

# Arashiyama National Forest



May 27, 2011

Kyoto/Osaka Forest Administration Office

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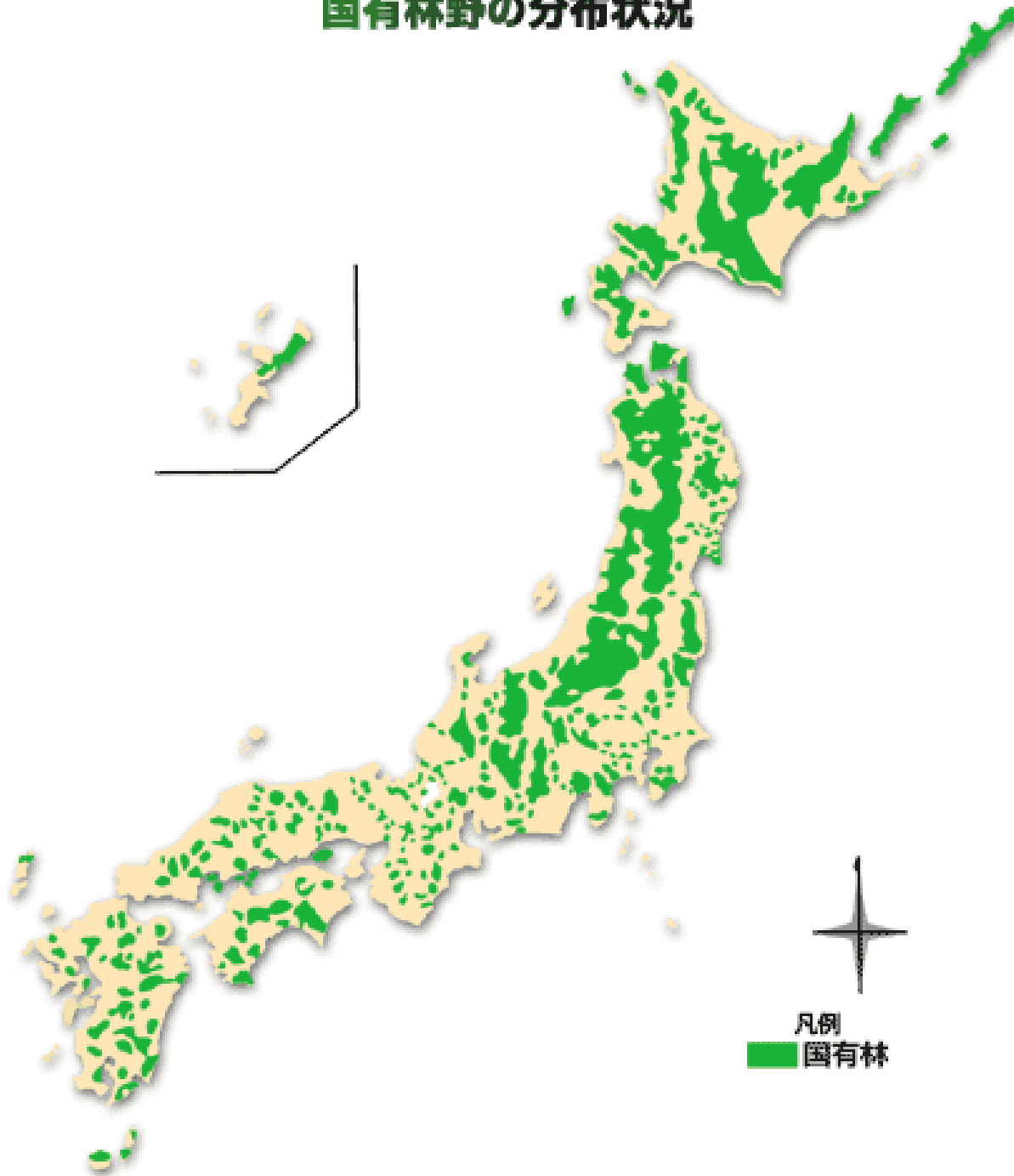
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# 1. National forests

- Approximately 2/3 of the national territory of Japan is made up of forests.
- Approximately 1/3 of the forests of Japan are national forests.
- National forests make up **approximately 20% of the national territory of Japan.**

	<b>Area</b>	<b>Ratio</b>
<b>National territory</b>	<b>37 million hectares</b>	<b>100%</b>
<b>Forests</b>	<b>25 million hectares</b>	<b>67%</b>
<b>National forests</b>	<b>7.6 million hectares</b>	<b>21%</b>

## 国有林野の分布状況



## Ratio of national forests by land area

Region	Ratio of national forests
Hokkaido	37%
Tohoku	32%
Hokuriku	15%
Kanto/ Koshinetsu	10%
Tokai	10%
<b>Kinki</b>	<b>3%</b>
Chugoku	5%
Shikoku	10%
Kyushu, Okinawa	13%

