Eaton's team hasn't produced enough of either compound to test their blasting power. But they have made enough to ensure that they're likely to be stable when jostled, a vital trait for any widely used explosive. What's more, Eaton notes that the eight-nitro compound should be able to adopt a more compact crystalline structure than the one they've observed in samples so far. If they manage to coax it into that tighter structure, they should be able to wring out even more explosive power.

For now, the synthesis of octanitrocubane remains too impractical to ramp up for military-scale production. But Eaton says his team is already pursuing the possibility of tacking nitro groups onto cheap and abundant acetylene, or ethyne, gas (C_2H_2) and then assembling four of these dinitroacetylenes to produce single molecules of octanitrocubane. Acetylene's high reactivity means that such an assembly won't be easy, says Eaton. But if it works, it's likely to have a powerful impact on both chemistry and explosives.

–ROBERT F. SERVICE

RESTORATION ECOLOGY

Bringing the Salton Sea Back to Life

The U.S. government has given the nod to what could become one of the most ambitious ecological restoration projects ever attempted: rescuing the Salton Sea, a giant lake in Southern California that has become a deathtrap for wildlife. On 13 January, the Interior Department released a blueprint for healing the lake, now on a fast track to looking as lifeless as the Dead Sea. But Congress must come up with $1 billion or more to pay for a full-scale restoration.

Created 95 years ago when engineers accidentally diverted the Colorado River into a desert trough, the Salton Sea once thrived as a resort. But years of agricultural drainage made the 984-square-kilometer lake ever saltier and loaded it with nutrients that spur oxygen-depleting algal blooms. Nowadays it's the scene of fish kills and bird die-offs. Despite its woes, many biologists say, the Salton provides critical habitat for birds moving along the Pacific Flyway, a major migratory pathway, as well as for endangered species such as the brown pelican. The lake's boosters succeeded in convincing Congress to pass a 1998 law that directs Interior to consider solutions for freshening the water, now 25% saltier than seawater, and improving it as a habitat (*Science*, 2 April 1999, p. 28).

Congress also funded $5 million in studies to reconnoiter the lake's chemistry and biology. The just-released results have "dispelled a lot of perceptions" about the sea's health, says wildlife disease biologist Milton Friend, chair of the multiagency Salton Sea Science Subcommittee. "For the first time, we have some good, solid information" that eases concerns that the lake is too polluted to bother saving. Absolved as suspects in the die-offs are pesticides and the element selenium (concentrations of both are too low), and algal toxins, which so far in lab tests do not appear to harm vertebrates. However, many fish are covered with parasitic worms, reflecting unhealthy conditions that might make them more susceptible to other pathogens. Its penchant for poisoning its inhabitants aside, the lake teems with a remarkable array of life-forms—scientists have counted over 300 organisms not previously reported there, including many microbes new to science. Their studies will appear later this year in *Hydrobiologia*.

Having concluded that the Salton Sea is worth salvaging as a resource for wildlife, recreation, and agriculture, Interior officials endorse building an evaporation plant and ponds to remove salts, and they have suggested schemes for pumping in fresher water or moving salty water out. Their plan also calls for a permanent science office that would fund studies and work with management on solutions. Congress will need to appropriate money for these projects, which Interior officials admit could cost $1 billion or more over the next 30 years.

CREDIT: M. FRIEND

Rest stop, in need of restoration. Interior has released a blueprint for saving California's Salton Sea, a mecca for migrating birds.

In the meantime, Salton managers have $8.5 million in hand to move ahead with a pilot project—an evaporation tower that will spray a fine mist of lake water into a holding pond, where salt will precipitate. They're also seeking to pay a commercial trawler to harvest fish, which by removing the nutrients sequestered in the fish's bodies would lead to a healthier ecosystem, and they've hired a wildlife biologist whose job is to anticipate—and take preemptive measures to alleviate—disease outbreaks.

Some critics say the plan doesn't go far enough to tackle tough issues such as stemming the flow of nutrients into the lake. "Birds and fish are going to continue to die unless they address these other problems," says Michael Cohen of the Pacific Institute, a think tank in Oakland, California. The plan does leave many issues unresolved, says Stuart Hurlbert, a limnologist at San Diego State University and staunch restoration advocate, but undertaking a pilot project first, he says, "seems a reasonable way to go."

–JOCELYN KAISER

CLINICAL RESEARCH

FDA Halts All Gene Therapy Trials at Penn

The death of a volunteer in a gene therapy experiment at the University of Pennsylvania in September triggered a flood of publicity; now, the consequences have landed on researchers and other patients at Penn. On 19 January, the Food and Drug Administration (FDA) stopped all seven clinical trials run by Penn's Institute for Human Gene Therapy—perhaps the most respected and best funded center of its kind—after finding "serious deficiencies" in the way the institute monitors its trials. The FDA had already halted the trial in which 18-year-old Jesse Gelsinger died.

Penn had not calculated at press time how many patients might be affected by the shutdown. But it noted in a statement that five "active trials" are on hold, including experimental therapies for cystic fibrosis, mesothelioma (lung cancer), melanoma and breast cancer, muscular dystrophy, and glioma (brain cancer). University President Judith Rodin has asked the provost, physician Robert Barchi, to oversee two reviews of all of Penn's clinical research. One panel, chaired by Barchi, includes "distinguished members of the Penn faculty," and the other, whose chair has not been named, will use outside scientists. The director of the gene therapy institute, James Wilson, a key investigator on all the trials, had no comment on FDA's decision. In December, during a public review of the case in Bethesda, Maryland, Wilson defended the institute's record and argued that the accident was unforeseeable (*Science*, 17 December, p. 2244).

The FDA did not release conclusive findings. But it did release an eight-page report offering preliminary "observations" that help explain the suspension order. The report lists 18 problems, some well publicized already. For example, FDA inspectors found that physicians had not filled out volunteer eligibility forms in advance, as required, for any of the 18 patients enrolled in the fatal trial, which was testing a new therapy for a genetic disorder that overloads the body with ammonia. The FDA learned that undated forms were filled out for these patients after Gelsinger's death. In addition, the report says that Penn failed to document ade-