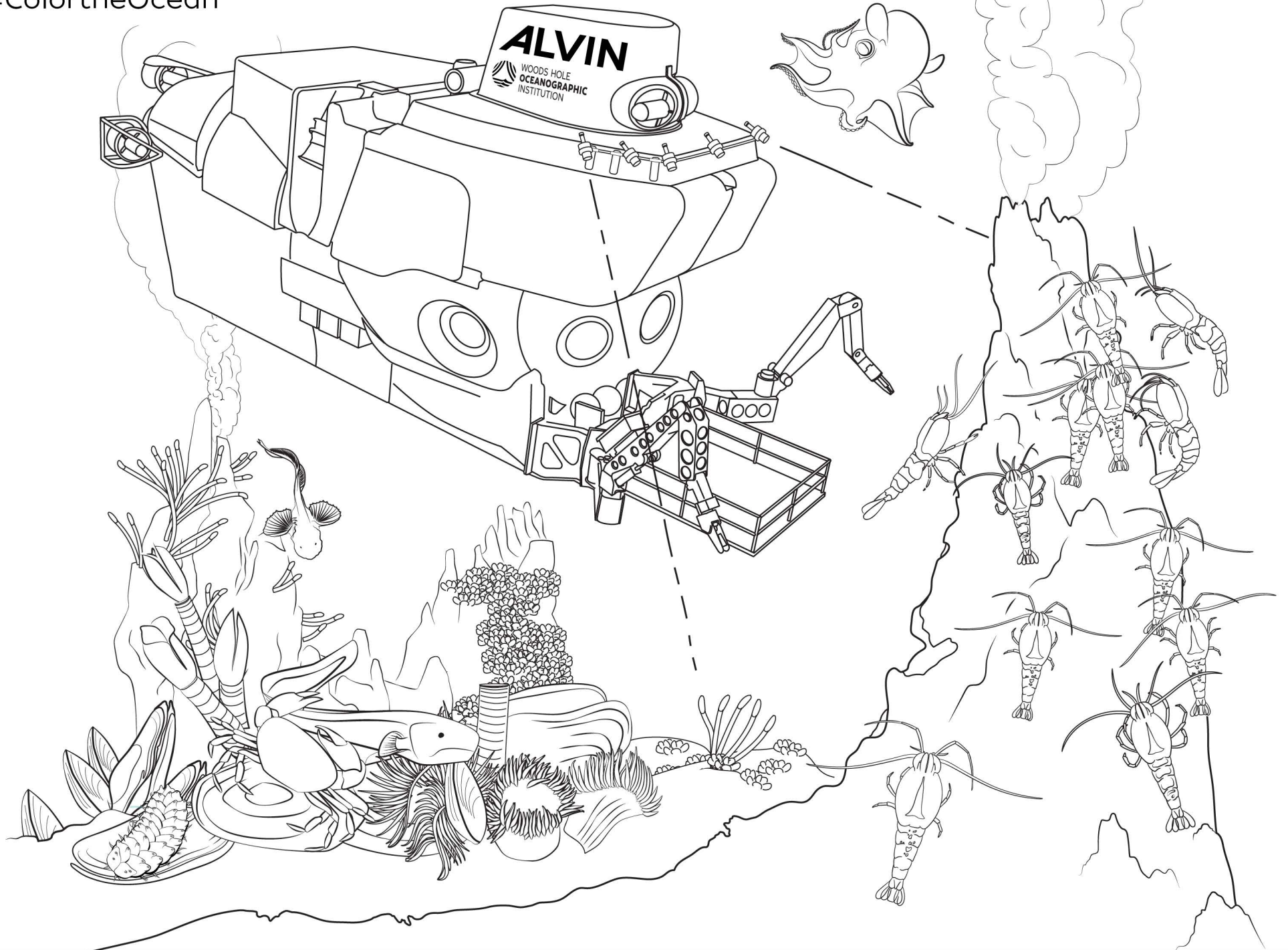


#ColortheOcean



WOODS HOLE OCEANOGRAPHIC INSTITUTION

whoi.edu

# COLOR THE OCEAN: Hydrothermal Vents

## Save trees and print as a double-sided page!

This coloring page is our free gift for you to print, enjoy, and learn about our ocean world. Coloring is a creativity-building activity for children and a stress-reliever for adults. On this page, you will also learn about deep-sea hydrothermal vents, one of the most spectacular features on the seafloor.

## Directions:

Print this PDF as a double-sided page and bring it to life with colored pencils, markers, crayons or even watercolors.

Fill in large areas or individual sections depending on your creative vision.

## To learn more visit:

[go.who.edu/vents](http://go.who.edu/vents)

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## Hydrothermal vents

In 1979, scientists in *Alvin* visited the seafloor near the Galapagos Islands, where they found clouds of what looked like black smoke billowing from tall chimneys. They also found dozens of previously unknown organisms thriving in the hot, chemical-rich water and perpetual darkness. These discoveries fundamentally changed our understanding of life on Earth.

Hydrothermal vents and their low-temperature cousins, cold seeps, form in many places on the seafloor. Water flows down through cracks and is heated by hot rock deep below, sometimes to more than 400°C (750°F). The hot fluid reacts with minerals in the rocks and rises back to the surface, gushing or gently flowing from the seafloor.

Hydrothermal fluid contains dissolved metals or other chemicals that feed microbes through a process called chemosynthesis. These microbes form the base of the food chain at hydrothermal vents and seeps and support a wide range of other life, including tubeworms, shrimp, and mussels—much as photosynthesis in plants and algae kickstarts the food chain on the sunlit surface. Scientists now think that, if ocean worlds like Europa or Enceladus have hydrothermal systems, we stand a good chance of also finding life there.

## Identify and color the following within the scene:

- Hydrothermal vent chimney**
- Snailfish** Family *Laparidae*
- (Human Occupied Vehicle) HOV Alvin**
- Giant tube worm** *Riftia pachyptila*
- Vent mussel** *Bathymodiolus* spp.
- Vent scale worm** Family *Polynoidae*
- Anemone** Family *Actinostolidae*
- Giant white clam**  
*Calyptogena magnifica*
- Dumbo octopus**  
*Grimnoteuthis* sp.
- Pink vent fish** Family *Zoarcidae*
- Vent crab** *Bythograea* spp.
- Blind shrimp** *Rimicaris exoculata*

Woods Hole Oceanographic Institution (WHOI) is a place where scientists, engineers, students, and many others come together to solve difficult problems and to learn more about the ocean. At any given time, WHOI researchers are leading over 800 projects in the lab, in the field, on shore, and at sea to help leaders around the world make decisions that will sustain our ocean planet. We tackle the most pressing issues of our time by championing ocean exploration, education, research, and awareness. And we do this for our ocean, our planet, our future.