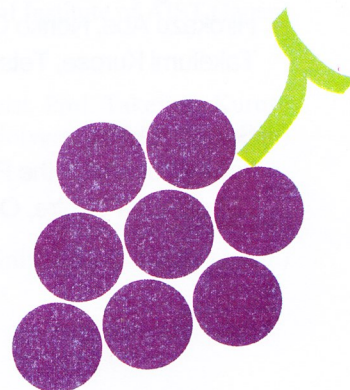
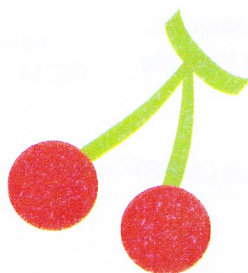
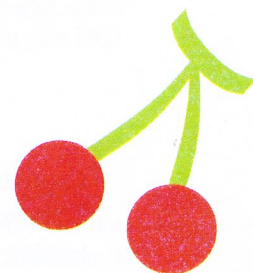
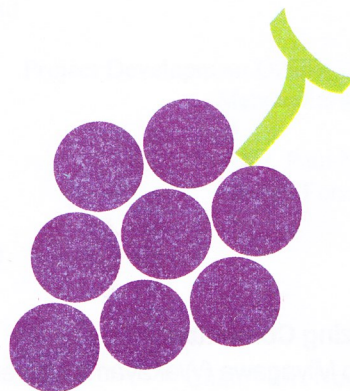
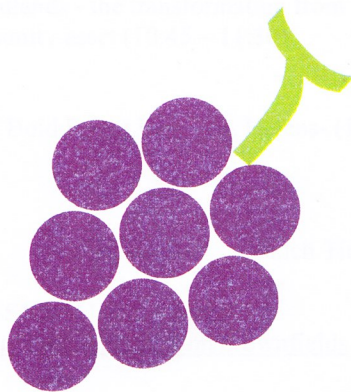
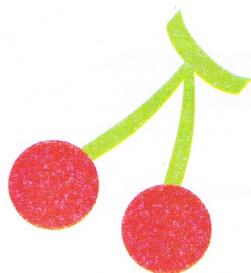
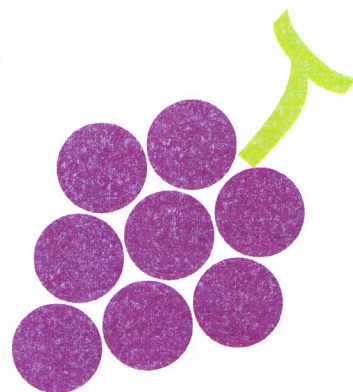
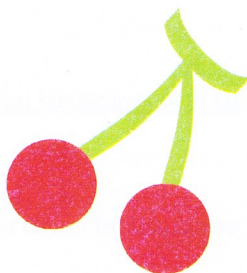
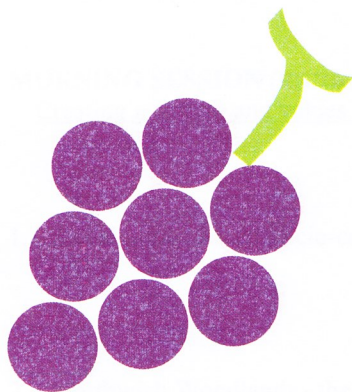


## **International Workshop on Brownfield regeneration 2016**

with Green Infrastructure (GI): Creating a Culture and Values

13 March 2016 --15 March 2016

Cybermedia Centre, Osaka University



# **International Workshop on Brownfield regeneration 2016 with Green Infrastructure (GI): Creating a Culture and Values**

13th of March (Sun) - 15th of March (Tues), 2016  
Cybermedia Commons, Cybermedia Center, Osaka University  
2-1 Yamadaoka, Suita, Osaka 565-0871, Japan

## **AGENDA**

### **13th of March (Sun)**

Pre-workshop GI tour in Kyoto (optional)

### **14th of March (Mon)**

**INTRODUCTION** (9:30 – 9:40)

Prof. Hirokazu Abe  
Osaka University (Japan)

**MORNING SESSION** (9:40 to 12:15)

Creating a culture and values on post-industrial landscapes with GI

Chair : Assoc. Prof. Tomoko Miyagawa  
Wakayama University (Japan)

1. Developing Shared Socio-cultural Values in Green Infrastructure Planning (9:40 – 10:25)

Senior Lecturer, Maggie Roe  
Newcastle University (the UK)

Coffee break (10:25– 10:45)

2. Northwich Woodlands - the transformation from industrial wasteland to vibrant community asset (10:45 – 11:30)

Project Development Officer, Clare Olver  
Mersey Forest (the UK)

3. Development of Bold Forest Park - St. Helens- (11:30 – 12:15)

Director, Paul Nolan, OBE  
Mersey Forest (the UK)

Lunch Time (12:20 – 13:30)

**AFTERNOON SESSION** (13:30 – 16:30)

Regeneration and planning process on brownfields

Chair : Dr. Noriko Otsuka  
ILS (Germany)

4. Remediation of severely contaminated brownfield lands (13:30 – 13:55)

Dr. Tetsuo Yasutaka  
National Institute of AIST (Japan)

5. Area-wide planning for brownfield regeneration  
, cases of mill cities in New England (13:55 -14:20)

Assist. Prof. Takefumi Kurose  
University of Tokyo (Japan)

6. Regeneration process of large-scale marginal brownfields sites  
, cases of steel plant sites in Japan (14:20 – 14:45)

Mr. Kentaro Nakajima  
University of Tokyo (Japan)

Coffee break (14:45 – 15:00)

7. Greening brownfields with open space strategies in Japan (15:00 – 15:25)

Assoc. Prof. Tomoko Miyagawa  
Wakayama University (Japan)

8. Brownfield Regeneration and Risk Communication after  
Decontamination of Severely Soil Pollution. (15:25 – 15:50)

Prof. Hirokazu Abe and Dr. Miya Yamade  
Osaka University (Japan)

9. Revitalising post-industrial landscapes through GI in Japan (15:50 – 16:15)

Mr. Yuto Isehara and Prof. Hirokazu Abe  
Osaka University (Japan)

**CLOSING NOTE** (16:15 -16:30)

Dr. Noriko Otsuka  
ILS (Germany)

Dinner at Japanese style restaurant (18:00 -)

## **15th of March (Tues)**

Site visits to brownfield regeneration cases around Osaka (12:00 - 18:00)

### **Accommodations (Hotels near from Osaka University)**

1. Senri Hankyu Hotel (4 star hotel located in commercial area, 15 minutes by bus or monorail from Osaka University)  
<http://senrihankyu.hh-hotels.jp/>
2. Hotel Hankyu Expo Park (4 star hotel in park area, 15 minutes by monorail from Osaka University)  
<http://hankyuexpopark.hh-hotels.jp/>

### **Workshop Venue**

The location is Cybermedia Commons, Cybermedia Centre  
Osaka University  
5-1 Mihogaoka, Ibaraki, Osaka 567-0047, Japan,



<http://www.osaka-u.ac.jp/en/access/index.html#suita>



## Pre-workshop GI tour in Kyoto (optional)

13th of March (Sun)

8:00 EXPO-Park→ (monorail) →Minami-Ibaraki→ (Hankyu Railway) →Karasuma(Kyoto)  
→ (Bus) →Nijo-jo／90min

9:30～11:00 **Nijo-Castle Visit**

11:30 Lunch (at ANA Hotel)

Nijo-jo→ (Bus) →Kinkakuji

13:00～14:30 **Kinkakuji Temple Visit**

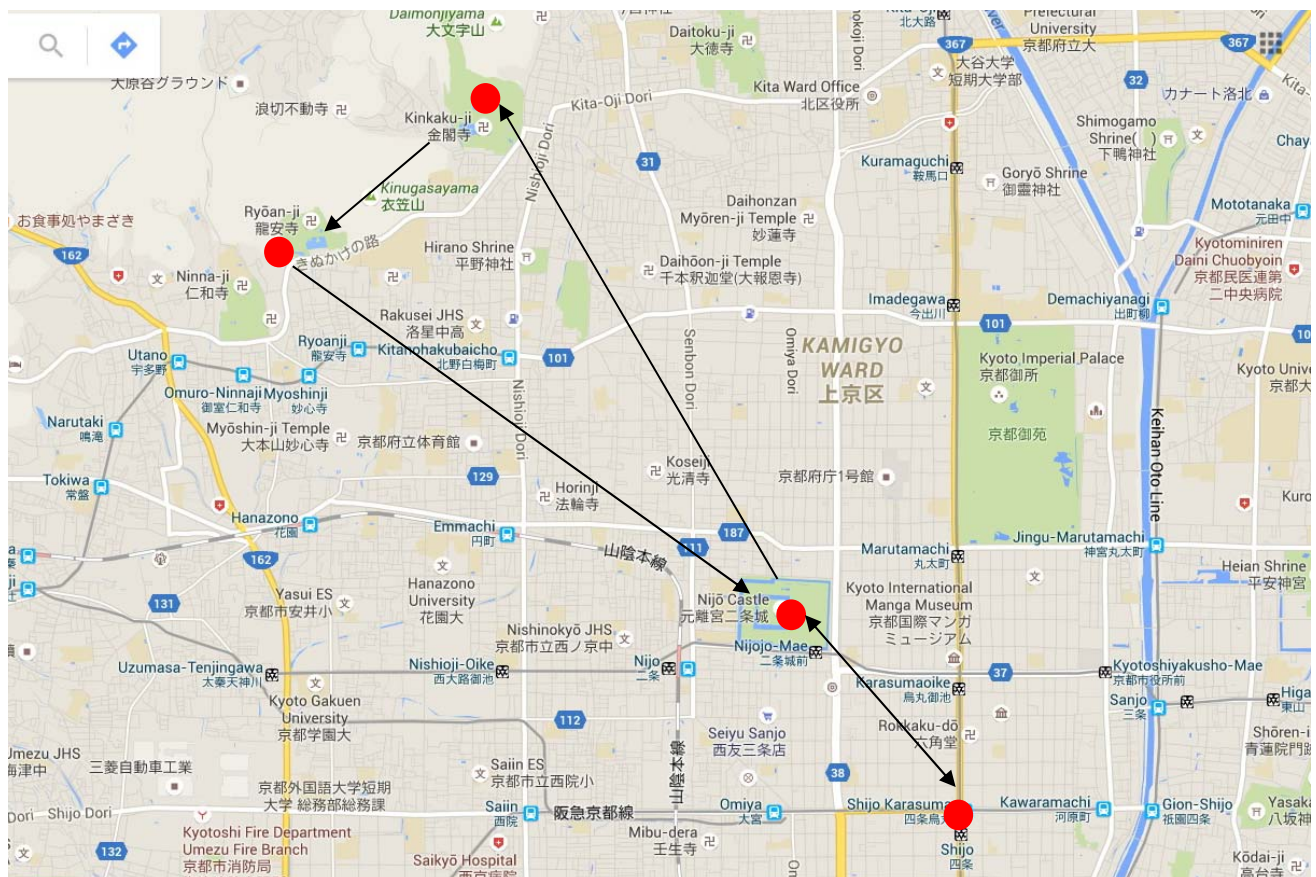
Kinkakuji→ (walk) →Ryoanji

15:00～16:30 **Ryoanji Temple Visit**

Ryoanji→ (Bus) →Senbon-Imadegawa→ (Bus) → Karasuma(Kyoto)  
→ (Hankyu railway) →Minami-Ibaraki→ (Osaka Monorail) →EXPO Park

18:00

Senri-Chuo





## Morning tour of conservation and redevelopment in historical settings in Nara

15<sup>th</sup> of March (Tues)

8:02 EXPO-Park→ (monorail) →Senri-chuo→ (Kita Osaka railway/Midosuji subway)  
→Namba→(Kintetsu railway)→Kintetsu Nara／90min

9:30～10:00 walk or taxi to Todai-ji temple(30mins by walking)

10:00～11:00 Visit to Todai-ji temple area in Nara Park

11:00～11:30 walk or taxi to Kintetsu Nara station(30mins by walking)  
picking up lunch(sandwich or lunch box) at Nara or Namba

11:47 Kintetsu Nara→ (Kintetsu railway)→Namba／40min

12:30 Namba station (Bus) Lunch in the bus



Todaiji temple, Nara city (former construction company site)

<http://www.todaiji.or.jp/english/index.html>

<http://www.todaiji.or.jp/english/map02.html>

<http://narashikanko.or.jp/en/index.html>

<http://narashikanko.or.jp/en/pdf/english.pdf>

[http://narashikanko.or.jp/pamph/pdf/guide\\_e.pdf](http://narashikanko.or.jp/pamph/pdf/guide_e.pdf)

## Site visits to brownfield regeneration cases around Osaka

15th of March (Tue)

12:00: **Cybermedeia Centre,Osaka University** → Namba

12:30: Namba Station → Amagasaki

13:00~13:30 **Amagasaki no Mori Visit**

Amagasaki → Maisima(Osaka Bay Area)

14:00~14:30 **Maishima Lodge & Sports Visit**

Maishia → Sakishima(Osaka Bay Area)

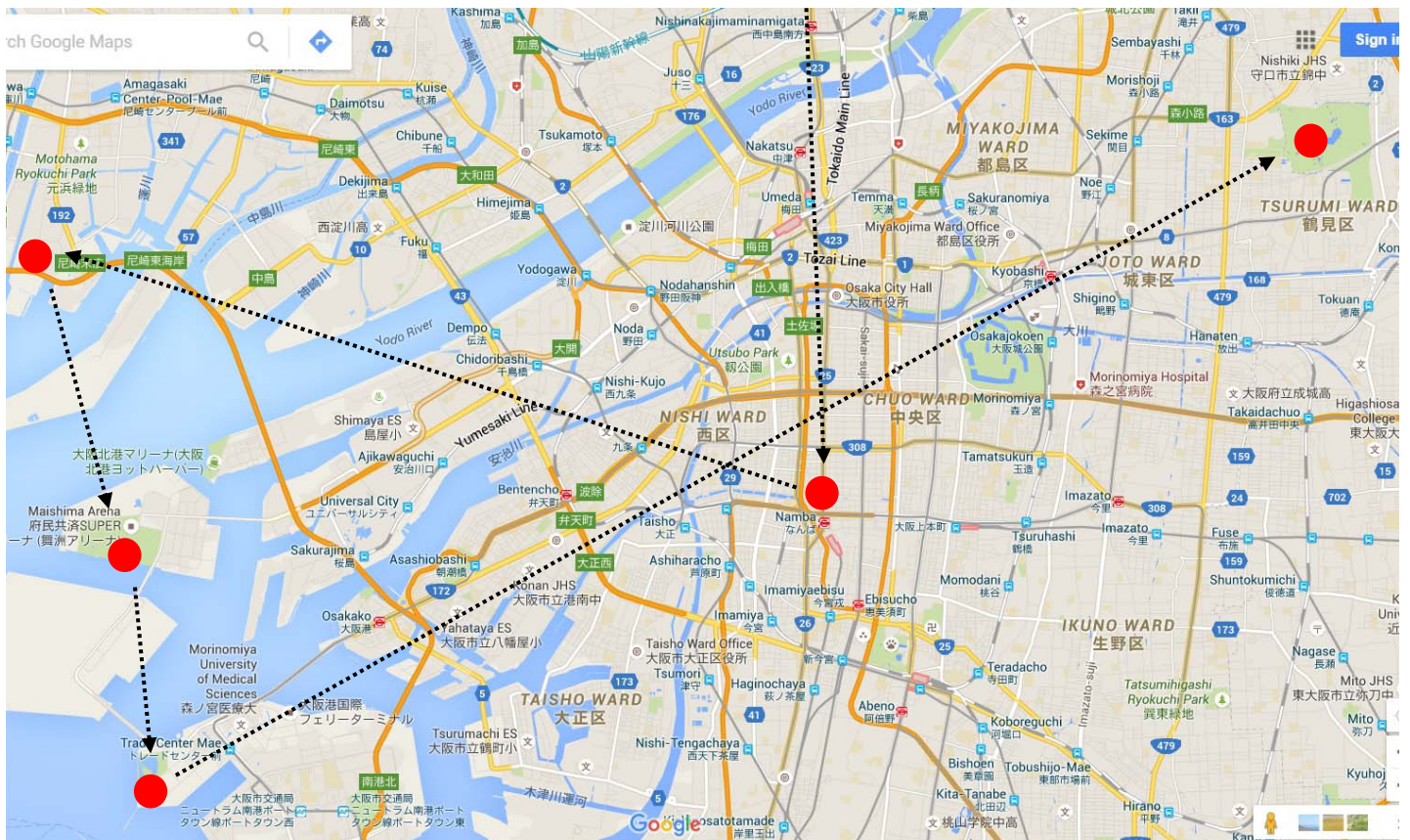
15:00 ~15;30 **Sakisima bird sanctuary Visit**

Sakishima → Tsurumi Ryokuchi

16:00 ~17:00 **Tsurumi Ryokuchi Park Visit**

17:00 Tsurumi Ryokuchi → **EXPO Park and Senri chuo**

→ 18:00: **Cybermedeia Centre,Osaka University**



**Anglo-Japan Workshop on Brownfield Regeneration with Green Infrastructure:  
Creating a Culture and Values  
13th-15th March, 2016 Cybermedia Center, Osaka University, Japan**

**Developing Shared Socio-Cultural Values in Green Infrastructure Planning**

**Maggie Roe  
School of Architecture, Planning & Landscape  
Newcastle University, UK  
[m.h.roe@ncl.ac.uk](mailto:m.h.roe@ncl.ac.uk)**

**SYNOPSIS**

Changing brownfield landscapes through green infrastructure planning and design requires a deep understanding of the implications of such change both physically for the land, for the values that exist and are embedded in such landscapes, and in terms of the opportunities for changing values. In order to understand the potential benefits, opportunities and problems that such change might involve we need to consider how human interactions with natural processes create values, the nature of those values and how landscape change affects values. Values are difficult to identify and to understand, particularly shared rather than individual values. In thinking about shared values we therefore need to use methodologies for working with communities and landscapes that reveal such values, and then ensure that the planned change also incorporates the ability to respond to changing values. In this presentation I am therefore going to concentrate on thinking about this idea of shared values in relation to landscape change, particularly in relation to green infrastructure planning and brownfield sites.





# Developing Shared Socio-Cultural Values in Green Infrastructure Planning

**Maggie Roe**  
School of Architecture, Planning & Landscape  
Newcastle University, UK

 Newcastle University

**Anglo-Japan Workshop on Brownfield Regeneration with Green Infrastructure:  
Creating a Culture and Values**  
13<sup>th</sup>-15<sup>th</sup> March, 2016 Cybermedia Center, Osaka University, Japan



Newcastle University

# What is 'Landscape'?

- \* Something we perceive and experience
- \* Not only does the extraction of all means for life come from the landscape, but also all we humans are constituted of the landscape *"We are the landscape"* (Turkmenli).
- \* Basis for identity & culture: we are a product of and a producer of landscape
- \* A common 'good'
- \* Landscape is a process
- \* It mirrors and is constituted of cultures and traditions
- \* A valuable and valued resource

ELC Definition:


***'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'***

- ELC Definition:




Newcastle University


# Outline



- \* What are values in Landscape?
- \* Shared values and Green Infrastructure Planning on brownfield land
- \* Methods for developing an understanding of shared values
- \* Summary thoughts/ Observations




# What do we mean by value/values?



A photograph showing a person in a grey shirt and black pants playing a black grand piano in a park. A large crowd of people is sitting on the grass and standing around the piano, watching the performance. The background features trees with autumn foliage and a clear blue sky.

Interpretations:

- Importance, usefulness
- Monetary worth, cost
- Satisfaction
- Principles – ethics, (moral) standards
- Appraise, assess, price
- Appreciate, cherish, esteem, prize, respect, desirability



Newcastle University



Newcastle University



# What are values in landscape?



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## ECOLOGY

Environmental Values & Theories

Social Values & Theories

Aesthetic Values & Theories

## COMMUNITY

## DELIGHT

### Values

- may overlap
- are often rivalrous and conflictual
- are complex
- cannot be compared
- positive or negative

Source: Based on Thompson, 2000



Newcastle University

# Green Infrastructure Planning



- Characteristics:
- \* Multifunctional
  - \* Multidisciplinary
  - \* Participatory
  - \* Inclusionary



This kind of work means compromises; not all goals can be achieved and such compromise has both structural and functional implications.



# The Invisible Cultural Landscape

Dancing around the Maypole on Mayday, Yorkshire



Extreme cycling at West Park, Darlington (courtesy Clive Davies)



Research with children reveals love of special places such as water features.

