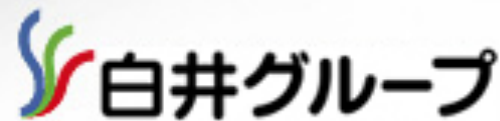




Tokyo and New York Waste Management Systems

A Shirai Group Presentation



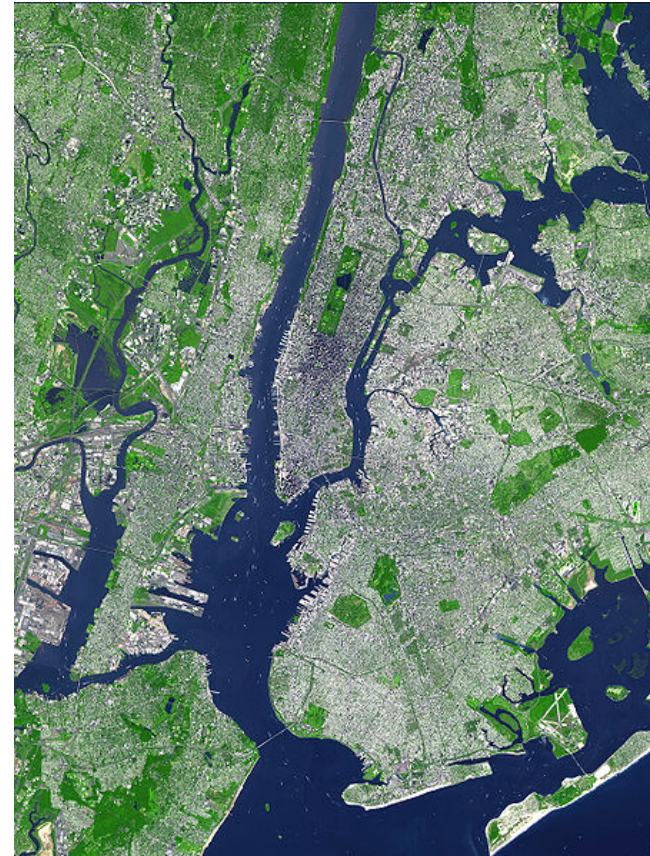
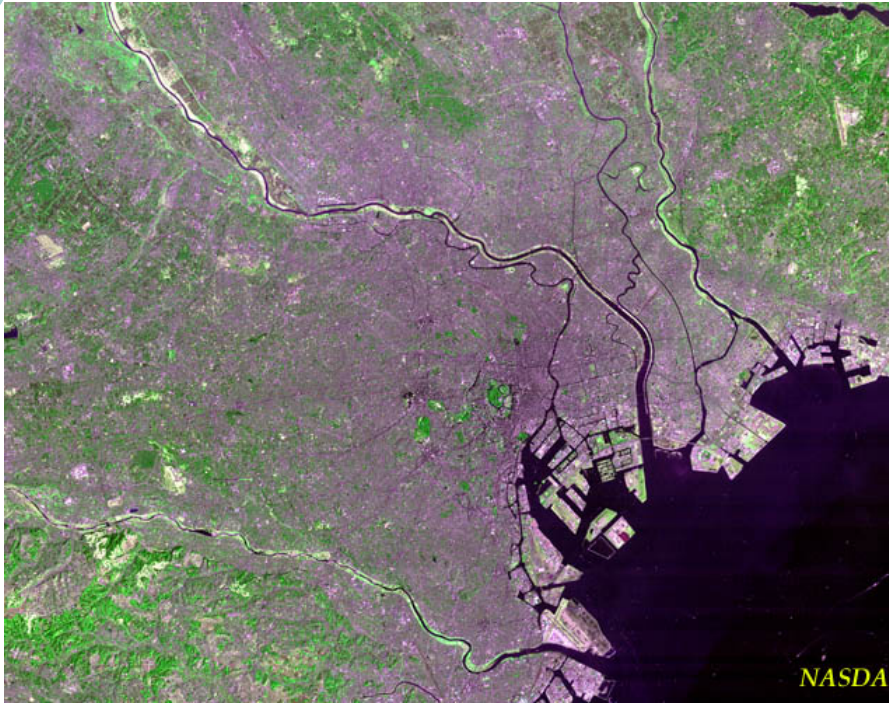


Geography and Distance

- Tokyo and New York are separated by over 6700 miles, an ocean and different climates.
- The differences in culture and technology create a great amount of variation in recycling systems.
- The following is a discussion of all general differences between the two systems.

