Chapter 15

The Grassroots Movement to Preserve Tidal Flats in Urban Coastal Regions in Japan

The Case of the Fujimae Tidal Flats, Nagoya

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The preservation of biodiversity has become one of the major objectives of environmental movements in various countries. Among ecosystems, tidal flats, along with tropical forests and coral reefs, are major targets for preservation. In Japan, tidal flats are common geomorphic features along the Pacific Coast. The action of river and tide continuously reshapes them, creating diverse habitats supporting a wide variety of living organisms. Since the 1990s, the preservation of biodiversity on the tidal flats has motivated Japanese local environmental movements. Recently, the national government and local administrations have become increasingly involved in environmental conservation or restoration projects.

The value of tidal flats in Japan depends on the way in which they are viewed. For example, they can be seen as necessary to small-scale coastal fisheries, much marine life either depending to some extent on them as habitat or preying on species that do. They can be seen as relatively easily reclaimed land that can be devoted to farming or industry. And they can be seen as possessing scenic or aesthetic value. Coastal development can focus on any of these values, and over the years the environmental movement has worked hard to bring its alternative values to public attention, realizing some degree of success in affecting government policy.

The early, postwar conservation movement in Japan was mainly concerned about the value of tidal flats as natural resources supporting the coastal fishing villages. It had little success in mobilizing the public, however, and, thus, made little headway until the 1970s, when the impact of pollution was brought home by the emergence of Minamata disease. Several lawsuits brought at that time against chemical companies and the national government on behalf of Minamata patients contested the development of the coastal environment and did lead to change in environmental policy, most notably the establishment of the national environmental agency.

Since the 1980s, another type of environmental movement, one contesting the value of biodiversity and favoring development, has arisen, influenced by similar developments in the West. This movement mobilized people nationwide but was especially influential in urban coastal areas, which favored reclamation because of the business that would be attracted. With reclamation, fishing villages declined and, with them, grassroots support for the fishing industry. There are, however, urban dwellers who value biodiversity over development. And it was such people who spurred the environmental movement to save the Fujimae Tidal Flats in Nagoya (see figure 15.1). The movement was the first case in Japan in which a reclamation project was contested on the grounds of biodiversity. It is a useful subject of study in that it provides insights into how Japanese environmental

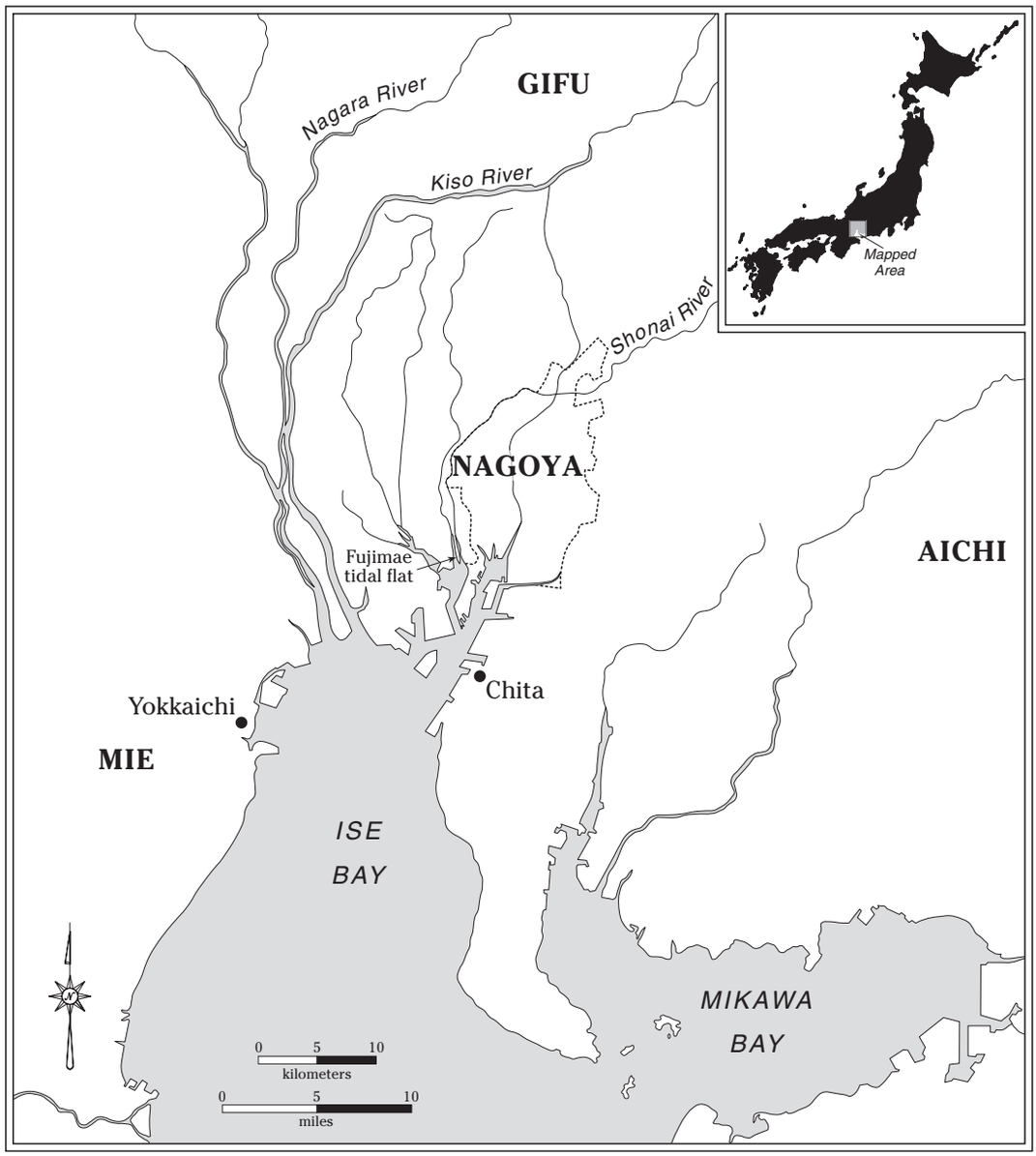

Figure 15.1. Fujimae Tidal Flat.

policies are changing at both the local and the national levels. I begin my discussion with some historical background.

