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## The U.S. - U.S.S.R. Agreement to Protect the Environment: 15 Years of Cooperation

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# ARTICLES

## THE U.S.-U.S.S.R. AGREEMENT TO PROTECT THE ENVIRONMENT: 15 YEARS OF COOPERATION

By  
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and  
GARY R. WAXMONSKY\*\*

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"As long as the spring flows,  
No one asks the price of water."  
- Russian Proverb

## I. INTRODUCTION

In the late 1960s, many nations awoke to the degradation of environmental quality. Dispersion or dilution of wastes, a practice used everywhere for centuries, proved no longer effective. Public health problems and damaged ecosystems accompanied a rapid increase in the overall volume of pollution and the appearance of wastes from new chemical compounds. Technological develop-

ment and rapid population growth resulted in unanticipated pressures on the environment, alarming citizens, legislators, and diplomats alike.

Symbolic of the worst of this new pollution was the fact that Cleveland's Cuyahoga River in the United States (U.S.), and the Volga River in the Union of Soviet Socialist Republics (U.S.S.R.) each caught fire in 1970. In the West the public bemoaned the degradation of Lake Erie, while in the East the public opposed the introduction of the first serious pollutants into pristine Lake Baikal. By 1970, both the U.S. and the U.S.S.R. enacted sweeping new statutes to try to deal with the situation,<sup>1</sup> and the United Nations convened a global "Conference on the Human Environment" at Stockholm, Sweden in 1972.<sup>2</sup> Over the same period, the Soviet Union moved to preserve some 10,600,000 acres of natural areas in "*zapovedniki*"<sup>3</sup> while the United States established a new system of "wilderness areas," comprising some 88,000,000 acres.<sup>4</sup> It had become evident in both the U.S. and U.S.S.R. by 1971 that there was a strong and growing domestic constituency favoring better pollution control and more effective protection of

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1. For the United States, see the National Environmental Policy Act, 42 U.S.C. §§ 4231-47 (1982 & Supp. I 1983); the 1972 Federal Water Pollution Control Act Amendments (renamed the Clean Water Act in 1977, 33 U.S.C. §§ 1251-1376 (1982); and the Resource Conservation and Recovery Act of 1976, 42 U.S.C. §§ 6901-6991(i) (1982 & Supp. III 1985). For the U.S.S.R., see IX Soviet Statutes and Decisions, "Soviet Conservation Law" (No. 1, Land; No. 2, Water; No. 3, Forests; No. 4, General Provisions), published in English by the International Arts & Sciences Press, White Plains, New York. See also O. Kolbasov, *Legal Protection of the Environment in the USSR*, 1 EARTH L. J. 51, 67 n.3 (1975). These Soviet laws have been revised since this early period. Current texts are found in W. Butler, II *Collected Legislation of the USSR and Constituent Republics*, § III (1978) (Oceania looseleaf).

2. The United Nations Conference on The Human Environment made several recommendations that were implemented, including establishment of the United Nations Environment Programme (UNEP) and adoption of a Declaration on the Human Environment. See generally L. CALDWELL, *INTERNATIONAL ENVIRONMENTAL POLICY* 19-49 (1984).

3. *Zapovedniki*, which literally means "forbidden areas," are restricted preserves for nature study. The American analogues to *zapovedniki* are "nature reserves." See Schoenbaum, *Natural Area Preservation in the Soviet Union and the United States: A Comparative Perspective*, 24 AM. J. COMP. L. 521, 624 n.15 (1976). See also King, *Nature Reserves of the U.S.S.R.*, SIERRA, May/June 1987, at 38.

4. Wilderness Areas are authorized under the Wilderness Act, 16 U.S.C. § 1131 (1982).

nature.

Given the sociocultural and political setting of those times, it is not surprising that both U.S. President Richard M. Nixon and the General Secretary of the Communist Party of the U.S.S.R., Leonid I. Brezhnev, considered it appropriate to inaugurate a bilateral program to address what seemed to be a topic of mutual interest. Accordingly, on May 23, 1972, at a Summit Meeting in Moscow, the Soviet and American heads of state signed the Agreement on Cooperation in the Field of Environmental Protection, generally known as the "Environmental Bilateral."<sup>5</sup>

In the fifteen years since then, the Environmental Bilateral has been renewed and expanded. While other forms of cooperation which began under the umbrella of detente have lapsed or been terminated,<sup>6</sup> the Environmental Bilateral has progressively expanded its scope, numbers of participants, and useful work products. Today, it is considered to be the most successful of the several cooperation agreements between the U.S. and the U.S.S.R. Through the Environmental Bilateral, both nations sponsor scores of joint working groups coordinated by a Joint

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5. Agreement on Cooperation in the Field of Environmental Protection with the Union of Soviet Socialist Republics, May 23, 1972, United States-U.S.S.R., 23 U.S.T. 845, T.I.A.S. No. 7345 [hereinafter Environmental Bilateral].

6. The geopolitical factors leading to concerted endeavors in the U.S. and U.S.S.R. to establish "detente," and their subsequent erosion, are extensively discussed in R. GARTHOFF, *DETENTE AND CONFRONTATION* (The Brookings Institution, Washington, D.C.). Garthoff does not discuss the fate of the four science and technology agreements signed in 1972, on environmental cooperation, medical science and public health, space, and the "Science & Technology" or "S&T" Protocol. Even as the agreements were concluded, however, some doubts were expressed that cooperation in traditional scientific areas could flourish given the problems of the past involving scientific freedom and human rights issues. See Walsh, *Soviet-American Science Accord: Could Dissent Deter Detente?*, 180 *SCIENCE* 40-43 (Apr. 6, 1973). The success of the Environmental Bilateral Agreement, with its academic and scholarly exchanges, which has continued after the demise of detente, is the topic of a conference report from a meeting in 1984 of the Kennan Institute for Advanced Russian Studies. See Woodrow Wilson International Center for Scholars, *U.S.-Soviet Exchanges* (1985). The S&T agreement was allowed to expire in 1982 as a result of the imposition of martial law in Poland. The medical science and public health accord has proceeded with low-level involvement and minimal results. Likewise, the space cooperation agreement has fallen aside. This is probably because the agreement implicated arms control and security issues, which Garthoff discusses as a hypersensitive part of the geopolitical relationship between the U.S. and U.S.S.R.

Committee on Environmental Protection. As a result, the Environmental Bilateral has produced extensive reports useful to both sides. The Kennan Institute for Advanced Russian Studies reviewed the Bilateral in 1984 and concluded that "[P]articipation by U.S. officials, congressional staff members, public interest groups, and legal scholars is complemented by an equal diversity on the Soviet side. Consequently, the U.S. - Soviet environmental agreement serves as an excellent medium for wide-ranging communications at times when the bilateral political context is suitable."<sup>7</sup>

The continuing importance of the Environmental Bilateral was underscored during the 1985 Summit Meeting in Geneva, Switzerland, between President Ronald Reagan and General Secretary Mikhail Gorbachev.<sup>8</sup> The Summit Meeting was preceded in Moscow by a meeting of the Joint Environment Committee, the first such meeting since the Reagan Administration began. That Moscow meeting renewed the environmental agreements which were sent to Geneva for the Summit. At the end of the Summit Meeting, both countries issued a joint communiqué on their "comprehensive discussion" which "covered the basic questions of U.S.-Soviet relations."<sup>9</sup> The leaders noted that despite serious differences on a number of critical issues, they agreed that U.S.-Soviet relations needed to be improved. As if to underscore the benefits of improved relations, ongoing cooperation in several fields was noted; the President and the General Secretary cited environmental protection as among the specific issues on which agreement was recorded.<sup>10</sup>

This joint U.S.-Soviet statement concluding the Geneva Summit noted the usefulness of the recent meetings of the heads of each nation's environmental protection agencies. The statement then set forth the following: "Both sides agreed to contribute to the preservation of the environment — a global task — through joint research and practical measures. In accordance with

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7. Woodrow Wilson International Center for Scholars, *U.S.-Soviet Exchanges* 29 (1985).

8. See Shabecoff, *U.S.-Soviet Accord on the Environment Approved in Geneva*, N.Y. Times, Dec. 13, 1985, at A1, col. 5.

9. The full text of the Joint U.S.-U.S.S.R. statement issued in Geneva, Switzerland on November 21, 1985, was published in the N.Y. Times, Nov. 22, 1985, at A16, cols. 1-6.

10. See *id.*

the existing U.S.-Soviet agreement in this area, consultations will be held next year in Moscow and Washington on specific programs of cooperation."<sup>11</sup>

Although couched in the most general terms, and heavily imbued with the bland argot of diplomatic discourse, this text is significant for the fact that it surfaced at all at the level of the Summit Meeting's joint statement. The schedule of the Moscow and Geneva meetings was largely coincidental, and the Reagan Administration did not usually discuss environmental problems as a high matter of state. To those unfamiliar with the subtleties of summitry, the text of the joint statement may seem unimpressive. Anodyne verbiage often conceals marginality or mediocrity in the realm of political action. In this case, however, the formal statement vastly understates what the U.S. and the U.S.S.R. accomplished together in their fifteen years of environmental protection.

In addition to being a model of successful international bilateral cooperation, the agreement pioneered new comparative law developments in environmental law. As a model, the agreement served as a precedent for a new U.S.-Polish Agreement on cooperation in the field of environmental protection, signed in 1987 between the U.S. Environmental Protection Agency and the Polish Ministry of the Environment.<sup>12</sup> The terms of both Agreements are intentionally quite similar, based upon successful components of the U.S.-Soviet undertakings.

This Article will discuss the origins and operation of the Environmental Bilateral, its functioning in international law, and its contribution to environmental law in each country.

## II. THE ORIGINS OF THE AGREEMENT

Soviet-American cooperation on environmental matters began in earnest in connection with preparations for the United Nations Conference on The Human Environment, which was held in

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11. *Id.* at cols. 5-6.

12. Agreement between the Environment Protection Agency of the United States of America and the Ministry of Environmental Protection and Natural Resources of the Polish People's Republic on Cooperation in the Field of Environmental Protection, signed in Washington, D.C., Sept. 10, 1987 (text available from the Office of International Activities, U.S. EPA).

Stockholm, Sweden, in 1972. In the late 1960s, the United Nations Association of the U.S. (UNA-USA) under the far-sighted guidance of Porter McKeever and Elmore Jackson, established a Parallel Studies Project with the U.N. Association of the U.S.S.R. (UNA-USSR).<sup>13</sup> Since environmental protection was emerging as a new foreign policy agenda item for both nations, it appeared to be an appropriate issue for an early exchange of views. While the UNA-USA is a non-governmental organization, its panels include persons with experience as senior officials in the federal government, and current officials sit in on meetings by invitation. The UNA-USSR institutionally functions in close relationship to the Soviet Ministry of Foreign Affairs.