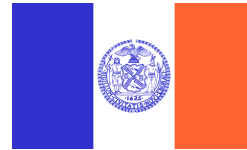
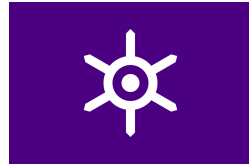
Geographical Differences

- One of the main reasons causing a lot of differences in recycling is the vastly different geography of the two cities.





Tokyo



New York

Population: 12,790,000

Total Area: 2,187 km²,
844.40 mi²

Density: 5,847 /km²

Population: 8,363,710

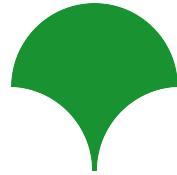
Total Area: 1,214.4 km²,
468.9 mi²

Density: 10,606/km²

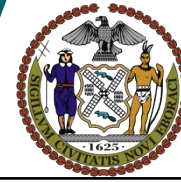
Tokyo and New York became Sister Cities in 1960's and have had a strong cultural and economical exchange since then.



Tokyo



Geography



New York

-
- | | |
|--|---|
| <ul style="list-style-type: none">○ Dominated by rivers, but is mostly on land. Water affects travel very little.○ Location and transportation of waste is done easily over land.○ In the past Tokyo's lack of water ways was seen as an advantage to transportation, but it also limits the way waste can be transported. | <ul style="list-style-type: none">○ New York is made of 5 smaller cities all of which are on different islands. River ways greatly effect travel.○ Transportation of waste is effected because of the geography and becomes very difficult over long distances.○ In the past New York has viewed its waterways as an obstacle, but will soon use them to its advantage. |
|--|---|

History of Sanitation

Tokyo



- 1898 modern Tokyo government started there was unit for waste
- 1954 Bureau of Waste Management started
- 2000 Bureau of Waste Management divided and shift into 23 cities
- 1982 recycling started in Shinagawa and Adachi.
- 1997 recycling started in all 23 cities area.



New York

- Sanitation Department was founded in 1881 as the Department of Street Cleaning.
- The Department of Street Cleaning, reorganized as the Department of Sanitation in 1930.
- In 1970 the first recycling operations began.

-By 1988 Recycling required all of the





Statistics-Waste

Annual Waste (in tons)

Tokyo

3,333,618

New York

3,559,300

Waste Per Person per day

1,060g

1,165g

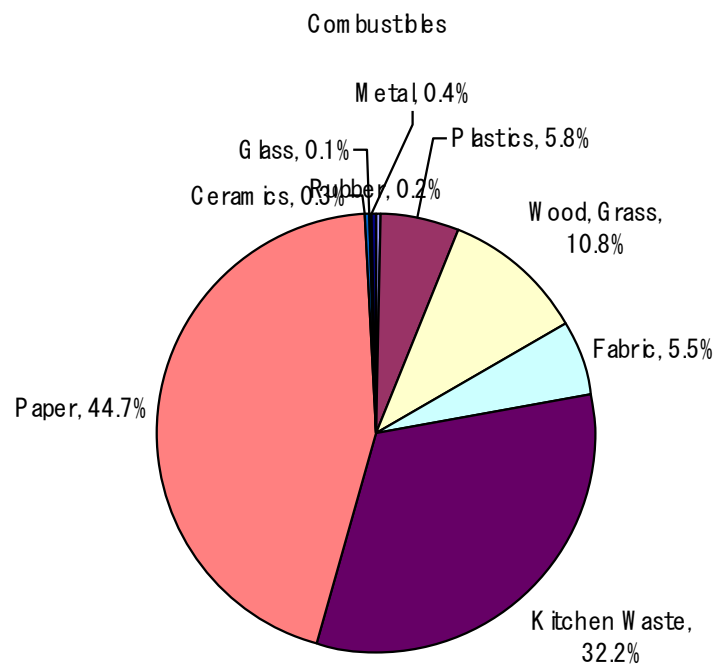
Disposal Cost (in tons)

\$564 (\56,405)