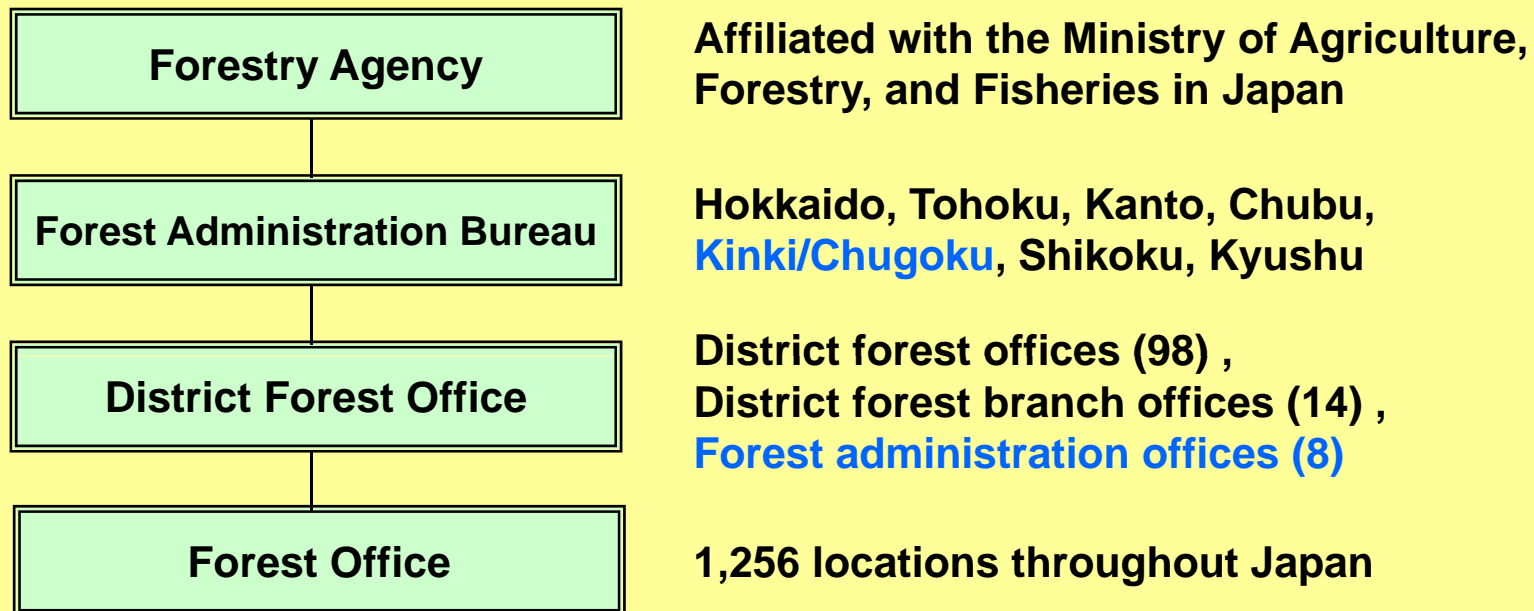
# 1. National forests

(Establishment of national forests)

- With the [return of the land and people from the feudal lords to the emperor](#) in 1869, the Meiji government established national forests from [forests that had been claimed by the previous feudal lords](#).
- With the [Ordinance regarding Shrine and Temple Lands](#) in 1871, [former shrine and temple lands](#) were incorporated as public land.
- From 1873 to 1881, the [classification of public and private land](#) through land-tax reform led to the setting of boundaries and the incorporation of [village-owned common forests](#) as national forests.
- Other areas were also incorporated through purchases, exchanges, and transfer of control.