During 1970-71, a series of informal discussions were held between individuals sponsored by the UNAs of the U.S. and U.S.S.R. The U.S. commissioned expert papers to acquaint the Soviets with the current status of environmental science and law. For instance, Dean Douglas Costle, who was then Connecticut's air pollution commissioner and would later co-chair the Joint Committee as U.S. Environmental Protection Agency Administrator under President Carter, prepared a paper on air pollution modeling and abatement; Professor Nicholas Robinson, at the time a member of the Legal Advisory Committee to the President's Council on Environmental Quality and a UNA-USA Board Member, prepared a paper on environmental law.<sup>14</sup>

These UNA meetings amounted to high level seminars, exploring what issues should be considered "environmental" and what possible agendas might effectively resolve various environmental problems. The discussions were not intended to produce any reports or action. Rather, they were of interest to both sides

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13. Many nations have since established citizen associations, known as U.N. Associations, to advance their nation's participation in the multilateral activities of the U.N. Organization. The UNA-USA National Policy Panel on U.S.-Soviet Relations undertook the Parallel Studies Project with assistance from David Lenefsky, under Elmore Jackson's direction. No other environmental projects have been pursued by UNA-USA. The most recent Policy Panel report was released in 1981. See United Nations Association of the United States of America, *U.S.-Soviet Relations: A Strategy for the '80s* (1981). UNA-USA continues the bilateral cooperation project under Dr. Toby Trister Gati.

14. The air pollution paper was not published. The environmental law paper was later published as Robinson, *The Origins and Framework of Environmental Law in the United States*, 1 *EARTH L.J.* 323 (1975).



as background preparations for the U.N. Stockholm meeting. As it turned out, the U.S.S.R. declined to attend that U.N. meeting; however, although the shared views which these discussions produced were not to be used in Stockholm, they became the basis for official bilateral cooperation. Both nations' foreign policy specialists understood what the scope of cooperation could be and that initiating such cooperation presents no political complications.

During this same period, President Nixon actively instituted new foreign policy initiatives with Henry Kissinger, then the Assistant to the President for National Security Affairs. At Nixon's direction, Kissinger structured U.S.-Chinese and U.S.-Soviet relations in such a way as to press for an early Summit Meeting between President Nixon and General Secretary Brezhnev. Kissinger's negotiations to schedule a Summit Meeting were successful. By September of 1971, when Soviet Foreign Minister Andrei Gromyko visited Washington, D.C. following his annual address to the U.N. General Assembly, President Nixon announced his agreement to attend a Summit Meeting in Moscow.<sup>15</sup>

Kissinger then made a secret trip to Moscow to prepare for the Summit in April of 1972. Each side's policies on Superpower cooperation, issues involving the Vietnam War, and negotiations for a strategic arms limitations treaty largely overshadowed concerns for trade, science and technology in general, and environmental protection in particular. Agreement was reached on the Summit agenda, including provision for the new cooperative environmental agreement.<sup>16</sup> During preparations for the Summit, there was apparently little need for high-level consideration of the forthcoming environmental accord; both sides deemed the accord desirable and acceptable to their respective domestic political constituencies. Upon his return from Moscow, Kissinger met in Washington, D.C. with the Soviet Ambassador to the United States, Anatoly Dobrynin, to work out the concrete aspects of summit agenda and schedule.<sup>17</sup> On April 11, 1972, agreement was reached on the framework for subsequent cultural and scientific exchanges.

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15. See H. KISSINGER, *THE WHITE HOUSE YEARS* 835-41 (1979).

16. *Id.* at 1150-54.

17. *Id.* at 1197.

While high level negotiations on a Strategic Arms Limitations Treaty proceeded in Helsinki, President Nixon and his delegation left for Moscow on May 20, 1972. Six "subsidiary agreements" were already negotiated in final form and "awaited the principals."<sup>18</sup> Thus, the Environmental Bilateral was not at issue when the Summit began; it had already been agreed to and scheduled for signing by U.S. President Nixon and Soviet President Nikolai Podgorny. As Kissinger recalled, "the one fixed item in the daily schedule was the signing ceremony, generally at 5:00 p.m. each day, for the subsidiary agreements negotiated beforehand."<sup>19</sup> The timing was orchestrated so that the press in the United States would have a news story for each day of the meetings; the first to be announced was to be the Environmental Bilateral.

The Environmental Bilateral was the initial "subsidiary agreement" to be signed, on May 23, 1972. Kissinger's only *memoire* about the substance of any environmental discussions in Moscow focused on a session which occurred two days after the signing while Brezhnev entertained Nixon at his *dacha*. At the banquet, Kissinger recalled that

Everyone gratefully steered clear of serious talk. . . . The Russians spoke romantically and proudly of Lake Baikal — its huge size, its beauty, and above all its cleanliness. Brezhnev complained that Nixon had inaccurately described it as polluted when seeking to demonstrate the global nature of the environmental problem in a speech. The Great Lakes were very dirty, Brezhnev said, but not Lake Baikal. Nixon's remarks, he said, had probably been drafted by Dr. Kissinger — I was to blame and should be exiled. Nixon suggested Siberia. Brezhnev offered Lake Baikal so that I could learn its wonders firsthand.<sup>20</sup>

Thus, while both sides recognized the potential usefulness of the Environmental Bilateral, it was apparent that the principals on each side knew relatively little about actual environmental conditions in each other's country. Perhaps because environmental is-

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18. *Id.* at 1202. These were "on cooperation in environmental protection; on medical science and public health; on the exploration and use of outer space for peaceful purposes; on science and technology; on avoiding incidents at sea by establishing 'rules of the road;' and on establishing a joint U.S.-Soviet economic commission." *Id.*

19. *Id.* at 1211.

20. *Id.* at 1228.

sues were not yet matters of high geopolitical or security significance, they were easily embraced.

Once signed, implementation of the Bilateral Agreement was entrusted to Russell Train, Chairman of the Council on Environmental Quality, for the U.S., and to the late academician E.K. Fedorov, and subsequently in 1974 to academician Yuriy A. Izrael, for the U.S.S.R. Train remained Co-Chairman of the Joint Committee when he left the Council to become Administrator of the U.S. Environmental Protection Agency (EPA), and subsequent Presidents have named their EPA Administrators to head the overall agreement. The Executive Secretary of the U.S. side of the Joint Agreement is situated in the Office of International Activities of the EPA. The Executive Secretary of the Soviet side of the Joint Committee, Yuri Ye. Kazakov, is situated within the U.S.S.R. State Committee on Hydrometeorology and Control of the Environment, known in English as "Hydromet." Yuriy A. Izrael is the head of Hydromet.

Before discussing the environmental law aspects of the Bilateral Agreement, it is instructive to outline its general provisions and the sort of activities which have been undertaken. Both reflect a willingness to explore jointly the new challenges which modern society faces in restoring and maintaining environmental quality.

### III. THE ENVIRONMENTAL BILATERAL AGREEMENT

The Environmental Bilateral enjoys support from a wide range of the political spectrum in both the U.S. and U.S.S.R. Presidents Carter and Reagan independently chose to continue the Environmental Bilateral, as had Presidents Nixon and Ford. In the U.S.S.R., the spectrum is illustrated by Communist Party support, scientific support and dissident support. For example, physicist Andrei Sakharov, in his first essay to be published abroad after release from his "internal exile" detention, stated in a matter-of-fact way that, "All countries should work together on economic, social and ecological problems."<sup>21</sup>

The great significance of the Environmental Bilateral Agreement is not only that Americans and Soviets both have acknowl-

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21. A. Sakharov, *Of Arms and Reforms*, TIME, Mar. 16, 1987, at 41.

edged the need for cooperation to solve environmental problems, but that there has in fact been substantial progress made toward lasting solutions. Thus, the Environmental Bilateral has proven successful, while other detente agreements have failed.<sup>22</sup> As the first of eventually eleven "S&T" agreements entered into by the U.S. and U.S.S.R. in the early 1970s, the Environmental Agreement alone continues to expand and attain new levels of cooperation. The Environmental Bilateral was and still remains the broadest and most ambitious cooperative undertaking in environmental protection between any two countries in the world. Its durability is furthered by the support it receives from a vast range of scientists in both nations, and by either the support of the various political factions in each country or, at worst, the benign neglect of those who are neither interested in it nor opposed to it. Budget officials in both countries have tended to pay little or no attention to the Environmental Bilateral, and it has been minimally funded by both sides. The success of the joint projects is therefore testimony to the dedication of the participating scientists and not to any substantial budgetary or high-level political support.

The Bilateral Agreement<sup>23</sup> consists of six articles, preceded by an introduction. The preambular clauses note that it is being undertaken in accordance with the earlier U.S.-U.S.S.R. Agreement on Exchanges and Cooperation in Scientific, Technical, Educational, Cultural and Other Fields in 1972-73, signed on April 11, 1972.<sup>24</sup> Both countries record their desire to facilitate closer and long-term cooperation between organizations with environmental interests in both nations. The motivating policy considerations for the new environmental agreement include: (a) the mutual "great importance" which both nations attach "to the problems of environmental protection," (b) the assumption that technology can be managed to control "undesirable consequences" and improve "the interrelationship between man and nature," (c) the belief that mutual cooperation will be beneficial to each country despite and considering their different social and economic systems," and (d) the fact "that economic and social

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22. See R. GARTHOFF, *supra* note 6, at 1068-89.

23. Environmental Bilateral, *supra* note 5.

24. Agreement on Exchanges and Cooperation in Scientific, Technical, Educational, Cultural, and Other Fields in 1972-73, April 11, 1972, United States-U.S.S.R., 23 U.S.T. 790, T.I.A.S. No. 7343.

development for the benefit of future generations requires the protection and enhancement of the human environment today."<sup>25</sup>

The first article of the Environmental Bilateral sets out the general policy guideline of equality of participation between countries.<sup>26</sup> The last article, which assures that the agreement is not in derogation of any other agreements, is essentially boiler-plate.<sup>27</sup> It is the second through the fifth articles which are the heart of the agreement. Article II defines the subject matter categories for the exchange,<sup>28</sup> Articles III and IV describe the means of exchange,<sup>29</sup> and Article V defines the role of the U.S.-U.S.S.R. Joint Committee on Cooperation in the Field of Environmental Protection.<sup>30</sup>

Article II of the Agreement outlines eleven specific areas in which cooperation is to proceed, "aimed at solving the most important aspects of the problems of the environment and will be devoted to working out measures to prevent pollution, to study pollution and its effect on the environment, and to develop the basis for controlling the impact of human activities on nature."<sup>31</sup>

- I. Air Pollution
- II. Water Pollution
- III. Environmental Pollution Associated with Agricultural Production
- IV. Enhancement of the Urban Environment
- V. Preservation of Nature and the Organization of Preserves
- VI. Marine Pollution
- VII. Biological and Genetic Consequences of Environmental Pollution
- VIII. Influence of Environmental Changes on Climate
- IX. Earthquake Protection
- X. Arctic and Subarctic Ecological Systems; and

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25. Environmental Bilateral, *supra* note 5, at preamble.

26. *Id.* at art. I ("The Parties will develop cooperation in the field of environmental protection on the basis of equality, reciprocity, and mutual benefit").

27. *Id.* at art. VI ("Nothing in this Agreement shall be construed to prejudice other agreements concluded between the two parties").

28. *Id.* at art. II.

29. *Id.* at art. III-IV.

30. *Id.* at art. V.

31. *Id.* at art. II.

## XI. Legal and Administrative Measures for Protecting Environmental Quality

These eleven areas have been broken into more specific topics through work plans described below.

