2. Need for Parks and Green Spaces

- Handling of Global Environmental Problems
- Improving Anti-disaster Measures in Cities
- Taking Measures Against the Declining Birthrate and Aging Population

Measures against Global Warming

The Kyoto Protocol Target Achievement Plan

April 28th, 2005

Formulated by the Cabinet decision

Positioning the Promotion of Urban Greening etc. as the measure to Secure Carbon Sinks

Reducing the Heat-island Effect

General Principles to Reduce the Heat-island Effect

March 30th, 2004

The Liaison Conference of Relevant Ministries on Heat-island Effect

Improve artificial ground surface covers and secure green areas to improve urban configuration

Conservation and Sustainable Use of Biodiversity

New National Strategy for the Conservation and Sustainable Use of Biological Diversity

March 27th, 2002

The decision of the meeting of cabinet ministers-concerned on global environmental preservation

Secure woodland that supports biodiversity and allocation and improvement of parks and green spaces in consideration of the natural environment

Measures against Global Warming

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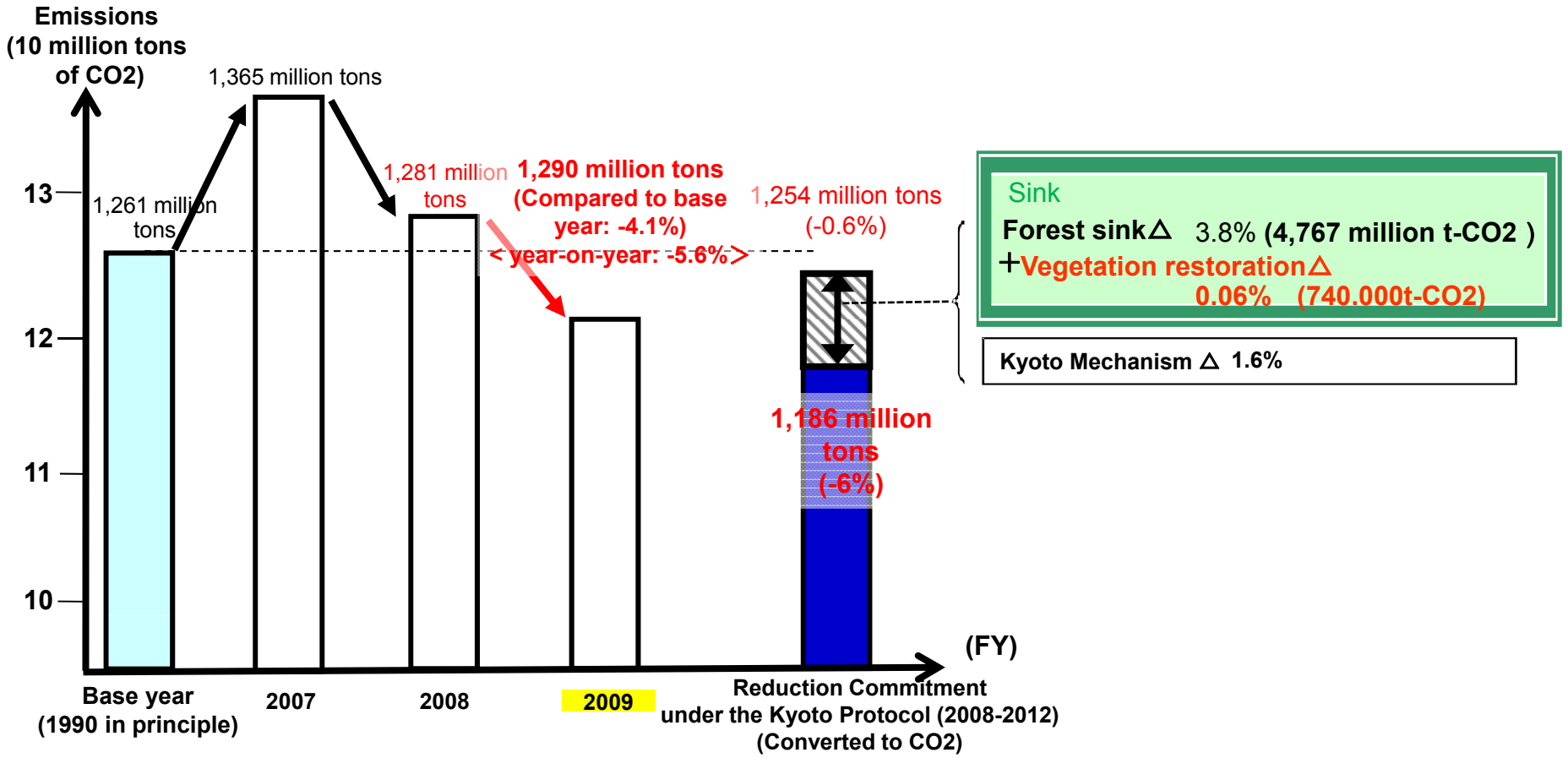
◆Japan committed under the Kyoto Protocol to reduce 6% of the average greenhouse gas emissions in comparison to the base year (1990) in the first commitment period (2008-2012).

◆Urban greening etc. corresponds to “vegetation restoration” subject to Article 3-4 of the Kyoto Protocol.

◆Annual average absorption of urban green areas etc. in the first commitment period is estimated to reach 0.06% (approx. 740,000 tons of CO2) of the total emissions in the base year. (Calculation according to the international guideline LULUCF-GPG. Approx. 1.03 million tons of CO2 absorption at the end of FY2009)



Urban Green Spaces as Measures against Global Warming

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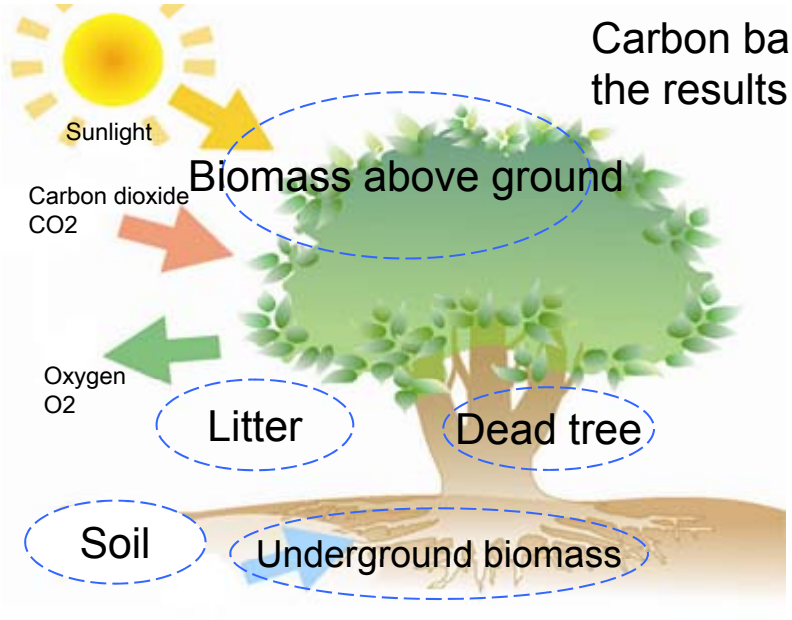
- Aside from forest sink, Japan counts urban greening as “vegetation restoration” defined in the Kyoto Protocol.
- Urban parks and green spaces at roadside, inside waste water treatment facilities, ports, rivers, public housing premises, outdoor facilities of public offices and those certified by greening facility development plan are considered as “vegetation restoration”.