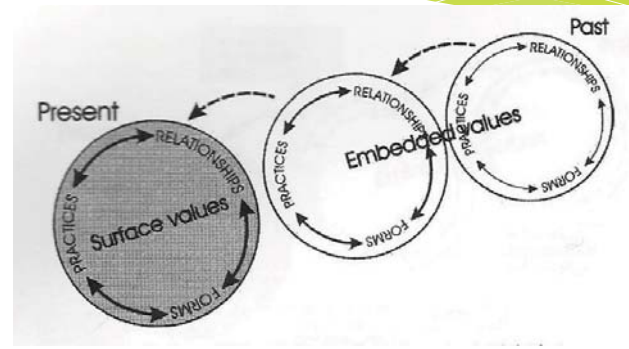
## Linkage: Past, present, future values

Photos courtesy Robert Melnick



## The Cultural Values Model

showing surface and embedded values



Source: Stephenson, J. (2008) The cultural values model: an integrated approach to values in landscapes, Landscape and Urban Planning 84:127-139.

## Interaction with the Landscape



*'Culture changes landscapes and culture is embodied by landscapes'*

(Nassauer, 1995 p229).



## Landscape Character Assessment



Understanding and representing past and present Landscape Character helps us understand processes and values in the landscape

Limestone Landscapes Character, North East England



## Shared Values and Green Infrastructure Planning on Brownfield Sites

## Socio-Cultural Values

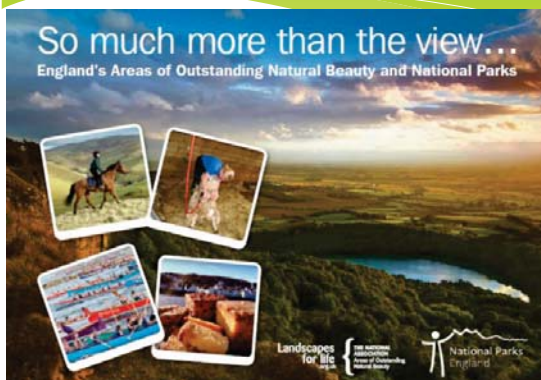
### Universal socio-cultural values include:

- \* Ethical
- \* Artistic
- \* Existential
- \* Spiritual
- \* Cultural
- \* Cognitive
- \* Humanistic
- \* Homeland
- \* Human
- \* Objective/subjective
- \* Legal
- \* Political
- \* Religious
- \* Aesthetic
- \* Moral

### Traditional (or cultural) values:

- \* Kindness
- \* Honesty
- \* Sharing
- \* Strength
- \* Bravery
- \* Wisdom
- \* Humility.

## Expressions of value in Policy



## Shared Values



- Shared values are not the same as aggregated individual values.
- Shared values (or societal values) are understood as the values people collectively hold as 'social beings', not simply in terms of individual costs and benefits – or preferences and motivations - but in terms of 'social rights and wrongs' (Fish et al., 2011:1184).

## Economic values?



## How are shared values expressed in the landscape?

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Blaenavon Industrial Landscape

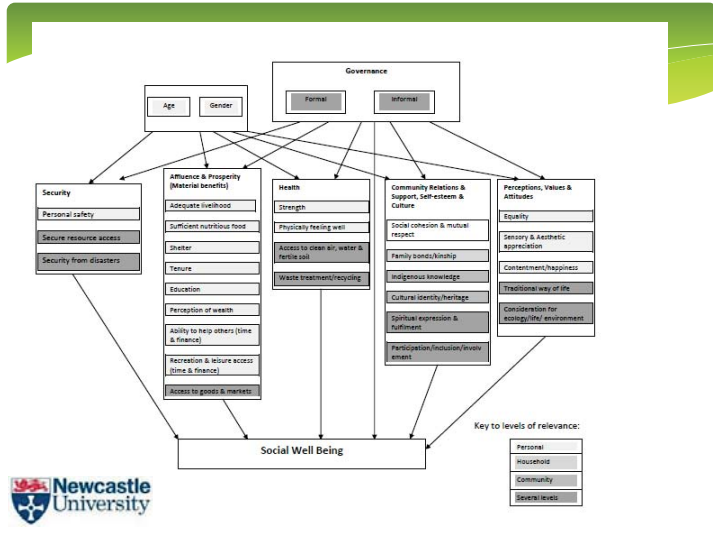
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West Devon Mining Landscape

- \* Relevant values need to be identified and expressed
- \* Recognition of shared values is important
- \* Participatory processes are important in the development and expression of shared values
- \* Human well-being and quality of life may be useful in ecosystem assessment and decision-making.





## New layers of landscape through slow change and reclamation



Hansa Coking Plant, Dortmund, Germany

(courtesy Clive Davies)

## Green Infrastructure Benefits



- \* Shared Socio-cultural, Ecological/Environmental and Economic values
- \* Considering the Ecosystem Services that GI can perform



## Fast change: the creation of new cultural landscapes



Qiaoyuan Park, China

Aerial view showing a system of wet and dry ponds

(courtesy Kongjian Yu/Turenscape)

## Revealing Shared Values



## Engaging with new communities, in new ways and changing values



The Hi Line, New York

## Capturing Values in Symbolic landscapes



"Northumberlandia"  
Newcastle upon Tyne



## Participation & Co-production



- \* Collaborative action
- \* Provides opportunities 'to combine theoretical and experiential knowledge
- \* Revealing local knowledge
- \* Encouragement of change in environmental understandings, attitudes and behaviour

## Methods for developing an understanding of shared values

## Hydrocitizenship Methods used

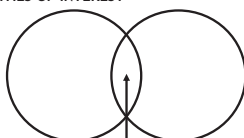
1. Conversations
  - \* Community activities & dialogue
2. Review and Sharing
  - \* Meetings (face to face and online)
  - \* Literature review
3. Observation, Reflection & Dissemination
  - \* Water-blogs
  - \* Reportage
4. Performance and Creative Interventions
  - \* Site/community-based activities

See [www.Hydrocitizenship.com](http://www.Hydrocitizenship.com)



## Landscape as process: The development of values & community involvement

COMMUNITIES OF INTEREST COMMUNITIES OF PLACE



Some groups will be both

- \* Researchers
- \* Institutions/funding bodies
- \* General public/indigenous groups & inhabitants
- \* Government
- \* Local groups (parish councils etc.)
- \* Land owners
- \* Land managers
- \* Pressure groups/interest groups
- \* Conservation & protection groups
- \* Fauna, flora, 'Nature'

..... 'Communities'



## Observations: How can socio-cultural values be captured?



*Finding solutions that allow for the integrity of difference in interpretation of meanings to be retained*  
(Buenen & Hagens, 2009)



## Observations



*"The future does not just lie ahead: it is something that we create. More precisely, the future is produced by natural processes and human modifications thereof"*

Forman & Collinge, 1997 p 129.



Thank you !

**Maggie Roe**

School of Architecture,  
Planning & Landscape  
[m.h.roe@ncl.ac.uk](mailto:m.h.roe@ncl.ac.uk)



On the Hi Line, New York







## **Northwich Woodlands: from derelict land to vibrant community asset**

**Clare Oliver**

**March 2016**

### **1. Introduction**

Northwich Woodlands – from derelict land to vibrant community asset

### **2. Where are we?**

Location on world map

### **3. Where are we in the UK?**

In North West England, surrounding the city of Liverpool.

### **4. Liverpool**

Famous for the Beatles, Liverpool Football Club and River Mersey

### **5. What is The Mersey Forest and where does the Mersey Forest Cover?**

A Community Forest covering 1,370 km<sup>2</sup> and home to 1.7 million people.

- Core partnership of seven local authorities and three government agencies
- Wider partnership of landowners, businesses and local communities
- Co-ordinated by dedicated team of approximately 12 officers.

### **6. The Mersey Forest Plan**

Long term and strategic guide to the work of The Mersey Forest team and partners. The work of the team is to deliver the Mersey Forest Plan. Currently on the third version

The Mersey Forest Plan is embedded in national and local planning policy - National Planning Policy Framework: *Community Forests offer valuable opportunities for improving the environment around towns, by upgrading the landscape and providing for recreation and wildlife. An approved Community Forest plan may be a material consideration in preparing development plans and in deciding planning applications.*

### **7. 1991**

When the initial Mersey Forest Plan was written – what was it like then?

- Low tree cover
- Socio-economic problems
- Loss of connection between people and landscape
- Forest Plan based on landscape assessment
- Forestry as a lower cost option for land
- regeneration
- Forestry able to deliver multiple benefits

- Large areas of derelict and underused land

## **8. Derelict Land**

Legacy of the industrial north west of England: coal mining, heavy industry. As much derelict land as woodland (4%) Compared to 30% in Osaka prefecture. (Osaka, 2006: 56,483 ha over 1,894 km<sup>2</sup>)

Derelict land: not only a wasted land resource, it can have a depressive effect on the environment, often leads to a poor image of the area and a lesser quality of life for local people. In turn this impacts on the prospects for inward investment and future economic prosperity.

## **9. Programmes of land reclamation of derelict land:**

2002: The Mersey Forest and partners had carried out five years of research on reclamation of brownfield land to community forestry.

The Capital Modernisation Fund (CMF) woodland programme developed 1500 ha of community woodland, approximately 40% of which was on brownfield land. Public benefits from woodland were worth an estimated £4,000 per ha annually, plus the programme led to £460,000 worth of further funding:

[http://www.forestry.gov.uk/pdf/urgp\\_evidence\\_note\\_010\\_Restoration\\_of\\_PDL.pdf/\\$FILE/urgp\\_evidence\\_note\\_010\\_Restoration\\_of\\_PDL.pdf](http://www.forestry.gov.uk/pdf/urgp_evidence_note_010_Restoration_of_PDL.pdf/$FILE/urgp_evidence_note_010_Restoration_of_PDL.pdf)

One example: Newlands. Launched in the summer of 2003, Newlands was a £32 million scheme that responded to local and regional socio-economic needs by transforming derelict sites into thriving, multifunctional community woodlands.

## **10. Case study of Northwich Woodlands in Cheshire**

In the UK the word 'Cheshire' typifies idyllic rural county, pastureland interspersed with quaint and charming black and white timbered market towns.

### **11. Chester**

Cheshire is a popular tourist destination with the historic city of Chester. In 2014 31 million people visited Cheshire West and Chester and spending among tourists in Cheshire increased by almost 10 per cent, with £1.6 bn spent in Cheshire West and Chester. The city and its borough has seen an increase in visitor numbers of seven% year on year, and 23% since 2009.

### **12. Salt**

Salt was first discovered in Cheshire as far back as the Iron Age and by 1700 there was a thriving salt industry in the town of Northwich. Transport was by the River Weaver. By 1732 key improvements had already been made such as eleven locks were completed in 1732. Rock salt is still extracted in Cheshire today.

### **13. Salt Extraction**

The demand for salt was huge and extraction continued for many years. The mines were enormous caverns up to 100m below the surface. After it became uneconomic to mine the salt, hot water was pumped into the workings, the salt dissolved and the brine was then pumped out to the surface.

#### **14.A Changing Landscape**

Around the town centre of Northwich (25km from Chester) the land was had over 90 abandoned rock salt mines and over 257 shafts, brine wells and boreholes.

#### **15.Flash**

Then followed major subsidence as mine after mine collapsed or were deliberately flooded. Northwich town's last rock salt mine closed in 1928.

#### **16.Aerial View of Ashton's and Neumann's Flash**

As a result of the salt, Northwich became the foundation of much of Britain's chemical industry. Later, much of the subsided land was used for the disposal of ash and lime rich waste; by-products of the nearby soda ash industry. The resultant lime beds were unsuitable for development and were abandoned leading to large areas of derelict land to the east of the town.

#### **17.Marbury Hall**

The impact of the chemical industry affected the surrounding land. Marbury Hall was designed in the style of a French chateau, based on the Palace of Fontainebleau. In 1940, Marbury Hall and Park was requisitioned by the army for the war, and in 1948 bought by chemical giant ICI. The hall fell into disrepair and was demolished in 1968.

#### **18.Marbury Country Park**

In 1975 a country park was developed from the relic landscaping features of Marbury Hall and this stood alone as a popular visitor attraction for 12 years before the next phase of reclamation began.

#### **19.Anderton Nature Park**

In 1989 a further programme of reclamation by the local government's Land Regeneration Unit commenced. This was a major project starting at what is now known as Anderton Nature Park, and sweeping east creating Witton Flash, Dairy House Meadows, Witton Mill Meadows and ending in the reclamation of Ashton's and Neumann's Flashes.

#### **20.View from Anderton Nature Park**

Proximity to the chemical works

#### **21.Entrance to Anderton Nature Park today**

Group of volunteers - Friends of Anderton and Marbury bringing in funding for the new gateway features. Importance of community engagement.

#### **22.Anderton Boat Lift and**



### **23. Lion Salt Works**

Restoration of Anderton Boat Lift in 2000 was significant factor, and recently the Lion Salt Works (both Scheduled Ancient Monuments). Jewels in the crown of a community woodland that cultural heritage of the area and is complementary to the cultural aspects of Northwich Town.

### **24. Witton Tip**

Ex-landfill site containing industrial and domestic waste. In 2004 a new community park, named in honour of ex-county councillor Ron Carey, was opened. Seven year reclamation project over 30,000 tonnes of composted green waste has been used to restore the site, helping to nourish 10,000 new trees and shrubs. Adjoining Northwich Town Centre.

### **25. Carey Park - New Entrance Features and signage 2016**

Importance of linking the Woodlands to the town of Northwich;

- More competitive town - economic benefits
- Sustainable development
- Healthy people - active travel
- Resilient to climate change
- Increased value from the natural environment

### **26. Carey Park - Wood Allotments**

Young woodland management for wood fuel by volunteers. Biodiversity benefits plus woodland management

### **27. Ashton's and Neumann's Flashes**

These are the largest of the flashes. Neumann's Flash was formed in 1873 after salt mine collapse.

These were the last of the large land holdings to be remediated. In 2002 improvements in derelict land management techniques had improved. The objective for Ashton's and Neumann's restoration was to complement biodiversity. Through natural regeneration on the lime waste the ensuing calcareous grasslands created an area of high ecological interest, particularly the rare Dingy Skipper butterfly and several species of orchids - species uncommon in Cheshire. New areas of woodland were created combining mixed native species, complementing and supporting woodland on neighbouring sites. In addition there was a new 3.5km circuitous footpath, as well as seating, observation platform and bird hides installed.

### **28. Linkages**

New bridge crossings essential - active travel

### **29. Footbridge in situ**

This bridge was installed in 2003 over the Witton Brook to create a through route along the bank of the Weaver from Northwich to Anderton. There was at one time a ferry here, operated by one Bob Carden after whom it was named.

### **30. Final piece in the Jigsaw: Uplands and Hopyards Farm**

In 2000 acquisition by Forestry Commission of 36ha of land from local farmer and politician completed the land assembly.

### **31. What's the result?**

- Over 300ha
- Largest area of managed public space near large town anywhere in Britain
- Vehicle – free with 28 km off-road walking, cycling and riding, canal tow paths
- Estimated visitors 100-250,000 per year
- High rating in Visitor Surveys
- Ownership changes

### **32. Patchwork**

Culmination of over 30 years of land restoration and assembly creating a patchwork of open spaces from derelict and contaminated land to the north of Northwich.

#### **Key to success:**

- Many partners – co-operative approach involving many partners and local community. The Mersey Forest played a key leadership role.
- Took many years
  - Main focus 1989 –Ashtons in 2004
- Built on experience
  - Quality design
  - Multi-disciplinary professionals
- Different resources (funding)
  - 1998 Strategic Programme of Reclamation: £4.17 million
  - 2003 Northwich Community Woodlands Programme of Enhancements focused on bridgeworks, car park and footpath works at Carden Ferry, Anderton and Marbury: £1million
- Clear vision of the end result:
  - To enhance landscape aesthetics and improve environmental image.
  - To improve the quality of life for local communities by providing extended opportunities for informal leisure and recreational use.
  - To develop a tourist destination of high regional value.
  - To protect and enhance ecological, cultural and heritage features.
  - To support and contribute to broader regeneration initiatives and strategic concepts.
- Passion and commitment

### **33. Sum is greater than it parts**

Aristotle. Whilst such expansive partnership working has not been without difficulty and complication, the experience of this project would suggest that the advantages gained from working in this way far outweigh any real or perceived disadvantage.

### **34. Vibrant Community Asset**

FoAM is a group of local residents who have come together to support, influence and play an active role in the future of Northwich Woodlands. The group was founded in 1999 and has since grown to a membership of over 230, holding two volunteer task days a week and has even piloted a woodland allotment.

### **35. What do the residents of the town of Northwich Think?**

Commissioned independent survey August 2015

- Just under half consider getting involved in contributing to Northwich Woodlands' future
- Seven in ten felt investment made had been worthwhile financially.
- Almost nine in ten felt investment had been worthwhile environmentally.
- Over eight in ten felt investment had been worthwhile for residents' health and wellbeing.
- Almost two in three felt the investment had been worthwhile for attracting visitors from outside the area.
- Over four in five residents consider the open spaces provide a good quality of life for them and their family.
- Two in five of those who have moved to their current address within the last two years, considered the open spaces influenced their decision to move there.
- Almost three in five of those who live at their current address for more than two years stated the open spaces influenced their decision to remain at their address.

### **36. Saltscape**

Funding still required to enhance the restoration. £1.4M of external funding to telling the story of Salt in the landscape:

- To protect, restore, enhance and manage this unique place as one environment
- Reconnect people with their landscape and heritage
- Make the area a better place to work, live and visit

### **37. The Challenge**

The main challenge is now to continue the management of the open spaces since the works had been completed. Like all public green spaces (in the UK – Japan?) they are competing for scarce resources for their continuing management.

Continue to raise the profile of the Northwich Woodlands to demonstrate that sustainably managed green spaces deliver multiple benefits and make a significant contribution for local people to feel healthier, happier and wealthier.



# Northwich Woodlands: from derelict land to vibrant community asset

Clare Oliver  
The Mersey Forest



## Liverpool



## Where are we?



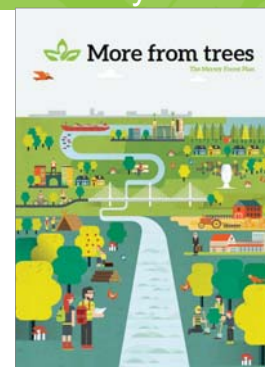
## The Mersey Forest



## Where are we?



## The Mersey Forest Plan



# 1991



merseyforest.org.uk



## Cheshire



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## Why focus on derelict land?

In 1994



we had as much derelict land

as woodland



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## Chester



merseyforest.org.uk



## Programmes of remediation



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merseyforest.org.uk





## Salt Extraction



merseyforest.org.uk



## Aerial View 1973



merseyforest.org.uk



## A changing landscape



merseyforest.org.uk



## Marbury Hall – 1920s



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## Lime Avenue at Marbury - 2015



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Anderton Nature Park - 1996



Anderton Boat Lift



View from Anderton Nature Park - 1996



Lion Salt Works



Entrance to Anderton Nature Park



Witton Tip - 1995



## New Entrance Features



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## Linkages



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## Wood Allotments



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## Carden's Ferry Footbridge



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## Ashtons & Neumann's Flashes



merseyforest.org.uk



## The last piece of the jigsaw



merseyforest.org.uk





## What's the result?



## Vibrant Community Asset



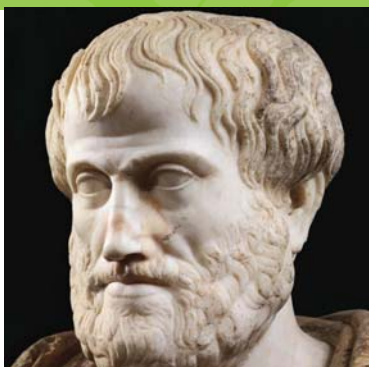
## A patchwork



## What do residents say?



## The whole is greater than the sum of its parts



## Telling the Story of Salt



SALTscape





merseyforest.org.uk 

# Thank you



Clare Olver

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# Bold Forest Park in St Helens

## Background

Bold Forest Park is in the town of St. Helens, in North West England. St Helens is one of the local government areas that is part of The Mersey Forest,

Bold Forest Park consist of seven separate woodland areas in a matrix of agricultural land.