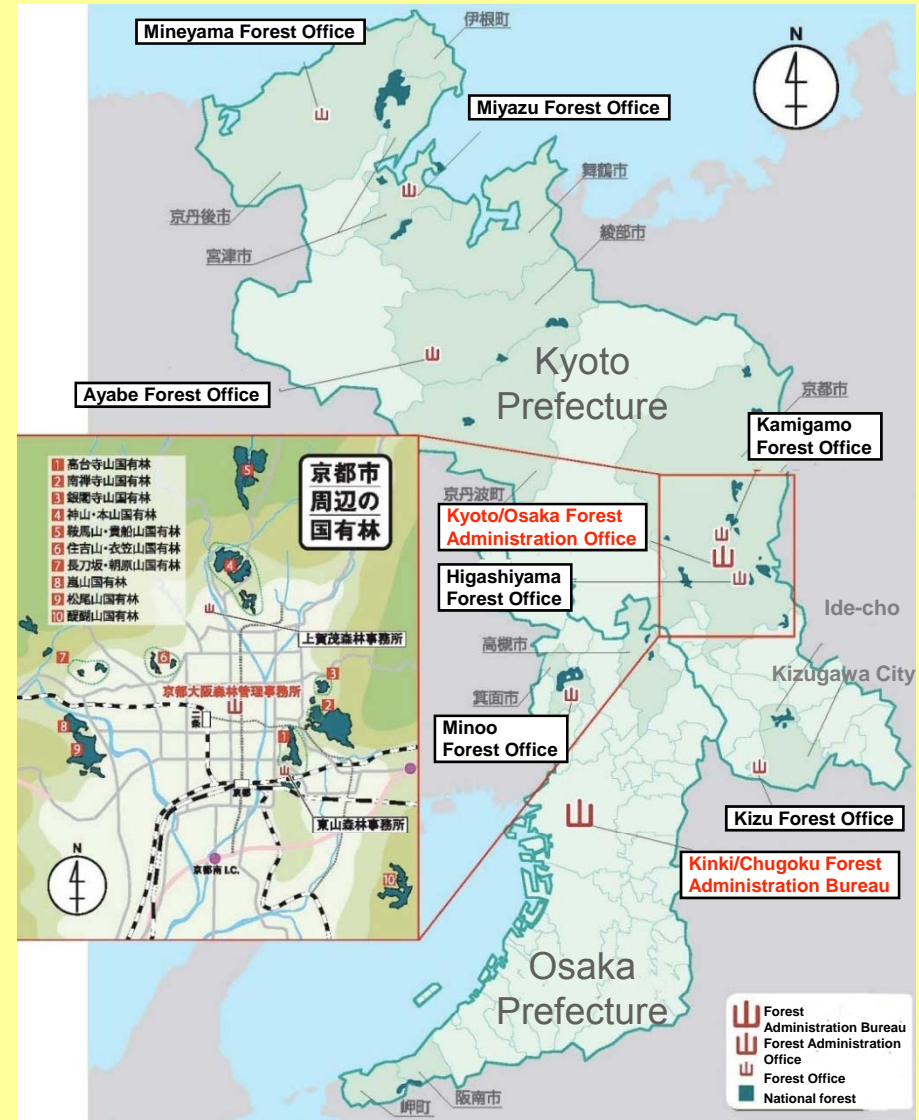
# 1. National forests

- The Forestry Agency acts as a state-owned company (government enterprise) that manages national forests.
- The Forestry Agency is comprised of Forest Management Divisions in 7 locations by regional block.
- District Forest Offices handle local management duties.



## 2. Kyoto/Osaka Forest Administration Office

- Positioned within the Kinki/Chugoku Forest Administration Bureau.
- In charge of management of the **approximately 5,700 hectares** of national forests in Kyoto and Osaka prefectures. (National forests account for approximately 1% of forests in Kyoto Prefecture and approximately 2% of forests in Osaka Prefecture.)
- The national forests under control in this area are **small in size and scattered**.
- National forest in the city of Kyoto include **Higashiyama, Kifuneyama, and Arashiyama**, and national forests in Osaka Prefecture include **Minooyama**.
- Forest Offices: 7 (Higashiyama, Kamigamo, Ayabe, Miyazu, Mineyama, Kizu, Minoo)
- Personnel: 21



## 2. Kyoto/Osaka Forest Administration Office

- There are [approximately 1,400 hectares](#) of national forests in the city of Kyoto.
- On Mt. Higashiyama, among Kiyomizu Temple, Yasaka Shrine, Chionin Temple, Nanzenji Temple, and Ginkakuji Temple, there can be found [Kodaijiyama National Forest](#), [Nanzenjiyama National Forest](#), and [Ginkakujiyama National Forest](#).
- On Mt. Kitayama, among Kifune Shrine and Kurama Temple, there can be found [Kuramayama National Forest](#) and [Kifuneyama National Forest](#).
- On Mt. Nishiyama, among Tenryuji Temple and Koke Temple, there can be found [Arashiyama National Forest](#) and [Matsuoyama National Forest](#).
- Most of the national forests in the city of Kyoto are former shrine and temple lands that were incorporated through the [Ordinance regarding Shrine and Temple Lands](#) in the early years of the Meiji era.





## 3. Arashiyama National Forest

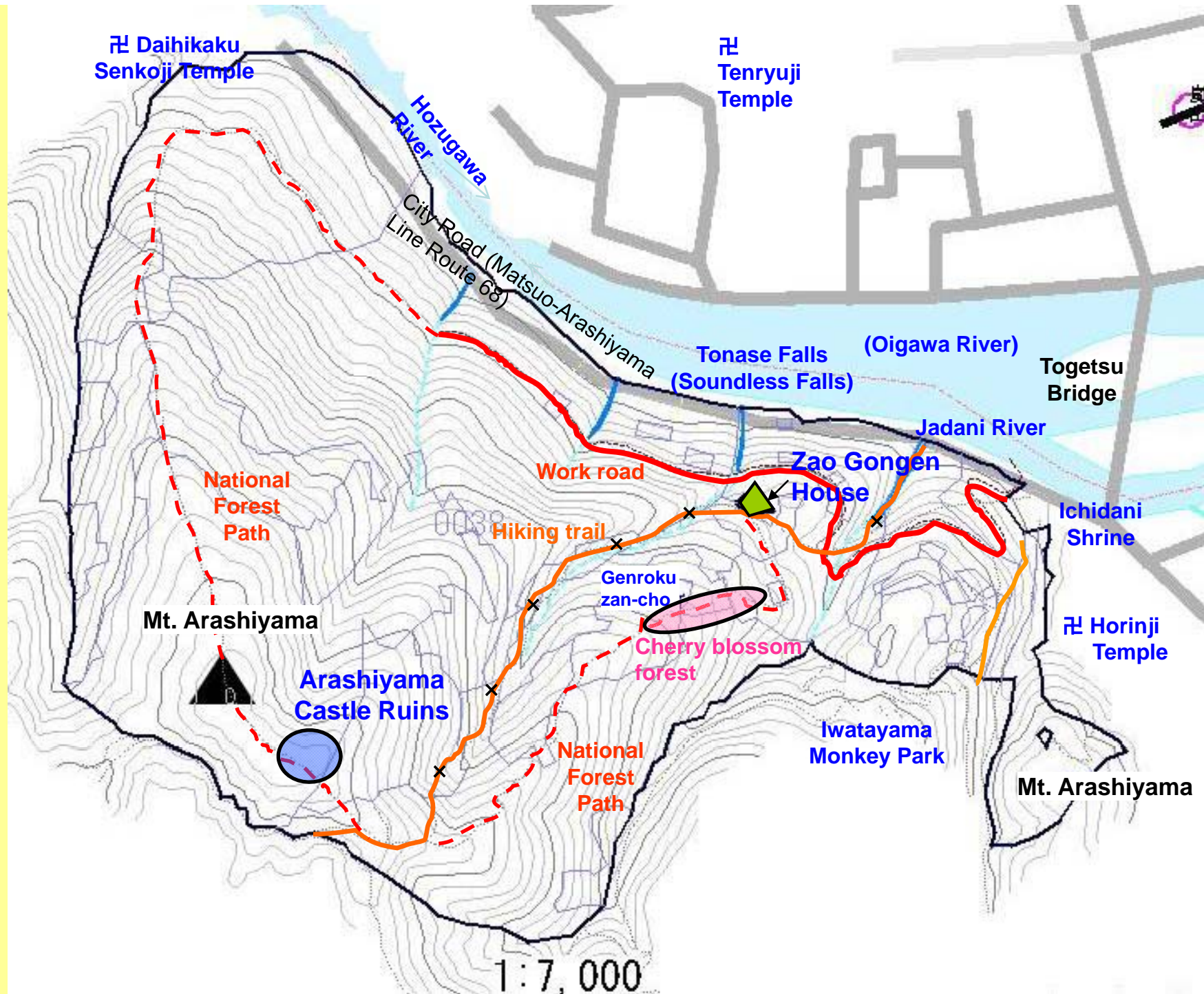
- (1) Overview of Arashiyama National Forest
- (2) Changes in Arashiyama National Forest
- (3) Current conditions of Arashiyama National Forest

