

# Information Sheet on Ramsar Wetlands (RIS) – 2006-2008 version

Available for download from [http://www.ramsar.org/ris/key\\_ris\\_index.htm](http://www.ramsar.org/ris/key_ris_index.htm).

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

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

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Designation date

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Site Reference Number

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## 2. Date this sheet was completed/updated:

17 August, 2008

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## 3. Country: Japan

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## 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.

Streams in Kume-jima

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## 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

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## 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.

Boundary of the Management Zone of Uegusuku Kikuzato's Stream Snake Habitat Conservation Area.

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**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.

26°22' N, 126°46' E

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**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.

Kumejima Town, Okinawa Prefecture

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**10. Elevation:** (in metres: average and/or maximum & minimum)

T.P. (medium tidal level of Tokyo Bay) Maximum 280 m, Minimum 120 m

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**11. Area:** (in hectares)

255 ha

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**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 site mainly consists of streams that flows from Mt. Uegusuku in the northwest Kume-jima (island) and the surrounding wetland and forest.

As the plant community in Mt. Uegusuku including *Castanopsis sieboldii* ssp. *lutchuensis* is well developed, streams of good-quality water run all through the year and create an important habitat of rare species such as Kikuzato's stream snake (*Opisthotropis kikuzato*).

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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

#### 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).

##### Criterion no 2:

This site serves as habitats for the critically endangered species and endemic to Kume-jima such as Kikuzato's stream snake (*Opisthotropis kikuzatoi*) and Kumejima Firefly (*Luciola owadai*), as well as many Ryukyu Islands' endemic species and subspecies, such as Ryukyu black-breasted leaf turtle (*Geoemyda japonica*; IUCN Endangered species), a subspecies of Kuroiwa ground gecko (*Goniurosaurus kuroiwaie yamashinae*; IUCN Vulnerable species) and Ryukyu Brown Frog (*Rana okinavana*; IUCN Endangered species), and it forms Kume-jima's original ecosystem. Especially, Kikuzato's stream snake, being the only aquatic snake species in Japan, has high academic values in ecological, genealogical and biogeographical aspects. They only inhabit in the limited mountain streams in Kume-jima including this site, and their population is presumed to be quite small, thus they are classified as critically endangered by IUCN. Ryukyu Islands including Kume-jima are divided into the Palaearctic Realm in the north and the Indomalayan Realm in the south, by Watase's Line located between Akuseki-jima and Kodakara-jima within Tokara Islands. Kume-jima belongs to the Indomalayan Realm.

Kikuzato's stream snake is endemic to Kume-jima, which is quite far away from the distribution of closely-related species in the same genus in the Indomalayan Realm, making Kume-jima the north-eastern end of the distribution of the genus. Specifically, other species of the genus *Opisthotropis* are distributed in the south-eastern part of China and north-eastern part of Indochina Peninsula, but they are not confirmed in Taiwan, Miyako Islands and Yaeyama Islands that lie between those areas and Kume-jima. This is presumed to be the result of constant marine transgression and regression cycle in the last million and a few hundreds of thousand years, which lead to the extinction of the population in the surrounding islands and the fortuitous survival of Kume-jima population.

The list below indicates those categorized as VU or higher risk on the IUCN and/or Japan Red Lists.

Species	IUCN status <sup>1</sup>	Japan Red List <sup>2</sup>	Species Conservation Law <sup>3</sup>	CITES Appendix I
<b>Birds</b>				
Ryukyu Robin ( <i>Eriothacus komadori komadori</i> )	NT	VU	Yes	
Amami Woodcock ( <i>Scolopax mira</i> )	VU	EN	Yes	
Grey-faced Buzzard ( <i>Butastur indicus</i> )	LC	VU		
Peregrine Falcon ( <i>Falco peregrinus japonensis</i> )	LC	VU	Yes	Yes
<b>Reptiles</b>				
Kikuzato's stream snake ( <i>Opisthotropis kikuzatoi</i> )	CR	CR	Yes	
Coral snake ( <i>Sinomicrurus japonicus takarai</i> )	-	VU		
Ryukyu black-breasted leaf turtle ( <i>Geoemyda japonica</i> )	EN	VU		
Subspecies of Kuroiwa ground gecko ( <i>Goniurosaurus kuroiwaie yamashinae</i> )	VU	CR		
Barbour's blue-tailed stink ( <i>Eumeces barbouri</i> )	-	VU		
Okinawan tree lizard ( <i>Japalura</i> )	-	VU		

