

March 2019

The ABCs for the Safe and Secure Use of Onsen

What should we be aware of when bathing in onsen (hot springs) and drinking onsen mineral water?

Compiled under the supervision of
the Japanese Society of Balneology,
Climatology and Physical Medicine



環境省

The Ministry of the Environment

Preface

Japan is blessed with abundant onsen, which people of all ages have loved and enjoyed since ancient times.

Contraindications, cautions for bathing and drinking and indications were established in 1949 by the then Ministry of Health and Welfare. Afterwards, the then Environment Agency took charge of administering onsen and revised the contraindications, etc. in 1982. The Ministry of the Environment has recently revised the contraindications, etc. on the basis of the latest medical knowledge and scientific evidence in cooperation with the Japanese Society of Balneology, Climatology and Physical Medicine (General Incorporated Association).

Based on the revised version, the Ministry prepared this leaflet “The ABCs for the Safe and Secure Use of Onsen” in order to help everyone learn more about onsen and understand how to use them safely and securely.

We hope that onsen will become even more valuable for enhancing everybody’s health and leisure activities in the future.

Nature Conservation Bureau, Ministry of the Environment





Cautions
Do NOT bathe in an onsen if you
have hypersensitive skin or a damaged
mucous membrane or if you are elderly
and have dry skin.
(acidic springs, sulphur springs)

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What are the contraindications of onsen?

Contraindications are “diseases or states of illness with a risk of adverse events by even one occasion of bathing in an onsen or drinking the mineral water.”

1 Contraindications – common to all onsen– for bathing

a

Do NOT bathe in an onsen if you are at the active stage of a disease (especially if you have a fever);

Onsen bathing imposes a large burden on your body, so avoid bathing in an onsen when you are weak and tired as the symptoms may become worse.



b

Do NOT bathe in an onsen if you have active tuberculosis, an advanced malignant tumor or in the case of a significant debility such as severe anemia.

Bathing may cause serious problems with dehydration or thrombosis.

However, even if you have a malignant tumor, if your general health condition is good, bathing is not necessarily a contraindication.



c

Do NOT bathe in an onsen if you have severe cardiac or lung diseases involving shortness of breath or severe kidney diseases.

Doctor's strict guidance is required as the water pressure is a heavy burden.



d

Do NOT bathe in an onsen when you are bleeding.

Before bathing, make sure you are no longer bleeding by seeking and receiving medical treatment if you are injured and bleeding or have gastrointestinal and other visible bleeding. In the case of a light nose bleed, rest quietly until the bleeding completely stops.

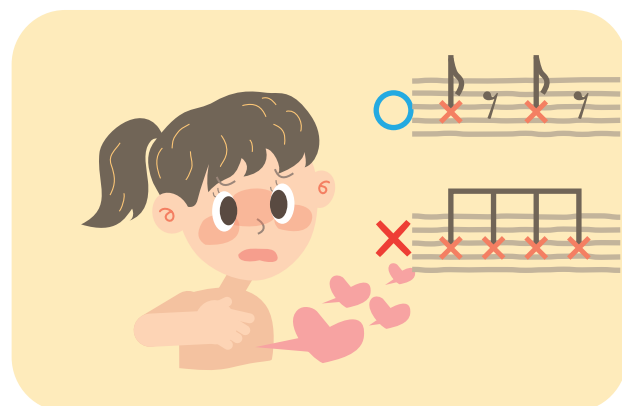


e

Do NOT bathe in an onsen when you are at the acute exacerbation stage of a chronic disease.

Avoid bathing in an onsen in the following cases.

- If you have chronic bronchitis and fever or difficulty in breathing.
- If you have stable angina and chest pain becomes frequent.



A What are the contraindications of onsen?

2 Contraindications – contraindications by spring water quality – for bathing

You should avoid bathing in an onsen if you have certain symptoms depending on the quality of the spring water. Be aware of the contraindications according to the quality of the spring water.

In the case where the spring water is acidic or sulphuric

f

Do NOT bathe in an onsen if you have hypersensitive skin or a mucous membrane.

Bathing in an onsen may cause skin inflammation (dermatitis) if you have hypersensitive skin or a mucous membrane.



g

Do NOT bathe in an onsen if you are elderly and have dry skin.

Your symptoms may become worse depending on the quality of the spring water.