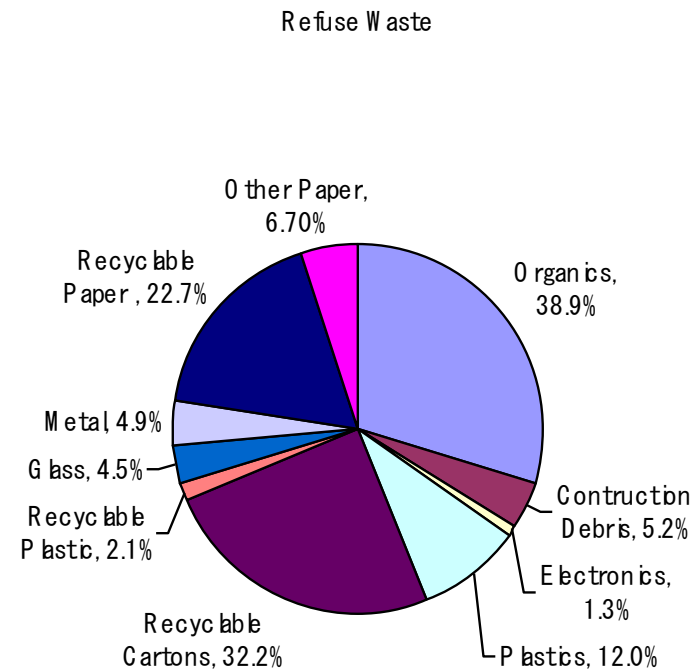
\$227(\22,700)

Statistics-Composition of Waste

Tokyo



New York



Government involvement

Tokyo

New York



- While the Tokyo government requires that all residential waste be handled by the government it hires private companies to do much of the work.
 - Additionally, much of the industrial waste is transported by private companies.
- The Sanitation Department of New York handles all residential waste, without any outsourcing to private companies, it also enforces all sanitation law.
 - Commercial and industrial waste is also handled mostly by the government, though there are more private companies in this industry.

Government Involvement

Tokyo



New York



Government Involvement-regulation

Tokyo

New York



- There are 53 waste transportation companies and 200 total that are relatively large in Tokyo and the government needs to have strict regulations for them as well as residents and commercial companies.
- New York's Sanitation Department holds a monopoly on residential waste and does not need to worry about transportation regulation because it already conducts most of them.
- The department only regulates a few private transportation companies.

Facilities

Tokyo



- Tokyo has created many new recycling and incineration plants.
- Initiatives like eco-towns have also contributed to the improvement of recycling technology.



New York

- Many of the recycling facilities in New York are outdated and new technology.
- The newer facilities are usually private.



Facilities

- While New York is building its first new public recycling facility for the first time in over 10 years Tokyo has a number of new plants run by private companies.
- New York recycling plants that are private are very small and generate little revenue.



Landfills



- Both New York and Tokyo are planning on closing its last landfills very soon. The city governments realize the need to force private industry to start to recycle.



Landfills

- The Fresh Kill landfill in New York was originally due to close in 2001, but due to the September 11th attacks was kept open. It receives all types of non recyclable materials.
- Tokyo will continue to keep its landfill open, but will close it to plastics in 2011. The Tokyo government believes that it can keep the landfill open for a many more years.

Tokyo



Transportation



New York

- The Tokyo government hires 53 companies and there are about 200 major companies doing waste collection.
- Tokyo law states that the producers of waste must recycle it and the usually hire private firms to collect it.



- New York Sanitation department is the largest waste collection and transportation agent in New York.
- In the private sector 3 private companies control over 50% of the market.
- New York Government also requires that waste is recycled by producers, but most businesses use the Sanitation department



Transportation

Tokyo

New York

- Private companies mostly use small trucks to transport waste to recycling plants and the
- Tokyo has no alternative way to transport waste, except in a few situations like Araiike company where waste by ship is a small percentage of total waste delivered.

- As a solution to an earlier problem, NYC started to use water ways to transport waste, keeping fuel costs down as well as maintenance costs for the large trucks.



Collection of waste in public places

Tokyo

New York



- Due to concerns about terrorist threats Tokyo has a limited number of public garbage cans.
- Most of the garbage cans that are available separate waste and recyclables very well, lowering collection costs.
- The streets of Tokyo remain much cleaner and free of garbage and recyclables.

- Throughout New York there is a much larger number waste and recycling cans.
- This is working for New York as an effort to lower recycling collection costs, but does not improve street cleanliness.



