

Environmental policy

环保政策

Reefer madness

珊瑚礁化狂热

Turning oil rigs into reefs saves money and marine life. Yet many greens oppose it

石油钻塔变成群礁，既可以省钱，又可以拯救海洋生命。然而，许多绿色环保人士依旧反对这项举措

WHEN an offshore well stops producing oil, what should be done with the rig? One option is to haul it ashore, break it up and recycle it. This is expensive. For a big, deep-water oil or gas platform, it can cost \$200m. Just hiring a derrick barge massive enough to do the job can cost \$700,000 a day. But there is an alternative: simply leave most of the structure where it is. That is what you would expect a greedy oil firm to do: despoil the ocean just to save a lousy few million dollars. The surprise is, the cheap option may actually be greener.

当海上油井停止产油，那我们该怎样处置钻塔呢？其中一个做法就是将其拉上岸，分解再重新循环利用。但其费用昂贵。一个大型的深海石油或天然气平台大约花费 2 亿美金。租一艘井架驳船就足够搞定，其费用为每天 70 万美元。还有另外一个选择：放任其不管。而那样做的只会是贪婪的石油公司，他们打劫海洋，省下几百万。然而，让人吃惊的是，最便宜的选择也许是最环保的。

For a start, it takes a lot of energy to move a rig. The ships that would be needed to shift California's largest one would emit 29,400 tonnes of carbon dioxide, by one estimate. And moving a rig disturbs the organisms that have attached themselves to its underside, or jacket. Far better, some say, to turn old rigs into coral reefs.

一开始，要移除钻塔需要费很大力气。若想要动加州最大的钻塔，那么运输船在这个过程中预估会释放出 2.94 万吨二氧化碳。而且，移动钻塔会影响附着在塔周围的有机体。若要全面考虑的话，有些人认为应该把老的钻塔转换成珊瑚礁。

"Reefing" typically involves bringing a platform's above-water parts ashore and cropping the lower parts to leave at least 26m of clearance: deep enough for ships to pass over, yet shallow enough for photosynthesis to nourish organisms on its upper reaches (see picture). Oil-rig reefs may shelter and feed up to eight tonnes of fish. In 2009 Shell moved a jacket in the Gulf of Mexico ten kilometres (six miles) away. The fish followed.

"珊瑚礁化"过程往往涵盖了把石油平台水上的部分拉上岸以及保证水下部分 26 米的空隙，这样方便船只通过，但对滋润生物的光合作用空间却依然不够（详情见图）。石油钻塔珊瑚礁可以给高达 8 吨的鱼群提供庇护以及食物。2009 年，谢尔把位于墨西哥湾的钻塔挪了大概 6 米，鱼群也跟着移动了。

More than 490 platforms in American waters have become reefs in the past three decades. The federal Bureau of Safety and Environmental Enforcement urges states to issue reefing permits. State coffers gain: oil firms typically hand over half the money they save by reefing.

在过去的三十年间，美国海域里超过 490 个石油钻井平台已经转变成珊瑚礁了。美国联邦安全与环境执法局督促各州"珊瑚礁化"。国库增加，而且石油公司往往可以从"珊瑚礁化"中直接获得超过一半的钱。

Those savings vary greatly. Small platforms in shallow waters can often be removed for \$10m, but sometimes for as little as \$1m, according to DecomWorld, a consultancy. But for states with lots of offshore oil rigs, the windfalls soon add up. Mississippi pocketed an

average of \$625,000 for each of the 12 permits it has issued, according to Melissa Scallan of the state's Department of Marine Resources. Louisiana's take has averaged \$270,000 per reefing—and the state has seen 336 of them, says Mike McDonough of the Louisiana Department of Wildlife and Fisheries.

从“珊瑚礁化”中省下的钱数目各不相同。在浅水海域，小钻井平台所需费用大概是 1 亿美元，有时候也可能只要 100 万美元。这些数据来源于 DecomWorld 顾问公司。但是，拥有的海上钻塔数量越多，就越能大发横财。国家海洋能源局梅丽莎提供信息，表明在 12 个钻塔中，密西西比州能从中平均每一个钻塔获得 62.5 万美元。来自路易斯安那野生动物与渔业局的麦克认为，该州平均从每个珊瑚礁获利 27 万美元，而且目前已经发现了 336 座珊瑚礁。

Currently, less than a tenth of America's old oil and gas platforms are reefed. Sometimes the reasons for this are practical. For example, platforms may be removed if waiting for a permit means weathering another hurricane season (in 2005 150 defunct platforms in the Gulf of Mexico were toppled by winds and waves). Operators typically favour reefing but it is not always economical or allowed, says David Welch of Stone Energy Corporation. The firm has only reefed 12 of the 60 Gulf of Mexico platforms it has decommissioned.

在美国，不到十分之一的老天然气和石油平台珊瑚化。理由往往很现实。比如，平台只要能熬过飓风季节，那么才有可能移除（在 2005 年，位于墨西哥湾的 150 座废弃平台被海风海浪摧毁）。能源公司的大卫·威尔士认为，运营商特别支持“珊瑚礁化”，但是，这样做往往不划算而且也不合法。该公司目前也才将墨西哥湾 60 座退役平台中的 12 座“珊瑚礁化”。

That share is likely to grow. Within five years oil firms will be reefing one offshore rig in four, predicts Quenton Dokken of the Gulf of Mexico Foundation, a conservation group. Gulf states, particularly Louisiana and Texas, are making “a big push” to streamline the permitting process, he says.

