

Yakushima: The Case for a Biocentric Approach

Glenn Forbes

An area of Yakushima was designated a world heritage site in 1993. On an island it is easier to observe the effects of various inputs to the natural systems. Environmental movements have failed to generate protection for natural landscape in Japan, meaning national parks have a significant role to play in this area. However, national parks remit may be less about environmental protection and more concerned with promoting utilization of the land. Yakushima needs clear management practices to ensure cumulative damage from improved access does not destroy what is a unique area of wilderness.

Key words: [Yakushima] [Japanese environmental attitudes] [Biocentric]
[Land use designation]

(Received September 17, 2008)

Islands, as Charles Darwin noted, allow a rare chance to isolate clearly those factors at work in the shaping of a landscape (Menard, 1986). With environmental and human inputs and outputs more easily isolated, the theoretical possibility of “getting to the bottom of it all” exists more clearly in an island setting.

Yakushima, (屋久島) a circular island located 130km south of Kagoshima City and approximately 60km off the southern Kyushu coast, is one such island. Designated a world heritage site in December 1993, a part of the Kirishima-Yaku National Park, and containing other biological reserves, Yakushima is an important Japanese environmental site (Yakushima World Heritage Area Management Plan).

In contrast to Japanese mainland sites, Yakushima enjoys a relatively low population density on its settled coastal lowlands, and has a historical tradition of conservation built in to the Islanders traditional lifestyles. It is Yakushima’s distinctive geomorphology however that leads to a natural biogeographic zonation of the island and, I would suggest, makes possible a biocentric approach to the island’s natural systems, without creating a conflict over use of resources (Schmidt 2000). I propose to use the following definition of biocentrism, which stems from Paul Taylor’s work as summarized by Barret and Grizzle (1999 p32): “(1) humans are members of the Earth’s community; (2) all species are integral elements in a system of interdependence; (3) all organisms are centers of life, each pursuing its own good; and (4) humans are not inherently superior to other living things.

* Kagoshima Immaculate Heart College, English Department, 4-22-1 Toso, Kagoshima-shi 890-8525, Japan

Change in environmental attitudes and public silence

Until the advent of modern engineering, steep mountains and dense forests left areas of Japan very isolated and people tried to foster a harmonious relationship with nature, in contrast to the European approach to nature as something to overcome (Takeda in Kira and Terada (eds) 2000: 225). In these circumstances, nature played a part in people's everyday lives and religious beliefs. Taneda (Kira and Terada (eds) 2000: 219) says, "Japan is an island nation, surrounded by the ocean and covered with mountains, in which every region has a representative peak as its symbol" and embodies spirits therein. Mountain shrines symbolize the religious value of the landscape in which spirits are an integral part of nature. In the past, hunters and foresters, fishermen and farmers all "shared this physical and religious bond with nature".

With a few exceptions such as Yakushima, however, this norm has been wiped away in Japan's post world war two economic boom (Hane, chap. 15). The accompanying rapid urban development and transport infrastructure changes saw huge demographic shifts (in 1950, 48.3% of the workforce were in agriculture; in 1994 5.2%) and, as a result, the type of culture with which people identify. Takeda (in Kira and Terada (eds) 2000: 223) proposes that the shift away from traditional villages which urbanization brought, and the identification with the company which Japan's post WW II economic expansion fostered, means that "people feel no interest in the place where they live, because it has nothing to do with their identity".

Not only do people feel a lack of personal attachment to, or responsibility for their urban environment; they have also lost touch with more traditional Japanese life, in which nature played a large part. Brecher (1999: 169-70) conducted a survey of how "green" Japanese people thought their lifestyles were. While 90% thought nature important in Japan's artistic traditions, "only 15% thought that their current lifestyles reflected the importance of nature more than lifestyles in other countries".

This does not mean Japanese people are happy with the situation. When the question "Generally, have you been happy with the environmental policies of the Japanese government?" was posed, only 1.4% of respondents said yes (0% of college students). This means that basically every person who replied with an opinion disapproved of the Japanese government's environmental policies. The extreme nature of this figure may be surprising, but as Brecher says, "more surprising . . . is that this nearly universal discontent is not being voiced to any significant degree."

