

Tides will be key when the Tsunami hits

Scientists foresee possible massive floods along the estuary

By KATIE WILSON
EO Media Group

COLUMBIA RIVER — Tides, not the amount of water already flowing in the river, will likely determine how much havoc a tsunami will unleash on Columbia River communities, according to a new study by Oregon State University.

A tsunami that hit during the highest tides of the year would, in general, do the most damage of all.

While water from a major tsunami would barely register 50 miles upriver near Longview, Wash., down at the mouth of the river the water could rise as much as 13 feet and almost 7 feet within a few miles of Astoria, according to OSU engineers.

“There have been previous models of Columbia River run-up as a result of a tsunami, but they had less resolution than this work,” David Hill, an associate professor of civil engineering in the OSU College of Engineering, told the *Columbia Basin Bulletin*. “We carefully considered the complex hydrodynamics, subsidence of grounds that a tsunami might cause, and the impacts during different scenarios.”

According to the recent OSU study, the lowest elevation of a tsunami wave generally occurs at high tide, but its overall flooding impact is the greatest because the tide levels are already so high. Basically, there’s just more water out there for a tsunami to work with. Because of complex hydrodynamic interactions, the study found water would actually wash up and over the southern spit of the Columbia River mouth only on a flood tide.

“We were a little surprised that the river’s water flow didn’t really matter that much,” Hill said. “The maximum reach of a tsunami on the Columbia will be based on the tidal level at the time, and of course the magnitude of the earthquake causing the event.”

Worst-case scenario

OSU Researchers concluded that if a 9.0 magnitude

earthquake and associated tsunami struck the coast at the highest tide of the year:

- Just offshore, the tsunami would raise water levels about 11.5 to 13 feet.
- Just inside the mouth of the Columbia River, the water would rise about 13 feet.
- At river mile 6, approaching Hammond, the river would rise about 10 feet.
- At river mile 25, near Welch Island, the river would rise about 1.6 feet.
- At river mile 50, near Longview, there would be no measurable rise in the river.

Past provides clues

The Cascadia Subduction Zone, a seismic fault that runs 60 to 100 miles offshore from Vancouver Island to northern California, unleashes massive earthquakes accompanied by tsunamis every 300 to 600 years, according to experts. The last one occurred in January 1700.

But, the *Bulletin* reports, according to researchers, the impact on rivers is difficult to predict since so many variables are involved — the width and shape of river mouths, bays, river flow, tides, all of which could dampen or magnify the effect of a tsunami.

Still, two events — one recent and one now decades in the past — give local communities some idea of what to expect.

In 2011, a magnitude 9 earthquake hit Japan, bringing a tsunami with it. That tsunami was caused by geologic forces similar to those facing the Pacific Northwest. The violent shaking and wall of water left more than 28,000 people dead or missing, and also included significant inland reach and damage on local rivers.

Closer to home but farther back in people’s memories, a magnitude 9.2 earthquake hit Alaska’s Prince William Sound in 1964. It caused a tsunami and sent water rushing up and down the West Coast, providing numerous examples of how a tsunami might affect local rivers. The waves generated by the Alaska event were to blame for most of the damages and deaths.

In Seaside, hundreds of miles from Alaska, people reported that a surge of sea water entered the estuary there, according to eyewitness accounts collected by NOAA. One man in a

house at the lower channel of Neawanna Creek said he saw a surge of water heading straight toward him. The family dog first heard the roar of the water, the man told NOAA. They had less than a minute to evacuate before water and huge driftwood logs crashed through their house.

Water also surged up the Necanicum River. A bore going up the Necanicum Channel tore an abandoned bridge from its pilings with the sound of “giant eggshells cracking.”

Local warnings

Still, little has been done locally to understand exactly what sort of devastation communities can expect when a massive earthquake and resulting tsunami hit the coast here.

In Oregon, the community in Cannon Beach has paid for extensive modeling and tests to determine where everyone should run when the earthquake and tsunami hit and how they should respond afterwards.

In Pacific County, 11 “All Hazard Alert Broadcast” sirens have been placed throughout the county and

will blare a warning if a tsunami is on its way. Signs along the roads alert visitors that they are entering a tsunami zone and signs at local beach approaches warn about the hazards of tsunamis. But locals have criticized the evacuation maps provided by county emergency management, saying they are difficult to read, out of date and may not even provide the best routes, and plans to build a vertical evacuation berm in Long Beach where there is virtually no high ground have stalled.

A 1997 paper by Brian Atwater and Eileen Hemphill-Haley, “Recurrent Intervals for Great Earthquakes of the Past 3,500 Years at Northeastern Willapa Bay, Washington,” examined sequences of buried soils in low-tide areas in northeastern Willapa Bay and found evidence to indicate regular earthquakes affecting the area. The authors concluded that about 500 years elapsed between massive earthquakes of magnitude 8 or larger.

The Columbia Basin Bulletin assisted with this report.

Major crimes rose in Cannon Beach last year

Lesser offenses took a downturn

CANNON BEACH — Cannon Beach experienced a 35 percent hike last year in Part I offenses — considered to be major crimes — but a decrease in Part II or lesser crimes, according to an annual report distributed by Police Chief Jason Schermerhorn.

