KING TIDES

WHAT IS A KING TIDE?

The king tide is the highest predicted high tide of the year at a coastal location. It is above the highest water level reached at high tide on an average day.

WHAT MAKES KING TIDES PREDICTABLE?

King tides occur when the orbits and alignment of the Earth, moon, and sun combine to produce the greatest tidal effects of the year. King tides are unrelated to sea-level rise. They are about astronomy, not climate change.

WHEN IS A KING TIDE?

King tides are a normal occurrence once or twice every year in coastal areas. In the United States, they are predicted by the National Oceanic and Atmospheric Administration (NOAA). In the Bay Area, they occur twice every winter.

According to the National Oceanographic Atmospheric Administration (NOAA), future king tides are anticipated to be 3 feet above mean high water. The streets of downtown in Miami Florida routinely flood causing public inconvences. Also known as “nuisance flooding,“ these extreme high tides occur in many other cities in the U.S. including San Francisco.

WHAT DO KING TIDES SHOW?

King tides bring unusually high water levels, and they can cause local tidal flooding. Over time, sea level rise is raising the height of tidal systems. Average daily water levels are rising along with the oceans. As a result, high tides are reaching higher and extending further inland than in the past. King tides preview how sea level rise will affect coastal places. As time goes by, the water level reached now during a king tide will be the water level reached at high tide on an average day. Sea level rise will make today’s king tides become the future’s everyday tides.

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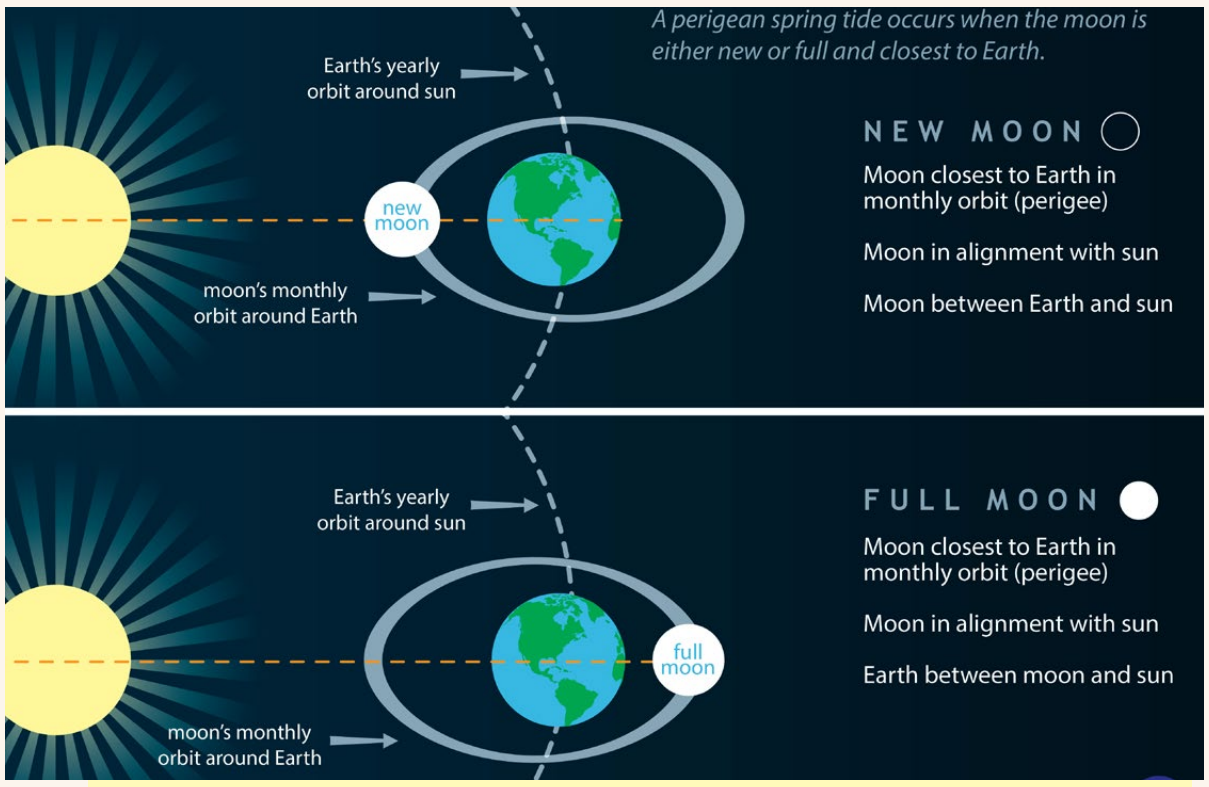
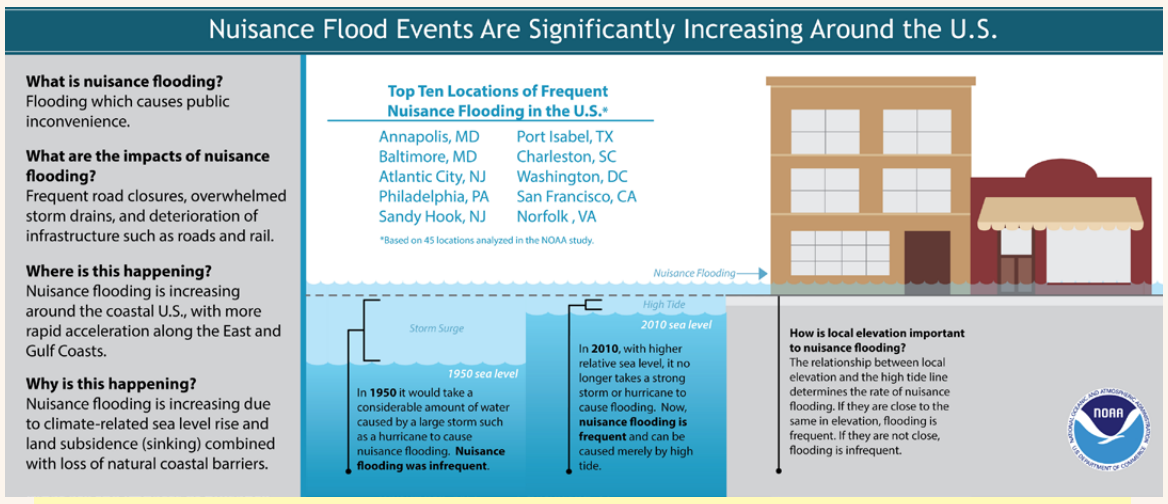


The origins of the phrase “king tides” apparently dates to around 2009, when it was used by Australian scientists to describe a particularly extreme set of tides. The less catchy name – but more scientifically accepted – is perigean spring tides.

WHY OBSERVE KING TIDES?

King tides provide a glimpse of future everyday water levels, and they are a way to communicate local sea level rise impacts over long time periods. Low-lying shoreline development is at increased risk of flooding because of rising seas, and public investments in infrastructure, housing, and habitat restoration projects are often expected to last for decades. Highlighting king tides in a community can raise awareness of potential sea level rise impacts and identify flood-prone locations. The increased understanding of how sea level rise will impact local resources is valuable information for community leaders.



So-called “nuisance flooding” – which causes public inconveniences such as frequent road closures, overwhelmed storm drains, and compromised infrastructure – has increased on all three U.S. coasts, between 300 and 925 percent since the 1960s.

King tides flooding of an entrace ramp to Hwy 101. The driver of this truck couldn’t see the edge of the road causing the truck to slide off the road into the soft muddy shoulder.