

## RIDE THE WAVE



One of the problems with tsunami preparedness is that often the warning can't be issued fast enough. A recent article in the Huffington Post online talks about a solution that's so obvious, it's amazing no one ever thought of it before: Using **cargo ships** to collect tsunami data (<http://tinyurl.com/shiptsu>). They're already out at sea, and on the move. Deep ocean sensors have limits — they are expensive, stuck in one spot, and there aren't very many of them.

Researchers at the University of Hawaii Manoa, backed by the National Oceanic and Atmospheric Administration (NOAA), who is in charge of providing tsunami warnings, have started the project by equipping 10 ships with tsunami sensors that are providing real-time data. The ship pictured is courtesy of the Maersk Line. Using GPS systems and satellite communications, the ships form a "network of open ocean tide gauges" to augment information provided by the deep ocean sensors already in place.

So how did the UH researchers finally come up with the idea? In 2010, when a tsunami generated by an earthquake in Chile passed one of their research vessels, the onboard equipment accurately recorded the tsunami signal. That was an "aha!" moment, indeed.

## LOOK BEFORE YOU LEAP



No, that is not a photo of a leaping orca you're looking at. It's the Killer Whale Y model of one of the newest concepts in submersible recreational watercraft, the **Seabreacher**. Each one is made to the customer's specifications, and the vessels are Coast Guard approved.

Here's a description from the company's website (<http://seabreacher.com>): "Unlike conventional watercraft that only operate on a two dimensional plane, the Seabreacher operates more like an aircraft with full three axis of control — pitch, roll, and yaw. This allows the vessel to carve left and right, jump over, dive under, and cut through the waves. Our latest model is even capable of 360-degree barrel rolls on the water!" And yes, of course, it can breach, as pictured in a photo from the website.

One of these handy dandy little vessels can be all yours — to scare the water wings off of friends, neighbors and strangers alike — for a mere \$80,000 to \$100,000. Start saving your pennies.

## DON'T TURN YOUR BACK



Worries over a "mini-tsunami" occurring near Ocean Shores, Washington, were caused by a video of the event taken by Irene Bergsagel Sumi as the wave swept ashore and flooded into coastal estuaries, causing injuries and damage. The clip was all over Facebook and the Internet, and even appeared on several TV newscasts. A still shot from the video is shown.

Rest easy. The National Weather Service has decreed the rushing water to be a sneaker wave, as Q13Fox reported (<http://tinyurl.com/notatsu>). NWS noted there was no seismic activity in the area, so it was not, in fact, a "mini-tsunami."

Another large sneaker wave, this one in Coos Bay, made the round of the news, as well, even as far south as San Francisco (<http://tinyurl.com/notatsu1>). Café owner Steve Raplee was filming at the beach when suddenly a huge wave rushed in, seemingly out of nowhere. Fortunately, no one was hurt. "Whoa!" he exclaimed. "... I just got out of the way. Could have taken anyone in its way."

All of which serves as a timely reminder, especially this winter: Don't turn your back on the ocean.

## In One Ear



by Elleda Wilson

[ewilson@dailyastorian.com](mailto:ewilson@dailyastorian.com) (503) 325-3211, ext. 257

## 316 AND COUNTING



Tuesday was the **316th anniversary** of the **Jan. 26, 1700 megathrust 9.2 earthquake** on the **Cascadia Subduction Zone** that devastated the coasts of Northern California, Oregon and Washington. The cataclysmic event caused coastal land to suddenly drop 3 to 6 feet and become flooded with seawater.

A massive tidal wave followed that was felt all the way across the Pacific. You can watch a National Oceanographic and Atmospheric Administration (NOAA)/ Pacific Tsunami Warning Center (PTWC) video of how the tidal wave spread at <http://tinyurl.com/twave1700>. A blurb that goes with the video says the subduction zone ruptured along its full length of its 600 miles that time, and the shaking would have lasted 5 minutes or longer.

Nine hours later, the tidal wave hit Japan, and observers there were puzzled by the "orphan tsunami." The wave didn't seem to have any local cause, and no one at the time could figure out where it came from. Nonetheless, the details were fastidiously recorded by individuals and officials in several municipalities.

It took 300 years for scientists and historians in the U.S. and Japan to connect the orphan tsunami with the catastrophic event on the West Coast. The result of their findings is compiled in a professional paper, available at (<http://tinyurl.com/bkwave1700>). Part of the cover is shown. North Coasters might be especially interested in the studies of evidence left behind on our coast by the event — the Neskowin ghost forest, for instance, the remains of which are visible to this day.

## TELL ME A STORY



While the Japanese wrote their accounts of the effects of the orphan tsunami of 1700, the **Native Americans** who lived through the catastrophic event on the West Coast preserved the memory — and tried to explain what happened — by creating a colorful **oral history**. Although the stories were passed down through the generations, apparently few are told today.

An article in Hakai Magazine, "The Great Quake and the Great Drowning" (<http://tinyurl.com/quaketales>) quotes several versions, including the following: "... Up the coast in what is now Washington, Thunderbird and Whale had a terrible fight, making the mountains shake and uprooting the trees, said the **Quileute** and the **Hoh** people; they said the ocean rose up and covered the whole land.