The Development of Tidal Flats Historically

Tidal flats in Japan are distributed mostly along the Pacific Coast and on Kyushu and Okinawa islands. They have historically been important fishing grounds, remaining so even in the nineteenth century as the commercial economy of Japan developed and fishermen increasingly turned to offshore fishing. Beginning in the Meiji period (1868–1912), a series of legal reforms facilitated the reclamation process. For example, an 1886 law establishing a cooperative fishermen's union—intended to solve a dispute over fishing grounds

among local villages—had the unintended consequence of making commercial fishermen the only authorized users of coastal fishing grounds. Similarly, a 1921 law gave the union, in consultation with the governor and the Ministry of Transportation, the power to authorize reclamation projects and excluded users other than union members from compensation. Thus, until 1997, when the Environmental Assessment Law gave local communities and scientific experts a stake in the decisionmaking process, tidal flats were easy prey for developers and development-minded local governments. The years after the Second World War in particular saw a significant loss of these wetlands.

The decrease in tidal-flat area (by 35 percent) in the thirty-three years from 1945 to 1978 is shown in figure 15.2. Ten major tidal flats are highlighted. Reclamation proceeded by means of both drainage and landfill, and the most significant loss occurred in indus-

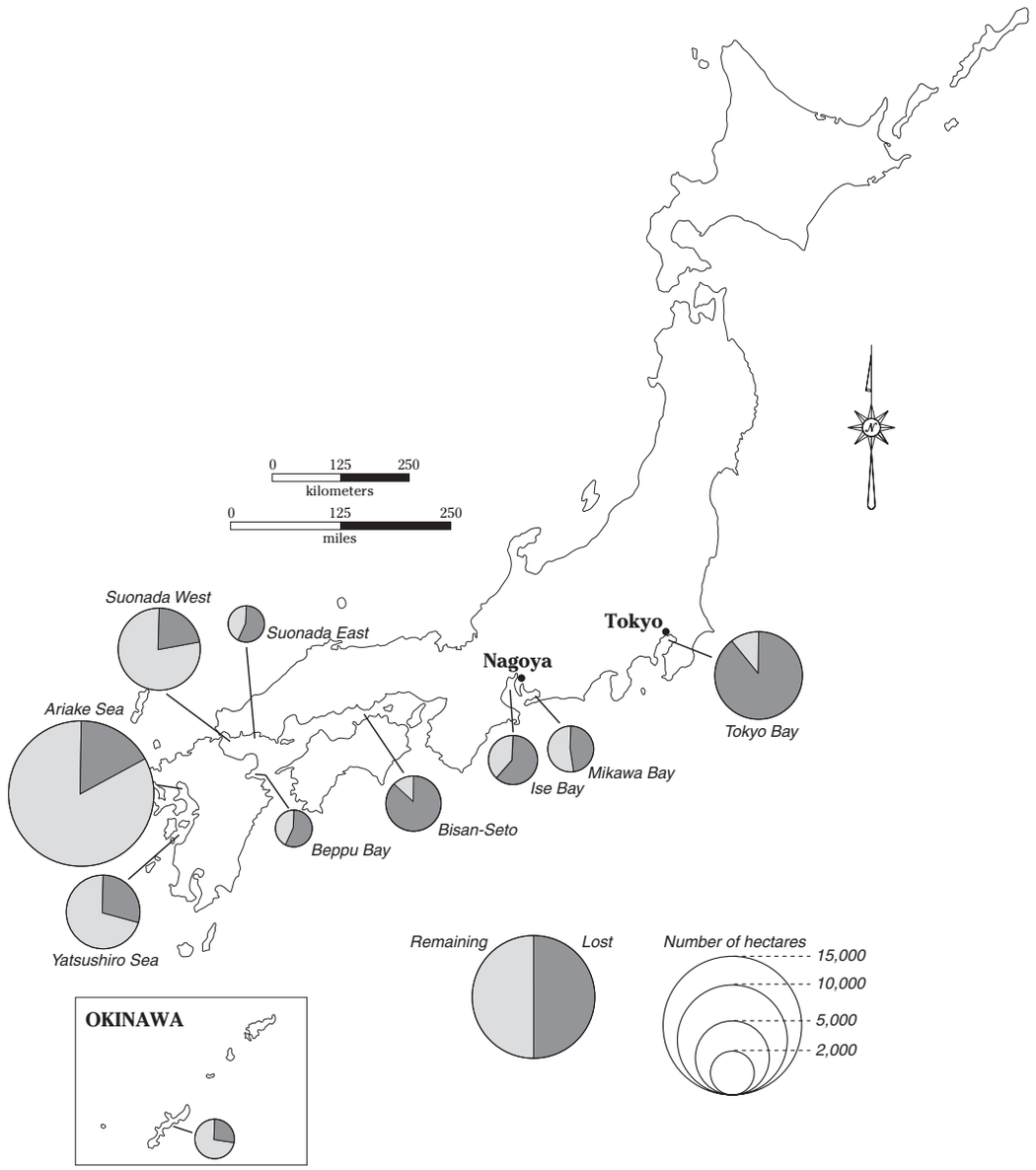

Figure 15.2. Change tidal-flat area, 1945–1978. *Source:* Nature Conservation Bureau (1980).

trial areas: Tokyo Bay, Ise-Mikawa Bay (near Nagoya), and the Seto Inland Sea. The 1962 First National Comprehensive Plan, which promoted the development of the heavy-industry and export sectors of the economy, mostly allocated the reclaimed land to the industrial complex, although some in the Seto Inland Sea area was devoted to rice production.