Column

How can we find out about the quality of the spring water?

You can find out about the quality of the spring water on the Internet. You can also find notifications on spring water quality, constituents, contraindications, criteria of cautions for bathing, etc. displayed in places such as dressing rooms.

Column

If I have a contraindication, should I completely refrain from bathing in an onsen?

No. Even though you have a contraindication, you may be able to take an onsen cure under the guidance of a specialized doctor.



3 Contraindications – Do NOT drink recklessly – for drinking

If you drink mineral water from an onsen, the minerals enter your body directly, so please drink it with great caution. Please observe the maximum permissible amount set out in accordance with your specific disease or state of illness and check notifications displayed in the onsen regarding the amount it is safe to drink.

***The daily permissible amount of mineral water to drink from an onsen shall not exceed approximately 500mL.**

The permissible amount of mineral water to drink from an onsen for persons with specific diseases or states of illness

Constituents	Permissible daily amount for drinking	Contraindications
Na⁺ Sodium ions	Amount over (1,200mg/A) x 1,000mL	State of illness requiring salt restriction (renal failure, cardiac failure, hepatic cirrhosis, ischemic cardiac disease, hypertension, etc.)
K⁺ Potassium ions	Amount over (900mg/A) x 1,000mL	State of illness required of potassium limitation (renal failure and adrenocortical hypofunction)
Mg²⁺ Magnesium ions	Amount over (300mg/A) x 1,000mL	Diarrhea and renal failure
I⁻ Iodide ions	Amount over (0.1mg/A) x 1,000mL	Hyperthyroidism

If the mineral water in the onsen contains multiple constituents in the above table, all who have contraindications to them should observe the lesser of the permissible amounts.

Note: Where mineral water from an onsen is provided for drinking, the specific daily amounts of drinking based on the weight of each constituent are presented.

Note: Please ask your doctor if anything is unclear.

In addition to the above-mentioned constituent, in the case where mineral water from an onsen contains constituents such as arsenic, the following limitations on the permissible amounts of drinking shall apply.

Criteria for amounts of drinking

Constituents	Permissible daily amount for drinking	Constituents	Permissible daily amount for drinking
As Arsenic	(0.1/A x 1,000)mL *Total intake of the constituent 0.1mg	Pb Lead	(0.2/A x 1,000)mL *Total intake of the constituent 0.2mg
F Fluorine	(1.6/A x 1,000)mL *Total intake of the constituent 1.6mg	Hg Mercury	(0.002/A x 1,000)mL *Total intake of the constituent 0.002mg
Cu Copper	(2.0/A x 1,000)mL *Total intake of the constituent 2.0mg	CO₂ Free carbon dioxide	(1,000/A x 1,000)mL for one time

*A refers to the weight (mg) of each constituent contained in one kilogram of water from an onsen.

B

Cautions for using onsen.

There are several things we need to be aware of in order to use onsen safely.

1 What should we be aware of – for bathing? 1

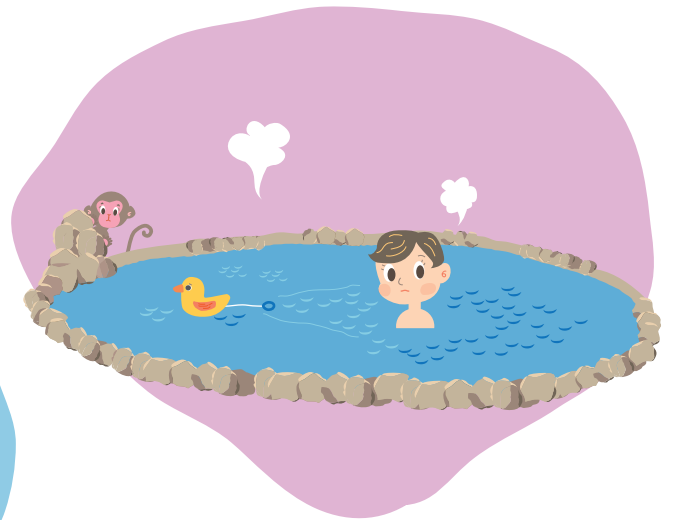
a

Avoid bathing immediately before or after a meal as well as after drinking alcoholic beverages



b

The elderly, children and physically challenged persons should avoid bathing alone.



c

Don't forget to hydrate yourself before and after bathing.



d

Avoid bathing when you are over tired or within 30 minutes after exercise.



