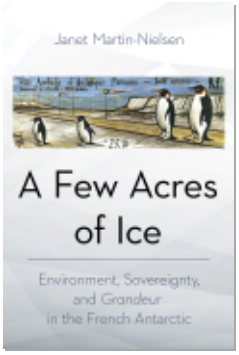
8. Environmental Authority



8

ENVIRONMENTAL AUTHORITY

As Terre Adélie was engulfed by crises, one idea above all stood out as a panacea for all the problems facing French Antarctica: air access. The effort to build an airstrip in Terre Adélie stretched from the late 1960s until the early 1990s—a massive and costly endeavor that ultimately ended in failure as the continent's political dynamics evolved.

When France became active in Terre Adélie after World War II, the only way to access the territory was by ship: first the French-owned *Commandant Charcot*, which despite its reinforced hull could not reliably make it through thick pack ice, and then leased Norwegian, Danish, and Canadian ships. Reliance on foreign vessels to access a French territory did little to support France's sovereignty agenda. Moreover, frustration soon grew with the formidable expense of the leases, as well as with the ships' propensity for getting stuck—often for weeks on end—in the pack ice near Terre Adélie. The French had, by mischance of discovery, been cursed with one of the least accessible sections of the Antarctic coast. Given the limitations, unreliability, and onerous expense of the ships, the French government and Expéditions polaires françaises soon identified air access as the solution to the many problems plaguing Terre Adélie. With the Americans and Soviets already using aircraft in the Antarctic, the idea did not seem farfetched.

While the airstrip project was first discussed in the 1960s, nothing happened quickly. For more than a decade, Expéditions polaires françaises undertook preparatory studies and government ministries debated how to fund the project. After consultations with the French Air Force, who would ultimately be respon-

sible for providing the planes, and the Americans, who were vastly more experienced in polar aviation, a plan was set: to build a long hard-rock airstrip near the Dumont-d'Urville base, capable of supporting Transall C-160s, a medium tactical transport plane codeveloped by France and West Germany, flying in from Tasmania or New Zealand.[1] In early November 1982, the secretary of state for Overseas France, Henri Emmanuelli, announced that France would build an 1,100-meter-long airstrip in Terre Adélie.[2] It would take another eleven years before the airstrip was completed. Five main arguments underpinned the project.

First, calculations showed that air access would reduce the cost of servicing Terre Adélie. The high cost of ship leases weighed heavily on TAAF's budget, leaving the territory in financial distress from the early 1970s on. Little money was left to support scientific personnel at the Dumont-d'Urville base. As France was forced to reduce, and reduce again, the number of overwintering personnel at Dumont-d'Urville, questions began to be raised about the compatibility of minimal presence with the sovereignty mission in the Antarctic.[3] With an airstrip, ship transport would only be needed for fuel oil and heavy machinery; all passenger and supply transport would be accomplished by air. The cost issue was taken further by Paul-Emile Victor, the Ministry of Foreign Affairs, and senior members of the government, who argued that with ship servicing alone, presence in Terre Adélie was too expensive to maintain and France would be forced to abandon its Antarctic claim.[4]

Second, air access would allow for longer scientific campaigns and more sophisticated scientific work in Terre Adélie. Given the direct link between science and authority in Antarctica, this was seen as a means of boosting France's status in both Antarctic research and politics.[5] As the continent's political situation normalized with the Antarctic Treaty, competition between states for territory was replaced by competition to unearth the continent's scientific secrets. Strong scientific work has long engendered the justification of political control in the Antarctic and moral claims to Antarctic sovereignty.[6] It was precisely this relationship between scientific research and authority that the French were eager to capitalize on with the airstrip project: the airstrip was envisioned as a conduit through which French science, and thus France's position, in the Antarctic would be strengthened. With air access, summer campaigns could be more than doubled in length, from two months to five months. A coastal airstrip was also the first step toward facilitating interior travel and building a permanent scientific station deep inland—something French scientists and politicians saw as paramount to France's future in Antarctic research. Reliance on mechanized overland transport, Victor and his deputy Jean Vaugelade noted as early as 1962,

was severely limiting France's operations in Terre Adélie; only the airplane, they continued, "offers an efficient and affordable solution to the problems of traveling across the interior of the Antarctic continent."[7] The use of airplanes to open scientific doors, too, was representative of Victor's view of technological modernism as central to the conquest of the polar worlds in the postwar era, and he was already putting them to use with great effect in Greenland.[8]

Third, air access would improve the safety of personnel in Terre Adélie, as with sea servicing alone it was impossible to evacuate personnel during the long austral winters. Since France was maintaining continual presence at Dumont-d'Urville, the inability to rescue ailing or injured personnel was an ongoing concern. In 1951, this came to a head when Claude Tisserand, the radio operator, suffered from an intestinal occlusion. It was a matter of life and death, and evacuation was impossible. Surrounded by all the station's men, who assisted as they could with the finicky anesthetic gas, expedition doctor Jean Cendron operated twice on Tisserand, placing an artificial anus in his abdomen as a patch until he could be evacuated the following austral summer (figure 17). Despite the successful outcome for Tisserand, it was not a situation the French wanted to repeat. But the danger was underlined by a second near fatality when, during

FIGURE 17. An emergency surgical operation in the improvised operating room in Terre Adélie: Jean Cendron prepares to operate on Claude Tisserand, 1951 (Archipôles, IPEV).

the International Geophysical Year, geophysicist Andre Lebeau needed an emergency appendectomy.

Fourth, air access would allow the French to be more competitive in the Antarctic. As it stood, France was at a distinct disadvantage compared to other countries who already operated aircraft in the Antarctic. When the United States proposed a transport network to connect all Antarctic bases with American ski-equipped C130s in the early 1970s, the link between logistical capacity and political weight came to the fore.[9] Concerned that France risked becoming dependent on the United States for logistics in the Antarctic, Expéditions polaires françaises wrote to the minister of defense warning that "the realization of this project would inevitably lead to a situation in which the US has a monopoly over air transport to and in the interior of Antarctica."[10] A decade later, the French deficit in Antarctic aviation had not abated: "France could soon be the only country that has not yet taken the turn toward air links," complained Bernard Vinay, the inspector general for overseas affairs.[11] France also felt threatened by increasing international interest in the Antarctic as represented by other access technologies such as West Germany's new polar icebreaker, an expensive symbol of commitment from a country with no territorial claim on the continent. That France did not have an icebreaker of its own was long a source of embarrassment. It did not help that the seasoned New Zealander diplomat George Laking pointed out publicly that his country's air access to its Antarctic territory was a marker of superiority over France.[12] Falling behind in the Antarctic was particularly worrisome to France: an airstrip would at once enhance France's presence and show its desire to retain its voice in Antarctic affairs.