During this period, fishermen and other local residents were the major actors in the various grassroots movements against reclamation. One such movement was that of fishermen in the Tokyo Bay area who were trying both to prevent further reclamation and to stop the pollution of Tokyo Bay by factories built on already-reclaimed land, both causes of damage to their fishing grounds (Wakabayashi 2000). Another was that of fishermen and local residents protesting the restriction of coastal access by firms that surrounded their factories with fences and seawalls (Takasaki and Takakuwa 1976; Honma 1977).

The decrease in tidal-flat area (by 7 percent) from 1978 to 1992 is shown in figure 15.3. Highlighted areas constitute 80 percent of all tidal flats in 1978. During this period, the rate of reclamation decreased sharply, particularly in industrial areas, discouraged by the oil crises of 1973 and 1979. However, some reclamation projects were carried on, particularly in urban areas, where they were spurred by population growth and, during the economic boom of the 1980s, the sharp rise in land prices. The reclaimed land was devoted to the construction of housing, waste-treatment plants, and parks. A typical example is Urayasu City on Tokyo Bay. Urayasu was once a small village where the main economic activities were fishing and gathering seaweed and shellfish. Large-scale reclamation projects since the 1960s have paved the way for apartment buildings, most famously, and Tokyo Disneyland, which opened in 1984.

Rural projects continued as well. In the Ariake Sea of Kyushu, which has the largest tidal flats in Japan, a project to reclaim land in Isahaya Bay for agricultural production was first proposed in 1953, only to fail because agreement could not be reached on how to compensate fishermen. The plan was revived periodically, and unsuccessfully, through the 1980s, finally gaining approval in 1988 when the rationale was shifted to disaster prevention. The subsequent campaign against the project was initially organized by fishermen and other local citizens but, because it received wide media coverage, soon attracted a larger base of citizens concerned about preserving the ecosystem. When the environmental impact of the project became apparent, most noticeably in form of wretched seaweed harvests, criticism of this and similar public works projects grew. Still, the campaign failed, and the project was completed in 1997.

Also attracting criticism for its role in the Isahaya and other projects was the national Environmental Agency. The agency had been established in 1971, staffed initially by temporary personnel. However, as Japan became a signatory to various international environmental conventions, as environmental laws were established, and as public concern for environmental issues increased, the agency was expected to take an ever greater role in environmental protection. Because of its failure in Isahaya, its dedication to its mission was called into question. But it was presented with an opportunity to redeem itself in the Fujimae Tidal Flats project. And redeem itself it did, officially opposing the project and leading the opposition movement, a development that marked a critical turning point for environmental policy in Japan.

Another new development is the trend toward the creation of artificial tidal flats. Such projects were seen first in Tokyo, then in Osaka, Hiroshima, and Aichi, where most of the naturally occurring coastal wetlands had long since disappearing owing to reclamation. In Tokyo, 30 hectares of artificial tidal