# (1) Overview of Arashiyama National Forest

- Forest division: Arashiyama National Forest Division 38
- Area: 59.03 hectares
- Legal restrictions: scenic site conservation forest (Forest Act), conservation forest protected against sediment discharge (Forest Act), location of historical importance (Cultural Assets Preservation Act) , scenic area (City Planning Act), specially preserved historic landscape (Ancient Capitals Preservation Law), game reserve (Wildlife Protection and Hunting Law)
- Function classification: “Area for coexistence between humans and the forest (forest area usage model) ”, recreational forest “Arashiyama Scenic Forest”
- Most of this area was part of Tenryuji Temple until the Edo era.



Arashiyama National Forest Location map



## (2) Changes in Arashiyama National Forest

- End of the 13<sup>th</sup> century: Emperor Kameyama transplanted several hundred cherry tree bulbs from Yoshino. Later, Muso Soseki transplanted several thousand mountain cherry blossom trees from Yoshino. Even later, cherry blossom trees and pine trees were planted.
- 1871: Incorporated from Tenryuji Temple land into government-owned land according to the “[Ordinance regarding Shrine and Temple Lands](#)”
- 1915: specified as [sanctuary forest](#)
- 1916: specified as a [scenic site conservation forest](#)
- 1927: specified as Arashiyama Gorge, [location of historical importance](#)
- 1930: specified as a [scenic zone](#)
- 1931: Due to [prohibitions on tree trimming](#), there was a declination in Japanese Red Pine trees below the halfway point of the mountain, and signs that the forest was changing into a broad leaf forest. Therefore, the Osaka Regional Forestry Office established the [Arashiyama Landscape Management Plan](#).
  - Large red pine and mountain cherry blossom seedlings were planted in 50 meter square plots on the mountain slope.
  - Natural conversion to red pine trees was promoted in 50 meter square plots on the mountain ridge.
  - Cedar and cypress were planted on the west face of the mountain to create a multi-layered forest.
  - Broad leaf trees were selectively removed from valley areas.

## (2) Changes in Arashiyama National Forest

- Early 1960s: prominent weevil damage
- 1981 : held “conference regarding measures to protect the scenic beauty of Arashiyama National Forest”
- 1982 : established “management of national forests in Kyoto suburbs”, and started “Arashiyama Afforestation/Plantation Day” together with the Arashiyama Hoshokai (preservation committee).
  - Specified conversion to Japanese Red Pine along the ridge of the mountain.
  - Stabilized slopes at the halfway point and below, and introduced Japanese Red Pine and cherry blossom trees.
  - Natural forests not in direct scenic view were allowed to return to their natural state.
  - Man-made forests of cedar and cypress were specified as lumber resources.
  - In order for cherry blossom trees to receive sufficient sunlight, 0.05 hectares were to be trimmed twice every few years, maintaining a cutting area of 0.1 hectares.
- 1990: For the planting of new trees, the selective trimming of 0.05 hectares began.

## (2) Changes in Arashiyama National Forest

- 2003: specified as “[World Cultural Heritage Contribution Forest](#)”, and related management policies were implemented.
  - Target: [colorful forest with a mixture of deciduous broad-leaved trees and conifers](#), such as maple and cherry blossom
  - For the planting of cherry blossoms, maples, and keyaki, it was essential to maintain a nursery space. After performing [small-scale tree trimming](#), nearby [evergreen broad-leaved trees and branches were cut for improvement](#) to ensure sufficient sunlight.
  - Japanese Red Pine and other species with high resistance were planted along the ridge of the mountain. The addition of other conifers would be considered in the future.
  - Strengthened relationships with related research organizations.
  - Implemented measures against damage by deer and monkeys.
  - Executed a conservation project to prevent sediment discharge.

