Tokyo's Profile

Natural environment in Tokyo
The administrative area of TMG extends 1,900km from north to south and from mainland Tokyo to Ogasawara Islands, with altitude difference of more than 2,000m. It belongs to cold temperate zone and the subtropics. These geographical features provide a wide range of natural environments.
On the other hand, various issues challenges Tokyo, such as the decrease in green spaces due to developments, and lowered quality of green space due to uncontrolled and unchecked exploitation.

Rich nature that varies greatly across regions in Tokyo
In the mountainous side of Tama region, primeval forests remain in higher altitudes and natural vegetation and artificial forests of cypress and Japanese cedars are mixed with primeval forests in lower altitudes, where large mammals including Asia black bear and raptors live. Although hills and plains in Tama region are rapidly being urbanized, the ecosystem functions properly in woods and riverbeds in Satoyama (agricultural landscapes near the hills and mountains) and hillocks, in terms of agriculture and people’s living.
In urban area, where urban functions are highly concentrated, precious wildlife habitats are provided by large green spaces like Emperor’s palace and Shinjuku Imperial Garden, agricultural lands/woodlands/private woods scattered around cities, and tidelands/beaches that have been conserved and created in littoral region.
World Natural Heritage-listed Ogasawara Islands are a group of oceanic islands isolated from other islands and continents. Ogasawara Islands' ecosystems reflect a range of evolutionary processes - plant species that had been accidentally brought in to the islands evolved in isolation conditions into endemic species unique to the islands over a long period of time. In addition, Izu Islands, too, have endemic species (subspecies) and species that choose the islands as their rare breeding sites.
Population and economic trends in Tokyo
Population of Tokyo accounts for about 10% of Japan’s total population. Factoring into the upward trend in population and the number of households, Tokyo will likely continue to see natural environmental changes through developments over years.
On the other hand, specific features, e.g. the large number of firms’ headquarters located in Tokyo, Tokyo’s being one of the world’s biggest economy scale and its low food sufficiency ratio, indicate that economic activities in Tokyo and livelihoods of the citizens largely depend on biological resources in and outside the country.

Population
As of 1st October 2010, Population of Tokyo increased by about 580,000 (4.6%) to about 13,160,000 from 12,580,000 in 2005, exceeding the level of 13,000,000 for the first time. Population of Tokyo is expected to continue its upward trend for years to come, peaking at 13,350,000 around 2020 and turning downward after that. The number of households in Tokyo in 2010 increased by 630thou (11.0%) to 6,380thou from 5750thou in 2005. It is expected to increase till 2025, and then start decreasing afterwards.

Economic trends
16.3% of Japanese firms have their headquarters in Tokyo, of which, 2,799 were large companies with capital more than JPY1 billion (in 2009), accounting for nearly 50% of all large companies nationwide. Nominal gross production of Tokyo in FY2009 was about JPY85trillion, and one of the largest city's economies in the world, and it is equivalent to a major state’s GDP. Food sufficiency ratio in Tokyo (on a calorie supply basis) is 1%, heavily depending on food supply from outside Tokyo. (Japan's food sufficiency ratio is 40%).
Adverse effects on Tokyo’s natural environments

① The loss of green spaces due to developments
The green and water coverage ratio for 2008 remained flat at 19.6% from 5 years earlier (20.0%) in wards, while that in Tama District dropped 2.4 points to 67.4% from 69.8% and that in Total also fell 1.7 points to 50.7% from 52.4% in the same period.
The major factors for the changes in the green and water coverage ratio are a decrease in “forests/fields/grasslands” and “farm lands” due to residential developments and an increase in “parks/green tracts” due to the steady establishment/improvement of urban parks and green areas.
Changes over years were: “park/green area” increased 0.2 points in both 23 wards and Tama region, while “agricultural lands” and “forest/plain/grassland” dropped. Especially, Tama region saw significant drops of 0.6% points in “agricultural lands” and 2.0 points in “forest/plain/grassland”.

② Deteriorated green quality due to the lack of positive human interventions and actions
【Devastated Satoyama and forest】
Habitats for amphibian are disappearing due to the loss of paddy fields and drying after years of abandonment.
59% of the forests in Tama region consists of artificial forests such as cypress and Japanese cedar forests. Stagnant timber price has been causing a delay to forest improvement/management such as periodic thinning, and some forests are being increasingly devastated.
Insufficiently-managed artificial forests cause soil runoffs since plant growth is sparse due to lack of sunlight in the undergrowth and deteriorates habitats for wildlife, thus lowering forest ecosystem services. In some regions, the lack of management in bamboo forests like Moso bamboo/Japanese timber bamboo forests are deteriorating habitats for a variety of wildlife, as bamboos take over the surrounding areas to let other plants wither.