Heading the list of major crimes in 2014 was the murder of a 2-year-old child, the first homicide in Cannon Beach in decades. The child’s mother, Jessica Smith, has been charged with aggravated murder in the child’s death and attempted aggravated murder for injuries suffered by Smith’s 13-year-old daughter. Smith is awaiting trial in 2016.

Increases also occurred in robberies, assaults, burglaries and thefts last year.

Meanwhile, decreases occurred in motor vehicle thefts, domestic disturbance responses, fraud, vandalism, sex offenses,



Jessica Smith is awaiting trial on charges that she murdered her 2-year-old daughter last year. The alleged murder is the first in Cannon Beach for decades.

drug/marijuana cases and others.

However, the department provided more than twice the number of citizen assists than last year. Warnings for overnight camping also increased significantly.

The department has eight police officers, in addition to Schermerhorn.

“Our traffic tickets and warnings were down, but also, along

with that, the accidents were down as well,” Schermerhorn said. “That was good to see.”

Overall, the department had a good year, he said.

“I think the department is getting much more educated on different things and a lot more experienced working with the community,” he said.

The city’s first National Night Out was held at City Park last year, in partnership with

the Cannon Beach Chamber of Commerce, Rotary Club of Seaside and Cannon Beach Rural Fire Protection District. Schermerhorn said he will continue the event.

The department also sponsored and participated in the eighth annual South County Citizens Academy, which Schermerhorn started when he worked for the Seaside Police Department. The academy takes citizens interested in law enforcement “behind the scenes” and trains them in various aspects of local law enforcement activities. Also participating in the academy were Seaside and Gearhart police departments, Clatsop County Sheriff’s Office and the Clatsop County District Attorney’s Office.

Schermerhorn said the department also will continue other community outreach events, including Coffee with a Cop, which encourages local residents and visitors to have a conversation with local police officers over a cup of coffee.

BY THE NUMBERS		
Crimes	2014	2013
Criminal homicide	1	0
Robbery	1	0
Assault	5	4
Burglary	13	7
Larceny/theft	34	29
Motor vehicle theft	0	1
Arson	0	0
Domestic disturbance responses:	15	19
Criminal trespass/notice	10	11
Forgery/counterfeit	3	2
Fraud	2	5
Embezzlement	0	0
Vandalism/criminal mischief	21	32
Weapons laws/carrying a concealed weapon	1	1
Sex offenses	0	2
Drug/marijuana cases	19	43
DUII arrests	13	21
Furnishing alcohol to minors	5	2
Disorderly conduct	5	4
Fugitive arrests	10	14
Minor in possession of alcohol	19	20
Number of calls	2014	2013
	2412	2,086
This was a 15 percent increase over last year.		
Services provided by officers	2014	2013
Citizen assists		1,620
719		
Local security checks	25,613	21,186
Assist other agencies	476	357
City code violations addressed	64	100
Vacation checks	690	649
Overnight camping warnings issues	668	486
Welfare checks	64	72
Traffic Enforcement	2014	2013
Traffic warnings	1,629	1,843
Traffic citations	182	206
Motor vehicle accidents information exchanges	30	36

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46 ANNOUNCEMENTS

Jewell School District #8 Announces Elections for:

School Board Member Positions #1, #3 & #5

Clatsop County School Board Elections will be held May 19, 2015. The terms for Positions #1, #3 & #5 on the Jewell School Board end on June 30, 2015 and the new term will begin July 1, 2015 and run through June 30, 2019.

If you would like to consider representing Jewell families on the governing board, please visit or call the Clatsop County Elections Department.

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70 HELP WANTED



Are you a digital Mr./ Ms. Fix-It? Our team needs a digital support tech to make our digital products function better. You will gather information from team members, local staff and vendors in order to troubleshoot, assess and fix issues. You will work in our office in Salem, Astoria or Long Beach, WA. You must be able to communicate well with supervisors and co-workers, but be able to fix issues in a timely manner without close supervision. You must be proficient in HTML/CSS, web content management systems (WordPress, Drupal or similar) and Google Analytics. Familiarity with responsive design, mobile platform, Newsycle and JavaScript preferred. At least two years experience in the world of digital content, including text, graphics, and other assets or the equivalent combination of experience/education is preferred.

Benefits for this full-time position include Paid Time Off (PTO), 401(k)/Roth 401(k) retirement plan and health insurance. Send resume and letter of interest stating salary requirements to EO Media Group, PO Box 2048, Salem, OR 97308-2048, by fax to 503-371-2935 or e-mail hr@eomediagroup.com

70 HELP WANTED



Astoria Crest Motel Has the following positions open. Apply in person 5366 Leif Erikson Dr.

•Front Desk 3-11pm flexible
•Night Audit/laundry 11pm to 7am
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70 HELP WANTED

Astoria Dental Group seeks full time, 5 days/week, business office assistant/data entry. Required skills include excellent multi-tasking, basic secretarial skills, familiarity with computer and multi-line telephone. Starting pay \$14 per hour with merit raises thereafter. Benefit package includes medical, dental, 401k, vacation and holidays.

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