"Farther north still, on Vancouver Island, dwarfs who lived in a mountain invited a person to dance around their drum; the person accidentally kicked the drum and got earthquake-foot, said the **Nuu-chah-nulth** people, and after that every step he took caused an earthquake (pictured). The land shook and the ocean flooded in, said the **Huu-ay-aht** people ... and people didn't even have time to wake up and get into their canoes, and 'everything then drifted away, everything was lost and gone.'"

The drum dance image shown is by Nuu-chah-nulth artist **Tim Paul**, courtesy of the Royal British Columbia Museum and Archives.

It wasn't until the 1980s that scientists realized that the stories are not just stories — they are history, and there are many similarities between different tribes' descriptions of the disaster's effects on both the land and the people.

Thankfully, some of the stories have been written down and have been preserved for future generations. Sadly, many more were not, and are lost.

## LET'S TAKE A TRIP



This is a real head-scratcher: **Tours** of the damaged **Fukushima power plant** have become a popular item in Japan, according to the Asahi Shimbun online (<http://tinyurl.com/fukutour>), despite still being actively radioactive more than 4 years after the extensive damage caused by the 2011 Japanese earthquake.

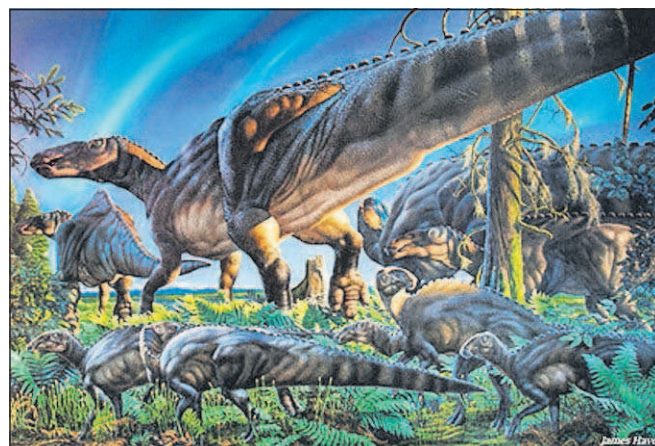
Visitors don't seem fazed by the 7,000 or so workers wearing protective clothing and face masks who are still busily decommissioning the reactors, which is expected to take decades. Amazingly enough, by the end of last September, an estimated 16,000 people had visited the facility. Pictured, in a photo provided by Appreciate Fukushima Workers, visitors to the plant pass storage tanks holding contaminated water.

A "visitation center" was established in 2014, but not just anyone can get a tour. You have to be 18 or older, and the "objective of the visit" is under scrutiny. Once you pass muster, you put on some cotton gloves, a disposable face mask, special footwear, and, of course, a dosimeter to measure how much radioactivity you're being exposed to. Thankfully, the tour is conducted mainly from the bus, and exposure levels are miniscule.

"Interest in the work serves as the core motivating factor for employees and decommissioning workers," the official in charge of the visitation center said. "We plan to actively allow in visitors for as long as possible."

Gee, who wants to go to Disneyland, when you can go to Fukushima?

## DEM DRY BONES



You just never know what secrets the Pacific Northwest is going to give up next. Did you know that the bones of a **new** arctic 30-foot-long duck-billed **dinosaur** have been found at the Liscomb Bone Bed on the Colville River, in **Northern Alaska**. According to TechInsider, the critters, which are hadrosaurs, have changed the way scientists think about dinosaurs (<http://tinyurl.com/aksaur>).

More than 6,000 bones were found, so researchers have "multiple elements of every single bone in the body" in the extremely remote location, so they have a very good idea what it might have looked like. It had Godzilla-like crests on its back, was 6 or 7 feet tall at the hip, and had hundreds of grinding teeth. James Havens' painting of the new find, named **Ugrunaaluk kuukpikensis** — which means "ancient grazer" in local Inupiaq — is shown.

The fossils were found farther north than any other known dinosaur species. Researchers were surprised to find that these grazers could survive in such a harsh climate, with icy winters and four months a year with no daylight — which led researchers to speculate that perhaps dinosaurs were a lot harder than was once believed.

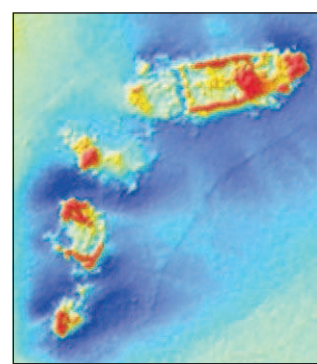
"The finding of dinosaurs this far north challenges everything we thought about a dinosaur's physiology," one of its discoverers, **Gregory Erickson**, said in a press release. "It creates this natural question. How did they survive up here?"

## IT'S RIGHT OVER THERE

Think of all the time and money that's been spent looking for shipwrecks hidden at the bottom of the ocean — most of which are never found. Well, the times they are a-changin' — now you can **find shipwrecks from space**. Ulster University reports that the new technique uses "satellite remotely sensed data" (<http://tinyurl.com/satwreck>).