Brecher (1999: 171) attributes the lack of expression of dissatisfaction to grassroots indifference, indicative of a "pervasive apolitical spirit" that is the result of "the extent to which the Western democratic values worked into the constitution have failed to take root". Certainly, people's reticence to get involved is supported by other facts. Michael McCloskey, Sierra Club Chairman (quoted in Brecher, p88) states that Japan, for example, is "the only

highly-developed, prosperous country that doesn't have a national-level environmental movement of any strength". It seems that people are simply resigned to not making a difference in political matters, rather than being disinterested in environmental issues per se.

Economically, Japanese people have the freedom to take a critical view of society, but unfortunately they are reluctant to get involved in issues with no direct bearing on their own livelihoods. Brecher (1999: 168) reports, "Environmental education in Japan has mainly targeted garbage separation, litter clean-ups, and nature appreciation – in other words localized and non-confrontational forms of action". People take responsibility for their own personal space, but, in contrast to other western nations, don't take a stance on global or national issues. Japan has therefore not been able to combat carbon dioxide emissions, reduce garbage (although recycling of garbage has been improved), energy consumption, use of cars or foreign timber.

Environmental policy, indeed any government policy, is something Japanese people either do not want, or feel able, to take an active role in. Nishimura (Kira and Terada (eds) 2000: 224), talking about the Japanese power structure, says a historical factor is at work, "After World War II, a top-down system was . . . effective . . . for engaging in economic war." Fast decision-making was possible, but although Japanese society is "consensus-conscious", because decisions were handed down from the top "people in general are not in the habit of thinking about the larger problems of society." This top-down decision making system means "people are reconciled to not having their opinion heard" (Kira, Kira and Terada (eds) 2000: 222). Accustomed to feeling powerless to participate in policy at any level, it seems that people, comfortable with their current lifestyles, have excluded it as a possibility.

The Reasons for National Parks

This being the case, what role do national parks play, and are they necessary or effective? The Japanese Ministry of the Environment conducted national surveys on the Natural Environment between 1979-86, and again from 1988-92. Comparative statistics show a deteriorating natural environment and make a case for protection (State of Japan's Environment at a Glance: Natural Vegetation). During this period, every single land type classified as natural, or near natural, decreased in area. If National Parks serve as a way to retain ever dwindling wilderness, then these Parks, clearly defined and effectively run, would seem to be a desirable instrument of environmental protection. Yakushima, with its natural attractions and geographic remoteness could be a model park where biological diversity is preserved without negatively affecting human settlement and economic activities.

One worry is that due to the "natural world heritage site" designation, Yakushima is

perceived as being green. In other words, that designation itself gives the Island a 'natural' image, when the reality may be less clear cut. Theoretically, Yakushima is covered by some degree of protective legislation, due to its (excessively complicated) designation under a series of conservation related zonings. However, Brecher (1999: 47), writing on the environment in modern Japan, finds "Laws are . . . superficial and ineffective . . . window dressing. He cites the example of Japan having "150 rangers patrolling national parks", but where poaching is nonetheless "standard practice". Laws are in effect and a national park system in place, but without close examination the ineffectiveness of the system is not evident. Yakushima itself has five national park rangers, three of whom are on patrol in the park at any one time. With (conservative) estimates of up to 45,000 people a year on Yakushima's trails, the park ranger to visitor ratio is clearly strained.

National Parks however are not necessarily for the protection of the environment. In Japan, the Natural Parks law defines National Parks (Ministry of the Environment: National Parks and Sanctuaries). This law "aims to conserve scenic areas and their ecosystems, to promote their utilization, and to contribute to the health, recreation and environmental education of the people."

Parks are classified as follows:

- (a) National Parks. These contain outstanding ecosystems and "national-level" scenic beauty. They are designated by the Director General of the Environment Agency. Currently 28 parks cover 2.05 million hectares (5.4% of the area of Japan).
- (b) Quasi-National Parks. Places of district-level natural beauty. These are proposed by Prefectural Governors, and then designated by the Director General of the Environment Agency. There are 55 parks covering 1.33 million hectares (3.5% of the area of Japan).
- (c) Prefectural Natural Parks. Places of "prefectural-level importance" designated by prefectural governments. There are 301 parks covering 1.94 million hectares (5.1% of the area of Japan).