With your help, it's all falling into place.

All NYC residents, government agencies, schools & institutions serviced by the NYC Department of Sanitation must recycle these materials. Check with your building to find out how. Commercial buildings serviced by private carters must follow commercial recycling regulations.

Paper & Cardboard



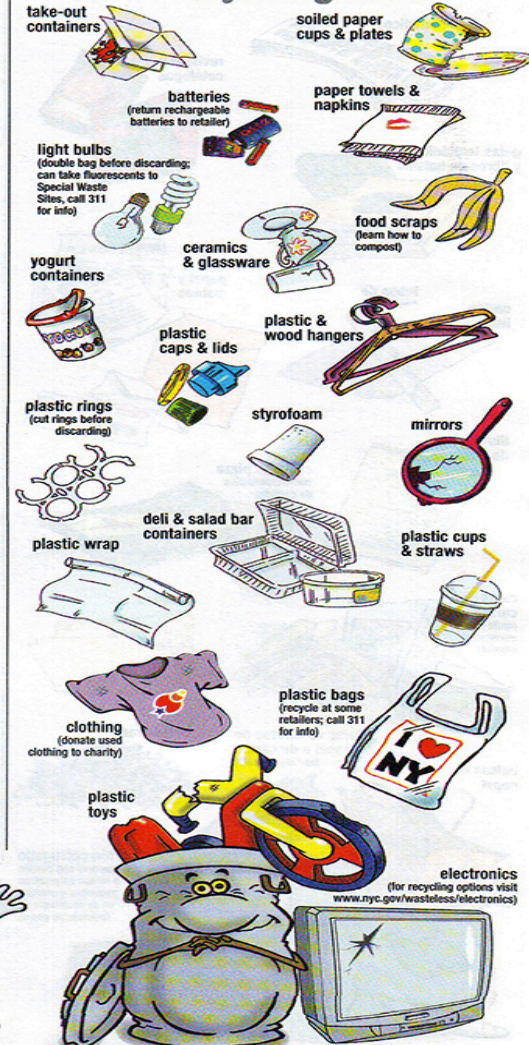
Use clear bags, bins labeled **Mixed Paper**, or any bin with this **green** decal.

Beverage Cartons, Bottles, Cans, Metal & Foil



Use clear bags, bins labeled **Bottles & Cans**, or any bin with this **blue** decal.
Empty and rinse all containers. Return 5¢ deposit bottles and cans to the store for refund.

Everything Else



Non-recyclables and trash
Donate, sell, or give away reusable goods.



Don't litter.
NYC Department of Sanitation
Bureau of Waste Prevention, Reuse and Recycling

Call 311 or visit:
recycling & waste prevention: www.nyc.gov/wasteless
reuse: www.nyc.gov/stuffexchange
collection: www.nyc.gov/sanitation
contact: www.nyc.gov/sanitation

Recycle more, waste less.
Printed on recycled paper, of course.
Save for reference—or recycle it!



Incineration

Tokyo



- Tokyo has new and efficient incinerators for waste management and energy generation.
- Tokyo's incinerators are technologically more advanced than anything the NYC ever had. Even in the 1980's they were better.



New York

- New York made incinerators illegal in 1989 and the last one was taken apart in 1996.
- New York had extremely inefficient incinerators and this is part of the reason they were made illegal.



Incineration

Tokyo



New York

- Incineration remained legal in Tokyo partly because there was no alternative, as there was no land available for landfills.
 - In Japan, incineration technology continued to grow and evolve.
- New York, and the United States have large amounts of free space, so when incineration was made illegal landfills were the alternative for waste processing.
 - Additionally, waste incineration was made illegal because large buildings, schools and office buildings had furnaces with low efficiency that polluted the air.

Incineration

Tokyo

- Tokyo kept its incineration on an industrial scale and much more efficient. New plants like Sincere and TRP are able to produce clean energy with incineration.



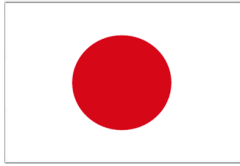
New York

- Because of the increasing cost of waste disposal and the closing of the State Island Landfill, New York is again considering opening incinerators.
- However, the bad image of incineration and the belief that it is a step back in waste management will most likely keep New York from developing new incinerators.

