

SPACE X'S RECOVERED ROCKET ARRIVES LEANING ON BARGE

CAPE CANAVERAL: Call it the Leaning Tower of SpaceX. SpaceX's fourth recovered rocket returned to shore Thursday, leaning to one side but still standing tall on its ocean-landing platform. The first-stage booster pushed the limits during the landing last Friday. Its speed was close to the design maximum for the rocket and the support system for its legs.

Although the 15-story rocket was in danger of tipping over, it remained upright as it pulled into Port Canaveral, smudged black in places. Friday's touchdown followed the rocket's launch of a satellite. SpaceX is working to recycle its rockets; the first one may again fly in two to three months.

Chief executive Elon Musk said the booster represents 70 percent of the cost of a Falcon rocket, on the order of \$30 million to \$35 million. So it makes sense, he said, to reuse the pieces. In fact, he said at Code Conference 2016 in Southern California on Wednesday, it's "tragic" to discard them in the ocean, as has been the case throughout history.

Musk said he tells his team, "Imagine there was a pallet of cash that was plummeting through the atmosphere and it was going to burn up and smash into tiny pieces. Would you try to save it? Probably yes. Yeah, that sounds like a good idea. "So we want to get it back, and that way we don't have to make

another one. I think it's quite tragic if rockets like get smashed into tiny pieces."

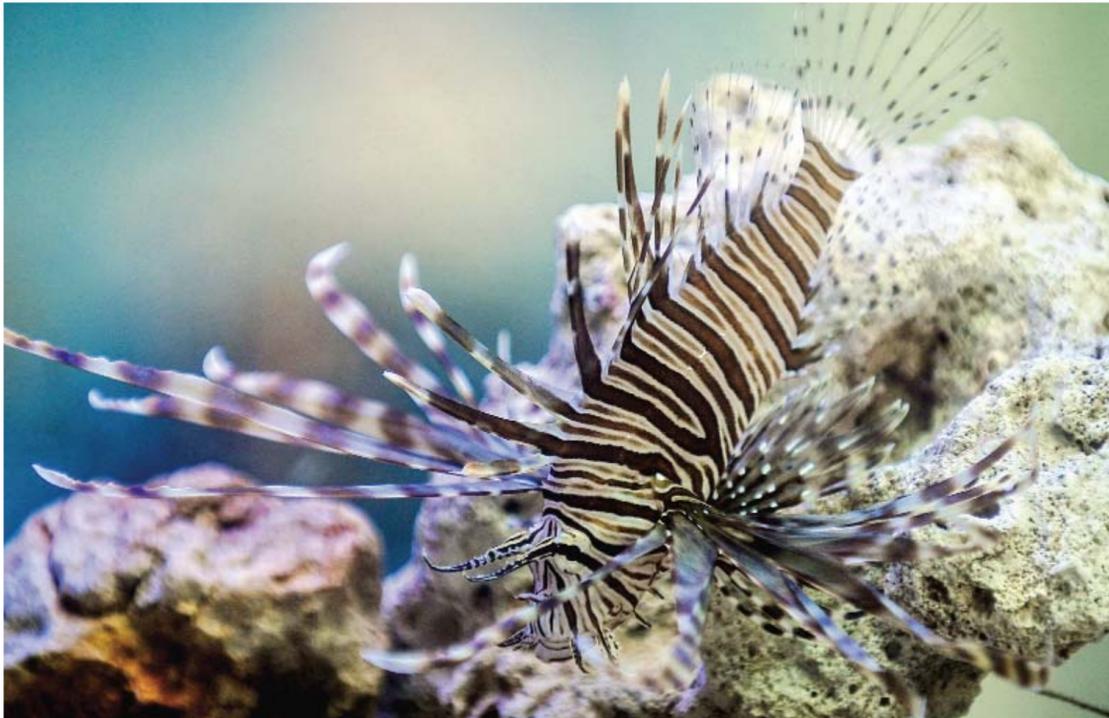
The Hawthorne, California-based SpaceX is the first and only rocket-maker to land boosters used in orbital missions. Blue Origin's touchdowns in Texas have occurred following suborbital flights. SpaceX's first successful landing occurred in December at Cape Canaveral Air Force Station. Three sea landings have followed off Florida's east coast, first in April, then two more in May. The stages look "quite good," according to Musk. For the landing, the rocket flips around, uses its engines to slow down and sets down on pop-out legs.