Devastated forest due to insufficient management
### 5-Year changes in the green and water coverage ratio by use (in FY2003 and 2008)

<table>
<thead>
<tr>
<th>Area</th>
<th>Year</th>
<th>Park/green area</th>
<th>Farms lands</th>
<th>Water surface/river/waterway</th>
<th>Forest/plain/grassland</th>
<th>Total of the green and water coverage ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokyo</td>
<td>2003</td>
<td>3.3%</td>
<td>4.4%</td>
<td>2.6%</td>
<td>42.2%</td>
<td>52.4</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>3.5%</td>
<td>3.9%</td>
<td>2.5%</td>
<td>40.8%</td>
<td>50.7</td>
</tr>
<tr>
<td></td>
<td>Changes over years</td>
<td>0.3 points</td>
<td>▲ 0.5 points</td>
<td>▲ 0.1 points</td>
<td>▲ 1.4 points</td>
<td>▲ 1.7</td>
</tr>
<tr>
<td>Tama District</td>
<td>2003</td>
<td>2.3%</td>
<td>6.0%</td>
<td>1.4%</td>
<td>60.0%</td>
<td>69.8</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>2.5%</td>
<td>5.4%</td>
<td>1.4%</td>
<td>58.0%</td>
<td>67.4</td>
</tr>
<tr>
<td></td>
<td>Changes over years</td>
<td>0.3 points</td>
<td>▲ 0.6 points</td>
<td>± 0</td>
<td>▲ 2.0 points</td>
<td>▲ 2.4</td>
</tr>
<tr>
<td>wards</td>
<td>2003</td>
<td>5.2%</td>
<td>1.4%</td>
<td>4.7%</td>
<td>8.7%</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>5.4%</td>
<td>1.1%</td>
<td>4.6%</td>
<td>8.5%</td>
<td>19.6</td>
</tr>
<tr>
<td></td>
<td>Changes over years</td>
<td>0.3 points</td>
<td>▲ 0.3 points</td>
<td>▲ 0.1 points</td>
<td>▲ 0.2 points</td>
<td>▲ 0.4</td>
</tr>
</tbody>
</table>
【Correlation between forest areas and the number of species in Kanto】
(An example of parks/green area in suburbs in Minami Kanto)

The larger the forest area is the more bird species live there.

Since forests provide habitats for wildlife such as birds, insects, fishes, mammals, etc., the loss of green areas leads to the decrease in species of these animals.

【Relation between river improvement and the number of fish species】
(Oozone Biotope (the Ayase river))

River improvement with considerations for wildlife habitats lead to an increase in the number of species.

【Source】Home page of Ministry of Land, infrastructure and Transport "Annual report on the Ayase river stream renaissance II (FY2011)"
3. The existence of rare, threatened and endangered species/the impact of alien species/introduced species on native species.

(Rare, threatened and endangered species)

Tokyo Red List (revised for mainland Tokyo in 2010 and for islands in 2011) lists rare, threatened and endangered species that need protection: 1,576 species in mainland Tokyo, 617 in Izu Islands and 625 in Ogasawara Islands.

Key threats to these rare, threatened and endangered species are the loss of green spaces, insufficient management and illegal digging/capture. Rare species such as Calanthe and Tokyo daruma pond frog (Rana porosa porosa) are now on the verge of extinction in mainland Tokyo. Furthermore, the loss of marsh and grasslands are also deteriorating bird habitats.

(Alien species/introduced species)

TMG has already confirmed several invasive alien species listed under the invasive alien species act in Tokyo. There is a concern over the introduction of more alien species/introduced species into Tokyo either intentionally or unintentionally by active freight and logistics.

In mainland Tokyo, one of the key threats to rare, threatened and endangered species is predation, e.g. common raccoons that feeds on Tokyo Salamander (Hynobius tokyoensis). The alien/introduced species have been threatening unique ecosystems in islands, too, for instance, the damage on plants by feral goat in Ogasawara Islands (Chihi-jima) and Japanese weasel’s predation on animals in Izu Islands (except for Oshima).

4. The impacts of global warming

As global warming progresses, plants in cold temperature region such as Erythronium japonicumhabitats, or “Katakuri” in Japanese, may lose their habitats.

Damage by feral goat
Promote green policies jointly with various stakeholders

To promote green policy in terms of biodiversity, TMG’s efforts alone are not sufficient. Its cooperation with various stakeholders including municipalities, the business community, non-profit organizations (NPOs) and their voluntary actions and participation are essential.

To clarify how stakeholders can contribute to the promotion of green policy, TMG has divided green actions into three policies and shows the future direction of green measures in a systematized way, with a summary of its previous efforts.

Three action policies

Action policy 1 『Conserve』～Improve greenery conservation～
Action policy 2 『Create』～Green network～
Action policy 3 『Harness』～Promotion of the sustainable use of ecosystems～
Major role expected of each stakeholder

[The citizens of Tokyo]
· Understand the importance of biodiversity and be a sustainable consumer.
· Participate in green conservation/creation activities by municipalities, businesses and NPOs.

[The business community]
· Promote sustainable business practices at all phases of company activities from raw material procurements to product designing/production, transport/sale and use/recycling.
· Make every effort to mitigate the impacts of developments of properties on ecosystem.

[NPOs]
· Promote green conservation/creation in close liaison with the citizens and municipalities.
· Endeavour to provide opportunities for the citizens to understand and experience the importance of biodiversity.
· Contribute to the Development of future leadership for green conservation/creation.

[Universities/Research institutes]
· Give specialist advice to the business community, NPOs, municipalities and TMG.
· Accumulate scientific knowledge that contribute to the biodiversity conservation and identify new methodologies and technologies.

[Municipalities]
· Promote, as local government that acts closely to local residents, locally-oriented green conservation/creation in liaise with local residents, the business community and NPOs.
· Endeavour to provide opportunities for local residents and the business community to learn and experience the importance of biodiversity.
· Promote leadership capacity development for green conservation/creation.

[TMG]
· Makes efforts in green conservation/creation of its own accord, and promote, as an autonomous body covering a wider area, rule-making to allow the above-mentioned stakeholders to act for green conservation/creation towards sustainable society.
· Gives technical assistance for each stakeholder to play a role as expected, through leadership capacity development for green conservation and information supply on natural environment.