DEEP successfully installs subsea human habitat in Florida Keys

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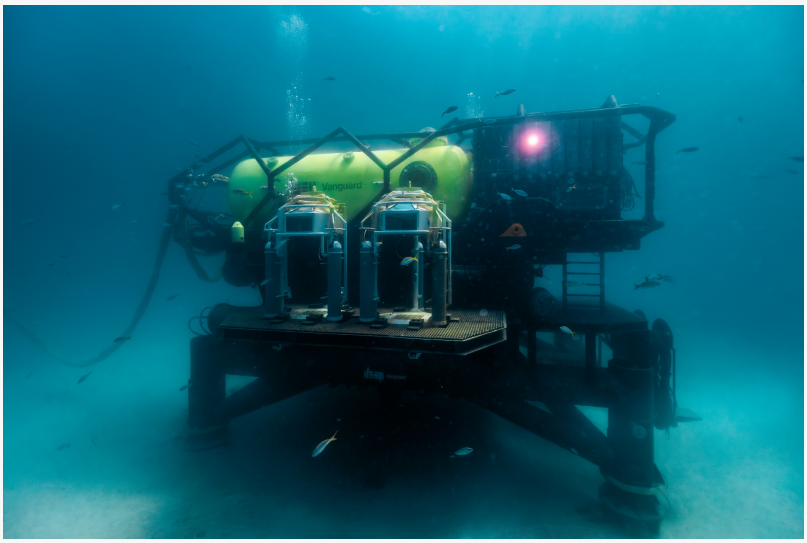

LAMBOURN, BERKSHIRE, UNITED KINGDOM, June 30, 2026 /EINPresswire.com/ -- Vanguard deployment press release.docx | Powered by Box
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• DEEP has completed installation of Vanguard, its pilot subsea human habitat, at Tennessee Reef in the Florida Keys National Marine Sanctuary, following a complex marine operation.

• The next phase will focus on commissioning, testing, and operational training, followed by crews of up to four aquanauts living and working underwater for multi-day research and training missions.

> "Installing Vanguard was a carefully choreographed marine operation and the culmination of intense design, build and testing efforts."
>
> *Norman Smith, Chief Technology Officer at DEEP*

• Missions will support marine science research, coral reef restoration, long-term monitoring, climate impact studies, human performance research, and training for extreme environments.

DEEP's Vanguard is now installed on the seafloor at Tennessee Reef in the Florida Keys National Marine Sanctuary, becoming the first open-ocean subsea human habitat built, tested, and deployed in the United States in 40 years and marking a major milestone for subsea engineering, ocean research, and conservation.

Vanguard's deployment involved setting an ocean floor foundation in place, fixing the habitat

onto the foundation, and securely tethering the surface support buoy nearby.

The complete system now sits on sandy bottom at 17 meters (56 ft) ocean depth. The liveable part of the habitat measures 10.7 meters (35 ft) long x 2.5 meters (8 ft) wide and is designed to support crews of up to four aquanauts living and working underwater on research missions of five or more days.

With deployment complete, sea acceptance testing and commissioning are now underway – the final steps toward DNV classification. DNV, a global leader in maritime classification, has been engaged throughout the design and build process, providing independent technical assurance that Vanguard meets rigorous engineering standards.

DEEP will then turn its focus to habitat support crew training ahead of Vanguard's first research missions at Tennessee Reef.

Norman Smith, Chief Technology Officer at DEEP, said:
"Installing Vanguard at Tennessee Reef was a carefully choreographed marine operation with a lot of moving parts, and the culmination of 18 months of intense design, build, and testing efforts. Today is a huge milestone and an experience I'll never forget.

Successful deployment gets us closer to enabling a continuous human presence in the ocean and is a major step forward in DEEP's mission to make humans aquatic.

From Vanguard we can expand meaningful access to the underwater environment and unlock new possibilities in marine science, environmental monitoring, human performance and extreme environment training."

Tennessee Reef is a critical area of scientific interest. Vanguard enables scientists to live and work at depth for days at a time, dramatically increasing the volume and continuity of research that can be conducted at the reef, accelerating understanding of coral health, ecosystem dynamics, and the impacts of climate change.

Eddie Kertis, superintendent of Florida Keys National Marine Sanctuary, said: "For decades, NOAA has supported using subsea habitats as a platform to reveal ground-breaking discoveries that inform the sanctuary's management well into the future.

The deployment of a new subsea habitat within the sanctuary creates additional opportunities for marine science and builds on research infrastructure, resource stewardship, and our long-standing collaboration with the scientific community."

Vanguard is the beginning of something larger. DEEP is building ocean infrastructure – a long-term program of habitats designed to give humans a sustained presence beneath the waves. As DEEP's pilot habitat, Vanguard provides the real-world experience that informs what comes next:

Sentinel, a larger, modular habitat system.

Initial activities supported by Vanguard are expected to include:
• Coral reef restoration operations – enabling longer-duration installation and monitoring of nursery-grown corals.

• Continuous reef condition monitoring – allowing repeated sampling of water quality, coral health, bleaching, disease, sedimentation, and benthic change over multi-day missions.

• Baseline and long-term climate impact studies – supporting repeated measurements tied to warming, acidification, and storm impacts.

• Species and food web ecology surveys – enabling extended observation of marine ecosystems.

• Human physiology and performance research – generating insights applicable to clinical and extreme-environment settings.

• Development and testing of new ocean sensors and sampling tools – providing a real-world subsea platform for marine technology.

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