

# Putting Limits on Teen Drivers

States are getting tough on teens behind the wheel. But many parents are reluctant to curb their children

By WENDY COLE HENDERSON

**S**INCE KINDERGARTEN, THEY HAD BEEN known as “the crew.” Still a close-knit group in high school, the five Henderson, Nevada, boys were all delighted when Sean Larimer turned 16 and in 2003 became the first to get his driver’s license. Sean’s mom, Susan Larimer, a hospital nurse who was in the midst of a divorce, was happy about it too. “I thought I needed him to drive,” she recalls. So Susan gave her son permission to drive around with the crew one evening just 63 days after he passed his road test.

As was customary during his outings with friends, Susan and Sean checked in with each other by cell phone several times. But while awaiting his return, Susan dozed off. Just after 1 a.m., the phone startled her awake with the news every parent of a teen dreads. Her son had smashed her Pontiac Grand Am and was in the hospital’s trauma unit. Three of the boys in the car had been killed, the fourth injured. Sean, who had been drinking heavily at a party that night (reportedly as much as eight beers in an hour), served two years in juvenile lockup for driving under the influence of alcohol and reckless driving. He cannot get his license back until he turns 21. Susan, shaken by the tragedy and determined to spare other young drivers and their parents similar agony, has lobbied state lawmakers to make

the licensing process for teen drivers lengthier and more safety conscious. “I’m not making excuses for his choice to drink,” she says. “But if we had tougher laws”—like prohibiting newly licensed teens from transporting other minors—“Sean would not have been out driving with his friends that night.” In October 2005, Nevada put in place a graduated licensing law, which phases in driving privileges as teens gain experience and maturity.

Getting a driver’s license remains a major milestone for teens in their impatient journey toward adulthood—and for their parents, eager to liberate themselves from constant chauffeuring duties. But car crashes are the main cause of death for U.S. teenagers, killing about 6,000 drivers between the ages of 16 and 19 each year. That’s more fatalities for this age group than those caused by guns and drug overdoses combined. And the younger and less experienced the driver, the worse the danger. Drivers ages 16 to 19 have a fatality rate four times

as high as that of drivers 25 to 29.

Experts say that parents who assume that simply reminding their kids to buckle up and watch the speed limit miss the central problem: the adolescent brain may be unable to handle the responsibilities of driving. Researchers with the National Institute of Mental Health have shown that the parts of the brain that weigh risks, make judgments and control impulsive

## TAKING A TOLL

- **The No. 1 killer** of U.S. teenagers is car crashes.
- **About 6,000 teen drivers** are killed in auto accidents each year—more fatalities for this age group than those caused by guns and drug overdoses combined.
- **Drivers aged 16 to 19** have a fatality rate four times as high as that of drivers 25 to 29.
- **18% fewer collisions** involving teen drivers occurred in Las Vegas in the first eight months of 2006 in the year after teen-driving restrictions were imposed.

behavior are still developing through the teen years and don't mature until about age 25.

Those findings—and aggressive lobbying by auto-safety advocates—have helped push 45 states to adopt some form of graduated driver licensing, or GDL, which lengthens the waiting period before teens can obtain a full “go anywhere, anytime” driver's license. Slowing down the process has slowed down the accident rate. Per-capita crashes have fallen 23% among 16-year-old drivers in California since its strict GDL law was enacted in 1998, the Insurance Institute for Highway Safety (IIHS) reported in August. The state's late-night crashes were down 27%, and crashes with teen passengers were down 38%. Similar drops have occurred in other states. Despite those impressive results, however, legislators have balked at imposing additional measures that could make teen drivers even safer.

Studies suggest that nighttime driving is particularly dangerous for teens, and curfews are urged. “Most accidents involving teens occur before midnight,” says Susan Ferguson, senior vice president of research for the IIHS. “So the smartest laws go into effect earlier.” Last year nine states introduced measures to rein in teens' nighttime driving privileges, but only one—Nevada—passed such a law.

Nevada is one of the last states to join the decade-long movement to restrict teen drivers, but its law is now among the most comprehensive in the nation. It requires teen drivers to be off the road by 10 p.m., earlier than the midnight or 1 a.m. curfews

in other states (six states still have no nighttime limits at all). Nevada also set a six-month waiting period between permit and licensing, mandates at least 50 hours of parent-supervised driving experience that must be tracked in a written log, and forbids newly licensed drivers to transport other youths for three months. The changes are already producing positive results. In Las Vegas, collisions involving teen drivers were down 18%, to 1,155, for the first eight months of 2006 compared with the same period in 2005.