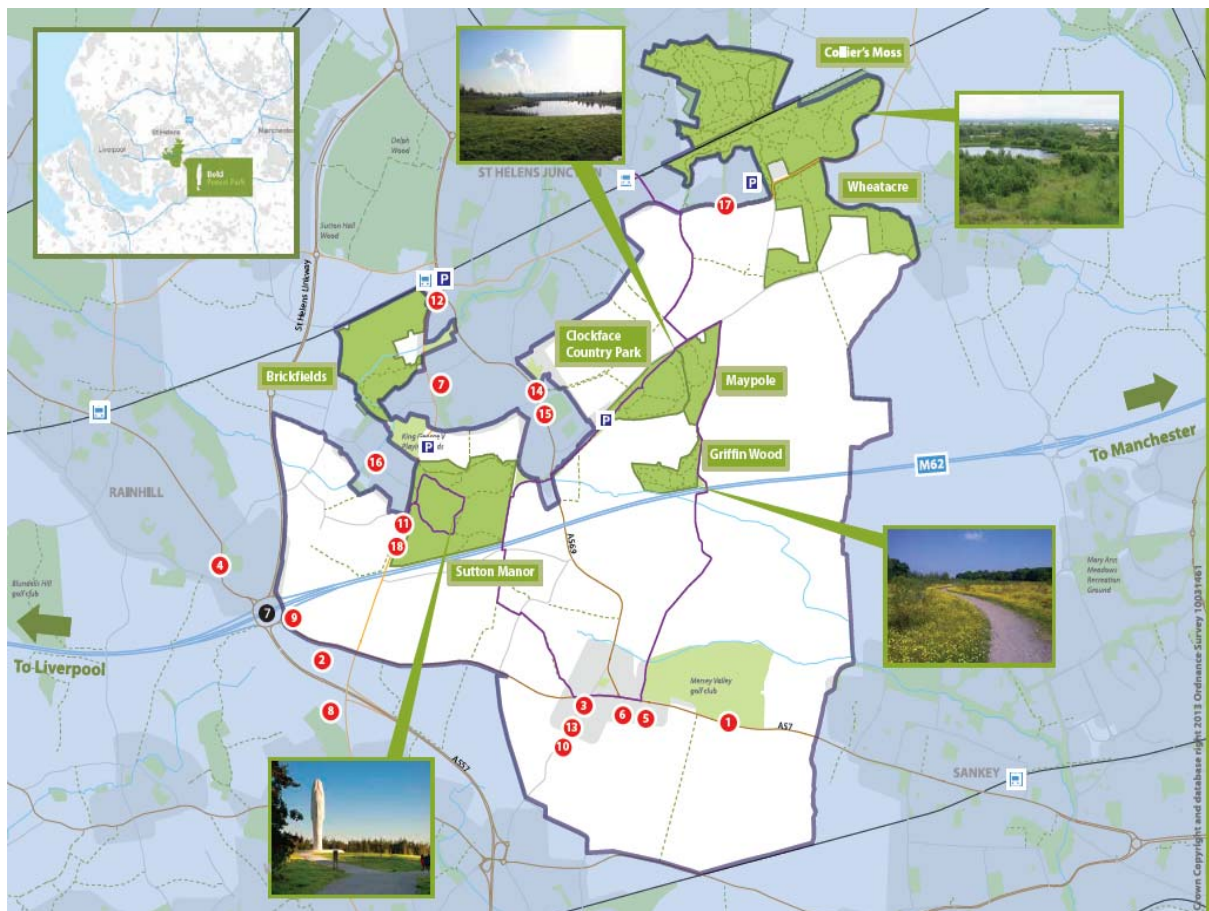


Figure 1 Map of Bold Forest Park area with main community woodland areas marked

The idea of a “Forest Park” emerged as several former mining sites that were derelict were reclaimed over time to community forests. The reclamation happened over a period of 20 years, with a variety of landowners now having ownership of different woodlands in Bold Forest.

The funding to carry out the reclamation has mainly been from the government in the past though this is no longer available. The total costs of reclamation of the sites are not known but is likely to be around £20m, excluding management and maintenance.

These woodlands are now maturing well and the next phase of their evolution from dereliction to an asset is underway. The area is being promoted for sport and recreation and attracts over 300,000 people a year.

Art installations, new footpaths and enhanced management for biodiversity now provide an interesting landscape to enjoy. The new woodlands are the backdrop to new housing and there is more housing planned, making use of the “Forest Park” as a local amenity that can add value to new development.

Recognising the increasing importance of Bold Forest Park, the area has been designated as a local area Action Plan within the Local Plan for St Helens. The Local Plan sets the strategic policy for new development, housing, business, and leisure, and can allocate land for specific purposes. The plan describes how a place might develop and is consulted on with the residents of St. Helens for their support and comments.

While a great deal has been achieved to develop the community woodlands and the concept of Bold Forest Park, there is still a great deal to do to enable the area to fulfil its potential. With the economic slowdown, resources to start new projects are slow to materialise and there is increasing emphasis on the private sector as a source of funding for these types of projects.

## Background

There has been coal mining in the Bold area since 1540. Over the past 450 years hundreds of mines, large and small have been opened closed. In the 1850's over 1m tonnes of coal, a year was being won from the mines in the area.



Figure 2 Photograph Courtesy of Sutton Beauty

St. Helens was a town in the heart of the industrial revolution, coal was the power source for industry across north-west England and the railways. Over time and with industrialisation larger mines emerged to replace the smaller inefficient mines. By 1920 12 large mines remained.

Mining brought much waste material to the surface; this was dumped close the mine, covering the former agricultural and mossland areas with large mounds of waste material. Over time mines closed as the coal was no longer available or became too expensive to extract. The mine buildings were removed but the mounds of waste remained.



At Bold, a new power station was built in the 1950's, fuelled by coal from the nearby mines. The power station provided another waste material, "pulverised fuel ash", that was dumped on the nearby land too.



Figure 3 Power station at Colliers Moss - Photograph Courtesy of Sutton Beauty

In the 1990's the government announced the closure of many mines and the last mine in St Helens stopped production in 1991, with an estimated 100 years of coal still available to mine.

## Site Reclamation

When Sutton Manor closed, reclamation of the other derelict mine areas was already underway through the "Wasteland to Woodland" programme that was run by an organisation set up in St Helens, the Groundwork Trust.

The Mersey Forest was initiated in 1991 and the first Forest Plan in 1994, highlighted the role that the Forest could play in reclaiming derelict land, supporting projects like Wasteland to Woodland and bringing in new partners such as the Forestry Commission. Over the following ten years, large-scale investment using government funds meant that all of the sites were reclaimed and open for public use as community woodlands.

Issues of water pollution, soil compaction and in places lack of any soil for planting were addressed during the reclamation process.

## Creating new community woodlands

In the UK, there has been a long tradition of creating new woodlands on closed mining sites. This is likely due to the lower levels of soil fertility and quality needed to establish the woodland,

versus for instance agricultural land. The site conditions also mean that reclamation to housing or another development is more complicated and, therefore, expensive.

The Forestry Commission has produced guidance on the techniques for woodland creation on mining waste based mainly on their experiences on the large mining spoil sites in South Wales.

([http://www.forestry.gov.uk/pdf/RIN216.pdf/\\$FILE/RIN216.pdf](http://www.forestry.gov.uk/pdf/RIN216.pdf/$FILE/RIN216.pdf) for an early example of guidance)

For Bold Forest Park two approaches have been taken to reclamation.

Firstly on sites such as Colliers Moss, a natural regeneration approach was taken. This involves less engineering and intervention generally on the site. The aim is to provide the conditions by slight modification of soil and sometimes water levels, to enable nature to take over and recolonise the site in a way that is planned, but open to the possibilities of accepting that we may not always foresee what might colonise the area.

On the whole, this approach has worked, with the rapid colonisation of the site by silver birch (*Betula pendula*) and alder (*Alnus glutinosa*) in the wetter areas. In the very wet areas near open water reed beds have established and are now in need of management to control their growth. Elsewhere, heathland vegetation, on very acidic mining substrate, continue to take hold slowly.



Figure 4 Old and blurred photo of natural regeneration at Colliers Moss

In contrast, Sutton Manor had an engineering-led approach. The initial reclamation of the site was by land engineers who compacted the soil to stabilise the slopes. This compacted soil is not suitable for trees. There was a need to bring in new soil, mainly waste soil from building projects in the area. This soil was spread and, using a large excavator machine, dug to ensure that it was not compacted and suitable for trees.



Figure 5 Decompaction of soil at Sutton Manor

Planting of the woodland followed and again, like Colliers Moss, the trees are growing successfully.

In some areas materials such as paper waste was used on site to improve soil conditions.



Figure 6 Paper waste used as a soil improver - note white colour of soil

## Community engagement

At the heart of what The Mersey Forest tries to achieve is the engagement of people with their woodlands. To provide woodland nearby that can be used for leisure and recreation.





Figure 7 Community Planting day

For all schemes in Bold Forest Park, over many years, there has been community engagement in the design as well as the use of the community woodlands.

Community events provide an opportunity for people who do not usually visit the woodland to visit the site.



Figure 8 Celebration event at Sutton Manor

## Celebrating the culture of the mining area

The closure of mines was rapidly followed by the demolition of all of the building and the mining machinery. Much of the history of the area was lost, and there are now only a few remnants of the enormous buildings and structures that one would have dominated the landscape.

People in the area are still proud of their mining heritage. In developing the new woodlands, the landowners have often tried to incorporate elements from the old mines, pit wheels, gates and



other items that provide a link back to the industry that created the landscape of Bold Forest Park in the first place.

The most striking example is Dream, a 40m sculpture of a child's face looking out over the landscape. Jaume Plesna, the international artist, designed the sculpture. He worked closely with the miners who had worked at Sutton Manor to come up with a striking work of art. Placed at the top of the old spoil heap, now covered in trees, it attracts more than 100,000 people a year to the site.

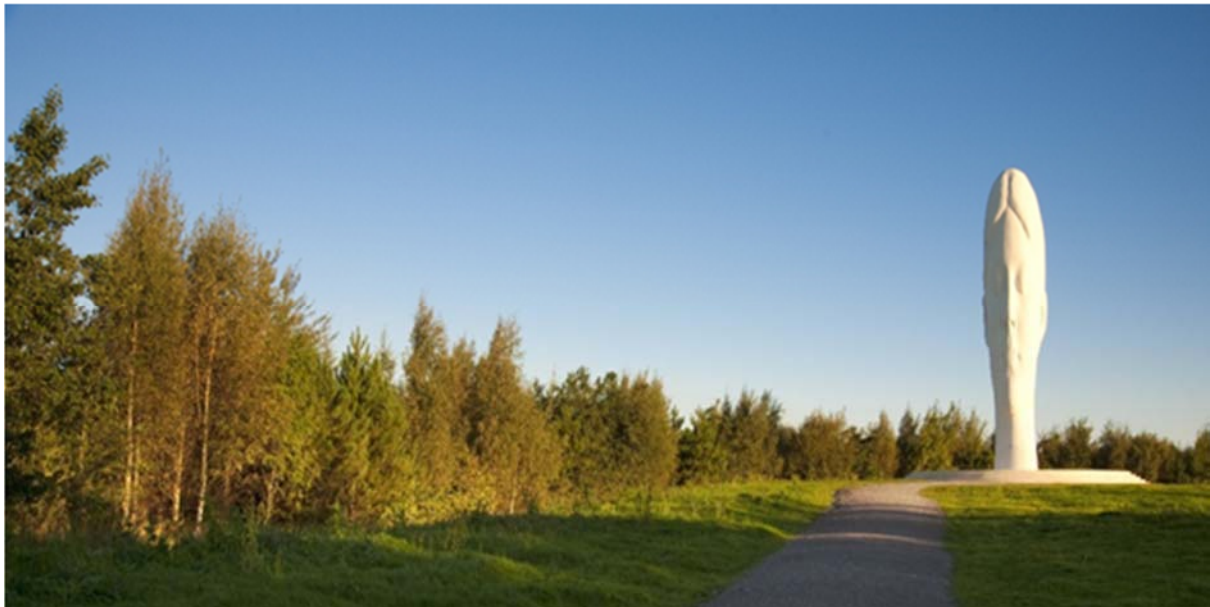


Figure 9 Dream at Sutton Manor

Local children also worked with another artist to celebrate the mining heritage of the area. The motto for St. Helens is “from the earth light” and the sculpture symbolises the light from the burning of the from coal deep underground that would have lit the homes of their grandparents.



Figure 10 From the Earth Light

## Developing a Forest Park

In 2008, we recognised that a new landscape was finally emerging in the Bold area. There were no longer any waste tips. New housing connected to the woodlands by local footpaths and cycleways.

The Idea of a “Forest Park” was put forward, with the intention of moving the projects forward from a land reclamation focussed project, to one that now made the best use of the community woodlands that had been created. The idea grew slowly. Various studies showed the value of the area and the opportunities that the “Forest Park” offered for leisure, recreation, new housing and business development.

Various projects have taken aspects of this vision forward. In 2014, we took Bold Forest Park into St. Helens Town Centre for a day! Bringing large trees into the town and having forest events in the main town square.

This raised the profile of the Forest Park with many people.

## Biodiversity

As sites in Bold Forest Park have developed, biodiversity has thrived. There is now a rich mix of habitats providing for many species.

Increasingly, management of the sites focusses on enhancing biodiversity, to improve the attractiveness of the sites as well as provide a critical part of the wider ecological network of St Helens and neighbouring areas. Colliers Moss is designated as a Local Nature Reserve for its mossland and heathland habitats.



**Figure 11** Wildflower meadow planted at Griin Wood - not a derelict site, but a new planting to help connect derelict sites

## Connecting sites

The individual mines were never completely connected by paths or tracks as they developed at different times and operationally were separate. Any connection that may have existed would have been lost in the works to close down the mines.

But the landowners are trying to develop cycleways and footpaths so that the separate sites may become linked.

There are specific plans for cycleways and footpaths to be developed in the future as funding allows. The main barrier in connecting the sites is a small but busy road, with fast travelling cars.

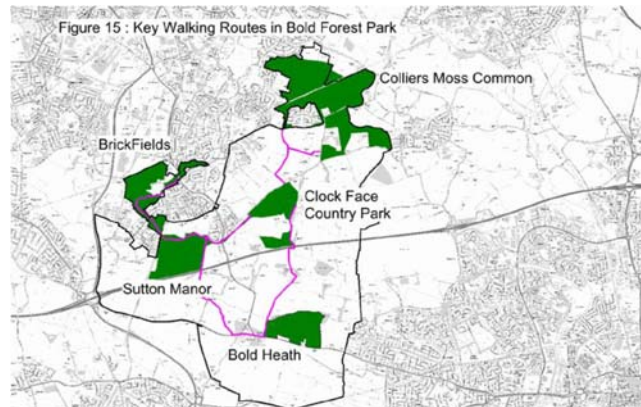


Figure 12 Aspirational walking network

## Bold Forest Park and the Planning System.

Bold Forest Park is now recognised officially as a designated area in StHelens Local Planning Documents. This is a major step forward in the development of the Forest Park.

The Local Plan sets the strategic planning context for an area. It is itself informed by England's National Planning Policy Framework. This national framework identifies the key issues to be considered by the local plan with detailed information provided online (NPPF)

Bold Forest Park is identified as an Area Action Plan in the St Helens local plan. The Area Action Plan is a legal document and provides more detailed descriptions that meet the key objectives of an area such as Bold Forest Park. Full details of the plan are also found online (<http://www.sthelens.gov.uk/what-we-do/planning-and-building-control/planning-policy/area-action-plans/> ).

Consultation on this plan has just finished and the final plan is expected in the summer of 2016.





Figure 13 Bold Forest Park Area Action Plan

The vision set out in the Bold Forest Park Area Action Plan is;

*“By 2030 a thriving diverse economy, providing a hub for family leisure and adventure sport. The natural environment and cultural environment will be rich and diverse. A network of open spaces and routes accessible to all connects the Forest Park to the wider countryside and links to our local communities.”*

The Plan also includes the following objectives;

The aim of Bold Forest Park Area Action Plan is to provide an outdoor leisure destination in an attractive, wooded setting with the following objectives:

- BFP1: Create new economic opportunities through sustainable development within Bold Forest Park;
- BFP2: Create opportunities for tourism and leisure related business, supported by the natural economy;
- BFP3: Create an easily understood and accessible network of linked open spaces within Bold Forest Park and with surrounding areas;
- BFP4: Promote the provision and positive use of green space for the benefit of the local community and visitors; and
- BFP5: Enhance the natural environment through targeted delivery of green infrastructure programmes that improve and expand the biodiversity and landscape quality of the Bold Forest Park area.

These can be supplemented by the addition aim of:

- BFP6 : Create quality outdoor space with opportunities for physical activities and positive use of green space to improve mental health and well-being of the local community and visitors.

The hope is that the Action Plan will provide support that directs the development and potentially funding for the further development and management of Bold Forest Park.

## Coordination

Bold Forest Park is owned by many landowners and is used by a broad range of people. Owners and representatives of the users are brought to discuss opportunities to develop projects. For example, at the moment, there is a discussion on how to develop the cycle network and create a “cycle hub” to attract more visitors. There is also an interest in getting more businesses involved in Bold Forest Park. Businesses can benefit from visitors spending money in their shops to buy meals and drinks when they are in the area visiting Bold Forest Park. While the park attracts 300,000 visits a year, many of the visits are repeat visits. Bold Forest Park is within a 1-hour drive for more than 2 million people, mainly from Liverpool and Manchester and so there is potential for an increase in visitors. In order to provide a good experience for the visitor, it is essential that there are local businesses that can provide refreshments and other amenities.

The implementation group reports to a Bold Forest Park Board, which consists of politicians, planners and the chair of the implementation group.

## The Future

Like all landscapes, even landscapes that have become derelict, Bold Forest Park will continue to evolve as opportunities to develop new activities on site emerge and perhaps as the connections between sites improved.

With limited government funding, the pace of change and development in the park has slowed. This is unlikely to change in the near future and the significant restriction on achieving the objectives for Bold Forest Park is a lack of funding. Recent work at Colliers Moss to manage some of the non-woodland habitats is an example of how individual sites can find funding for particular works to improve the landscape and biodiversity. The large scale strategic funding is however not available at the moment for infrastructure works such as improvements to the cycle network.

## Finally

Bold Forest Park now consists of a change of once abandoned coal mines and other sites that have been transformed into community woodlands by a range of landowners over a long period. They have changed the landscape, enhanced biodiversity and create a setting for homes, leisure, recreation, heath and education.

However, as with any long-term plan and most landscapes, there are still challenges ahead.

The aspiration is that the new Area Action Plan can help us to move to the next phase in the development of the Park.

We hope that you may visit us some time on your travels. We would like to welcome back those of you who have already seen Bold Forest Park already.



Figure 14 you may recognise some of these people visiting Dream at Sutton Manor



# Development of Bold Forest Park - St. Helens

Paul Nolan  
The Mersey Forest

merseyforest.org.uk



## The Mersey Forest



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## Summary

- **Before the Forest Park - The History**
  - Coal Mining
  - Industrial revolution
  - Power generation
- **Bold Forest Park Creation**
  - Reclaiming derelict land
  - Connecting sites
  - Adding to sites
  - Attracting visitors
- **Linking to the past**
- **Planning for the future**

## Bold Forest Park



## Before the Forest Park

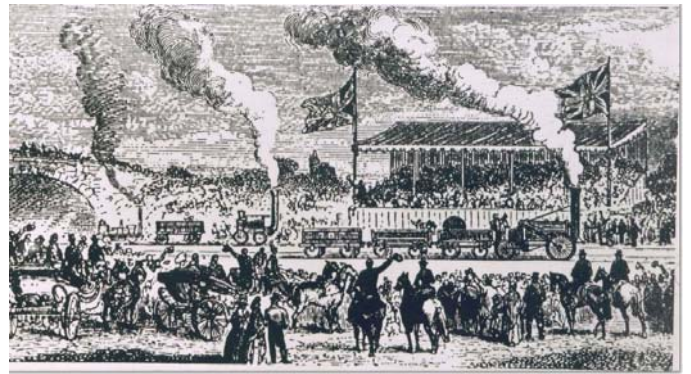
- Coal mining area since 1540
- 1850's - 1 million tonnes of coal a year produced
- 12 Mines in 1920
- 0 mines in 1995
- 100 years of coal still in the ground



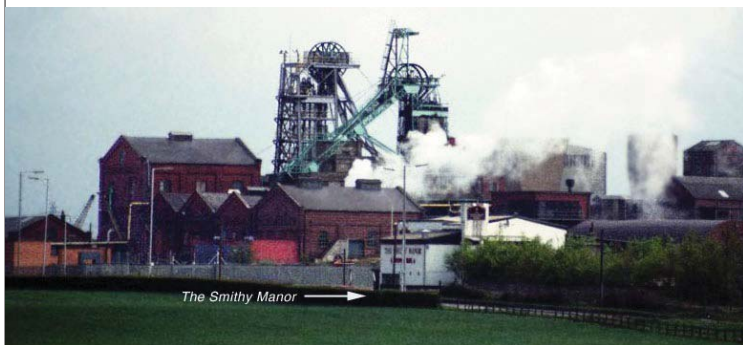
## 1950's Aerial Photograph – Bold



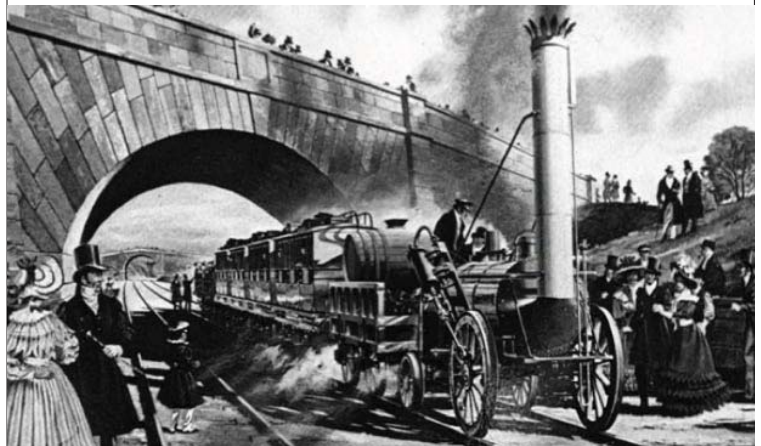
In 1800's Bold was at the heart of the Industrial revolution



## Sutton Manor



## "Stephenson's Rocket"







## Why is this a problem?

- Poor image for the area
- Sites not used by people
- Pollution to water
- People wanted to see things change



## Decline of mining in England

The final mine (Bold) was closed in 1991, ending more than 400 years of mining in St Helens.

