

Environment Management of Golf Course in Japan - Controversies of Ecological Ideas -

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Abstract

The purpose of this study¹⁾ was to clarify the environmental issues surrounding golf courses in Japan, based on data which included articles and reports in academic journals from 1985 to 2000. Within a wide body of articles and reports, the connection between golf courses and the conservation of nature in Japan were discussed. Their content included investigation, analysis and consideration of environmental issues from the view points of a variety of professional fields such as jurisprudence, sociology, agriculture, chemistry and also the citizen activity.

Golf courses use a great deal of agricultural chemicals for swards and trees because of the high temperature and high humidity of Japan. The Environmental Assessment Law was established in 1997 in Japan similar to those in other countries. However, under this law, there is no provision for imposing penalties. The Law obligates local governments and corporations only to guide golf courses in their use of agricultural chemicals. Moreover, the concepts of environmental protection around golf courses such as “stewardship” and “sustainability” have not fully permeated among Japanese golfers and the golf industry in general. In addition to this, there are inadequate funds for expenditure on such environmental safeguards, as many courses were established by speculative corporations during the boom-time of the “Bubble Economy” era.

KEY WORDS: *environmental assessment, stewardship, sustainability, golf courses in Japan*

1. Introduction

In Japan, the innovation of sport, especially golf, progressed rapidly after World War II. The population of golfers in Japan is now thirteen million and golf is recognized as one of the national and lifelong sports. The increase of the number of golf courses corresponding to the increase in the golfing population has brought about much change to the natural environment. Awareness about conservation of nature and protection of wild animals seems low in players and others concerned such as developers, landowners, course employees, the local residents. It is almost impossible to say that any concept of the mutual dependence between the golf course and the natural environment exists in Japan.

Therefore, the purpose of this study is to clarify the environmental issues surrounding golf courses in Japan. This study analyzed data based on the data of articles and reports in academic journals from 1985 to 2000, consulted through the Information Retrieval System of the National Diet Library. These articles and reports were related in terms of “golf” and “environment”. The researchers have tried to summarize the environmental issues of Japanese golf courses, compared with cases in Scotland and the United States of America.

2. Ecological Management in Scotland and the U.S.

It is possible to say historically and geographically

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that golf courses in Scotland have used the landform and the characteristic of nature effectively, compared with courses in Japan. When we Japanese visit Scotland, most people get the impression that the golf courses there are comparatively harmonized with the environment. We will see the same landscapes in many European countries.³⁾¹⁰⁾

In the United Kingdom, the Royal & Ancient Golf Club of St. Andrews and the Scottish Golf Society cooperate with the environmental protection groups such as the Nature Conservancy Council and golf-course wildlife groups and are making foundation.¹¹⁾ The foundation executes a system of evaluations and researches for harmony of golf courses and natural environment.⁸⁾ Even though the ecological management in Scotland is progressed compared to Japan, Smith suggested to need more consciousness about conservation. The key to environmental stewardship lies in understanding and appreciating the golf course management practices.

The important to consider that golf courses are not perceived to be inherently at odds with the principles of sustainability and stewardship, and that through environmentally sensitive management they have the potential to conserve wildlife and habitats (biodiversity), water resources, historical features, cultural heritage and much more.

The people who are related to golf in Europe and America seem to have consciousness about golf course and nature more than Japanese. Besides, associations of golf, such as R & A, US Golf Association, etc., have closely relationship to environment protection groups.²⁰⁾ Also these groups are aiding environment investigation with the fund.

Some reports on environment issues at golf courses in the Europe and America are introduced to Japan. For example, ecological weeding was executing instead of the way of depending on the herbicide in the Camoustie Golf Course of the British Open in 1999.⁹⁾ Forty five to fifty grams per square meters along with the nitrogenous fertilizer was being used as herbicide at the end of the spring. After that, the Camoustie was reported in case of being the

weeding having to do with an ecology to spray a herbicide on very rarely only with the spot. Another report introduced that ten percent of whole golf courses in Europe do not use agricultural chemicals.²³⁾ The magazine "Golf Course Management" in America is introducing practical cases of reducing agricultural chemicals and weeding having to do with an ecology to be done at golf courses. Also the magazine shows useful research data carried out by universities and research institutes.

3. The Beginning of Ecological Ideas in Japan

There are more than 2,400 golf courses in Japan. A golf course is space at lawn colored by green. A golf course should be developed to co-exist with the surrounding environment. But according to many reports about golf course development and agricultural chemical pollution in Japan, it is difficult to say that the quality of the surrounding environment is given adequate consideration when courses are constructed.

There is a word, "stewardship", in arguments about environmental issues. "Stewardship" refers to a butler, entrusted with management of a manor. Human similarly have been entrusted to manage this world that God made, to make it more productive.¹²⁾ Similarly, the word, "sustainability", means to use effectively, without destroying the environment. We frequently see the words, stewardship and sustainability, not only when discussing environmental issues, but also when referring to management ethics.