Recycling Culture



- One of the biggest and unquantifiable differences between the two cities is the attitude the general public has towards recycling.
- Though they are difficult to measure, there are different residential responses to the need to recycle.



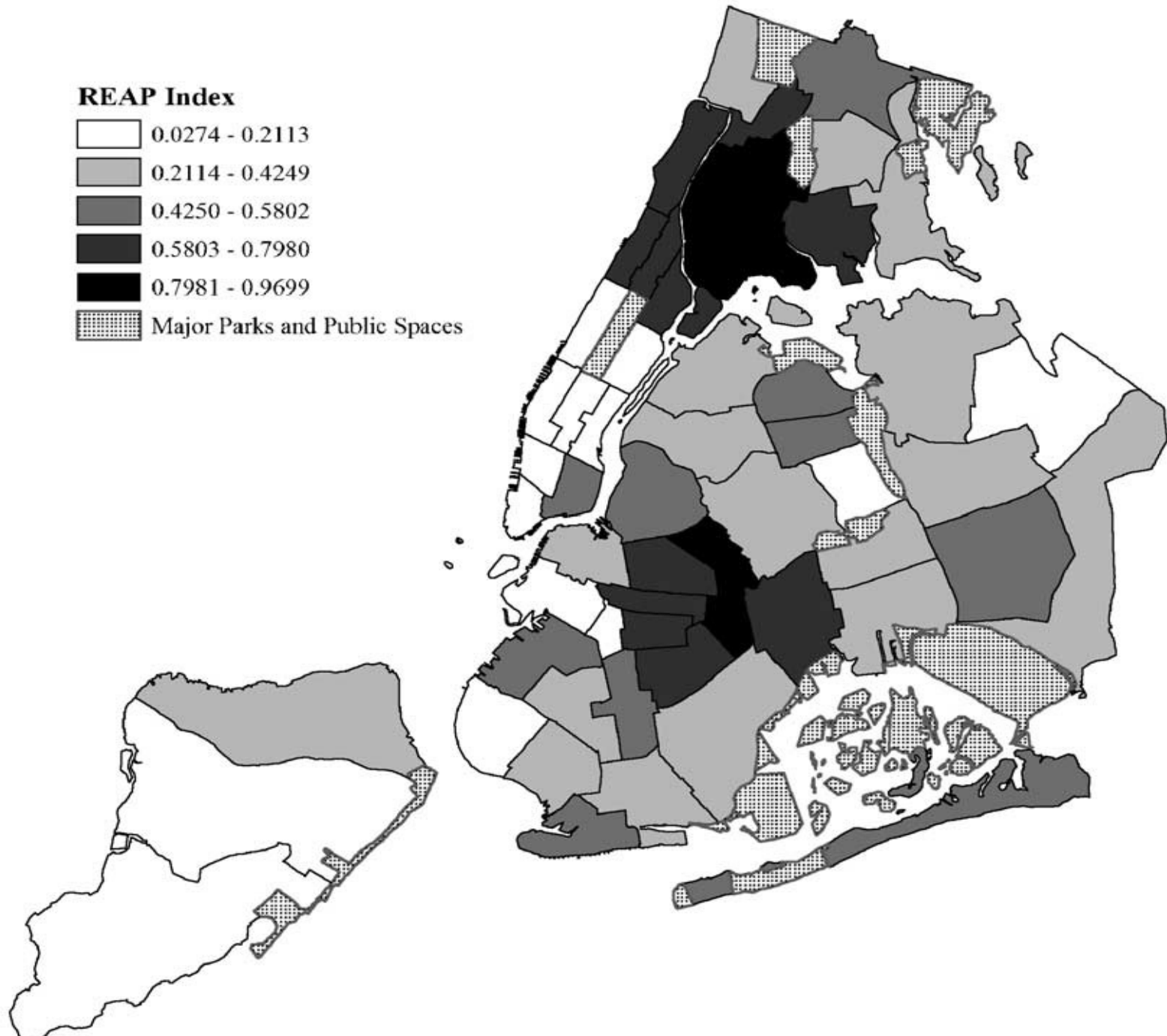
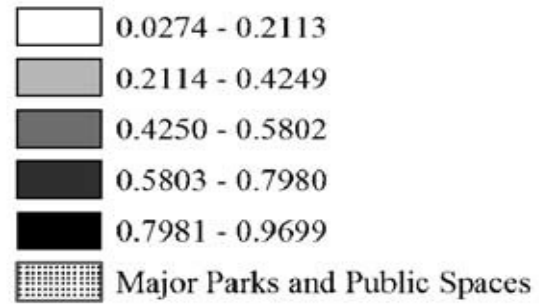
Cultural Differences