Across the UK 31,000 miners lost their job



## The Mersey Forest Plan - derelict land



## The legacy of dereliction



Reclamation of sites for Forest – engineering to create the conditions to grow trees on compacted sites - Sutton Manor







## Improving soil conditions for trees using paper waste



## Planting woodland

- Mix of native species
- Mix of habitats too
  - Woodland
  - Grassland
  - Mossland
  - Open water
- Planted by
  - Contractors
  - Community





## Newly planted woodland



## Wildflower meadow at Griffin Wood – Biodiversity and image from the road



## Natural Regeneration

- Let nature reclaim the sites!
- Bold Colliery has a natural regeneration approach
- Sutton Manor is engineered



## Forest Park as a place for people

- The Forest Park 30 minute drive for 2,065,000 million people.
- Around 300,000 people a year currently visit

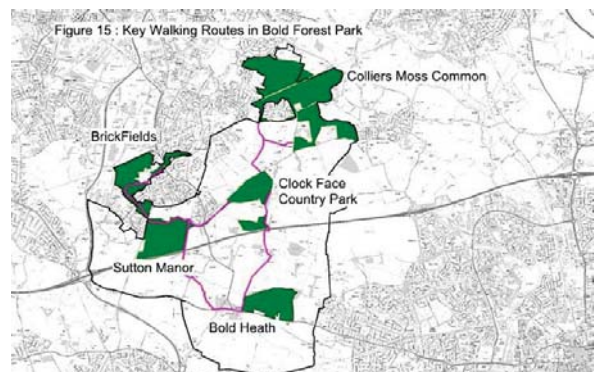


## Creating woodland on other land

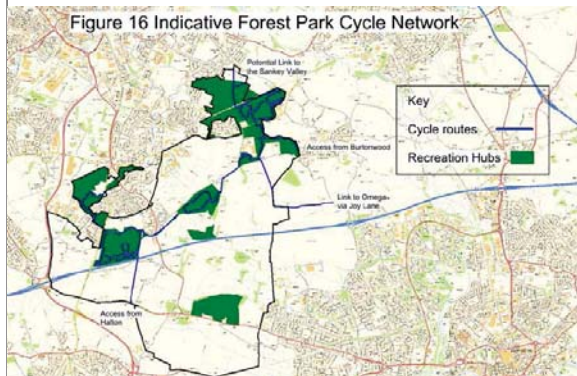
- Woodland planted at 2 sites that are not derelict
  - Create scale
  - Different habitats
  - Connect sites by footpaths and cycle ways



## Connections Walking routes



## Cycling routes



## Dream sculpture Attracts 100,000 people a year



## Using mining infrastructure



## To create new routes

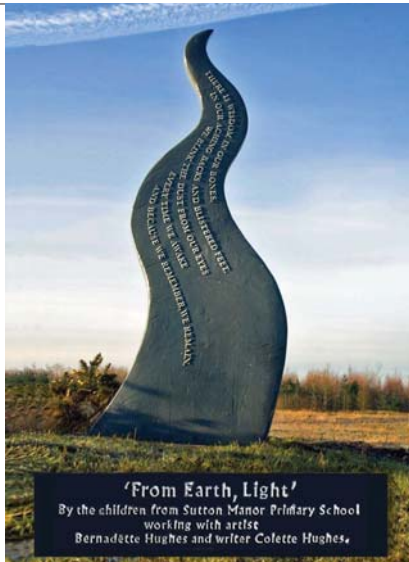


## Culture

- Remembering the previous Industry and the people who created the landscape
- Respect
  - Connection





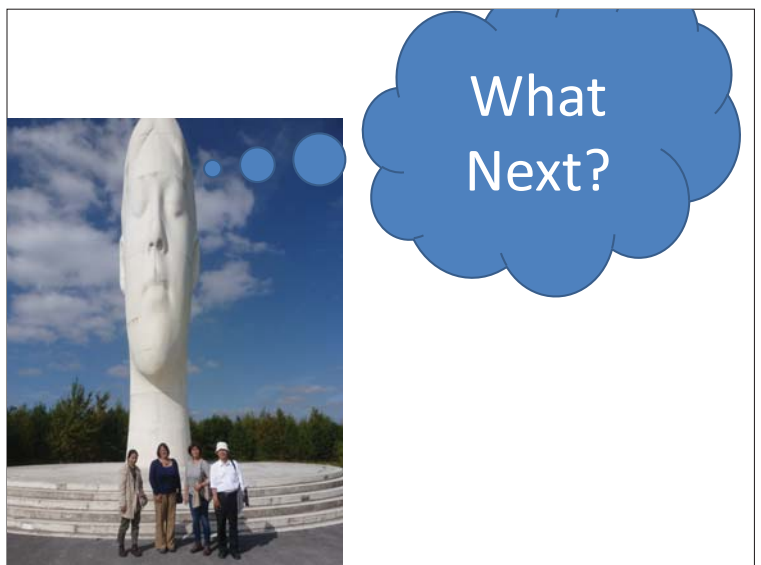


## People using the Forest Park

- As well as leisure walking and cycling the Forest Park is now used for
  - Health
  - Education
  - Sport



## Celebrating the Forest Park



## Bold Forest Park designated in Planning

1

- England National Planning Policy Framework

2

- St.Helens Local Plan

3

- Bold Forest Park Area Action Plan



## Bold Forest Area Action Plan



## A mining area regenerated!



## Future vision for the Forest Park

*"By 2030 a thriving diverse economy, providing a hub for family leisure and adventure sport. The natural environment and cultural environment will be rich and diverse. A network of open spaces and routes accessible to all connects the Forest Park to the wider countryside and links to our local communities."*



## The challenge ahead

- Maintaining the sites
- Developing new activities
- Linking to local businesses
- Coordination across the landowners
- Resources



www.boldforestpark.com



Be part of it...



What is Bold Forest Park?

Bold Forest Park is an exciting site to develop the woodlands and businesses of south St.Helens as a place to visit and enjoy. bringing local jobs and amenity. Find out more.



Explore the woodlands

Find walking and cycling routes on the interactive map at [discoverboldforest.co.uk](http://discoverboldforest.co.uk)



What's on?

There's loads going on in the Forest Park. [Click here](#) to find out what's coming up soon.

Thank you



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merseyforest.org.uk



www.suttonbeauty.org.uk



Welcome to Sutton Beauty & Heritage!

A Celebration of the Past & Present of Sutton in St Helens

Lots of independent information about Bold Forest Park and the history of mining in the area.

Many of the mining pictures kindly provided by Stephen who owns the website.





### Remediation and return of hard contaminated brownfield lands in Fukushima after 5 years What is the Problem?



OTetsuo Yasutaka

\* National Institute of Advanced Industrial Science and Technology

Brownfield regeneration: mitigating perceived risks and stigma through image branding

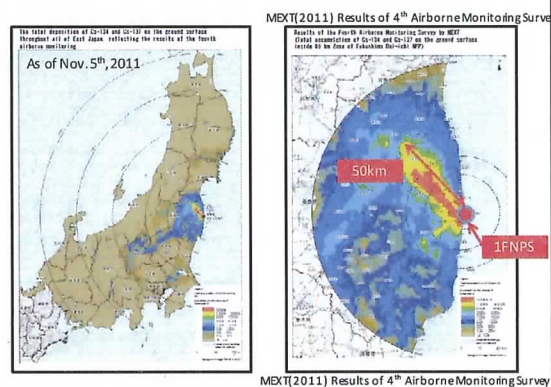
### Agenda

1. Overview of Fukushima accident
2. Current situation of one small evacuee village
  - Environmental Issue
  - Depopulation Issue
  - Industrial and Economical Issue
3. Can they overcome this situation.

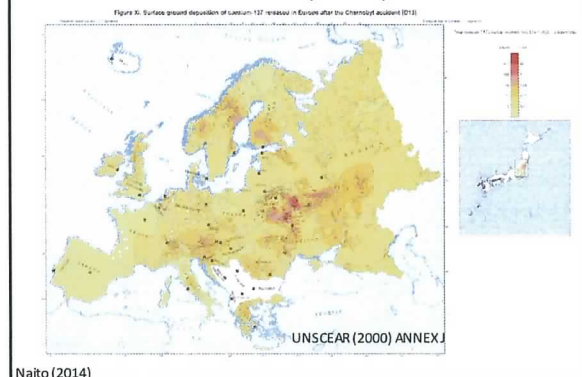
This presentation is not the result of research, but the report of the relation between researcher and evacuee residents who want to back to their home.



### Radioactive contamination caused by the accident at 1FNPS



### Same Scale comparison of total Cs-137 depositions for Chernobyl and Japan



### Decontamination policy

|  | Area   | Annual dose (mSv/year) | residents                    | Decontamination        |
|--|--|------------------------|------------------------------|------------------------|
|  | Special decontamination zone (SD Zone)         | > 20                   | Off limits or limited access | By National government |
|  | Intensive contamination survey area (ICS Area) | 1-20                   | stay                         | By each municipality   |



### Decontamination methods



### Decontamination process

#### Decontamination Process

1. To remove the contaminated soil and various materials
2. To pack the contaminated soil and other materials in the Flecon Pack (Flexible Containers)
3. To move the Flecon packs to temporary storage sites and keep them for a 3 years
4. To move the Flecon packs from the temporary storage sites to interim storage facility (still don't built now) and keep them for 30 years.
5. To move them to the final disposal



### Our Estimation costs of decontamination in Fukushima,

Yasutaka et al., (2015) J. Environ. Radioact. 155

Unit: Billion EURO

| Scenario  |           | Special Decontamination Zone (SD Zone) | Intensive Decontamination Survey Areas (IDS Area) | total |
|-----------|-----------|--|---|-------|
| SD Zone   | IDS Area  |  |   |       |
| Scenario1 | Scenario3 | 15                                     | 23  | 38    |
| Scenario1 | Scenario4 | 15                                     | 5   | 20    |
| Scenario2 | Scenario3 | 8                                      | 23  | 31    |
| Scenario2 | Scenario4 | 8                                      | 5   | 13    |

- The total cost of decontamination is estimated 13 - 38 Billion EURO.
- The cost is quite different each scenarios.
- This result indicate that the decontamination cost can be reduced by selecting the appropriate decontamination scenarios and methods.

Assuming 1 EURO = 136 JPY

revised on July 2013 at AIST RISS website



Over 85,000 people have been unable to return to their homes because of the evacuation order.

### How many people will return their home?



### Agenda

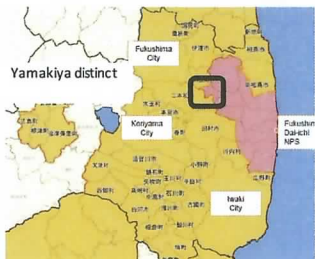
1. Overview of effect of Fukushima accident
2. Current situation of one small evacuee village
  - Environmental Issue
  - Depopulation Issue
  - Industrial and Economical Issue
  - Issue who don't return their home....
3. Can they overcome this situation?

We are research on the small village in the evacuated zone during 5 years

Population 1,306 (2011)  
1,176 (2015)  
Evacuee 1,176

Area 37 km<sup>2</sup>  
Elementally school 1  
Junior high school 1

Evacuated in 22th April 2011  
Decontamination 2012FY-2016FY  
Possible return date: 2016-2017



2012



2015



### Decontamination Work

|                           | progression rate | Area   |
|---------------------------|------------------|--------|
| Residential area          | 100%             | 360 ha |
| Agricultural area         | 99%              | 470 ha |
| Forest near the residence | 100%             | 500 ha |
| Road                      | 100%             | 68 ha  |

14 km<sup>2</sup> / 37 km<sup>2</sup>

### Environmental Problem

Target exposure 1 mSv/year

External exposure

70% area is under or equal to 1mSv/year

Internal exposure

There is few risk without mushroom and wild animals

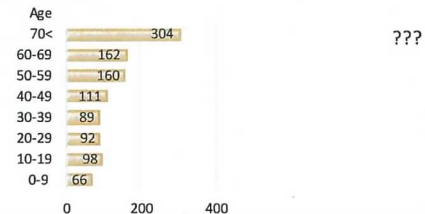


## Depopulation Issue

Before the accident, phenomenon of **Depopulation** and **Aging society** have started as same as other rural region in Japan.

Furthermore, this accidents also may accelerate the **Depopulation** and **Aging society**

Population in 2010, Total 1306



2020

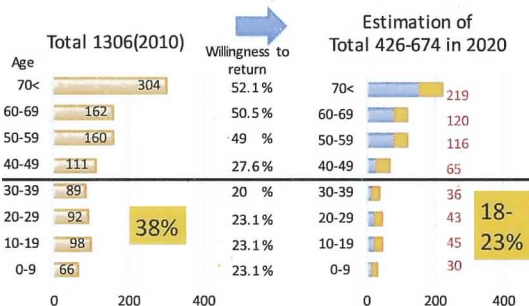
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## The result of questionnaire by Kawamata town



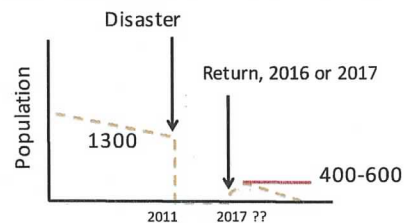
[http://www.reconstruction.go.jp/topics/main-ca1/sub-ca1-4/ikouchousa/20151204\\_ikouchousa\\_kawamata.pdf](http://www.reconstruction.go.jp/topics/main-ca1/sub-ca1-4/ikouchousa/20151204_ikouchousa_kawamata.pdf)

## Estimation of the future population in Yamakiya



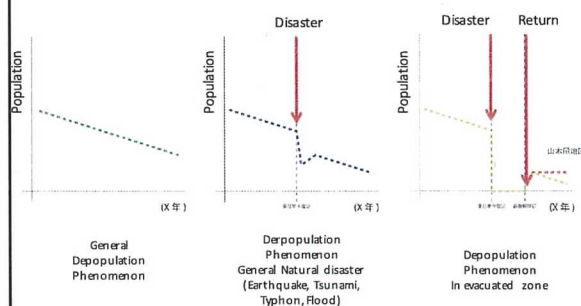
- A strong possibility that the community size will greatly decrease.
- A strong possibility that aged population will extremely increase due to the low returning intention of inhabitants aged over 30~50.

## Depopulation and Aging Phenomenon in evacuated zone



- An increase in management burden on traditional events, agricultural roads and water ways.
- A decrease in efficiency of infrastructures and administrative services due to the progression of depopulation and tendency of decentralized inhabitant.
- Degradation of agricultural lands and forest due to reduction of population engaging in agriculture and forest.

## Classification of depopulation in rural area



## Economical problem

- Main industry is agriculture.

This type of industry was hit hard by rumors now.

The main agricultural products in Yamakiya are.....

- Rice
- Feed crop
- Tobacco
- Eustoma (Flower)



**Eustoma (Flower)**  
トルコギキョウ



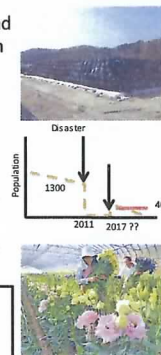
Overcome the rumors hit, non-food crop is effective



7-8 farmers and their son re-start the agriculture.

### Summary: Recent problem in rural area example of Yamakiya region in Kawamata town

- Decontamination will finish in April 2016 and environment will be recover but still remain the temporarily storage site.
- Population 1300 before the accident, phenomenon of depopulation has started.
- Depopulation and aging may accelerate by accident.
- Main industry was the agricultural industry but this type of industry was hit hard by rumors now. But the flower farmer re-start their work
- We have to regenerate this place not only the environmental but also the economically....
- But it is hard task for everyone.



## Agenda

1. Overview of effect of Fukushima accident
2. Current situation of one small evacuee village
  - Environmental Issue
  - Depopulation Issue
  - Industrial and Economical Issue
3. Can they overcome this situation?

## Can they overcome this situation?

- I don't know they overcome this situation.
- But there is a seed for miracle or hope.
- 7-8 farmers and their son return and re-start their works.
- What we can do is to support them.
  - We plan the professional support of flower, especially Eustoma.
  - We also plan the Yamakiya tourism for university student and urban people
    - 1) support for the aquiculture of flower
    - 2) study for the history and current situation
    - 3) study for radioactive contamination and waste.

## Tourism



## More information

- Yasutaka et al.,(2013) Cost and Effectiveness of Decontamination Strategies in Radiation Contaminated Areas in Fukushima in regard to external radiation dose, PLOS ONE,8(9),e75308.
- Yasutaka et al., (2013) A GIS-based evaluation of the effect of decontamination on effective doses due to long-term external exposures in Fukushima, Chemosphere,93(6),1222-1229.
- WEB site in Japanese
  - 2012.11.19 1st result of Cost and effectiveness
  - 2013.06.04 2st result of Cost and effectiveness
  - 2013.07.24 3rd result of Cost analysis
  - <http://www.aist-riss.jp/main/modules/research/content100.html>
  - [http://www.aist.go.jp/aist\\_j/new\\_research/2013/nr20130604/nr20130604.html](http://www.aist.go.jp/aist_j/new_research/2013/nr20130604/nr20130604.html)

## **Area-wide planning for brownfield regeneration, Cases of mill cities in the U.S.**

Takefumi Kurose, The University of Tokyo, Urban Design Lab., takefumi.kurose@gmail.com

### **1. Change of brownfield policy in the U.S.**

#### **1.1. Brownfield policy of states and federal government**

Brownfield revitalization policy in the U.S. started from deregulation of CERCLA. Some states have created voluntary cleanup programs (VCPs) to remediate and reuse “slightly contaminated sites not listed on the NPL (Superfund site list)” in the late 1980s. Other states followed and improved the idea and the federal government started to assist VCPs from the early 1990s. As a result of regulation improvements and financial incentive programs provided by states and the federal government, Brownfield sites in “good” location have been quickly redeveloped by private investors. However, other sites in marginal locations or distressed area have been left behind.

#### **1.2. Limitation of Site by Site approach and Emergence of area-wide approach**

Some cities successfully revitalized distressed area based on the feasible future plan with a combination of Brownfield funding and other traditional funding resources such as housing, economic development and infrastructures. Brownfield showcase community program by federal government enhanced these integrated approaches against brownfield sites and their surrounding areas. Those projects were highlighted as a success story, however there were not typical framework, nor an annual funding program for planning of the area with multiple brownfield sites.

On the other hand, New York State officially started “Brownfield Opportunity Area(BOA)”, a planning support for distressed area with brownfield sites in 2003 after a long discussion with community groups and non-profit organizations supporting those difficult areas in the state. The program itself does not provide funding for remediation but with BOA designation, funding from environmental sections are also prioritized.

New Jersey followed BOA emphasizing remediation of multiple sites in the area. USEPA also started federal grant named “Brownfield area-wide planning grant” in 2010, which modeled after BOA of New York State. In today’s presentation, two case studies of area-wide planning approach for brownfield revitalization will be explained.

### **2. Lowell - Massachusetts, Area-wide planning in downtown fringe area**

#### **2.1. Lowell, the first industrial city in the U.S.**

Lowell in the commonwealth of Massachusetts is the first planned industrial city in the U.S. The city had been famous for the textile industry until the end of WW II. From 1950s to 1970s, the local government redeveloped several mill sites under Urban renewal act.

#### **2.2. Limitation of Site by Site approach in 1990s**

EPA and HUD provided fundings for citywide brownfield assessment and preparation of



city's brownfield revitalization strategy in 1990s. At that time, the city was trying to redevelop suburban brownfield sites for industrial use. The priority of redevelopment was based only on a short-term feasibility study. However, those "site by site" redevelopment in remote location did not have a continuous positive impact to the declining industrial city and its economy.

### 2.3. Beginning of area-wide approach on the fringe of downtown

The federal government designated Lowell as Brownfield showcase community and the EPA officer was appointed as a brownfield coordinator in the local government. She introduced area-wide planning approach to the city and they initiated two district-scale revitalization plans (the Acre plan and JAM plan) on the fringe of downtown from 1999. Both plans put their emphasis on the canals and networks of small open spaces for their connection.

After the success of two revitalization plans on the fringe of downtown, the city finally started revitalization project for the Superfund site funded by EPA area-wide planning grant from 2010.