Fifth, and lastly, an airstrip would be a concrete representation of France's presence in Terre Adélie, a physical symbol of French sovereignty over the territory. Just as Antarctic science has always been a geopolitical performance, as Peder Roberts reminds us, so too have Antarctic logistics and infrastructure.[13] In a place where the traditional norms of sovereignty do not hold, in a continent so remote and difficult to access, investing in logistical capability is a key way of performing sovereignty. The French decision to build an airstrip in the middle of an important bird nesting site speaks to the strategic import of the project: a primary belief that an airstrip was not only desirable but indeed necessary to support France's claim to territory. Further, an airstrip would boost France's polar legitimacy at a time when the Antarctic Treaty was being challenged by developing countries and environmental NGOs (ENGOs).[14] The airstrip soon became symbolic of a new chapter in human interaction with Terre Adélie's environment, one that integrated technology, science, and sovereignty.[15]

Construction and Controversy

The Terre Adélie airstrip proved a beast to build. It quickly became clear that there was no suitable site near the Dumont-d'Urville base. On the inland side, icy cliffs towered thirty meters in the air, an impenetrable wall of white. On the other side, rocky islands and archipelagos, free of ice and close to the coast, dotted the sea. None of them, however, were long enough to accommodate an airstrip. To solve the problem, Expéditions polaires françaises decided to connect a group of islands with a rock causeway. The islands would be leveled with dynamite and the rock thus obtained used to fill the spaces between them (figure 18). In all, over 720,000 cubic meters of rock were to be blasted and moved.[16] After preliminary studies suggested that this plan would succeed, construction began during the austral summer of 1982–1983.

Quickly, however, the airstrip project met with opposition from ENGOs who argued that the work would destroy important nesting grounds for Adélie penguins, snowy and giant petrels, Cape pigeons, and fulmars, and disrupt the nearby Emperor penguin colony. Greenpeace maintained steady direct action

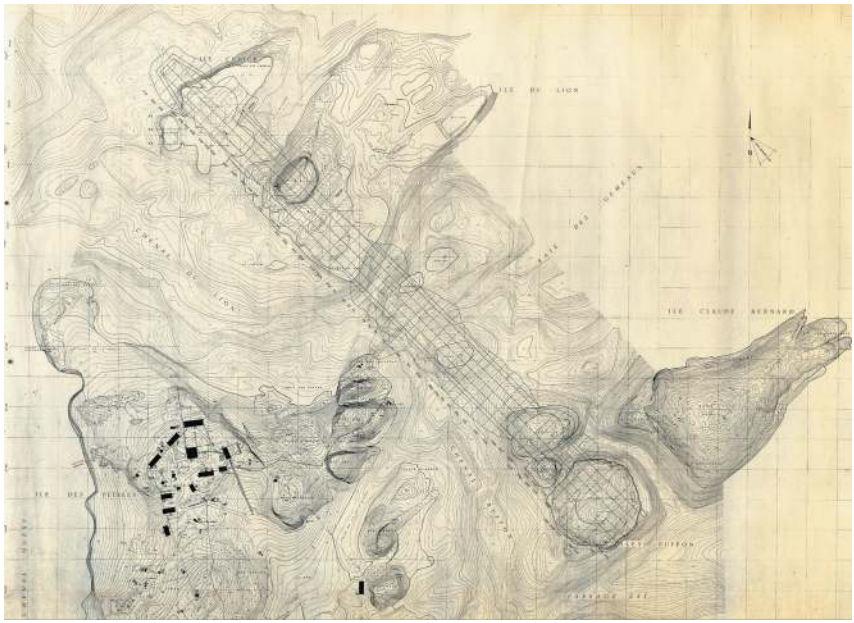


FIGURE 18. Airstrip plan, 1983: The rectangular grid shows where the airstrip will be built; the outlines of the islands to be razed are seen underneath. The small black rectangles in the lower left are the buildings of the Dumont-d'Urville base (Archipôles, IPEV).

with activists in penguin costumes occupying government buildings in Paris and others blocking the *Polarbjørn*—the Norwegian ship leased to bring construction materials to Terre Adélie—from leaving Le Havre.[17] Later, Greenpeace confronted the *Polarbjørn* with a twenty-ship protest flotilla in Hobart.[18] Greenpeace's aim was to attract international attention to the airstrip and pressure the French government to suspend construction until an environmental impact study could be carried out—a study that, as Greenpeace pointed out, was required by French law. Greenpeace's concerns were echoed by other ENGOs, including the Antarctic and Southern Ocean Coalition, which emphasized that the islands the French were blasting and leveling were one of the richest sites for fauna in the whole of Antarctica.[19] The French Academy of Sciences joined these voices, unanimously passing a resolution highlighting the danger of the airstrip for the area's avifauna, demanding a rigorous environmental impact study, and arguing that the construction violated both national law and the Antarctic Treaty.[20] In contrast, the Antarctic Treaty consultative parties took no action, even when evidence of harm to penguin colonies was presented—representative of a broader lack of willingness within the Antarctic Treaty System to impose sanctions or reprimands for environmental infractions.[21]

The French law referred to by Greenpeace and the Academy of Sciences was a 1976 law requiring all big projects affecting the environment to conduct impact studies. Since their introduction by the United States in 1970, environmental impact statements and assessments have played a central role in environmental management in the Antarctic.[22] While French law required environmental impact studies from 1976 on, the efficacy of this legislation left much to be desired: the law was neither well enforced nor held to high standards.[23] There was widespread mistrust of the law and the studies were seen as something to be worked around rather than constructively engaged with.

In face of outside pressure, France was forced to carry out an environmental impact study for the airstrip. The study, undertaken by Expéditions polaires françaises, concluded that the airstrip's impact on bird life, landscape, and ice circulation would be minimal to null.[24] It is clear from the study that the idea of "impact" had been politicized: the airstrip's impact on access to Terre Adélie and scientific research in Antarctica was given more weight than its impact on bird life and the environs. The study was approved by TAAF but strongly criticized by ENGOs as well as by the Ministry for Industry and Research. In response, the overseas minister named an expert committee, led by Louis Thaler, to reassess the project's environmental impact. Thaler (1930–2002) was a natural choice: perhaps the most influential French evolutionary biologist of his time, by the early 1980s he was widely called upon as an authoritative voice on controversial subjects. As a student in the United States in the 1950s, Thaler had been captivated

by the ideas of George Gaylord Simpson, one of the fathers of the modern synthesis of evolutionary theory. Over the following two decades, Thaler's research brought together methods from paleontology, ecology, molecular biology, and genetics to shed light on the mechanisms of evolution. A brilliant speaker and interlocutor, his ideas—often radical in France at the time—soon made him well-known in scientific circles. With respect came duty: from 1978 to 1983, Thaler served as president of Montpellier-II University and frequently adjudicated in various capacities.