In technical-ese, the article says: "... wrecks generate Suspended Particulate Matter (SPM) concentration signals that can be detected by high-resolution ocean colour satellites such as Landsat-8." Pictured, one of the satellite images of a wreck site.

Aside from the historical value being able to target lost shipwrecks, there is a more urgent reason: More than 70 percent of wrecks in European waters are from the two world wars, and they are deteriorating — which means their "significant quantities" of toxic contents (fuel and munitions) will start leaking out. And, the North Atlantic contains 25 percent of the potential polluters. This new technology should make those ships a lot easier to locate.



## COMMUNITY NOTES

**Sit and Stitch Group** — 11 a.m. to 1 p.m., Custom Threads, 1282 Commercial St. Knitting, crocheting and needle work. For information, call 503-325-7780.

**Columbia Northwestern Model Railroad Club** — 1 p.m., in Hammond. Group runs trains on HO-scale layout. For information, call Don Carter at 503-325-0757.

### SUNDAY

**Line Dancing** — 5:30 to 8 p.m., Seaside American Legion, 1315 Broadway. For information, call 503-738-5111. No cost; suggested \$5 tip to the instructor.

### MONDAY

**Scandinavian Workshop** — 10 a.m., First Lutheran Church, 725 33rd St. Needlework, hardanger, knitting, crocheting, embroidery and quilting. All are welcome.

For information, call 503-325-1364 or 503-325-7960.

**Senior Lunch** — 11:30 a.m., Bob Chisholm Senior Center, 1225 Avenue A, Seaside. Suggested donation \$3 for those older than 60; \$6.75 for those younger than 60. For information, call Michelle Lewis at 503-861-4200.

**Columbia Senior Diners** — 11:30 a.m., Peace Lutheran Church (lower level), 565 12th St. Cost is \$7. For information, or to have a meal delivered, call 503-325-9693.

**Warrenton Senior Lunch Program** — noon, Warrenton Community Center, 170 S.W. Third St. Suggested donation of \$5 for seniors and \$7 for those younger than 60. For information, or to volunteer, call 503-861-3502 Monday or Thursday.

**Astoria Rotary Club** — noon, second floor of the Astoria Elks Lodge, 453 11th St. Guests always welcome. For information, go to [www.AstoriaRotary.org](http://www.AstoriaRotary.org)

**Knochlers Pinochle Group** — 1 p.m., Bob Chisholm Community Center, 1225 Avenue A, Seaside. Cost is \$1 per regular session per person. Players with highest and second highest scores split the prize. Game is designed for players 55 and older, but all ages are welcome.

**Line Dancing for Seniors** — 6 to 7:30 p.m., Astoria Senior Center, 1111 Exchange St. For information, call 503-325-3231.

**Astoria Toastmasters** — 6:30 p.m., Hotel Elliot conference room, 357 12th St. Visitors welcome. For information, go to [\[www.toastmasters.org\]\(http://www.toastmasters.org\) or call 503-894-0187.](http://www.toastmas-</a></p>
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**Depression and Bipolar Support Alliance** — 7 to 9 p.m., Room A, Columbia Memorial Hospital, 2111 Exchange St. Open to all those diagnosed with a mood disorder, or have a family member or friend diagnosed, or who think they might have depression or bipolar disorder. For information, contact Patricia Fessler at 503-325-8930.

### TUESDAY

**World War II Warbirds** — 8 a.m., Labor Temple Diner, 934 Duane St.

**Stewardship Quilting Group** — 9:30 a.m. to 1:30 p.m., First Lutheran Church, 725 33rd St. All are welcome. Donations of material always appreciated. For information, call Janet Kemp at 503-325-4268.

**Do Nothing Club** — 10 a.m. to noon, 24002 U St., Ocean Park, Wash. Men's group. For information, call Jack McBride at 360-665-2721.

**Senior Lunch** — 11:30 a.m., Bob Chisholm Senior Center, 1225 Avenue A, Seaside. Suggested donation of \$3 for those older than 60. For information, call Michelle Lewis at 503-861-4200.

**Columbia Senior Diners** — 11:30 a.m., Peace Lutheran Church (lower level), 565 12th St. The cost is \$7. For information, or to have a meal delivered, call 503-325-9693.

**Astoria Kiwanis Club** — noon, El Tapatio, 229 W. Marine Drive. For information, call Robert McClelland at 503-894-0187 or

Susan Brooks at 503-741-0186 or 503-338-4994.

**Astoria Lions Club** — noon, Astoria Elks Lodge, 453 11th St. Prospective members welcome. For information, contact Charlene Larsen at 503-325-0590.

**Line Dancing for Seniors** — 1:30 to 2:30 p.m., Astoria Senior Center, temporarily located at 1555 W. Marine Drive in the old Astoria Yacht Club. For information, call 503-325-3231.

**A Course in Miracles** — The Astoria ACIM study group meets weekly from 3 to 4 p.m. For information and location, call Nelle Moffett at 916-307-9790 or email [moffett@cgifellowship.org](mailto:moffett@cgifellowship.org)