Carbon balance is calculated for 5 different carbon pools and the results are reported.

Biomass above ground: High trees above ground level

Biomass underground:
Underground parts of high trees

Litter: Leaves/branches/fruit/flower fell naturally from high trees in the year

Withered dead tree: Wood biomass generated by withered and dead standing trees

Soil: Carbon stock underground

The State of the Heat-island Effect

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The heat-island effect is the phenomenon that the temperature in the heart of a city becomes higher than in the suburbs, and the high-temperature region in the city center is shaped like an island.

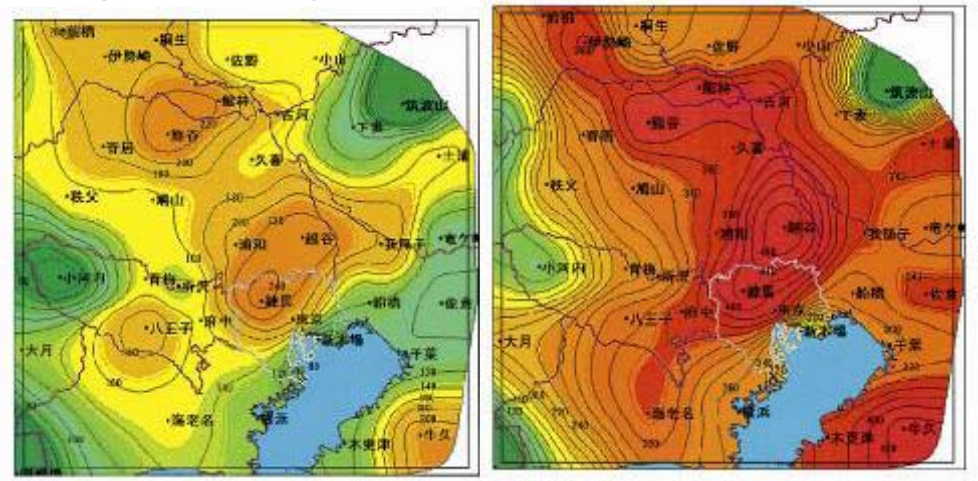
This phenomenon can be caused by the following causes:

①Increase in exhaust heat emitted by artificial means from air-conditioning systems, electrical equipment, heat-producing equipment, cars, etc.

②Decrease in green spaces and the water levels, and the artificial paving of the surface of the ground due to increase in the numbers of buildings and surfaced areas

And others

●Change in the Distribution of High-temperature Regions in Tokyo District（Left：1981, Right: 1999）



●The Amount of Rise in The Average and Minimum/Maximum Temperature in Big Cities in Japan per 100 Years（1901～2000）

Location	The Amount of Rise in Temperature per 100 years（℃/100 years）		
	Annual Average Temperature	Annual Average Minimum Temperature	Annual Average Maximum Temperature
Sapporo	+2.3	+4.1	+0.9
Sendai	+2.3	+3.1	+0.7
Tokyo	+3.0	+3.8	+1.7
Nagoya	+2.6	+3.8	+0.9
Kyoto	+2.5	+3.8	+0.5
Fukuoka	+2.5	+4.0	+1.0
The Big-City Average	+2.5	+3.8	+1.0
The Average of Smaller 36 Cities	+1.0	+1.4	+0.7

The Average Temperature Rose by 2～3 degrees in Big Cities in Japan.

Heat-island Effect

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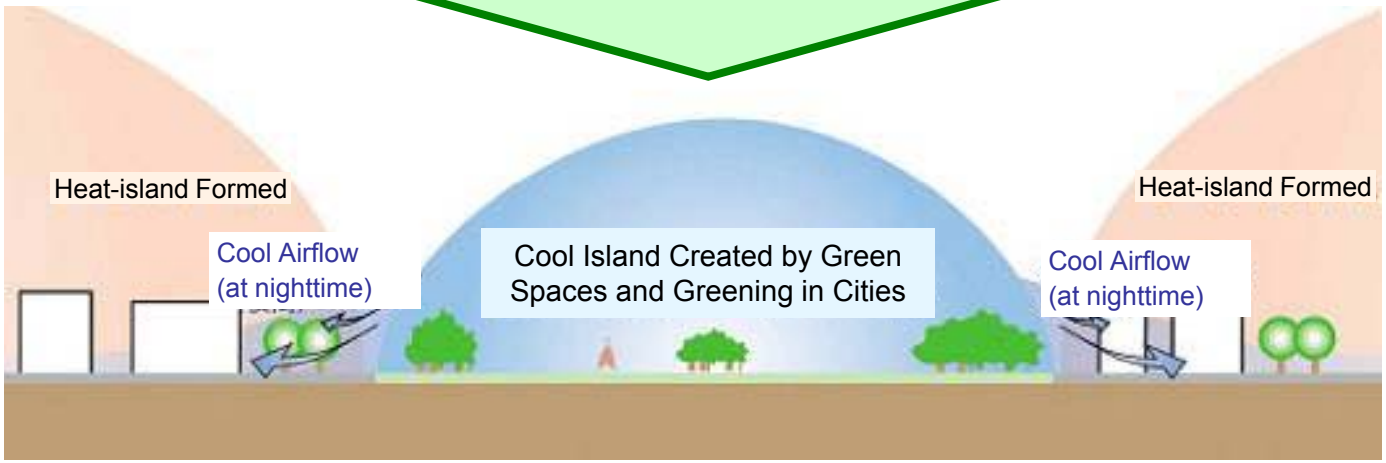
● Creating Cool Islands by Urban Greening

As plant transpiration lowers the surrounding temperature, a large green space creates a “cool island” which is covered by cool air, shaped like an island; moreover, it is confirmed that such cool air flows out of the island into its adjacent area.



The Actual Surveying in Wakayama City , Wakayama Prefecture, shows about 1.5- to 2-degree difference in temperature between inside green spaces (Wakayama Park) and around there, and the decline of temperature within a range of 50 to 80m from the periphery of green spaces.

Park and Green Space Contributing to Improvement of Heat Environment in Cities

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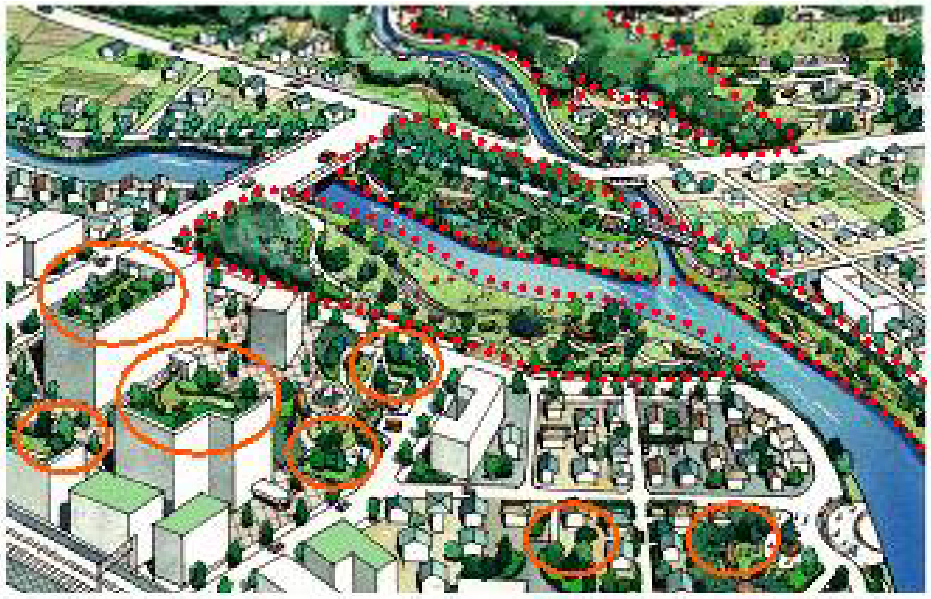
The two charts at right show that difference in temperature becomes maintained constant in general when evapotranspiration area gets to be 30% or more of the whole.