Thaler's report described the initial environmental impact study as "unsatisfactory in procedure and depth" and painted the airstrip project in a negative light but did not go so far as recommending that it be stopped.[25] The technical underpinnings of the project were insufficient, Thaler wrote, adding that human activity was already having negative consequences for the Pointe Géologie archipelago. Unsurprisingly, his report failed to please anybody. On one hand, Greenpeace thought that Thaler's report did not criticize the project strongly enough, and other ENGOs argued that the project should be terminated on the basis of the report.[26] On the other, Claude Pieri, TAAF's chief administrator, complained that Thaler's report neither understood nor represented the project correctly.[27]

Rather than openly distribute Thaler's report—a concept at the heart of environmental assessments—the French government chose to withhold it, drawing rebuke from Australia and New Zealand.[28] The Australian government was sensitive to the difficulties the airstrip controversy was causing for the Antarctic Treaty System: at a time when the ATS was being increasingly challenged, Australian politicians argued, it was not wise to open doors to criticism, especially with regard to the environment. Tasmanian State MP Bob Brown led this fight against the project, calling on the federal government to refuse the *Polarbjørn* entry to Hobart port and accusing the French of egregious environmental breaches, including "plann[ing] to inject hundreds of Adelie penguin eggs with poison to stop breeding" and dynamiting Adélie penguin nesting sites.[29] While the Australian government did not go so far as closing the port to the French, Brown's outspokenness drew attention to the airstrip. In private, furious French authorities accused Australia and New Zealand of egging on the environmental protesters in the hope that France would be forced to abandon the airstrip and pull out of the Antarctic altogether.[30]

Brown's accusations, while inflammatory, were not far off the mark. French government documents make it clear that nests were disturbed and displaced, eggs were destroyed, and birds (both chicks and adults) were killed during the airstrip construction. In some cases, eggs were removed from nests to encourage adult birds to vacate a certain area. In other cases, eggs were replaced with

artificial ones (often, potatoes painted white); the real eggs were then transported to other colonies in the archipelago, where they were redistributed into the nests of unsuspecting penguins. Adélie penguin chicks in the construction zone were also deliberately killed in the months corresponding to the incubation and hatching phases. Adult penguins, too, were killed by explosions (approximately twenty in 1984, for example), but it was difficult to determine how many because of the nature of the debris.[31]

In both Australia and New Zealand, the airstrip tensions added to what was already a difficult political relationship with France. As well as a serious falling-out over French nuclear tests in Polynesia, in the 1980s the countries clashed over the future of New Caledonia, which led France to eject the Australian consul general in Noumea.[32] While Australia worried about the long-term ecological consequences of nuclear testing and about French military presence in Australia's sphere of influence, in France there was steadfast unanimity on the need for the tests to guarantee an independent nuclear force de frappe. The low point came in July 1985 with the *Rainbow Warrior* bombing, when French agents blew up the Greenpeace ship in a New Zealand port as it was about to embark on a protest against the tests. Bilateral protests against the airstrip were not limited to Australia and New Zealand: around the world, French embassies were so inundated with letters from governments, environmental groups, scientists, and individuals that Paris had to draft talking points to help the embassies craft their replies.[33]

Faced with these differing views, the Overseas Ministry hesitated, requesting a second environmental impact study. At the same time, the French Ministry for Industry and Research, which had given 12 million francs toward the airstrip in 1982–1983, pulled its funding, arguing that both the cost and the environmental risks were too high. An interministerial dispute broke out, with the secretary of state at the Ministry of the Interior accusing the Ministry for Industry and Research of jeopardizing not only French scientific research but also French sovereignty in Terre Adélie.[34] Exasperated by these disputes, the overseas minister halted work on the airstrip in the spring of 1984 and asked for a high-level ruling on whether the project should go ahead.[35]

Senior figures in the French government lost no time making their case, arguing that the airstrip was essential to France's claim to Terre Adélie. Their position was stark and simple: either the airstrip went ahead or France would be forced to abandon its Antarctic claim. Diplomats appealed directly to the prime minister, writing that "the construction of this airstrip constitutes, in effect, the condition *sine qua non* for the maintenance of our presence in Antarctica."[36] And an interministerial group addressed President François Mitterrand, stating bluntly that "stopping the construction of the airstrip would lead to the closure

of the base and, by consequence, the end of French presence in Antarctica. This departure from Terre Adélie would question (1) our sovereignty, (2) our strategic position, and (3) our participation in international conferences on the Antarctic which is critical at a moment when the mineral resource treaty is being negotiated and when the question of common human heritage in Antarctica is being raised at the UN."[37] They were supported by Paul-Emile Victor, now retired but still very much the dean of French polar science: "Without this airstrip," he wrote, "France's presence in Antarctica will be seriously compromised and will probably quickly disappear."[38] The airstrip was also wrapped up in larger dreams of national pride and polar legitimacy. "At a time when India and Brazil are making considerable efforts to establish permanent bases in Antarctica, and just now China too," the Ministry of Foreign Affairs pointed out, "it is inconceivable that France, a pioneer in the discovery and exploration of the continent, gives up for lack of means."[39]

These arguments carried weight and there was broad cross-party agreement on the airstrip's necessity. The French state took the decision to restart construction unofficially in 1986 (by providing funding and allowing construction materials to be sent to Terre Adélie) and officially in 1987.[40] With Expéditions polaires françaises' director Michel Engler at the helm, the aim was to complete the airstrip by 1991. One hundred million francs were authorized for the project, to be provided jointly by the Overseas Ministry, the Ministry for Research and Higher Education, and the Ministry for Transport.[41]

As soon as the decision to proceed was made, Greenpeace upped its campaign against the project. Its ships stopped at Terre Adélie as part of the World Park movement, during which Greenpeace installed a base near Robert Falcon Scott's hut at Cape Evans and pressured the consultative parties to ban commercial exploitation and pollution in the Antarctic.[42] When Greenpeace's activists disembarked in Terre Adélie, they were met by signs in French and English declaring that access to the airstrip site was prohibited "to all people foreign to the site, due to the risks linked to the operation of such a site and in particular to the movement of heavy public works machinery."[43] These signs had been carefully worded by the French government in order to comply with the Antarctic Treaty's observer rules while also giving the on-the-ground personnel justification for denying the activists access to the site. But those personnel had been expressly forbidden from confronting the activists, who simply bypassed the signs and chained themselves to the heavy construction equipment (figure 19).[44]

French authorities were at a loss for how to deal with the protesters, especially given the nebulosity of legal jurisdiction in the Antarctic. What should, and what could, be done if protesters conducted illegal acts in Terre Adélie? The Ministry of Foreign Affairs spilled much ink on this question, ultimately proposing that

FIGURE 19. Greenpeace activists blocking construction equipment at the airstrip site, 1990 (Patrice Fauquemberg, Archipôles, IPEV).

arrested protesters could be brought to Hobart and dealt with there—an unsatisfactory solution from the point of view of sovereignty—but also instructing the construction teams on the ground in no uncertain terms to avoid confrontation.[45] Arresting foreign national protesters in Terre Adélie would open a legal Pandora's box and highlight the uncertainties of jurisdiction in the Antarctic, something French authorities were determined to avoid. Greenpeace's activists made the most of the French restraint, scoring a victory with photos showing penguins running from heavy machinery, as well as the cadaver of a penguin killed during the earthworks: "irrefutable proof," Greenpeace argued, that the French authorities were minimizing the real impact of the project.[46] While France was impotent to push back against this direct action, it did retaliate by calling for Greenpeace and other ENGOs to be banned as observers at the Commission for the Conservation of Antarctic Marine Living Resources meetings, and certainly feared that ENGOs might succeed in pushing their way into Antarctic Treaty meetings, creating what French diplomats called "an effect of contagion within the Antarctic system."[47]

Greenpeace's tactics, which stretched from Europe to Australia to Antarctica, drew the ire of the French government, forcing General Bernard Norlain, the chief of the prime minister's military cabinet, to spend time and energy countering the environmentalists.[48] The police were summoned several times to TAAF's headquarters, to ports where the *Polarbjørn* called, and even to Expéditions polaires françaises' fortieth anniversary celebrations, all targets of the activists.[49] But the French had little success against Greenpeace's public relations strategy. The airstrip became a cause célèbre for ENGOs. "France deliberately broke the eggs of a hundred birds' nests and is ready to displace 5,000

penguins, contravening the provisions of international agreements of the protection of the environment," reported the spokesperson for the Antarctic and Southern Oceans Coalition.[50] With these protests came media coverage: "France dynamites Antarctic penguins" read a provocative headline in the *New Scientist*.[51]

