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The Context of Changes for Land Resources Ecosystem in Urban Wild Area: Case Study of Wuhan City's Metropolitan Area, People's Republic of China in 1999 - 2013

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Abstract

Natural protection and ecosystem conservation of a city is current issues in globalization and industrialization. This article analyzes Wuhan city's satellite images between 3 September 1999 to 9 September 2013 capture by Landsat 7 from Computer Network Information Center, Chinese Academy of Science. Moreover, they study urban wild area changes in Wuhan city's metropolitan area and they create land ecological interactions: land symbiosis and land antagonism: as ecological comparator. From the research, they found that size of urban wild area in Wuhan city's metropolitan area: Hankou zone, Hanyang zone and Wuchang zone: reduced between 3 September 1999 to 9 September 2013. Besides, size of urban area increased in this period and it was inversely proportion with each other. Furthermore, qualities of urban wild areas were also changes in this period. All information show that land ecological interactions between urban wild area and urban area in Wuhan city's metropolitan area case is land antagonism because urbanization of Wuhan city's metropolitan area has negative impact with urban wild area's ecosystem.

Keywords: urban wild, Wuhan city, land ecology, land resources management, urban management, urban ecology, urban study, ecological urban informatics and remote sensing.

1. Introduction: Land Resources Ecology of a City.

The city is human natural habitat. Mankind cannot survive without a city environment (Aristotle, 2009). In the modern era, the human being needs living factors from cities such as public services, occupational, governmental services, commercial market, consumables, money, financial services, among others. Humans have created and developed the city in a very convenient and comfortable for human way of life. However, the city is not only for human occupation, it has other organism's live inside such as flora, fauna, and microorganism. The city is the diversity of ecological areas and systems (Sven Erik Jorgensen, 2009).

City is the nature of mankind, but the city is adulterated thing of nonhuman life: every city around the world comes from a wild area in human history. However, human cannot disclaim wild area because they need ecosystem services from wild area such as fresh air, fresh water, fresh food, natural scenery, natural recreation, etc. (Per Bolund and Seven Hunhammar, 1999). In this regard, most of the city governors and city planners try to design metropolis have natural space or open space. However, the way to create a natural space is more difficult than the natural conservation processes. Nature conservation and environmental protection in urban area is tasked because city government must keep balance between urbanization and environmental conservation (Yajie Song, 2009).

On the other hand, townsmen change from a wild area to urban civilization, while it is natural habitat changes in natural organisms. Some species can adapt themselves to urban living, including anatomy, physiological mechanism, behavior and genetics. But some of them cannot do it and it means they are extinct. Urban wildlife and urban plants can survive in an urban wild area and it makes city has biodiversity. Urban forest and urban biodiversity are new area of urban management and planning. Many people often think forest and biodiversity should live in a remote area, but this idea is not the best way for environmental conservation (UN-HABITAT, 2010). The way for equilibrium protection in urban ecology between urban development and urban wild conservation is a challenge for city governor and public policy planner (Ann P. Kinzing, 2005).

The importance of urban ecosystem mentioned above, this article tries to study with the relation between urban wild area and urban area of Wuhan city as a case study. They analyze satellite images from Computer Network Information Center, Chinese Academy of Science capture by Landsat seventh between 3 September 1999 to 9 September 2013 and they use PCI Geomatica: a remote sensing computer software: as a study tool for data analysis. Moreover, they try to study with land resources' ecosystem between two areas

development and changes comparison: urban wild area and urban area: in the metropolitan area. Besides that, they use the inductive method for a case study of Wuhan city's metropolitan area of land resources ecology's innovative development.

Landscape ecosystem inside the city is one of urban indicators show the metropolitan's quality of life in that city (Theo Kotter, 2011) because metropolitan need ecosystem services. The urban wild area is a landscape ecosystem inside a city. If the city is rich of urban wild area in quantity and quality, citizen lives in that city will have high living standards. Thus, every city needs urban wild area in quantitative and qualitative scales because they are ecological infrastructure in the metropolitan area and they are one of important infrastructures in the city. The Urban wild area is one urban land resources that are valued by the governor and city planner because they are green public space for metropolitan (UN-HABITAT, 2013).

2. Urban Wild Area vs. Urban Area

All cities around the world have urban area combined and overlapped with urban wild area. The urban wild area is natural land and natural ecosystem that still maintains wilderness in the midst of developing and developed metropolitan areas. In other words, an urban wild area is natural habitats inside the city and living creatures in an urban wild area can evolve and intimate with the urban environment and urban atmosphere (P. O. Cheptou, 2008).