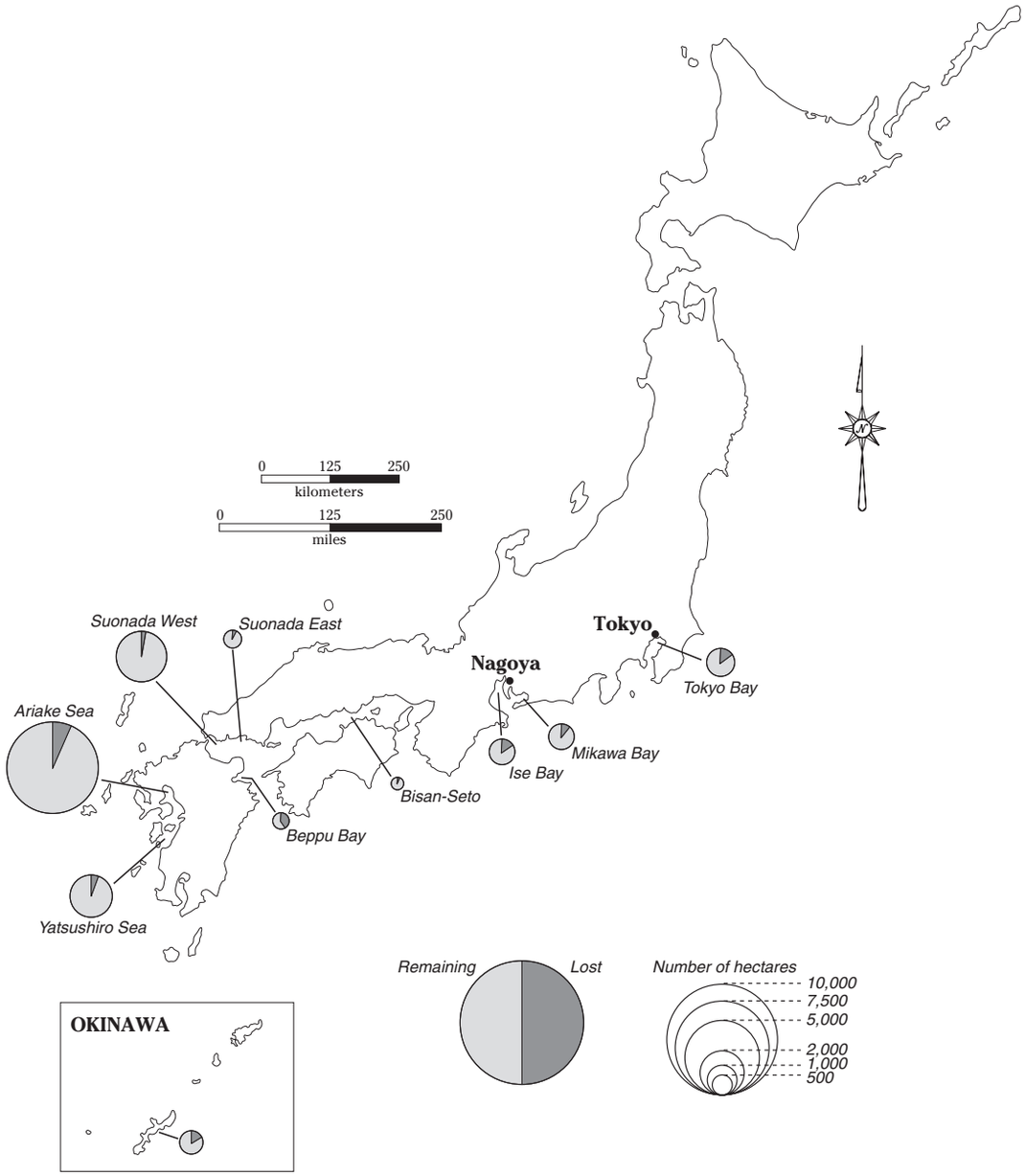

Figure 15.3. Change tidal-flat area, 1978–1992. *Source:* Nature Conservation Bureau (1994).

flats were created in 1983 and 38 hectares in 1988, the combined area being equivalent to 80 percent of the rest of Tokyo. The first of these two wetland areas became a bird sanctuary, the second a waterfront marine park. In Aichi, nearly 350 hectares of tidal flats had been created by 2001 (Suzuki 2003).

This trend in coastal planning follows directly from national environmental policy. In response to the burgeoning environmental consciousness, the law was revised in 1999 to guarantee the preservation of the coastal environment and citizens' access to it. The 2002 Nature Restoration Act strengthened the initiative by establishing public works projects aimed at the regeneration of the natural environment.

The reaction to such public works projects on the part of grassroots conservation groups has been mixed, some in favor and some opposed. On the one hand, the designation of coastal areas as public spaces was welcomed by those who insisted on access. On the other hand, the creation/restoration of wetlands was called into question by those advocating the preservation of biodiversity. The history of such environmental interventions in Japan is too short yet to allow the collection and evaluation of evidence as to their effects, positive or negative. Still, the homogenization of microhabitats (and, thus, of benthos and birds), secondary environmental destruction caused by the dredging sand for tidal-flat construction, and the cost of maintenance remain hotly debated (Furota 1996). In areas where reclaimed land is allocated for development, the possibility of such environmental intervention often justifies proceeding with reclamation without conducting the appropriate environmental assessments. Nevertheless, such creation/restoration projects are being enthusiastically promoted.

In order to further the debate of such issues, we turn next to an analysis of a specific case, that of the Fujimae movement.

The Grassroots Movement to Preserve the Fujimae Tidal Flat

The Fujimae Tidal Flat Reclamation Project

The Fujimae Tidal Flat is located at the head of Ise Bay (see photographs 15.1 and 15.2). Several rivers have deposited sediment there since prehistoric times, forming an extensive delta. From the seventeenth century to 1890, about 10,000 hectares of the bay were reclaimed, land devoted to rice production. The remaining wetlands went largely undisturbed throughout the first half of the twentieth century, but during the period 1955–1975 a total of 6,000 hectares was reclaimed (about 200–400 hectares each year), mostly in the Nagoya and Yokkaichi industrial areas. Underwater exploitation and decreased sedimentation

Photograph 15.1. The Fujimae Tidal Flat is barely protected within the industrial complex of the Nagoya port. (Courtesy Ikeguchi Akiko.)

also caused subsidence in some areas, and a further 500 hectares was reclaimed after 1980 (Mizuno 2003), leaving only 105 hectares of tidal flats, an important feeding ground for migratory birds in Japan (Tsuji 1999).

The Fujimae Tidal Flat reclamation project was formally announced in 1984, with work to begin by 1990. The project was part of a larger Nagoya city government and port-management-union plan to develop the harbor to serve as an international trading hub as well as a waste-treatment area. The latter need was particularly pressing because, owing to population pressures (the population of Nagoya City in 1981 was 2.17 million), the amount of waste to be disposed kept increasing. Even though a program to recycle paper, glass, and aluminum had been instituted by the city in 1980, only seven of sixteen wards participated, and disposal sites were expected to reach capacity by 2001.