Musk said the company is working hard to whittle down a six-month backlog in Falcon 9 launches, following last summer's launch accident that destroyed cargo for the International Space Station. NASA represents about a quarter of this business, with commercial satellite operators and science payloads making up the rest.

SpaceX hopes to launch astronauts to the space station by the end of next year in beefed-up Dragon capsules, and in 2018 send an unmanned Dragon to Mars. He foresees sending humans to Mars via SpaceX rockets and spacecraft in 2024, if things go according to plan. — AP



CAPE CANAVERAL: This photo provided by SpaceX shows the first stage of the company's Falcon rocket after it landed on a platform in the Atlantic Ocean just off the Florida coast on Friday, May 6, 2016, after launching a Japanese communications satellite. — AP



HAVANA: A lionfish is seen in a fish tank in Havana, on May 2, 2016. Cuba includes in its menu lionfish to combat this invasive and predatory species that threatens the balance of the Caribbean Sea. — AFP

TO FIGHT LIONFISH INVASION, CUBA LEARNS TO COOK THEM

HAVANA: If you can't beat your enemies, eat them. That's the strategy Cuba has adopted to respond to an invasion of lionfish, a poisonous predator that has strayed far from its home waters in the South Pacific and Indian Oceans.

A favorite in aquariums for its flamboyant spines and vibrant orange and red stripes, the lionfish is wreaking havoc on ecosystems in the Caribbean and the Gulf of Mexico, where it showed up about a decade ago. The fish is hanging out around the region's coral reefs, living large as it feasts on smaller species and scares off its own potential predators with its venomous spines. Except for humans, that is.

Defying the invasion and fear of those intimidating spines, Cubans have begun serving up lionfish for dinner—a tasty meal and act of ecosystem conservation all in one. Delmis Cabrera, a marine biologist at the National Aquarium in Havana, said lionfish were first recorded in Cuba in 2007, apparently after being introduced to Caribbean waters accidentally. Within two years, the fish surrounded the island. Even sharks won't go near them, giving them

free rein to feed and spread. The problem has gotten so bad that combating the lionfish is the top item on the agenda at a summit of the Association of Caribbean States in Havana.

Bad reputation

But Cuba isn't waiting for regional governments to come up with a plan. It is catching lionfish and putting them on the menu. "We know it's a poisonous species that has its risks... but it's also delicious," said Cabrera. Lionfish has been eaten in Japan for years. And, like Cuba, a number of countries on the other side of the world are starting to experiment with it in the kitchen, including Colombia, Costa Rica, Mexico and the southern United States.

Cuba now holds an annual fishing tournament for the species. "It has practically been decimated," Cabrera told AFP. Professional diver Enrique Valdes backed that up. "Now you usually only see little ones," said the 55-year-old SCUBA pro.

Restaurants are trying to create a buzz around the new protein-rich fish, even if some

customers are reluctant at first. Besides scaring off predators with its spines, the lionfish is also known for stinging bathers and fishermen who come into contact with them, with symptoms that include pain, swelling or an allergic reaction. "We are trying to introduce it on the menu, but since it's a fish everyone knows as venomous," it is difficult, said Santy Pescador restaurant manager Carlos Fonseca.

Possible cancer drug?

Preparing lionfish requires just a little caution. "The spines have venomous glands that can cause respiratory paralysis, muscle pain and fever for up to three days if you prick yourself," said Noriesky Gao, 30, a chef at Santy Pescador. Since it is an invasive species that only recently arrived, he and his colleagues are still figuring out what to do with it. He has been experimenting with lionfish sushi. "Customers really enjoy it. It has white, juicy flesh. Here, people usually eat it raw," he said. Cuban biologists are also studying the lionfish's venom as a possible cancer-fighting agent, said Cabrera. — AFP

TWO-DRUG CHEMOTHERAPY SHOWING PROMISE AGAINST PANCREATIC CANCER

CHICAGO: A combination of two chemotherapy drugs has shown promising results in fighting pancreatic cancer, significantly improving five-year survival rates, according to a European study presented Friday.