<i>polygonata polygonata</i> )				
<b>Fish</b>				
“Ruri bouzu haze” ( <i>Sicyopterus lagocephalus</i> )	-	EN		
“Kibara yoshinobori” ( <i>Rhinogobius</i> sp.)	-	EN		
<b>Crustaceans</b>				
“Kumejima oo sawagani” ( <i>Geothelphusa Kumejima</i> )	-	VU		
“Kumejima minami sawagani” ( <i>Candidiopotamon kumejimense</i> )	-	VU		
“Aramoto sawagani” ( <i>Geothelphusa aramotoi</i> )	-	VU		
<b>Insects</b>				
“Kuroiwa zemi” ( <i>Muda kuroivae</i> )	-	VU		
Kumejima Firefly ( <i>Luciola owadae</i> )	-	VU		
<b>Arachnids</b>				
“Kume koshihiro zatoumushi” ( <i>Parabeloniscus shimojanai</i> )	-	VU		
<b>Mollusks</b>				
“Sakazuki nomi giseru” ( <i>Selenozaptyx inversiluna</i> )	-	VU		
“Kadomaru urokoke maimai” ( <i>Aegista lepidophora scutifera</i> )	-	VU		
“Ryuukyu hidarimaki maimai” ( <i>Satsuma perversa</i> )	-	VU		
“Omoro yamataka maimai” ( <i>Satsuma omoro</i> )	-	VU		
“Kumejima maimai” ( <i>Satsuma mercatoria Kumejimaensis</i> )	-	CR+EN		

<sup>1</sup> = IUCN Red List of Threatened Species

<sup>2</sup> = Red List of Threatened Wildlife in Japan. Ministry of the Environment.

<sup>3</sup> = Designated under the Law for Conservation of Endangered Species of Wild Fauna and Flora (Species Conservation Law)

(Abbreviations: CR = Critically endangered; EN = Endangered; VU = Vulnerable; Yes = noted as a Domestic Endangered Species)

**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:**

4. 27. 12 Taiwan  
Indomalayan Realm

**b) biogeographic regionalisation scheme** (include reference citation):

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

### 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.

Climate: Subtropical climate with narrow annual range of temperature. Average yearly temperature is 22.4°C. Average yearly humidity is 76.0%. Annual rainfall is 2176.6mm. The precipitation is concentrated to the rainy months (mid-May to late June) and typhoon season (August).

Geology: Mainly consists of andesite and tuff of mid through late Pliocene epoch.

Geography: High or low reliefs. The area surrounding the site is relatively steep.

Type of soil: Dry or wet, non-basic Dark Red Soil (dDR)

Origin: Natural

Hydrological feature: There are more than 40 middle and small scale streams that originate in Mt. Uegusuku. Approximately 30% of them are surface stream for the entire length, and the other 70% are partly or entirely flowing underground and appear as spring water in downstream. Also, seasonal and irregular streams appear in the forest as the rain fall. The south slope of Mt. Uegusuku is relatively gentle compared to the north slope, and the streams on the south slope converge to become Shirase River (the longest river on the island) and Urachi River.

Water quality: Temperature: 5.0 to 21.5 °C. BOD: generally less than 0.5. SPRS: 22 to 440

Water depth: Generally less than 50cm

Fluctuation of water level: The water levels of permanent small and middle scaled streams change on a large scale according to the precipitation.

### 17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

Ditto

### 18. Hydrological values:

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

The forest community in the site has experienced relatively little human intervention, and serves to protect watershed and control flood.

The high amount of dissolved oxygen and the good quality of water in the streams make this site inhabitable for various organisms.

### 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.

Inland wetland

M, N

**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.

Biological feature: This site consists mainly of a mixed forest dominated by *Psychotria rubra* - *Castanopsis sieboldii* ssp. *lutchuensis* and *Pinus luchuensis* with relatively little human intervention and of a number of small and medium scaled streams that run through the forest.