For this reason, it can be one of the guideposts in terms of exploiting full function of greens that the ratio of green spaces should be about 30～40% as the whole amount of greens including the water.

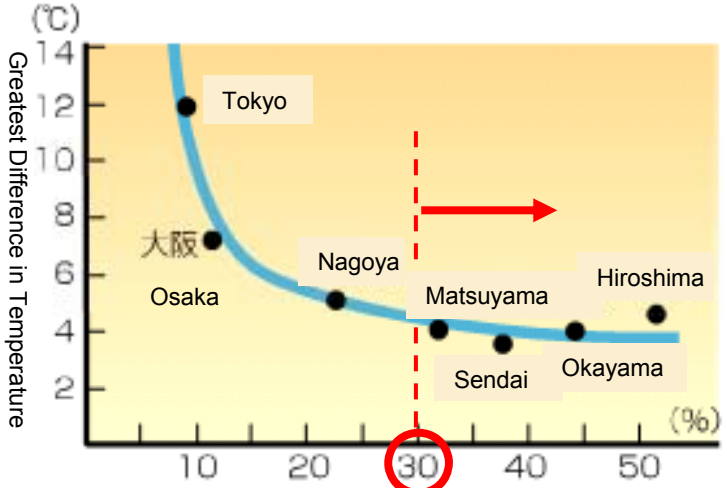
●Ideal Park and Green Space Arrangement Image



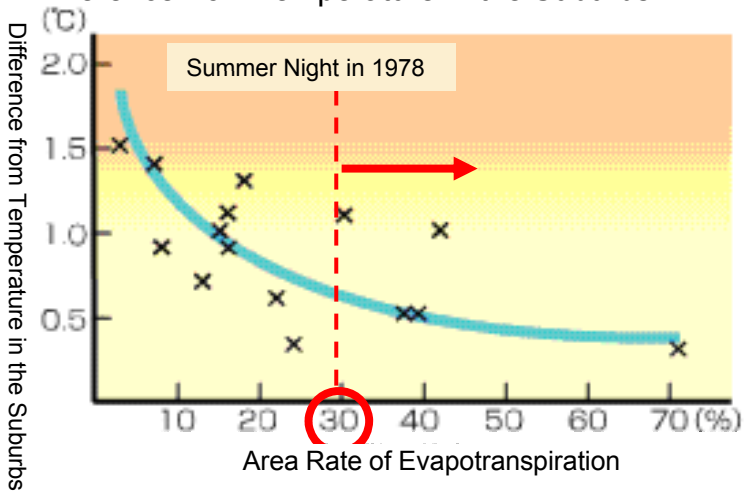
Point of Securing Large Block of Green Space

Point of Scattered Green Space

●Area Rate of Evapotranspiration in Major Cities and Difference from Temperature in the Suburbs



● Area Rate of Evapotranspiration in Hiroshima City and Difference from Temperature in the Suburbs



Reference：Yoshitaka Fukuoka(1983): “The Role of Water and Green in Heating of the Atmosphere in Big Cities,” Water Utilization Science No.244

Ecosystem in Danger

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**34 regions including Japan in the world are designated as “Hot Spots.”
Although these regions cover only the 2.3% of the surface area of the earth, they are home to the 75.5% of the most endangered mammals, bird species, and amphibians.**

Distribution of Hot Spots

Reference：Conservation International

Biodiversity in the Japanese Islands is related to that of the world.

The Necessity of Biodiversity

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Biodiversity is a condition essential to the continued existence of all humanity.

The Purpose of the Biodiversity Treaty Article 1

Conserving a wide range of living beings on earth together with the environment in which they are grown

Exploiting biological resources in a sustainable manner

Sharing the benefits derived from the use of genetic resources fairly and by maintaining balance

4 Service Functions Generating Benefits (Ecosystem Services)

（From “The Necessity of Biodiversity” <Millennium Ecosystem Assessment, 2005>）

Supporting Services	The basis of ecosystem services to create and maintain the environment including human societies in which living species and their ranges exist
Regulating (Easing) Services	The effect to ease radical changes such as contamination, climate change, and the outbreak of insect pests
Provisioning Services	The effect of being fed, clothed, and housed through ecosystems. Exploiting biological resources to provide food and medicines.
Cultural Services	Culture brought by ecosystems and spiritual richness

The Necessity of Biodiversity

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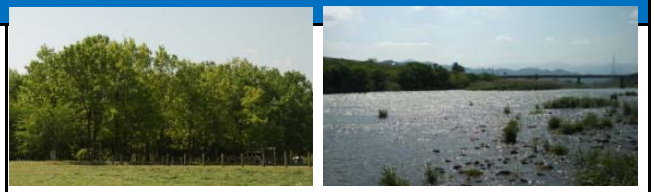
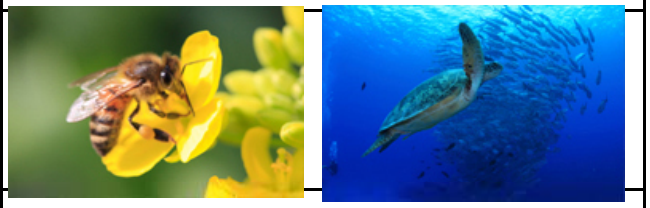
What is biodiversity?

(Convention on Biological Diversity (came into effect on December 29, 1993))

- Defines “all the living creatures are different”.
- Indicates that “**diversity** can be classified into **3 different levels**”.

3 levels of biodiversity

Type of diversity	Contents	
Ecological diversity	Different types of natures like forest, mountain village, river, fog, coral reef etc.	
Interspecies (species) diversity	Different types of creatures from animal/plant to microorganism like bacterium	
Genetic diversity	Form, pattern and biological variations of individuals of one species caused by difference of genes E.g.(1) Pattern of multicolor Asian lady beetle varies by region E.g.(2) Shell of Manila clams living in the same beach varies wide	 

[Source of pictures] Pollination of honey bee: Mika Nishiguchi, green turtle and bigeye kingfish:Yasuaki Kagii , Manila clams: Fuwashin
Source of the above: Website of biodiversity by the Ministry of the Environment

The Necessity of Biodiversity

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Biodiversity is the foundation for the existence of human being and assets common to all the human beings

(Basic Act on Biodiversity No.58 in 2008)

■Human beings are **dependent on the benefit (ecosystem service) of biodiversity for their existence.**

■ Biodiversity also supports the diversity of local cultures.