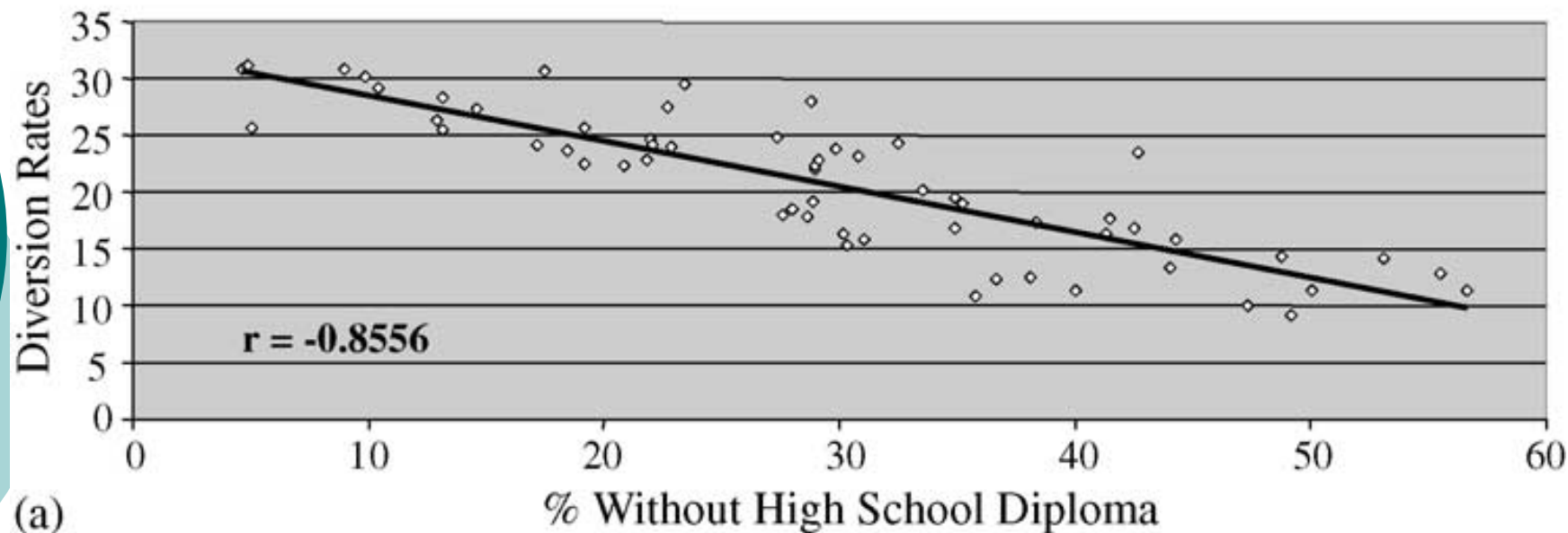
- In Japan, the culture seems to dictate the importance of recycling for the greater good of society. People seem to be more aware of the importance of their contribution to the effort.
- In New York much of the population refuses to see the importance of recycling. Many New Yorkers still do not separate their recyclable materials and this keeps costs high.

