

## LETTERS

### Soviet Environmental Practices

P. R. Pryde (Articles, 15 Apr., p. 274) lists the urgent environmental issues in the Soviet Union (Lake Baikal, the Caspian Sea problem, poaching, land reclamation, and air and water pollution), but he does not bring up the key environmental problem: the abysmal state of fresh and brackish water resources in the most populous regions (1).

Since the 1930's, Soviet policy in favor of reservoir construction on rivers in the plains to generate hydroenergy has led to rapid depletion of water sources, serious pollution (2), and basinwide ecologic catastrophes resulting in heavy losses of fish resources in rivers and coastal waters (3). This program also has caused large-scale problems in territorial distribution of industries, useless water transfers, and resource-use conflicts. The problems have been further compounded since the late 1960's, when agricultural expansion became a top priority. Now intense water deficits threaten to curtail economic activities in the most productive southern regions and force the Soviet leaders to further restructure the river network: the Black Sea estuaries, including the Azov Sea, will be blocked by dams, and the Danube flow will be diverted northward to alleviate the water shortages in the Ukraine (4). The enormous Soviet program calling for rerouting of northern river flows to the southern slope is not engendered by "the Soviet predilection toward large-scale technological solutions," as Pryde suggests (p. 278), but is simply the last remedy to help ailing agriculture and to replenish dwindling amounts of water in all links of the drainage system and inland seas.

I disagree with Pryde's accounts of the disparity between resource ownership and resource exploitation, the uselessness of mass automobile production in view of an "excellent public transportation system" in the country (5), and the Soviets' decidedly utilitarian approach to nature—a propensity for massive solutions to environmental problems and an inability to halt environmental degradation. Nor do I see the Soviet and the U.S. environmental solutions as parallel.

Pryde concludes that environmental disruption is not related to the Soviet political and economic system (6). In my opinion, ill-famed "gigantic constructions of communism," such as the Baltic-White Sea (*Belomor*), the Moskva-Volga, and Lenin's Volga-Don canals are environmentally damaging, extreme-

ly costly in operation, and play a miniscule role in overall traffic. These were purely political decisions and took heavy tolls in human lives. Even the entire hydroenergy program was conceived as a political act—the magnificent hydrostations and man-made seas surely signify the might of Soviet power to master natural phenomena. Existing massive environmental legislation with poor enforcement (7), heavy censorship barring publications on negative anthropogenic effects in nature inside the Soviet Union, and deliberate misinformation on the real environmental situation of Western scientists visiting the country are parts of the Soviet ideological warfare.

I do not share Pryde's optimism about future overall improvement in the Soviet environmental situation. The very authentic book by Komarov (8) and my own experience suggest that the environmental degradation continues in the Soviet Union with an ever-increasing pace. For 67 years the Soviet system has not been able to develop an efficient economic mechanism to ration scarce water resources among the competing users, nor has it been able to halt environmental pollution; further Soviet economic expansion is now feasible only through unrestricted destruction of natural resources.

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#### References and Notes

1. S. L. Vendrov, *Problemy preobrazovaniya rechnykh sistem SSSR* (Gidrometizdat, Leningrad, 1979, pp. 45–49); D. Tolmazin, *New Sci.* **84**, 764 (1979).
2. A. M. Gusev, *Vliyaniye stochnykh vod i lesoplavy na rybokhozyaystvennyye vodoemy i ushcherb nanosimyy zagryazneniyem rybnoy promyshlennosti SSSR* (Izvestia State Research Institute of Lake and River Fishery, Leningrad, 1967), vol. 66.
3. A. M. Bronfman, N. G. Dubinina, G. D. Makarova, *Gidrologicheskiye i gidrokhimicheskiye aspekty produktivnosti Azovskogo moriya* (Pishehvaya promyshlennost', Moscow, 1979); D. Tolmazin, in *Biologiya Moriya*, Y. Zaitsev, Ed. (Naukova Dumka, Kiev, 1977), vol. 43, pp. 12–17; A. V. Krotov, in *Problemy ekonomiki moriya*, M. T. Meleshkin, Ed. (Institute of Economics of the Ukrainian Academy of Sciences, Odessa, 1976), vol. 5, pp. 135–141.
4. D. Tolmazin, *Environ. Manage.*, in press.
5. As a captive patronizer of this system for 35 years, I can testify that it is the most aggravating and insulting Soviet reality (after food lines).
6. Only 10 years ago Pryde's views were strikingly different: P. Pryde, *Conservation in the Soviet Union* (Cambridge Univ. Press, Cambridge, 1972), p. 161.
7. As Ukrainian Deputy Prime Minister V. Kal'chenko once stated, "The environmental legislation is not designed to protect nature, but [to] protect us from outside public opinion."
8. B. Komarov, *The Destruction of Nature in the Soviet Union* (Sharpe, White Plains, N.Y., 1980).

I do not disagree with Tolmazin's assessment of the problems surrounding the Soviet Union's freshwater resources.

Most of the specific problems to which he alludes in his second paragraph were implicitly covered by my introductory references to the continuing problems of land reclamation, the Caspian Sea, and water pollution. As most of these were discussed in my earlier work, they were not repeated in my *Science* article in the interest of brevity. I again note that they continue to be pressing environmental problems.

It is not possible to comment on Tolmazin's criticisms in his third paragraph, as he does not indicate specific reasons or examples in support of his position of disagreement.

One or two of his comments appear to be somewhat contradictory. For example, in both his second and third paragraphs he objects to what I termed the Soviet predilection to large-scale projects to solve environmental problems, but then in his fourth paragraph he laments several "ill-famed gigantic constructions of communism." He calls them political acts, which they are, but then all governmental environmental programs represent political acts, in both the institutional and causal senses of the term. Nor is it at all clear, given the sentiments expressed in his fourth and fifth paragraphs, why he earlier states that he disagrees with my characterization of "the Soviet utilitarian approach to nature."

Finally, in his fourth paragraph, he appears to misinterpret my conclusion, for I did not state that "environmental disruption is not related to the Soviet political and economic system." What I did suggest is that potential environmental disruption is more highly correlated with emphasis on industrial output than it is with types of political or economic systems, and similarly that environmental improvements are most highly correlated with a political will to see them effected. I noted in my article several instances in which Soviet laws were not being complied with (as they sometimes are not in the United States), and his examples serve mainly to compliment my own. I do not necessarily embrace the "optimism" he ascribes to me. The Soviet environmental future can be as healthy or as deteriorated as they choose to make it, and obviously there are today numerous problem areas. As a careful reading of either of our works makes clear, it is not yet at all certain which future the Soviet leadership will choose to pursue.

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