The means of cooperation primarily include meetings of scholars and experts, exchanges of information, joint projects in basic and applied sciences, and "other forms of cooperation which may be agreed upon in the course of this Agreement."<sup>32</sup> Of unusual significance is the Agreement's Article IV, which encourages private sector involvement and the development of "separate agreements and contracts" where appropriate.<sup>33</sup> In 1977, the Sierra Club and the all-Russia Society for the Preservation of Nature signed a cooperative agreement in Moscow, as an outgrowth of discussing the role of citizen organizations in the Environmental Law Project of Area XI.<sup>34</sup>

Undertakings in each of the eleven areas of cooperation are structured through annual work plans reviewed by the Joint Committee. The Joint Committee is composed of representatives of the principal participating organizations on each side and meets more or less regularly to review recent cooperation and to plan or confirm future activities. The Joint Committee meetings have been co-chaired by the Administrator of the Environmental Protection Agency and the Chairman of Hydromet. The current incumbents are Lee M. Thomas and Yuriy A. Izrael, co-chairs of the Joint Committee meetings in Moscow in December of 1985, in Washington, D.C. in October of 1986 and in Moscow in February of 1988. Future Soviet chairmen have not yet been designated.

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32. *Id.* at art. III.

33. *Id.* at art. IV ("Proceedings from the aims of this Agreement the Parties will encourage and facilitate, as appropriate, the establishment and development of direct contacts and cooperation between institutions and organizations, governmental, public and private, of the two countries, and the conclusion, where appropriate, of separate agreements and contracts").

34. A Memorandum of Agreement between the All-Russian Society for the Protection of Nature and the Sierra Club, was signed in Moscow, 1977; it is discussed in G. WARNER & M. SCHUMAN, *CITIZEN DIPLOMATS* 320-22 (1987). More recently, there have been agreements on sport fishing between Trout Unlimited (U.S.) and the All-Russia Society for Hunting and Fishing (*Rosohotrybalovsoyuz*), see *TROUT*, Winter 1987, at 71; and between the Natural Resources Defense Council (U.S.) and the U.S.S.R. Academy of Sciences on Seismic Monitoring of nuclear explosive device testing. See *SCIENCE*, July 18, 1986, at 278.

The Joint Committee is supposed to hold an annual Joint Committee Meeting (JCM) to evaluate work undertaken in the past year and to consider suitable work plans for the coming year. The JCM alternates its venue between Moscow and Washington. At the JCM, both sides "shall approve concrete measures and programs of cooperation, designate the participating organizations responsible for the realization of these programs and make recommendations, as appropriate, to the two governments."<sup>35</sup>

Each side is also to name a coordinator to assure smooth communications and collaborations among all working components on each side, and with the counterpart groups. The coordinator for the U.S. side is the JCM Executive Secretary housed in the International Activities Office of the U.S. Environmental Protection Agency. The Soviet side coordinator was housed in Hydromet from 1972 to 1988. In 1988, that function was assigned to the consolidated State Committee on Protection of the Environment (*Goskompriroda*), established in early 1988.<sup>36</sup> Owing to a hiatus in JCM sessions between 1979 and 1985,<sup>37</sup> there were ten rather than fifteen Joint Committee meetings. The eleventh took place in February 1988 in Moscow.<sup>38</sup>

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35. Environmental Bilateral, *supra* note 5, at art. V.

36. For an account of the creation of *Goskompriroda*, see *Environment Protection Agency Set Up*, THE CURRENT DIGEST OF THE SOVIET PRESS, Feb. 17, 1988, at 7, col. 1 [hereinafter SOVIET DIGEST].

37. EPA Administrator Ann Gorsuch never scheduled a JCM meeting. Her replacement, EPA Administrator William Ruckelshaus, met with his Soviet counterparts in 1984 at a United Nations Economic Commission for Europe meeting and agreed to resume the JCM sessions. Ruckelshaus left it to his successor, EPA Administrator Lee Thomas, to hold the meetings. The lapse of meetings has been explained on the U.S. side as follows: from January 1980 through June 1984, Joint Committee meetings and other forms of high-level contact under the S&T bilaterals were prohibited as a matter of U.S. policy following the Soviet occupation of Afghanistan and the internal exile of Nobel Laureate Andrei Sakharov. This policy was lifted by President Reagan in June 1984.

38. The Eleventh Meeting of the U.S.-U.S.S.R. Joint Committee was held in Moscow, February 1-4, 1988. The meeting was conducted by the Joint Committee's Co-Chairmen Lee M. Thomas, Administrator of the U.S. Environmental Protection Agency, and Yuriy A. Izrael, Chairman of the U.S.S.R. State Committee for Hydrometeorology. The Meeting produced an ambitious agenda for continuing joint projects in Areas I-IX and XI, together with many new projects, including:

- a study of improved scrubber technologies to reduce air emissions from municipal incinerators and other stationary pollutant sources;
- a modeling and control program for non-point water pollutants from agricultural runoff;

#### IV. ENVIRONMENTAL COOPERATION UNDER THE BILATERAL AGREEMENT

##### A. *The Mutual Benefits of U.S.-U.S.S.R. Environmental Cooperation*

In substantive terms, the Environmental Agreement consists of some 40 research projects distributed unevenly among the topics enumerated above. The actual work carried out in any given project is decided jointly by the American and Soviet project leaders, either in face-to-face consultations or through correspondence. Such communication is arranged or facilitated by the executive secretariats in Moscow and Washington, in coordination with their respective foreign offices.

In empirical terms, the Environmental Bilateral has generated a rich array of cost-effective original research in the form of published reports, monographs, and symposia proceedings in both languages. Among the concrete accomplishments of the Agreement are the following: (i) the United States and the Soviet Union negotiated the U.S.-U.S.S.R. Migratory Bird Convention, which was ratified in 1978;<sup>39</sup> (ii) the countries initiated a program for exchanging certain rare mammal species between their zoos; (iii) jointly developed water quality management techniques were applied to several Soviet river basins; (iv) joint research in aquatic toxicology allowed EPA to develop water quality criteria for ammonia; similarly, jointly developed or refined models of pesticide behavior in soil and water provided the basis for many of EPA's standards under the Federal Insecticide, Fungicide, and

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- a study of permafrost ecology under the newly-activated Area X;
  - new research on low waste/no waste technology for industrial processes;
  - research on the management of toxic wastes, including biodegradation and thermal destruction technologies;
  - new studies on global climactic change; and
  - new programs under "Comprehensive Analysis of the Environment," with an emphasis on climactic change and atmospheric ozone depletion.

See "Memorandum of the Eleventh Meeting of the U.S.-U.S.S.R. Joint Committee on Cooperation in the Field of Environmental Protection" (Feb. 1-4, 1988) [hereinafter 1988 Memorandum].

39. Convention for the Protection of Migratory Birds between the United States of America and Great Britain (for Canada), Aug. 16, 1916, United States-Great Britain (for Canada), 39 Stat. 1702, T.I.A.S. No. 628; cited in N. Robinson, *Migratory Bird Species Conventions: Precedents and the U.S.-U.S.S.R. Agreement of Nov. 19, 1976*, 2 EARTH L.J. 415 n.1 (1976).



Rodenticide Act;<sup>40</sup> (v) the introduction and management of national parks in the Soviet Union owes much to the American experience, as conveyed through the Environmental Agreement; (vi) Soviet vessels serve as research platforms for productive joint studies of marine mammal populations off the coast of Alaska, properties of atmospheric trace gases in the central Pacific, and the ecological baseline condition of the Bering Sea; (vii) two of the world's leading earthquake research communities assist each other substantially in field, laboratory, and computer-based investigations of seismic rock;<sup>41</sup> the nations have exchanged environmental law texts and reached agreement on a legal structure best suited to deal with such varied topics as air pollution and wildlife preservation.

Less tangibly, the Environmental Agreement enhanced Soviet-American communication and coordination in several multilateral environmental fora, such as the U.N. Economic Commission for Europe (Long-Range Transboundary Air Pollution Convention), the International Maritime Organization (Marine Environmental Protection Committee), and the U.N. Environmental Programme (Convention on Protection of the Ozone Layer). Also, the two sides have given initial, tentative consideration to a joint response capability for oil spill cleanup in the Bering and Chukchi Seas, though further progress depends in part upon resolution of the 1867 boundary line issue.<sup>42</sup> Additionally,

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40. 7 U.S.C. §§ 136-136(y) (1982).

41. For a general survey of problems and accomplishments of this program, see *The Soviet Role in Pacific Rim Trade: U.S.-Soviet Environmental Cooperation: Hearing before the Special Subcommittee on U.S.-Pacific Rim Trade of the Committee on Energy and Commerce, 99th Cong., 1st Sess. (June 28, 1985)* [hereinafter *Soviet Role in Pacific Rim Trade*]; *US-USSR Cooperative Agreements in Science and Technology: Hearings before the Subcommittee on Domestic and International Scientific Planning and Analysis of the Committee on Science and Technology, 94th Cong., 117-44 (Nov. 18-20, 1975)* (testimony of Russell Train, Joint Committee Co-Chairman). For additional current information, see "Report on the Implementation of the U.S.-U.S.S.R. Agreement on Cooperation in the Field of Environment Protection during the period December 1985-December 1986," adopted at the tenth meeting of the U.S.-U.S.S.R. Environmental Joint Committee in Washington, D.C., Dec. 15-18, 1986 [hereinafter 1985-86 Implementation Report]. Copies of the Report are available from EPA, Office of International Activities (A-106), Washington, D.C. 20460).

42. The boundary issue is described in Antinori, *The Bering Sea: A Maritime Delimitation Dispute between the United States and the Soviet Union*, 18 OCEAN DEV. & INT'L. L. 1 (1987).

the Agreement produced interesting, if informal, discussions of the "nuclear winter" scenario.

On the commercial front, during the 1970s, there were modest sales of American monitoring instruments and oil recovery technology to the Soviet Union; continued progress in the broader ambit of U.S.-U.S.S.R. relations may make pollution control an area of meaningful trade potential between the two countries. Several projects of the Agreement could advance this potential.<sup>43</sup>

One of the more intriguing, and over the long run perhaps the most important aspects of this cooperative relationship is its impact on environmental law and policy in the Soviet Union. As noted above, Soviet research data and methodologies have, upon occasion, supported specific regulatory actions in the United States. Moreover, an agreement for the shared resources of the Bering Sea region was discussed, and the U.S.-U.S.S.R. migratory bird agreement has already been signed. Within the Soviet Union, however, bilateral cooperation has become significant as a source of comparative environmental law. The environmental protection agenda in the U.S.S.R. continues to evolve,<sup>44</sup> and with it, the search for corresponding administrative and legal approaches to air pollution control, environmental impact analysis and hazardous waste management. Successful American environmental laws serve as models for development and application of Soviet environmental control regulations.

Among the original projects of the Environmental Agreement, and certainly one of the most frequently discussed at JCM sessions, is an effort entitled "Comprehensive Analysis of the Environment." As expressed in recent Joint Committee documents, the aim of this project is

the study of various factors (as they are interrelated) which effect the quality of the environment: the impact of pollutants on ecosystems and man's health; the impact of human activity on the biosphere; methods for monitoring, assessing and regulating the state of the environment. This includes the related economic factors and

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43. See *Soviet Role in Pacific Rim Trade*, *supra* note 41, at 29-31.

