

Global 2000: Gloom and doom quantified

The forecast of gloom and doom predicated by a consortium of international environmental leagues in their World Conservation Strategy earlier this year (SN: 4/26/80, p. 269) was a stark, qualitative assessment of where current environmental policies — or the lack of them — are leading. Now a 766-page tome by the federal government seeks to fill in, as much as possible, the quantitative detail conspicuously absent in the earlier report. The result is a much more vivid, statistical and compelling portrait of impending havoc.

Called "The Global 2000 Report to the President," it sets the stage for a newly commissioned Task Force on Global Resources and the Environment whose mission will be to draw up and submit to the President within six months an action plan to stem the planet's growing environmental problems. This is no mean feat and will command the highest priority attention of chairman Gus Speth. Speth heads the President's Council on Environmental Quality, one of the two primary sponsoring agencies of the Global 2000 report. The State Department — whose Secretary will serve on the task force together with the heads of the Office of Management and Budget, Office of Science and Technology Policy and White House Domestic Policy Office — is the report's other primary sponsor. Another nine agencies contributed data and computer modeling used to develop Global 2000's projections over the past two-and-one-half years.

Speth was careful to bill the document not as a prediction of what will occur by the year 2000 but instead as what could occur if drastic changes don't come soon. Think of the report's modeled projections as a "series of timely warnings," Speth said, adding that "we can't deceive ourselves that the [world's] response thus far [to previous warnings] has been adequate."

Among the report's dire warnings are projections that:

- Although there will be a slight drop in the population-growth rate, increasing average longevity could lead to a 50 percent increase in the global population — from four billion persons to six billion — with 80 percent of the increase projected to occur in lesser-developed nations.
- An anticipated 90 percent increase in agricultural output — due to greater efficiency and technological innovation during the period from 1970 to 2000 — could lead to a 15 percent average increase in per capita food consumption. But much of that increase would undoubtedly occur in parts of the world now well fed; estimates indicate that the number of malnourished could climb from 600 million to 1.3 billion.
- A region the size of Maine could be transformed annually from agricultural

use to desert. Over the next two decades that portion of the earth covered by deserts could increase by 20 percent.

- Under current trends, the globe will lose 40 percent of its remaining forests. In fact, the July 28 World Development Letter by the U.S. Agency for International Development pegs world wood harvests at 50 acres of forest per minute.

Contending that Global 2000 is more quantitative than previous predictions does not mean that its conclusions are either more accurate than or notably different from conclusions of previous works. Gerald O. Barney, the project's director, noted as one major limitation of the study, for example, its inability to effectively link different computer models in order to integrate data for projections of impacts on multiple sectors of the economy. This inability makes it difficult to predict, for example, how changes in energy supplies could simultaneously alter cropland losses, population growth and food supplies, he said.

Bioenergy: Fuel that grows on trees

The United States could sever its umbilical pipeline to Middle Eastern oil and match the loss with energy from domestic supplies of plant and animal matter—that is, in twenty years, if we start now. This is the most optimistic reading at least of a government report released last Monday that itself was studiously neither optimistic nor pessimistic.

"It is especially important for policy-makers to take into account the broad range of uncertainty that exists—and will continue to exist for many years—regarding bioenergy conversion technologies . . ." With such confessions of bald-faced honesty, the report compiled by the Office of Technology Assessment seems to counsel pragmatism: The potentials of alternatives to imported oil exist in abundance, but the United States is far from realizing them.

It also counsels swift action, and in this respect it might already have animated a legislative response: Last June, President Jimmy Carter's much-publicized synthetic fuels bill (SN: 5/31/80, p. 344) was passed by a Congress that had previewed the report's major findings. Although project director Thomas E. Bull is unable to assess the report's ultimate influence, it is noteworthy that about \$1.5 billion of the bill's total budget of \$25 billion was earmarked for the development of bioenergy, particularly as it involves so-called alcohol-conversion schemes.

These schemes are in fact a main subject of the OTA report, "Energy from Biological Processes." Its discussion contends that "for the major biomass sources—lignocellulosic materials such as wood, grass and crop residues—methanol synthesis appears to be the least expensive and nearest term option for producing liq-

Nonetheless, Global 2000's authors describe the report as "the most complete picture ever painted by the U.S. government." Maintaining that "governments, inevitably will have to get involved," Assistant Secretary of State Thomas Pickering described how reproductions of that picture are being transmitted globally. In hopes of "galvanizing" action here and abroad, ambassadors of every nation having diplomatic ties with the United States are being briefed on the report's contents.

A glimpse of the type of responses that can be expected of Western leaders appears in a new report, "Environmental Policies for the 1980s," by the Organization for Economic Cooperation and Development (of which the United States is a member nation). In it, reports of a 1979 meeting of OECD ministers explain why they believe preventing pollution is economically sound, even, for example, when it means balancing short-term closures of industrial plants against environmental gains. □

uid fuels." These fuels, it is further argued, would be "important in displacing imported oil."

In comparing the specifics of methanol (commonly called wood alcohol, although it can be made from a variety of relatively dry plant material, not just wood) and ethanol (grain alcohol, the potent potable), the report favors the former even though ethanol can be made from methanol-producing materials and grains, sugar crops and fermentable wastes as well.

All things considered, methanol owes its advantage over ethanol to the relatively cheaper cost of conversion. For example, using cost estimates of methanol production that Bull says are based on reliable if limited experience, methanol could begin to compete economically with a \$35 barrel of crude oil; ethanol couldn't. But with that said, the report also acknowledges that although wood-to-methanol facilities probably can be built with existing technology, "no plants currently exist in the United States." And furthermore: "Herbage-to-methanol plants need to be demonstrated."

In the meantime, ethanol production from a variety of grains has been a proven technology in the United States for decades, as many a 1920s bootlegger could testify. For this and other reasons, the OTA report foresees a feasible if secondary role for ethanol by the year 2000.

In particular, the report reasons: "If the alcohol is used as an octane-boosting additive to gasoline, rather than solely for its fuel value," then it is possible to replace "up to the energy equivalent of 0.4 gallon of gasoline per gallon of alcohol," assuming the use of gasohol, which is ten percent alcohol. □