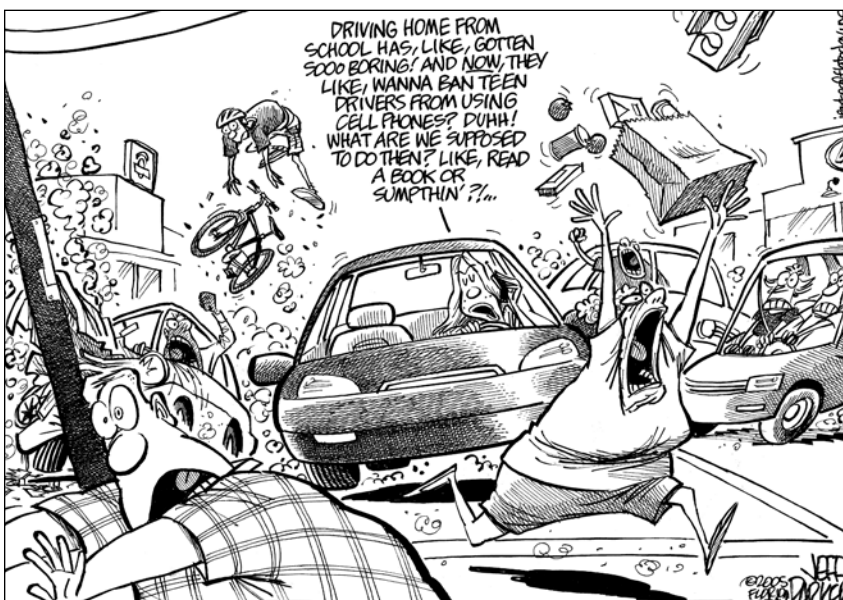
Some parents, like Donna Botti, are not convinced that the restrictions should apply to their children. On a recent Saturday evening as her daughter Angela, 16, was getting ready for a friend's sweet-16 party at a downtown Vegas club, she belatedly noticed the phrase “Parent Drop-off and Pickup Preferred” on her invitation. “How stupid is that? I have my own car,” Angela scoffed. Although the festivities were supposed to end at 10 p.m., Angela had no intention of racing home in her shiny '05 Hyundai Tucson to make curfew. In fact, she and her parents said they were unaware that nighttime restrictions for teens existed until being interviewed for this story. Donna's sunny expression momentarily turned pained when she was asked whether she would allow Angela, who was chauffeuring two pals that evening, to ignore the law: “I don't want to feel like an uncaring mother, but truthfully, I'm not worried about her.”

That kind of statement makes Susan Larimer

cringe. “People would like to believe Sean's crash was an isolated incident,” she says. “But the second your kid drives away under his or her own power, you have no idea what can happen. If this nightmare can happen to our family, it can happen to anyone.” ■

### Questions

1. Why might teen drivers have trouble assessing risks?
2. Has Graduated Driving Licensing (GDL) legislation been effective in California?
3. Do you support GDL? Explain.



# How I Did On the SAT

In 2003 I predicted dire consequences from a massive redesign of the college-entrance test. What I got right—and wrong

By JOHN CLOUD

**T**HE NEW SAT SCORES ARE OUT, AND BURIED in them is a sign of hope for American education. True, the scores are actually a bit lower than last year's; the combined average for the SAT's math and reading sections fell 7 points, to 1021, the biggest single-year decrease since 1975, when the score dropped 16 points, to 1010. But statistically speaking, a 7-point decline (out of a possible 1600 on those two sections) isn't much. It's less than the value of a single question, which is about 10 points. Also, the SAT was radically changed last year. The College Board made it longer and added Algebra II, more grammar and an essay. Fewer kids wanted to take the new 3-hour 45-minute test more than once, so fewer had an opportunity to improve their performance. Scores were bound to slide.

In 2003 I spent six months tracking the development of the new SAT. I sat through hours of test-development sessions and even learned how to grade SAT essays. TIME ran my resulting story on its cover that October.

The story did make some predictions that turned out to be right. For instance, the new test favors girls more than the old one did. Girls are better than boys at fixing grammar and constructing essays, so the addition of a third SAT section, on writing, was almost certain to shrink the male-female score gap. It did. Girls trounced boys on the new writing section, 502 to 491. Boys still outscored girls overall, thanks largely to boys' 536

average on the math section, compared with girls' 502. But boys now lead on the reading section by just 3 points, 505 to 502; the gap was 8 points last year. What changed? The new test has no analogies ("bird is to nest" as "dog is to doghouse"), and boys usually clobbered girls on analogies.

My story also predicted that the addition of the writing section would damage the SAT's reliability. Reliability is a measure of how similar a test's results are from one sitting to the next. The pre-2005 SAT had a standard error of measurement of about 30 points per section. But the new writing section, which includes not only a multiple-choice grammar segment but also the subjective essay, has a standard error of measurement of 40 points. In short, the College Board sacrificed some reliability in order to include writing.

Finally, I was right about one other thing: that the graders would reward formulaic, colorless writing over sharp young voices. The College Board is now distributing a guide called "20 Outstanding SAT Essays"—all of them perfect scores—and many are unbearably mechanical and clichéd ("smooth sailing always comes after the storm"; "they say that history repeats itself").

Still, there's good news. The central contention of my 2003 story was that the SAT's shift from an abstract-reasoning test to a test of classroom material like Algebra II would hurt kids from failing schools. Instead, the very poorest students—those from families earning less than \$20,000 a year—improved their SAT performance this year. It was a modest improvement (just 3 points) but significant, given the overall slump in scores. And noncitizen residents and refugees saw their scores rise an impressive 13 points.

Sometimes it's nice to be wrong. ■



## Questions

1. In what areas of the new test do girls outperform boys? Where do boys outperform girls?
2. Which groups improved their test scores on the new test?

# Tour de Testosterone

A failed drug test taints cyclist Floyd Landis' heroic victory in the Tour de France. Is Landis flawed, or is the testing process?

By **SEAN GREGORY**

**T**HIS ONE HURT. AFTER MARION JONES, MARK McGwire and Sammy Sosa, aren't we immune to the fact that our beloved athletes might not have achieved immortality on talent alone? Heck, no. Reports are circulating that Floyd Landis—the fun-loving Mennonite from Pennsylvania, the guy whose Alpine comeback in the Tour de France was dubbed, properly, “The Ride of the Century” (and he did it with a bum hip to boot)—might have cheated.