Australia, too, was unhappy, complaining to the French embassy in Canberra that "by restarting construction, France risks to find itself again committing infractions against agreed measures as the project constitutes a danger for the survival of the Emperor penguin colony."[52] This tense meeting was part of two years of ongoing discussions between Australia and France as to whether France was contravening its obligations under the Antarctic Treaty System (ATS). While the French maintained that they were within their rights under the treaty, the Australians were uncomfortable with the immediate environmental consequences of the construction and with the longer-term implications for the stability of the ATS. The Australian concerns, however, were ultimately without teeth. While the Australian government initially considered closing the port of Hobart to France, in the end it not only kept the port open but also allowed the French to charter the Australian ship *Nella Dan* to transport heavy equipment to Terre Adélie. To France's advantage, Australia chose to prioritize unity within the ATS and its own Antarctic airstrip ambitions.[53] And Australia never did follow through on its veiled threat to come inspect the construction site under the auspices of the Antarctic Treaty, although it is unclear whether this was due to the high cost of such an inspection or to the French counterthreat to retaliate by inspecting the ice runway the Australians were proposing for their Casey Antarctic base.[54]

Environmentalism in France

While international ENGOs led a charge against the airstrip, there was less in the way of local or national protest against the project—a reflection of the state of environmentalism in France at the time.[55] In the 1960s, the environmental movement spread from the United States to Europe, making tentative inroads in France. French scientists, local politicians, and members of the public who lived close to sites of industrial degradation (such as the southern port zone of Fos-sur-Mer and the Breton coast, where the *Torrey Canyon* oil spill devastated the shore) began to speak out. Jean Dorst's 1965 book, *Avant que nature meure* (*Before Nature Dies*), one of the first French treatments of human impacts on nature, was widely read.[56] Still, the French public was largely unconcerned about and unengaged with environmental issues up to and after the events of 1968.

During the May 1968 civil unrest, protesters saw environmental problems as a secondary issue, a reflection of broader problems with France's political elite and consumer society. Still, May 1968 marks a turning point: before then, French environmentalism had been restricted to a small number of intellectuals, whereas the protests brought more attention, albeit not sustained, to the cause.

The French government responded to these burgeoning concerns by creating a Ministry for the Environment and Protection of Nature in 1971. This ministry, however, was weak, poorly funded, and unable to control its agenda. It struggled to take a holistic approach to the environment as large swaths of nature, such as forests, wildlife, and waters, were already under the control of other ministries who saw the newcomer as a rival. Other major issues with environmental aspects, such as energy, health, and planning, were also controlled by other, stronger, ministries. It was no secret that environmental policy was expected to be subservient to economic development: Valéry Giscard d'Estaing, then minister of the economy and finance, made it clear that the environment ministry should cost the state nothing. Soon, the new ministry's first leader, Robert Poujade (who was only a *ministre délégué,* or junior minister, and not a full cabinet minister—another indication of the ministry's lowly status), declared that it was "the ministry of the impossible" and resigned.[57]

As Jacques Theys writes, in the 1970s French environmental politics "was conceived of and institutionalized more as a short-term and technical response to a political problem (the crisis of May 1968) than as a real political choice."[58] It was a concession rather than representative of genuine political desire for change, favoring intellectual debate over action. Instead of tackling environmental problems, the new ministry sought to gain leverage over the environmental movement. "By hiring and directly engaging the movement's leadership, the ministry in some sense co-opted and silenced the political ecologists," notes Stephanie Pincetl: "Their issues became the state's issues, only to be relegated to intellectual debate."[59] For two decades, French environmental politics suffered from a persistent lack of legitimacy.

In French society, too, environmentalism was inchoate through the 1970s: the French public was less concerned about environmental issues than was the case in other western European countries. After the oil shock of 1973, the French government intensified the construction of nuclear power plants. The plan was met with ardent opposition: militant demonstrations against nuclear power, growing doubt about the state's ability to manage resources, and protests over industrial pollution raged through the middle of the decade, culminating with the sixty- to eighty-thousand strong protest at the Creys-Malville reactor site near Grenoble in the summer of 1977. As protesters threw Molotov cocktails, riot police responded with truncheons and tear gas, killing one man and seriously

injuring more than one hundred others. But the antinuclear protests were not representative of any broader environmental movement; indeed, through the decade environmental issues were taken up by only a small minority.[60] ENGOs such as Greenpeace likewise had little success gaining members in France. The sinking of the *Amoco Cadiz* off the coast of Brittany in 1978, with its catastrophic oil spill, highlighted the fragility of coastal environments and the dangers of transporting petrol through those environments—but the ultimate lesson the French public learned from the sinking was that the idea of making polluters pay rarely works in practice, another obstacle to the take-up of environmental ideas.

As the 1980s opened, there was still no broad public concern over the environment in France, and what vitality had been present in the 1970s was drained by the stresses of another economic crisis. The French antinuclear movement receded as the impact of its protests proved minimal. The movement had lost the nuclear power battle, and not even the Three Mile Island (1979) and Chernobyl (1986) accidents did much to revive it.[61] While some environmentalists wanted to enter the political arena, they were not able to come together, agree on platforms, and run effective campaigns. When the left came back to power in 1981, environmentalists were initially optimistic, but the *Rainbow Warrior* bombing severed all bridges between the environmentalists and the left in power. As such, French environmentalism remained weak, especially in comparison with other western European countries.[62] With regards to the airstrip, while the Ministry of the Environment initially expressed concerns, it was swayed by the strategic arguments in favor of the airstrip and soon indicated that it would not oppose the project.[63]

That there was little in the way of protests against the Terre Adélie airstrip in France is part and parcel of this broader context. The Academy of Sciences and the small group of French biologists who spoke out against the project were exceptions to this rule. Among them, the animal biologists Yvon le Maho and René Groscolas wrote to French government officials and published an open letter in *Le Monde*: "The risks are unacceptable for scientific reasons as well as for the simple preservation of a wildlife capital and the protection of one of the Antarctic's most beautiful sites," they argued.[64] They were incensed over the environmental impact study, which they described as "particularly naive, especially concerning the consequences of the project on the mortality of birds." Terre Adélie held a deep place in Le Maho's heart—he had first overwintered at the Dumont-d'Urville base in 1971—and he firmly believed that the biological impacts of the project were being willfully ignored. Biologist Patrice Robinson, too, argued that the work was having dire consequences for Adélie penguins, cutting off their normal migration route and destroying an important nesting and

reproduction site.[65] This was part of a wider conflict between disciplines in French Antarctic science, where biologists found themselves in the minority on a number of issues. In the airstrip context, their voices had little impact.