Although there were few articles about ecological ideas in the past, we could find the management of golf courses referred to along with the terms "stewardship" and "sustainability" in a article as early as 1990. Morioka used terms such as "the environment preservation-type golf course" in his article, titled "The Development of the Golf Course and the Environmental Problem".⁷⁾ He insisted in his article that an ecological point of view is vital for golf course management. Environmental protection groups and golf courses should make a cooperation "trust" and take on this management process

together. This was the first time that a Japanese article had featured this idea and the term “the environment preservation-type golf course” based on an ecological point of view. The ideas of “stewardship” and “sustainability” were already apparent in the articles.

4. Economy versus Environment

From an economic aspect, the development of courses during the Bubble Economy era (1986–91) was called as being “environment destruction-type development”.²⁾ One of the outcomes of the financial crisis after the Bubble Economy was seeing that the destructive large-scale development of the environment was not a profitable business. Many financial institutions and big corporations invested heavily in such destructive large-scale development. A lot of commentaries on the Bubble Economy explain that Japan aimed for the economy to grow, while at the same time, virtually ignoring all environmental safeguards. The development investment of public entities and the policy of the government created a huge financial deficit and back debt. This situation made the growth of the economy hazardous and left existing corporations in critical condition.

In other words, the government and the financial institutions invested funds in speculative corporations rather than profitable corporations because of the principle of lender responsibility. Many speculative corporations developed golf courses in this era. However, speculative corporations could not return outstanding debt after the Bubble Economy ended. Subsequently, they did not have enough finance for capital expenditure on environmental maintenance. Many golf course developers were also responsible for widespread environmental destruction.

Corporations that aim at profit usually consider returning debt. Incidentally, corporations that do profitable business during and after returning the principal and interest. This is the image of the corporation in terms of the conventional capitalism economy. However, in case of golf course development in the Bubble Economy era, the deposit was not only from the bank and the golf course purveyed a fund by membership. This made a new

type of corporation that is different from the basic character of the capitalism economy.

5. Environment Guideline by the Governments

Japan has the highest consumption rate per hectare of agricultural chemicals in the world. In particular, agricultural chemical consumption in a golf course is excessive. The Ministry of Health and Welfare established the Standard of Water Quality Guideline in 1990. Also, the Japan Environment Agency also reevaluated the Water Quality Environment Standard in 1993. At present, the standards for use of insecticides, bactericides and herbicides including 30 kinds of agricultural chemicals are set by the Environment Agency.²¹⁾ The Ministry of Health and Welfare continues to police agricultural chemical through the Environment Agency. Most of the administrative divisions of Japan fix an agricultural chemical measure and then regular assessment is obligatory.

To stop the growth of weeds, a great deal of agricultural chemicals for sward and trees are used since high temperatures and humidity promote rapid plant growth. Many golf courses are located near rivers as water sources because Japan’s land is mostly mountainous. Therefore, the outflow of agricultural chemicals from golf courses is a large problem. Although there has been no report of direct damage to humans, cases of large quantities of fish found dead in rivers near golf courses have been reported in Japan.¹⁸⁾

Generally, these issues are regarded as either water pollution by spraying manure and herbicide to raise a lawn, or air pollution by evaporating agricultural chemicals.¹⁾ Issues about water pollution are reported more frequently than air pollution.^{6) 17) 19)} Recently, herbicide use has been focused upon in agricultural chemicals use at golf courses. Therefore, the Environment Agency has specified suitable amounts of Asulam, Simazine, MBPMC, and so on for use as herbicides. The Water Quality Preservation Bureau of the Environment Agency notified administrative divisions of all prefectures in “The Temporary Guidelines” for prevention of water

pollution by agricultural chemicals used at golf courses.⁵⁾

On the other hand, it is pointed out that Asulam has been identified as an endocrine disrupter. Although they are not on the list of the Environment Agency, a lot of endocrine disrupters such as MCP, NIP, Atrazine, etc., are contained in herbicides often used at golf courses. The Environment Agency and the Ministry of Health and Welfare have only provided a guideline to golf courses, however such a guideline is not regulated by law. The regulations of using these agricultural chemicals without penal codes provided different ideas for local autonomies and golf courses.

6. Recent Ecological Ideas in Japan

“Golf Course Management and Maintenance Magazine”²⁾ of Japan Golf Digest, Inc., is the special purpose magazine which is widely read by managers and maintenance persons at golf courses. The contents of the magazine are edited management advices of consultants, reports of investigations and statistics, introductions of new methods in the golf course maintenance such as fertilization, weeding, irrigation facilities and so on.