Landis tested positive for abnormal testosterone levels, a result confounding and dumbfounding, given that a number of prerace favorites were tossed from the Tour under a cloud of doping suspicion. There's hope for Landis lovers inspired by his back-from-the-brink tale: his guilt is far from established, and the case has other twists ahead. Phonak, the Swiss sponsor of Landis' cycling team, revealed that on the day of Landis' miraculous comeback, an abnormally high ratio of testosterone to epitestosterone was found in his urine. (Testosterone is a muscle-building anabolic steroid; epitestosterone, a related substance, has no performance-enhancing effects.) Specifically, Landis' testosterone-to-epitestosterone (T/E) ratio was above the 4-to-1 limit set by WADA; the ratio for most people is between 1 to 1 and 2 to 1. The team suspended him immediately.

So did Landis put synthetic testosterone into his body? He has denied using any illegal substances. Some antidoping experts say that Landis' body

could produce excess testosterone on its own. “We know there is a small percentage of the population who are going to have a natural production of testosterone that is above the norm,” says Gérard Dine, president of the Biotechnological Institute in Troyes, France, and an antidoping consultant to French and international sporting authorities. Another possible explanation lies in what Landis consumed the night before his 125-mile comeback: he has admitted to trying to erase the worst performance of his career by downing some whiskey. Medical research has linked alcohol with an elevated T/E ratio.

**The most vexing mystery is why Landis would suddenly take testosterone as the Tour wound down, since it might not have been of much help.**

The most vexing mystery is why Landis would suddenly take testosterone as the Tour wound down, since it might not have been of much help. “It doesn't add up,” says WADA member Dr. Gary Wadler. “If you're going to get any benefit out of steroids, you would have to have been on the steroids before the Tour de France ever started.” Landis notes that

he had passed seven other drug tests on the Tour.

What's unknown—and crucial—for Landis is the result of another test on his urine samples, the one that measures the carbon-isotope ratio. This examines the atomic makeup of the testosterone in Landis' body. If the ratio of carbon isotopes matches those found in synthetic testosterone, Landis will be in trouble. But even then, the debate might go on because some scientists say this particular test is not infallible. Says Dine: “With testosterone, there is no scientific consensus.”

Landis seems prepared for an ugly ride. “Unfortunately, I don't think it's ever going to go away, no matter what happens next,” he said of the allegations. Landis has fallen off his bike before. Let's see if he can get back on this time. ■

## Questions

1. What is testosterone?
2. What are some possible reasons that Landis' testosterone level was elevated at the time of the testing?

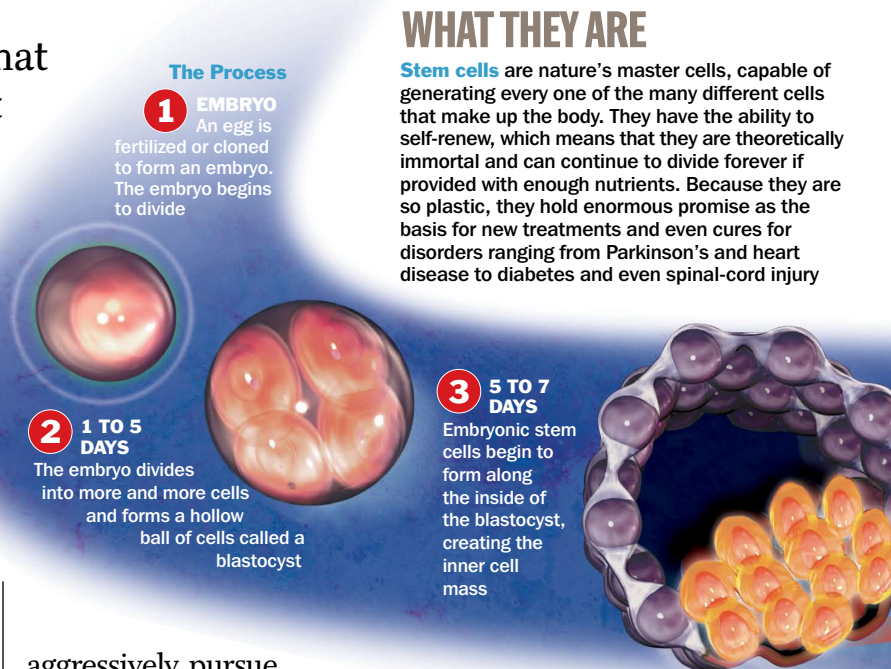
# Stem Cells: The Hope And The Hype

The debate is so politically loaded that it's tough to tell who's being straight about the real areas of progress and how breakthroughs can be achieved. TIME sorts it out

By **NANCY GIBBS**

**W**HEN THERE'S NOTHING ELSE TO prescribe, hope works like a drug. A quadriplegic patient tells herself it's not a matter of if they find a cure but when. After all, researchers have been injecting stem cells into paralyzed rats and watching their spinal cords mend. But what is the correct dose of hope when the diseases are dreadful and the prospects of cure distant? In July 2006, when President George W. Bush vetoed the bill that would have expanded funding for human embryonic-stem-cell (ESC) research, doctors got calls from patients with Parkinson's disease saying they weren't sure they could hang on for another year or two. The doctors could only reply that in the best-case scenario, cures are at least a decade away.

