Now, you've been reading articles about the tremendous damage done to life and property by earthquakes.

现在，你们已经阅读了关于由地震造成的生命和财产的巨大损失的文章。

That's why seismologists have been working so hard to develop methods of earthquake prediction.

这是地震学家一直为了发展地震预测的方法而努力工作的原因。

We can now predict earthquakes fairly well, but the predictions only locate potential areas of danger.

我们现在能比较好的对地震进行预测，但是预测只能定位潜在的危险区域。

They don't predict the specific time and location at which an earthquake is likely to occur.

他们不能预测一场地震可能会发生的具体时间和地点。

Today, I want to introduce to you three prediction models that have been developed.

今天我想给你们介绍已经发展出来的三种预测模型。

The first prediction model looks along earthquake faults, those cracks in the Earth's crust, to find what are known as seismic gaps.

第一个预测模型沿着地震断层看，即那些地壳里的裂缝，寻找所谓的地震空白地带。

Seismic gaps are places where the fault has shown little or no seismic activity for a long time.

地震空白地带是指那些长时间以来显示很少或者没有地震活动的断层。

This theory postulates that such places are due for a major shock.

这种理论假设这样的地方应该受到一次大震。

The second model relies on phenomena, like ground tilt.

第二个模型依靠现象，比如地面倾斜。

Using long cylindrical tubes containing water, observers noted that ground tilt tended to occur before major earthquakes.

使用装水的柱形管，观察者注意到大地震前有发生地面倾斜的倾向。

That led them to correctly predict the big Haicheng quake of 1975, the first successful earthquake prediction scientists have ever made.

那使他们正确预测了 1975 年海城大地震，那是科学家作出的第一次成功的地震预测。

A million people were evacuated from that Chinese city before the earthquake struck.

在地震袭击前，一百万人从那个中国城市转移。

Unfortunately, this method hasn't worked consistently, so we can't say it's been perfected.

不幸地是，这种方法不是始终有效，所以我们不能说它是完美的。

The third model is based on the theory that major earthquakes closely follow a series of minor ones.

第三个模型基于一系列小地震紧随大地震之后（的理论）。

Starting with the measurements and timing of the smaller quakes, a complex formula calculates the probability of a much larger quake.

以小地震的测量值和时间开始，以一个复杂的公式计算一个大得多的地震发生的可能性。

Right now, this method, like the first method, cannot predict specific times and places, but that may change as it is further developed.

现在，这种方法，像第一种方法一样，不能预测具体的时间和地点，但是当它进一步发展后可能会有变化。

For the moment, none of these models can predict with reasonable levels of confidence.

目前，这些模型没有一个能做有合理水平的预测。