The Airstrip in Political Context

Why was the airstrip so strongly defended in France over the years, even as international opposition to the project grew? Through the 1980s, ENGOs won media coverage and harangued the French government, but they were unable to make the airstrip's environmental context matter at a high level. Bilateral complaints at France's embassies around the world, too, failed to resonate in government. For French authorities, the issues that drove the airstrip—strategic interests, national ambition, and sovereignty—trumped concerns for the environment. Throughout the 1980s, the airstrip's proponents were dismissive of environmental concerns, arguing that the construction would have minimal detrimental effects on bird life and that any damage would be eclipsed by the airstrip's benefits. Moreover, they simply refused to meaningfully engage with critics. The airstrip's opponents, Pieri thundered, were conducting "false and partisan campaigns."[66] Victor wrote bluntly that "all the numbers advanced by the project's adversaries [about the loss of bird life] are *false*."[67] He also ridiculed the concerned biologists, going so far as to accuse them of abusing their scientific responsibility, calling them "*tout feu tout flamme*" (all fired up).[68] While the minister of the environment did send a biologist, Vincent Bretagnolle, to mitigate disruption to bird populations, this was only after French biologists openly published data showing that the Emperor penguin colony close to the construction site had decreased in size by 60 percent between 1962 and 1989.[69] Bretagnolle ringed more than seven thousand birds, built barriers to prevent birds from nesting on the work site, and lured birds away from the construction zone by painting rocks white to imitate guano deposits.[70]

The airstrip retained an aura of importance, indeed of necessity, to its supporters because the very idea of sovereignty over Terre Adélie had become embedded into the project. As Christy Collis and Quentin Stevens have written, Antarctic spaces are actively produced by physical practices and infrastructure: the installations built in the Antarctic are a means by which claimant countries exert control over distant possessions.[71] For France, the airstrip was, from the get-go, construed as a potent symbol of French sovereignty over Terre Adélie. Despite occupying a small area at the very edge of the territory, the airstrip's imagined impact on France's Antarctic space was huge. Representing increased territorial control via improved access, it came to embody France's future in the

Antarctic; indeed, the airstrip and the claim to Terre Adélie became inseparable. In an era where technological and scientific achievements increasingly supported geopolitical power, the airstrip was a modest but pointed means of demonstrating France's political intentions in Antarctica. And as a way through which the government articulated its political intentions, the airstrip became entrenched in the production of France's Antarctic space.

Support for the airstrip was also connected to a wider lack of interest in environmental protection in government. While every French political party of the 1980s spoke about the importance of environmental protection, in practice environmental concerns did not greatly influence policy- and decision-making. The lack of high-level interest in the environment was exemplified by the aftermath of the sinking of the *Rainbow Warrior* in July 1985. The Greenpeace ship was in port in Auckland, about to lead a protest against French nuclear testing near the Mururoa Atoll, when French operatives bombed the ship, killing one man, the Portuguese-Dutch photographer Fernando Pereira. Tellingly, after finally admitting culpability, the French government expressed more regret over the arrest of its agents and the forced resignation of high-level officials than over France's position on nuclear testing.[72] Indeed, just months after the bombing, President Mitterrand visited Mururoa to show support for nuclear testing, and France resumed nuclear testing in the South Pacific the following year. While in the Pacific region the bombing aroused intense emotions and triggered protests against violations of rights, morals, and international law, in France there was an explosion of patriotic solidarity toward the two arrested agents, whose incarceration was seen as harassment, not justice. In French society, the state's use of violence to stymie Greenpeace's campaign, even in the waters of a friendly country, was entirely acceptable. This instinctive reaction is representative of a broader national solidarity surrounding France's worldwide status: when it comes to *grandeur*—and nothing embodies *grandeur* as much as an independent nuclear deterrent—the ends always justify the means.[73] High-level disregard for the environment was again visible in 1986 when, in the aftermath of the Chernobyl disaster, the French government deliberately concealed the domestic fallout in order to protect the French nuclear program. While other European countries panicked, in France the authorities calmly explained that the radioactive clouds had lost all their noxiousness by the time they arrived at the French border.[74] Independent tests showed otherwise. As Gerry Nagtzaam writes, by the mid-1980s France had developed a reputation as being "among the least interested states when it came to global environmental protection."[75]

This poor environmental reputation was accentuated by the government's position on the airstrip. Greenpeace and the Academy of Sciences argued that the construction violated the Agreed Measures for the Conservation of Antarctic

Fauna and Flora since it was wounding, killing, and interfering with the living conditions of native birds.[76] Adopted at the 1964 Antarctic Treaty Meeting in Brussels, the Agreed Measures aims to protect fauna and flora from the impact of human activity on the continent. Outside commentators agreed: the historian and polar expert Peter Beck, among others, argued that the airstrip construction "appeared to constitute a clear breach of the Agreed Measures" and certainly did not comply with the spirit of the safeguards.[77] The secretary of state for Overseas France responded forcefully to these accusations, making it clear that the French state was not going to allow the Agreed Measures to restrict its freedom to act in Terre Adélie: "Planning for air access does not constitute a violation of the treaty because it falls in the framework of necessary operations for the establishment, supply and exploitation of stations," he argued.[78] Allowing the Agreed Measures to interfere with the airstrip plans, he continued, would represent an unacceptable infringement on France's claim to Terre Adélie. To the government, the physical transformation of the Antarctic environment caused by the construction was justified by the strategic transformation of the space for France's benefit. In this context, the airstrip was seen as a means of boosting the legitimacy of the claim: a physical symbol of France's intention to remain in Terre Adélie despite the efforts by developing countries to dismantle existing claims. The physicality of the airstrip and its attendant structures (hangar, road, and control tower) were a stamp on the environment, a concrete sign of human, and specifically French, engagement in an otherwise almost entirely desolate territory.

This reaction is also indicative of the limits of France's policy of positive engagement with the Antarctic Treaty System. For France, the ATS is of appreciable value; it is the mechanism through which France wields power and influence in the Antarctic sphere, and it protects Terre Adélie at minimal cost to the French state. The French attitude toward the ATS has generally been one of positive, even eager, cooperation. But this has one important reservation: France has consistently defended its sovereignty interests in Terre Adélie and its sub-Antarctic possessions to the point of breaking with the consensus-based norms of the ATS when those interests are perceived to be threatened.

Minerals, Sovereignty, and Environment

While sovereignty over Terre Adélie was at the heart of the airstrip project through the 1980s, at the end of that decade France's geopolitical strategy for Antarctica shifted—with unexpected consequences for the airstrip. These changes were driven by the negotiation of a minerals convention for the Antarctic.

Like in the case of living marine resources, the Antarctic Treaty made no explicit reference to mineral exploration and exploitation—what is often called the "resource gap."[79] The sovereignty implications of minerals were simply too touchy to deal with at the end of the 1950s. In the 1970s, the question of Antarctic minerals came to the fore, propelled by the *Glomar Challenger* expedition, which uncovered potential traces of hydrocarbons in the Ross Sea, and the Arab oil crisis. But it was still unclear whether the Antarctic offered viable mineral resources, and, if so, how feasible it would be to extract them.

Within the French government, ministries jostled to bring attention to the Antarctic minerals question through the mid-to-late 1970s. Anxious to strengthen France's petrol politics, the Ministry of Scientific and Industrial Development saw the Antarctic as one ingredient in the diversification of hydrocarbon resources and pushed for the continent and its waters to be opened to prospecting and exploitation.[80] With technological progress, the ministry thought, French companies would be in a strong position to exploit hydrocarbon resources in Antarctic sedimentary deposits. Given that the chance of discovering hydrocarbons in Terre Adélie was thought to be zero, the ministry wanted France to obtain assurances from the other claimant states that French companies would have free access to more promising areas. This thinking was strategic but also speculative: no exploitable mineral resources had yet been discovered in Antarctica despite centuries of "treasure island" visions. The Ministry of Foreign Affairs partially concurred, instructing the French delegation to the 1974 Antarctic Treaty consultative meeting to announce that France was disposed to opening Antarctica to mineral exploration.[81] France's top diplomats were, however, more attuned to the sovereignty implications of resources, and made it clear that their first priority was to keep Terre Adélie as "a territory where her sovereignty is whole and entire."