Stem-cell research has joined global warming and evolution science as fields in which the very facts are put to a vote, a public spectacle in which data wrestle dogma. Scientists who are having surprising success with adult stem cells find their progress being used by activists to argue that embryo research is not just immoral but also unnecessary. But to those in the field, the only answer is to press ahead on all fronts. "There are camps for adult stem cells and embryonic stem cells," says Douglas Melton, a co-director of the Harvard Stem Cell Institute. "But these camps only exist in the political arena. There is no disagreement among scientists over the need to



## WHAT THEY ARE

**Stem cells** are nature's master cells, capable of generating every one of the many different cells that make up the body. They have the ability to self-renew, which means that they are theoretically immortal and can continue to divide forever if provided with enough nutrients. Because they are so plastic, they hold enormous promise as the basis for new treatments and even cures for disorders ranging from Parkinson's and heart disease to diabetes and even spinal-cord injury

aggressively pursue both in order to solve important medical problems."

Trapped in all this are patients and voters who struggle to weigh the arguments because the science is dense and the values tangled. Somewhere between those who would gladly stop research and the swashbucklers who disdain limits are people who approve of stem-cell research in general but get uneasy as we approach the ethical frontiers. Adult-stem-cell research is morally fine but clinically limiting, since only embryonic cells possess the power to replicate indefinitely and grow into any of more than 200 types of tissue. Extracting knowledge from embryos that would otherwise be wasted is one thing, but scientists admit that moving forward would require a much larger supply of fresh, healthy embryos than fertility clinics could ever provide. And once you start asking people about creating embryos for the purpose of experimenting on them, the support starts to slow down.

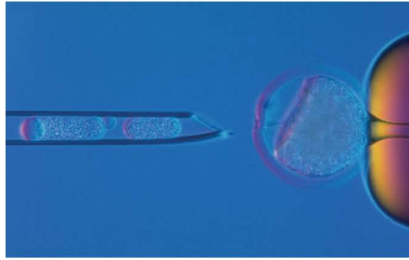
In a prime-time speech from his Texas ranch in August 2001, Bush announced that federal money

## WHERE THEY COME FROM

### LEFTOVER OR DEAD-END IVF EMBRYOS

**Why they are useful** More than 400,000 embryos created during in vitro fertilization lie frozen in clinic tanks in the U.S. Many of them will be discarded, so the embryonic stem cells that exist inside them could be salvaged

**Drawbacks** The freezing process may make it harder to extract stem cells. Some of the embryos were the weakest ones created by infertile couples and may not yield high-quality stem cells



ROSLIN INSTITUTE

### ◀ NUCLEAR-TRANSFER EMBRYOS

**Why they are useful** These embryos are created using the technique that created Dolly, the cloned sheep. Stem cells can be custom-made by inserting a patient's skin cell into a hollowed human egg. Any resulting therapies would not run the risk of immune rejection

**Drawbacks** The process has not yet been successfully completed with human cells, and it requires an enormous amount of fresh human eggs, which are difficult to obtain

### ◀ ADULT STEM CELLS

**Why they are useful** They exist in many major tissues, including the blood, skin and brain. They can be coaxed to produce more cells of a specific lineage and do not have to be extracted from embryos

**Drawbacks** They can generate only a limited number of cell types, and they are difficult to grow in culture

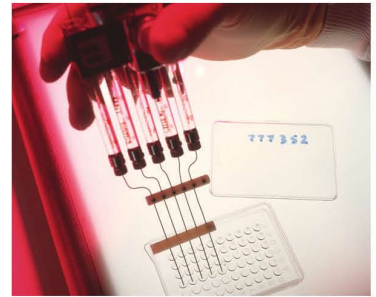


GARY D. GAUGLER—PHOTOTAKE

### UMBILICAL-CORD CELLS ▶

**Why they are useful** Although they are primarily made up of blood stem cells, they also contain stem cells that can turn into bone, cartilage, heart muscle and brain and liver tissue. Like adult stem cells, they are harvested without the need for embryos

**Drawbacks** An umbilical cord is not very long and doesn't hold enough cells to treat an adult

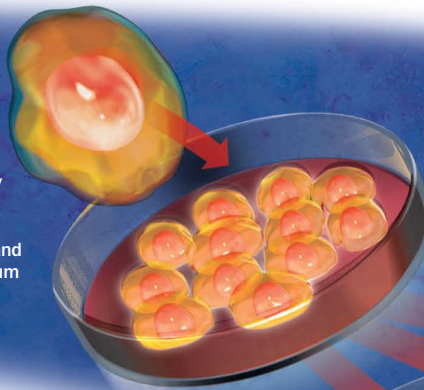


COLIN CUTHBERT—PHOTO RESEARCHERS

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### STEM LINE

The cells are scraped away and grown on a layer of feeder cells and culture medium



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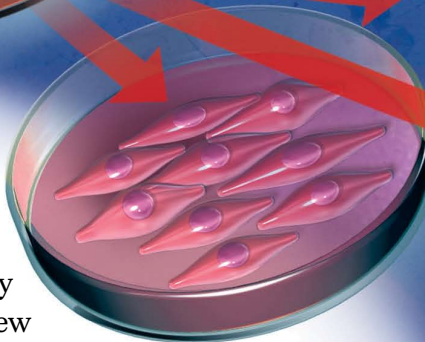
### TISSUE PRODUCTION

Groups of stem cells are nurtured under specialized conditions, with different recipes of nutrients and growth factors that direct the cells to become any of the body's more than 200 various tissues

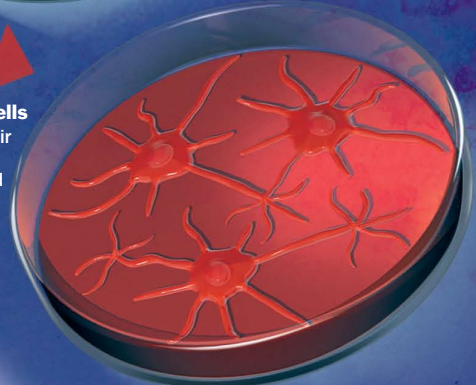


**▶ Pancreatic islet cells**  
Could provide a cure for diabetes

could go to researchers working on ESC lines that scientists had already developed but no new lines could be created using federal funds. States from Connecticut to California have tried to step in with enough funding to keep the labs going and slow the exodus of U.S. talent to countries like Singapore, Britain and Taiwan. Meanwhile, private biotech firms and research universities with other sources of funding are free to create and destroy as many embryos as they like, because they operate outside the regulations that follow public funds.