## 3. Buffalo – New York, Area-wide planning for large brownfield sites

### 3.1. Introduction of Buffalo and South Buffalo district

Buffalo have been the gateway of Erie canal from the Great Lakes. Because of its strategic location, Many heavy industries (3 Steel plants, Oil terminals, Paint factory, etc. ) started their factories in South Buffalo district in the early 20th century. However, most of those industries left Buffalo in 1980's and the district itself became one of the largest brownfield sites in the state (about 2000 acre).

### 3.2. The beginning of area-wide approach in Buffalo

The city of Buffalo started two types of brownfield revitalization project around 2000. The one was a district-scale revitalization on the downtown fringe area as same as Lowell and the other was a large-scale brownfield revitalization creating / utilizing Green Infrastructure in the area (funded by NYS BOA). South Buffalo was the first example of large-scale revitalization projects in Buffalo.

### 3.3. Green infrastructure as a framework of the area

In the South Buffalo BOA master plan, half of the area is planned as non-development area and most of landfill sites in the area will be converted into green open spaces. The city of Buffalo expects that those green spaces function not only as the amenity of citizen, but also the attraction for new businesses in the area.

## 4. From brownfield site redevelopment to area-wide revitalization (Discussion)

- Strategy to extend one leading project to surroundings neighborhood
- Utilization of former infrastructures for industrial use
- Combination of vacant land and brownfield
- Flexibility of planning to accommodate fluctuating real estate market

## Area-wide planning for brownfield regeneration Cases of mill cities in the U.S.

March 14, 2016  
Takefumi KUROSE, Assistant Professor  
Urban Design Lab., The University of Tokyo

### Today's topic

1. Change of brownfield revitalization policy in the U.S.
2. Lowell-Massachusetts, Area-wide planning in the downtown fringe
3. Buffalo-New York, Area-wide planning for large brownfield sites
4. From brownfield site redevelopment to area-wide revitalization (Discussion)

### 1. Change of Brownfield policy in the U.S.

#### 1st generation Brownfield policy in the U.S.

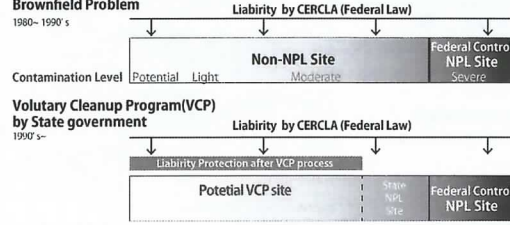
##### Brownfield problem

- Retrospective, strict, joint and several liability by CERCLA (1980)
- Renders kept away from former industrial land development

##### 1st generation brownfield policy

- State government created "Voluntary (non-federal) " Cleanup Program (VCP) for private owner and developer
- Liability protection after cleanup based on VCP process

##### CERCLA and Brownfield Problem



## Emergence of 2nd generation brownfield policy

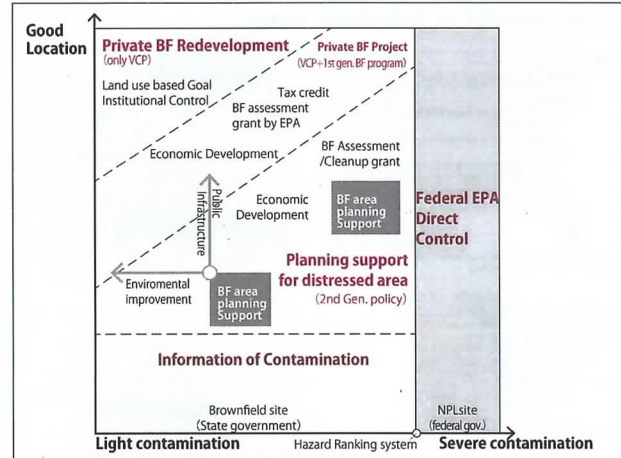
### Limitation of 1st generation brownfield policy

- Brownfield redevelopment only in good location sites
- Public funding for assessment and cleanup could not attract private investment for reuse of land in distressed urban area and rural area
- Redevelopment only of in BF sites, no contribution to revitalization of surrounding area

### 2nd generation brownfield policy in the U.S

Second Generation of brownfield program (Evan van Hook et al., 2003)

- Integrated public assistance (planning, assessment, cleanup and reuse of land) for multiple brownfield sites in distressed area
- Planning based on environmental information, cleanup priority on revitalization plan
- New York State Brownfield Opportunity Area (BOA) started in 2003, Beginning of 2nd generation BF policy
- US EPA followed BOA as a federal brownfield program in 2010

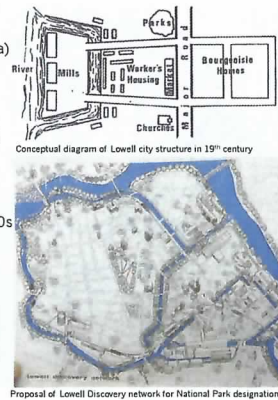


| Buffalo, New York |  | Lowell, Massachusetts |  |
|-------------------|--|-----------------------|--|
| Population        | 261,310('10) 580,132('50)  | Population            | 106,519 ('10) 112,759('20)   |
| Household         | 112,144  | Household             | 38,470   |
| Area              | 136.0 km <sup>2</sup>  | Area                  | 37.7 km <sup>2</sup>   |
| Av. Income        | \$20,245 State av. \$32,104<br>Pop. Under Poverty line 18.4%       | Av. Income            | \$23,600 State av. \$35,485<br>Pop. Under Poverty line 17.5%             |
| Race              | White 50.4%, African American 38.6%,<br>Hispanic 10.5%, Asian 3.2% | Race                  | White 60.3%, African American 6.8%,<br>Asian 20.2%, Native American 8.8% |

The map shows the Northeast corridor rail line connecting Buffalo, New York and Lowell, Massachusetts. It highlights the Erie Canal, Hudson river, and the Northeast corridor rail line. Key cities like Buffalo, Rochester, Albany, Greenfield, Chicopee, Westfield, Springfield, Hartford, Danbury, Town, Bridgeport, New Haven, Stamford, Glen Cove, New York, Perth Amboy, Trenton, Philadelphia, Camden, Jersey City, and New Bedford are marked.

## 2. Lowell-Massachusetts, Area-wide planning in the downtown fringe Lowell, The first industrial city in the U.S.

- Prosperity of Textile industry based on hydropower of the river and canals
- Immigrants from the world (Europe to Asia)
- Declining of Mills from early 20c and complete closure after WW II
- Urban renewal: Loss of immigrant community and industrial heritage
- Designation of National park as a national historical park in 1978
- Utilization of canals for the route of industrial heritage
- The Massachusetts Miracle (High-tech industries, HQ of Wang Laboratories) in 80s
- Bankruptcy of Wang Laboratories and serious depression of local economy



## Brownfield inventory and redevelopment priority

### Preparation of Industrial site inventory in 1996 by CDBG

317 sites in Middlesex county and 52 sites not in use  
Feasibility study of redevelopment for industrial use

### Brownfield assessment Grant by USEPA in late 1996

Addition of brownfield sites in downtown fringe area

### Site by Site brownfield redevelopment approach in 1990s



Typical "industrial to industrial" redevelopment (100 Phoenix Ave, No. 1 in the development priority ranking of the city)



Brownfield inventory in 1999 and development priority

## Brownfield showcase community designation

- 3 years appointment of EPA official in local government as a brownfield coordinator
- Comprehensive assistance for brownfield incl. planning, funding, assessment and cleanup
- Change of city's BF policy influenced by the coordinator

### Expanded Definition of Brownfields Should Include:

- Any previously used commercial/industrial site where development is complicated by:
  - Poor Access
  - Lack of Available Parking
  - Obsolete Building Design
  - Perceived or Real Contamination
  - Poor Location
  - Use in Conflict with Residential Neighborhoods



Lowell Brownfields Program

### Strategy Three: Stimulate Private Sector Investment

- Strategy:
  - Utilize "non-Brownfields" & Brownfields tools & incentives for redevelopment
- Implementation:
  - Non-Brownfields Tools
    - Section 108 Loans
    - EDIP Program (TIFs)
    - CDBG
    - Historic Tax Credits
  - Brownfields Tools
    - Revolving Loan Fund
    - Local Tax Abatement
    - Tax Credits & Deductions
    - State Insurance Program
    - State Financing



Lowell Brownfields Program

Brownfield strategy of Lowell, presentation to the city council, April 2000 (courtesy of Lowell city hall)

## From outskirts to downtown fringe

### Strategy Two:

#### Master Planning of Target Areas

- Strategy:
  - Develop plans for areas with systemic barriers to development
  - Requires holistic approach to redevelopment
- Implementation:
  - Urban Revitalization and Development Plans: Acre, JAM, & E. Merrimack Cultural Corridor
  - Strategic Planning: North Canal, Tanner Street, & Downtown

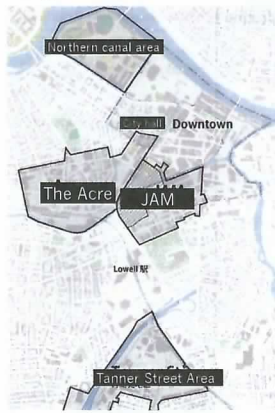


Lowell Brownfields Program

Brownfield strategy of Lowell, presentation to the city council, April 2000 (courtesy of Lowell city hall)



Lowell city area



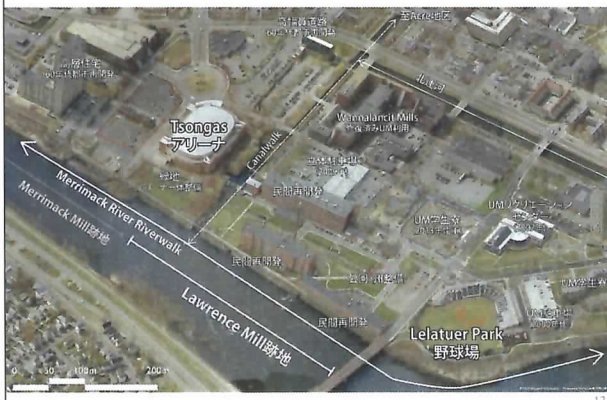
Brownfield revelation area in the downtown fringe of Lowell

## Northern Canal area in 1996



Google earth

## Northern Canal Area in 2010s



## Northern canal area, Revitalization after urban renewal, utilization of Univ. of Mass.

Revitalization of the old mill site and vacant site after urban renewal in 60s

- Arena and baseball park funded by state's economic development grant
- Connecting sport facilities, downtown and the mill site by the river walk
- Private investment to the mill site in 2000s
- Expansion of the University of Mass. in 2000s



Northern canal area



River walk along Merrimack river  
Photo by James 2007-11



Tsongas Arena  
Photo by James 2006-11



Baseball park (Lafayette Park)  
Photo by North 2014-06



Lawrence Mills  
Photo by North 2014-06



### The Acre: Middle school and CDC for area-wide revalidation

Mixture of residential (immigrants / low-income) use and small BF sites

- Construction of the new middle school on non-feasible BF site (Cleanup by federal and state grant)
- Redevelopment of small BF sites and vacant lots by CDC for low-income housing
- Improvement of public realm for better connection to the downtown (the main street and Canal walk)



The Acre area



New Middle school (Photo by Kurose 2014/6)



Canal walk and housing by CDC (Photo by Kurose, 2014/6)



Textile museum, renovation from old mill (Photo by Kurose, 2014/6)

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### JAM area: Attracting private investment to brownfield sites in the expanded downtown

Abandoned old mills and canals in the backyard of downtown

- Utilization of Urban renewal for revitalization plan preparation and site assemblies (Assessment and Cleanup funded by USEPA)
- Public parking garage (reduction of project cost in private development)
- Introduction of Canal walk and other waterfront public spaces



JAM Area



Before: Cotton house and Jackson St. in 2009



After: Cotton house and Jackson St. (Photo by Kurose, 2014/6)



Brownfield site in JAM in 2005 (Photo by Kurose, 2005/10)



Public parking garage (Photo by Kurose, 2014/6)

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### Example of mill reuse projects in JAM area



図45. Appleton Mills建群 (Photo by Kurose 2005/11)



図46. ロフト型住宅として再生したAppleton Mills (2011, Mass Housing Finance Agency)



図47. Jackson St. と Canal St. 交差点付近 (2005/11 Photo by Kurose)



図48. 橋渡しの110 Canal St. (Photo by Kurose 2014/6)

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### Tanner St. area : Revitalization of Superfund site

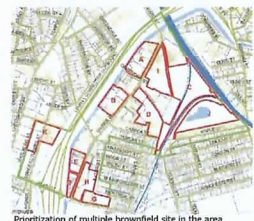
The area locate 2km South of Downtown and designated as a Superfund site for Chemical waste.

Originally low priority area for the city, however EPA awarded BF planning grant twice and supported the city to go forward (EJ issue)



Chemical waste dumping by Silaresim in 1970s

- EPA area-wide planning grant in 2010
- Prioritization of multiple BF sites based on environmental information and strategic importance in the area
- Enhancing natural feature of the area incl. small stream and street trees for changing the image of the area
- Urban revitalization plan was approved by the state in 2014



Prioritization of multiple brownfield site in the area

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### Area-wide revitalization strategy in the downtown fringe of Lowell

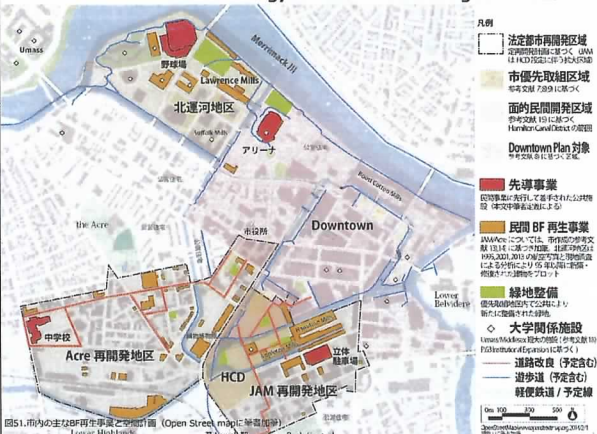


図51. 市内の主要再生事業と計画 (Open Street map) に基づく計画 (Lower Highways 東 (Lower Mills) 北運河地区)

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### 3. Buffalo-New York, Area-wide planning for large brownfield sites Major BF projects in Buffalo

- Revitalization of Downtown fringe
- Erie canal harbor development (Waterfront development)
- Buffalo Niagara Medical Campus

#### BOA designated area

- South Buffalo
  - Lakeside Commerce Park
  - Riverbend Commerce Park
- Buffalo Harbor
- Buffalo River Corridor
- Tonawanda St. Corridor



Major brownfield project area in Buffalo

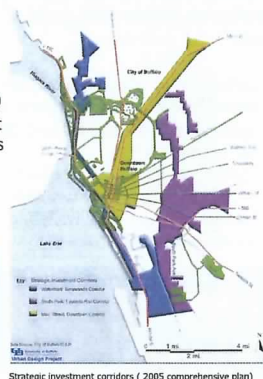
19

## BOA and City master plan

- Strategic investment corridors in the city master plan (2005) = BOAs
- Main St. Corridor = Erie canal harbor development and Buffalo Niagara Medical Campus (Extended Downtown)
- New zoning code (Unified Development Ordinance) based on BOA master plans



BOA and other planning initiatives in Buffalo



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## Downtown Fringe BF projects

### Extended downtown

- Planning initiative from late 90's
- Concept of extended downtown
- Brownfield Cleanup Program (BCP) utilized by private developers

### Erie Canal Harbor Development

- Economic Dev. Project by State and City
- BCP fully used by Private Developer



1557. 公園整備完了後のCanal Side



1558. One CanalSide (Photo by Kurose, 2014/6)

### Buffalo Niagara Medical Campus

- University at Buffalo, Medical institution and Hospital
- BCP used in some plot



1559. 建設中のConventus



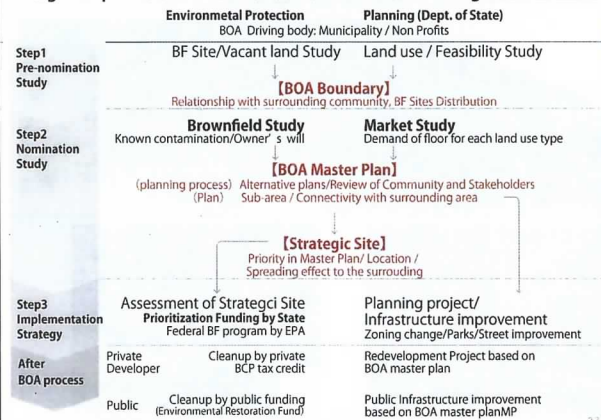
1560. Trico Plan No.1 外観

21



North-South 3.5km East-west 800ha

## Integrated process of Environmental Protection and Planning - BOA



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## South Buffalo BOA Master Plan

### Aggressive greening policy

- Greening land fills and less developable land
- Clear differentiation of development area and open space (not Vacant land)



Fig.75. South Buffalo BOA master plan, green network  
South Buffalo BOA Nomination document, P131



Fig.67. South Buffalo BOA Step 2 BOA master plan (2010)

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## South Buffalo BOA master plan Land Use Table

City of Buffalo, South Buffalo BOA Nomination document, 2010, P133 4Table 5.11: 敷地利用計画、計画区域の土地利用

| Land Use                | Area (acre)  | Ratio       | Floor Area(sq ft) | Estimated Job |
|-------------------------|--------------|-------------|-------------------|---------------|
| R&D                     | 33           | 2%          | 500,000           | 700           |
| Business Park           | 220          | 11%         | 3,800,000         | 12,500        |
| Business Services       | 66           | 3%          | 2,100,000         | 2,800         |
| Industrial              | 317          | 16%         | 2,800,000         | 1,800         |
| Rail                    | 190          | 10%         | 0                 | 0             |
| Mixed Use               | 102          | 5%          | 4,400,000         | 2,800         |
| Neighborhoods           | 138          | 7%          | N/A               | N/A           |
| <b>Development Area</b> | <b>1066</b>  | <b>54%</b>  | <b>N/A</b>        | <b>N/A</b>    |
| Tift & South Park       | 450          | 23%         | N/A               | N/A           |
| Natural Areas           | 212          | 11%         | N/A               | N/A           |
| Golf                    | 133          | 7%          | N/A               | N/A           |
| Parks & Open Space      | 107          | 5%          | N/A               | N/A           |
| <b>Non-development</b>  | <b>902</b>   | <b>46%</b>  | <b>N/A</b>        | <b>N/A</b>    |
| <b>Total</b>            | <b>1,968</b> | <b>100%</b> | <b>13,600,000</b> | <b>20,600</b> |

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## 2 Layers of planning for large sites

### Sub Area and Prioritization

- 810ha framework plan and 10 sub area for timely implementation

### Leading projects (Some public projects)

- Lakeside Commerce Park completed in 2011
- Riverbend area- Detailed Master plan in 2012, 2014 development started
- Golf course on land fill – Feasibility study in 2014
- Enhancing connectivity to leading projects for maximum spill over effect (BOA step 3 Implementation Strategy)

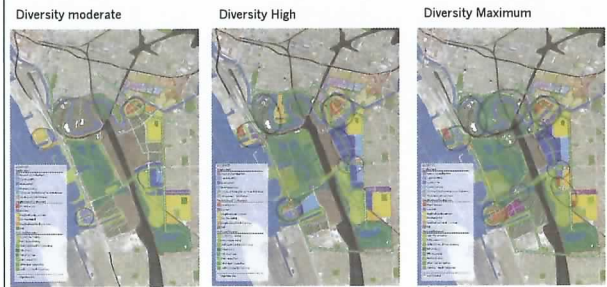


Fig. South Buffalo leading projects

Fig. Riverbend Master Plan (2011)

Fig. South Buffalo Golf Course, Conceptual Plan (2014)

## Alternative plans for swinging market and community discussion



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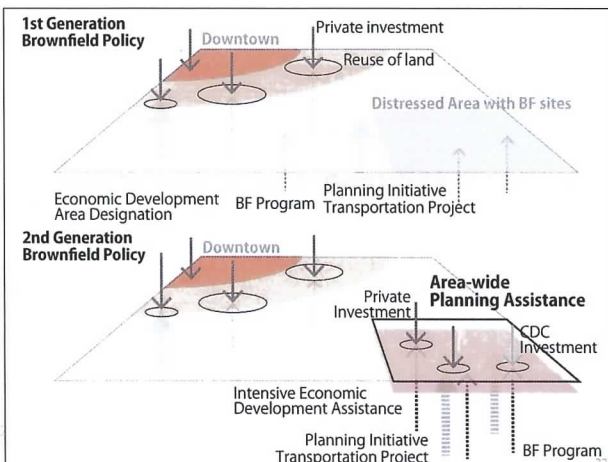
South Buffalo, Ship Canal Commons (June, 2014)

30



South Buffalo, Lakeside Commerce Park (June, 2014)

31



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## From single brownfield site redevelopment to area-wide revitalization

Strategy to extend revitalization from a single brownfield site to neighborhood and city

- Combination of
  - Assessment/Cleanup and Planning
  - Public, private and non-profit investment
  - Vacant lands and brownfield sites
- Flexibility of planning to accommodate fluctuating real estate market
  - Alternatives and framework plan
  - Step by Step / Changeable planning
- Utilization of former infrastructures for industrial use as low-cost Green Infrastructures
  - Canal, river, road and rail corridor
  - Landfills and severely contaminated sites

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# Regeneration process of large-scale marginal brownfield sites, cases of steel plant sites in Japan

-focusing on the role of green spaces

March 14, 2016  
Kentaro NAKAJIMA  
Master Course Student, Urban Design Laboratory  
University of Tokyo

## Today's agenda

1. History of brownfield sites in Japan
2. Outlines of post steel plant sites (Research target)
3. Land use conversion in post steel plant sites
4. Green spaces generated through conversion process

### Research question

- How to regenerate brownfield sites under low development pressure?
- Are the green spaces effective for brownfield regeneration?