In 1982, the Antarctic Treaty System consultative parties began negotiations to regulate mineral resources on the white continent.[82] At the same time, the ATS was being increasingly challenged by outsiders. Soon, the consultative parties saw the minerals question as a potential tipping point, an issue that, if not handled correctly, could destabilize or even destroy the ATS. The negotiations were tense and complex as the claimant states tried to balance the jurisdictional implications of mineral resources with the need to accommodate other parties in order to make the regime widely acceptable and forestall efforts to establish an alternative framework for Antarctica's management. And pressure was on: as Christopher Beeby, the New Zealander chair of the negotiations, wrote, "The most important reason for deciding to do the job quickly was that, for so long as the minerals question remained unresolved, it presented a *political* threat to the Antarctic Treaty and the Antarctic Treaty system."[83]

During the negotiations, France found itself in a difficult position, frustrated by the competing interests of the parties around the table. Bombarded with telegrams and instructions from Paris, the French negotiators were on the losing end of many debates, including veto powers over mining activity, which France wanted to disallow, fearing that they would be deployed for political purposes.[84] But ultimately the Ministry of Foreign Affairs instructed the French negotiators to not let specific issues stymie cooperation, judging that failure to reach an agreement quickly would weaken the ATS, potentially fatally.[85] In this respect, the presence of observer states such as India and Brazil at the meetings, as well as increasing pressure on the ATS from the developing world, swung the balance in the French position. For France, the negotiation of a strong agreement to show the collective character of the ATS's management and maintain control over Antarctic space proved more important than the details of the convention itself.[86]

The Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA) negotiations lasted for six years, until June 1988. Despite being forced to accept significant compromises, as the convention took its final form the French negotiators sent a telegram to Paris recommending that it be accepted as it was the best possible deal for France under the circumstances.[87] The Overseas Ministry concurred, arguing that the convention was positive for French interests in Antarctica since it reinforced France's position at the heart of the "Antarctica club," it awarded France an important role on the regulation committees, and it kept the balance of power over Antarctica with the claimant states. France's main aim—strengthening "the credibility of the Antarctic system, its coherence and its operational character," as the envoy François Senemaud wrote—had been achieved.[88] Before the convention could come into force, it still had to be ratified by the sixteen consultative parties to the Antarctic Treaty.

In mid-1989, however, President Mitterrand declared that France would not ratify the minerals convention for environmental reasons—a death knell for the convention. Mitterrand's decision was a volte-face from a country that had long been considered one of the least pro-environment members of the Antarctic Treaty System, and an entirely unexpected decision given both how intensely France had been involved in the mineral rights negotiations and the strength of normative consensus-based decision-making in the ATS. Mitterrand's decision caught France's allies and outside commentators off guard.[89]

Concerned about the implications of the minerals protocol for its territorial rights in the Antarctic, Australia likewise declined to ratify it.[90] Together, the two countries published a joint communiqué declaring their desire to instead establish a comprehensive environmental protection regime for Antarctica.[91] After fierce negotiations, this came to fruition just two years later, in 1991, when

the Protocol on Environmental Protection to the Antarctic Treaty was signed in Madrid, designating Antarctica as a "natural reserve, devoted to peace and science." Known as the Madrid Protocol, it came into force in 1998.[92] The Madrid Protocol prohibits all activities related to mineral resources in the Antarctic, other than scientific research, until 2048; this can only be changed with the unanimous consent of the consultative parties and if a binding legal regime on Antarctic mineral resource activities is in force.[93] With regard to sovereignty concerns—always a sticky issue in the Antarctic—the Madrid Protocol's ban on mining acts to prevent potential disputes over the ownership of any exploitable mineral resources.

Why did France change its mind on the minerals convention and pursue the Madrid Protocol? And how did this connect to the Terre Adélie airstrip? In 1989, two widely publicized oil spills highlighted the fragility of the polar regions: the *Exxon Valdez*, which spilled 10.8 million US gallons of oil in Alaska's Prince William Sound, and the *Bahia Paraiso*, which unleashed 170,000 US gallons of oil when it sank in Antarctica's Arthur Harbor. Both resulted in environmental catastrophes. Images of the devastation, broadcast by media around the globe, gave ammunition to ENGOs in their fight against the minerals protocol. Together with growing interest in ozone depletion over the Antarctic and awareness of the white continent's importance for climate change, these oil spills fueled a global turn toward the protection of Antarctica's environment. While in 1982, when the minerals negotiations began, global warming and ozone depletion were hardly on the radar, by 1989 they were major international issues and the Antarctic was considered critical to understanding them. In that year, a "green fever" erupted: *Time* magazine chose planet Earth as its "person of the year" and in France the popular television station TF1 declared that human damage to the natural environment was endangering the planet's future. As the environment came to the fore in Antarctic geopolitics, the mineral protocol's credibility suffered a blow. Mineral exploration and exploitation of any kind would engender environmental risks that were now much less defensible.

In France, the oceanographic explorer and conservationist Jacques Cousteau (1910–1997) took up the Antarctic minerals cause. A pioneer of modern underwater diving and filmography, Cousteau also had strong environmental interests that grew from his successful publicity campaign against the planned dumping of radioactive waste in the Mediterranean Sea by the *Commissariat à l'énergie atomique* in 1960. In the postwar decades, he became known worldwide as a television personality for bringing the undersea world to life. His American television series, *The Undersea World of Jacques Cousteau*, which ran from 1966 to 1976, enamored him to the American public: his thick French accent, epic adventures, and unmistakable red bonnet were uniquely appealing. Build-

ing on this fame, he created the Cousteau Society, a US-based international ENGO, in 1973 as part of a campaign to win funding to finance expeditions around the world. His society grew into a leading body for environmental protection. Cousteau's choice to operate out of the United States was driven by the weakness of environmentalism in France at the time. He created a sister organization in France in 1981, but even then he continued to focus the majority of his efforts stateside. The French public was much less receptive to his ideas than the American public, and he was continually frustrated by the red tape that stymied his French society. Still, as he campaigned hard against the minerals convention, painting mining as a grave risk to Antarctica's fragile environment, this vision gained enough ground in France to make a critical difference. When Cousteau's petition against the convention gained 180,000 signatures, the French government was forced to sit up and take notice.[94]

Cousteau, along with Victor, also directly lobbied the French government, and the two respected voices had the ear of President Mitterrand and Prime Minister Michel Rocard. Victor wrote to Mitterrand with an urgent plea: "The recent catastrophe on the Antarctic peninsula [the *Bahia Paraiso* spill], which may have worldwide consequences for certain fundamental ecosystems, demonstrates the extent to which it would be aberrant to not definitively protect the Antarctic continent from all aggressions including those that it would suffer as a consequence of [mineral] exploitation."[95] "With force and urgency," Victor continued, "I take the liberty to ask you to demonstrate to the world international civic spirit by refusing to sign the Wellington Convention of June 1988 [the minerals convention]." In the spring of 1989, Mitterrand declared publicly that he had consulted Cousteau on the minerals convention. "His proposition to make the Antarctic continent an international natural reserve has seduced me," said Mitterrand: "I am going to ask the French government to study this proposition and to see if whether, together with the countries who share our preoccupations, it would be possible to implement this idea without delay."[96]