The urban wild area has many kinds and they are a natural urban ecosystem such as a public park, private garden, orchard, river, lagoon, canal, bay, beach, mangrove forest, urban forest, hill, fallow etc. Urban wild area can be categorized in three groups.

2.1 Natural urban wild area: It is naturally occurring and human does not build it. Urban people let that area remain natural and they do not interfere with that too much, but some areas have effect from urban development. Examples are bay, lagoon, river, hill, beach, sea, urban canopy and etc.

2.2 Man-made urban wild area: It is a human sectional area and it looks like natural area. All of these areas are human space utilization such as a public park, garden inside university, reservoir, zoo, botanical garden, agricultural area, farmland, temple and etc.

2.3 Semi-natural urban wild area: It is naturally occurring, but people go into that area for capitalization and amendment and that are still nature. When people do not intervene in this wild area, it becomes an urban area, or parts of the city such as hill inside public garden and natural lagoon inside the university.

It is not easy to identify the different types of urban wild area because every group appearance looks like natural ecosystem and every type interweave together in the city. Urban area and urban wild area have changed from time to time in the city and they have related together because metropolitan and the natural organism needs land resources for living. So people change the urban land cover and urban landscape of an urban wild area to an urban area. It means they destroy urban ecosystems and an urban wild area. It makes that city get many environmental problems, for example air pollution, water pollution, natural equilibrium, mental health problems, physical health problem, urban biodiversity loss and etc.

This article research Wuhan city as a case study and they compare land cover changes from an urban wild area to an urban area in a period between 3 September 1999 to 9 September 2013. Wuhan city is one of the important cities in the People's Republic of China because it is a regional central city in central China. Moreover, Wuhan city is full of natural land resources, for example rivers, lake, hill, wetlands and forest. It means this city is rich of urban wild area, but Wuhan city also is one city change and develops fast in the People's Republic of China (Wuhan Government, 2013). So Wuhan city's land resources' ecosystem is a good case study for an urban wild area change research.

Urban wild area change study in this research has two study methods that are quantitative study and qualitative study. Both of the studies come from a satellite image analysis and all satellite images are captured by Landsat 7. This research uses PCI Geomatica computer program for image processing and study. Quantitative study is urban wild area and urban area counting from high quality images and qualitative study is an image comparison with 1999 to 2013. Lansat 7 satellite took Wuhan city images 213 times or days between 3 September 1999 to 9 September 2013 but it had good quality data in 105 days.

Researchers use PCI Geomatica program process 105 data to 315 images of different color band processing in three groups that are band 2, 5 and PAN in the first group, brand 2, 4, 5 and PAN in the second group and brand 3, 4, 5, 6 and PAN in the third group (Ned Horning, 2008). Because three groups of satellite images are good combination and option for false and true color analysis and urban wild area study. Then, they count urban wild area and urban area from 315 images of PCI Geomatica program and they calculate average of urban wild area

and urban area. After that, they analyze all statistics in quantitative method and compare with satellite images by qualitative methods. Then finally, they explain urban wild area changes in Wuhan city's metropolitan area by urban ecology and land ecology analysis.

3. Wuhan City: The City of Luxuriant Land Resources Ecosystem

Wuhan is the capital of Hubei province and it is also a hub city in the central region of China because they are center of transportation, logistics, industry, commerce, economy, education, politics and culture. This city is not the only important city in regional level, but they also are important cities in national level because they are top ten largest cities of China. Wuhan has had unofficial name is the Chicago of China (Mark Jacob, 2012). Wuhan has been an important city since 3,500 years ago. Because the city is a stronghold, exuberance and perfect ecosystem, so this area is still a civilized metropolitan city in China from the past to the present (Hubei Provincial Government, 2013).

Wuhan city's area is 8,494.41 square kilometers, but they have metropolitan area only is 888.42 square kilometers (Pan Jianqiao, 2012). We can zone Wuhan metropolitan area in three groups that are:

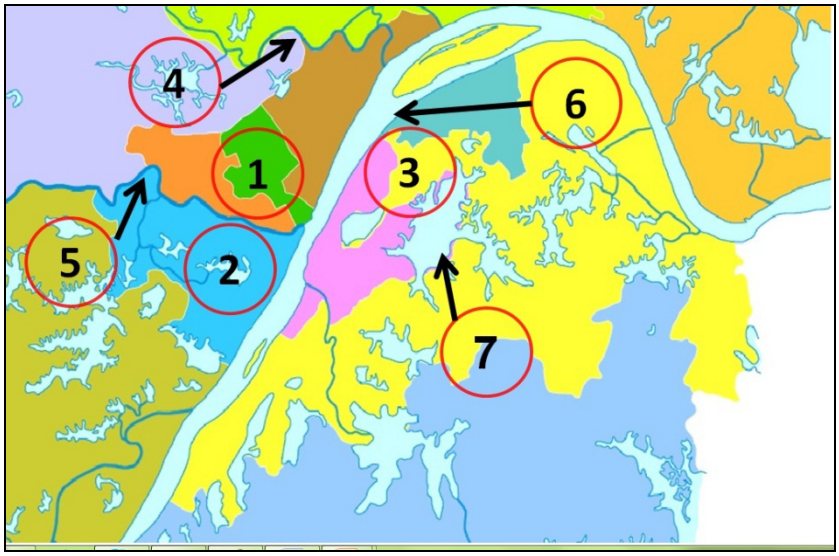

Figure 1 Wuhan City's Metropolitan Areas

Number 1 – Hankou Zone Number 2 – Hanyang Zone

Number 3 – Wuchang Zone Number 4 – Fuhe River

Number 5 – Hanshui River Number 6 – Yangtze River

Number 7 – East Lake

3.1 Hankou Zone: This area has three districts that are Jiang'an district, Jianghan district and Qiaokou district. This zone area size is 144.06 square kilometers (zone 1 in figure 1). Hankou zone has Fuhe River (number 4 in figure 1) in the north side. Hankou is separated by Fuhe River from another part of Wuhan city. But they have a small part of a Hankou zone next to the Yangtze River (number 6 in figure 1) and it is on the other side of Fuhe River.

3.2 Hanyang Zone: This area has only a district name Hanyang district and this zone area size is 108.34 square kilometers (zone 2 in figure 1). This zone separate from the Hankou zone by the Hanshui River (number 5 in figure 1) in the north side.

3.3 Wuchang Zone: This area has three districts that are Wuchang district, Qingshan district and Hongshan district. This zone area size is 636.02 square kilometers (zone 3 in figure 1) and this zone separate from Hankao zone and Hanyang zone by Yangtze river on the west side. Wuchang zone has huge and famous lake that is East Lake (number 7 in figure 1) and this lake is also a huge urban wild area in Wuhan city's metropolitan area.

Wuhan has many urban wild areas such as lakes, pools, rivers, canals, hills, urban forests and agricultural areas because Wuhan city is situated in the water resource bank of China. So they have an unofficial name of Hubei province is a province of lakes and they also call Wuhan city is hundreds of lakes urban areas and

urban river basin (Kai Xu, 2010). This area is not only large urban wild area, but they are also biodiversity's ecosystem in China because they have approximately 300 species of bird: endemic bird and migratory bird: and 200 species of fish (Jingyun Fang, 2006). They are the habitat of endangered animal as Yangtze River dolphin or Baiji (*Lipotes vexillifer*) and we can find this kind of freshwater dolphin only in the Yangtze River (Gillian T. Braulik, 2005). This area has indigenous vegetation is more than 830 species (Antoine Sambou, 2010), so we see that urban wild area at Wuhan city's metropolitan area is a luxuriant ecosystem.

4. Urban Wild Area Changes in Wuhan City: Phenomenon in 1999 to 2013

Analytical explanation of urban wild area changes in Wuhan city's metropolitan area has three parts that are Hankao zone, Hanyang zone and Wuchang zone. Moreover, they have two approaches that are quantitative approach and qualitative approach for urban wild area changes' narration.