### (3) Current conditions of Arashiyama National Forest

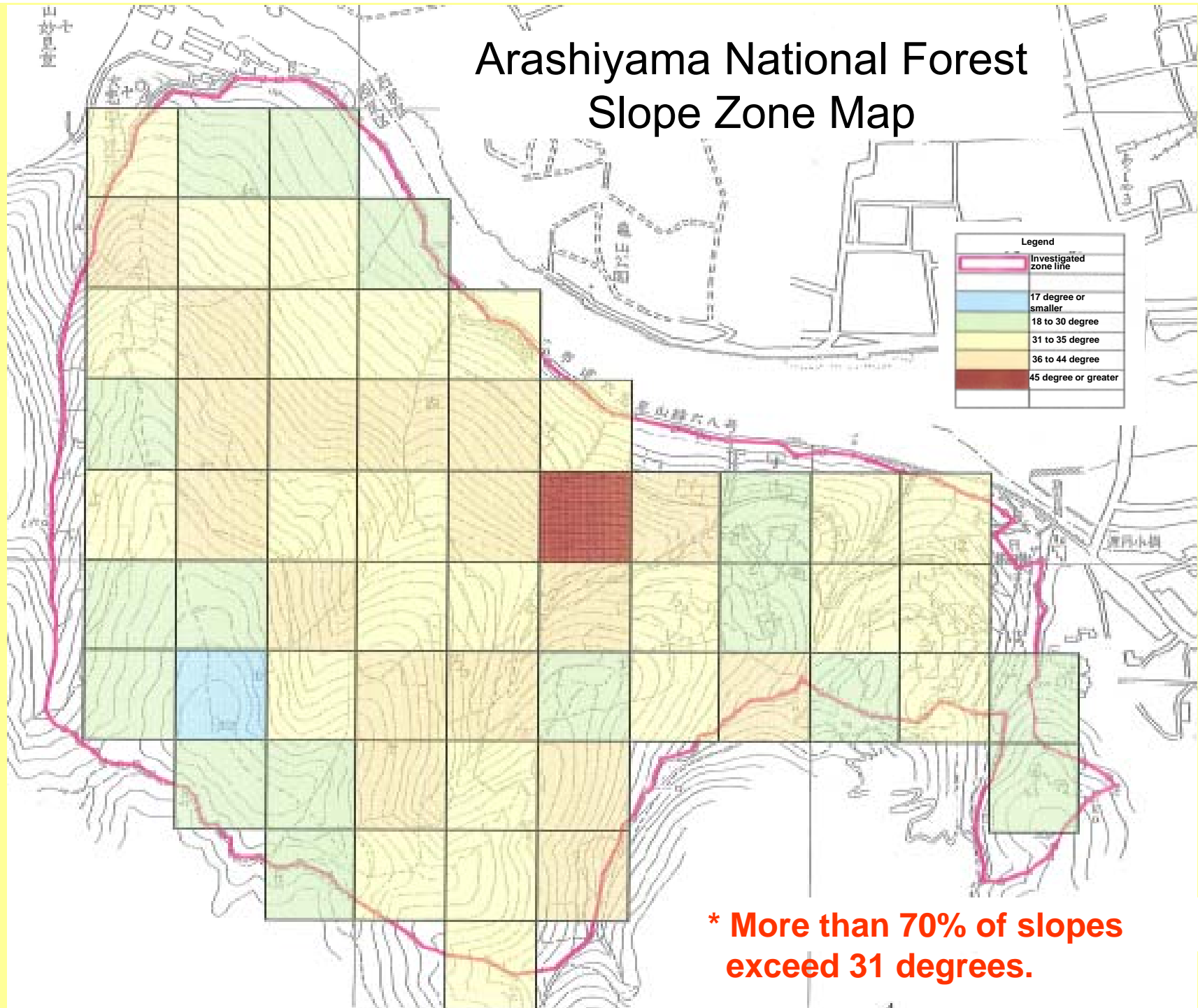
- (A) Terrain, topography
- (B) Flora, vegetation
- (C) Fauna
- (D) Sightseeing
- (E) Fire prevention facilities
- (F) Laws and regulations

## (A) Terrain, topography

- Elevation: 30 to 382 meters
- Average slope is approximately above 30 degrees, with a maximum of 45 degrees or greater. (70% of sloped surfaces exceed 31 degrees.)
- Many areas are on the northern slope and have insufficient exposure to sunlight. The surface soil is easily run off. Becoming infertile land.
- Topography: primarily sedimentary rock which belong to “Tanba group” made up of pelite, sandstone, and chert
- Many areas have been jointed and weathered by external forces, such as folding. There is a hazard of rocks breaking away and falling.



# Arashiyama National Forest Slope Zone Map



## (B) Flora, vegetation

### (Primitive era)

- Sakaki and Castanopsis (evergreen broad-leaved tree forest)

### (Ancient to pre-modern)

- Japanese Red Pine—Rhododendron (Japanese Red Pine forest)
- Transitioned to Japanese Red Pine forest through changing the trees to firewood as coal and trimming the branches.
- In and after the 13<sup>th</sup> century, planting of cherry blossoms and pines on lower slopes.

### (Modern to current)

- After incorporation as public land, prohibitions on cutting led to the transition from a Japanese Red Pine forest to a broad leaf forest. There was a dramatic decrease in Japanese Red Pine due to withering after the early 1960s.
- Cedar and cypress were planted in some valley areas.
- Declination of Japanese Red Pine and conversion into a three-layer forest (Japanese Red Pine secondary growth forest, broad leaf forest, man-made forest)

## (B) Flora, vegetation

### (Forest conditions by area)

- Upper slopes (16 hectares: approximately 30%): Japanese Red Pine secondary growth forest
  - Composition of Japanese Red Pine and Rhododendron remains
  - Dramatic decrease in Japanese Red Pine
  - Incursion of low- to medium-level evergreen broad-leaved trees, such as Ilex, Clethra, Eurya.
- Lower slopes (29 hectares: approximately 50%): broad leaf forest
  - Due to early planting changes and landscape management by man, an open forest of keyaki, Hackberry, cherry blossoms, and Quercus salicina has grown.
  - Erosion of the ground on steep slopes has occurred due to insufficient understory vegetation.
  - There are few seedlings of arboreal trees for the next generation.
- Forested sites (14 hectares: approximately 20%): man-made forest
  - Since the early 1960s, cedar and cypress have been planted primarily on the west side.
  - Since planting in the Meiji area, the east side has returned to natural forest.