B Cautions for using onsen

1 What should we be aware of – for bathing? 2

e

Before soaking in hot water, it is preferable to pour water over your body from the extremities in order to become acclimated to the high temperature and rinse off dirt, etc.



f

Those mentioned below should be cautious about the temperature and how they bathe:

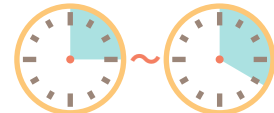
- The elderly, persons with hypertension or with cardiac diseases and persons who have experienced a cerebral hemorrhage should avoid high temperatures of **42 degrees** Celsius or more.

3 to 10 minutes or so on one occasion, once or twice a day **at the start.**



- Persons with cardiopulmonary insufficiency should submerge their **body halfway or partially** soak their entire body.

When accustomed, they can soak for 15 to 20 minutes or so on one occasion, twice or three times a day.



g

It is preferable not to rinse the onsen constituents off the body. Just wipe moisture off with a towel.

In order to keep onsen constituents on the body.



h

Do not put towels in the bathtub.

In order to keep the water clean.



***However, it is better to rinse off if you have sensitive skin, or if onsen contains stimulant constituents (e.g. acidic springs, sulphur springs).**

i

In the case of bath reaction

Around 3 to 7 days or so after starting onsen cures, some persons may experience bath reaction, feel unwell, or suffer from insomnia, digestive symptoms or dermatitis.

While these symptoms continue, it is advisable to stop bathing or decrease bathing frequency until these symptoms resolve.



B Cautions for using onsen

2 What should we be aware of – for drinking? 1

a

In the following cases, please consult your doctor:

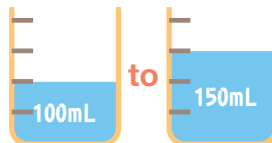
- For drinking mineral water from an onsen as medical treatment: please seek advice from a doctor with expertise, such as a spa therapy doctor.
- For persons administered drugs: please consult your doctor or pharmacist.



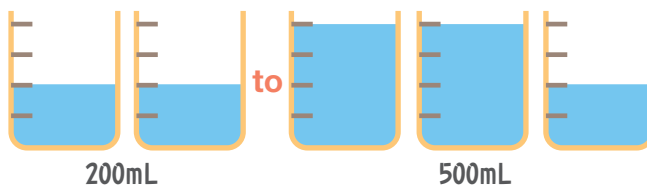
c

Drink an appropriate amount of onsen mineral water.
*Please check the table of onsen mineral water components.

100mL – 150mL
for one time



200mL – 500mL per day



e

Onsen mineral water shall be drunk at the place where drinking is permitted and shall not be brought out of the place.



b

Drink fresh mineral water in a clean glass from an onsen of which drinking is permitted.



d

In principle, drinking onsen mineral water is only for adults. If children drink onsen mineral water, seek guidance from a doctor such as a spa therapy doctor.



f

It is generally preferable to drink onsen mineral water about half an hour before a meal.

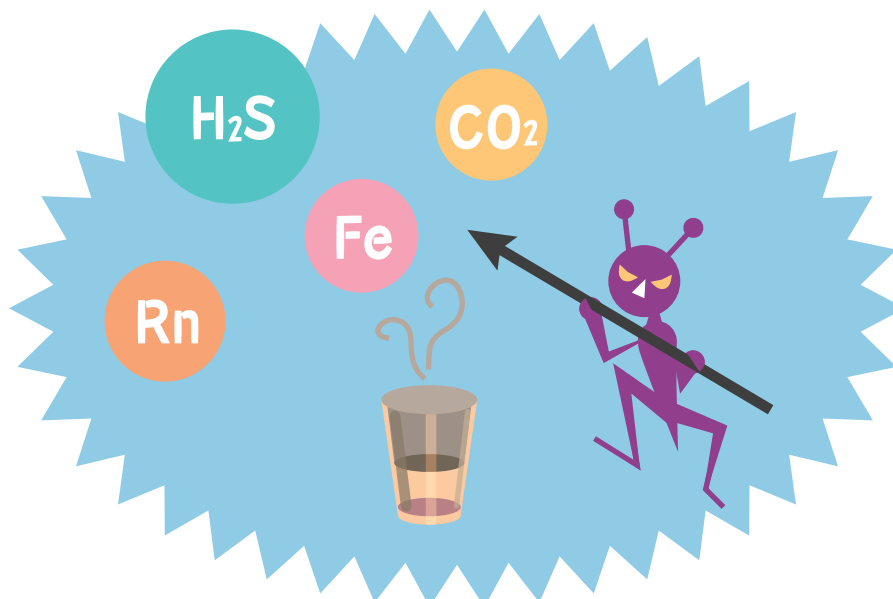


2 What should we be aware of – for drinking? 2

Column

Onsen mineral water is “raw food.”