In 1987, a survey commissioned by the port-management union revealed that the tidal flat was an important feeding area for migratory birds. Also in that year, the conservation group the Nagoya Port Tidal Flat Association [Nagoya-ko hozen group]—later the Save the Fujimae Association [Fujimae higata o mamoru kai] (SFA)—was organized and began its campaign against the project. In 1989, the city government reduced the planned reclamation area from 105 to 70 hectares (owing to concerns about flood control) and then again, in 1990, to 52 hectares (in response to a petition drive that had collected 100,000 signatures opposing the project). After another reduction to 46.5 hectares (owing to land-purchase problems), the city decided to start the environmental impact assessment (EIA) process.

As data for the EIA were collected, the anti–reclamation project movement grew stronger. When a public hearing on the EIA was held in 1996, the SFA, as well as other nongovernment organizations (NGOs) and academics, criticized the report as inaccurate,

Photograph 15.2. Yamatoshijimi (*Corbicula japonica*), one of the life forms inhabiting the Fujimae Tidal Flat. (Courtesy Ikeguchi Akiko.)

citing as evidence their own, independently collected data. In 1998, the city organized a committee to explore the effects of the construction of an artificial tidal flat as compensation for proposed reclamation. That same year, however, at a symposium sponsored by the SFA and other NGOs, the Environmental Agency made clear its position that such a project should not be pursued. In October 1998, the Fujimae Neighborhood Association [Fujimae jichikai] polled the residents of Fujimae, and 223 of 231 votes expressed opposition to the dumping of waste in the coastal wetlands. That same month, a petition demanding a public referendum on the project was presented to the Nagoya city council. The petition contained 108,155 signatures, more than three times the required 34,000 signatures. In the face of such profound opposition, the city abandoned the reclamation project in January 1999 and began to revise its waste-management policy.

The opposition to the Fujimae Tidal Flat reclamation project offers us a representative case study of a grassroots environmental movement valuing biodiversity. Characterizing the movement's success is that it con-

ducted its own independent research (instead of relying on the official EIA), that on the basis of that research it suggested a policy alternative, and that it mobilized an extensive network of concerned citizens. While it is not uncommon for grassroots movements to conduct their own independent research, it is uncommon for the information thus obtained to have such a marked effect on public opinion. I now detail the characteristics of the movement and its sociopolitical background, drawing on Matsuura (1999) and a newspaper database for the period 1989–1999.

The Assessment of the Project

The EIA process in Japan was established by a 1972 cabinet decision. Even so, assessments of large-scale public works projects were conducted only at the discretion of the government. Although some local governments did come to require EIAs, especially after the process was recommended by the 1993 Environment Basic Law, it was not until 1997 that the process became legally mandated nationwide. In the case of the Fujimae Tidal Flat reclamation project, the SFA did identify and bring to public attention certain defects in the plan and the associated evaluation process, defects that had also been seen in earlier evaluations. One significant defect was that no account was taken of the fact that the plan might have to be revised once the findings of the EIA were revealed. Another is that the EIA was overseen by the project director, not by an independent third party. Also, although the final EIA report was made available to the public and public hearings were held, the evaluation procedure was not entirely transparent.

More specifically, the Fujimae project assessment proceeded as follows. First, a preliminary report was compiled by Nagoya City. That report was then submitted for review to a committee composed of local residents and scholarly experts. When completed, that committee's assessment report was submitted to the Ministry of Transportation along with the reclamation project application. Prior to the preliminary report being made available to the review committee, however, several NGOs, including the SFA, made available independent research covering the effects on migratory birds and benthos, the status of artificial tidal flats, the availability of alternative waste sites, the legal issue raised by the land-purchase procedure, and an economic evaluation of Fujimae employing contingent valuation methodology. The most influential was SFA research on tidal-flat organisms.

For example, the preliminary report concluded that, owing to the low (1.3 percent) tidal-flat use rate, the effect on migratory birds would be minor. (The use rate was calculated as the percentage of a four-day survey period during which birds of any species were sighted on the tidal flats.) The SFA was critical of this conclusion on the grounds that the role of tidal flats in birds' lives differs by species and that birds use different parts of the tidal flats at different times and for different purposes. It was also critical of the report's data, which were collected by people who had little local experience and employed generalized techniques, whereas the SFA data were obtained by people who had long observed bird behavior in the area and were familiar with tidal-flat use patterns.

The preliminary report also concluded that, owing to their low biomass on the tidal flats (only twenty to forty grams per square meter), benthos did not play a significant role in the purification of seawater. The SFA was critical of this conclusion because it was based on a generalized technique employed by environmental research companies, the collection by dredge of animals in the tidal-flat sediment to a depth of only ten centimeters. The SFA data, however, collected by hand-dredging to a depth of more than one meter, showed that the actual biomass was twenty times higher than the report indicated. In a public hearing, an SFA representative reported that "each

tidal flat has unique characteristics that any survey must evaluate" (Matsuura 1999, 65).

The independently compiled data—and especially that coming from the SFA—was considered by the review committee to be so credible that, in its report, it concluded that the project would have a negative impact on the tidal flat (Hayakawa 1999). Such an admission by a review committee being rare, the media took great interest in the story and publicized the assessment report widely. In response, Nagoya City revised the project plans, the final reclamation project application being for permission to construct an artificial tidal flat by adding sand to thirty-eight hectares of shallow water in order to raise the seabed.