# Arashiyama National Forest Forest Type Map

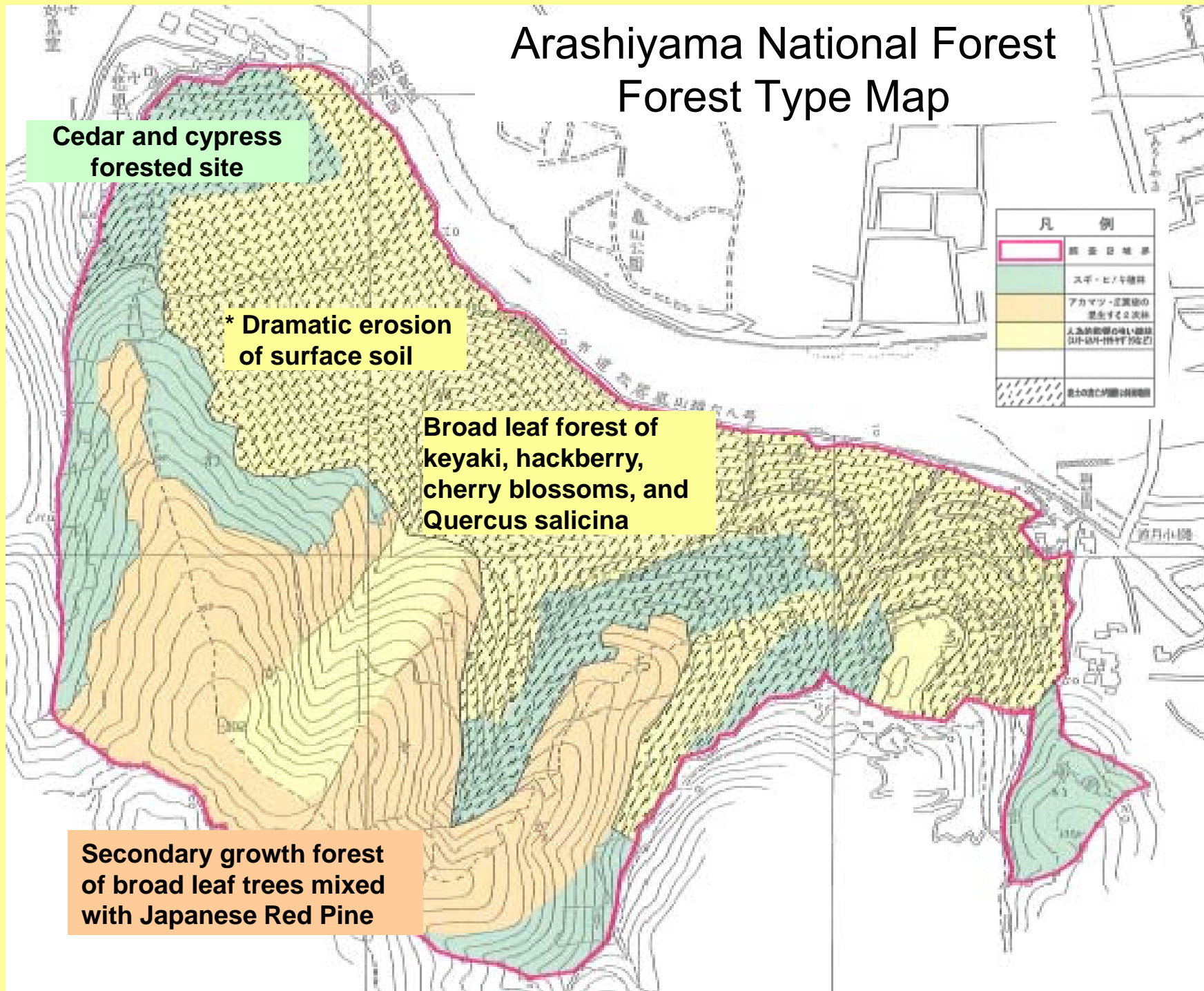
Cedar and cypress  
forested site

\* Dramatic erosion  
of surface soil

Broad leaf forest of  
keyaki, hackberry,  
cherry blossoms, and  
Quercus salicina

Secondary growth forest  
of broad leaf trees mixed  
with Japanese Red Pine

凡 例	
	調査区域界
	スギ・ヒノキ植林
	アカマツ・正葉樹の 混生する二次林
	人為的破壊の多い二次林 (山火・伐採等による)
	過去の伐採跡・埋立地





## **Japanese Red Pine secondary growth forest**

**(Japanese Red Pine has withered,  
followed by the incursion of *Pieris  
japonica* and *Ilex*.)**

## **Young Japanese Red Pine**

**(Several young Japanese Red Pine  
trees have appeared along the ridge  
of the mountain.)**





## **Broad leaf forest**

**(Insufficient understory vegetation on steep slopes has led to the falling of many rocks. )**

## **Autumn leaves in broad leaf forest**

**(There is a mixture of  
many species.)**





**Forested sites of  
cedar and cypress**

**Cedar forest along  
the approach to  
Zao Gongen**



## (C) Fauna

### (Japanese deer)

- Eat seedlings and damage trees
- There are reports of deer entering the gardens of Japanese inns at the base of the mountain.

### (Boar)

- There are indications of boars wallowing in mud and rooting.