The trial showed that patients who take the oral drug capecitabine in addition to treatment with the commonly-used intravenous drug gemcitabine after surgical removal of pancreatic cancer survived longer without significant increase in negative side effects. It was one of the largest trials ever conducted in pancreatic cancer, involving 732 patients. The study was presented at the American Society of Clinical Oncology's annual meeting, the world's largest conference on cancer, currently being held in Chicago.

"Pancreatic cancer remains one of the most hard-to-treat cancers. It is a major win to find that adding a generic chemotherapy not only improves survival for these patients, but does so with little effect on patients' quality of life," said Smitha Krishnamurthy of Case Western Reserve University, who was not a part of the study.

Although most people diagnosed with pancreatic cancer are not candidates for surgery, the findings show that those who can

have surgery "have a fighting chance of surviving this cancer with the combination of two commonly used chemotherapies," said John Neoptolemos, the study's lead author of the University of Liverpool in Britain.

The study showed a five-year survival rate of 28.8 percent among the group treated with both capecitabine and gemcitabine for six months, compared with 16.3 percent for the group that received gemcitabine alone during that time. The median overall survival rate was 28 months with the combination of drugs, compared to 25.5 months with gemcitabine alone.

"The difference in median survival may seem modest, but the improvement in long-term survival is substantial for this cancer," Neoptolemos said in a statement. The study's determination that the gemcitabine-capecitabine treatment is safe allows researchers to consider what other treatments could be added effectively.

According to the World Health Organization, 338,000 people in the world were diagnosed with pancreatic cancer in 2012, with the highest number of cases in North America and Europe. Pancreatic cancer is the fourth-leading cause of cancer death in the United States, with 41,780 deaths expected in 2016. — AFP

EXTINCT OTTER SPECIES NAMED AFTER GRATEFUL DEAD GUITARIST

BOISE: A US National Park Service paleontologist and Grateful Dead fan credited with identifying an extinct species of otter found in south-central Idaho has named it after the band's guitarist. Self-described Deadhead Kari Prassack says traveling the country to see Bob Weir and the band gave her the sense of adventure and confidence to pursue her career.

So when fellow scientists earlier this year credited her with properly identifying the new species from a mislabeled jawbone found in the late 1980s at Hagerman Fossil Beds National Monument, she named it *Lontra weiri*. Lontra is the genus and *weiri* the species. "It was a really important part of my life," said Prassack on Thursday about the 100-plus Grateful Dead concerts she saw starting in 1990 at age 15, when her mother first gave her permission, to 1995 when the band's run ended with the death of frontman Jerry Garcia. "I really became an adventurous person, much more so than ever before," she said, noting she visited multiple fossil sites during her travels following the band. "I decided if I wanted to do something, I could go and do it."

Childhood dream

During those five years, Prassack had made an attempt at art school, but she dropped out

and spent more time following the band. After Garcia's death, she decided to pursue her childhood dream of becoming a paleontologist. She earned a doctorate and in 2012 landed at the national monument famous for its wide variety of fossils that span from 3 million to 4.2 million years ago.

In 2014 she stopped at the Idaho Museum of Natural History in Pocatello to examine fossils collected at the national monument decades earlier and found the jawbone of the otter that had been wrongly identified as another species. She submitted a paper and other scientists confirmed her work, with the paper appearing in the *Journal of Vertebrate Paleontology* in April.