44. See the wide-ranging discussion of environmental policy at the Third Session (11th Convocation) of the Supreme Soviet, reported in *Pravda* and *Izvestia*, July 3-4, 1985 (available in translation in Foreign Broadcast Information Service, *Daily Report — USSR: National Affairs*, July 12, 1985, at R11-R15; July 15, 1985, at R5-R16; July 16, 1985, at R12-R18).

effects of regulatory activities on the environment. An analysis of these factors provides the scientific and technological basis for developing a comprehensive strategy to monitor and manage the environment, and for setting quality norms and standards. This project is designed to coordinate all work in the aforementioned areas which are part of other projects of this Agreement.<sup>45</sup>

This analysis ultimately strives toward a systems analysis of all interrelated environmental quality issues. The relative importance ascribed to this project by the respective sides is illustrated by the fact that during the past twelve years there were seven U.S. project leaders for Comprehensive Analysis, while on the Soviet side there was but one: the Co-Chairman of the Joint Committee, academician Yuriy Izrael.

In his 1984 book entitled *Ecology and Environmental Control*,<sup>46</sup> Izrael elaborates on his concept of "comprehensive analysis" as a multi-stage process involving determination of environmental impacts contaminant loadings in various media, and economic factors in determining maximum permissible loadings on a regional scale. Apart from predicting impacts at the ecosystem level, "comprehensive analysis" contains nothing particularly exotic or innovative from the standpoint of environmental protection in the United States. What is remarkable is less the substance of Izrael's approach than the fact that he relied almost exclusively on the Environmental Agreement, a bilateral forum, to develop a strong and *domestic* policy agenda.<sup>47</sup>

Significantly, perhaps, the period of greatest activity in the Comprehensive Analysis project, 1974-79, witnessed the transformation of Izrael's bureaucratic domain, the State Hydrometeorological Service, into a cabinet-level entity, the State Committee for Hydrometeorology and Environmental Control (Hydromet).<sup>48</sup>

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45. 1985-86 Implementation Report, *supra* note 41, at 25 (Project 02.07.21).

46. Y. IZRAEL, *EKOLOGIYA I KONTROL' SOSTOYANIYA PRIRODNOY SREDY* 14-15, 33-48 (1984).

47. It was particularly ambitious a decade ago, when Izrael's organization, Hydromet, was nothing more than an analog of the National Weather Service. In a more recent context, Izrael's "comprehensive analysis" scheme seems almost modest in comparison with his call for the "ecologization of all sectors of the national economy." See *Izvestiya*, July 4, 1985, at 5, col.1.

48. Four joint "Comprehensive Analysis" symposia were held in this period. The transition from Hydrometeorological Service to State Committee for Hydrometeorology and Environmental Control occurred in the spring of 1978.

Though Hydromet's regulatory competence is limited to the air medium, the agency gained responsibility in the past several years for monitoring ecological parameters in all media; an environmental and climate monitoring laboratory, operated jointly by Hydromet and the U.S.S.R. Academy of Sciences, supports over 2,000 monitoring sites across the vast territory of the Soviet Union. Over the past two years, Izrael pressed vigorously for establishment of a national Ecology Program (and a corresponding State Ecological Service in each Republic in the U.S.S.R.) similar in scale and priority to the Soviets' current national programs in food and energy production.<sup>49</sup> As of 1988, Goskompriroda was assigned the responsibility for establishing a national program encompassing these sorts of programs.

At the ninth meeting of the Environmental Joint Committee, the EPA agreed to a Soviet proposal calling for another Comprehensive Analysis Symposium — the fifth in that series and the first since 1979 — in autumn 1986, at the time of the tenth Joint Committee meeting in Washington. Izrael headed the Soviet group at the 1986 Symposium.

It is extraordinary that the many accomplishments of the Environmental Bilateral were realized with a minimal investment of budgetary resources from both the U.S. and U.S.S.R. sides. As early as 1975, the United States General Accounting Office recommended that

Congress should also consider the desirability of specifically funding the [environmental] agreements. This would enhance overall cooperative efforts by providing the project coordinators with the financial means to attain project goals and objectives without having to rely primarily on those agency funds provided for other purposes as done in the past.<sup>50</sup>

To date, although the Joint Committee coordinates the preparation of a detailed annual report and work plans for each project, funding to implement the work plans is still scarcely adequate. Both the United States through Congress and the White House Office of Management and Budget, and the Soviet Union

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49. See, e.g., *Izvestiya*, July 4, 1985, at 5, col. 1; *Vestnik Akademii Nauk SSSR* 20-22 (1984).

50. GENERAL ACCOUNTING OFFICE, A PROGRESS REPORT ON UNITED STATES-SOVIET UNION COOPERATIVE PROGRAMS 49 (ID-75-18) (Jan. 8, 1975).

through the new Goskompriroda and Gosudarstvenny Planovyy Komitet (GOSPLAN) (the State Planning Committee) would do well to consider the General Accounting Office finding<sup>51</sup> that more adequate resources are needed for the areas of cooperation.

A brief comparison of cooperative activity in the biennial periods 1972-73 and 1985-86 demonstrates substantial growth in cooperation, and the commensurate accomplishments. The General Accounting Office summarized the initial cooperation as follows:

The first meeting of the joint committee was held in Moscow in September 1972 and it approved memorandums of implementation and procedures under the agreement. The memorandum of implementation provided for joint cooperation on 30 topics within the 11 specified areas of interest. The establishment of 9 working groups and the convening of additional meetings and conferences of specialists to work out plans for continuing cooperation were also authorized at this meeting.

The second annual meeting was held in Washington, D.C., from November 13 to 16, 1973. The committee reviewed the work accomplished during the first year of cooperation and adopted a report on the progress of the program to date. This meeting was convened by the Soviet and American chairmen of the joint committee and was attended by an additional 12 Soviet and 14 American representatives. Overall, the committee noted that there had been more than 20 meetings of working groups and that some activity had taken place under each of the 11 areas of the agreement. It was agreed that a good beginning had been made in the program of environmental cooperation and that a solid basis had been laid for further progress.

As of November 1, 1973, the 17 working groups had held at least 24 meetings at which a total of 109 topics of common interest were identified within ten environmental areas. Subsequent meetings have been held and by June 1, 1974, there were about 40 working-group and smaller scale meetings according to the Department of State.

The information exchanges primarily concerned data on organizational outlines and procedures for developing environmental controls, published technical data, and reports on the efforts of individuals working group members. As of June 1974, two working groups (air pollution and modeling, and earthquake prediction) have instruments and technicians in the Soviet Union for side-by-side field comparisons of instruments and techniques. However, in

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51. See *id.*

most cases further details remain to be worked out before results are expected.<sup>52</sup>

By the tenth meeting of the Joint Committee in Washington, D.C., in December of 1986, ten of the eleven areas were active with fifty-eight separate projects; many activities were included within each project.<sup>53</sup> Only Area X, on arctic environmental matters, was not functioning independently; its intended work was instead reflected in other projects under Water Pollution (Area II), Enhancing the Urban Environment (Area IV), Nature Protection (Area V), Climate Modification (Area VIII), Earthquake Prediction (Area IX), and comparative law studies of Alaskan and Siberian Environment Laws (Area XI).<sup>54</sup> By 1985, three new projects were established as well: the first focuses on education and training in environmental education, the second on the development and improvement of non-waste and low-waste technological processes for protection of the environment, and the third on research aimed at managing toxic wastes.<sup>55</sup> As of 1988, all eleven Areas are functioning independently.

### *B. Eleven Areas of Bilateral Cooperation*

The principal cooperative endeavors under each of the eleven Areas are discussions sharing advanced technology, joint scientific and professional education seminars and educational programs, comparative studies, and exchanges of data, research and related publications. Unfortunately, dissemination of this information in both the U.S. and U.S.S.R. is hampered by a lack of funds for translating and publishing texts. The scope of substantive work currently underway can be summarized as follows:<sup>56</sup>

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52. *Id.* at 22-23.

53. See "Memorandum of the Tenth Meeting of the US-USSR Joint Committee on Cooperation in the Field of Environmental Protection," (Dec. 15-18, 1986) [hereinafter *Memorandum*], reprinted in *Readings and Materials for Colloquium: Comparative American and Soviet Environmental Law* (Pace University School of Law, Feb. 23, 1987) (N. Robinson ed.) [hereinafter *Pace Colloquium Readings*].

54. See *Memorandum*, *supra* note 53, at 55.

55. *Id.* at 58-60.

56. See the description of past work in 1985-86 Implementation Report, *supra* note 41; and current and future work is outlined in *Memorandum*, *supra* note 53 (references are to working group numbers, which continue in use from year to year).

### 1. *Area I - The Prevention of Air Pollution*

Air pollution was the subject of a joint study to determine the ways in which airborne contaminants are formed, transported, and dispersed. Comparisons were made of modeling techniques, standard setting, and instrumentation and measurement methodologies.<sup>57</sup>

While the EPA and Hydromet worked together on this study, EPA and the Ministry of Chemical and Petroleum Machine Building have shared technologies to reduce stationary source emissions of oxides of nitrogen and sulphur dioxide.<sup>58</sup> Likewise, particulate emission research is exchanged between the EPA and the U.S.S.R. Scientific Research Institute for Industrial and Sanitary Purification.<sup>59</sup> Finally, the EPA and the Ministry of the Automobile Industry work together on technological innovations in engine design, fuels, and related engine development issues.<sup>60</sup>

### 2. *Area II - The Prevention of Water Pollution*

This area has had three *foci*. First, an active exchange of specialists has addressed river basins, lakes, and estuaries.<sup>61</sup> The project under this topic includes joint efforts to plan and manage water quality in river basins, conducted by the EPA and the All Union Scientific Research Institute on Water Protection of the Ministry of Land Reclamation and Water Management.<sup>62</sup> Similarly, the EPA and Hydromet are researching the measurement and modeling of chemical pollutants in lakes and estuaries.<sup>63</sup> Second, the U.S. Fish and Wildlife Service and the Institute of the Biology of Inland Waters of the U.S.S.R. Academy of Sciences undertook joint analyses of the effects of pollutants on aquatic organisms and ecosystems, and the development of water quality criteria.<sup>64</sup> Third, the EPA and the All Union Research Institute

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57. 1985-86 Implementation Report, *supra* note 41, at 1-2 (Working Group 02.01-10, Projects 02.01-11, 12).

58. *Id.* at 2-3 (Projects 02.01-20, 21).

59. *Id.* at 3-4 (Project 02.01.22).

60. *Id.* at 4-5 (Project 02.01-31).

61. *Id.* at 5 (Working Group 02.02-10).

62. *Id.* at 6 (Project 02.02-11).

63. *Id.* at 6-7 (Project 02.02-12).

64. *Id.* at 7-8 (Project 02.02-13).

on Water Supply, Sewage, Hydrotechnical Facilities and Engineering in the U.S.S.R. State Committee for Construction Affairs, cooperated on improving methods of treatment of municipal and industrial waste water discharges, including paper and pulp processing.<sup>65</sup> An entirely new project, consisting of joint studies by the EPA and the Ministry of Geology seeks to predict groundwater contamination from pollution and from natural resources extraction.

