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TITLE: Elasmobranch egg capsules associated with modern and ancient cold seeps: a nursery for marine deep-water predators

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ABSTRACT:

At 2 modern deep-water cold-seep sites, the North Alex Mud Volcano (eastern Mediterranean Sea, water depth ~500 m) and the Concepción Methane Seep Area (south-east Pacific Ocean, water depth ~700 m), we found abundant catshark (Chondrichthyes: Scyliorhinidae) and skate (Chondrichthyes: Rajidae) egg capsules, respectively, associated with carbonates and tubeworms. Fossilized catshark egg capsules were found at the 35 million year old Bear River Cold-Seep Deposit (Washington State, USA) closely associated with remains of tubeworms and sponges. We suggest that cold-seep ecosystems have served as nurseries for predatory elasmobranch fishes since at least late Eocene time and therewith possibly play an important role for the functioning of deep-water ecosystems.

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