**▶ Muscle cells**  
Could repair or replace a damaged heart



**▶ Nerve cells**  
Could be used to treat Parkinson's, spinal-cord injuries and strokes

TIME Graphic

For scientists who choose to work with the approved "presidential" lines, the funding comes wrapped in frustration. Today there are only 21 viable lines, which limits genetic diversity. They are old, so they don't grow very well, and were cultured using methods that are outdated. What's more, the chromosomes undergo subtle changes over time, compromising the cells' ability to remain "normal."

In the wake of Bush's original order, Harvard decided to use private funding to develop about 100 new cell lines from fertility-clinic embryos, which it shares with researchers around the world. Scientists, desperate for variety, snap them up. "Not all embryonic-stem-cell lines are created equal," says Dr. Arnold Kriegstein, who runs the Institute for Regeneration Medicine at the University of California, San Francisco. "Some are more readily driven down a certain lineage, such as heart cells, while others more easily become nerve. We don't understand how it happens, but it does mean we need diversity."

To get around political roadblocks, scientists are searching for another source of cells that is less ethically troublesome, ideally one that involves no embryo destruction at all. The most exciting new possibility doesn't go near embryos at all. Dr. Shinya Yamanaka of Kyoto University reported tantalizing success in taking an adult skin cell, exposing it to four growth factors in a petri dish and transforming it into an embryo-like entity that could produce stem cells—potentially sidestepping the entire debate over means and ends.

Even if scientists discover an ideal source of healthy cell lines, there is still much to learn about how to coax them into turning into the desired kind of tissue. Geron, a California-based company, claims it is close to filing for permission to conduct the first human trials relying on ESC-based therapy. Not to be outdone, the academic groups are just a few steps behind. Lorenz Studer at Memorial Sloan-Kettering Cancer Center in New York City has been able to differentiate ESCs into just about every cell type affected by Parkinson's disease and has transplanted them into rats and improved their mobility. Next, he plans to inject the cells into monkeys.

But the closer scientists come to human trials, the more concerned the FDA will be with ensuring patient safety. Regulators want data on how the cells will behave in the human body. Stem cells have shown a dismaying talent for turning into tumors. When human trials finally begin, there's no method for precisely determining whether the transplanted stem cells are functioning correctly.

Even as scientists press ahead with embryo research, exciting news has come from the least

controversial sources: the stem cells in umbilical-cord blood and placentas, and even in fully formed adult organs. While not as flexible as embryonic cells, cord and placental cells have proved more valuable than scientists initially hoped.

If you want to lean out over the edges of science and marvel at what is now possible, visit Dr. Joanne Kurtzberg's program at Duke University Medical Center. Children with blood diseases that were almost certainly fatal a decade ago have got cord-blood transplants that essentially cure them. Now she and her team are taking a more targeted approach by attempting to differentiate cord-blood cells to address heart, brain and liver defects. "I think cord-blood cells have a lot of promise for tissue repair and regeneration," says Kurtzberg. "But I think it will take 10 to 20 years."

Until recently researchers thought adult stem cells couldn't do much more than regenerate cell types that reflected the stem cells' origin—blood and immune cells from bone marrow, for example. Even so, some scientists believe adult stem cells may prove to be a powerful source of therapies. "In some cases, you may not want to go all the way back to embryonic stem cells," says Kurtzberg. "You may want something more specific or less likely to stray. You wouldn't want to put a cell in the brain and find out later that it turned into bone."

Even the true believers among scientists, however, dispute eager politicians who have called for a Manhattan Project approach to research. Indeed, a massive centralized effort controlled by the Federal Government could do more harm than good. The key is to have the broadest cross section of scientists possible working across the field. When it comes to such an impossibly complicated matter as stem cells, the best role for legislators and Presidents may be neither to steer the science nor to stall it but to stand aside and let it breathe. ■

### Questions

1. Why are embryonic stem cells more useful for scientific research than adult stem cells?
2. As therapies are developed using stem cells, what concerns is the FDA expected to have?

# Goodbye, Arctic Icecap

By **MICHAEL D. LEMONICK**

**B**ACK IN 2005, SCIENTISTS DREW ATTENTION TO four years of unusual summer melting in ice that covers most of the Arctic Ocean. They concluded that this northern sea could be completely ice-free—including the North Pole—well before the end of the 21st century.

But a recent report from the American Geophysical Union suggests that things have sped up. The ice didn't melt quite as much as in 2005, the worst summer on record. But 2006 was still pretty bad—there's less ice than the historical norm by an area about the size of Alaska. When you plug all the data into computer simulations, they suggest that the summer ice could disappear completely a lot sooner than anyone thought—possibly within just 40 years, and possibly with very little warning. That's because as the sea ice melts in summer, warmer water can more easily flow into the Arctic. Open water also reflects a lot less sunlight than ice does, which lets the sun warm things up more as more water shows. That creates a feedback loop: more water means more heat means even more water means even more heat—until, in just one especially warm summer, the ice could vanish, and not return.