Services from the ecosystem:

1. Purifying water and air
2. Controlling flood and water discharge
3. Controlling soil erosion and sediments
4. Formulating topsoil and maintaining soil fertility
5. Accumulation and circulation of nutrients
6. Providing outdoor recreational opportunities
7. Providing habitat for endemic and rare wildlife

The site includes the following species: “Kobanmochi” (*Elaeocarpus japonicas*), “Shishiakuchi” (*Ardisia quinquegona*) “Adeku” (*Syzygium buxifolium*) etc.

**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.*

The *Psychotria rubra* - *Castanopsis sieboldii* ssp. *lutchuensis* community and the *Pinus luchuensis* community are developed in the site. Particularly, the *Castanopsis sieboldii* ssp. *lutchuensis* community around Mt. Oh and Mt. Uegusuku is designated as one of the Specific Plant Communities for its academic importance.

The below species are used as dye for Kume-jima pongee (cloth), which is an indigenous product of Kume-jima.

Yeddo-hawthorn (*Rhabdialepis indica* var. *Umbellata*) “Nakaharakuroki” (*Symplocos nakaharae*)  
China Root (*Smilax china*)

**22. Noteworthy fauna:**

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12, 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.*

Japanese Wood Pigeon (*Columba janthina janthina*) (listed as NT on IUCN and Japan Red Lists)

Bullfrog (*Rana catesbeiana*) (alien species)

Bluegills (*Lepomis macrochirus*) (alien species)

**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:

- Liquor is produced from stream water that runs from the site.

- Kume-jima pongee, which is soft thin woven cloth, is one of the Intangible Cultural Properties which uses Yeddo-hawthorn (*Rhaphiolepis indica* var. *Umbellata*), barks of “Nakaharakuroki” (*Symplocos nakabarae*) and roots of China Root (*Smilax china*) that grow naturally around the area as colorants.
- Ruins of Uegusuku Castle in the site are designated as Okinawa Prefectural historical site.

**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?

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:

It is said that forest remains unexploited around Mt. Uegusuku since it was once a sanctuary where *Aji* (feudal lord that governed the district) lived.

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**24. Land tenure/ownership:**

- a) within the Ramsar site: Public land 251.5ha, private land 3.5ha
- b) in the surrounding area: Public land, private land

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**25. Current land (including water) use:**

- a) within the Ramsar site:  
The area encompasses bare grounds and park facilities in some parts. Water from part of the rivers is transmitted through hoses for agriculture, livestock breeding or daily life.
- b) in the surroundings/catchment:  
The publicly owned land (Kumejima Town) mostly consists of mixed forests of *Psychotria rubra*, *Pinus luchuensis*, etc., with relatively little human intervention whereas private land mostly consists of croplands such as sugarcane fields and pineapple fields, grass pastures and residential districts.  
There are some large and small dams in the downstream to intake water for domestic and agricultural use, as well as for brewing industry.

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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:
  - Deterioration of the mountain stream environment due to developments.  
Mantle communities at the edge of the forest are not well-formed near the developed areas such as croplands and grass pastures because of human disturbances. There are some bare grounds due to excessive underbrush clearing. This could lead to aridification of the wetland or red soil flowing into the wetland. Red soil that has run off the land will be piled up at the bottom of the streams which is

believed to be a factor for the decreased number of species and population of aquatic organisms such as Kumejima Firefly larvae, freshwater crabs, tadpoles and shrimps. There is a concern that the population of predators such as Kikuzato's stream snake, which feed on these aquatic organisms, will also decrease.