### Research target

Post steel plant sites  
→4 case study sites (Kitakyushu, Chiba, Amagasaki, Sakai)

## 1. History of brownfield sites in Japan

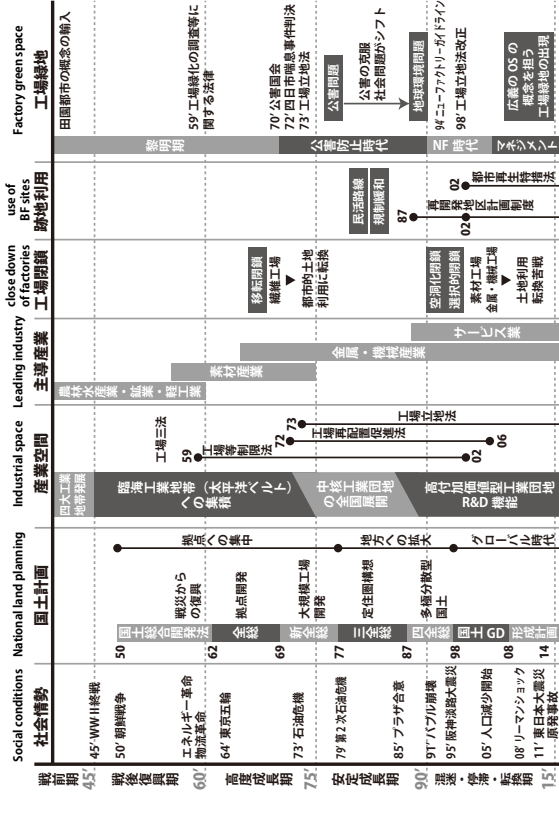


Fig. Chronological table about Brownfield sites (by the author)

## 1. History of brownfield sites in Japan

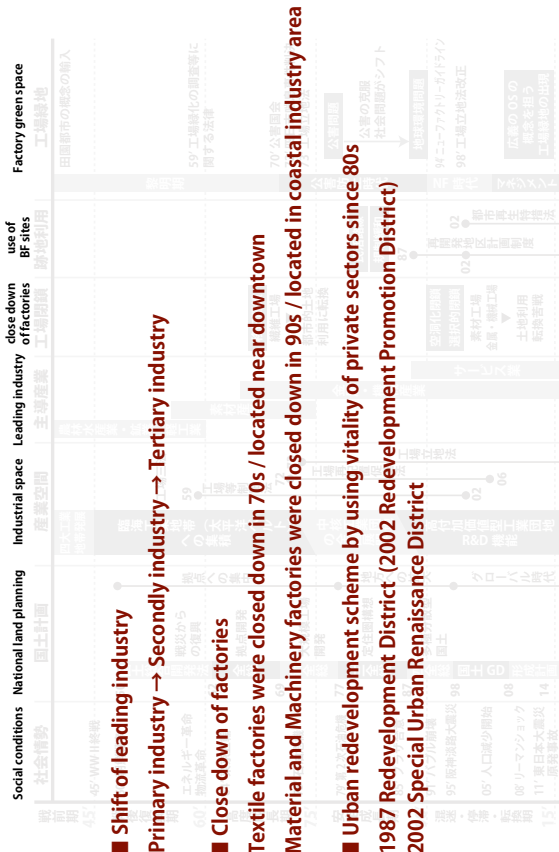


Fig. Chronological table about Brownfield sites (by the author)







### 3. Post industrial site in Amagasaki steel plant

12/17

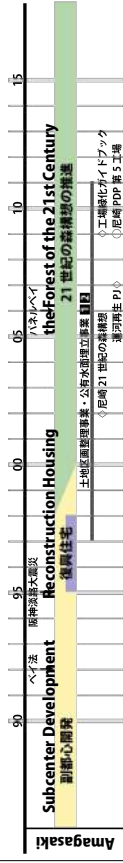


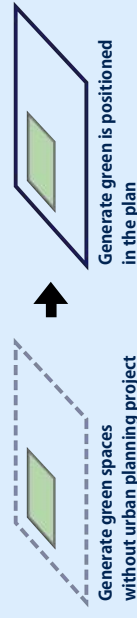
Fig. Aerial photograph in Amagasaki coastal industrial region (by Google Earth)

### 4. Green spaces generated through conversion process

14/17

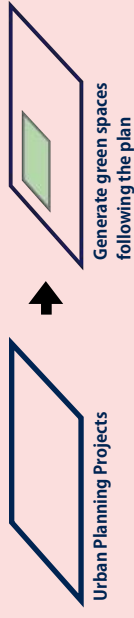
■ 2 types of green spaces

#### Green space without urban planning project



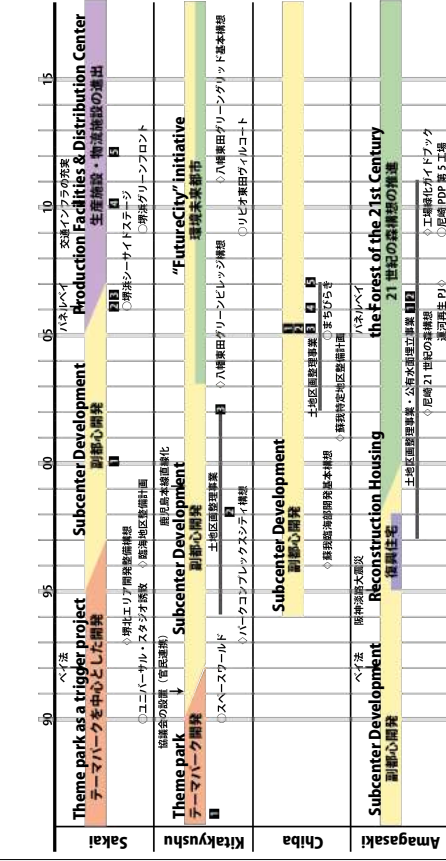
- mainly temporary use / Land owners have will to cut down property tax

#### Green space with urban planning project



### 3. Land use conversion in post steel plant sites

13/17



-All sites planned subcenter before 2000, then started unique strategy.  
-Location near downtown and have clear concept is important.

### 4. Green spaces generated through conversion process

15/17

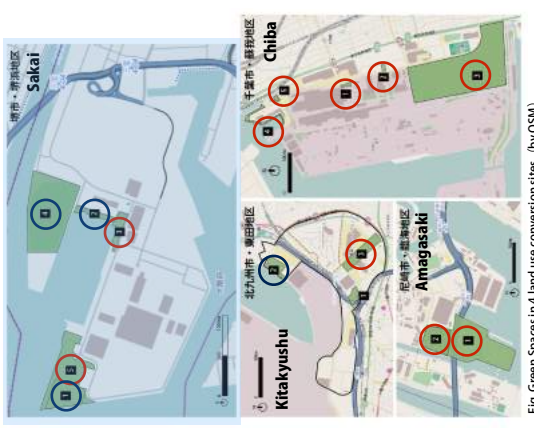


Fig. Green Spaces in 4 land use conversion sites (by OSM)

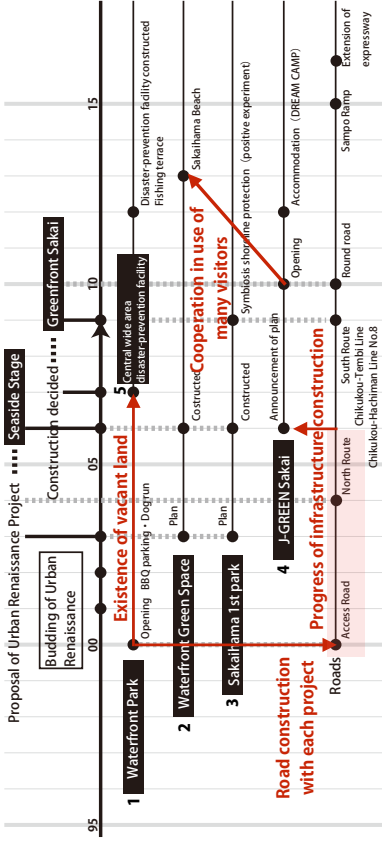
#### without Urban Planning Projects

- free transfer of private land
- free credit of private land

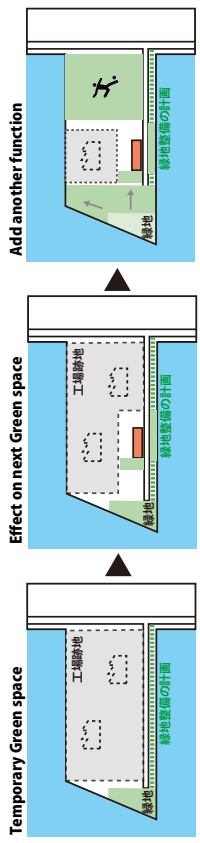
#### with Urban Planning Projects

- land readjustment
- redevelopment promotion district
- disaster prevention blocks improvement district
- Central wide area disaster-prevention facility

#### 4. Green spaces generated through conversion process 16/17



#### 4. Green spaces generated through conversion process 17/17



Temporary green space is generally low quality as a public space and has few visitors.

▼ focusing on the role of green spaces to advance the land use conversion

Green spaces effect on the generation of next green spaces.

- become the opportunity to build the roads
- provide the blank to use in necessary

Green spaces have a possibility to change the negative image.



Fig. J-GREEN Sakai (by Sakai City)



Fig. Green spaces along the Sakai North Berth (by Google Earth Pro)

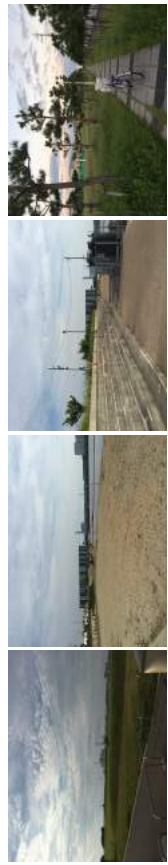


Fig. Umitono Fureai Park

Fig. Sakaihama Beach

Fig. Waterfront Green Spaces

Fig. Sakaihama 1st Park

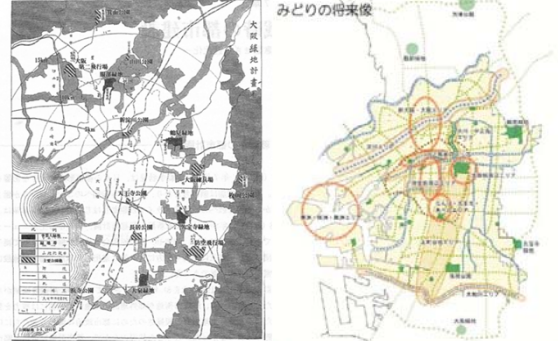


## Greening Brownfield with Open Space Strategy in Japan

**Tomoko Miyagawa**

Faculty of Systems Engineering,  
Wakayama University

- Project of Centenary of municipalisation
- identified to be one of four main parks in Osaka Open Space Plan by Osaka Prefecture, 1941 and in Master Plan For Parks And Open Spaces, 2012 by Osaka City



### Introduction : Greening Brownfield in Japan

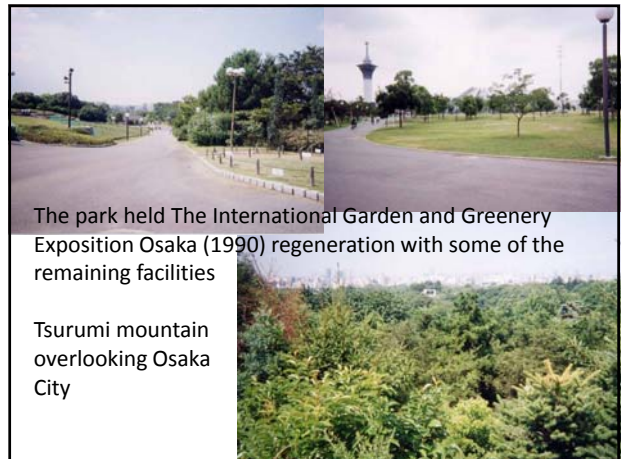
- Loss of nature in urban and suburban areas due to urbanisation and industrialisation
- Changes in landuses and industrial activities a shift from industrialisation owing to structural changes
- Increase of Brownfield in former industrial areas its utilisation and management is necessary
- Opportunities for Urban regeneration, environmental regeneration; participation of citizens, NPOs, and companies

#### Aim of this study

- to seek key factors for promoting greening brownfields with four case studies by literature reviews in Japan

The park held The International Garden and Greenery Exposition Osaka (1990) regeneration with some of the remaining facilities

Tsurumi mountain overlooking Osaka City



### 1) Tsurumi Ryokuchi Park, Osaka City

1970-1972, 126ha

- Former landuses: farm land to landfill
- Design: Trurumi mountain, a pond, and grassed open space



### 2) Moerenuma Park, Sapporo City 1988-2005, 189ha

- Former landuses: landfill
- Design: designed by a sculptor, Isamu Noguchi; a whole park to be a sculpture; two mountains and geometric patterns to view surrounding mountains of Ishikari plain More mountain (52m), Play mountain (30m)



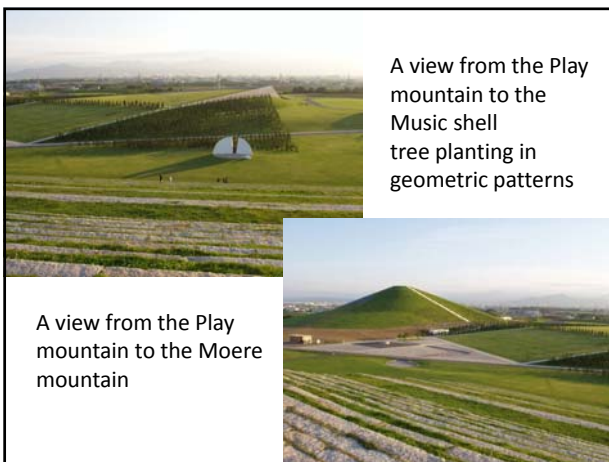


- identified to be a main park in the northeast in Ring-shaped Greenbelt Plan of Sapporo City, in Master Plan For Parks And Open Spaces in 1982, amended in 2010
- Flood prevention: storage area for temporal rain water
- Environmental regeneration of former landfill (2.7 million tons of total amount of waste)

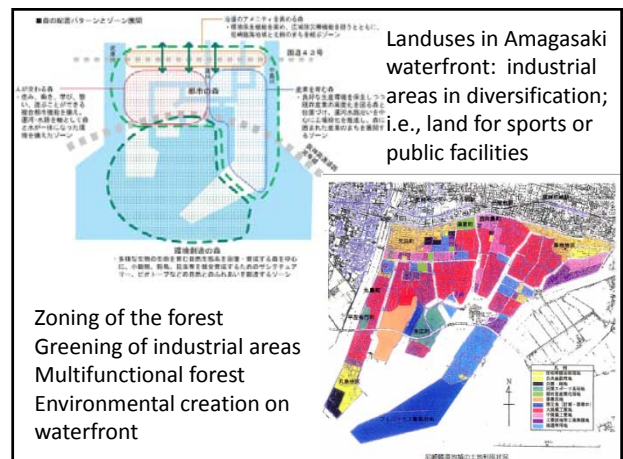
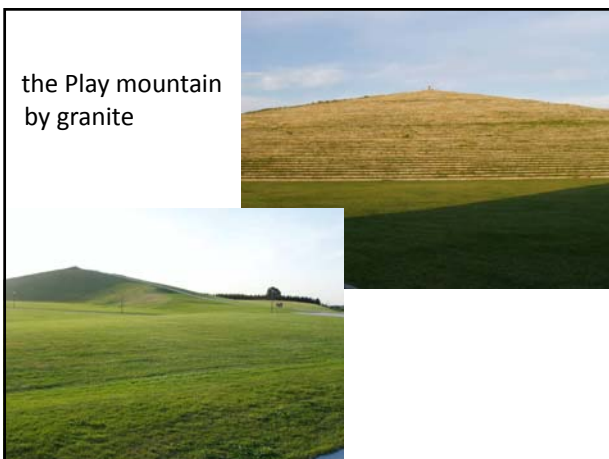
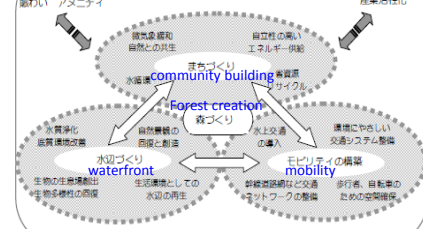


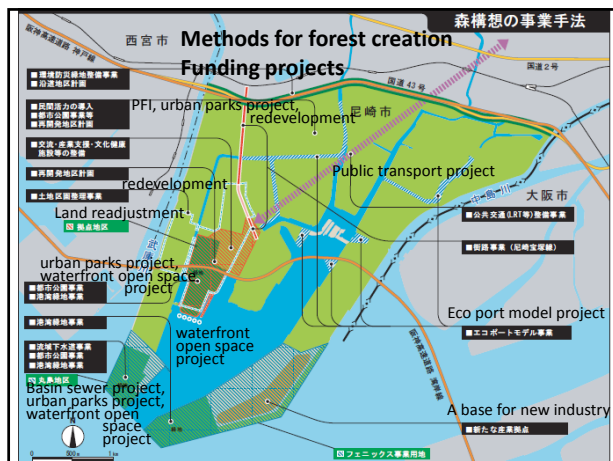
### 3) Amagasaki forest of 21<sup>st</sup> century, Amagasaki city 2002-2102 1000ha

- Former landuses: steel factory (Central Forest; 26ha)
- Design: Tree planting on Central Forest to extend open space in surroundings up to 1000ha; management over 100 years to create forest



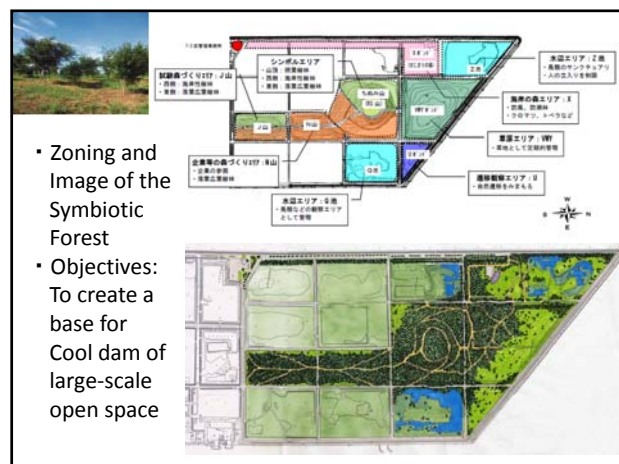
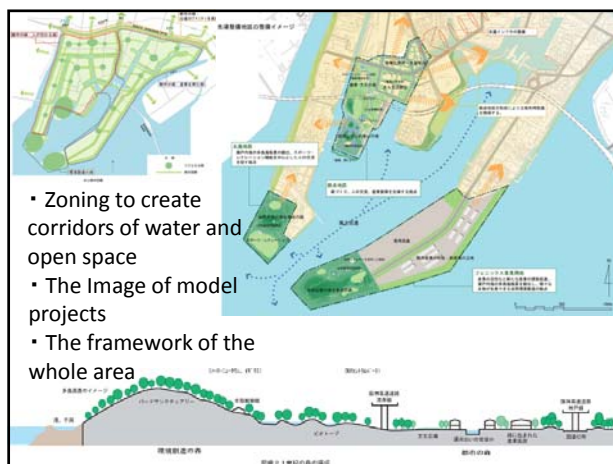
- an outline of the forest is illustrated in Master Plan For Parks And Open Spaces by Amagasaki City, 1999
- shifting from industry based to environmental regeneration in waterfront; transformation into co-existence with the environment with new role and function
- community building, creation of mobility and waterfront by forest creation





#### 4) Greening projects of Waterfront in Sakai City 2004-2104 100ha

- Former landuse: landfill into Symbiotic Forest
- Design: Symbiotic Forest; Tree planting; management over 100 years to create forest



#### The image of Central Forest Zoning and the plan



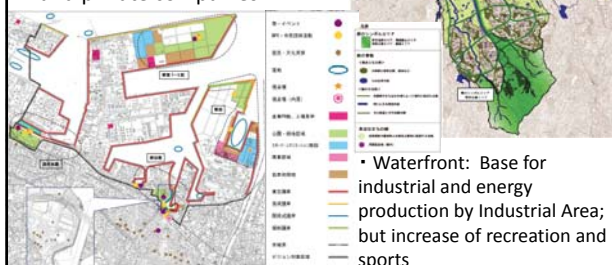
former landuse: a gas factory to J-Green Sakai (National Training Centre for football) opened in 2010, 42.6ha land is leased to Sakai city for 22 years for free of cost





- Master Plan For Parks And Open Spaces by Sakai City, 2012
- funded by the government;

Urban regeneration project partnership with citizens, NPO, and private companies



- Waterfront: Base for industrial and energy production by Industrial Area; but increase of recreation and sports

Thank you for your attention!



