Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 14, 3rd edition). A 4th edition of the Handbook is in preparation and will be available in 2009.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

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DD MM YY | Designation date | Site Reference Number

2. Date this sheet was completed/updated:

June 14, 2012

3. Country:
JAPAN

4. Name of the Ramsar site:
The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Tokai Hilly Land Spring-fed Mires

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only)**:**
a) Designation of a new Ramsar site ☑; or
b) Updated information on an existing Ramsar site ❑

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged: ❑

or
If the site boundary has changed:
i) the boundary has been delineated more accurately ❑; or
ii) the boundary has been extended ❑; or
iii) the boundary has been restricted** ❑

and/or

If the site area has changed:
i) the area has been measured more accurately ❑; or
ii) the area has been extended ❑; or
iii) the area has been reduced** ❑

** **Important note**: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

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7. Map of site:
Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i**) a hard copy** (required for inclusion of site in the Ramsar List): ☑;

ii**) an electronic format** (e.g. a JPEG or ArcView image) ☑;

iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** ❑.

b) Describe briefly the type of boundary delineation applied:
e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

Considering the area of special district, Quasi-National Park, this site is divided according to the catchment areas. This mentioned site is composed of six small cluster wetlands, which belong to the respective adjacent catchment areas under the same Yahagi River system.

In addition, these small wetlands are situated on the granite soil, nearby the strata of Tokai Group which had been accumulated from the Miocene to the Pleistocene epochs and all of these small wetlands are established by the seepage of water flowing in such strata as the gravel layer to the slope and denuded land. Accordingly, these sites share the common formation process.

Formerly, there had been a number of spring-fed mires in this area and many of the plants are the local endemics at each respective wetland. Consequently, it is considered that this range of cluster wetlands as a whole, has formed a meta population. However, with the land development activities, currently many similar surrounding wetlands have sharply been disappeared or declined and conditions of these six small wetlands have well been conserved.

Accordingly, conservation measures of these cluster wetlands are developed as a whole and the site area which is to be designated this time, was also designated as special district, the Class 2, Aichi Kogen Quasi-National Park.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):
Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

Yanami Wetland : 137.216366° E, 35.083808° N
Kamitaka Wetland : 137.241777° E, 35.121228° N
Onshinnji Wetland : 137.246025° E, 35.117694° N

9. General location:
Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

This site is situated in Aichi Prefecture which is located almost at the centre of Japan. This site is about 25 km from Nagoya City which is the prefectural capital (population: about 2,266,000, surface area: about 326 square km) and 5 km north east from the urban areas of Toyota City. (Toyota City, population: about 423,000, surface area: 918.5 square km)

10. Elevation: (in metres: average and/or maximum & minimum)
All of them T.P. (Average tidal level of *Tokyo* Bay)
T.P. (Basic surface water level to be the reference point for the land height above sea level in Japan)

Yanami Wetland: max. 168m; min. 111m
Kamitaka Wetland: max.244m; min. 190m
Onshinnji Wetland: max.254m; min 194m

11. Area: (in hectares)

Yanami Wetland : 5.13ha (western site : 3.45ha, eastern site : 1.68ha)
Kamitaka Wetland : 5.45ha (northern site: 1.31ha, south eastern site : 1.96ha, south western site: 2.18ha)
Onshinnji Wetland : 11.92ha

Total : 22.50ha

12. General overview of the site:
Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

This wetland consists of a cluster of six small oligotrophic spring-fed mires at an elevation of 100-300m in the central part of Honshu, the main island of Japan. Although the mires occur in three main areas (Kamitaka, Onshinji, and Yanami) in adjacent catchments, they are hydrologically linked because of underground seepage from the Yahagi River system. The mires

at the site are representative examples of such wetland types that once used to be common in the biogeographic region but have since been lost due to development.

The site also supports a diversity of rare and endemic plant species that are adapted to the oligotrophic conditions. These include a number that are locally called 'Tokai Hill Land Elements' because they have their main distribution at the site.

