

Part 8

You are going to read an article about converting old oil rigs to artificial reef habitats for marine life. For questions 47–56, choose from the sections (A–D). The sections may be chosen more than once.

Mark your answers **on the separate answer sheet**.

In which section does the writer

mention a commercial idea for converting rigs?

47

describe research being carried out at different depths on rigs?

48

say that regulations concerning rigs can be interpreted at a local level?

49

mention an academic overview of environmental rig conversions?

50

mention an environmental reason for not converting rigs?

51

report the difficulty of saying things that are true about all rigs?

52

give details of how rigs are adapted in order to become artificial reefs?

53

highlight a benefit to the rig structure caused by marine life?

54

highlight the problem with taking used rigs back to land?

55

mention that reefs evolving from other structures is not a new phenomenon?

56

Oil rigs may get second lives as fish habitats

Old oil rigs – offshore platforms for oil drilling – can be left on the seabed to become habitats for an abundance of fish and other marine life

- A** Off the coast of Southern California, USA, a group of aging oil rigs has an uncertain future. After about three to five decades of pumping oil, the rigs are set to be decommissioned. A new study confirms the value of one potential solution: do not tow them to land to be disassembled but let them remain in place to serve as artificial reef habitats for marine life. The study reviews rigs-to-reefs research worldwide, and also contains important new fish surveys conducted on the Californian rigs. It is led by Milton Love, a research biologist at the University of California, Santa Barbara, who has spent three decades assessing the impact of oil rigs on species living nearby. According to Love, there are many different types of rig structures, some mobile, some fixed, depending on various circumstances including water depth. So it can be challenging to make general statements about the ways in which they impact the environment. Regarding the organisms on rigs, he says that there are great similarities and some differences between what you find on a platform and what you find on natural reefs. The water at a depth of 300 to 1,500 meters around rigs acts as nursery grounds, harboring large numbers of juvenile commercial fish like rockfish.
- B** Love and his colleague Ann Scarborough Bull have both worked on fish counting surveys, where divers descend as far as 30 meters around rigs, following a set path to count and estimate the length of every fish within two meters of themselves. Below 30 meters, researchers use a two-person submarine to perform a similar task: go to the bottom – sometimes 400 meters down – and travel out on the sea floor up to 15 meters around the platform to count all the fish and estimate their size. Love describes the method as the 'gold standard' for doing fish surveys. But it actually produces an underestimate, since the divers only count the fish outside the main structure of the rig. Surprisingly, researchers have found that fish are even more abundant on rigs than on natural reefs nearby, likely because there tends to be less fishing around the rigs. 'It's basically like a marine protected area,' says Bull. Along with juvenile fish, there is an abundance of invertebrates living on the rig – the steel is typically teeming with creatures like mussels, corals, oysters, crabs and shrimps. All that life squeezed onto the steel beams makes the structure slower to rust, adding to its longevity.
- C** The term 'artificial reefs' is a wide one, covering a broad range of man-made structures which provide ideal habitats for marine life. People have unintentionally been creating artificial reefs for millennia: defensive structures built from wood by Persians and Romans to block the entrance to harbors during wars ended up as rich marine environments. However, the first time artificial reefs were deliberately constructed is thought to have been in 17th-century Japan: rocks were used to grow seaweed and so increase fish numbers. More recently, many decommissioned rigs have been given a new lease of life, in programs around the world. One retired rig off the coast of Borneo has become a new hotel, with four-day dive packages to explore the underwater world.
- D** Opponents of the rigs-to-reefs idea say that if left, certain types of rig could, over time, leak toxic substances into the water. They therefore support removal of the rigs. But other researchers, including Bull, say that once the rigs are part of a functioning system, it's wise to consider how they impact their surroundings: 'If the platform is completely removed [from the sea], you're also removing all that habitat.' Of course, habitat isn't the only consideration. Rigs impact species on the soft sea floor and they can lower non-fish biodiversity. While governing bodies in the USA advocate the complete removal of rigs after they've been decommissioned, in practice, individual states are typically allowed to make their own decisions. In the Gulf of Mexico, states have transformed 500 rigs into reefs. Energy companies usually remove the upper 25 meters of the rig, which stick out above the water, and recycle it or place it in the water next to the bottom part. Many states may soon have an important choice to make, as rigs near the end of their working lives.