But the SFA was again critical, responding as follows: "The plan of artificial tidal flat is human insolence. . . . Even one burrow of a Japanese mud shrimp (*Upogebia major*) is part of a pattern of life that has existed since ancient times. Now is the time to reconsider the significance of the tidal flat. . . . This plan was exclusively an engineer's idea. The Fujimae Tidal Flat was formed over a period of more than 150 years, beginning at the mouth of the old Kiso River, where it was known formerly as *Chidori gata* [tidal flat of a plover], and long fostered life. They [Nagoya City] close their eyes to the criminal attempt to bury and, thus, destroy this place with waste and, in the name of compensation, plan another massacre [by constructing artificial tidal flats], although perhaps not knowingly" (Matsuura 1999, 65, 151).

In refuting the claims made in the preliminary report, opponents of the reclamation project stressed both the ecological importance of the tidal flats and their historical significance. And it was from such a perspective that they came to the conclusion that the project was inappropriate, a conclusion compelling enough that the project was eventually abandoned. Thus, we see the importance of independent research, media exposure, and the pressure of public opinion in a grassroots movement. I now go on to describe how the network that saved the tidal flats was assembled.

The Development of the NGO Network to Save Fujimae

The core of the Fujimae movement was the SFA, which had been organized by birdwatchers in Nagoya City. Among conservation groups in Japan, those devoted to bird-watching were among the earliest to establish both national and international networks. The Wild Bird Society of Japan [Nihon yacho no kai] (WBSJ) is the largest of the bird-watching groups, having a branch in every region of Japan. And among the international networks in which it participated was one including groups in China and Korea that was established to exchange information about tidal flats, which are important relay points for birds migrating from Australia to Siberia. Recognizing the importance of tidal flats, the network has held symposia about and proposed international conventions promoting their conservation. The Ramsar Convention—which Japan joined in 1980—was one such convention; it obliges member countries to establish wetland sanctuaries.

The initial motivation for the development of a national network promoting tidal-flat conservation was the Ramsar Convention symposium held in Kushiro in 1993 (Tsuji 1999). Spurred by the campaign against the Isahaya Bay reclamation project, the Japan Wetland Action Network [Nihon shitchi network] (JAWAN) was organized in 1991 and, at the symposium, proposed stricter Environmental Agency enforcement of wetland-conservation policy. In 1992, the WBSJ proposed that the Environmental Agency register nineteen wetlands as sanctuaries. The International Wetland Symposium, organized by JAWAN, was held in Tokyo that same year, and tidal-flat-conservation groups from Fuji-

mae and the Isahaya Bay, Hakata Bay, Tokyo Bay, and Nagara River areas attended. The Environmental Agency also organized the Asia Wetland Symposium to be held prior to the Kushiro congress and invited representatives from a variety of Asian countries. At the symposium, the agency did, in fact, propose the establishment of new sanctuaries, including some on the WBSJ's list, but tidal flats already slated for development were not among them. Protesting this decision, the World Wildlife Fund–Japan [Sekai shizen hogo kikin Nihon shibu], the Nature Conservation Society–Japan [Nihon shizen hogo kyokai], JAWAN, and the WBSJ organized the '93 Wetland Alliance [93 wetland kaigi] and started a campaign to register, and, thus, protect, wetlands slated for development under the Ramsar Convention. This network of NGOs became the basis from which the movement against Fujimae project grew.

Also important in the development of the national network was the establishment in 1997 of a listserv managed by a representative of the Forum on Environmental Administration Reform [Kankyo gyosei kaikaku forum], a nongovernment think tank (Matsuura 1999). The activities of the SFA and the problems with the Fujimae project EIA process were already widely known to activists concerned with environmental policy, and, therefore, a representative of the SFA was invited to join the mailing list, which currently includes about two hundred activists, government officials, lawyers, and journalists. The SFA has used the mailing list both to publicize its activities and to exchange information with other organizations. The advantages that it gained were several.

First, the effort to keep journalists informed about the Fujimae project garnered such media attention that what was once a local environmental issue became a national political one. This is especially evident in the spike in newspaper articles about the project around March 1998, when the negative EIA committee report was issued (see figure 15.4). But attention to the project had been growing

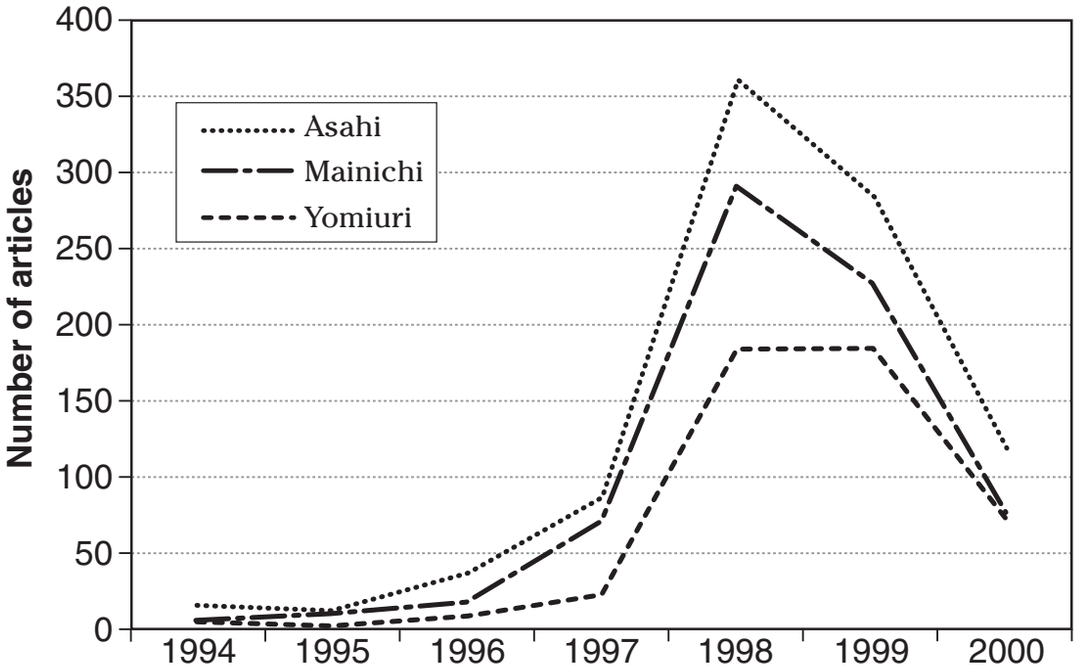

Figure 15.4. Number of articles about Fujimae Tidal Flat reclamation in three major Japanese newspapers.