4.1 Hankou Zone

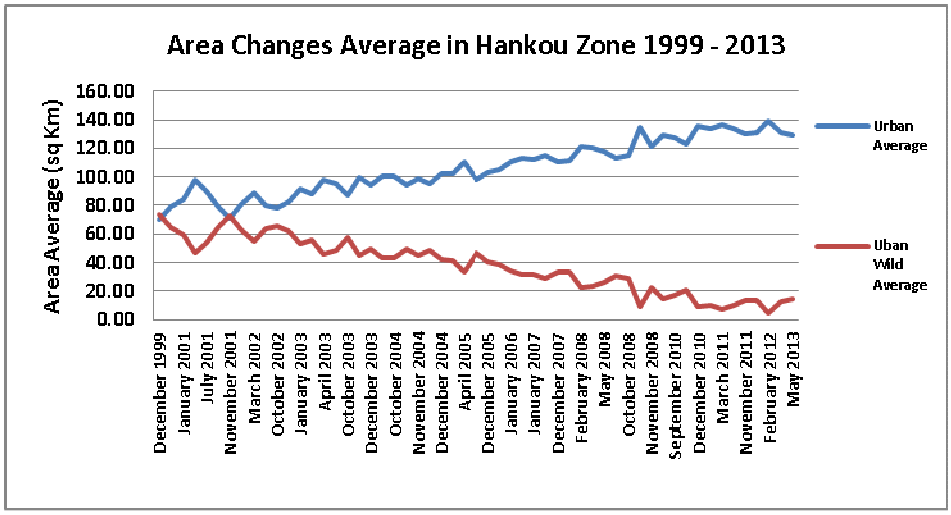

Figure 2 Hankou Zone's Changes Average Graph in 1999 - 2013

From the overview, urban wild area in Hankou zone has recessive trend, but urban area in Hankao zone has progressive trend from 1999 to 2013 (figure 2). Urban wild area and urban area were similar proportion in 1999, and then they were gradually different proportion from 1999 to 2013. Most of area in Hankao zone was urban area and urban wild area was a little area in 2013. From the graph, both graph lines are undulating in whole line because the urban wild area change from the season changes in a year, so season factor can impact with both of areas increase and decrease in every year.

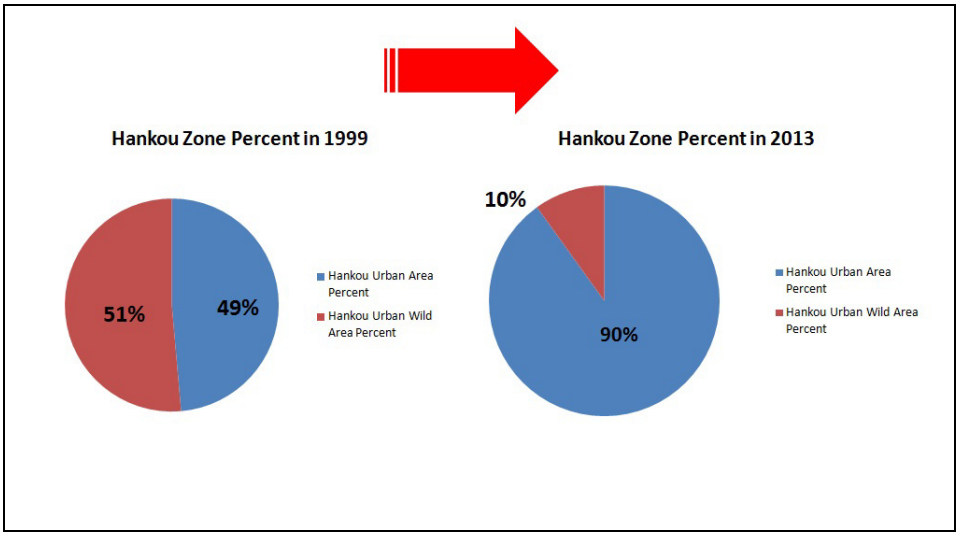

Figure 3 Hankou Zone's Changes Percent Graph from 1999 to 2013

An Urban wild area in Hankou zone has changed since 1999 (figure 3). Hankou zone had urban wild area 51 percent, but they had urban area 49 percent in 1999. It means an urban wild area had the same size as urban area. When the time pass, an urban wild area in Hankou zone is smaller. Hankou zone had urban wild area 10 percents but they had urban area 90 percents in 2013. It means most of the area in Hankou zone is an urban area.

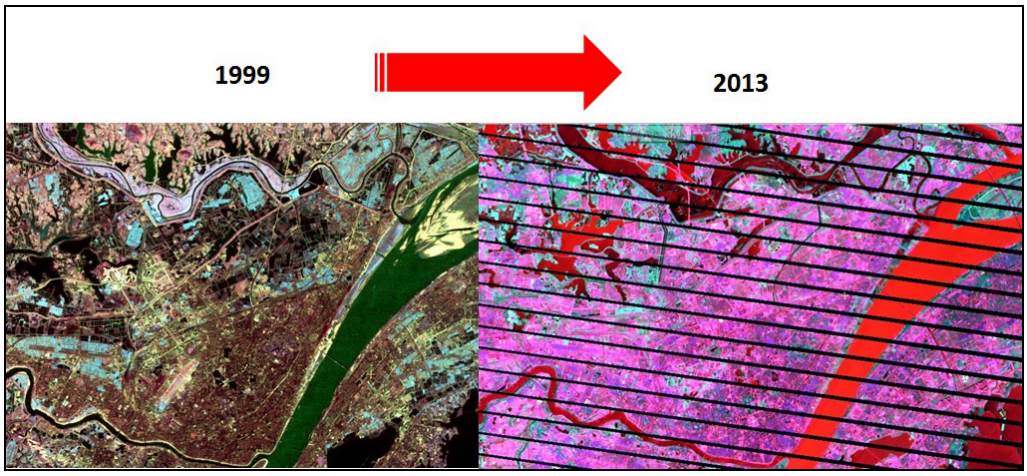

Figure 4 Hankou Zone's Changes Satellite Images Band 2, 4, 5 and PAN from 1999 to 2013.