There are articles about weeding having to do with ecology in the Magazine. But most of the articles are introductions of cases of Scotland and the United States. There is not much discussion about positive effort to the environment preservation. This kind of discussion is often postponed from the present situation.¹⁶⁾ But some corporations are to have more information and knowledge about ecological weeding, endocrine disrupter and standard of use agricultural chemistry than the golf course. These information and knowledge are very expensive and do not easily spread to golf courses.

The decision-making whether or not to use the conventional style of herbicide or the new style of weeding with ecological idea is the discretion by each manager of the golf course in Japan, depending on the climate and condition of location, the work load, the management size, the management expenses and so on. This decision is not referred to any evaluation of an organization outside the golf course, such as

nature conservation group. The decision makes arrangements to suite its own convenience. There is no evaluation system by the conservation groups for golf courses in Japan.

For example, the Greenery Golfers Group, Corporation was established in 1976 in Japan. Planting trees business has been developed by the fund of golfers. The business is done in the place other than golf courses. It is not used for the golf course and the natural environment. The Japan Ministries authorize the qualifications of the Lawn Grass Management Technician and the Green Safe Management Engineer and so on. Their professions are to use and management agricultural chemicals. Their roles are to pursue a surface having to do with ecology.

At the present, the knowledge that we can use is limited, to evaluate the various influences that a golf course gives to the environment and local community.¹³⁾ To say limited to agricultural chemicals, research is hardly going ahead and the many problems are still left.¹⁴⁾ The nature that is left now is all the Japanese nation's properties. Not only administration but also people should sufficiently pay attention to environment around golf courses and to watch harmony with ecology and golf facilities based on the long-term view in hundred or fifty years.

7. Conclusion

Three kinds of inter-related environmental problems were summarized through studying the articles. The first is environmental disruption by the construction of golf courses, especially during so called “Bubble Economy” era. The second is water pollution caused by agricultural chemicals flowing out from golf courses. The last environmental problem is the fact that golfers and organizations such as the Japan Golf Association are not fully aware of the natural ecosystem in the area of a golf course. Moreover, there is no advisory service or system about the conservation of wildlife and nature for Japanese golf courses. Therefore, we can recognize that we should immediately cooperate to solve the above problems with each other.

However, agricultural chemicals still continue to

flow out from most golf courses in Japan, which include environmental hormones. Even though the Japan Ministry of Environment sets the environmental standards for agricultural chemicals and gives information about how to use chemicals in golf courses, legal compulsion of the Agency is not strong enough to prevent water pollution.

For the golf courses to continue for good as our nature and cultural inheritance, the fact to understand and to evaluate the mutual relation of the golf course and the environment can be called the important and urgent problem. For example, the investigation and the evaluation in the natural environment and the ecology of the wildlife surrounding the golf course are needed by the professional non-profit organizations.

Recently, the boom in golf course constructions has faded because of economic depression so that the amount of the environmental disruption has been reduced. There is no speculative corporation that develops golf courses. Therefore, financial institutions and big corporations do not invest in destructive large-scale development. On the other hand, the value of golf as a lifelong sport has been recognized rather than the object of investment. We should think golf courses as facilities of playing golf at the same time as we think the management and maintenance of golf facilities, including the stewardship and sustainability.

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Notes

- 1 This paper was corrected with more data, based on the paper¹⁵⁾ of “Natural Environment and Golf Courses in Japan, Japan Journal of Golf Sciences (1999)”.
- 2 The information of this magazine is ahead of the idea of Japanese golf courses in maintenance and management. Most of Japanese golf courses have a subscription of this magazine. Its circulation is about 16,000.
- 3 The titles of the Japanese references were translated by the authors.

日本のゴルフ場における環境マネジメント —エコロジーに関する議論を中心に—

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抄 録

スコットランドのゴルフ場では環境問題を取巻く考え方に、自然の秩序を破壊しない範囲内でより生産的に管理運営してゆこうという「スチュワードシップ (stewardship)」や「サステナビリティ (sustainability)」というものがあり、環境と人々の生活を一体化させた考え方をゴルフ場のメンテナンスに応用してゆく運動が進んでいる。これらの考え方は現代の経営倫理の中にも頻繁に見られる言葉である。一方日本では、多くのゴルフ場が「バブル経済」を通して思惑的な投機や投資の対象となり、その影響から環境面での支出に至っては十分な資金調達やコンセンサスが得られない状況にあった。論点としては、欧米よりは比較的ゆるい規制を携えた環境行政やゴルフ関係者の環境やエコロジーに対する意識が何故低いのかの理由について取上げた。さらに経済、法律、社会学、農業、化学及び市民運動と様々な視点から内容の調査・分析を行い、その結果からゴルフ場に関する環境問題の議論を考察し、経済状況、農薬規制の問題、環境保全の意識の低さ、これら3つの理由としてまとめた。さらに今後の生態系の維持を含めた環境マネジメントのあり方を提示した。

キーワード : 環境アセスメント, スチュワードシップ, サステナビリティ, 日本のゴルフ場

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