- Decrease of stream flow due to water withdraw and Kikuzato's stream snake's accidental entry into the intake hoses.  
Some individuals and communities use hoses to withdraw water from some streams for agriculture, livestock breeding or daily life. Due to the little amount of water in the stream in the first place, water withdraw is causing a notable reduction in flow, and the deterioration of habitat is a concern. As most hoses have no measures to prevent snakes from entering, Kikuzato's stream snakes are sometimes found and taken into custody (or found dead) in the downstream far away from their original habitat.
- Disruption by Invasive Alien Species.  
Bullfrogs (*Rana catesbeiana*) and Bluegills (*Lepomis macrochirus*), are both found at the site and are designated as Invasive Alien Species under the Invasive Alien Species Act. These species potentially disrupt the ecosystem of the site and the surrounded area, and may threaten rare and endemic species of Kume-jima.
- Disturbance to stream environment from gusty heavy rain and floods due to steep landscapes.  
Stream flow and speed will drastically increase at times of gusty rains like typhoon due to the steep stream landscape. Aquatic organisms like Kikuzato's stream snake are sometimes washed down far away from their original habitat.

b) in the surrounding area:

ditto

## 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.

The entire area is designated as Management Zone of Uegusuku Kikuzato's Stream Snake Habitat Conservation Area (Law for the Conservation of Endangered Species of Wild Fauna and Flora) since June 15, 1998:

It is required to obtain permission from the Minister of the Environment for modifying the land such as installing, renovating, or extending artificial structures, reclaiming, mining, land-filling, modifying water level and flow of water bodies, and logging.

**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

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

- 'Guidelines for protection in the designated area' of the 'Uegusuku Kikuzato's Stream Snake Habitat Conservation Area' has been formulated under the Law for the Conservation of Endangered Species of Wild Fauna and Flora.
- A park plan was formulated under the Okinawa Natural Parks Ordinance.
- Okinawa Prefecture Environment Management Plan was formulated in 1994 and 'Guidelines for conservation of natural environment' was formulated in 1998 based on the Plan.

The relevant authorities are managing the area based on the above guidelines.

**d) Describe any other current management practices:**

- Three wardens are deployed in Uegusuku Kikuzato's Stream Snake Habitat Conservation Area in order to monitor habitat conditions and illegal activities, to check signs and to raise public awareness on protection.

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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.

Kumejima Nature and Culture Centre and Kumejima Firefly Museum are the facilities owned by Kumejima Town to raise public awareness on Kume-jima's nature, rare species, and so on.

The trail inside the Shirase River Park, along the Lower Shirase River, is sometimes used for environmental education and recreation.

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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.

Approximately 90,000 tourists visit Kume-jima annually, but very few of them visit the site.

Some local organizations in the island such as NPO School of Island or Kumejima Firefly Association conducts events such as nature observation tours for local residents and elementary / junior high school students. However, the use of the site is still low.

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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)

Kumejima Town

(Functional)

Ministry of the Environment (Habitat Conservation Area)

Okinawa Prefecture (Prefectural Natural Park, Prefectural Wildlife Protection Area)

Kumejima Town (Forest Reserve)

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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.

Education Ministry. (1981). *Island Ecology and its Anthropogenic Alteration in Ryukyu Islands*.

Fishery Agency. (1998). *Data book on Endangered Wild Aquatic Organisms in Japan*. Japan Fisheries Resource Conservation Association.

Japan Wildlife Research Center. (2000). *Red Data Book on Endangered Wild Fauna and Flora in Japan (Reptiles and Amphibians)*.

Kumejima Town. (2003). *Kumejima Town Rural Environment Plan*.

Kumejima Nature and Culture Center. (2005). *The third bulletin of Kumejima Nature and Culture Center*.

Kumejima Firefly Association. (2008). *Nature, Treasure and Precious Lives of Kume-jima – Kikuzato's Stream Snake*.

Kumejima Firefly Museum. (2008). *Nature and Small Creature on the Island*.

Kumejima Nature and Culture Center. (2008). *The relationship between the inhabitation of Kumejima Firefly larvae and the red soil runoff analyzed by the water quality surveillance method using the aquatic organisms*. The eighth bulletin of Kumejima Nature and Culture Center. pp. 17-45.

Ministry of the Environment. (2008). *Report on the research on the habitat of Kikuzato's stream snake*.

Ministry of the Environment. (2008). *Report on the research on the natural environment of Kikuzato's Stream Snake Habitat Conservation Area*.

Okinawa Prefecture Board of Education. (1993). *Report on the research of inhabitation of Kikuzato's stream snake*.

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