Ecosystem service

Supply service
Services to supply necessary resources for the lives of human being such as food, fuel, wood, fiber, drug and water

Coordination service
Services to adjust environment like control diseases and pests, alleviation of severe climates and water purification of forests etc.

Cultural service
Services to provide mental satisfaction, aesthetic enjoyment and recreational opportunities

Basic service Synthetic function of enzyme realized by photosynthesis, formulation of soil etc. which form the foundation of sustaining the aforementioned services

Biodiversity is faced with a serious crisis

■ First crisis: Crisis caused by **human activities** and **developments** (land reclamation etc. of mudflats for development)

■ Second crisis: Crisis caused by the **contraction** of human activities (abandon of the control of coppice forests etc.)

■ Third crisis: Crisis caused by the things **brought** by human beings (foreign species, species from other region etc.)

■ Crisis caused by global warming

→It is necessary to make efforts to protect biodiversity to continuously benefit from it.

→Urban life is made possible by enjoying the benefits of biodiversity.

It is also necessary to give considerations to protect biodiversity in promoting urban development.

Trend of Efforts to Secure Biodiversity

1992

Adoption of Convention on Biological Diversity (CBD)

(enacted in 1993) Signatory states: 192 countries

- Aimed at the preservation of biodiversity, sustainable utilization of constituting elements of biodiversity etc.
- Signatory states formulate the national strategy of biodiversity based on Article 6 of CBD.

2008

Formulation of the Basic Act on Biodiversity

- Obliges the government to formulate the national strategy of biodiversity
- Obliges the municipalities to make efforts to formulate the regional strategy of biodiversity

2010

Cabinet decision on the 2010 national strategy of biodiversity (March)

- Consisted of the preamble, the first chapter “Strategy” and the second chapter “Action plan”
- Describes “the preservation and revival of urban greening” in “securing connection between forest/village/river/ocean” in four basic strategies in Section 4-2 of Part 1
- Describes the measures in “urban cities” as part of measures taken to regional spaces in Chapter 1 of Part 2 “measures in national spaces”

(Formulate the third national strategy of biodiversity during 1995-2007)

The 10th Conference of Parties of Convention on Biological Diversity (COP10) (October, Nagoya city, Nagoya prefecture)

[Main resolutions related to biodiversity of urban cities]

① New strategic plan/Aichi target (Set 20 individual targets to be achieved by 2020)

② Resolution X/22 “Action plan of sub-national states, cities and municipalities” etc.

Trend of Efforts to Secure Biodiversity (New strategic plan/Aichi target)

Vision (mid-term target (2050))

Realize the world that coexists with nature

Mission (short term target (2020))

Implement effective actions immediately to stop the loss of biodiversity

20 individual targets

*Red: Efforts involving MLIT

A: Address the root cause of losing biodiversity

Target 1 : Make everyone recognize the value of biodiversity

Target 2 : Incorporate the value of biodiversity in the government plan

(Ecological network plan in urban cities (Master Plan For Parks And Open Spaces))

Target 3 : Abolish measures and subsidies harmful to biodiversity and formulate/adopt the right incentives

(System to oblige greening at the level of municipalities)

Target 4 : All the interested parties execute the plan

(Consider environment in development projects and projects of rivers/parks to create the habitats of living organisms)

B: Mitigate the direct pressure to biodiversity

Target 5: At least halve the speed of losing habitats including forests and stop the loss of habitats wherever it is possible.

(Natural regeneration of mudflat etc.)

Target 6: Avoid continued catch of fishery stock and the resulting overfishing to hold down the impact

Target 7: Control for sustainable agriculture and forestry

Target 8: **Suppress pollutions to the level they are considered harmless**

(Revival of seas, improvement of water quality of rivers and lakes, improvement of sewages)

Target 9: Restrict and eradicate invasive alien species

Target 10: Minimize the impact of climate change

C: Improve biodiversity

Target 11: Protect the species of land and ocean species at least by 17% and 10%, respectively through conservation of areas

Target 12: Prevent the extinction/reduction of endangered species with focus on improving the protection of quickly disappearing species

Target 13: Stop the loss of genetic diversity

D: Strengthen the benefits of biodiversity

Target 14: Ecosystem is protected and needs of women etc. are considered.

Target 15: Ecology contributes to the mitigation of climate changes and adaptation to them.

Target 16: Promote the access to genetic resources and distribute the benefits.

E: Strengthen the execution of the treaty through capacity development

Target 17: Formulate an effective and participatory national strategy.

Target 18: Traditional knowledge is respected.

Target 19: Improve the related knowledge/scientific technology.

("Map of earth", national census related to rivers/waterfronts)

Target 20: Remarkable augmentation of personnel/financial capacities.

Trend of Efforts to Secure Biodiversity

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Resolution X/22 "Action plan of sub-national states, cities and others municipalities for biodiversity" (Tentative name) – extract -

■Purpose

- Extend the participation of sub-national states and municipalities to support the respective signatory states.
- Collaboration among signatory states etc. in methods and measures for municipalities to ensure sustainable management of biodiversity, provision of ecological services to the citizens, provide incentive and support to incorporate considerations to biodiversity in city planning and city development.

■Examples of actions

- Incentive to incorporate considerations to biodiversity in infrastructure development of cities.
- Promote the introduction and adaptation of ecological approaches and integrated landscape control methods incorporated in sustainable development plans.
- Support municipalities to utilize researches on biodiversity and evaluation methods.
- Promote the research and development of technologies related to biodiversity in cities and encourage the establishment of national and regional core research institutes of urban design/planning/control.

→ **Need to implement city development by giving considerations to biodiversity in municipalities as well**

Overview of Basic Act on Biological Diversity

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Basic Act on Biological Diversity was enacted in June, 2008, reinforcing efforts toward biodiversity.

Preamble		○Biodiversity as the basis of the survival of the human race ○Biodiversity in grave danger, seriously influenced by global warming ○Indicating basic principles and a course of action, and strengthening measures comprehensively and systematically
General Rules		○Basic Principles ◆Conservation of Natural Environment ◆Sustainable Use ◆Preventive Efforts ◆Preservation and Restoration of Ecosystems, etc. ◆Preventing Global Warming ○Responsibilities of Nations, Local Public Entities, Business Entities, Citizens, and Private Organizations ○Legislative Actions, etc., and Annual Reports
Biodiversity Strategy		○Formulating National Strategy for Biodiversity ○Formulating Regional Strategy for Biodiversity
Measures	**Nation**	◆Conserving Regional Biodiversity ◆Prevention of Damages Caused by Adventives ◆ Proper Use of Resources ◆Active Conduct of Business with Particular Attention to Diversity ◆Measures to Prevent Global Warming ◆Collaboration among Various Entities ◆Research, Science and Technology ◆Citizens' Understanding ◆Strengthening Environmental Impact Assessment ◆International Cooperation
	Municipality	○Promoting Measures Based on National Action Plans

Trend of Efforts to Secure Biodiversity in Cities

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Further promote preservation/revival/creation/control of green areas in cities to enrich biodiversity that supports life and living

Past efforts to secure biodiversity in cities

Continue support to the following efforts under the system of the Social Capital Improvement Grant, Urban Green Space Conservation Law etc.