In the nearby surrounding areas are secondary forests of Japanese red pine *Pinus densiflora* and Konara oak *Quercus serrata* are

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13. Ramsar Criteria:

Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1	2	3	4	5	6	7	8	9
☑	☐	☑	☐	☐	☐	☐	☐	☐

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14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criteria 1

The site is composed of a cluster of six small spring-fed mires which although belonging to adjacent catchment areas, are all connected by the same Yahagi River system due to the seepage of water flowing in the strata of the Tokai Group that formed between the Miocene and Pleistocene. As a result of land development elsewhere, these are the only remaining spring fed mires that are still in good condition and are representative of such type of wetlands in the Japanese Evergreen Forest biogeographic region. The clusters of wetlands are currently well conserved and protected under national law.

Criterion 3

This wetland is important in the biogeographic region for supporting many rare and endemic plant species that are adapted to the oligotrophic condition at the site (see section 21). These include a number that are locally called 'Tokai Hill Land Elements' because they have their main distribution only at the site. These include 'Shiratama-hoshikusa' *Eriocaulon nudicuspe*, 'Mikawa-shiogama' *Pedicularis resupinata* var. *microphylla* and 'Tokai-komousengoke' *Drosera Tokaiensis*.

At the same time, diversified species including a notable disjunct distribution, such species as *Inula ciliatris,* a northern hemisphere species, and *Utricularia bifida*, a tropical species are observed. Habits of these species are found intensively.

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15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Japanese Evergreen Forest

b) biogeographic regionalisation scheme (include reference citation):

Udvardy, M. D. F. (1975). *A classification of the biogeographical provinces of the world*. IUCN.

16. Physical features of the site:
Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Geology :
Granite matrix

Geomorphology :
Hilly land surrounded by mountainous regions

Soil type :
Granite matrix, sand, gravels, non peaty soil (organic constituent and soil pH are unmeasured)

Origins :
Natural spring water

Hydrology :
More than constant amount of spring water throughout the year, and increase of inflow and outflow at the time of rain

Water quality :
pH6.7-7.5, EC3.2-5.8S/m

Water depth :
0.3m (average)

Fluctuations in water level:
Approximately constant, but temporary increase at the time of rainfall

General climate:
Annual precipitation, 1,666 mm; annual mean temperature, 15.2 degrees Celsius (average by Toyota observatory of the Japan Meteorological Agency, 2011)

17. Physical features of the catchment area:
Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

Surface area:
62 ha.
[87,189m^2 (Yanami); 64,971 m^2 (Kamitaka); 119,827m^2 (Onshinji)].

General geology and geomorphological features:
As for the geology surrounding Tokai Hilly Land Spring-fed Mires, granite and metamorphic rocks are widely distributed at the mountain and besides, hilly land regions and unsolidified deposits such as sand, gravels, clay, and silt are thickly deposited on alluvial lowlands on the plains.

General soil types:
Weathered granite soil.

General land use:

Forest.

General climate:
Pacific Ocean coast climate.
Annual precipitation, 1,666 mm; annual mean temperature, 15.2 degrees Celsius.

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18. Hydrological values:
Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.
Flood control

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19. Wetland Types

a) presence:
Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • (Tp) Ts • U • Va • Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:
List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.
Tp

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20. General ecological features:
Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

Yanami Wetland:
Harbaceous plant communities of *Eriocaulon* (Pipeworts) and *Rhynchospora fujiana* are dominant.

Kamitaka Wetland and Onshinnji Wetland:
Both herbaceous plant communities of *Eriocaulon* (Pipeworts) and *Rhynchospora fujiana* and temperate forests mainly consisting of *Magnolia stellate* (Star Magnolia) are present. Both of them are oligotrophic spring-fed mires.

In addition, as for ecosystem services, Yamani wetland partly used to be rice paddies. Forests in the catchment of wetlands including Kamitata and Onshinnji are used to be fuel wood forests.

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21. Noteworthy flora:
Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS*.