even before that, prompting an invitation to the SRA from the Forum on Environmental Administration Reform to send a representative to a January 1998 meeting of its executive council at which members of the National Diet in charge of environmental policy would be present. The idea was that, by presenting a case that the issues surrounding the Fujimae project extended beyond migratory bird conservation to such other aspects of environmental policy as waste management and international law, the SRA could affect policymaking at the national level (Matsuura 1999, 76). The move was successful, and, in September 1998, over one hundred Diet members from different parties organized a workshop on the tidal-flat issue (*Asahi shimbun,* September 15, 1998).

Second, when in 1998 the focus of SFA activity shifted from the reliability of the EIA process to waste-management policy generally, the mailing list offered activists a much-needed resource for researching alternatives to reclamation. Because local governments in rural areas were increasingly refusing to accept waste from nearby urban areas, Nagoya City had no choice but to construct the needed waste-treatment site inside city limits. But it had to be convinced that there were alternatives to reclamation. And it was up to NGOs like the SFA to come up with a feasible alternative, a task greatly aided by members of the mailing list familiar with environmental policy.

Still, cooperation with other NGOs in the city beyond the sharing of information was needed if a workable strategy was to be formulated and implemented. I turn now to the process by which the local network that constructed the alternative waste policy developed.

Development of Local Network and Construction of an Alternative Policy

Local networks among NGOs with different political goals but a common commitment to public involvement in policy were first developed in Japan in the early 1990s in response to large public works projects in Aichi Prefecture, such as the world's fair and the new international airport, that were pushed through rapidly with little public input (Shimazu 2001). In April 1994, nineteen NGOs, including both conservation groups and consumers' networks, held a symposium in Aichi. The next month, the group Save Our Health and Environment! Aichi Residents' Action [Kenko to kankyo a mamore! Aichi no jumin issei kodo] was organized in the name of sixty NGOs, and representatives of the group met with the mayor of Nagoya City.

As we have seen, the issue prompting the SFA and other NGOs to join forces was waste-management policy. Since the 1980s, the rapid increase of waste as a result of rapidly increasing consumption has been recognized as a critical urban problem in Japan. Although smaller cities tried to solve the problem by promoting recycling, such an approach was thought to be unrealistic in the larger urban areas, where the waste generated by business activity exceeds that generated in domestic settings. Nagoya City's response to the problem was to construct disposal sites for untreated waste outside Aichi Prefecture, in Gifu Prefecture, but few municipalities could be found to host such sites owing concern with dioxin pollution. Also, Nagoya City was criticized by other local governments for dumping its waste on others instead of reforming its waste policy.

There did, however, exist some grassroots groups promoting recycling. The Chubu Recycle Action Network [Chubu recycle undo shimin no kai], the largest such group, was established in 1980. It established recycling stations that collected newspapers and plastic containers, using volunteer workers to promote its efforts. From its inception in 1987, the SFA held the yearly collaborative "Waste-Bird Symposium" [Gomi-tori symposium] at which alternative waste policies were dis-

cussed. Other grassroots recycling activities with the ultimate aim of tidal-flat conservation also emerged in Nagoya. For example, in April 1995, two housewives from Meito Ward—one a member of the Chubu Recycle Action Network—published a book about the ecology of Fujimae (*Asahi shimbun,* April 22, 1995). And about a hundred housewives from the same ward organized the Society for Zero Emission Nagoya [Zero-emi Nagoya no kai] in August 1998, establishing stations for the collection of recyclable waste, which was to be transported from the stations to the treatment site by lorry (*Asahi shimbun,* August 4, 1998). The society also helped the neighboring ward, Higashi, launch a similar project the next month. The success of all these projects suggests that it was easier to spur the conservation minded to action when the focus shifted from the more esoteric goal of tidal-flat ecology to the more familiar one of recycling everyday waste.

The efforts of such local networks were unexpectedly aided by the 1990 recession and the 1991 Law for the Promotion of Utilization of Recycled Resources. While the amount of waste generated by business activity did continue to increase, it did not increase nearly as much as was expected. In 1992, for example, only 8.2 percent of the expected amount of waste was generated in the city, meaning that the Chita disposal site could easily handle it (*Asahi shimbun,* November 20, 1992), and calling into question the city's claim that metropolitan waste generation would continue to increase almost exponentially.

The growing concern of the residents of Aichi Prefecture with the establishment of an alternative waste policy was demonstrated at the ballot box. In the 1997 election for the House of Councillors, the upper house of the Japanese Diet, for example, the Democratic Party, running on a platform of the conservation of Fujimae and the revision of the city's waste-management policy, defeated the Liberal Democratic Party by gaining two seats out of three in the Aichi Prefecture proportional representation block. Even the Communist Party, also calling for the revision of waste-management policy, triples its total from the previous election, earning one in three seats in the process. Subsequently, some members of the Diet from Nagoya who had previously supported the mayor's position began calling for a revision of waste-management policy (*Asahi shimbun,* August 4, 1998).