Recycling Education, Awareness, and Participation (REAP) Index

REAP Index

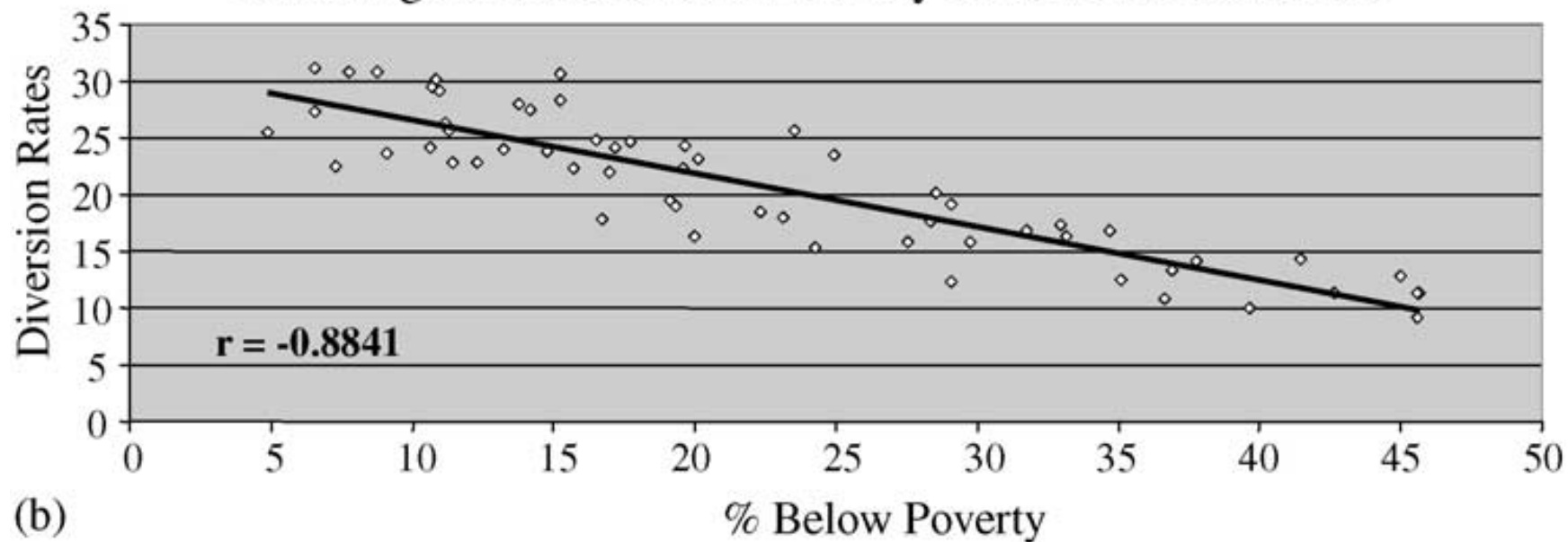


Percentage of Adults with Less than a High School Diploma / Diversion Rates



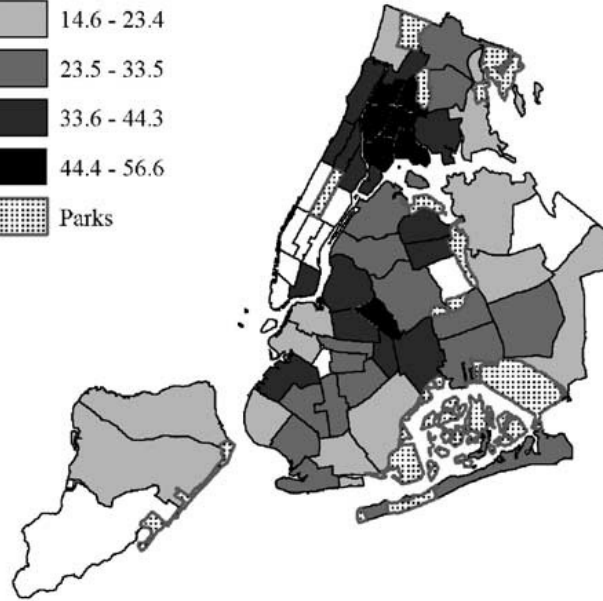
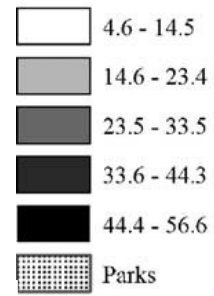
(a)

Percentage of Persons Below Poverty Level / Diversion Rates

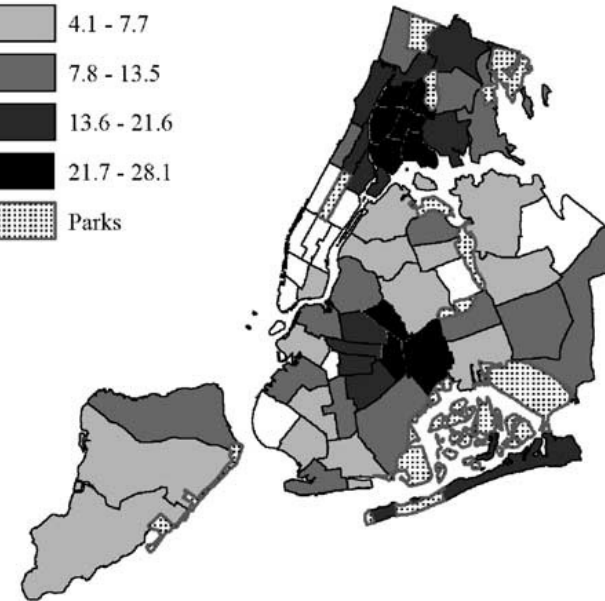
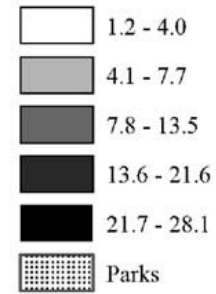