## Conclusions

### • Key factors for greening brownfields:

- 1) Open Space Strategies by Master Plans For Parks And Open Spaces to cover the role of GI Planning in Japan;
- 2) Funding for projects

GI is recently being introduced in Japan...

thus, yet not to have become statutory requirements and authorised as one of a key planning tool

At present, master plans for parks and open spaces are adopted to take over functions of GI Planning in Japan

## Conclusions

### • Lessons from the case studies:

The key findings are as follows;

- 1) creation of new large-scale open spaces can contribute to improve the quality of the environment;
- 2) above projects are mostly located in the edge of cities to have difficulties for the public to access and to be noticed by the people

necessary to build partnerships with surrounding areas and to create and manage local identity and culture with its historic environments of post-industrial landscapes



Brownfield Regeneration and Risk Communication after  
Decontamination of Severely Soil PollutionHirokazu ABE, Miya YAMADE (Osaka University)  
14 March 2016, Cybermedia Commons, Osaka University

This research is funded by MEXT/JSPS KAKENHI Grant Number 25289207.



## Spread of radioactive pollutant

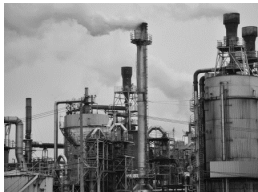


11, March 2011, East Japan earthquake had occurred. Tsunami hit the Fukushima nuclear power plant and it exploded. The map shows the spread of radioactive pollutant from Fukushima nuclear plant. Red and yellow color shows the severely contaminated area

Ministry of environment <http://josen.env.go.jp/>

## What is Brownfields ?

Brownfield is mainly previously industrial sites which were abandoned or unused. In Japan, health hazard and land use dereliction caused by a remaining harmful contaminant that used in industrial factories, had been discussed, before.



East Japan earthquake and Fukushima nuclear disaster had occurred in 2011. It brought Japan a huge radioactively-contaminated Brownfield site.

## Legislation for promoting Decontamination

- ◆ The Act on Special Measures Concerning the Handling of Radioactive Pollution came into force on January 1, 2012.
- ◆ Based on this Act the followings are carried out:
  - Planning and implementation of decontamination work
  - Collection, transfer, temporary storage, and final disposal

**Special decontaminated area**

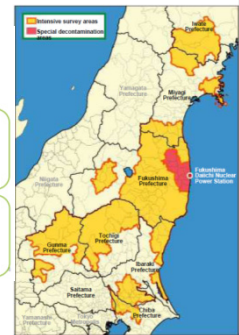
- ◆ 11 municipalities in (former) restricted zone or planned evacuation zone (<20km from the NPS, or annual cumulative dose is >20mSv)
- ◆ Decontamination is implemented by the national government

(\*) Entire area of Naraha, Tomioka, Okuma, Futaba, Namie, Katsurao, and Iitate. Some area of Tamura, Minami Soma, Kawamata, and Kawauchi.

**Intensive decontaminated survey**

- ◆ 151 municipalities in 8 prefectures (\*), in which over 0.23  $\mu$ Sv/hour of air dose rate (equivalent to over 1 mSv/Year) is observed, were designated.
- ◆ Decontamination is implemented by each municipality. The national government will take financial and technical measures.

(\*) Iwate, Miyagi, Fukushima, Ibaraki, Tochigi, Gunma, Saitama, and Chiba



"The Special measure Act for Radioactive Pollution" came into force 2012. In the Act there are two types of areas

Ministry of environment <http://josen.env.go.jp/>

## Current condition of Fukushima

Hirokazu ABE (Osaka University)

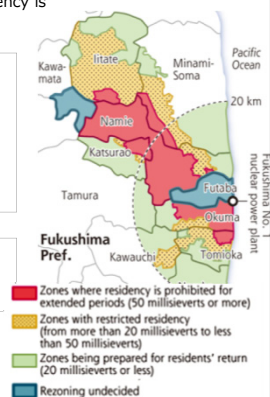
## Special Decontamination Area

**Special decontamination area** where residency is restricted or prohibited.

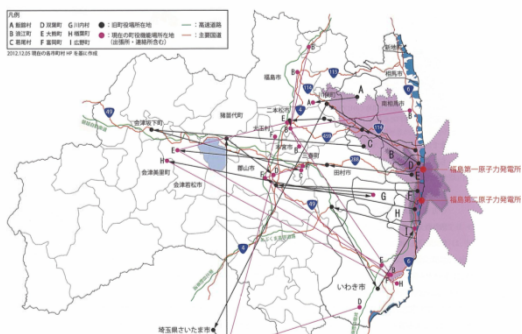
Policy in FY 2012 and 2013  
Decontamination should be implemented taking into account the level of air dose rate.

- **Area less than 20mSv/year**: Aiming for reducing additional exposure dose less than 1mSv/year as long-term goal.
- **Area from 20-50mSv/year**: Aiming for reducing exposure dose in residential and farmland area less than 20mSv/year by the end of FY 2013.
- **Area more than 50mSv/year**: Demonstration projects will be implemented. Lessons learnt will be reflected into future decontamination policy.

- Policy After FY 2014
- Aiming for reducing additional exposure dose less than 1mSv/Y as long-term goal.
  - Check and evaluate two-year decontamination results, consider proper actions, and revise implementation plans as needed.

Ministry of environment  
<http://josen.env.go.jp/>

## Evacuation of inhabitants

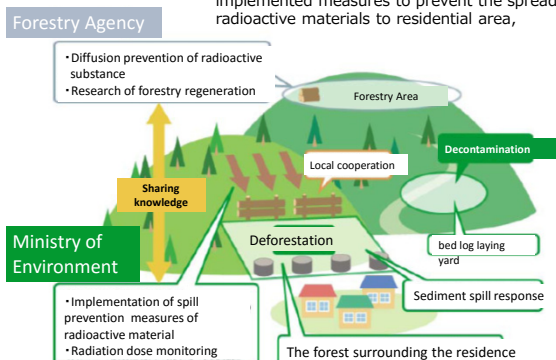


Many evacuees moved to neighboring cities.

Architectural Institution of Japan Jan. 2013

Forestry areas

Because it is impossible to decontaminate in all forest and mountain, national government has implemented measures to prevent the spread of radioactive materials to residential area.



## Decontamination Work

Ministry of environment <http://josen.env.go.jp/>

Roof: Cleaning with a brush



Rainwater Guttering:  
Removal of deposited materials



Rainwater Guttering (Downspout): High-Pressure water washing, vacuuming



Concrete Slab: High-Pressure water washing



Concrete Slab: Shot blasting



Yard: Removal of topsoil

In order to reduce radiation dose in a wider area, decontamination works should be carried out on buildings, streets, and farmlands

### Temporary Decontamination Waste Storage Sites



Naraha Town Rice Field – On-Site Storage



Okuma Town Baseball Field – Temporary Storage Facility



Tomioka Town Sports Complex – On-Site Storage



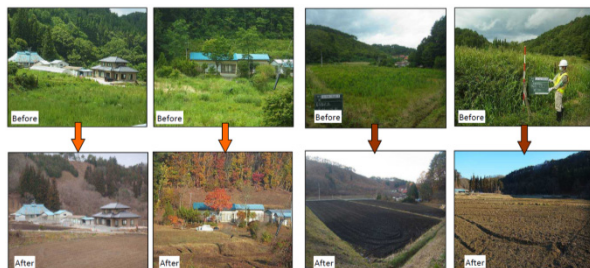
Tomioka Town Park – Temporary Storage Facility

Amount of waste and removed soil resulting from decontamination activities has been increasing.  
They are packed in the blue sack, and temporary banked up on the site.

Ministry of environment <http://josen.env.go.jp/en/documents/>

## Residential areas and farmland

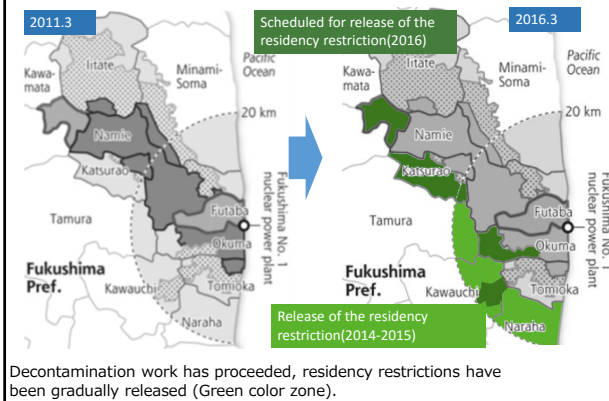
Ministry of environment  
<http://josen.env.go.jp/en/documents/>



Decontamination is conducted within 20m from residential area and farmland  
Forest and Mountain area is not conducted.

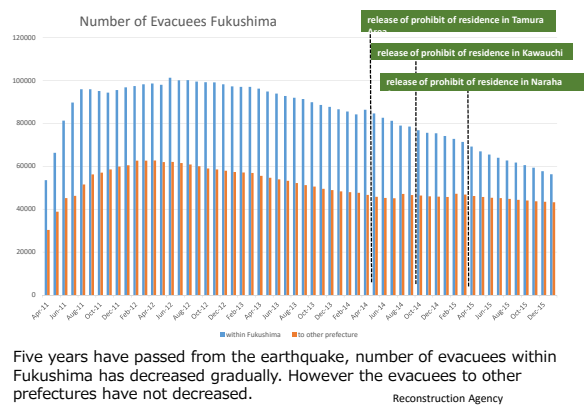
### After five years from disaster

## Current condition of restriction of residence



## Real estate market and Stigma

## A change of the number of evacuees



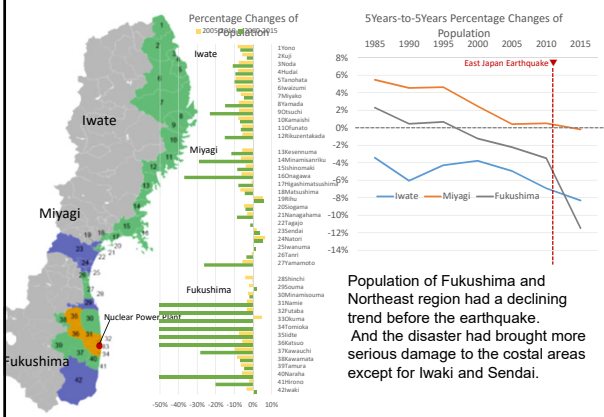
## What is Stigma?

**Stigma**, in the environmental context, may be broadly defined as the negative perceptions associated with property that is contaminated, that was once contaminated or that lies in proximity to contaminated or previously contaminated property. (Johnson 1997)

**Stigma** represents a loss in value apart from the cost of remediating itself, and it can be based upon actual or perceived risks or fear, such as "possible public liability", "fear of additional health hazards" and "simple fear of unknown". (Johnson 1997)

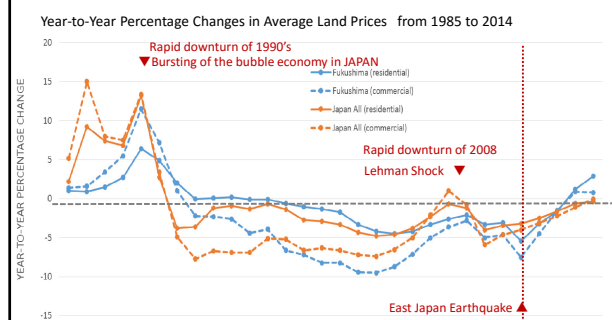
E. Jean Johnson, Environmental Stigma Damages: Speculative Damages in Environmental Tort Cases, UCLA Journal of Environmental Law and Policy, 15(2)

## A change of the population of coastal areas in Northeast R.



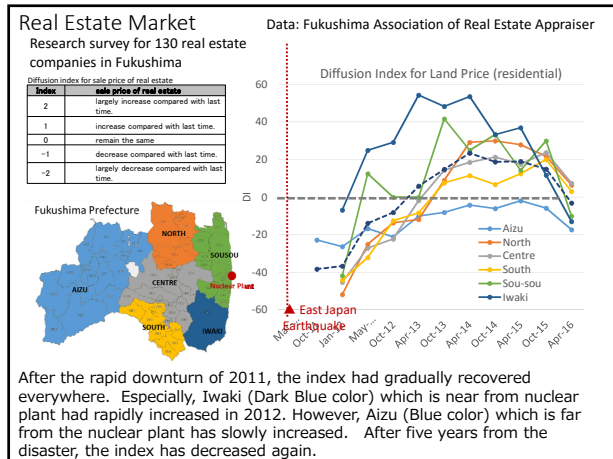
## Real Estate Market

Data: Fukushima Prefectural Government



Last downturn of 2011 in only Fukushima prefecture is due to Nuclear accident. Next year 2012, however, the index score has recovered to the state before the disaster.

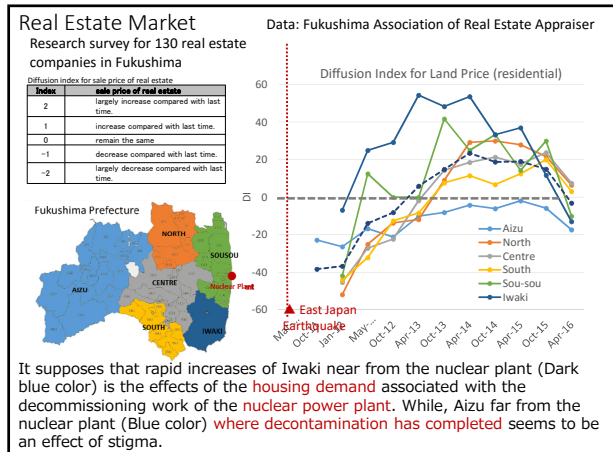




### Summary

1. Population of Fukushima had a declining trend before the earthquake. And the disaster had brought more serious damage to this problem.
2. The number of residents decreased compared to before the disaster, it is difficult to form the local community
3. Rapid increases of land price in Iwaki is the effects of the housing demand associated with the decommissioning work of the nuclear power plant. in 2015, the housing demand is settled down, and the index of land price has decreased again. In while, sluggish of land price in Aizu seems to be an effect of stigma.
4. The restrict residency has been released gradually. Then we are facing the brownfield issue and stigma. And we should think about how the Fukushima residents will make a living after return.

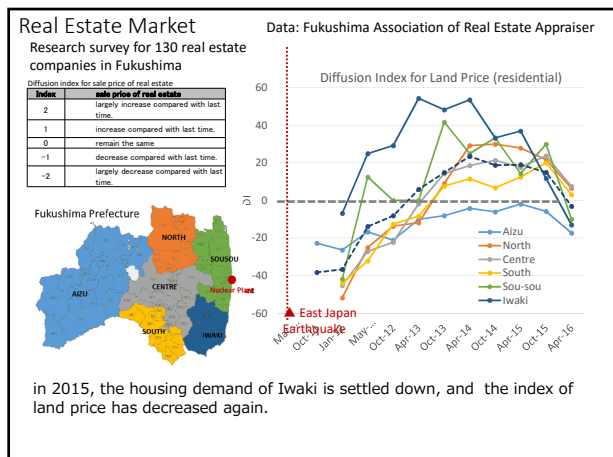
In this context, We hope that the concept of GI (greening infrastructure) will be useful for the regeneration with mitigating the perceived risks in the post-disaster Brownfields.



### Residents perception and risk communication

Miya YAMADE (Osaka University)

It has been reported on the current situation of Fukushima after the disaster, so far. From here, I will discuss that residents perception of Fukushima city from the existing questionnaire survey. On the other hand, we will analyze the public perception in Japan about the accident by using Twitter article

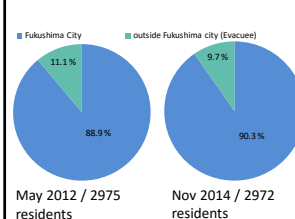


### Attribute of Fukushima Residents

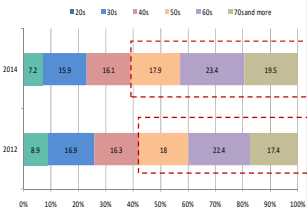
Fukushima City Council

<http://www.city.fukushima.fukushima.jp/soshiki/7/kouchou12090501.html>

#### Residential Area



#### Age

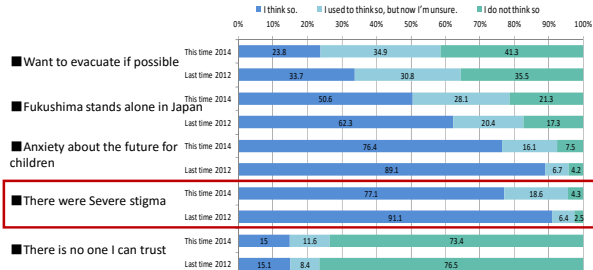


This figure shows the Attribute of Fukushima Residents. Most residents are living in Fukushima city but 10 percent of residents still have been evacuated. It can be seen about 60 percent of the residents are over 50s and younger generation is less.

## Anxiety and difficulty of Fukushima Residents

Survey 1: May 2012 / 2917 residents Fukushima City Council  
Survey 2: Nov 2014 / 1471 residents <http://www.city.fukushima.fukushima.jp/soshiki/7/kouchou12090501.htm>

### What do you think about living after the disaster?



The most frequent comments made by residents were that there were severe stigma, the secondary is that Fukushima stood alone in Japan, and that Anxious about the future for children.

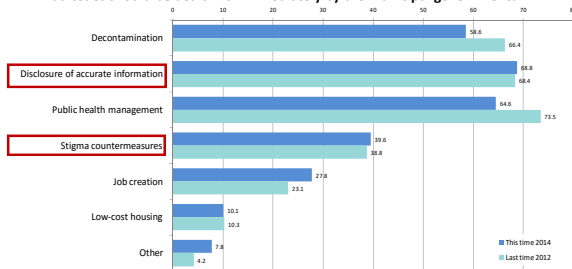
## Public Perception in Japan

The perception of Fukushima residents was reported so far.  
Then Next is to examine the public perception in Japan after Fukushima nuclear disaster.

## Fukushima Residents' Requests to Local Government

Survey 1: May 2012 / 2930 residents Fukushima City Council  
Survey 2: Nov 2014 / 1469 residents <http://www.city.fukushima.fukushima.jp/soshiki/7/kouchou12090501.htm>

### What issues should be dealt with immediately by the municipal government?



"Disclosure of accurate information" and "Health management" are high. In addition, about 40 percent of the residents felt like the local government should carry out "Stigma countermeasures". These findings suggest that improvements are needed in risk communication.

## Public Perception in Japan

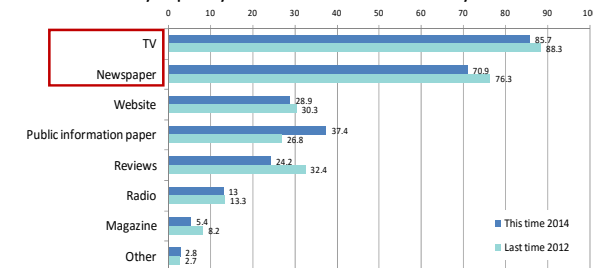
This research aim to identify the public perception in Japan by using Twitter article for three years after the disaster. Methodology of analyzing the Twitter article will be used to Text Mining.



## Fukushima Residents' Source of Information

Survey 1: May 2012 / 2949 residents Fukushima City Council  
Survey 2: Nov 2014 / 1490 residents <http://www.city.fukushima.fukushima.jp/soshiki/7/kouchou12090501.htm>

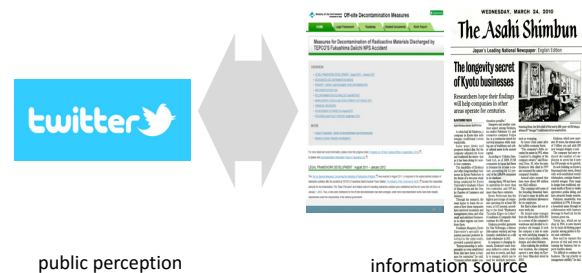
### What is your primary source of information on radioactivity?