Improvement of urban parks

Preservation and revival of biodiversity through urban park improvement

Umekoji Park of Kyoto city

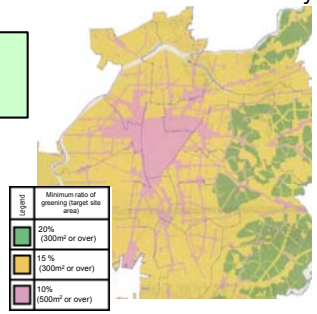
Preservation of green areas

Preservation of green areas which forms the base of inhabitation and nursery of animals/plants

Yoshidayama special greening preservation district of Koto city

Promotion of greening

Expansion of green spaces which serve for inhabitation/nursery of animals and plants

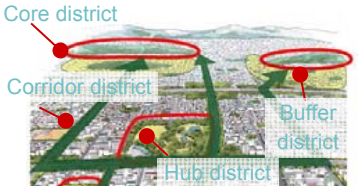


Regional greening system of Nagoya city

Efforts based on COP10 resolution

Amendment etc. to the Urban Green Space Conservation Act
(To be enacted in Oct. 2011)

○Describe **the viewpoints of securing biodiversity** in the operation guideline of the Urban Green Space Conservation Act.
○Newly formulate "technological considerations in securing biodiversity under the green basic plan" which summarizes the method of ecological network plan in the cities.
*Plan to share best practices with municipalities



Urban ecological network

Collaborative regional preservation activities

Act on the Promotion of Conservation for Biodiversity Activities
(Enacted on October 1, 2011 by MAFF/MLIT/MOE)

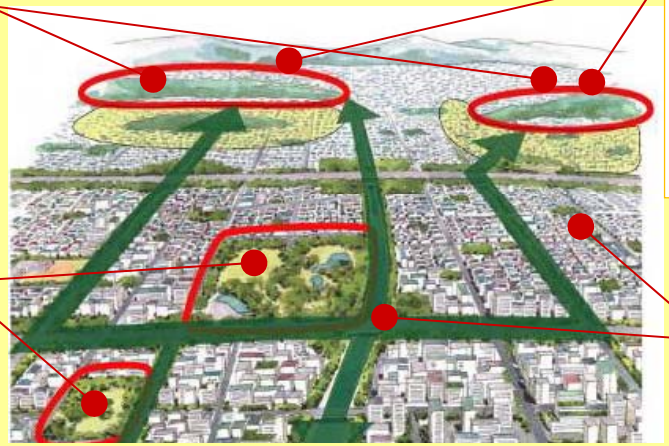
○A law to further promote activities to conserve biodiversity through the cooperation among regional diversified actors
○Stipulates on special cases of exemptions from the procedure of obtaining permission on actions within special green conservation district etc. based on Urban Green Space Conservation Law, when municipalities defines conservation plan through cooperation among regional parties

Responses to secure biodiversity in the operation guideline of the Urban Green Space Conservation Act

Amendment to “the operation guideline of the Urban Green Space Conservation Act” and establishment of “technical considerations related to the operation guideline for securing biodiversity under Master Plan For Parks And Open Spaces”, in response to the development of efforts at home and abroad on biodiversity (October 1, 2011)

[Main points of amendment to the operation guideline of the Urban Green Space Conservation Act]
It is desirable to develop **an organic network (ecological network)** of green areas in **core districts, hub districts, corridor districts and buffer districts** located to secure biodiversity.

Urban ecological network (image)



Core district
Green areas in the suburbs which play core functions of supplying etc. animal/plant species in other districts

Buffer district
Buffer zone with green areas adjacent to core, hub and corridor districts necessary for these districts to stably exist.

Hub district
Green areas in the cities which contribute to expand distribution areas of animal/plant species

Corridor district
Green areas like rivers and green ways that connect core districts and hub districts and provide spaces of travel for animals/plants

[Technical considerations for securing biodiversity under Master Plan For Parks And Open Spaces]
Describes considerations in different phases of **research, target setting, allocation of green spaces and considerations of measures** etc. which are important for the development of ecological network, at a time of formulation/amendment of Master Plan For Parks And Open Spaces

Earthquake Disasters Occurring with a High Frequency

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Although its land area equals only 0.25% of the world's total land area, Japan is one of the countries with the highest probability of earthquake occurrence in the world. Seeing the frequency of earthquakes of magnitude 7.0 or stronger, it equals 17.8% of the total numbers of earthquakes occurring in the world.

○ Major earthquakes in the world

Magnitude	Average occurrence in a year (world (W))	Average occurrence in a year (Japan (J))	% of occurrence in Japan (J/W)
More 8.0	1	0.2	20%
7.0 - 7.9	17	3	18%
6.0 - 6.9	134	17	13%
5.0 – 5.9	1,319	140	11%

Source: Japan Meteorological Agency

○ Major Earthquake Occurrence in Recent Years

Date of Occurrence	Name of Earthquake	Place (Prefecture)	Seismic Intensity
1995.1.17	The South Hyogo Prefecture Earthquake (Hanshin Awaji Earthquake)	Hyogo	7
1998.9.3	The North Iwate Prefecture Inland Area Earthquake	Iwate	Weak 6
2000.10.6	The West Tottori Prefecture Earthquake	Tottori	Strong 6
2001.3.24	The Aki Nada Earthquake	Hiroshima	Weak 6
2003.10.9	The Tokachi-oki Earthquake	Hokkaido	Weak 6
2004.10.23	The Mid Niigata Prefecture Earthquake	Niigata	7
2005.3.20	The West Fukuoka-oki Earthquake	Fukuoka	Weak 6
2005.8.16	The Miyagi-oki Earthquake	Miyagi	Weak 6
2007.3.25	The Noto Peninsula Earthquake	Ishikawa	Weak 6
2007.7.16	The Niigata Prefecture Chuetsu-oki Earthquake	Niigata	Strong 6
2008.6.14	The Iwate-Miyagi Nairiku Earthquake	Iwate	Strong 6
2008.7.24	Northern coast of Iwate	Iwate	Weak 6
2009.8.11	Suruga Bay	Shizuoka	Weak 6
2011.3.11	The Great East Japan Earthquake	Iwate, Miyagi, Fukushima, etc.	7
2011.3.12	Border between Nagano and Niigata	Nagano,Niigata	Strong 6
2011.3.15	Eastern part of Shizuoka	Shizuoka	Strong 6
2011.4.7	Off the coast of Miyagi	Miyagi	Strong 6
2011.4.11	Hamadori of Fukushima	Fukushima	Weak 6
2011.4.12	Nakadori of Fukushima	Fukushima	Weak 6

The Role of City Parks When Earthquake Disaster Happens

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Predominantly promoting the development of parks that can be used as emergency evacuation sites and disaster protection centers in earthquake disaster situations for safe and reliable urban development by improving anti-disaster measures in cities

○The Role of City Parks When Earthquake Disaster Happens

①Emergency Evacuation Sites and Routes
Housing Evacuees and Protecting their Lives from Fire in Urban Districts

②Disaster Protection Centers etc.
- Base of Disaster Rehabilitation and Reconstruction
- Base of Rescue Operations
- Sites for Temporary Housing etc.