### (Japanese monkeys)

- There are **approximately 150 monkeys fed** at “Iwatayama Monkey Park”. Is their movement area restricted?
- There is some **damage to newly planted trees**.



Damage to tree by deer



Mud pit wallowed in by boars



## (D) Sightseeing

- The **number of tourists** to the area around Arashiyama **is increasing**. (2002: 5.7 million → 2007: 7.9 million)
- 15.9% of all tourists in Kyoto visit Arashiyama, second only to Kiyomizu Temple (21.2%).
- In recent years, **tourists come in large numbers to the north side of Togetsu Bridge**. Is it necessary to create a greater dispersion of sightseeing areas?
- Nearby tourist facilities include **Arashiyama Monkey Park** and **Daihikaku Senkoji Temple**. Annual number of visitors: approximately 70,000 to Monkey Park and approximately 5,000 to Daihikaku Senkoji Temple.

## (D) Sightseeing

- Just beyond Jatani are the Tonase Falls (also known as the Soundless Falls), which were once a popular location on Mt. Arashiyama.  
“The brocade flowing along the Tonase is formed by the leaves of the trees along the Oigawa River.” (Fujiwara no Toshinari (12<sup>th</sup> century))
- Upstream from the Tonase Falls can be found the isolated enclave “Zao Gongendo. When Emperor Go-Saga planted cherry blossoms from Yoshino on Mt. Arashiyama, it is said that he prayed for the coming of Zao Gongen. Zao Gongen also appears in the Noh Play “Arashiyama” (written by Komparu Zempo (15<sup>th</sup> century)).
- The ruins of Arashiyama Castle can be found at the top of Mt. Arashiyama (382 meters). This castle was built in 1497 by Kozai Motonaga, a vassal of Hosokawa Masamoto, the official representative of the mountain castle.



Zao Gongen House

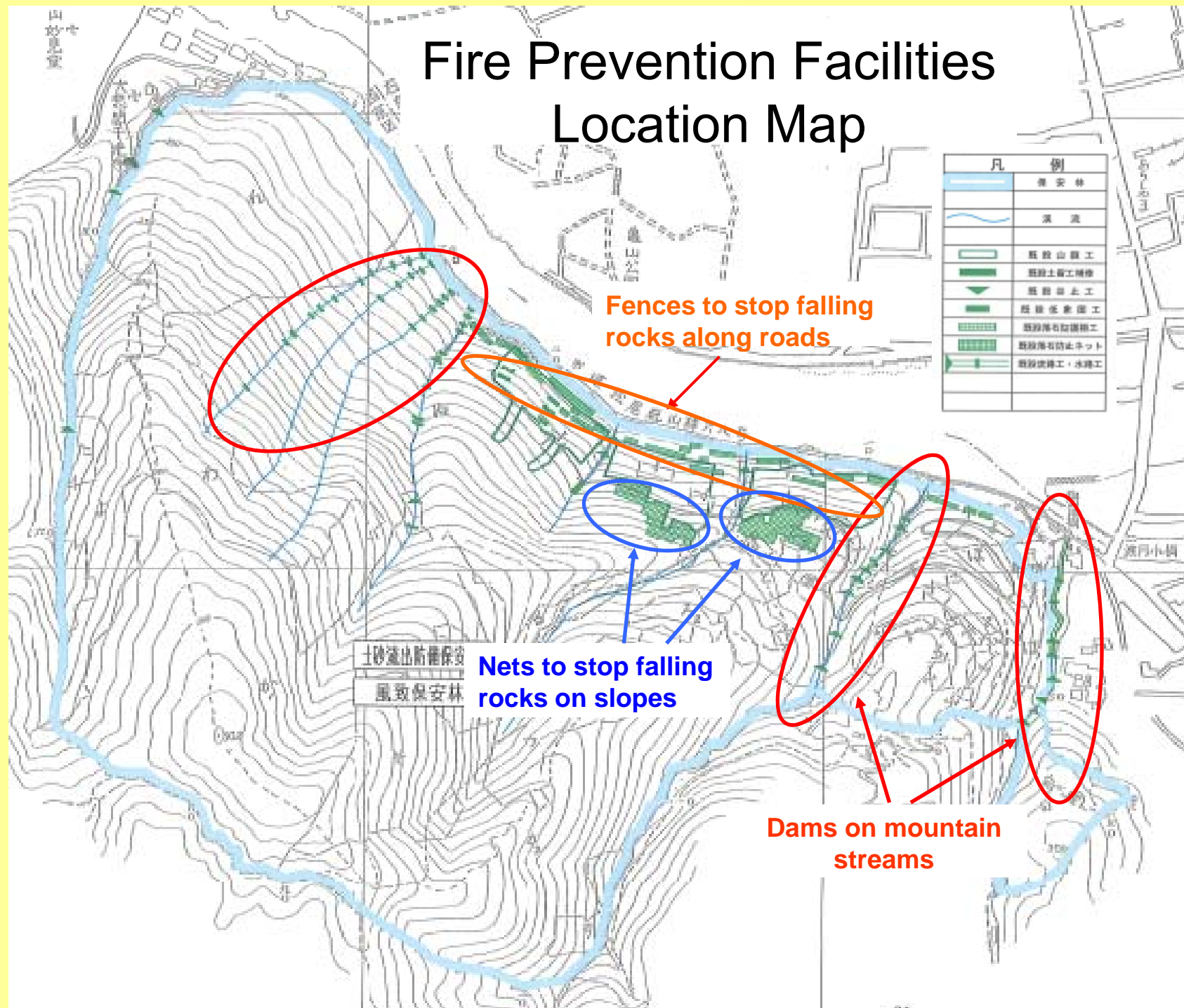


Tonase Falls

## (E) Fire prevention facilities

- **Mountain conservation work** has been performed continuously in Arashiyama National Forest since 1948, contributing to the prevention of mountain fire.
- Until that time, primarily hillside work (\* prevention of slope area slides) and valley work (\* maintenance of mountain streams) were performed.
- Since 1992, there has been a **focus on installing fences and nets to stop falling rocks**.
- It is believed that there has been a **dramatic reduction damage due to rocks falling onto city roads** immediately below the national forest.
- There are **some areas that require repairs due to degradation, or the construction of new fences**.