Endemic species and species in disjunct distriribution inhabiting in this region:
Pedicularis resupinata subsp. Oppositifolia var. microphylla, IUCN -, EN*1, EN*2, *3, *4
Veratrum stamineum var. micranthum, IUCN -, VU*1, EN*2, *3
Eriocaulon nudicuspe , IUCN -, VU*1, VU*2, *3

Magnolia stellata (*tomentosa*)(Star Magnolia), IUCN -,VU*1, VU*2, *3, *4
Eulalia speciosa, IUCN -, VU *1, NT*2, disjunct distribution*3
Berberis sieboldii.(Berberis), IUCN -,NT*2, *3
Symplocos paniculata, IUCN -,*3,
Drosera tokaiensis, IUCN -,*3, *4
Agrostis valvata, IUCN -, NT*1,*3
Inula ciliaris, IUCN -, NT*2, Endemic species in Japan
Utricularia bifida, IUCN -, disjunct distribution

Endangered species:
Blyxa aubertii : IUCN -, VU*1, EN*2
Trap incisa: IUCN -, VU*1, EN*2
Leucanthemella liinearis: IUCN -, VU*1, CR*2
Habenaria sagittifera: IUCN -, VU*1, VU*2
Platycodon grandiflorus (Balloon Flower): IUCN -, VU*1, NT*2
Pogonia japonica: IUCN -, VU*1, EN*2
Habenaria radiata:(White Egret Flower): IUCN -, VU*1, VU*2
Sagittaria aginashi: IUCN -, NT*1,
Pogonnia minor (Makino)Makino: IUCN -, VU*2
Ultricularia aurea (Golden Bladderwort): IUCN -, VU*2

*The IUCN Red List of Threatened species
LC: Least Concerned
*1 Red List of Threatened Wildlife of Japan, Ministry of the Environment
*2 Red List of Threatened Wildlife of Japan, Aichi Prefectural Government
CR: Critically Endangered, EN: Endangered, VU: Vulnerable: NT: Near Threatened
*3 Tokai Hilly Land element: Endemics and sub-endemics inhabiting in the marshes developed in hilly land, plateau, and terrace in Tokai district or taxonomic group of disjunct distribution
*4 Endemic species in Tokai district

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22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS*.

Mammals
Micromys minutus (Eurasian Harvest Mouse), IUCN -, VU*2

Birds
Pericrocotus divaricatus (Ashy Minivet), IUCN LC*, VU*1, NT *2
Cuculus saturates Blyth(Oriental Cuckoo), IUCN -, NT*2

Amphibians
Cynops pyrrhogaster (Japanese Fire Belly Newt), IUCN -, DD*2
Rana ornativentris Werner (Montane Brown Frog), DD*2

Fish
Lefua echigonia Jordan et Richardson, IUCN -, EN*1, VU *2

Insects

Leptelmis gracilis Sharp, IUCN -, CR+EN *1, NT *2
Appasus japonicus (Ferodious Water Bug): IUCN -, NT*1
Nepa hoffmanni Esaki: IUCN -, NT*2
Aquarius elongates: IUCN -, NT*2

*The IUCN Red List of Threatened species
LC: Least Concerned
*1 Red List of Threatened Wildlife of Japan, Ministry of the Environment
*2 Red List of Threatened Wildlife of Japan, Aichi Prefectural Government
CR: Critically Endangered, EN: Endangered, VU: Vulnerable: NT: Near Threatened, DD : Data Deficient

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23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

The forest in the catchment area had once been used as fuel wood forest and had been supporting the livelihood of "Satoyama" community. Also, this kind of human activities to use wood for fuel had held forest-succession and potent effect as the watershed protection forest. Because of this kind of disturbance by human activities, wetlands in this area had also been maintained.

In addition, the wetland possesses the function as a reservoir and that function supports the agriculture carried out in the down stream (especially e.g. rice paddy). Moreover, this function had the value for supporting the cultures including the local festival and beautiful "Satoyama" landscape which can be regarded as uniquely Japanese.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?
None

If Yes, tick the box ❑ and describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

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24. Land tenure/ownership:
a) within the Ramsar site:

Public land (Toyota City): 5.13ha

Private land: 17.37ha

c) in the surrounding area:

Private land

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25. Current land (including water) use:
a) within the Ramsar site:

Environmental education, recreation, part of historic site

b) in the surroundings/catchment:

Forests, agriculture and forestry, housing

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26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:
a) within the Ramsar site:

Past :
The area had been used as rice paddies. However, in recent years, it was abandoned and sustainable maintenance and management had not been carried out since then.

Present :
Currently, as the use as rice paddies is abandoned, land ownership by the local city and its management in collaboration with the local community are in process. Accordingly, there is no special factor to cause negative impact.