It's all one more suggestion that global warming is very real, and that the effects could lead to sudden changes. If the Arctic ice disappears, it might be good for shipping, but wildlife (including polar bears and seals) would be devastated. The global climate effects could be devastating, as well. ■



# The Scary Economics of Global Warming

By **MICHAEL D. LEMONICK**

**P**EOPLE WHO LIKE TO PAINT GLOBAL WARMING as an overblown threat often point to the huge costs of trying to fix it. What if we spend billions or trillions to stave off a threat that isn't there? But that argument is false, says a new report out of the United Kingdom.

Put together by economist Sir Nicholas Stern, the study pegs the likely economic hit from human-induced climate change at a whopping 20% reduction in global economic output over the next several decades, due to such things as massive droughts, hundreds of millions of refugees from rising sea level, and the widespread extinction of species. That's comparable, says the report, to the devastation caused by the Great Depression or one of the world wars.

The good news, says Stern, is that this economic disaster, which he deems very probable based on a survey of scientific evidence, can be largely staved off with an investment of about 1% of the world's gross domestic product (GDP) in carbon-reduction and other schemes. The bad news is that we have to start pretty much right away. And while Tony Blair has hailed the

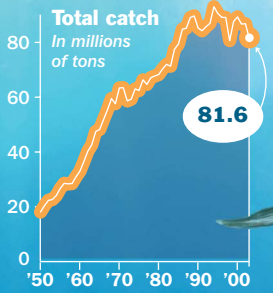
new report and promised that the U.K. will take serious measures, there's pretty much no response out of the White House. Could President George W. Bush be miffed that former Vice President Al Gore has signed on as an adviser on climate change to the British government? ■

## Questions

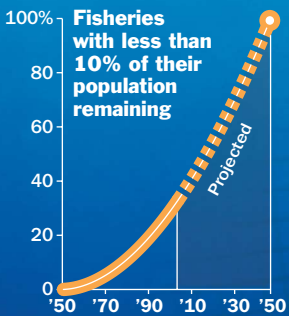
1. What could cause the Arctic ice cap to melt completely within 40 years?
2. How could global warming cause an economic downturn equivalent to the Great Depression?



# The world is consuming more fish ...

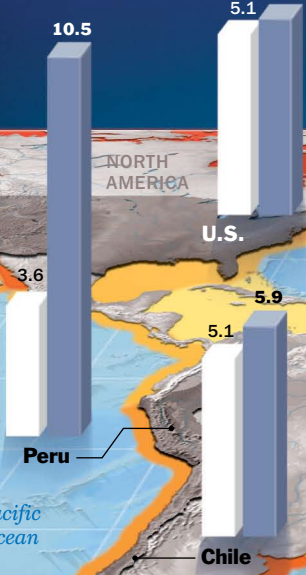


# ... which could lead to the extinction of many species



# A LOOK AT WHO DOES THE MOST FISHING

**Total marine harvest**  
In millions of tons



## STURGEON

This ancient fish was around at the time of the dinosaurs. Its eggs (true caviar) are a gourmet delicacy, but sturgeons of the Caspian Sea are nearing extinction

## SWORDFISH

It was overfished in the late 1990s, but public pressure led to tighter regulations, which helped the species rebound. Today most of the swordfish Americans eat is imported

## PACIFIC SALMON

Nearly 30 runs of salmon in Washington and Oregon are endangered due to construction of dams and habitat loss. However, Alaska's salmon population thrives

## GROUPE

These sedentary, long-living fish dwell in deep waters and reproduce for short periods. They're overfished in the Gulf of Mexico near Florida's west coast and in Hawaii

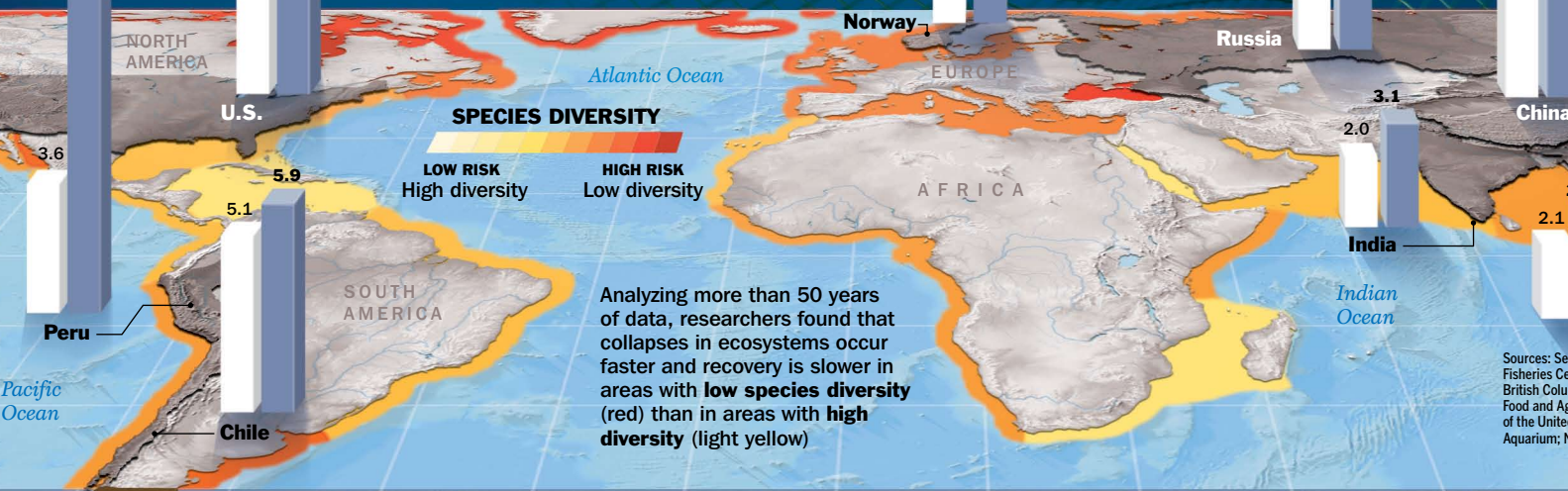
## RED SNAPPER

Not to be confused with "Pacific red," they are heavily fished in the Gulf of Mexico, exported by Mexico and Brazil and listed as overfished by the U.S. since 1980