Within the National Park itself, land is classified according to a zone system.

- Special Protection Zone. Strict regulations are enforced and building is prohibited
- Class I Special Zone. Scenic beauty is to be conserved as far as possible. Building is prohibited.
- Class II Special Zone. Agriculture, forestry and fisheries should be adjusted to suit the environment. Facilities for daily life of local people are required. Visitor facilities that do not obstruct scenic beauty are allowed.
- Class III Special Zone. As Class II. Clear-cut logging is allowed.
- Marine Park Zone. Areas with abundant marine life. Regulations as per Special Protection Zone.
- Ordinary zone. A buffer zone for conservation. Settlements and farms may exist.

Large buildings obstructing scenic beauty may be subject to administrative action.

From this outline it is clear that human interaction with nature takes a central role in the purpose of Japanese national parks (Kagoshima prefecture Environmental Conservation Division) and organizations such as the Japan Ecotourism Society recognize the need for environmentally friendly tourism. In 1998 the Japanese National Land Agency released “A new grand design for the 21st century” aiming to make Japan “a beautiful garden island” (Kira and Terada (eds) 2000: 222). Designed to show society’s emphasis on the economy was over and that ‘living’ should begin, this represents a very anthropocentric view towards the environment.

Yakushima as wilderness area or theme park?

The danger for Yakushima is that this vision of Japan as a garden is realized. This may seem like an unlikely scenario, given the rugged geography of the landscape, but the island and its protected areas serve as a good case study for cumulative effect environmental changes. These changes include small, incremental changes such as road extensions, forestry clearance, and tourist number increases due to easier access. The cumulative effect of these changes is to bring present generations net benefits, but future generations net harm. The cumulative effect model can be related to the concrete example of the Jomon Sugi trail, Yakushima’s most popular hiking route. This tree is the most famous natural object on the island and draws wildly disproportionate numbers of hikers. Current National Park estimates are of up to 800 hikers a day on this route in August. With this number of users there are entirely predictable problems, including lack of toilet facilities, litter and human waste on the trail, erosion of the trail and at the base of the tree, where the problem has necessitated the building of a fence to distance visitors from the site. Like Shiratani Unsuikyo, where vehicle access has been improved and consequently visitor numbers have soared and people are now wearing away the famous moss gardens that attracted them in the first place, Jomon Sugi is being adversely and predictably affected by the huge number of visitors.

In addition to these obvious changes, so called “invisible hand” effects such as loss of biodiversity are cumulatively negative and may go unnoticed until they reach a balance point, beyond which the ecosystem quickly degrades. This threat extends to species which have not yet been ‘discovered’, such as the plant, *Yakunohinahoshi*, found only this year by long term Yakushima resident and nature photographer, Hiroaki Yamashita.

On Yakushima, it may seem that there is a long way to go until a critical point is reached, but since global biodiversity loss due to human land-use conversion (biodiversity is measured as the number of species, gene variety and ecosystem loss) has leading academics

(Leakey and Lewin) considering the current period of history to be the start of the 6th major mass extinction of all geological time, prudence would suggest adopting a cautionary approach. Seen in this light, the current developments to make vehicle access easier to the centre of Yakushima are leading to predictable negative results and are perpetrating foreseeable intergenerational injustice (Wood and Waterman, 2008).

Entirely foreseeable consequences of development mean current generations benefit economically while subsequent generations lose. The national park service is not unaware of these conditions and is currently considering the possibility of limiting numbers of hikers at certain times of year. However, this policy may be likened to persistently treating the symptoms of an illness rather than preventing the illness from occurring in the first place. One possibility may be to run some contingent valuation studies to see what sort of revenue might be generated by adopting a permit system for the national park. Money generated could be used to offset loss in earnings if there is a fall in visitor numbers due to some people being unwilling to pay to visit the park. This would also allow the park to be operated in such a way as to minimize damage, which the present visitor pattern shows to be an area requiring some action.