这中趋势有可能会增加，墨西哥湾基地的 Quenton 预测，在五年内，石油公司将能把四分之一的海上钻井平台“珊瑚礁化”。海湾各州，特别是路易斯安那州和德州，正在努力简化审批流程。

Far bigger savings are possible in the deep waters off California. Four years ago the Golden State passed a law allowing reefing. Operators are loth to estimate costs publicly, but the Tulane University Energy Institute reckons that reefing the state's 27 platforms could save \$2 billion. A platform or two could be retired as early as next year, though rising oil prices may mean they keep pumping longer.

在远离加州海岸线的深水区域里，省下的钱或许会更多。四年前，加州通过了一项允许“珊瑚化”的法律。运营商并不愿意公开费用，但是杜兰大学能源学院认为，将该州 27 个钻井平台“珊瑚礁化”能够省下 20 亿美元。尽管上升的油价会迫使钻井平台产生更多价值，但其中有 1-2 个平台最早在明年就会停止使用。

The California Ocean Science Trust, a research group that has advised lawmakers, thinks that platforms increase marine life and should not all be removed. Skyli McAfee, the group's director, describes this conclusion as “a big fat duh”. Studies by Milton Love, a marine biologist at the University of California, Santa Barbara, support it. Oil platforms serve as “excellent nursery grounds” that boost fish populations, he says. The bocaccio, a rockfish whose numbers are worrying fishing authorities, is one big beneficiary.

加州海洋科学信托研究机构，认为这些平台使得海洋生物繁殖，不应该全部被移除。该机构主任斯盖里·麦考非将这一结论描述为“一个大胖墩”。加州大学圣芭芭拉分校的生物学家弥尔顿发表一份研究，支持该结论。石油钻井平台就像“优质育儿室”，促进鱼类繁殖。其中曾

经一度让鱼类学家担心会走向灭绝的菖鲉目前是最大受益者。

Yet the odds of preserving most oil-rig reefs look bleak. Public opposition is robust. Not one platform off California has been reefed. Activists quote the findings of scientists such as James Cowan, an oceanographer at Louisiana State University, who studied isotopes, tissue caloric densities and the stomach contents of creatures from both natural and artificial reefs and concluded that the latter generate no extra biomass. The Environmental Defence Centre in Santa Barbara, a group that files anti-development lawsuits, advocates the complete removal of oil platforms. Linda Krop, its chief counsel, says that abandoned structures might damage anchors, rob natural reefs of fish and even leach poisons. She does, however, acknowledge the environmental damage associated with complete removal.

然而，要尽可能多地保留石油钻机塔的几率看起来很渺茫。公众对此嗤之以鼻。加州海上钻井塔没有一个已经“珊瑚礁化”。激进分子引用一些科学家的研究结果，比如路易斯安娜州大学海洋学家詹姆斯·柯旺在研究同位素、组织热量密度及天然珊瑚礁与人工珊瑚礁上的生物胃内情况之后，得出结论，人工珊瑚礁不会为生物提供生活所需。圣芭芭拉环境保护中心主要任务就是给反运动的法律诉讼存档，他们提倡完全移除石油钻井平台。其首席律师琳达·科略普认为废弃的建筑可能会破坏锚、珊瑚礁，甚至会释放有毒物质。然而，她也承认完全移除这些平台也会对环境造成破坏。

When reefs cause grief

Greenpeace, a pressure group, makes a different argument. John Hocevar, its head of ocean campaigns, concedes that in some locations reefed platforms, if non-toxic, may increase marine life. But they should be banned anyway, he says, because they save the oil firms money and therefore encourage them to drill more.

当珊瑚礁引发灾难

绿色和平组织给出了不同的意见。该组织海洋运动的领头人约翰承认在一些海域，如果“珊瑚礁化”的平台无毒，那么久有可能促进海洋生物的繁殖。但是，无论如何都要禁止这些钻井平台“珊瑚礁化”。因为“珊瑚礁化”可以帮助石油公司省下一大笔钱，这样一来，便会煽动他们去海上开采更多的石油。

The debate is likely to intensify. In the Gulf of Mexico some 400 platforms are now being decommissioned each year. Divers and many fishermen want more to be reefed; shrimpers complain that reefs prevent them from dragging nets across parts of the ocean floor. In California operators must decide quickly if they wish to turn redundant rigs into reefs. Until 2017 firms can keep 45% of the savings. After that the figure falls to 35% until 2023; then it drops to just 20%.

For now, the evidence suggests that reefing is a rare policy. It is both eco-friendly and pays for itself.

讨论越趋激烈。每年，墨西哥湾有 400 座钻井平台停止使用。潜水员和渔民希望钻井平台“珊瑚礁化”越多越好，而捕虾人却抱怨珊瑚礁会妨碍他们在洋底撒网。在加州，经营商如果想把多余的钻井平台变成珊瑚礁，他们必须尽快做出决定。到 2017 年，石油公司可以保证省下 45% 的费用，2017 年以后，降至 35%，到 2023 年，降至 20%。

至今为止，“珊瑚礁化”这一政策是很罕见的，这样做不仅环保而且很负责。