### *3. Area III - Environmental Pollution Associated With Agricultural Production*

In this exchange, the Estonian Academy of Sciences and Bowling Green State University have studied the effects of air pollution on forest ecosystems and other vegetation.<sup>66</sup> EPA and Hydromet collaborate on analyses of the forms and mechanisms by which pesticides and agricultural chemicals are transported.<sup>67</sup>

### *4. Area IV - Enhancement of the Urban Environment*

Although potentially quite important, little effective cooperation has been achieved regarding the relationship of urban transportation and the environment;<sup>68</sup> therefore, that topic has only been addressed within the related studies on air pollution prevention under Area I. The preservation of important natural, cultural, or historic monuments began in 1985 as a new area of cooperation, involving the National Park Service and the State Committee for Civil Construction and Architecture's Department of Town Planning and Development.<sup>69</sup> A modest study of the management and processing of urban solid waste is ongoing between the EPA and the Russian Republic's Ministry of Community Affairs.<sup>70</sup>

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65. *Id.* at 8-9 (Project 02.02-21).

66. *Id.* at 10-11 (Project 02.03-21).

67. *Id.* at 11-12 (Project 02.03-32).

68. *Id.* at 13 (Project 02.04.11).

69. *Id.* at 13-14 (Project 02.04-20).

70. *Id.* at 14 (Project 02.04.31).



### 5. *Area V - Preservation of Nature and the Organization of Preserves*

The nature protection exchanges stand out as one of the most visible and tangible fields of cooperation, directed to the protection of both flora and fauna and the establishment of nature preserves. Joint projects focused on implementing the U.S.-U.S.S.R. Migratory Bird Convention,<sup>71</sup> preserving and breeding endangered species of cranes, raptors, and other rare species<sup>72</sup> (as depicted in the documentary film "A Thousand Cranes"<sup>73</sup>), conducting joint research on rare and endangered animals,<sup>74</sup> and in the captive breeding of rare and endangered animals among cooperating zoos.<sup>75</sup> The U.S. Fish and Wildlife Service and the Ministry of Agriculture's Department on Nature Preservation, Preserves and Forest and Game Management direct these activities, involving the Moscow, San Diego, Omaha, Chicago, and Cincinnati zoos.

A substantial amount of cooperation focuses on the identification and use of "Biosphere Reserves" for monitoring and collecting baseline data.<sup>76</sup> The U.S. Forest Service and U.S.S.R. Academy of Sciences led this effort. Other projects under examination are: (1) the preservation of arid ecosystems by joint studies of Utah State University and the Turkmen Republic's Academy of Sciences;<sup>77</sup> (2) the joint study of northern Pacific marine mammals by the National Oceanic and Atmospheric Administration (NOAA) and the Ministry of Fisheries' Scientific Research Institute for Fisheries and Oceanography;<sup>78</sup> and (3) cooperative fundamental research on the ecology of single species of flora and fauna in both countries, including cooperation by botanical gardens in each country, coordinated through the Rancho Santa Ana Botanic Garden and the Academy of Sciences.<sup>79</sup> The other studies focused

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71. *Id.* at 15 (Activity 02.05-1101). See also *supra* note 39.

72. 1985-86 Implementation Report, *supra* note 41, at 15-16 (Activity 02.05-1102).

73. *A Thousand Cranes* (Artemis Wildlife Foundation 1986).

74. 1985-86 Implementation Report, *supra* note 41, at 16 (Activity 02.05-1103).

75. *Id.* at 16-17 (Activity 02.05-1105).

76. *Id.* at 17-18 (Project 02.05-41).

77. *Id.* at 18 (Project 02.05-51).

78. *Id.* at 18-20 (Project 02.05-61).

79. *Id.* at 20-21 (Activity 02.05-7101).

on holarctic animals and northern migratory waterfowl, particularly the Wrangel Island snow goose.<sup>80</sup> Finally, the Fish and Wildlife Service and the Soviet Ministry of Fisheries investigated improving fisheries management and aquaculture techniques.<sup>81</sup>

#### 6. *Area VI - Marine Pollution*

This area developed two projects. The first involves the U.S. Coast Guard and the Soviet Ministry of the Maritime Fleet, who are currently developing mutual standards and procedures to combat oil spills, especially those occurring in the Bering Sea.<sup>82</sup> This project continues work which both countries also pursue multilaterally in the International Maritime Organization (IMO). The second project engages the EPA and Hydromet in joint studies of the bioaccumulation of toxic substances in marine organisms.<sup>83</sup>

#### 7. *Area VII - The Biological and Genetic Effects of Environmental Pollution*

A major component of Area VII is the project on the Comprehensive Analysis of the Environment<sup>84</sup> discussed above.<sup>85</sup> Additional projects include a joint effort by the U.S. Department of Health and Human Services, the EPA, and the U.S.S.R. Academy of Sciences to formulate principles of genetic monitoring,<sup>86</sup> and analyze shared information obtained from research projects in the Bering Sea.<sup>87</sup>

#### 8. *Area VIII - The Influence of Environmental Changes on Climate*

The agenda for this area is growing rapidly, with the U.S. National Oceanic and Atmospheric Administration (NOAA) and Hydromet continuing an extensive program of exchanging data.

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80. *Id.* at 21-22 (Activity 02.05-7102).

81. *Id.* at 22 (Project 02.05-81).

82. *Id.* at 23-24 (Project 02.06-11).

83. *Id.* at 24 (Project 02.06-21).

84. *Id.* at 25 (Project 02.07-21).

85. *See supra* notes 45-49 and accompanying text.

86. 1985-86 Implementation Report, *supra* note 41, at 25 (Project 02.07-11).

87. *Id.* at 26-27 (Sub-project 02.07-2101).

That program includes the designation of data coordinators and of scientists to assess climate conditions and changes,<sup>88</sup> to examine the phenomena of air pollution in the arctic, to evaluate stratospheric ozone conditions<sup>89</sup> and atmospheric aerosols,<sup>90</sup> and to jointly study the influence of change in solar activity (radioactive fluxes) on climate.<sup>91</sup> The systematic sharing of data under this agreement<sup>92</sup> is a model of international cooperation in the full and free exchange of environmental baseline data, which is essential for establishing environmental protection policies.

### 9. *Area IX - Earthquake Protection*

These studies involve cooperative work to refine the techniques for predicting and reducing earthquake damage, using improved methods of seismic construction and land use zoning.<sup>93</sup> Field investigations, coupled with laboratory analysis of the physics of earthquake sources<sup>94</sup> and the use of statistical and theoretical models (including development of algorithms for prediction and seismic risk estimates<sup>95</sup>), are also major subjects of cooperation. Additionally, both sides work together to evaluate the engineering potential for reducing earthquake hazards.<sup>96</sup>

These earthquake projects were led by a range of American specialists, such as the Lamont-Doherty Geological Observatory of Columbia University; the U.S. Geological Survey, Indiana University; the University of Colorado; and the University of California at Los Angeles. Soviet project leaders included the Institute of Physics of the Earth and the Tadjik Institute of Seismoresistant Construction and Seismology (TISCS). There was also an exchange of data for the design of a system to give simultaneous warnings of seismic sea waves (tsunamis), but little work is yet completed on this project.<sup>97</sup> NOAA and the Sakhalin Integrated

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88. *Id.* at 28-29 (Project 02.08-11).

89. *Id.* In 1986, a sub-project on the ozone conditions of Antarctica was added as sub-project 02.08-1201, "Monitoring of the Atmospheric Ozone Layer."

90. *Id.* at 29-31 (Project 02.08-12).

91. *Id.* at 31 (Project 02.08-13).

92. *See id.* at 29-30.

93. *Id.* at 32 (Project 02.09-10).

94. *Id.* at 33-34 (Project 02.09-11, 12).

95. *Id.* at 34-35 (Project 02.09-13).

96. *Id.* at 35-36 (Project 02.09-14).

97. *Id.* at 36 (Project 02.09-21).

Research Institute of the Far East Research Center of the U.S.S.R. Academy of Sciences are continuing to develop the tsunamis research project.

*10. Area X - Arctic and Subarctic Ecological Systems*

Originally, both countries contemplated that the arctic/subarctic region would warrant a separate project focus. Instead, from 1972-1988, this Area was subsumed within the substantive projects on water pollution, nature preservation, climate study, and earthquake prediction. Working groups under Areas V and VII, for example, sponsored research activities in the Bering Sea.<sup>98</sup> In 1988, at the Joint Committee Meeting in Moscow, the sides decided to activate Area X as a formal area of joint study in its own right. Subcommittees and project leaders are being designated now.<sup>99</sup>

*11. Area XI - Legal and Administrative Measures for Protecting Environmental Quality*

These exchanges have been an important subject for cooperation because they encompass all of the legal aspects of the other Areas of joint work. To date, comparative law exchanges have focused on air and water quality regulations, environmental impact assessment techniques, wildlife preservation strategies, the creation of parks and reserves, avenues for citizen participation in the creation of hazardous waste regulations, and the overall enforcement of environmental laws.

Since 1986, the project was active in two subprojects, one on Comparative Environmental Law and Policy<sup>100</sup> and the other on International Environmental Law and Policy.<sup>101</sup> There was also a separate project to compare definitions of environmental terms in English and in Russian and to standardize these terms. A dictionary was prepared through the joint efforts of the U.S. Department of Commerce and the U.S.S.R. State Committee on Standards (Gostandardt), but this work was completed by 1980 and the subproject has not been extended.

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98. 1985-86 Implementation Report, *supra* note 41, at 37.

99. See 1988 Memorandum, *supra* note 38, at 43.

100. See Memorandum, *supra* note 53, at 56-57 (Activity 02.11-1101).

101. *Id.* at 57 (Activity 02.11-1102).

Cooperative exchanges under Area XI were guided by the U.S. Council on Environmental Quality and by the Bureau of Legal Problems of Environmental Protection and the Rational Use of Natural Resources (since 1988 renamed and expanded as the Sector on Ecological Law), in the Institute of State and Law of the U.S.S.R. Academy of Sciences. The Center for Environmental Legal Studies of Pace University School of Law in New York and the Institute of State and Law of the Lithuanian Republic's Academy of Sciences also exchanged legal and administrative information under the Agreement. Additionally, legal specialists participated in the program from many agencies, including the U.S. Department of Justice, University of Kansas Law School (U.S.), Moscow State University Faculty of Law (U.S.S.R.), and the Ukraine Republic and Kazakh Republic Academies of Sciences. A Colloquium on Comparative U.S.-U.S.S.R. Environmental Law was held in New York in 1987.<sup>102</sup>

### C. *New Projects*

At the Ninth Joint Committee Meeting in Moscow in 1985, three new projects were added to the cooperation program. These included:

1. Education and training in the field of environmental protection, including both university level instruction and advanced continuing education course for specialists; this project is to be conducted by Dartmouth College and the Ministry of Secondary Specialized and Higher Education.
2. The development and improvement of non-waste and low-waste technologies that will protect the environment; lead agencies for this project are not yet designated.
3. Research aimed at controlling toxic wastes, including thermal destruction technology and biodegradation of halogenated hydrocarbons, with EPA as the lead agency for the Americans; the Soviets have not yet designated their lead agency.

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102. The proceedings of this Colloquium are to be published by the Pace Environmental Law Review in 1988. See generally Lane, *US, Soviet Conservation Officials Exchange Ideas on Environmental Protection*, Gannett Westchester Newspapers, Feb. 25, 1987, at A12, Pt. IV, col. 1; see also *Pace Colloquium Readings*, *supra* note 53.

Effective May 23, 1987, the Environmental Cooperation Bilateral Agreement will continue for an additional five-year term.<sup>103</sup> Work under the new projects and the many cooperative ventures in the ten active areas will proceed through 1992.

