The current APT design could handle the stockpile allowed by the Strategic Arms Reduction Talks–1 (START-1). If the United States and Russia reduce the number of warheads to the START-2 level or below, APT could scale its tritium production downward. Production would be directly proportional to accelerator power, which would be the major operating cost. Thus, as tritium needs decreased, operating costs would also decrease significantly.

E. Michael Campbell
Associate Director, Laser Programs,
Lawrence Livermore National Laboratory,
Livermore, CA 94550, USA
John C. Browne
Program Director, Los Alamos Neutron Science Center, and Energy Research Programs,
Los Alamos National Laboratory, H-845,
Los Alamos, NM 87545, USA

References

1. *Energy from Inertial Fusion*, William J. Hogan, Ed. (International Atomic Energy Agency, Vienna, 1995).
2. National Research Council, "Second review of the Department of Energy's inertial confinement fusion program: Final report" (National Academy Press, Washington, DC, 1990).
3. W. E. Parkins, *Science* **199**, 1403 (1978).
4. S. Drell *et al.*, *Accelerator Production of Tritium: 1995 Review* (JASON report no. JSR-95-310, MITRE Corp., McLean, VA, 1995).

Corridors for Wildlife

The article "Are wildlife corridors the right path?" by Charles C. Mann and Mark L. Plummer (News and Comment, 1 Dec. 95, p. 1428) covered a number of perspectives. Any debate about the effectiveness of corridors needs to address the wide variability of species responses. For example, empirical research on deer (*1*) would be expected to produce results at variance with studies of smaller mammals, let alone with an array of other species. Thus, "each potential corridor must be considered on its own merits" (*2*). The problem is that if we wait until there is "adequate" research on the effectiveness of corridors, many more habitats and habitat patches will be irrevocably lost.

I suspect that the project of underpasses for the Florida panther is a success (*3*). Monies used for such projects do not necessarily come from funds that would be used for other conservation efforts. Another aspect of corridors or connectivity is that the constraints of minimum viable population sizes (*4*) may be relaxed if even some genetic dispersal occurs (*5*). For the area between the Torrey Pines and Los Peñasquitos Reserves, a larger corridor will likely increase the probability of success.

As a case in point, deer west of Vail, Colorado, have been restricted to a narrow corridor (the underpass under I-70) (*1*) for about 25 years and, although deer continue to use the structure, they also exhibit reluctance and often challenge the 2.44-meter fence for alternative routes. In retrospect, should the structure have been larger? Without doubt—probably twice as large. When considering corridors for the long term, bigger is probably better.

Dale F. Reed
Colorado Division of Wildlife,
Wildlife Research,
317 West Prospect,
Fort Collins, CO 80526, USA

References

1. D. F. Reed, paper presented at the International Symposium on Deer and Highways, Sapporo, Japan, 28 January 1995.
2. D. Simberloff and J. Cox, *Conserv. Biol.* **1**, 63 (1987).
3. M. L. Foster and S. R. Humphrey, *Wildl. Soc. Bull.* **23**, 95 (1995).
4. J. Berger, *Conserv. Biol.* **4**, 91 (1990).
5. P. Beier, *ibid.* **7**, 94 (1993).

My colleagues and I have shown (*1*) that implementation of the Conservation Reserve Program in a portion of southern Wisconsin would effectively reconnect many isolated patches of oak forest, permitting ready bird-dispersal of acorns across the landscape. Because other dominant tree

genera (for example, maple and birch) are wind-dispersed, many more corridors and patches would need to be created to facilitate wider dispersal of their seed and pollen. Thus, different taxa will "perceive" a landscape differently.

Because habitat corridors (as opposed to roads or trails as corridors) could transmit disease or fire and increase predation risk (*2*), corridors cannot be judged generically (*3*). Furthermore, designers of a corridor should carefully consider the potential implications of edge-effects and invasion by native pest (for example, raccoons) or exotic plant or animal species (*4*). For these reasons, ecologists are right to study and debate the positive and negative consequences of corridors. Unfortunately, study is lagging behind debate.

Christopher P. Dunn
Morton Arboretum, Route 53, Lisle, IL 60532, USA

References

1. C. P. Dunn, F. Stearns, G. R. Guntenspergen, D. M. Sharpe, *Conserv. Biol.* **7**, 132 (1993); C. P. Dunn, D. M. Sharpe, G. R. Guntenspergen, F. Stearns, Z. Yang, in *Quantitative Methods in Landscape Ecology*, M. G. Turner and R. H. Gardner, Eds. (Springer-Verlag, Berlin, 1990), pp. 173–198.
2. D. Simberloff and J. Cox, *Conserv. Biol.* **1**, 63 (1987).
3. D. Simberloff, J. A. Farr, J. Cox, D. W. Mehlman, *ibid.* **6**, 493 (1992).
4. R. J. Hobbs, *Trends Ecol. Evol.* **7**, 389 (1992).

Fusion Progress

David Montgomery's letter (8 Sept., p. 1328) discounts the efforts of thousands of researchers, not just in the United States but around the world, who have taken fusion experiments from table-top devices in the 1950s and 1960s to devices that now produce megawatts of fusion energy in the laboratory. The progress in fusion energy research, *and in plasma physics*, has been outstanding by any measure. The fact that the fusion program has had a mission, a sense of purpose beyond the purely academic, has not limited the scope of science accomplished in the process. Fusion theory, experiment, diagnostics, computation, and engineering are all pushing the state-of-the-art. The mission has, however, motivated many people to continue to work on fusion even when funding prospects were uncertain.

Montgomery comments specifically on the lack of diagnostics for high temperature (tokamak) plasmas. In fact, we have made tremendous strides: Beam-emission spectroscopy, multichannel motional Stark-effect polarimetry, multichannel-multipulse Thompson scattering, and heavy-ion beam probes are examples of the diagnostics that are being used to reveal the inner workings of the fusion plasma devices.

Plasma physics has been seen as a mature science since 1986, when the National Research Council's Plasmas and Fluids Subpanel report, *Physics Through the 1990s* (*1*), stated that "plasma physics and fluid physics are scientifically and intellectually well developed, and both areas are broad subdisciplines of physics."

N. Anne Davies
Office of Energy Research, Department of Energy, Germantown, MD 20874–1290, USA

References

1. *Physics Through the 1990s, Plasmas and Fluids* (National Academy Press, Washington, DC, 1986, p. x).

Letters to the Editor

Letters may be submitted by e-mail (at science_letters@aaas.org), fax (202-289-7562), or regular mail (*Science*, 1333 H Street, NW, Washington, DC 20005, USA). Letters are not routinely acknowledged. Full addresses, signatures, and daytime phone numbers should be included. Letters should be brief (300 words or less) and may be edited for reasons of clarity or space. Letter writers are not consulted before publication.