The quality of onsen mineral water changes as time passes after gushing from the source. Onsen mineral water that contains unstable constituents such as hydrogen sulphide, iron, carbon dioxide and radon tends to change quality dramatically and so, it is advisable to drink it at the source while it is still fresh.



The ABCs of onsen cures

When taking an onsen cure, be aware of categories, indications and contraindications by constituent or spring quality for an effective onsen cure

1 What effects do onsen cures have?

a

How effective are onsen cures?

Onsen cures become effective through psychological reactions and biological reactions as a result of holistic actions caused by onsen constituents, thermal effects of bathing, surrounding environment, the climate and others.

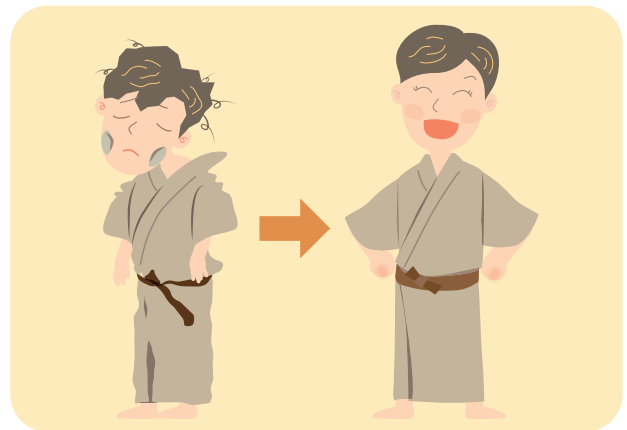


b

Can an onsen cure my disease?

The purpose of taking an onsen cure is, rather than curing a specific disease, to obtain comprehensive improvement effects by:

- alleviating symptoms and pains; and
- recovering and promoting health, etc.



c

Can I expect perceivable effects soon?

Although onsen cures bring you mental refreshment in even a short period, it is appropriate to take onsen cures for two to three weeks to obtain adequate effects.



d

Should I consult a doctor?

Your illness may deteriorate depending on your disease or condition and so, you should take an onsen cure under the guidance of a doctor with expertise in onsen cures (such as a spa therapy doctor) related to medicines, exercise and rest, sleep, meals, etc.



C The ABCs of onsen cures

2 About medicinal springs

Among all onsen, medicinal springs refer to onsen having especially good spring water qualities for cures. The medicinal qualities of each spring are stated in the “indications.” Indications are divided into two categories, namely “general indications,” common to all medicinal springs regardless of the spring water quality types, and “indications by spring water quality,” prescribed in accordance with spring water quality types. It is useful to know the characteristics of each spring water quality type.

General indications

Chronic pain or stiffness of muscles and joints

(The chronic phase of rheumatoid arthritis, osteoarthritis, lower back pain, nerve pain, frozen shoulder, bruises, etc.)

Mild asthma or emphysema

Hemorrhoids pain

Muscle stiffness in motor paralysis

Medicinal springs

Excessive sensitivity to cold and peripheral circulatory failure

Gastrointestinal hypofunction

(slow digestion, intestinal gas formation, etc.)

Mild hypertension

Autonomic instability and various symptoms from stress

(Sleep disorder, depression, etc.)

Impaired glucose tolerance (diabetes)

Mild dyslipidemia

Restorative phase from illness

Recovery from fatigue and health promotion

Comprehensive improvement

- alleviating symptoms and pain
- recovering and promoting health, etc.

Column

What are traditional indications?

In 1954 (Showa 29), the then Ministry of Health and Welfare prescribed indications of onsen, but the effects of onsen were well-known since long before. In fact, onsen were already being ranked in the Edo area. Nowadays, even traditional indications are reviewed and prescriptions are made in consultation with doctors with relevant expertise.