#### V. ENVIRONMENTAL LAW EXCHANGES UNDER THE AGREEMENT

##### A. *Moving Toward A Common Approach to Environmental Policy*

Given the significant constitutional, legal, economic and philosophical differences between the U.S. and the U.S.S.R., it might be assumed that there is little basis for effective cooperation on legal and administrative approaches to environmental protection. In fact, both nations have encountered remarkably similar problems over the past decades with the effects of pollution; each country is now working to protect natural areas and ecosystems.

The functional similarities between each nation further demonstrate why the environmental law cooperation under Area XI is effective. Each nation shares similar geographic conditions in the Northern Hemisphere, with vast temperate forests, extensive rivers, lakes and marine resources, comparable wildlife and aquatic systems, and the arctic. Each is a federated system, with "federal" standards in the U.S. and "All Union" standards in the U.S.S.R. which are first established uniformly at the national level, subsequently adopted at the "state" or "republic" level, and finally implemented in the political subdivisions therein. Each is industrialized and is experiencing continued urban and suburban growth, with resulting pressures to provide for new residential housing. Each nation has comparable technology; the automobile and its internal combustion engine produce similar air pollution and land use problems.

Equally important is the fact that environmental law is a new field in each country. New statutes define how human endeavors can take into account and accommodate natural systems. In both countries, these statutes are principally enforced by administrative agencies, and environmental laws may be backed by criminal

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103. At the 1986 Joint Committee Meeting in Washington D.C., the parties observed: "The sides note with satisfaction the extension of the US-USSR Agreement on Cooperation in the Field of Environmental Protection for an additional five-year term effective May 23, 1987." Memorandum, *supra* note 53, at 61.

sanctions.

Several studies by American specialists describe the rapidly developing Soviet policies for environmental protection.<sup>104</sup> These were corroborated by a publication in 1978 of a *samizdat* (self- or unofficially-published) text,<sup>105</sup> prepared by the ecologist Zev Volfson. It was published in English under the pseudonym Boris Komarov as *The Destruction of Nature in the U.S.S.R.*<sup>106</sup> These works document how pollution and habitat degradation have worsened in the U.S.S.R.

In a similar fashion, Soviet writers within the U.S.S.R. published criticisms of the ecological damage in their country, especially as literature.<sup>107</sup> Environmental groups in the U.S.S.R., chiefly the All-Russian Society for Nature Protection, pressured for more effective environmental laws, more nature sanctuaries, and more scientific efforts to guide nature protection policies.<sup>108</sup> Finally, the Soviet press featured articles on pollution incidents.<sup>109</sup> Unfortunately, Americans largely ignored the Russian-language publications from the Soviet Union.

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104. Early studies were M. GOLDMAN, *THE SPOILS OF PROGRESS: ENVIRONMENTAL POLLUTION IN THE SOVIET UNION* (1972); P. PRYDE, *CONSERVATION IN THE USSR* (1972). The most recent survey is C. ZIEGLER, *ENVIRONMENTAL POLICY IN THE USSR* (1987). See Axline, *(Out)Back in the U.S.S.R.: Charles Ziegler's Environmental Policy in the U.S.S.R.*, 18 ENVTL. L. 383 (1988).

105. UNICHTOZHENIE PRIRODY, OBOSTRENIE EKOLOGICHESKOGO KRIZISA V SSSR (Possev-Verlag, V. Gorbachev K.G. 1978, Frankfurt/Main, Germany).

106. B. KOMAROV, *THE DESTRUCTION OF NATURE IN THE SOVIET UNION* (M. Vale & J. Hollander trans. 1980) (the English version was published by M.E. Sharpe, Inc., White Plains, N.Y.).

107. See, e.g. V. SOLOUKHIN, *A WALK IN RURAL RUSSIA* (S. Miskin trans. 1966) (the English translation was published in Great Britain by E.P. Dutton & Co.).

108. See *NATURE PROTECTION IN RUSSIA* (A. Inozemtsov ed. 1981), prepared at the request of the All-Russia Society for Nature Protection's Central Board, through its Resolution of Feb. 15, 1980 on citizen activists. See N. Yost, *The Citizens' Role in Nature Protection in the USSR*, 11 ENVTL. L. REP. (ENVTL. L. INST.) 50,051 (Aug. 1981).

109. Soviet Press reports for several years have routinely covered environmental stories. With the current policy of *glasnost*, these Soviet stories are not often reported in the west, while in the past they were ignored. See, e.g., Shabad, *Soviet Projects Debated in Press*, N.Y. Times, Dec. 21, 1986, at L15, col. 1.

*B. Goskompriroda: The Soviet Union's New Environmental Authority*

A recent debate over Soviet environmental policy emerged with the Communist Party's 1985 findings that many new environmental laws are neither adequately enforced nor complied with. In 1978, the Communist Party of the Soviet Union's Central Committee and the U.S.S.R. Council of Ministers adopted a resolution "On Further Measures to Intensify Nature Protection and To Improve Use of Natural Resources." By 1985, it was evident to the Party leadership that exhortation to comply with environment laws was not successful. In response, the July 1985 special session of the Supreme Soviet, the U.S.S.R.'s legislature,<sup>110</sup> enacted the Decree "On Observance of the Requirements of Legislation on the Protection of Nature and the Rational Utilization of Natural Resources."<sup>111</sup> This decree was direct, even blunt, in criticizing shortcomings in environmental protection in the U.S.S.R. The debate leading up to adoption of the decree was particularly self-critical,<sup>112</sup> and as candid as any scholarly analysis set forth

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110. The Supreme Soviet has had Standing Commissions on Nature Conservation in the Soviet of the Union and the Soviet of Nationalities (the two chambers of the Supreme Soviet, the former representing the people and the latter the republics, autonomous regions, eight *oblasts* and ten *okrugs*). See generally P. VANNEMAN, *THE SUPREME SOVIET: POLITICS AND THE LEGISLATIVE PROCESS IN THE SOVIET POLITICAL SYSTEM* (1977).

111. Ved. Verkh. Sov. S.S.S.R. (1985), No. 27, Item 479 (adopted July 3, 1985), discussed in O. Kolbasov, *Environmental Policy and Law in the USSR*, 17 ENVTL. L. REP. (ENVTL. L. INST.) 10,068-069 (Mar. 1987).

112. See the accounts entitled *Supreme Soviet Nature Conservation Resolution*, *Izvestiya*, July 4, 1985, at 1-2, col. 1 (morning edition); *Nuriyev Addresses Supreme Soviet on Conservation*, *Izvestiya*, at 2-3, July 3, 1985 (morning edition). Nuriyev, Deputy Chairman of the USSR Council of Ministers, is reported to have said, for instance, that along with progress in pollution control and nature conservation these were also problems:

There are many instances of formalism and a departmental approach being allowed in this work. This in turn leads to the breakdown of comprehensive nature conservation measures, for which we have to pay later. This situation cannot be justified by any reason, . . . Matters are going badly at a number of enterprises of the USSR Ministry of Nonferrous Metallurgy. Here new manufacturing processes for obtaining sulfur and sulfuric acid from metallurgical plants' waste gases are being introduced only slowly. . . . The pollution of the air with exhaust fumes in the cities and industrial centers is becoming a serious problem. . . . We have not managed to halt completely the discharge of untreated sewage into the basins of the Caspian and Azov Seas. The pollution of underground waters has been



earlier by western scholars, Soviet critics, or Zev Volfson's *samizdat* book.

In January 1988, the Central Committee of the Communist Party of the Soviet Union and the U.S.S.R. Council of Ministers announced the establishment of a new national authority to implement environment protection laws. The decision generally furthers the *perestroika* (restructuring) program of the Party and General Secretary Mikhail Gorbachev, and is entitled "a radical re-organization (restructuring) of environmental protection in the country."<sup>113</sup> The new organ is called *Goskompriroda*, literally the "State Committee on Nature," which TASS translates as the State Committee in "Environmental Protection," since in Russian the word for nature, *priroda*, connotes the wider sense of the ambient environment, not just the narrow connotation of nature in English as the natural flora and fauna or conservation.

*Goskompriroda* is to be the central body of the Soviet Union's state administration for environmental protection and use of natural resources. Its functional relationship with other All Union agencies and its ability to require compliance with All Union environmental laws remains to be seen, however. The impact of *Goskompriroda* on the many Republic agencies and their environmental laws also remains to be seen, since the All Union State Committee bears full responsibility for nature conservation with each Republic's Council of Ministers.

*Goskompriroda* is given exclusive control over Soviet duties in international environmental treaties and work abroad. The Secretariat for the U.S.-U.S.S.R. Joint Committee on Cooperation in the Field of Environmental Protection is now within *Goskompriroda* rather than Hydromet.

The structure of the overall Soviet framework for environmental protection is to be delineated in a new law to be submitted to the U.S.S.R. Council of Ministers in 1989. It will take at least two years to restructure and realign Soviet federal and state

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allowed in the regions of Severodonetsk, Aktyubinsk, Fergana, and other cities. . . . Poaching seriously endangers nature. . . . There are now over 2 million hectares of misused land in the country. . . .

*Id.* These remarks are illustrative of the debate. It was candid and detailed.

113. TASS Press Release, *CPSU Adopts Decision on Reorganizing Environmental Protection*, Jan. 16, 1988, available from Foreign Broadcast Information Service; see also *SOVIET DIGEST*, *supra* note 36.

agency responsibilities and staff, and then a longer period to establish the procedures and compliance mechanisms for Soviet environmental protection laws.

Some of the new powers given to enforce environmental standards have been announced. Pravda has reported that Goskompriroda and its counterpart agency in each Republic will have "the necessary powers and, in particular, the right to prohibit the construction, reconstruction, or expansion of industrial and other facilities, work including the use of natural resources carried out in breach of the environmental protection law."<sup>114</sup> Pravda further reported that Goskompriroda should establish administrative organs to examine violations of laws on environmental protection and natural resource use. Fees or payments are to be required for emission of pollutants as well as for the use of natural resources; a substantially higher payment would be exacted for exceeding permissible discharges.<sup>115</sup>

Goskompriroda is also to be assigned the environmental impact assessment process, known as "the State ecological expert analysis" process. Pravda noted that under Goskompriroda, there is to be established a new "public council consisting of scientists, public figures, representatives of local Soviets, and leaders of enterprises."<sup>116</sup> The Council is to discuss environmental problems and prepare recommendations for their resolution. Goskompriroda will also create an All Union Scientific Research and Information Center on Environmental Protection Problems, with components taken from other agencies.

Goskompriroda therefore encompasses, in essence, a wide range of ecological concerns, such as habitat/nature conservation, resource uses, and environmental protection. It, therefore, may eventually provide a more integrated coordination of Soviet activity in the U.S.-U.S.S.R. Joint Committee for Cooperation in the Field of Environmental Protection. Goskompriroda has an even wider mandate than does the U.S. Environmental Protection Agency, so if the Soviet side achieves a more comprehensive coordination of JCM projects, then the U.S. EPA may need to devote more resources to the task of inter-agency coordination. For the

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114. Pravda (Moscow), Jan. 17, 1988, p.1.

115. *Id.*

116. *Id.*

moment, at any rate, the U.S.S.R. has taken a major step towards making its environmental protection programs more effective.