③Stations to Help Persons Stranded to Return their Homes

④Nearby Base of Disaster-prevention Activities

⑤Function to Prevent the Spread of fire

In Japan, Anti-disaster Functions are Essential for City Parks.

Status of Utilizing City Parks in Hanshin Awaji Earthquake

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Even in large-scale earthquakes like Hanshin Awaji Earthquake and the Mid Niigata Prefecture Earthquake, parks function as disaster protection centers for disaster rehabilitation and reconstruction as well as daily commodity relay bases for disaster rehabilitation, wide-area evacuation sites to house evacuees from the environs and to protect their lives from fire, etc. in urban districts, and meeting places of local residents and bases of fire-fighting and relief operations.

Ookuni Park not only prevented the spread of fire in Nagata region but also functioned as emergency evacuation site and a base of disaster-prevention activities.

Ookuni Park：Kobe City, Hyogo Prefecture

The scene of an emergency kitchen (Volunteers distributed food.)

Shimonakajima Park：Suma Ward, Kobe City

Tents were also pitched at a soccer ground.

Nakano-minami Park：Higashi-nada Ward, Kobe City

Utilizing City Parks in The Mid Niigata Prefecture Earthquake in 2004 and The Niigata Prefecture Chuetsu-oki Earthquake in 2007

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・In the Niigata Prefecture Chuetsu-oki Earthquake, large-scale parks in the suburbs were utilized as bases of rescue parties or stations to deliver relief goods. Especially just after earthquakes, they play important roles as bases for rescue operations and transportation of supply goods because roads are split.

Parks function well as bases of the operations of the Self-Defence Forces and fire-fighting activities.

Echigo National Hill Park, Nagaoka City

Hakusan Municipal Athletic Park, Ojiya City

Utilized as base of volunteers to distribute food

Tookaichi City

・In the Niigata Prefecture Chuetsu-oki Earthquake, parks were also used to function not only as evacuation sites but also as temporary housing sites and bases of the rescue operations of the Self-Defence Forces.

Utilized as base of the operations of the Self-Defence Forces

Kashiwazaki Aqua Park, Kashiwazaki City

Utilized as temporary housing sites

Kasuga Park, Kashiwazaki City

Damages of Tsunami caused by the Great East Japan Earthquake

国土交通省

○Date and time of occurrence: 2:46p.m. on March 11, 2011

○Scale: Magnitude 9.0 (Maximum depth 7)

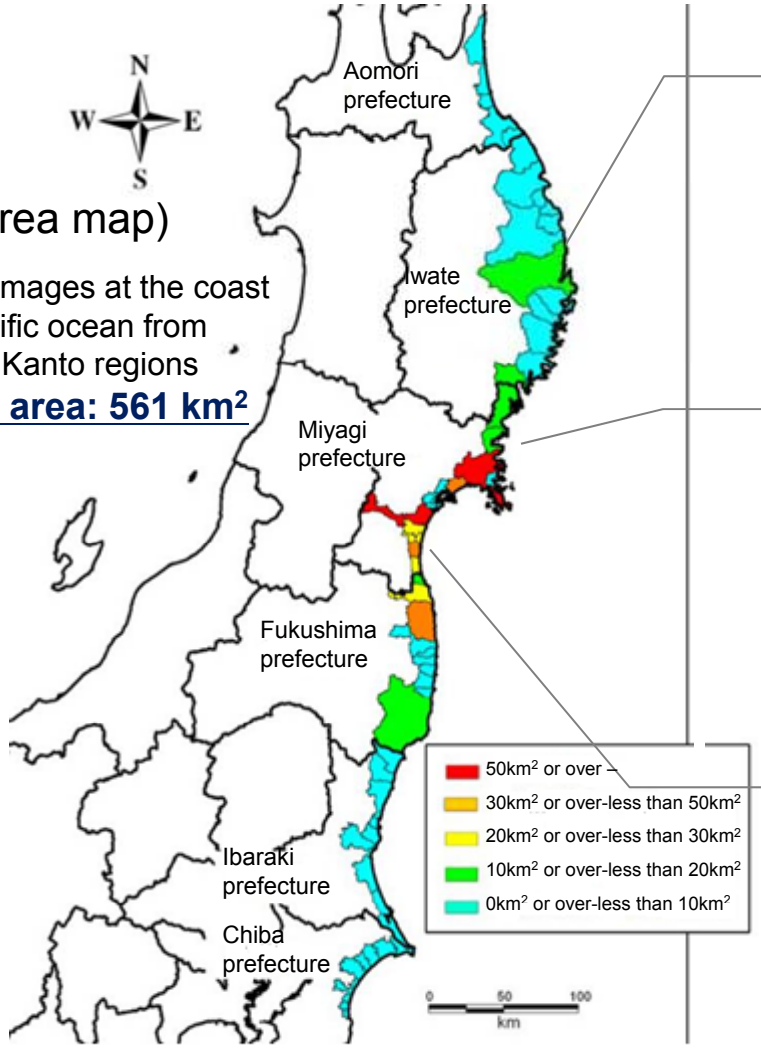
○Epicenter: Pacific sea, off the coast of Sanriku, 130km to the east-south-east of Oshika Peninsula and 24km deep

○Run-up height: 40.5m at the maximum (biggest ever in Japan) ○Maximum tide level: 9.3m ○Deaths/missing: Approx. 20,000

(Flood area map)

Severe damages at the coast facing pacific ocean from Tohoku to Kanto regions

Flooded area: 561 km²



Tsunami ran up the terrain from ria coast and reached **40.5m** which is the furthest record in the history of Japan. (Taro district, Miyako city)

In addition to damages at coastal areas, cities developed along rivers suffered from severe damages because tsunami ran up along rivers and reached inland areas. (Kesen-numa city etc.)

Tsunami fell trees etc. at coasts and flooded inland areas far from coasts, resulting in severe and extensive damages. (Wakabayashi ward, etc. Sendai city)

Damages and Impacts of Green Areas in Parks due to the Tsunami and Wastes Generated by the Disaster

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■ Damages of the tsunami to green areas in parks

Takada Matsubara Park of Rikuzentakata city in Iwate prefecture had its tide barrier forests totally destroyed and the park still remains under water due to subsidence.

Tsunami flooded inland parks and dumped huge amount of debris etc. there

■ Effect of green areas etc. in parks at the Great East Japan Earthquake

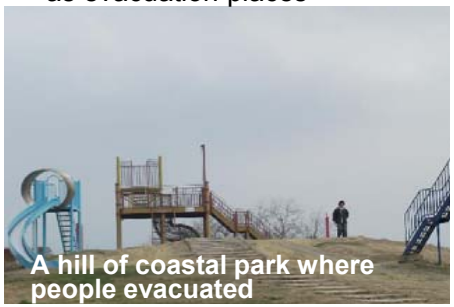
☐Attenuation of the energy of tsunami

Many houses were carried away where there is no forests at the coast

☐Capture floating objects

Trees prevented cars etc. from drifting

☐High land area etc. served as evacuation places



A hill of coastal park where people evacuated

☐Hub of support activities for recover/reconstruction

Utilized as a hub for self-defense force etc. to provide supports

■ Wastes generated by the earthquake

Concrete scraps

Wood scraps

Sediments of tsunami

Effect of Green Areas in Parks Confirmed after the Great East Japan Earthquake (Supports for recovery/reconstruction)

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☐Evacuation place

Azuma general playground park
(Fukushima city)

Gymnasiums in urban parks were utilized as shelters for evacuated citizens who lost their homes due to the Tsunami. Approx. 1,500 people were accommodated to the parks at one time in Fukushima.