# Fire Prevention Facilities Location Map





**Installation of fences along roads with almost unintermittedly, to stop falling rocks**

**Some areas require repair or the building of new fences due to full of fallen rocks etc.**



## (F) Laws and regulations

- “Scenic site conservation forest” and “conservation forest protected against sediment discharge” were stipulated based on the Forest Act. Consultation with the government of Kyoto Prefecture is required for the trimming of trees.
- “Historical sites and places of scenic beauty” were stipulated based on the Cultural Assets Preservation Act. Projects that would change current conditions or effect preservation work require consultation with the Chief of the Cultural Affairs Agency.
- “Scenic areas” were stipulated according to the City Planning Act. Consultation with the Mayor of Kyoto is required for the trimming and trees.
- “Specially preserved historic landscapes” were stipulated based on the Ancient Capitals Preservation Law. Consultation with the Mayor of Kyoto is required for the trimming of trees.

## (Summary of current conditions)

- Most of the north face consists of steep slopes, where the **surface soil** is easily **runoff**.
- There are many areas that have been subject to joint and weathering, where there is a **hazard of falling rocks**.
- The forest is currently a **three-layer forest**, made up of “Japanese Red Pine secondary growth forest” on the upper slopes, “broad leaf forest” on the lower slopes, and “man-made forest”.
- There is damage caused by both **deer** by feeding and barking damages and **monkeys** by bending and breaking trees.
- There are **increased numbers of tourists** at Mt. Arashiyama, mostly around the Togetsu Bridge.
- **Mountain conservation work has been performed continuously** since 1948. There has been a reduction in damage due to falling rocks. Some fences and nets have degraded.
- **Tee cutting is regulated in multiple levels** by the Forest Act, Cultural Assets Preservation Act, City Planning Act, and Ancient Capitals Preservation Law. Each act or law stipulates the **need for authorization before trimming** the trees.

## 4. Forum for discussing the management of Arashiyama National Forest

### (Issues)

- Since 1982, **cherry blossom and maple trees have been planted** on “Arashiyama Afforestation/Plantation Day”, but the same number of trees have continued to wither and die.
  - Reconsider planting methods
- While there is an increase in the number of tourists to Mt. Arashiyama, they primarily visit the area around Togetsu Bridge.
  - Utilize historic and cultural resources within the national forest
- **There is damage caused by deer and monkeys.**
  - Achieve a better understanding of the ecosystem
- Due to continued mountain preservation work, there has been a reduction in damage due to falling rocks. Some fences and nets have degraded.
  - Strengthen existing safety equipment, and continue such measures.



## 4. Forum for discussing the management of Arashiyama National Forest

- A “Forum for discussing the management of Arashiyama National Forest” was held at Tenryuji Temple on June 12, 2009.
- The committee was made up of 6 local personnel and 4 specialists. (\* cooperation between local organizations, research organizations, and the government)
- This forum was held on 4 occasions. Reports and proposals regarding vegetation, scenic views, fauna, and mountain conservation were received from the specialists, and opinions were summarized. (\* integration of “forestry”)
- A “Policy for the Management of Mt. Arashiyama” was established. Based on this, projects for 2010 and beyond were scheduled.
- This forum is scheduled to be held regularly, twice annually beginning in 2010.



**Discussion Forum**

## 5. Projects in fiscal 2010

### (Cooperation between Discussion Forum and other regions)

- **Addition of 2 more local personnel committee members** to broaden the range of opinions.
- **Discussion Forums to be held on September 29, 2010 and February 25, 2011.**
- **Along with the implementation of monitoring survey by specialists on the committee, explanation meetings will be held for the general public on November 5, 2010, January 18, 2011, and February 7, 2011 to gain the understanding and cooperation of local residents.**
- **The "30<sup>th</sup> Arashiyama Afforestation/Plantation Day" will be held on February 25, together with the Arashiyama Hoshokai (preservation committee). Memorial trees will be planted by Saga Junior High School on the same day.**
- **A local tour will be provided for local community leaders on March 18.**

### (National forest project)

- **Mountain conservation work will include 0.29 hectares of mountain work in 3 areas, and the planting of 85 Japanese Maple trees of two varieties.**
- **87 trees (39m<sup>3</sup>) damaged by *Platypus quercivorus* will be removed.**

## 6. Projects scheduled for fiscal 2011

### (Cooperation with other non-Discussion Forum regions)

- Discussion forms will be held in September 2011 and February 2012.
- The implementation of monitoring survey by specialists on the committee will be continued with the understanding and cooperation of local residents.
- The "31st Arashiyama Afforestation/Plantation Day" will be held in February, together with the Arashiyama Hoshokai (preservation committee).
- A local tours will be provided for local community leaders on multiple occasions.

### (National forest project)

- Mountain conservation work will include mountain slope work and the planting of Japanese Maple trees of various varieties.
- Trees damaged by weevil and *Platypus quercivorus* will be removed as necessary.



End