Through early to mid-1989, Antarctic issues were discussed at high levels in the French government, and soon both Mitterrand and Rocard adopted the Antarctic as a personal crusade.[97] In the aftermath of the oil spills, Rocard argued, the mineral convention's provisions for environmental protection could no longer be considered adequate, and neither could its fundamental basis—that is, that mining in the Antarctic was in principle acceptable.[98] This represented a reversal of the position France had held since the 1970s. Protecting Antarctica's environment, Rocard announced in the autumn of 1989, is "my most fervent desire."[99] Rocard's personal rapport with the Australian prime minister Robert (Bob) Hawke, who likewise decided to reject the minerals convention, was also central to shaping the French government's position on the Antarctic. This rapport,

nurtured by Rocard's personal charm, was critical to reviving the French-Australian bilateral relationship, which had been in tatters for a decade.[100] Gone were the days in which Australia treated France as a political rival in the Antarctic; on the minerals protocol, the two countries formed a united front. In France, the minerals convention was also opposed by the National Assembly, whose president, Laurent Fabius, was irritated that he had been shut out of the negotiations. Together, these voices called for France to fight for a complete ban on mineral exploitation and to protect the Antarctic "from any and all risks of pollution regardless of their origin."[101] Mitterrand's final decision echoed Cousteau's position: "I am preoccupied by the safeguarding of the Antarctic continent," he said, and with the "idea of transforming this continent into a vast natural and peaceful reserve."

This decision was part of a nascent but limited validation of environmental concerns in government. Elected in the spring of 1988, France's new Socialist government included committed environmentalists, most importantly Brice Lalonde. A political ecologist, founding member of *Les amis de la terre* (which campaigned against the French nuclear program through the 1970s), and ecological candidate in the 1981 presidential election, Lalonde was recruited to government from a European think tank. He was named secretary of state and then minister for the environment—the first ecologist to hold this position. He immediately launched an assertive environmental agenda at home and abroad, ratifying international treaties including the Montreal Protocol (CFCs/ozone), the Bonn Convention (protection of migratory species), and the Bern Convention (protection of natural habitats), as well as banning ivory imports into France. Domestically, his government's *plan vert* was adopted in October 1990. For Lalonde, opposition to mining in the Antarctic was a matter of identity. But even with his environmentalist credentials, he was in no position to change the government's stance on issues of significant national importance, such as nuclear testing. The Socialist government he served was, as Robert Gildea writes, "happy to steal individual policies from the ecologists, but not to let them interfere with the overall thrust of their strategy."[102] On the Antarctic minerals question, Lalonde's views carried weight as Mitterrand and Rocard formulated their position.

The French rejection of the minerals convention cannot, however, be attributed simply or solely to an environmental turn in government. Several analyses of this volte-face argue that it was steeped in environmental altruism, or, an explicit desire to improve the country's image on the world stage after having been lambasted for a trio of environmental mistakes in the 1980s: the *Rainbow Warrior* bombing, the Terre Adélie airstrip, and nuclear testing in the Pacific.[103] While this explanation makes logical sense, it is not supported by the archival

material. It is important not to conflate environmental credentials and choices with conversion to the cause. This is not a story of simple altruism, or adoption of environmentalism. It is more complicated than that, entangled with two strongly political rationales: domestic politics and electoral strategy, and strategic considerations in the Antarctic.

Electoral pressure from the ecological movement and from pro-environmental voters made the environment matter on the French political agenda in late 1988 and into 1989.[104] Domestically, green candidates were making strong inroads. In the cantonal elections of autumn 1988, the Greens broke through the 5 percent barrier for the first time. And in municipal elections the following spring, Nantes, Toulouse, Lyon, and Bordeaux all saw victories for Green lists. In total, two thousand Green or Green-leaning candidates were elected to municipal councils in what Brendan Prendiville has called a "green wave" sweeping over France.[105] Mitterrand's refusal to ratify the minerals convention was meant to counter this momentum. On the European front, too, pollsters predicted dramatic breakthroughs for the surging Green parties in the mid-1989 parliamentary elections.[106] In the lead-up to those elections, Green interests in France came together for the first time and presented a single list, whose popularity soared. Mitterrand's volte-face on Antarctic minerals was part of his strategy for those elections, designed to attract potential Green voters and to demonstrate that the Socialists were responsive to environmental concerns. Still, Mitterrand was hugely tarnished by the *Rainbow Warrior* scandal and even with the minerals decision he found it hard to win the environmentalists back. In a major breakthrough the Greens won 10 percent of the vote and made their entrance on the European parliamentary scene, with a significant portion of those votes coming from former Socialist supporters.

The rise of green politics in France at the end of the 1980s is representative of the new life environmentalism enjoyed in the country at that time. After decades of stagnation, environmentalism was beginning to spread wings in French society: environmentalist ideas circulated more widely and in many aspects of social life, ecology and the environment became "in" topics. As business leaders, intellectuals, and politicians pronounced themselves "green," environmentalism edged toward the mainstream. Still, while it was chic to be concerned about environmental issues, real action still lagged. Even with major policy announcements such as the Antarctic minerals convention rejection, France continued to be seen internationally as among the worst offenders in the realm of environmental protection. And this environmental spirit did not persist for long: after the Rio de Janeiro Earth Summit in 1992, environmental issues again took on a leisurely pace in France.[107] Three years later, when newly elected president Jacques Chirac ordered a series of nuclear tests in the South Pacific coinciding with the

negotiation of the Comprehensive Test Ban Treaty, France again became a pariah in the international environmental community. Still, there was relatively more acceptance of environmental ideas and the environment continued to matter in the Antarctic arena.

Mitterrand's rejection of the Antarctic minerals convention also spoke directly to strategic concerns about the French claim to Terre Adélie. In the late 1980s, as the environment came to matter in a way it had not earlier in the decade, the developing country group and ENGOs who had long been focused on Antarctica found their leverage. Malaysia spoke out at the United Nations, portraying the minerals convention and the Antarctic Treaty System as anti-environment. The ENGOs argued that the consultative parties would not be able to make good on the convention's environmental safeguards and portrayed the protocol as a slippery slope toward environmental degradation in the Antarctic.[108] For the ENGOs, the ongoing Terre Adélie airstrip saga was proof that the ATS would not reign in problematic projects, and was as such a red flag for minerals exploration and exploitation. The penalty for France if it was to ignore these voices, as Marie Françoise Labouz has written, was "discredit, or even disappearance" from Antarctic affairs.[109] In this context, senior figures in the French government considered the rejection of the minerals convention on environmental grounds and the proposal of the Madrid Protocol as the most effective way to protect the French claim to Terre Adélie: by championing a protocol for environmental protection within the existing ATS, they negated the environmental arguments for the creation of a supranational control authority.[110]