## BLUEFIN TUNA

One of the world's most valuable fish, these 300-lb. giants are favored for sushi. The Atlantic population has declined almost 90% since the 1970s

TIME Graphic by Ed Gabel and Lon Tweeten  
Written by Kristina Dell



Sources: Sea Fisheries Cent, British Colum, Food and Agr of the United Aquarium; NC

# Oceans of Nothing

A study says overfishing will soon destroy the seafood supply

By UNMESH KHER

**F**ISHERMEN ON THE HIGH SEAS HAVE plenty of worries, not the least of which are boat-tossing storms, territorial squabbles and even pirates. Now Boris Worm, a marine biologist at Dalhousie University in Halifax, Canada, has added another. After studying global catch data over more than 50 years, he and a team of researchers in four countries have come to a stunning conclusion. By the middle of this century, fishermen will have almost nothing left to catch.

Over the past three decades, the fish export trade has grown fourfold, to 30 million tons, and its value has increased ninefold, to \$71 billion. The dietary attractiveness of seafood has stoked demand. About 90% of the ocean's big predators—like cod and tuna—have been fished out of existence. Increasingly, fish and shrimp farms are filling the shortfall. Though touted as a solution to overfishing, many of them have—along with rampant coastal development, climate change and pollution—devastated the reefs, mangroves and seagrass beds where many commercially valuable fish hatch.

Steven Murawski, chief scientist at the U.S. National Marine Fisheries Service, finds Worm's headlining prediction far too pessimistic. Industry experts are even more skeptical.

Still, the destructive fishing practices that have decimated tuna and cod have not declined worldwide. Up to half the marine life caught by fishers is discarded, often dead, and vibrant coral forests are still being stripped bare by dragnets. Worm argues that fisheries based on ecosystems stripped of their biological diversity are especially prone to collapse. At least 29% of fished species have already collapsed, according to the study, and the trend is accelerating.

So what's a fish eater to do? "Vote with your wallet," says Michael Sutton, who runs the Monterey Bay Aquarium's Seafood Watch program in California. Since 1999, the aquarium has handed out pocket guides listing sustainably harvested seafood. The Marine Stewardship Council has partnered with corporations to similarly certify wild and farm-raised seafood. Some 370 products in more than two dozen countries bear the British group's "Fish Forever" label of approval. Wal-Mart and Red Lobster, among others, have made commitments to sell sustainably harvested seafood.

But that's just a spit in the ocean unless consumers in Japan, India, China and Europe join the chorus for change. "If everyone in the U.S. started eating sustainable seafood," says Worldwatch Institute senior researcher Brian Halweil, "it would be wonderful, but it wouldn't address the global issues. We're at the very beginning of this." ■

## Questions

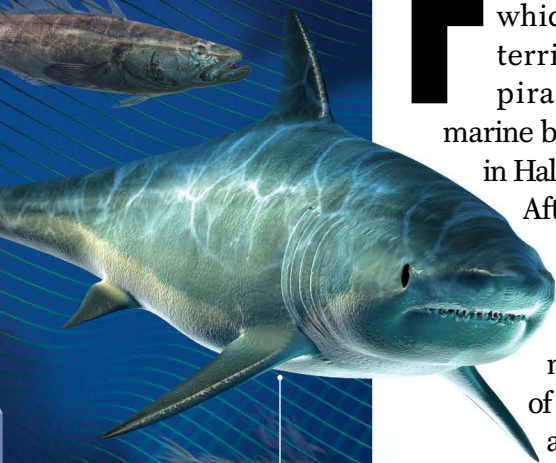
1. What has happened to 90% of the ocean's big predators?
2. What would help stop the depletion of fish from the ocean?

## ATLANTIC COD

Its abundance attracted Europeans settlers to America, but recent overfishing has altered the ecosystem. Scientists say we are fishing the last 10% of this species