Potential:
In future, when this area is designated as Ramsar site, improvement of facilities etc. will be carried out to promote more constant wise use by the support of local administration. No special cause for negative influence is in prospect.

b) in the surrounding area:

Past:
Surrounding areas are sustainably used as rice paddies and fuel wood forests. However, in recent years, the area management is not carried out at some parts. Because of this, overgrowth of bamboo forests are observed.

Present:
Even excepting the area for the use and management as rice paddies and mountain forests for fuel, conservation management is carried out by local citizens and there are no factors of adverse effect.

Potential:
Current use as rice paddies and mountain forests for fuel is planned to be continued and no negative effect is foreseen.

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27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:
In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

Quasi National Park, Class 2, Special District (National Parks Law)

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ❑;Ib ❑; II ❑; III ❑; IV☑ ; V ❑; VI ❑

The desigrantion as Quasi National Park is to promote the main purpose of conservation of endangered fauna and flora and excellent natural environment such as these wetlands. It is also its objective to conserve the biodiversity in view of landscape and in this region, such activities as erecting structures, felling trees, collecting plants and animals etc. are regulated.

c) Does an officially approved management plan exist; and is it being implemented?

Tokai Hilly Land Spring-fed Mires (Yanami Wetland, Kamitaka Wetland, Onshinji Wetland, etc.) Conservation plan was developed in March, 2011 and its implementation was put into effect from April of the same year

d) Describe any other current management practices:
Maintenance and management work by the collaboration of local wetland conservation organizations, local communities, and Toyota City.
In order to eliminate shrubs to prevent dryness and to inspect facilities (e.g. footpaths) management work is carried out.

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28. Conservation measures proposed but not yet implemented:
e.g. management plan in preparation; official proposal as a legally protected area, etc.

None

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29. Current scientific research and facilities:
e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

None

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30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:
e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Toyota City Nature Sanctuary provides observation hides, nature trails, nature centre etc. and CEPA activities are being carried out.

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31. Current recreation and tourism:
State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Yanami Wetland: open to the public twice a year
(In 2011, it was carried out once in autumn for three days. Participants numbered 1,034. There were shuttle buses to guide participants to surrounding facilities accompanied by local guides of regional conservation associations.)

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32. Jurisdiction:
Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Territorial jurisdiction:
Toyota City

Functional jurisdiction:
Ministry of the Environment (Quasi National Park, Class 2, Special District)
Aichi Prefecture (Quasi National Park, Class 2, Special District)

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33. Management authority:
Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

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34. Bibliographical references:
Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

Fujiwara, 1979, Moor vegetation in Japan with special emphasis on *Eriocaulo-Rhynchosporion fujiianae*, Vegeration und Lnadschaft Japan. Bull. Yokohama Phytosoc. 16, 325-332

Iwatsuki, Kunio, David E. Boufford and Oba, Hideaki (Eds.), 2006, Flora of Japan, Vollume II a 44-55, Kodansha LTD., Tokyo

Japan Meteorological Agency, Information on meteorological statistics (Toyota City, Aichi Prefecture) (http://www.data.jma.go.jp/obd/stats/etrn/view/annually_a.php?prec_no=51&prec_ch=%E6%84%9B%E7%9F%A5%E7%9C%8C&block_no=0464&block_ch=%E8%B1%8A%E7%94%B0&year=2009&month=&day=&elm=annually&view=)

Senuma, 1998, "Marsh vegetation in Mino-Mikawa district"

Tomita, Keisuke, 2012, " History of the relationship between the people concerned with spring-fed mires and the nature", case in Yanami Wetland, Aichi Prefecture", "Chirigaku-hyoron" 85: 105

Toyota City,Conservation Plan of Tokai Hilly Land Spring-fed Mires (Yanami Wetland, Kamitaka Wetland, Onshinji Wetland etc.)

Ueda, Kunihiko, 1989, Phytogeography of Tokai Hilly Land: I. Definition

Ueda, Kunihiko, 1990, "Sidekobushi –no-tadotta-michi (The road followed by *Magnolia stellata*)", Puranta 7:77-81

Ueda, Kunihiko, 1994, "Natural History of Plant", pp3-8, Hokkaido University Press, Sapporo

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