There is, therefore, a consensus among informed specialists and Soviet leadership that the U.S.S.R. needs effective environmental law. This consensus formally became a matter of public record at the highest levels in 1985, but it had been building every year since the U.S.-U.S.S.R. Environmental Bilateral Agreement began in 1972.

### *C. The Success of the Exchanges*

Eight factors have allowed the environmental law exchange to be a success:<sup>117</sup>

First, as noted above, environmental problems in both countries are real and serious. Industrialized nations paid little attention to effective pollution control until around 1970; serious injury to the environment resulted in both the U.S. and U.S.S.R. Even as late as 1970, neither country had much of what we now know as environmental law. Consequently, both sides have an interest in learning as much as possible about how to abate pollution, and protect natural resources.

Second, there are common resources shared by both countries. The Agreement furthered cooperation on the conservation of migratory birds whose life cycles include time in both the U.S. and U.S.S.R. Both sides share the oceans and have cooperated on how to curb and eliminate oil pollution and oil spills; the latter would be most important if oil reserves in the Bering Strait and Arctic areas are developed. U.S. EPA Administrator William Ruckelshaus told the Associated Press in 1984 that the revived Environmental Agreement would focus "on shared problems such as acid rain and toxic substances."<sup>118</sup> Both sides have a common interest in dealing with their shared problems and managing their shared resources.

Third, both nations have strong, well established and well informed domestic constituencies advocating nature protection,

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117. These factors were noted by Professor Nicholas Robinson in testimony to the U.S. House of Representatives. See *Soviet Role in Pacific Rim Trade*, *supra* note 41, at 44.

118. *Environmental Pact Revived*, N.Y. Daily News, June 27, 1984, at 6.

conservation, and maintenance of environmental quality. In the U.S.S.R., scientists in the Academy of Sciences and elsewhere have documented threats to the environment. The All-Russia Society for Nature Protection has grown since its founding in 1924 to over 30 million members, half of whom are students. The Society's leadership in Moscow and throughout the Russian Republic addresses all areas of environmental protection. Other Republics have established groups like the All-Russia Society, and smaller societies exist in Azerbaijan and Khazakhstan. Attempts to create an All-Union Society for Nature Protection have not succeeded yet, since many other Republics either lack a Society or have only a weak one. Nonetheless, the All-Russia Society has among its officers and directors some of the leading scientists and experts in the U.S.S.R.; this fact helped to make it an effective national voice. The All-Russia Society for Hunting and Fishing (*Rosho-trybolousoyuz*) provides a similar voice for wildlife conservation. Other groups such as the *Znaniye* (Knowledge Society) educate about environmental protection, while all teacher training schools offer a compulsory course on nature protection, and the Young Communist League (*Komsomol*) encourages nature protection projects throughout the U.S.S.R. Soviet citizens organized to demand action against pollution and for nature protection; beginning in 1972, the government and the Communist Party agreed to give increased attention to these concerns.

On the U.S. side, the advocacy of citizens in groups such as the Sierra Club, the Izaak Walton League, Trout Unlimited, the National Audubon Society, the National Wildlife Federation, and the Natural Resources Defense Council is well known to the Congress and to state legislatures. As a part of the U.S.-U.S.S.R. Environmental Bilateral, citizen leaders from among these groups served on U.S. delegations, and under Area XI of the Environmental Agreement, the Sierra Club was asked to organize a delegation of environmentalists to meet with the All-Russia Society in 1977. The Soviet side is now considering the time when the All-Russia Society will send a return delegation to meet with environmentalists in the United States.

Fourth, the environmental concerns do not involve strategic or military issues; there are no national security secrets to be divulged. Because environmental issues are new agenda items in both nations' foreign policy, such issues are often ignored by the diplomats of both countries. Consequently, these issues are often

left to environmental specialists, most of whom are not part of the formal foreign affairs establishments. Moreover, while environmental topics receive low priority, they are generally accepted as benign by foreign policy officials. The low priority accorded the environmental exchanges may also have made them not worth cancelling as a pawn in the political rivalries of these superpowers.

Fifth, a less cynical reason for the success of the Environmental Agreement is that exchanges of data and scientific assistance have benefitted both the U.S. and the U.S.S.R. Basic information on earthquake detection, marine oil spill clean-up, the monitoring and technology for air pollution abatement, the collection of specimens of flora and fauna not found in each other's territory, and a host of similar undertakings have been exchanged to mutual advantage. Both sides pay close attention to reciprocity, and work hard to achieve that reciprocity. Each of the ten active Areas under the Environmental Agreement operates through well-defined projects and work plans; these are detailed by memoranda of understandings (or protocols) prepared by both sides for every project in each Area. These memoranda allow open monitoring of the Agreement and carefully set realistic, achievable, and pragmatic objectives.

Sixth, a very significant factor contributing to the success of the U.S.-U.S.S.R. Environmental Agreement is the quality of the participating individuals. On both sides, the specialists tend to be highly motivated, professional, and relatively young. Environmental science, environmental engineering, and environmental law have been recognized as new fields in their own right only since the early 1970s. The experts in these subjects, both in government and in the private sector, are still building their disciplines. Their professional advancement coincides with the success of each working group, for as the projects advance, so does the development of their respective disciplines. The bilateral exchanges also benefit the participants in a cross-cultural sense. The experience of working with one's counterpart in another great nation with a different language, economic organization, and politics not only offers interesting insights into that country, but also gives an opportunity for comparative analysis of how one's own country approaches essentially the same environmental protection issue. The substantial and often unpaid efforts invested by the participants on both sides of the exchanges greatly enhanced the success

of the Environmental Bilateral.

Seventh, unlike political issues, in which differences of opinion are often not easily reconciled, environmental protection is amenable to substantial factual certainty. The effects of pollution and the characteristics of natural phenomena can be measured and studied. As an example, from the late 1960s to roughly 1972, a number of Soviet theoreticians blamed pollution on capitalism and claimed that there was no pollution under Communism. In recognition of actual environmental conditions, this absurd proposition was implicitly rejected by the Supreme Soviet in September 1972 when it adopted the special resolution "On Measures For Further Improvements In The Utilization of Natural Resources." The Communist Party of the Soviet Union, through its Central Committee, and the U.S.S.R. Council of Ministers furthered this position through a decree promulgated on December 29, 1972, entitled "On Strengthening Nature Conservation and Improvements In The Utilization of Natural Resources."

Just as the convening of the United Nations Conference on the Human Environment in 1972 stimulated many nations to create agencies like the U.S. Environmental Protection Agency (EPA), so, too, the Soviets came to recognize that environmental problems are amenable to scientific and practical resolution. Environmental cooperation is like protecting public health; it is an essential undertaking regardless of a country's social, political, or economic organization. It is not an ideological issue. Today, 144 countries have environmental protection agencies, while in 1972 only 11 developing and 15 industrialized nations did. With the establishment of Goskompriroda, the U.S.S.R. joined the ranks of nations with a central environmental authority.

Eighth, a final reason for the success of the Environmental Agreement may be the growing recognition that there is "only one earth." As astronauts and cosmonauts circle our globe in space, the uniqueness of life on this blue-green orb is put into stark relief. Just as the superpowers recognize the need to cooperate to avert nuclear war, so too common efforts are required for environmental protection of the biosphere. As Secretary of State George Schultz observed to the Senate Foreign Relations Committee on January 31, 1985, U.S. policy with respect to the Soviet Union

... requires a continuing willingness to solve problems through negotiations where this serves our interests (and presumably mutual

interests) . . . We must learn to pursue a strategy geared to long-term thinking and based on both negotiation and strength simultaneously, if we are to build a stable U.S. Soviet relationship for the next century.<sup>119</sup>

*D. Sharing Environmental Law: Making Cooperative Efforts to Protect Air Quality*

Soviet-American cooperation, and a keen Soviet interest in combatting air pollution, led to fruitful exchanges on air quality protection. As of 1972, the Clean Air Act<sup>120</sup> was in place in the United States, but no comparable Soviet All-Union law was enacted. In the years that followed, the U.S. shared the benefits of its experience in air pollution control technology with the Soviets.<sup>121</sup>

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119. Speech by Secretary of State George Schultz, Senate Foreign Relations Committee (Jan. 31, 1985).

120. The Clean Air Act of 1970, 42 U.S.C. §§ 7401-7642 (1982).

121. See G. KHOZIN, *THE BIOSPHERE AND POLITICS* (1979). Khozin offers the following discussion:

A number of problems in this area have become the object of joint efforts by Soviet and American specialists. The problem of controlling air pollution is being tackled through a number of specific projects, whose results are of interest to specialists not only in the USSR and the US, but in many other countries as well. These projects include simulating the processes of atmospheric pollution, and developing technical facilities for controlling atmospheric pollution by industry and by transport.

At its first meeting, the USSR-US Joint Committee decided to initiate studies of air pollution processes over the cities of St. Louis (USA) and Leningrad (USSR). Specialists from the two countries are making a comparative analysis of techniques employed to monitor air pollution in these cities, and of the methods of estimating the composition and dispersal of various impurities; they are working out ceilings for discharges into the atmosphere, and are forecasting the dangerous weather conditions that could be induced by increased concentrations of harmful impurities in the atmosphere.

Joint studies of the purification of vehicle exhausts, which account for a substantial part of the total air pollution, are likewise seen by the experts as promising. It was estimated at the beginning of the 1970s that transport accounted for over 144 million tons of various atmospheric pollutants out of the annual total of about 280 million tons. The experts are also giving close attention to the problem of electricity generation at thermal power stations through the burning of ecologically clean fuels, which produce no smoke, sulphur or other air pollutants, to effective new methods of turning solid and liquid fuels into gas and to unconventional energy generation tech-

In this manner, and through the regular meetings of environmental law specialists in Area XI, the Soviets developed a sound understanding of the U.S. Clean Air Act. Full exchanges of legal literature about the Clean Air Act were reinforced by Soviet meetings with U.S. air pollution control lawyers, administrators in federal and state government, and industry specialists. There were also visits to air pollution sources, in order to evaluate stack controls, programs for Prevention of Significant Deterioration,<sup>122</sup> and enforcement procedures.

By the late 1970s, the Bureau of the Legal Problems of Environmental Protection in the Institute of State and Law of the U.S.S.R. Academy of Sciences was able to prepare a draft Soviet law on air protection. This draft law was largely modeled after the U.S. Clean Air Act. The Academy specialists were successful in persuading the Supreme Soviet and other authorities that the new law was necessary; on June 25, 1980, the Supreme Soviet adopted the U.S.S.R. Law On Air Protection.<sup>123</sup>

In a significant way, Area I of Article II of the U.S.-U.S.S.R. Environmental Bilateral Agreement helped familiarize the Soviets with air pollution monitoring and control techniques, while Area XI helped the Soviets to fashion the legal and administrative means to impose those control techniques. The institution of Soviet air pollution controls has immediate health benefits for Soviet citizens, and should benefit Americans in the long-term by abating the precursors of acid rain and "arctic haze."

The U.S.S.R. Law on Air Protection briefly provides that air

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niques (such as harnessing tidal energy, or geothermal energy, or 'collecting' and converting solar energy).

Measures to protect the atmosphere from various types of pollutants, including vehicle exhausts, can be effective only provided reliable means of determining the composition and levels of atmospheric pollution are developed and introduced by states. Cooperation in such an important field as the development of instruments for air pollutant dosimetry was the subject of the Soviet-American 'Clean Air 76' seminar, sponsored by the Soviet Hydrometeorological Service and Chamber of Commerce and Industry, and by American firms manufacturing instruments and equipment for determining the contents of harmful impurities in the air.