☐Site for the construction of temporary housing and temporary storage site for debris

Kesennuma park
(Kesennuma city)

Tsurugadani central park
(Sendai city)

Urban parks are utilized for the construction of urgently needed temporary housings and temporary storage of disaster wastes generated in huge amount.
Approx. 3,300 out of planned 16,500 temporary houses were built in urban parks including 106 houses built in Kesennuma park (as of July 20, 2011)

☐Wide-area disaster prevention hub

Ishinomaki general playground park
(Ishinomaki city)

General parks etc. with a large open space were utilized as hubs for rescue/relief activities, supply goods collection and medical activities by self defense forces (SDF) and fire fighters. Ishinomaki general playground park was used as a campground for approx. 1,500 SDF personnel.

☐Acceptance of people stranded due to failure of the transportation systems

Showa Kinen Park
(Akishima city and Tachikawa city, Tokyo)

National parks were quickly opened up as shelters for many people who could not go home because public transportations were paralyzed in urban areas in the wake of the earthquake. Showa Kinen Park (Tachikawa city and Akishima city) accepted approx. 600 people and provided drinking water and blanket to them in response to the suspension of JR Chuo line.

Accelerating Aging Society with Declining Birthrate

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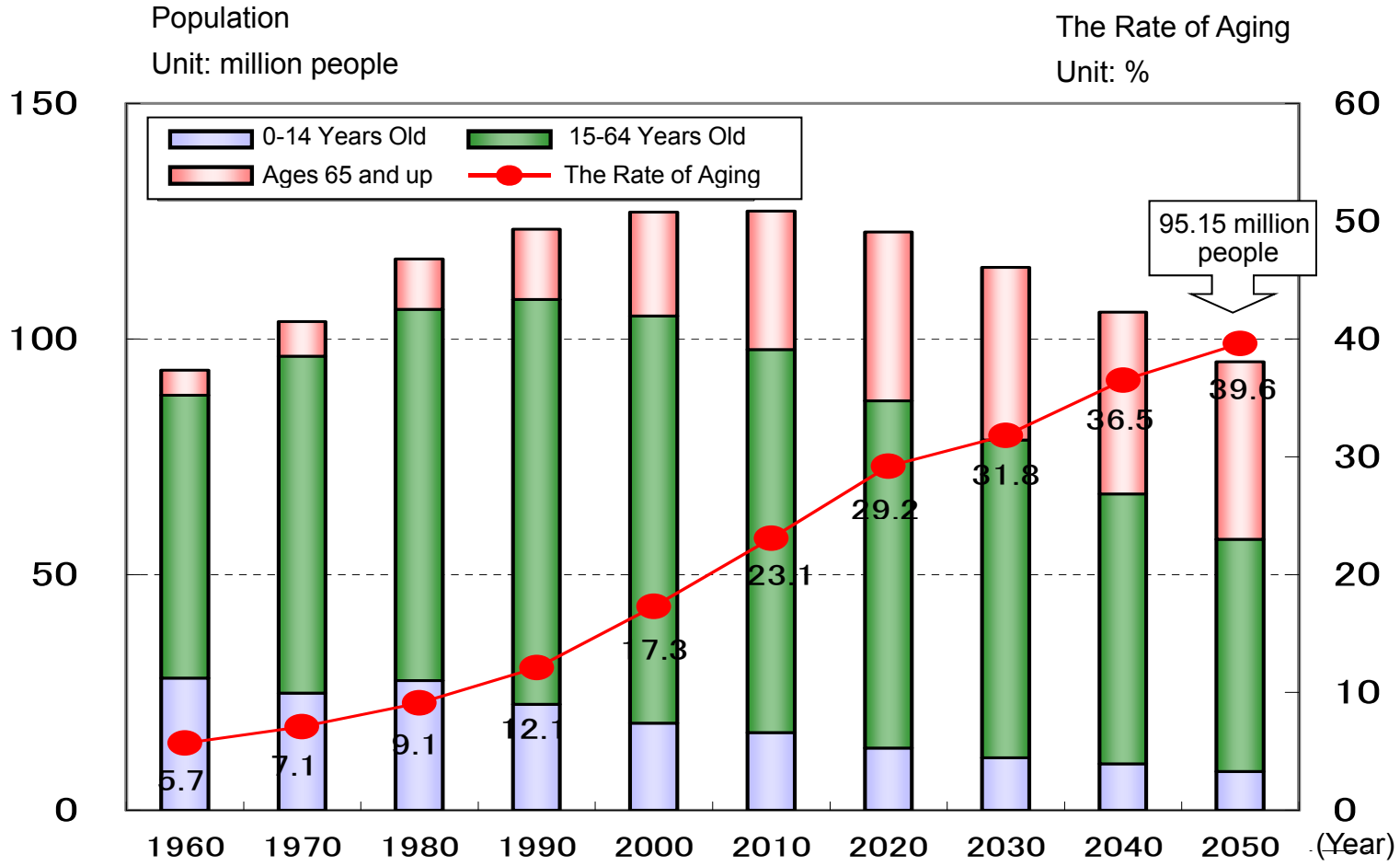
・Serious State of Declining Birthrate and Aging Population – Heading into Depopulating Society



Reference: This table makes references to a research by the National Institute of Population and Social Security Research

(Estimated in December, 2006)