(b)

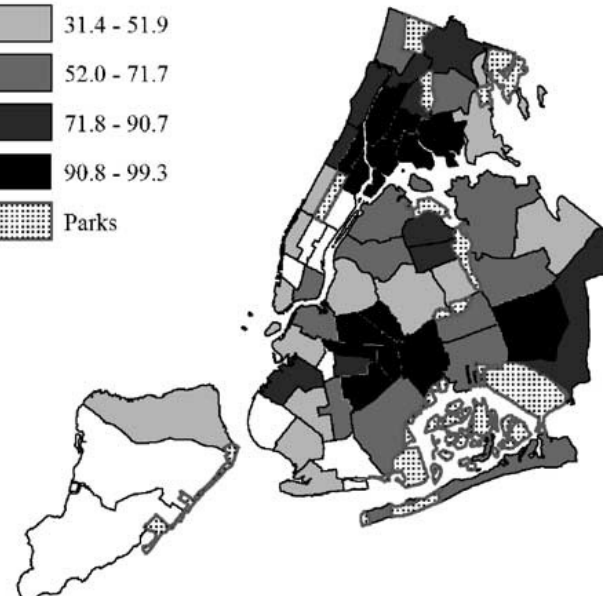
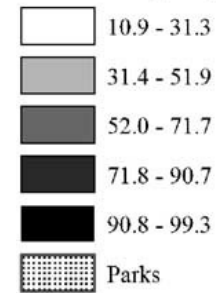
% Adults without H.S.Diploma



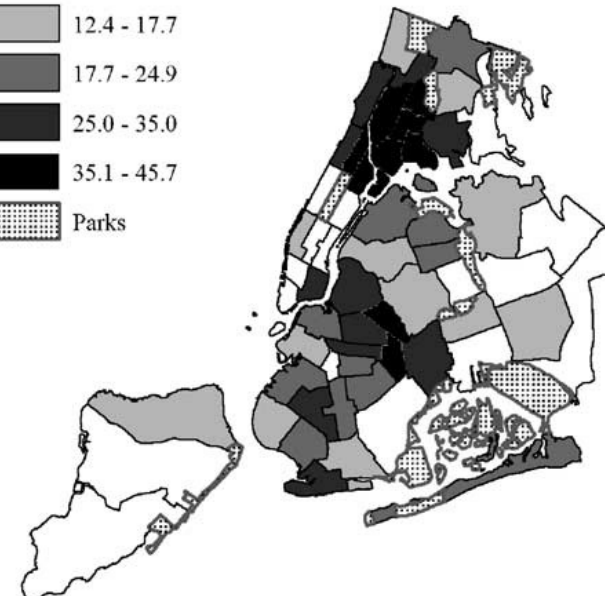
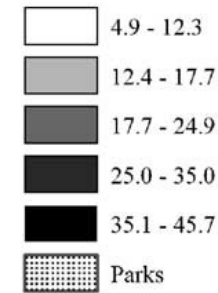
% of Households with Female Head w/ Children

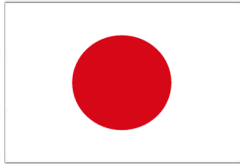


% Minority Population



% Persons Below Poverty Level





Cultural Differences



- Because a small part of Tokyo's population is immigrant, there is less need to educate people, as most already know about recycling.
 - In Japan social responsibility is understood and followed a lot more than in the US. Most Japanese understand the need to recycle, so they do a better job of collecting and separating waste.
- The effort to educate the population about recycling seem much greater in New York. The Sanitation department invests a lot of money in teaching the youth about the importance of recycling.
 - The New York educational effort is also part of a bigger of creating a Green activist culture in America.