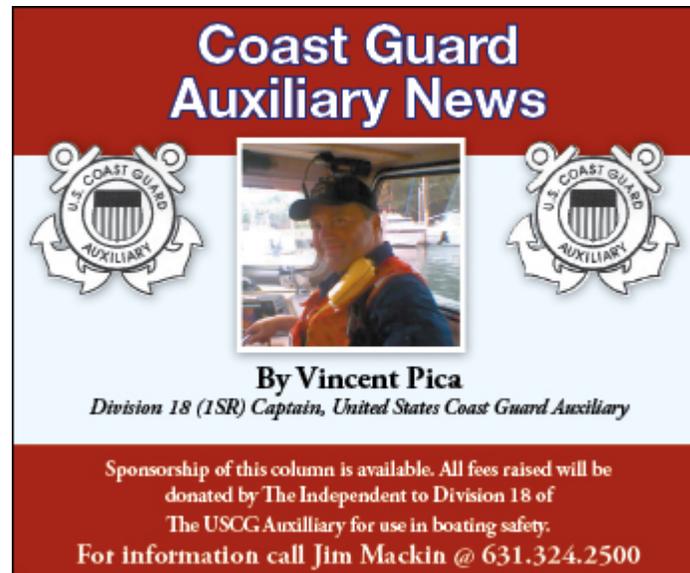


THE *East Hampton • Southampton • Riverhead • Southold • Shelter Island*
INDEPENDENT

Coast Guard Aux NEWS ▶

September 16, 2009



The graphic features a red header with the text "Coast Guard Auxiliary News" in white. Below the header is a white section containing two U.S. Coast Guard Auxiliary logos on either side of a central photograph of a man in a blue uniform and cap. Below the photo, the text reads "By Vincent Pica" and "Division 18 (ISR) Captain, United States Coast Guard Auxiliary". A red footer contains the text: "Sponsorship of this column is available. All fees raised will be donated by The Independent to Division 18 of The USCG Auxiliary for use in boating safety. For information call Jim Mackin @ 631.324.2500".

Is It Me – Or Have the Tides Been Higher Lately?

Back in September 2006, we wrote about how time and tide wait for no (wo)man. Here we are three years later and I know I have heard it several times this season, "did you see the high tide yesterday? It was REALLY high." And I explained how the full (or new) moon had an effect, etc. But I heard it so often that I did some research. This column is about that.

How Do The Tides Work?

If you are a long-time reader of this paper, this might be a bit redundant – but the tides are largely about gravity. The primary source of the gravitational pull is the Moon (2X) and then the Sun (1X.) When the Moon and the Sun line up, such as in a New Moon (the one we can't see) or a Full Moon, they are working in concert. So, high tides are higher and, as a consequence, low tides are lower. These tides are called Spring Tides.

When we have Quarter Moons, the Moon and the Sun are working against each other. Their gravitational pulls are at right angles to each other, and thus cancel out some of their power. So, high tides are lower and low tides are higher. These tides are called Neap Tides.

These gravitational pulls create the largest wave on Earth – the entire seabody is pulled up and it follows the pull of gravity around the entire planet. Now it isn't as concentrated as a tsunami, for example, but when you consider that ALL the water on the planet is affected by this immense power, you can see that, taken as a whole, the wave of tides is the largest wave on Earth.

Yeah, So Why Have The Tides Been Higher Lately?

Because while tides are largely about gravity, they aren't solely about gravity. Weather can have a localized effect on tides. High pressure systems can slow the tides from rising simply because the water has to lift something that weighs 14 pounds/square inch (the atmosphere) – except that it is heavier when we have a high pressure zone in play. In contrast, when we have a low pressure system at work, the opposite happens. The atmosphere just weighs less in a particular area. And do you know what we call a system of really low pressure? A hurricane...

And that brings to the fore another factor in tidal heights. Wind. The wind creates waves and more wind creates bigger waves.

And This Means What?

With that as foreground, guess what? We have been having higher tides up and down the entire Eastern Seaboard. You can read the full report in NOAA technical report, Elevated East Coast Sea Level Anomaly: June-July 2009 but here is the gist of it.

Tides have been higher from as little as 6 inches over the norm to as much as 2 feet over the normal high tide for a given set of circumstances. And the reasons tie into all of the above.

1. All the "crummy" weather we've been complaining about since early Spring has manifested itself in long, sustained winds from the Northeast. Essentially, we've been having a long and somewhat restrained "Nor'easter" for months. But the persistence of the weather over weeks and weeks created some of the rise above normal.
2. Scientists at NOAA also found that a weakening of the Florida Current Transport – an oceanic current that feeds into the Gulf Stream – contributed to this anomaly.
3. In addition to the current change and steady winds, elevated water levels in the latter half of June coincided with a perigean-spring tide, an extreme predicted tide when the moon is closest to the Earth during a spring tide. In short, we had a very big Spring Tide because we were closer than normal to the Moon, as part of its natural oscillation.

The June–July 2009 sea level anomaly is unique because northeast winds along the coast were not at a multi-year high and the Florida Current Transport was not at its low – two factors that can cause elevated sea levels. However, the coupled effect of these two forces created sea levels that were at the highest levels all along the East Coast. What the study didn't find was that Global Heating (I refuse to call it Warming as that sounds too benign) added more water to the oceans.

But all this caught people and communities by surprise because we didn't really have any of the hurricane-like weather that naturally brings us higher tides.

But what you were thinking/wondering about was really happening!

BTW, if you are interested in being part of USCG Forces, email me at JoinUSCGAux2009@aol.com or go direct to Lisa Etter, who is in charge of new members matters, at FSO-PS@emcg.us and we will help you "get in this thing..." If you'd like a copy of any of the columns cited, email me and I send it to you.