Changing Needs of Parks

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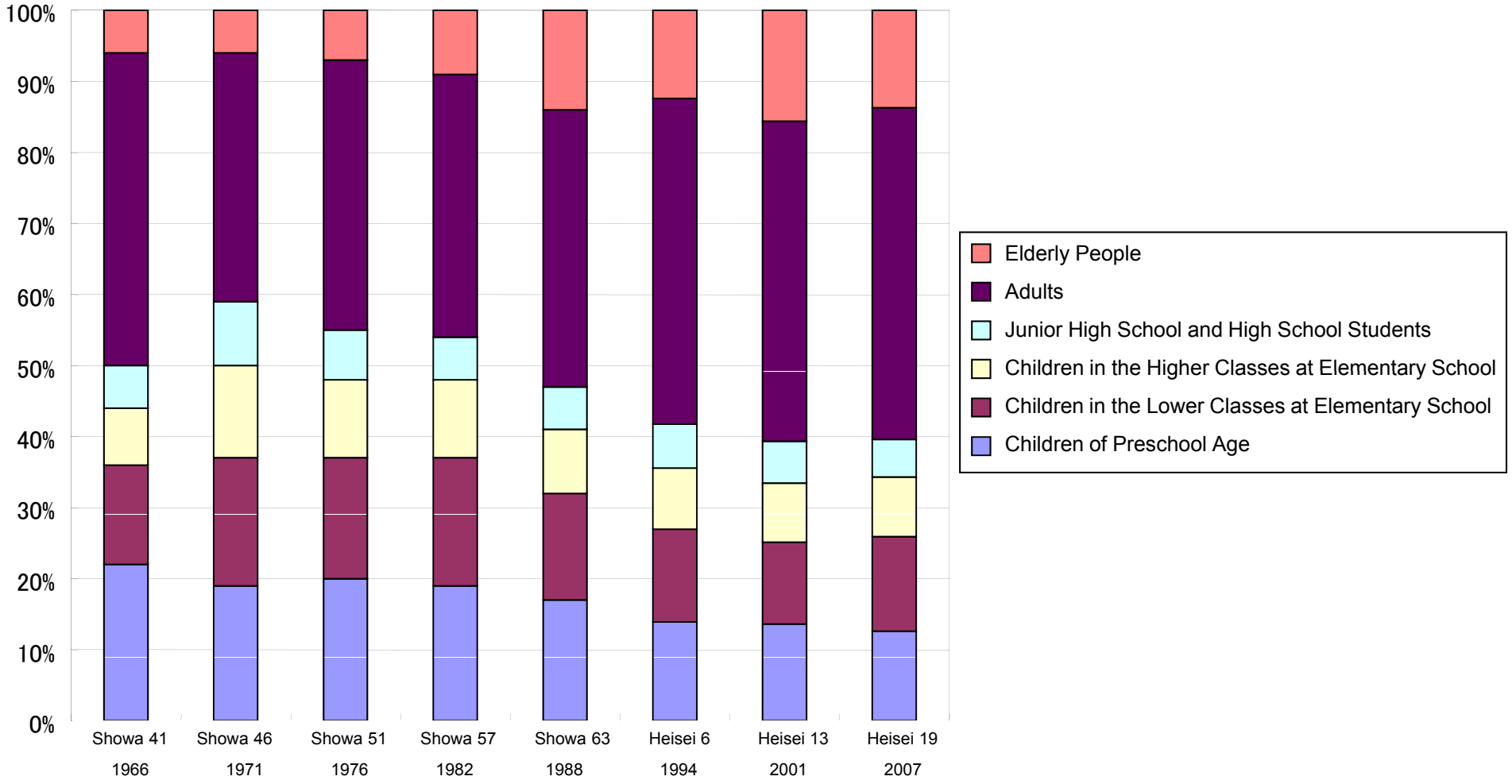
- In small parks, the park usage rate of elderly people increases, while that of children decreases.
- As the park using public changes, the age deterioration of park facilities also advances.

Investigation of Actual Conditions of Using City Parks



Barrier-free City Park

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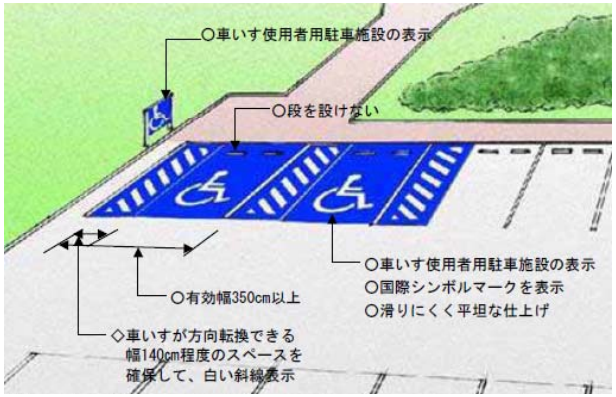
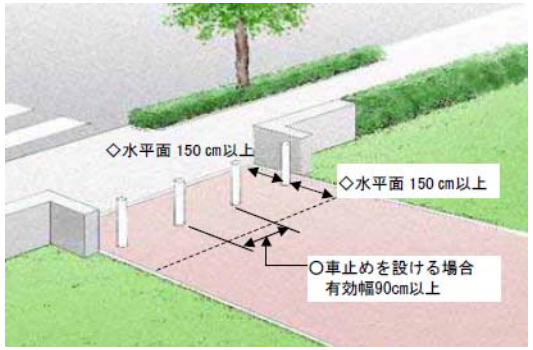
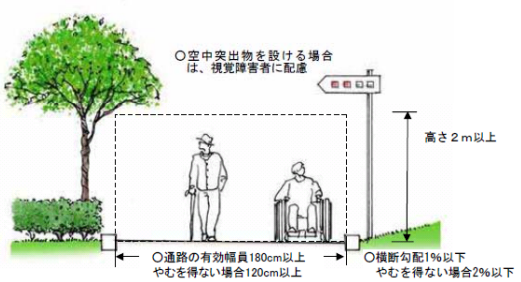
Keeping enough spaces to pass for the gateway of a park, paths from a parking lot to major park facilities, and open grounds, and eliminating difference in level on the ground, as well as ensuring access to barrier-free restrooms, rest areas, a management office, etc.



Reserving Parking Spaces Only for Wheelchair Users

Setting Barrier-free Restrooms





Eliminating difference in the level on Paths through a Park

Efforts to Ensure Safety in City Parks

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○In Japan, a guideline was drawn up by the government for defining concepts to ensure safety in managing parks because some children were involved in major accidents when playing on playground equipment and in swimming pools

"Guideline for Ensuring the Safety of Playground Equipment in City Parks"

Developed in March, 2002, and Revised in August, 2008

▼ This provides basic concepts to ensure the safety of playground equipment in city parks in consideration of children's unique ways of playing and past accident examples, and managers are notified about this content as national technical advice based on Urban Park Act.

The reason why it was revised in August, 2008.

○Increase in the number of playground equipment located in city parks (from about 390,000 in 1998 to 430,000 in 2004)
○Increase in the number of new types of playground equipment such as large complex or spring-loaded one

⇒ **Change in the factors of accidents and the accident frequency rate by equipment**

○Deteriorating financial conditions in which unit cost drops to almost two third of its peak
○Deterioration of park facilities like playground equipment with age in managing parks in recent years

⇒ **Increase in the number of major accidents ascribable to incomplete inspection**

【Important Points of Revision】

①Reinforcement of Safety Check System ・・・ Reinforcing the approach to safety check to prevent accidents ascribable to incomplete inspection

②Actions to Prevent Further Deterioration ・・・Thoroughly implementing measures concerning old equipment to prevent accidents caused by its deterioration with age

"Safety Standardized Guideline in Using Pools" Drawn up in March, 2007

▼Considering a fatal accident that occurred at a city pool in Fujimino city, Saitama prefecture, in July, 2006, the authorities concerned cooperated to uniformly indicate several points of consideration to make from facility, management, and operation standpoints regarding pools, and park managers are notified about this content as national technical advice based on Urban Park Act.

Renewal of City Parks

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- Many City Parks Developed During a High-growth Period in Japan
- Renewal of Old City Parks into the Ones to Meet the Current Needs

Improving Disaster Prevention in Urban Areas

Parks used as emergency relief centers to prevent the spread of fire and to function as evacuation sites

Earthquake-resistant water tanks

Warehouses

Proper placement of disaster prevention equipment necessary to create safe cities such as earthquake-resistant water tanks, warehouses, and broadcasting facilities

Renewing and Incorporating Barrier-free Design into Park Facilities

Making old park facilities barrier-free for elderly people to use safely, as well as re-developing them to meet regional needs

Measures to Improve Functions of Park Facilities

Developing playgrounds for infants in time for renewal of old playground equipment