C The ABCs of onsen cures

3 Types of medicinal springs – indications by spring water quality 1

Medicinal springs are categorized based on the temperature or major constituents. “Indications by spring water quality” are prescribed uniquely for each type of spring water quality and so, it is useful to know the characteristics of each type of spring water quality in accordance with the purposes of bathing.

Simple springs

1

Dissolved components (excluding gas components) are below 1,000mg/kg. The temperature of the springs is 25 degrees Celsius or above.

Characteristics

- Simple alkaline onsen refers to onsen of pH8.5 or above.
- Stimulation is mild.

- B** Autonomic instability, insomnia and depression

Chloride springs

2

So-called “onsen of heat.” The main negative ions are chloride ions.

Characteristics

They are effective for heat retention and circulation as salts adhere to the skin.

Indications by spring water quality

- B** Cuts, peripheral circulatory failure, excessive sensitivity to cold, depression and xeroderma
- D** Atrophic gastritis and constipation

Carbonated springs

3

So-called “onsen of beauty.” The main negative ions are hydrogen carbonate ions.

Characteristics

They soften the stratum corneum of the skin.

Indications by spring water quality

- B** Cuts, peripheral circulatory failure, excessive sensitivity to cold and xeroderma
- D** Gastroduodenal ulcerations, reflux esophagitis, impaired glucose tolerance (diabetes) and hyperuricemia (gout)

Sulphate springs

4

The main negative ions are sulphate ions.

Characteristics

Drinking them contracts the gall bladder and stimulates the peristaltic movement of the intestine.

Indications by spring water quality

- B** Cuts, peripheral circulatory failure, excessive sensitivity to cold, depression and xeroderma
- D** Biliary dysfunction, dyslipidemia and constipation

B = for bathing **D** = for drinking

Column

Be aware of the indications of onsen and spring water quality.

Each onsen has its own unique indications depending on the major constituents of the mineral water. Be familiar with the characteristic qualities of each spring to use it in accordance with the purpose of bathing such as taking an onsen cure.



C The ABCs of onsen cures

3 Types of medicinal springs – indications by spring water quality 2

Carbon dioxide springs

5

Characteristics

Heat retention effect and circulation effect are known as carbon dioxide gas is absorbed into the skin.

Indications by spring water quality

B Cuts, peripheral circulatory failure, excessive sensitivity to cold and autonomic instability

D Gastrointestinal hypofunction

So-called “onsen of bubbles.” When bathing, small bubbles adhere to the skin. They contain carbon dioxide at a concentration of 1,000mg/kg or more.

Acidic springs

7

Characteristics

· If the water is strongly acidic, it irritates the skin when bathing and tastes sour.
The water has strong sterilizing power.

Indications by spring water quality

B Atopic dermatitis, plaque psoriasis, epidermoid suppuration and impaired glucose tolerance (diabetes)

The water contains hydrogen ions at a concentration of 1mg/kg or more.

Sulphur springs

9

Characteristics

· The water has strong sterilizing power and removes epidermal bacteria and atopic cause substances.

Indications by spring water quality

B Atopic dermatitis, plaque psoriasis, chronic eczema and epidermoid suppuration

***Peripheral circulatory failure is added with regard to the hydrogen sulphide type.**

D Impaired glucose tolerance (diabetes) and dyslipidemia

The water contains total sulphur at a concentration of 2mg/kg or more.

Ferruginous springs

6

Characteristics

They change color to red when exposed to the air.

Indications by spring water quality

D Iron-deficiency anemia

The water contain iron ions (Fe⁺⁺ and Fe⁺⁺⁺) at concentration of 20mg/kg or more in total.

Iodine containing springs

8

Characteristics

· They are mainly found among non-volcanic onsen and become yellow when left for a while.
Japan is a major iodine-producing country.
· Drinking the water reduces total cholesterol.

***Be cautious if you have hyperthyroidism**

Indications by spring water quality

D Dyslipidemia

The water contains iodide ions at a concentration of 10mg/kg or more.

Radioactive springs

10

Characteristics

· A trace amount of radioactivity in onsen mineral water is effective for inflammation.

Indications by spring water quality

B Hyperuricemia (gout), rheumatoid arthritis, ankylosing spondylitis, etc.