The growing concern with waste policy extended to the Fujimae neighborhood as well. For much of the 1990s, the Fujimae neighborhood association had made no express objection to the reclamation project, which allowed the city to claim that it was outsiders fueling the opposition. This state of affairs can be attributed to the fact that Fujimae was a relatively closed community—presumably because of the long-standing ban on the construction of new residential housing under the Nagoya City industrial land use plan—and, thus, local residents had little contact with the SFA (Matsuura 1999, 252). Things changed, however, when one resident organized a study group on dioxin pollution, after which a number of housewives organized the Association to Save the Children from Dioxin [Daiokisin kara kodomo o mamoru kai] in August 1998 and started meeting with the SFA. These activities prompted the Fujimae neighborhood association to sponsor a referendum—ultimately successful—calling for the abandonment of the Fujimae reclamation project.

An Evaluation of the Fujimae Tidal-Flat Conservation Movement

The previous section described the development of the Fujimae Tidal Flat conservation movement, with special attention paid to the process of network building. This remarkable movement was a turning point in the history of coastal development in Japan. It showed

that the tidal flat has value other than as a resource to be exploited by industrial, agricultural, and government interests. Nevertheless, the means by which the end of stopping the reclamation project was achieved had unintended consequences, affecting local waste-management policy, national environmental policy, and the perceived value of tidal flats.

The Impact on Local Waste Policy

After canceling the Fujimae reclamation project, Nagoya City first attempted to find an alternative waste-disposal site—with the assistance of Aichi Prefecture, the Ministry of Transportation, the Ministry of Health and Welfare, and the Environmental Agency—without success. The city therefore had no choice but to change its waste policy drastically. In February 1999, it issued an emergency declaration that waste was to be reduced by 20 percent (about 200,000 tons) over the next two years. In August, it made recycling mandatory, with five categories of recyclables identified—the strictest recycling program ever attempted in a metropolitan area. To aid those citizens—especially the elderly and ethnic minorities—who found the rules for separating recyclables confusing, the city made available a booklet explaining the procedure. It also established sanitary committees in all school districts to ensure that recyclables had been properly separated. The NGOs aided the process by establishing collection sites in vacant lots or supermarkets. The program proved successful, the city's waste being reduced by 23 percent in two years, and the amount of recyclables increasing from 13 percent in 1998, to 18 percent in 1999, to 28 percent in 2000 (Matsubara 2001; Nagoya City 2003).

National Environmental Policy

The debate over the Fujimae reclamation project brought to public attention several problems with existing environmental policy at the national level, including the lack of public involvement in the decisionmaking process and the limits to the authority of the Environmental Agency director. The result was that, when, in 1997, the EIA process was legally mandated nationwide, these problems were directly addressed. First, in addition to the submission of proposals to review committees, more general surveys of public opinion about environmentally sensitive public works plans were required. Second, whereas, before, the director of the Environmental Agency could comment publicly on projects only if specifically requested to do so, now he was free to act on his own initiative, allowing him to participate more effectively in the policymaking process.

Recently, the Environmental Agency and the Ministry of Land, Infrastructure, and Transport (an amalgam of the former Ministry of Transportation and Ministry of Construction) have been considering the introduction of a more direct form of public involvement: the strategic environmental assessment. Under such a plan, local residents would be asked their opinion of alternative plans as they are being developed. Of particular concern here is establishing lines of communication, and, facilitating, cooperation, between the various parties with an interest in environmental policy.

Regeneration of the Tidal Flat?

In opposing the Fujimae reclamation project, the SFA harbored a different notion of the value of the tidal flat than did the government, seeing it, not simply for its potential to be exploited, but as a valuable natural resource in its own right and a unique historical heritage. Such a view became widespread, and, in response, Prime Minister Koizumi set up a national environmental commission that called for public works that had as their aim the regeneration of natural environments. Tidal

flats were among the ecosystems targeted by the commission, and the Ministry of Land, Infrastructure, and Transport is currently conducting conservation projects in forty ports. Some of the projects are, unfortunately, problematic. That in the Ise-Mikawa Bay, for example, aims at regenerating a twelve-hundred-hectare area by raising the seabed with sand dredged from the bay, a process that, as we saw earlier, can have dire consequences for marine life.

The Ise-Mikawa Bay project reveals that disconnects still exist in the networks established to date by environmental activists. As with the Fujimae reclamation project as initially conceived, the value that local activists place on tidal flats is not necessary the value that national policymakers place on them. It is to be hoped, however, that, as public involvement in environmental policymaking grows, all involved will make their views more widely known and that better-functioning partnerships will be developed. Here, the initiative clearly must be taken by the grassroots movements.

Conclusion

This chapter is a case study of a grassroots conservation movement in Japan that successfully opposed the Fujimae Tidal Flats reclamation project. It details the differing values that different actors placed on the tidal flats and how the influence of the various actors changed, environmental concerns increasingly being incorporated in public policy at both the local and the national levels over time. It also details how major components of the movement's success were the mobilization of a large-scale network, a process made possibly largely by sociopolitical developments, and an insistence on the need for public input in the decisionmaking process. Despite the movement's success, however, the value of the tidal flat remains contested. The challenge for this grassroots movement—and others throughout Japan—in the twenty-first century remains the education of both the general public and policymakers and the fight to incorporate local knowledge in public policymaking.

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