

## Whale Baby Boomlet

The highly endangered North Atlantic right whale is having a banner year for reproduction, vindicating researchers' hypothesis that abundant food makes for fertile whales.

Over the last decade, the number of northern right whales—so-called because whalers considered them the "right" whale to kill—has hovered at roughly 300 along the eastern U.S. coast. But their future looked dim after three barren breeding seasons for the inshore whales that make up most



Right whale with calf.

of the known population.

Last year, however, marine mammal researcher Charles "Stormy" Mayo and colleagues at the Center for Coastal Studies in Provincetown, Massachusetts, predicted that the whales would multiply this winter. After analyz-

ing 15 years' worth of data, the team concluded that the amount of food available in the whales' winter feeding grounds in Cape Cod Bay could be used to forecast how many females would become pregnant the following year, and hence how many baby whales

would show up 2 years later in the breeding waters off Florida and Georgia.

Because 1999 brought a good crop of copepods—a major crustacean in the cetacean diet—Mayo predicted that the inshore whales would produce three or

more calves this year. And lo, just halfway through the 2-month calving season, researchers have already spotted at least eight offspring. A thrilled Mayo says that, "in whale work, you seldom get such well-supported data." He is still waiting to see if the nutrition-calving link bears up next year, which he also predicts will bring a whale baby boomlet.

## Doppelgängers

Reports of doppelgängers (people's ghostly doubles) have long popped up in folklore and fiction, and even in medieval medical texts. But doppelgängers have eluded researchers. Peter Brugger, a neuroscientist at the University

of Zürich, hopes to change that by using virtual reality devices to give people the experience of having a body double.

Brugger, who this month was awarded the \$37,000 Pfizer Prize for his work on phantom limbs

with a woman born without arms or legs, believes that doppelgängers are "whole body" versions of phantom limbs. The brain contains a representation of the body, and disturbances in relevant neural networks by brain tumors or epilepsy can create the apparitions, he says.

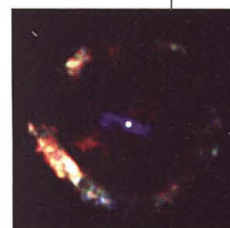
He has therefore designed a system similar to one that has been used to induce and treat phantom limb sensations. Subjects will don virtual reality goggles that are connected to a video camera, creating a cyber doppelgänger that mimics the subject's movements. Brugger even hopes to use Hollywood-style special effects to make the double appear "pale" and "ghostly." Eventually, he'll wire up brain sensors so he can see what kind of neural activity the experience evokes.

Some are doubtful that Brugger's plan could work. "I am skeptical as to whether current virtual reality could generate a sufficiently powerful or convincing effect," observes Peter Halligan, a neuropsychologist at Cardiff University in Wales. Brugger acknowledges that it may work with very few people, but argues that to some, the fake illusion will be as powerful as the real thing.

## Redating a Star

Almost 1615 years ago, Chinese astronomers saw a brilliant new star appear in the constellation we now call Sagittarius. Last fall, NASA's Chandra X-ray Observatory identified the stellar corpse of this supernova explosion: a tiny, superdense, spinning, x-ray-emitting neutron star, or pulsar. According to Vicky Kaspi of McGill University in Montreal, this is only the second pulsar for which an accurate age is known. The other, in the Crab Nebula, resulted from a supernova recorded in A.D. 1054 by Asian stargazers.

The Chandra image shows the pulsar as a white spot in the center of a hot, gaseous shell ejected by the dying star. This supernova remnant, some 15,000 light-years away, was already believed to be associated with the explosion seen by Chinese astronomers in the spring of A.D. 386. But earlier studies had suggested that it was separate from the shell and far older—by 23,000 years. By showing that the pulsar is smack in the middle of the remnant, Chandra has proved it was indeed the light seen in China. It has also shown, says Kaspi, that there's something wrong with the standard way of determining pulsar ages.

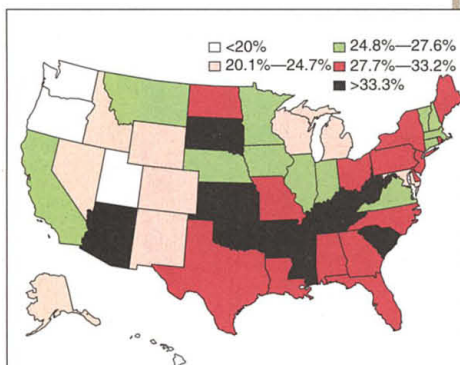


## Nation Continues to Gain

The more obsessed we are with diet and fitness, the fatter we get, it seems. At least half the U.S. population is overweight, according to the Centers for Disease Control and Prevention. And in the past 2 decades, the proportion of adults judged to be "obese" has gone from 12% to 20% of men, and from 16% to 25% of women.

Fat is bad not just for the heart and blood vessels; it also raises cancer risks, notes the American Cancer Society's (ACS's) latest report, *Cancer Facts & Figures 2001*. It raises breast cancer risk in postmenopausal women by 50%, for example, and is associated with more colon and prostate cancer in men.

There is no sign that this particular risk factor is abating in this land of couch potatoes. In 1998 (see map), only four states met the ACS's "healthy people goal 2010," which is to have 80% of adults engage in leisure-time physical activity.



Percentages of people in the United States reporting no leisure-time exercise.