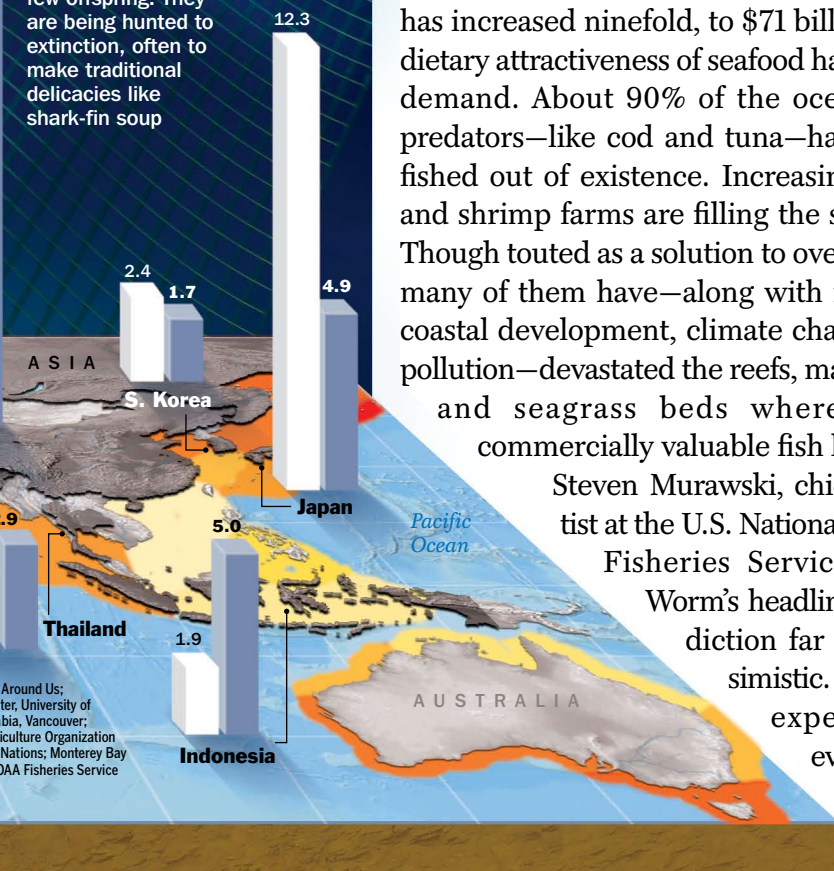
## CHILEAN SEA BASS

The trendiness of this fish, also called the Patagonian toothfish, could be its downfall. The fish is often caught illegally, especially in the remote waters of the Antarctic



## SHARKS

Almost all are in trouble in part because they mature slowly and bear few offspring. They are being hunted to extinction, often to make traditional delicacies like shark-fin soup



Around Us:  
ter, University of  
bia, Vancouver;  
iculture Organization  
Nations; Monterey Bay  
DAA Fisheries Service



# Interpreting Maps and Graphics

The maps and graphics accompanying **Stem Cells: The Hope and the Hype** on pages 24 to 26 and **Oceans of Nothing** on page 28 and 29 are packed with information. But what does it all mean? Use the questions below to sharpen your skills in reading and interpreting graphics.

## Stem Cells: The Hope and the Hype

1. How does an embryo form?

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2. Define a *blastocyst*.

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3. True or false: A blastocyst is formed more than seven days after an egg is fertilized.

4. How many types of tissues are found in the human body?

5. True or false: A stem cell can be cultured from an unfertilized egg.

6. How can different types of cells be grown from stem cells?

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## Oceans of Nothing

7. True or false: The 81.6 tons of fish caught in the last year on the chart is the highest amount ever caught.

8. By what year will 100% of all fisheries have less than 10% of their populations remaining?

9. Name the three countries that have reduced the amount of fish they caught between 1984 and 2004.

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10. Name one of the world's most valuable fish whose Atlantic population has been reduced by 90% since the 1970s.

11. What country more than quadrupled the amount of fish it caught between 1984 and 2004?

12. Which area of the world has the most concentrated area of low species diversity?

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# Where to Get a Pay Raise

Congress won't give you one—the federal minimum wage is still \$5.15. Activists in Chicago and elsewhere are pressing for a “living wage” to help the working poor

By JEREMY CAPLAN

**W**AL-MART MAY HAVE EARNED MORE THAN \$11 billion last year, but it's squawking over a \$10 bill. The bill in question is a new Chicago ordinance that the retailer fiercely opposes, which will require the company—along with Target and other giant retailers—to pay a starting wage of \$10 an hour, plus \$3 in benefits, to anyone hired in the Windy City. The living-wage ordinance, passed by the city council after ferocious campaigning by organized labor and its business opponents, is the country's first directed at big retailers.

After years of failed attempts to unionize big-box stores, labor seems to have hit on a winning legislative tactic in the battle over pay. Union leaders say the Chicago rule means a long-overdue raise for the working poor. In real terms, wages for nonmanagerial retail workers have fallen 18% since 1975. But David Vite, president of the Illinois Retail Merchants Association, says the law could deter inner-city economic development.

“Companies affected by this ordinance have capital budgets they can spend anywhere in the U.S., and they'll now go elsewhere,” says Vite. Target, for one, has postponed plans for a previously announced store.

“In fights like this, retailers use the exit threat, then stay and expand,” says Annette Bernhardt, a labor expert at New York

University Law School. One of Target's most successful units is in Chicago's Lincoln Park neighborhood, and studies suggest there's \$1.3 billion in untapped spending on the city's North Side and West Side alone. That, says Dorian Warren, a politics professor at Columbia University, “is going to be worth far more than the \$10 wage costs them.”

Not all retailers dread such laws. Costco CFO Richard Galanti says his company already meets the Chicago minimum and that the \$10 wage helps the company retain employees. “It doesn't make us any less competitive,” he says.

One keen observer of the living-wage battle has been David Coss, mayor of Santa Fe, N.M., which mandated a living wage in 2004. “We were also told the sky was going to fall,” he says, “but all we've seen is strong growth.” With the city's \$9.50 wage floor set to rise to \$10.50 in 2008, Target and Sam's Club are thriving. Wal-Mart is even building a superstore. “You're going to see more and more municipalities taking matters into their own hands,” Coss says. “Poverty just isn't a necessary ingredient for economic development.” ■

## Questions

1. What has happened to wages for nonmanagerial retail workers since 1975?
2. Why do some companies approve of living-wage legislation?