*Id.* at 179-80.

122. 42 U.S.C. §§ 7470-7479 (1982).

123. U.S.S.R. Law on Air Protection, *Ved. Verkh. Sov. U.S.S.R.* (1980), no. 27, § 528.



must be protected as "one of the major, vital elements of the environment." The law sets as a goal to prevent and reduce the "harmful chemical, physical, biological and other effects of air pollution likely to cause unfavorable consequences for human beings, the national economy, and the flora and fauna of the world. . . ."<sup>124</sup> The law sets out the authority of the U.S.S.R. to establish a national system of air protection binding on the separate Republics. The "All-Union" or federal authority is to establish uniform national emission limits, to establish a unified national air quality monitoring system, and to define the structure and regulation which each Republic must use in adopting its own new air protection law.<sup>125</sup>

The Republics are required to develop their own area-specific plans for air protection, like the "State Implementation Plans" imposed by the U.S. Clean Air Act. The Republics must also adopt enforcement and implementation procedures.<sup>126</sup> Republic and All-Union economic and social development plans are to integrate air pollution control measures into their programs. Each state industry is to develop a relevant abatement program which "shall be agreed upon with the agencies exercising state supervision over air protection" in accordance with All-Union or Republic procedures.<sup>127</sup> Stricter standards than the uniform national standards are authorized in "selected regions," presumably where air pollution is especially acute or where pristine airsheds are to be preserved.<sup>128</sup> Under these procedures, an emission permit must be obtained from "a specially authorized state agency" for every "fixed source" of pollution. The Law on Air Pollution required the U.S.S.R. Council of Ministers to establish a nationwide set of permit procedures.

Permit violations may result in additional emission limits or even a prohibition of the entire operation or activity causing the emission, when the public health is deemed to be in danger by an administrative agency with regulatory authority over air protection. Permittees must report any episodes where their emissions exceed the permissible standards. In unfavorable meteorological

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124. *Id.* Article 1.

125. *Id.* Article 3.

126. *Id.* Articles 4-5.

127. *Id.* Article 6.

128. *Id.* Article 8.

conditions, emissions are to be curbed at the direction of the appropriate air protection agencies.<sup>129</sup> All agencies of the state are charged with monitoring compliance with air protection laws, thus mandating enforcement of air pollution controls by the Councils of People's Deputies.<sup>130</sup> Violations can result in "criminal, administrative or other liability."<sup>131</sup>

Manufacturers of cars, aircraft, ships and other mobile facilities are directed to redesign their products "to prevent and reduce discharges of pollutants."<sup>132</sup>

Siting and construction of new facilities require planning to avoid exceeding the national pollution emission standards in the air quality in the region. Specific rules are provided for fertilizer and agri-chemical operations<sup>133</sup> and mining.<sup>134</sup> All major new economic development is barred if it could affect weather or climate.<sup>135</sup> However, under certain unspecified instances, permits can allow "some types of harmful physical effects" of air emissions.

Significantly, the law provides that if the U.S.S.R. should enter into international agreements on air pollution which vary from the provisions of the Air Protection Law, "the rules of [the] . . . international agreement shall be applied." Any inconsistent All-Union or Republic rules would therefore yield to the international agreement.<sup>136</sup>

This Air Protection Law is essentially an elaboration of the framework for the U.S. Clean Air Act. Both nations now have a comparable regulatory framework in which to continue cooperation on air pollution control and on related scientific and technical issues. The congruence of both legal and administrative systems for air quality protection is one of the most useful accomplishments of the Area XI exchange under the U.S.-U.S.S.R. Environmental Bilateral Agreement.

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129. *Id.* Article 10.

130. *Id.* Article 15.

131. *Id.* Article 28.

132. *Id.* Article 11.

133. *Id.* Article 16.

134. *Id.* Article 17.

135. *Id.* Article 20.

136. *Id.* Article 30.

Through the collaboration of comparative environmental law specialists, today the U.S.S.R. and U.S. have complementing, mutually understood air pollution control laws. Since the world's airmasses move from country to country, there is a recognized need for all states to have effective measures in place to protect the air resources of the biosphere.

Consider, for instance, the long range transport of air emissions. The long range transport of air pollutants is also a serious problem, but the Soviets have only recently been able to document this. In 1979, a Soviet scientist, Yuri Sinyakov, observed that "Air pollution is largely dependent on geographical conditions. The center of the European part of the Soviet Union, Western Siberia and Kazakhstan has [sic] very favorable conditions for dispersing industrial air pollution."<sup>137</sup> Since then, Hydromet issued a report in 1984 by A.G. Ryaboshapko, a meteorologist with the Moscow Institute of Applied Geophysics, who found that the acid rain from non-Soviet Europe now falls on some 350,000 square miles of the Soviet Union. Further studies will very likely indicate that Soviet industry also generates much of its own acid rain, as is apparently the case with the United States.

In 1982, U.S. scientists studying the phenomena of "arctic haze" air degradation concluded that the central Soviet Union is a potent source of contaminants which constitute the haze; the contaminants are thought to originate from steel plants and coal burning furnaces. Dr. K.A. Rahn and Dr. G.E. Shaw report that huge quantities of pollution aerosol are released in the central Soviet Union — adding up to some of the highest pollution levels in the entire Soviet Union.<sup>138</sup> Their research focused on contaminant sources in the southern Urals, adjoining parts of Kazakhstan, western Siberia and some European areas of the U.S.S.R., as well as Norilsk, a copper-nickel smelting complex in northern Siberia. If arctic haze is to be abated, Soviet air pollution control will have to succeed.

When scientific consensus is established on what is needed to control the precursors of arctic haze, the control and command tools exist in both nations' air pollution laws. This will ease the task of negotiating a protocol on abating arctic haze, and will

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137. Y. SINYAKOV, *STANDING UP FOR NATURE* 15 (1979).

138. See K. RAHN & G. SHAW, *ARCTIC HAZE* (1982).

make monitoring, enforcement and improvement of any such protocol far less difficult.

## VI. CONCLUSION

Both the U.S.S.R. and the U.S. face tremendous challenges in making their respective environmental laws more effective. So much new law has been enacted so quickly that the need to reform, streamline, and refine the field exists even before the field has become fully effective. The leading Soviet environmental law expert, Professor Oleg S. Kolbasov, characterizes the U.S.S.R. situation as follows:

One often encounters other inadequacies which diminish the effectiveness of the law and therefore should be eliminated. We are speaking here of the excessive complexity, declarativeness, contradictoriness and drafting deficiencies of the environmental protection legislation. In recent years, it has become quite complicated; a broad system of norms regulates in detail the behavior of individuals in various types of nature protection and natural resource utilization. There has been a corresponding growth in the number of legal normative acts relating to this area of legislation. In particular, in the U.S.S.R. Legal Code (Vol. IV) under the heading Legislation on Nature Protection and Rational Use of Natural Resources, there are 670 entries of statutory acts. Nature protection acts in the legal codes of the Union Republics, and similar enactments not contained in the codes, number in the thousands.<sup>139</sup>

Any environmental lawyer in the United States could (and probably has) expressed much the same point of view with respect to U.S. environmental laws as Professor Kolbasov did in the above quotation. Both the U.S. and U.S.S.R. can learn much by sharing their knowledge and experience on how to improve environmental laws, as well as how to enact new laws and agreements.

Environmental law reform will not be easy in either country. The Soviet tendency towards "departmentalism" or bureaucratic resistance to reform is described in many contexts.<sup>140</sup> While the Communist Party of the Soviet Union has recently pursued per-

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139. Kolbasov, *Observance of the Requirements of Nature Protection Legislation in Sovetskoe gosudarstvo i pravo*, No. 4 (1986).

140. See, e.g., M. GOLDMAN, *GORBACHEV'S CHALLENGE: ECONOMIC REFORM IN THE AGE OF HIGH TECHNOLOGY* 31-32 (1987).

*estroika*, or restructuring,<sup>141</sup> it remains to be seen whether Soviet environment protection will be made a high priority, or whether economic reform will be so eagerly pursued that troublesome environmental regulations will be avoided wherever possible. Sadly this sort of retreat from environmental protection occurred all too often with U.S. environmental law.<sup>142</sup>

In the Brezhnev period, environmental reforms proceeded in the U.S.S.R. without having to compete for attention among many economic reforms. Under *perestroika*, and despite Gorbachev's acknowledgment of the importance of environmental protection, the environment law agenda must compete with many new reform movements within the U.S.S.R. To be sure, new citizen environmental activists emerged to advocate the need for increased conservation,<sup>143</sup> but more will be needed.

One factor that may drive the Soviets to continued environmental protection is citizen suits. Presently, citizen-enforcement actions under U.S. environmental laws are fairly well established.<sup>144</sup> By comparison, under the 1977 Soviet Constitution, "Citizens of the U.S.S.R. have the right to lodge a complaint against the actions of officials, state bodies and public bodies. Complaints shall be examined according to the procedure and within the time-limit established by law."<sup>145</sup> The U.S. experience with environmental citizen enforcement was understood by Soviet jurists through Area XI Exchanges under the Environmental Bi-

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141. See M. GORBACHEV, *PERESTROIKA: NEW THINKING FOR OUR COUNTRY AND THE WORLD* (1987).

Another no less obvious reality of our time is the emergence and aggragation of the so-called global issues which have also become vital to the destinies of civilization. I mean nature conservation, the critical condition of the environment, of the air basin and the oceans, and of our planet's traditional resources which have turned out not to be limitless. . . . I could say a lot about the work we do at a national level in our country to help resolve these problems. I touched upon them to a certain extent when I discussed our *perestroika*. We will do whatever depends on us.

*Id.* at 137.

142. Note, for example, the impasse in Congress about reauthorization and amendment of the Clean Air Act prevailing through the 99th Congress and into the 100th Congress.

143. See Keller, *No Longer Merely Voices In The Russian Wilderness*, N.Y. Times, P. 14 Dec. 27, 1987, at E14, col. 1.

144. See J. MILLER, *CITIZEN SUITS* (1987).

145. Konst. S.S.S.R. art. 58. For a full text English translation, see 17 *Constitutions of the Countries of the World* (Oceania) 19 (Dec. 1987).

lateral, and their knowledge played at least a modest role in the framing of the new section of the Constitution. In 1987, the draft law establishing the procedure for citizen suits was completed. Perhaps citizen environmental complaints can advance the cause of environmental protection against "departmentalism," despite the competing economic and social reform agenda.

On balance, there is ample reason to conclude that the Environmental Bilateral Agreement has matured to the point of being a useful and permanent fixture of growing importance in U.S.-U.S.S.R. relations. The Agreement is now a model of how two nations should cooperate closely, integrating their environmental management methodologies and programs. As the need for environmental protection grows, these two superpowers can do much to safeguard the natural resources of the northern hemisphere and the biosphere itself. Neighboring states should consider the U.S.-U.S.S.R. Agreement as a prototype for their own environmental cooperation. The Environmental Bilateral has come of age, even at a mere 15 years, although it requires encouragement and financial backing from both nations if it is to achieve its full potential. In the wisdom of a Russian proverb, less waters are now flowing from the spring, and it is time to ask to price of water.