Indeed, while held up as an environmental victory, the Madrid Protocol was also designed to serve narrower French and Australian interests. For those two countries, the protocol was both a tool for environmental protection and a tool for restoring the Antarctic Treaty System's moral legitimacy. By trading autonomy in action for a more stable and robust ATS, it was, in Bruce Byers's terms, a "sovereignty bargain" that maintained Antarctica's power dynamics firmly in the ATS's court, exactly as France and Australia wanted it.[111] Foreign Minister Roland Dumas made this explicit: France's rejection of the minerals convention, he wrote, aimed at "the consolidation of the Antarctic Treaty System and its improvement to counter the doubts and criticisms levied against it."[112] This power play is generally regarded as having been successful both within France and by historians.[113] In this way, France retained authority on Antarctica's political scene and legitimacy in Terre Adélie. Further, France's leadership in this context built its reputation as a powerhouse in Antarctic environmental governance, important to French diplomats as it gave the country a means of exerting influence outside the Anglo-Saxon dominated SCAR.[114]

The French government also saw the rejection of the minerals convention as a way of preventing other countries from increasing their power in Antarctica, thereby preserving France's place as a major player in the Antarctic sphere. Countries such as Chile and China, Jean-Yves Le Deaut of the Parliamentary Office for Evaluating Scientific and Technological Choices noted, were acting aggressively in the Antarctic, by sending pregnant women to Antarctica to give birth (Chile) or by building large numbers of "supposedly scientific" bases in order to secure presence (China).[115] If Antarctic mining were to go ahead, Le Deaut emphasized, "we cannot completely exclude the opening by a claimant country of 'political' mining or petroleum installations which will serve only to affirm their rights to a territory. This could also be the case for countries which until now have not presented claims but which do not want the Antarctic to remain a domain reserved for a small club of developed countries." For France, limiting possibilities on the white continent was a means of self-preservation. And Le Deaut's assessment that significant mineral deposits in the Antarctic, should they exist, would be economically and technologically unexploitable for a long time into the future quelled any push for France to capitalize on the opening of the continent to minerals activity.

With these decisions, France found itself in a new position vis-à-vis other Antarctic actors: the many voices that had criticized France, often vociferously, through the 1980s, from Australia to the developing country group led by Malaysia to the ENGO group led by Greenpeace, now publicly supported France's new environmental stance.[116] Greenpeace even invited French diplomats in Wellington to a reception on board the *Gondwana*, declaring that "we have had our differences with France, but we support your policy in the Antarctic"—an impressive offer given that the French state had bombed a Greenpeace ship in New Zealand only five years previously.[117]

The volte-face on Antarctic minerals also represents another instance in which France broke with its normal policy of positive cooperation in the Antarctic Treaty System. After six years of negotiations, there was every reason to expect all countries to ratify the convention, especially given the informal rules governing common behavior at the ATS. A high degree of trust—the belief that governments are acting and negotiating in good faith—is critical to the effective functioning of the ATS.[118] For France to break these rules and reject a convention for which it had fought hard for years was remarkable. Here we see a similarity with France's decision on living marine resources: in both cases, France put sovereignty above adhering to the ATS's norms. While in the case of living marine resources, France's defense of its sovereignty priorities did not kill the convention as it did in the minerals case, both are representative of the limits of French adherence to the cooperative nature of the ATS.

The End of the Airstrip

As these events were swirling in Paris, the construction team in Terre Adélie dynamited and moved almost two million tons of rock, leveling Cuvier, Lion, Zeus, and Buffon Islands and lacing them together with the debris.[119] Gradually a long airstrip emerged, its straight sides and flat grayness an anomaly in its icy environment. By mid-1989, the blasting was all but complete: the causeway reached the last island and a zone had been prepared for a hangar and control tower (figure 20).

The Terre Adélie airstrip was finally completed in early 1993, over ten years after construction first began. The first plane to land on the airstrip, a French Air Force Hercules C-130, was scheduled for February 1994. In celebration, France released a stamp showing an airplane swooping above the rocky tip of Terre Adélie, the long airstrip gleaming in the background. But the stamp was premature: just two weeks before the plane was due to land, a storm hit Pointe Géologie. Winds whipped over two hundred kilometers per hour, causing ice to shelve from a nearby glacier and a tidal wave to slam into the causeway. The air-

FIGURE 20. High-altitude aerial view to the southeast, 1990: In the foreground is the airstrip under construction, with the razed islands clearly visible. The archipelago, the Dumont-d'Urville base, and the continent can also be seen (Antoine Guichard, Archipôles, IPEV).

strip was destroyed. Over two decades of planning, building, and strategizing was laid to waste by a single storm; what had taken years of political wrangling and on-the-ground earth moving to build was gone in a flash.

Why had such an event not been foreseen? The district chief in Terre Adélie blamed the storm's intense violence, calling it without precedent and utterly unpredictable.[120] But it is clear that Expéditions polaires françaises grossly underestimated the action of the sea and waves in its preparatory studies. This oversight is due to self-bias: the studies were strongly influenced by Expéditions polaires françaises' steadfast desire for the airstrip project to go ahead, by the belief that only an airstrip could resuscitate France's position in the Antarctic. It is also representative of the concentration of knowledge in Expéditions polaires françaises, its long history as a private organization, and its general disdain for external consultation. Government auditors lambasted the outcome, calling it a "poorly thought out [and] unhappy affair" that had "gravely underestimated" both the risks of natural disaster and the environmental damage wrought and led to the "pure loss" of more than 100 million francs.[121]

With the airstrip destroyed, the French government found itself in a delicate situation: on one hand, one basic premise underpinning the airstrip had always been to reinforce French sovereignty over Terre Adélie—something that could not simply be cast aside. On the other hand, it was not clear that rebuilding the airstrip would be successful, even if the necessary rock could be found, blasted, and moved. It was also unclear where the money to do so would come from. And, more importantly, given France's push for environmental governance in the Antarctic, the environmental consequences of rebuilding were hard to justify. In fact, the contradiction had been visible for some time and had been a quiet source of tension during the final years of construction.

The airstrip's fate was announced by Michel Barnier, the new minister of the environment in Mitterrand's government. With a long history of environmental interest, Barnier was a natural choice for the portfolio. He had been *chargé de mission* in Robert Poujade's cabinet in the early 1970s and had advocated environmental protection throughout his long tenure as the deputy for Savoie. After deliberation, Barnier declared the end of the airstrip project in the autumn of 1994. France's Antarctic airstrip had never been used and would never be used. Barnier gave two reasons for ending the project: "France's desire to better protect the Antarctic environment" and the cost and difficulty of rebuilding.[122] This decision went against the explicit wishes of Terre Adélie's district chief.

With French Antarctic diplomacy now guided by an environmental protocol that had given new wind to the Antarctic Treaty System's legitimacy, the political situation facing the French government was starkly different than it had been during the airstrip's construction. Through the 1980s, the airstrip had been

a physical symbol of French commitment to its Antarctic claim and was seen as essential to maintaining that claim. But once French authority in Terre Adélie and legitimacy in Antarctic affairs had been bolstered by the minerals convention and Madrid Protocol decisions, the argument that the airstrip was primal to the territorial claim lost its driving force. Further, France's new, very public commitment to environmental protection in the Antarctic meant that rebuilding the airstrip was not defensible in light of the amount of further blasting, harm to birds, and damage to the landscape that would incur. By citing environmental protection as a key reason for terminating the airstrip project, Barnier reinforced France's strategic position within Antarctica's evolving political dynamics.