The water contain radon at a concentration of $30 \times 10^{-10} \text{Ci/kg}$ (8.25 Mache-Einheit) or more.

*All corresponding indications in the case of correspondence to two or more types.

B = for bathing **D** = for drinking

C The ABCs of onsen cures

4 Which spring water qualities are good for my symptoms? – suitable spring water quality by symptom 1

Table for selection of spring water quality by symptom 1

 = spring water quality with indications by bathing
 = spring water quality with indications by drinking

Symptoms Spring water quality	Peripheral circulatory failure	Excessive sensitivity to cold	Hypertension (mild)	Impaired glucose tolerance (diabetes)	Dyslipidemia	Gastrointestinal hypofunction	Constipation	Gastroduodenal ulcerations	Reflux esophagitis	Atrophic gastritis	Biliary dysfunction
1 Simple springs											
2 Chloride springs											
3 Carbonate springs				 							
4 Sulphate springs											
5 Carbon dioxide springs						 					
6 Ferruginous springs											
7 Acidic springs											
8 Iodine-containing springs					 						
9 Sulphur springs				 	 						
10 Radioactive springs											

C The ABCs of onsen cures

4 Which spring water qualities are good for my symptoms? – suitable spring water quality by symptom 2

Table for selection of spring water quality by symptom 2

 = spring water quality with indications by bathing
 = spring water quality with indications by drinking

Symptoms Spring water quality	Gout	Rheumatoid arthritis	Autonomic instability	Insomnia	Depression	Chronic pains or stiffness of muscles and joints	Muscle stiffness in motor paralysis	Cuts	Xeroderma	Atopic dermatitis
1 Simple springs										
2 Chloride springs										
3 Carbonate springs										
4 Sulphate springs										
5 Carbon dioxide springs										
6 Ferruginous springs										
7 Acidic springs										
8 Iodine-containing springs										
9 Sulphur springs										
10 Radioactive springs										

C The ABCs of onsen cures

4 Which spring water qualities are good for my symptoms? – suitable spring water quality by symptom 3

Table for selection of spring water quality by symptom 3



B = spring water quality with indications by bathing



D = spring water quality with indications by drinking

Symptoms Spring water quality	Plaque psoriasis	Chronic eczema	Epidermoid suppuration	Ankylosing spondylitis	Iron-deficiency anemia	Asthma or emphysema (mild)	Hemorrhoidal pain	Restorative phase from illness	Recovery from fatigue and health promotion
1 Simple springs									
2 Chloride springs									
3 Carbonate springs									
4 Sulphate springs									
5 Carbon dioxide springs									
6 Ferruginous springs									
7 Acidic springs									
8 Iodine-containing springs									
9 Sulphur springs									
10 Radioactive springs									

D

Q&A on onsen use

Q&A



C

Can pregnant women bathe in onsen?

Yes, pregnant women can bathe in onsen. However, they should not bathe for too long or in high temperature, and should be careful of slippery floors.

W

Where can I find a spa therapy doctor?

You can find doctors on the website of the Japanese Society of Balneology, Climatology and Physical Medicine (http://www.onki.jp/doctor/doc tor_intro).

C

Can pets take an onsen bath with me?

There are some rest houses with onsen exclusively for pets. You can also find rooms with family bathing facilities where you can take a bath with your pets. However, from a hygienic viewpoint, it is advisable to use a separate bath tub for pets.

C

Contraindications and cautions were revised in 2014 (Heisei 26). What are the major changes?

Compared to the old version prescribed in 1982 (Showa 57), in the new version the disease names, etc. are easier to understand. Revisions were made based on the latest medical knowledge.

W

What are onsen incrustations (yunohana)? Can I use them as bath salts at home?

Onsen incrustations (yunohana) are sediments of onsen components and contain many constituents. They have been used as bath salts since ancient times, but if you use them at home, please read and follow the instructions for usage and dosage.

A

Are onsen effective for curing cancer?

Unfortunately, there are no onsen for curing cancer. However, if the condition of the disease is stable, bathing in onsen and relaxing may bring psychologically positive effects.



If you have any comments or questions, please contact the following:

Office for Conservation and Promotion of Hot Springs,
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Nature Conservation Bureau, Ministry of the Environment
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For details, please see the link below:

Website of the Ministry of the Environment

http://www.env.go.jp/en/nature/nps/appendix_criteria.pdf

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