Most residents get information from the television and newspapers. However website and other tool are not used.

## Difference between public perception and information source

Secondly research aim to identify the relationship between public perception and information source. Then we will compare the contents between Twitter and Newspaper.



public perception

information source

## Decide the searching keywords in Text mining



"Fukushima"  
"Nuclear power plant".

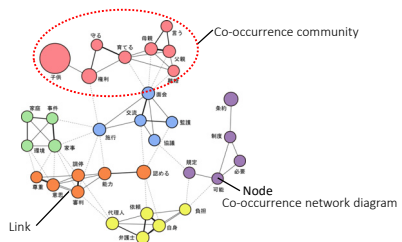
Through the research, the team hopes to learn the extent of these companies' have nuclear resources and what small and medium business in other regions can learn from them.

Fukushima Daiichi Nuclear Power Plant, a Japanese nuclear power plant, was severely damaged and was almost completely destroyed by the Great East Japan Earthquake and the resulting tsunami on March 11, 2011. The plant's three reactors were damaged, and the resulting release of radioactive material into the environment was a major concern. The plant's owner, Tokyo Electric Power Company (TEPCO), has been criticized for its handling of the crisis and for its failure to adequately inform the public about the situation.

The Fukushima Daiichi Nuclear Power Plant is a large industrial facility located in Fukushima Prefecture, Japan. It is a nuclear power plant, which means it generates electricity by using nuclear fission to heat water and create steam. The plant has three reactors, and it was one of the largest nuclear power plants in the world at the time of the disaster. The disaster at Fukushima Daiichi was a major event in the history of nuclear power, and it has led to a re-evaluation of nuclear safety standards around the world.

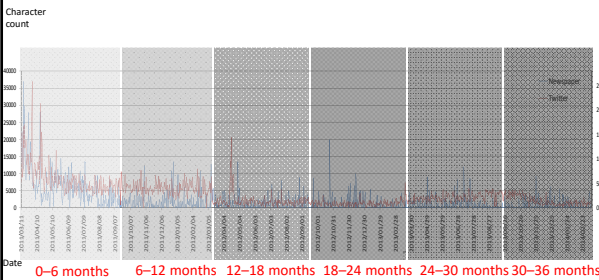
We searched for articles in newspapers and tweets containing the words "Fukushima" and "Nuclear power plant".

## The co-occurrence network diagram



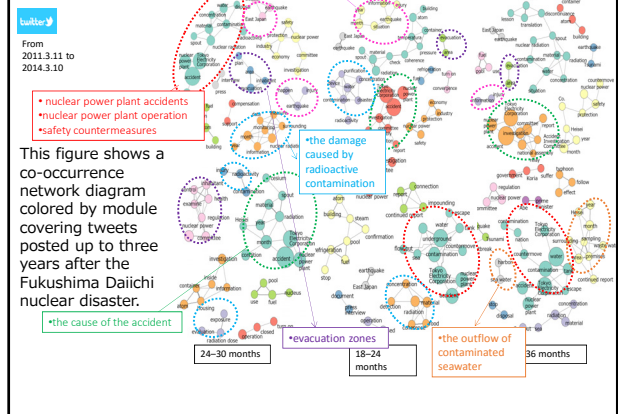
The circles represent words and the lines show the connections between the words. Strong co-occurrences are indicated by thick lines, and the more frequent a word occurs, the larger the circle. One method of interpreting such diagrams is to divide words into co-occurrence communities (groups with a common attribute) with nodes and links based on the relationships between phrases.

## Changes in the total number of characters in tweets and Newspaper articles

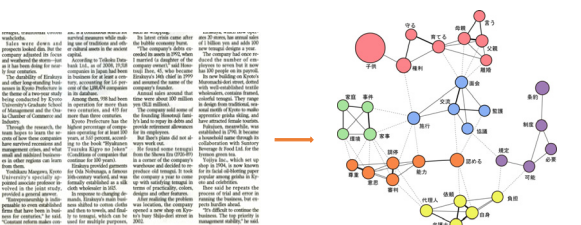


The frequency of occurrence of these terms differed between newspaper articles and tweets. Whereas the number of newspaper articles on Fukushima decreased somewhat rapidly, the number of tweets remained fairly constant.

## Public Perception

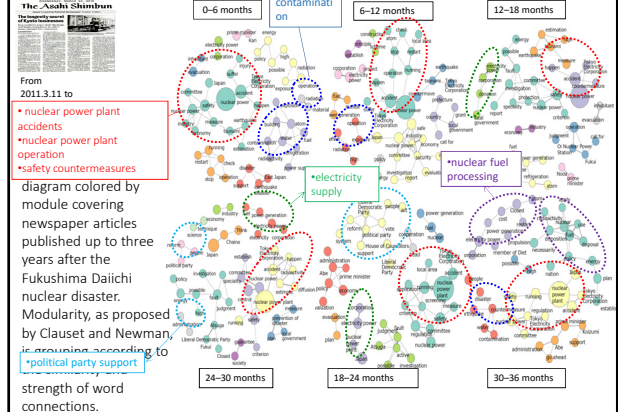


## Text Mining

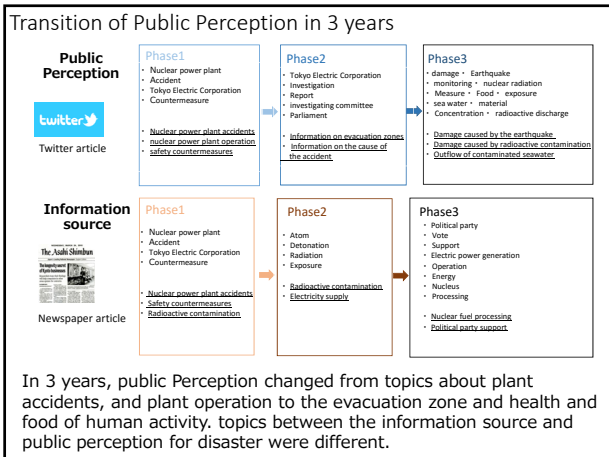


One of the methods of analysis in text mining is to create a co-occurrence network diagram. Co-occurrence network diagrams visualize the connections, patterns, and similarities between the words that appear in a sentence. They have often been used in writing analysis. In this study, we used the software program KH Coder to create co-occurrence network diagrams for investigating the differences between newspaper articles and tweets.

## Information source







## Conclusion

This report examined Fukushima residents perception and public perception in Japan. And it identified the gaps between the public perception (Tweets) and the information source (Newspaper) regarding information about Fukushima nuclear plant. Summary is as follows.

1. Fukushima residents complain to the local government about "disclosure of accurate information" and "Stigma countermeasures".
2. Whereas the number of newspaper articles on Fukushima decreased somewhat rapidly, the number of tweets remained fairly constant.
3. The differences between laypersons and the information source in terms of perception of the disaster were evident. Public perception topics have been changed to "Nuclear power plant accidents" from "the damage caused by radioactive contamination". It suggests that general information topics regarding Fukushima tended to be published in newspapers, while topics regarding life and human activity tended to be posted to Twitter.

However, this was only a preliminary study of risk communication at a severely contaminated brownfield site. How to bridge the information gaps between the public perception and information source needs to be examined in greater detail in future studies.

# Revitalizing post-industrial Landscapes through GI in Japan

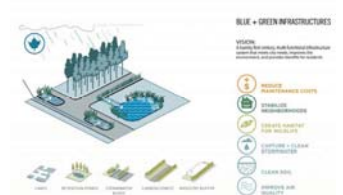
Graduate School of Engineering Osaka University  
Yuto Isehara

## 1.1 Background

### □ Regenerating Brownfields through GI



German : Emscher Park



America : Detroit Green Project

In addition, GI is the effective solution to reuse brownfields which include an increasing number of unused lands such as former factory sites in shrinking cities in the face of changing industrial structure. Some western countries have regenerated brownfields by using GI . For example, IBA Emscher Park has been restoring natural environment in former industrial areas and Greening Project of unused areas in Detroit is another example.

3

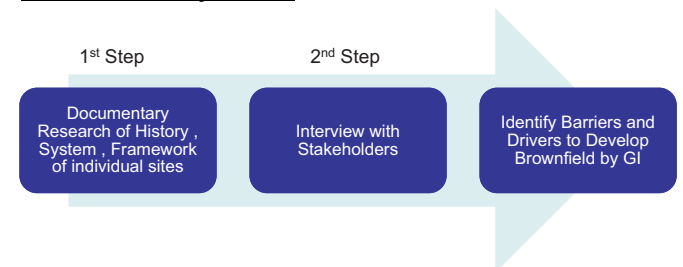
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- 1. Introduction
  - 1.1 Background
  - 1.2 Objective
  - 1.3 Methods
- 2. Amagasakinomori Central Green Tract of Land
  - 2.1 Current Situation
  - 2.2 History
  - 2.3 the Forest of the 21st Century
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- 3. Sakai Coastal Area
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  - 5.1 Current Situation
  - 5.2 History
  - 5.3 Osaka Nankou Bird Sanctuary
  - 5.4 Present Activities
  - 5.5 Perception of Stakeholders
- 6. Summary

1

## 1.2 Methods

### □ Framework of my research

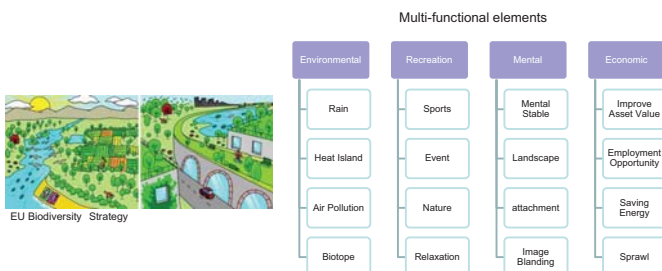


This study conducted a literature review and interviews in order to identify history, legal frameworks, urban planning system, current conditions, and stakeholder's perception. The purpose of the research is to identify barriers and drivers to develop GI.

4

## 1.1 Background

### □ What is Green Infrastructure



Recently, green infrastructure (GI) is gathering a lot of attention in various fields regarding the disaster prevention and resilient city. It has been studied since the late 1990's in western countries. Generally, GI has multi-functional elements compared to existing other types of infrastructure which helps restore biodiversity and ecosystem.

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## 1.3 Objective

### □ 4 case study sites

## Osaka Bay Area

Osaka bay area has a lot of problems about the increase of unused land such as former factory sites in shrinking city by changing industrial structure.



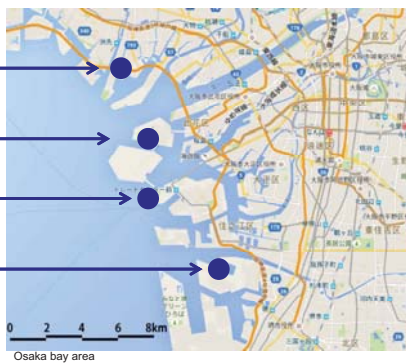
Osaka bay area

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## 1.3 Objective

### 4 case study sites

- ① : Amagasakiomori central green tract of land
- ③ : Maishima Sport Island
- ④ : Osaka Nankou Bird Sanctuary
- ② : Sakai Coastal Area



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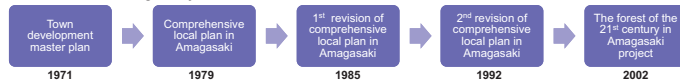
## 2. Amagasakiomori Central Green Tract of Land

### 2.2 History

#### Flow of Social History



#### Flow of Local Planning History



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## 2. Amagasakiomori Central Green Tract of Land

## 2. Amagasakiomori Central Green Tract of Land

### ① . Amagasakiomori Central Green Tract of Land



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### 2.3 the Forest of the 21<sup>st</sup> century in Amagasaki Project

Environmentally friendly town project by creating a natural environment for revitalizing Amagasaki coastal area.



① This plan aims to develop a network of green spaces along roads and canals in an industrial district of 1000ha with existing factories.

② Amagasakiomori central green tract of land is designed to be the hub of this green network.

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## 2. Amagasakiomori Central Green Tract of Land

## 2. Amagasakiomori Central Green Tract of Land

### 2.1 Current Situation

Coastal area has a land area of about 1,002ha, which accounts for 20% of Amagasaki city. Over half of the coastal site is used for industrial purposes.

Residential area and factory site are separated.

Case study area Amagasakiomori Central Green Tract of Land is located in the industrial coastal area.



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### 2.4 the Forest of the 21<sup>st</sup> century in Amagasaki Project



Amagasaki Sports Forest



Central green spaces

This project focuses on the developing processes with various groups rather than on making natural environment and it takes one hundred years to complete. Now only sporting facilities named Amagasaki Sports Forest opened in 2006 and central green space opened in 2015.

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## 2.5 Present Activities

- Amagasaki city developing forests in cooperate with citizens, businesses, and public authorities.
- Activities in this project is promoted by Hyogo prefecture, the forest of the 21<sup>st</sup> century in Amagasaki project initiative (NPO), and Ama-forest (citizen group).

Hyogo prefecture Amagasaki harbor management office

- Public led Planning and development.

The forest of the 21<sup>st</sup> century in Amagasaki project initiative (NPO)

- Education, outreach and publicity

Ama-forest (citizen voluntary group)

- Implementation, planting and maintenance

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## ② . Sakai Coastal Area



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## 2.5 Present Activities



Environmental study program



Forest conference



Forest picnic

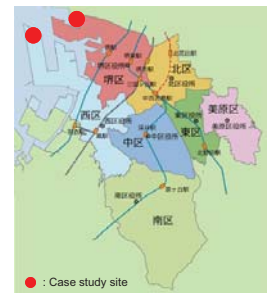


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## 3.1 Current Situation

- Sakai city is located in the center of Kinki area.
- Sakai coastal area has a land area of about 1,007.9ha, and is used for industrial purposes.
- Case study area J-Green and community forest are located in the industrial coastal area.

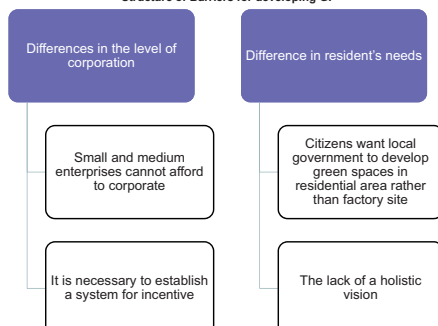


Sakai MAP

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## 2.6 Perception of Stakeholders

### Structure of Barriers for developing GI



Interview respondent : Hyogo prefecture Amagasaki harbor management office

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## 3.2 History

### ■Flow of Social History



### ■Flow of Local Planning History



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### 3. Sakai Coastal Area

#### 3.3 Present Activities in Sakai Coastal Area

Osaka Prefecture

- Implementation, planting and maintenance

J's Park Group

- Sporting events in J-Green



Arbor day in Community-forest

Cutting the glass event

Sakai National Training Center

Football school

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### 4. Maishima sport Island

#### 4.2 History

##### ■Flow of Social History and Local Planning History



Osaka Olympic visual image



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### 4. Maishima sport Island

## ③ Maishima Sports Island



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### 4. Maishima sport Island

#### 4.3 Maishima Development Policy in Sport and Health

Developing this district in Sport and Health with citizens, universities, and companies.



Maishima Sport Island

•Based on the plan of the Olympic Park, a new policy for the island is developed.

•Public-private partnership takes an initiative in managing the effective land use of the island.

•Green space is managed by Osaka city council with a limited vision for restoring ecosystem.

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### 4. Maishima sport Island

#### 4.1 Current Situation

•Maishima is located at the north port of Osaka bay area and this is the artificial land reclaimed with industrial waste.

•This island has a land area of about 220ha, and east area is developed for industry and west area is developed for recreational sporting service.

•Case study area Maishima Sport Island is located in the west area.



Maishima MAP

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### 4. Maishima sport Island

#### 4.4 Present Activities in Maishima Sport Island

Public Sector

- Management of Maishima Green Land

Private Sector

- Music and Sporting event



Nagisa Music Festival



Summer Sonic



American Car Festival



All-Japan lacrosse championship

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## 4. Maishima sport Island

### 4.4 Present Activities in Maishima Sport Island

- Lodge Maishima is run by Hotel Castle Group but Maishima green land is managed by a different party.
- A better management system would improve coordinated usage of the two places.



Maishima green land



Lodge Maishima

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## 5. Osaka Nankou Bird Sanctuary

### 5.1 Current Situations

- Sakishima is the artificial reclaimed land of 1045ha and located at the center of Osaka coastal area which has a good accessibility.
- Sakishima includes bird sanctuary and Cosmosquare.

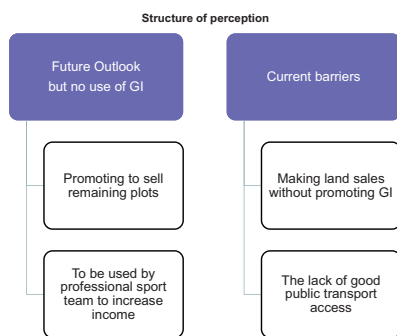


Sakishima MAP

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## 4. Maishima sport Island

### 4.5 Perception of Stakeholders



Interview respondent : Port and harbor authority in Osaka city

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## 5. Osaka Nankou Bird Sanctuary

### 5.2 History

#### ■Flow of History



#### ■Flow of Local Planning History



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## 5. Osaka Nankou Bird Sanctuary

## 5. Osaka Nankou Bird Sanctuary

### 5.3 Osaka Nankou Bird Sanctuary

The Bird Sanctuary of 19.3ha located in northwest of reclamation land in Osaka port.

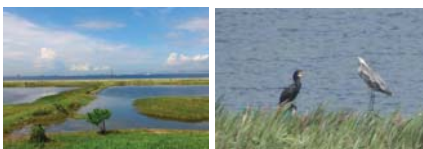


Osaka Nankou Bird Sanctuary

- Osaka Nankou Bird Sanctuary unexpectedly opened in reclamation land in 1983.
- Renewal for the guideline of Sakishima in 2009 promoted a large green space including bird sanctuary.
- In 2012, the support for maintaining this park was terminated due to financial constraints of the local government.

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## ④ Osaka Nankou Bird Sanctuary



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### 5.4 Present Activities in Sakishima district

• This sanctuary park has no management system and no event has been organized by the local and prefecture governments.

• In Cosmosquare, the local and prefecture governments hold events such as walking tour and light up in Sakishima canals.

• These events aim to increase publicity of this district as a first step of developing Sakishima

Public Sector





- increase publicity of this district as a first step of developing Sakishima

Private Sector

- No events

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### □ Barriers and Opportunities

|                                | ① Amagasaki-mori Central Green Tract of Land  | ② Sakai Coastal Area (Community Forest, J-GREEN)   | ③ Maishima Sport Island   | ④ Osaka Nankou Bird Sanctuary   |
|--------------------------------|---|--|---|---|
| Image                          |   |   |    |    |
| Barriers                       | <ul style="list-style-type: none"> <li>• Differences in the level of corporation</li> <li>• Difference in resident's needs</li> </ul>                                   | <ul style="list-style-type: none"> <li>• Public sector have a vision for ecosystem restoration but private sector have a vision for economic benefit.</li> </ul> | <ul style="list-style-type: none"> <li>• Making land sales without promoting GJ</li> <li>• The lack of good public transport access</li> </ul>    | <ul style="list-style-type: none"> <li>• The lack of demand due to the centralization on Tokyo</li> <li>• Economic benefit but no relation to ecosystem restoration.</li> </ul> |
| Opportunities Future solutions | <ul style="list-style-type: none"> <li>• Having the good vision for a network of green spaces</li> <li>• It is necessary to establish a system for incentive</li> </ul> | <ul style="list-style-type: none"> <li>• Having a good vision for developing the forest</li> </ul>   | <ul style="list-style-type: none"> <li>• Having a good place for ecosystem restoration but having a limited vision about biodiversity.</li> </ul> | <ul style="list-style-type: none"> <li>• Having a good place for ecosystem restoration but having limited vision about biodiversity.</li> </ul>                                 |

• Amagasaki-mori and Sakai coastal area have a good vision for ecosystem restoration, but they have various problems about development.

• Maishima Sport Island and Osaka Nankou Bird Sanctuary have a good place for ecosystem restoration, but they have limited visions about biodiversity.

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### 5.4 Present Activities in Sakishima district



Working tour



Light up in Sakishima canals



Osaka Nankou Bird Sanctuary

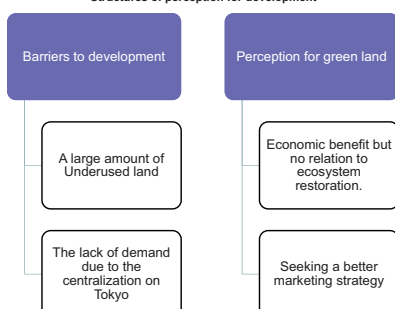
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Thank you for listening

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### 5.5 Perception of stakeholders

Structures of perception for development



Interview respondent : Port and harbor authority in Osaka city

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