Not that the environment agency is always able to respond effectively. Writing in 1999, Brecher (p88-89) states that “for the Environment Agency to introduce . . . legislation, it requires the approval of twenty-four other agencies and commissions.” Clearly, there is a measure of inefficiency in the system. This is connected to the Wood and Waterman concept of *ultra vires* (literally, beyond jurisdiction), which effectively prevents democratic governments from legislating for the benefit of future generations. In Yakushima this is further compounded by the sheer number of conservation orientated designations overlapping each other (World Heritage Evaluation Group 1993 and East Asia Biosphere Reserve Network Report 1996).

The benefits of a biocentric approach for Yakushima

How does the current outlook translate to environmental concerns on Yakushima? On Yakushima, people still retain a sense of living with the land: a sense that has been lost in parts of modern Japan. There is also a geographical separation of areas of human land-use and the areas designated as wilderness, meaning that the possibility exists for the island to contain both a viable economic system and sustainable biodiversity without generating a clash over use of resources.

As Japan has modified much of its natural environment, Yakushima, largely as the result of geographical remoteness and rugged terrain, has until now managed to retain wilderness areas. These wilderness areas are the reason for the island's current popularity, with increased visitor numbers now threatening the very nature that attracted them

there in the first place. If effective leadership is shown, Yakushima, due to its distinct geographical conditions, provides an opportunity for a model of biodiversity conservation that also benefits the local population. Unfortunately, comparative studies suggest that future costs and concerns are being subordinated to present day benefits, and consequently the cumulative effects of change are not moving in a positive direction. A beautiful garden island can be constructed even on reclaimed industrial land. It is not necessary to convert one of the last pristine wildernesses into a tamed park.

Bibliography

Adger, W.N. (2000) *Environmental Science for Environmental Management*. (O' Riordan, ed) UK: Pearson Education Ltd.

Barrett, C. B. and Grizzle, R. (1999) "A Holistic Approach to Sustainability Based on Pluralism Stewardship." *Environmental Ethics* 21: 23-42.

Brecher, W. P. (1999) *Nature Watch: Essays from Japan*. Canada: Trafford.

East Asian Biosphere Reserve Network Report. (EABRN-4) On-line PDF
<http://www.unesco.or.id/prog/science/envir/EABRN/Yaku-Eval>

Kira, M. & Terada, M. (Eds.) (2000) *Japan. Towards Totalscape*. Rotterdam: Nai Publishers (Netherlands Architecture Institute).

Leakey, R. and Lewin, R. (1995) *The Sixth Extinction: Biodiversity and its Survival*. New York: Doubleday.

Menard, H. W. (1986) *Islands*. New York: Scientific American Library.

Ministry of the Environment (Japan)

1. The Basic Environment Law. Ministry of the Environment
www.env.go.jp/en/lar/blaw/index.html
2. Climate Change: Second Meeting of the U.S. – Japan High-Level Consultations on Climate Change. <http://www.env.go.jp/en/topic/cc/cc020405.html>
3. Japan Environment Quarterly (JEQ) -Vol.7 No, 1 March 2002
www.env.go.jp/en/org/jeq/v007-01.html

4. Index Page <http://www.env.go.jp/en/index.html>
5. State of the Environment: National Parks & Sanctuaries
<http://www.env.go.jp/en/soe/ncj/np.html> (accessed 05/04/2002)
6. Statistical survey commissioned by the Ministry of the Environment and carried out by Fuji Research Institute Corporation, between Dec. 2000 and Mar. 2002. Published March 2002

Schmidtz, D. (2000) "Natural Enemies: An Anatomy of Environmental Conflict."
Environmental Ethics 22: 397-408.

Wood, P.M. and Waterman, L. (2008) "Sustainability Impeded: Ultra Vires Environmental Issues." *Environmental Ethics* 30; 159-174.

Yakushima World Heritage Area Management plan.
www.env.go.jp/en/soe/yakushima/index.html