

## 本集内容

The changing sound of whale song 变化万千的鲸鱼之歌

## 学习要点

有关 “singing and songwriting 唱歌和写歌” 的词汇

## 边看边答

How long have the scientists studied the whales?

## 文字稿

Humpback whales are known for their haunting songs, and much like human **tunes**, they can quickly spread until all whales in the group are **singing from the same song sheet**.

座头鲸以其醉人的歌声而出名，就像人类的**曲调**一样，鲸鱼的歌声可以迅速传播，直到鲸群里的所有成员都**同唱一曲**为止。

This signature song evolves gradually over time as individual males add **embellishments** and others copy. Seen here off the east coast of Australia, this is what the whales were singing two years later. But every now and then a song completely disappears from the oceans and is replaced by something new in what scientists call a 'revolution event'.

这首主打歌曲随时间的推移逐渐演变：雄性个体给曲子加以**修饰**，其它的鲸鱼会模仿。人们在澳大利亚东岸附近看到了这些鲸鱼，这是它们两年后的歌声。但时不时的，一首歌会从海洋中完全消失，随后被新歌替代，科学家们把这一现象称作一次“**蜕变性事件**”。

Dr Jenny Allen, Honorary Research Fellow at Queensland University

Normally, when the song is evolving kind of through gradual changes, you can hear the songs from one year to the next and hear the similarities. But with a revolution, the song is completely different. They essentially **start from scratch** with a revolution.

珍妮·艾伦博士 名誉研究员 澳大利亚昆士兰大学

“通常，当鲸鱼之歌在逐渐演变时，你可以听出前后两年歌声之间的相似之处，但随着‘蜕变’，歌曲听起来会完全不同。它们基本上会**从零开始**创作。”

Researchers studied whales over 13 years. They found that when they changed their tune, the new ballads were always more simple.

研究人员对鲸鱼进行了 13 年研究。他们发现，当鲸鱼改变曲调时，新的歌谣总是更简单。

Dr Jenny Allen, Honorary Research Fellow at Queensland University

What this tells us is that there might be some kind of limitation to that learning. So there might be some kind of cap either in terms of how complex a thing they can learn or how much new material they can learn at one time.

珍妮·艾伦博士 名誉研究员 澳大利亚昆士兰大学

“这说明鲸鱼的学歌能力可能有一些局限性。也就是说，它们能学习多复杂的事物，或一次能学到多少新素材。”

And that could explain how the crooners of the sea adapt and change their songs, ensuring their **musical repertoire** stands the test of time.

这可以解释这些海洋中的低吟歌手如何改编及改变它们的歌曲，确保它们**所有的音乐曲目**经得住时间的考验。

## 词汇

tunes 曲子，旋律

singing from the same song sheet 同唱一曲

embellishments 修饰、装饰

start from scratch 从零开始

musical repertoire 全部音乐曲目

视频链接: <https://bbc.in/2Tzr9KT>

## 问题答案

They have studied the whales for 13 years.