"This one is the biggest find, especially recently," said JoAnn Blalack, integrated resource manager at the monument. Blalack noted that she also is a Grateful Dead fan. "But not as much as Kari." Scientists say the otter lived 3.8 million years ago and is the earliest known example of modern North American river otters, but about half their size and weighing about 10 pounds. Prassack said she never expected to have the opportunity to name a new species, and the Grateful Dead's Weir was an easy choice. "It was a great opportunity to say 'Thank you,' for such a great experience," she said. — AP

DOUBLE TROUBLE FOR PRIZED POLISH FOREST

BIALOWIEZA, Poland: The roar of a chainsaw and staccato blows of an axe break the silence deep in Poland's majestic Bialowieza forest as loggers swiftly fell a 90-year-old tree. Teeming with wildlife, Bialowieza, a UNESCO World Heritage Site, includes one of the largest surviving parts of the primeval forest that covered the European plain ten thousand years ago.

But today, this peaceful haven is the scene of a bitter battle between environmentalists and officials over a spruce bark beetle infestation that rangers say is damaging healthy trees. There is no denying spruce bark beetles are having a field day in the forest, also home to the continent's largest mammal, the European bison, as well as elk, wolves and lynx. The wood of a logged spruce reveals a spectacular network of tunnels created by the insects.

"When their population gets as huge as it is now, the beetles are no longer content just to finish off diseased spruce. They also attack healthy trees," Andrzej Antczak, a local forest ranger told AFP. Authorities insist the goal of the tree felling is to stop the degradation of the treasured woodland. But environmentalists and many scientists argue the beetle poses no threat and that officials are more interested in selling wood than protecting the forest.

Spruce trees make up around 30 percent of Bialowieza and rangers say that beetles have attacked about a fifth of them, translating into

about a million cubic meters of lumber. Each infested tree threatens up to 30 of its neighbors. And warmer weather means that up to five generations of beetles can reproduce over a year. Cutting a single infested tree and removing it, can "save one to two hectares of forest per year," Grzegorz Bielecki, head forest ranger at Bialowieza, told AFP.

Over the centuries, Bialowieza has been spared the loggers by Polish kings and Russian czars who treasured it as the perfect hunting ground brimming with large game. The forest also survived massive clear-cut logging-when all is felled down to the stem-in the 20th-century by Russian and German occupiers, British industrialists and communist authorities.

Sprawling over 150,000 hectares, Bialowieza reaches across the Polish border with Belarus, where it is entirely protected as a nature park, compared to only around 16 percent of the Polish part of the forest. Green activists argue that the entire Polish part of the forest should be designated as a nature park, meaning logging would be forbidden. But since it was elected in October 2015, the controversial Law and Justice (PiS) government has said it plans to harvest more than 180,000 cubic meters of wood over a decade-triple the amount approved by the previous liberal government. The PiS insist new trees outnumber ones that are being chopped down and that protected virgin woodlands will not be logged.

'Huge' infestation

The governing conservatives claim logging will protect the forest from beetles and people from being hit by weakened, falling spruce. Environmentalists, however, accuse rangers of altering the forest's unique ecosystem which is described by UNESCO as "an irreplaceable area for biodiversity conservation".

A coalition of environmental organizations, including Greenpeace and the Polish branch of the Worldwide Fund for Nature (WWF), has lodged a complaint with the European Commission over the logging. The EU has also said it is "concerned" by Warsaw's decisions to log in Bialowieza and a UNESCO delegation is due to visit Poland from June 4 to 8.

Science professor Rafal Kowalczyk told AFP he opposes the felling, believing the beetle-ravaged trees should be allowed to die naturally and become a habitat for new flora and fauna. "The trees around me look dead, but in reality they're brimming with life, even more so than when they were growing, because now they're home to hundreds of insect species," Kowalczyk said, standing in part of the forest where trees fell victim to beetles. "A dead tree is a wealth of biodiversity," added the director of an outpost of the Polish Academy of Sciences in Bialowieza. "To cut down trees in this forest is comparable to what the Taliban does when it destroys works of art!" — AFP



BIALOWIEZA: Rafal Kowalczyk, Director of Mammal Research Institute of Polish Academy of Sciences shows dead spruces tree after they were attacked by woodworms in primal parts of Bialowieza Forest. — AFP