Lobster caught off Cape Cod has exceedingly rare genetic mutation. That saved its life.

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A lobster recently pulled from the water off Cape Cod looked as though the sea had made a mistake — or a masterpiece.

The exceptionally rare lobster, caught on April 16 and now destined for residency at the Woods Hole Science Aquarium, is divided in perfect bilateral symmetry: orange-red along one side from antennae to tail fan, dark brown along the other.

Aquarium biotechnician Julia Studley said the odds of encountering a lobster like this are roughly 1 in 50 million, making it one of the most unusual marine finds. A genetic mutation is the cause of the variation.

"When two eggs absorb one another, they develop into one animal with two different sets of genes," explained Studley, a contractor with IBSS Corp. and Saltwater Inc. who works with the Woods Hole Science Aquarium.

Wellfleet Shellfish Company received the lobster after the crew of the F/V Timothy Michael hauled it in and chose to turn it over to the team of marine biologists and aquarists with the NOAA-operated aquarium.

"Wellfleet Shellfish Company is proud to donate this rare beauty to Woods Hole Science Aquarium," the Eastham-based company wrote on its Facebook page on April 21.

The Woods Hole Science Aquarium team picked the lobster up from Wellfleet Shellfish Company on April 17 and is caring for it in temporary quarters within the nearby Marine Biological Laboratory while the aquarium undergoes renovations. When the aquarium reopens early next year, visitors will be able to see one of the ocean's most unusual treasures up close.

"She'll be one of the first animals going back into the aquarium," Studley said.

Weighing 3 to 4 pounds, the lobster has mutated coloring on one side, and typical dark brown coloring on the other side, she said.

According to American Oceans, an organization dedicated to marine education, split-color lobsters are the second most rare color variation. Albino lobsters, which lack all pigmentation, are the rarest, occurring in 1 in 100 million lobsters. After the split-color lobster, the next least common are calico, yellow, orange, and cotton candy lobsters, seen in 1 in 30 million, followed by 1 in 2 million blue lobsters. Some color variations are the result of diet or environmental factors.

Lobsters get their more familiar brown coloration from a red pigment called astaxanthin, which reacts to proteins in the layers of the shell — the pigment is the same one that makes shrimp and salmon appear pink. Some proteins in the shell bind the astaxanthin to create a blue tone; others create more red and yellow tones. Together, the layers of color create the overall brown appearance of most lobsters.

Commenting on the "extraordinarily rare" lobster, Wellfleet Shellfish Company noted that "moments like this are why we do what we do: supporting our fishing community, protecting the ocean, and sharing its wonders with everyone."

For now, the lobster is getting acclimated inside a large tank, freshly scrubbed just for her, and enjoying hiding in its "cave structures."

"It's amazing to get this unique animal somewhere" that does not include a dining table, Studley said, giving credit to the network of scientists from the New England Aquarium to the Woods Hole facility who found a place for the lobster to go. And meanwhile, behind the scenes, the NOAA team has begun collecting name ideas from among the staff — a fitting gesture for a creature that already stands apart as is likely to win the affections of visitors.

Heather McCarron, hmccarron@capecodonline.com, writes about wildlife and marine life (whales, sharks, sea turtles, shorebirds), Woods Hole Oceanographic Institution, general science, local history, climate change, sea-level rise, beaches, environmental issues such as water quality and PFAS, offshore wind stories related to the Cape and Islands, and issues in Barnstable, Falmouth and Brewster.