From figure 4, Hankou zone has had landscape changes since 14 years. Hankou zone had half of agricultural areas: urban wild area: and half of urban areas in 1999. Then, Hankou zone had most of the area was urban area in 2013. It means they loss urban wild area and they extend urban area such as the urban wild areas disappearance in the north side, northeast side (near Fuhe River and Yangtze River) and south-west side (near Hanshui River). They do not loss only urban wild area in quantity, but they also loss in quality. Inland water resources: small lakes and pools inside Hankou zone: was no pollution in 1999 because they were dark color, but they changed to pollute in 2013 because they were red color.

Figure 5 Hankou Zone's Changes Satellite Images Band 3, 4, 5, 6 and PAN
In February, May, September and November 2008

From figure 5, urban wild area in Hankou zone change from seasoned condition in a year cycle. We can see green areas near Fuhe River and Yangtze River in February, May and November 2008 but we cannot see

them in September 2008. Moreover, green area inside urban area and agricultural areas dynamically changed in the whole year because green areas appeared fitfully. Hankou zone had flooding in area near Fuhe River in September 2008 because Fehe River enlarged area. Beside the quality of water resources inside urban area had good quality in February and November 2008 because they had dark color, but they had pollution in May and September 2008 because they had red color in water resources. All of the data show that urban wild area in Hankou zone is undulate changes from seasoning condition.

Urban wild area changes at Hankou zone in holistic view, they lose urban wild area in large quantities because they lose in 41 percent of urban wild area or it is approximately 54.95 square kilometers in 14 years. Or we can say that Wuhan city's metropolitan area has urban wild area loss rate in the 2.93 percent per a year or 3.93 square kilometers per a year. Furthermore, urban wild area becomes an urban area because satellite images show the landscape changes between 1999 and 2013. Beside qualities of urban wild is also changing because inland water resources change from non-polluting to sediment appearance inside Hankou zone.

4.2 Hanyang Zone

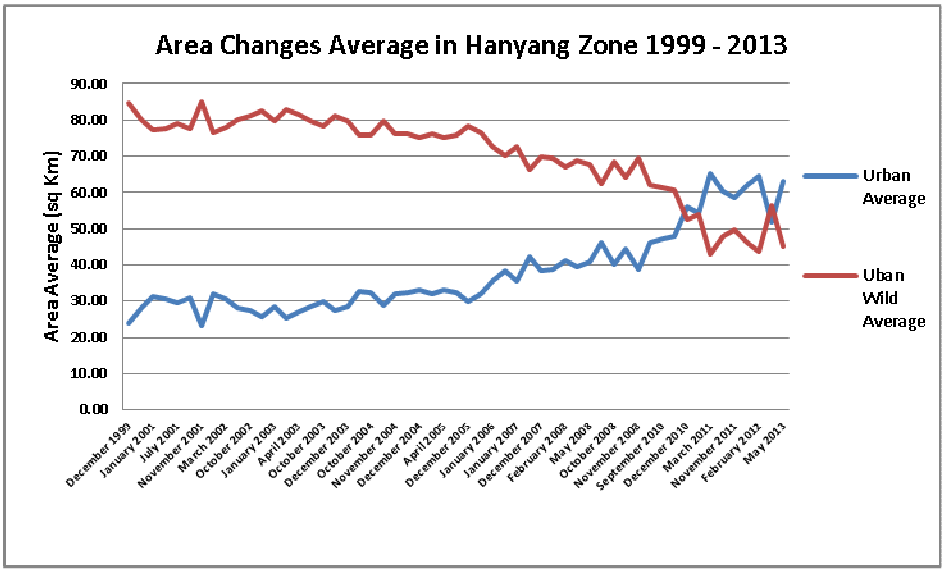

Figure 6 Hanyang Zone's Changes Average Graph in 1999 - 2013

Hanyang zone's case is different from Hankou zone's case. Because Hanyang zone had large areas of urban wild area and they had small area of urban area in 1999 (figure 6). When the time passes, Hanyang zone had both of areas were similar scale of the area in 2013. It means urban wild area downward trend between 1999 to 2013. Both graph lines are undulating in whole line because the urban wild area change from the season changes in a year and it is similar in Hanhou zone's case.

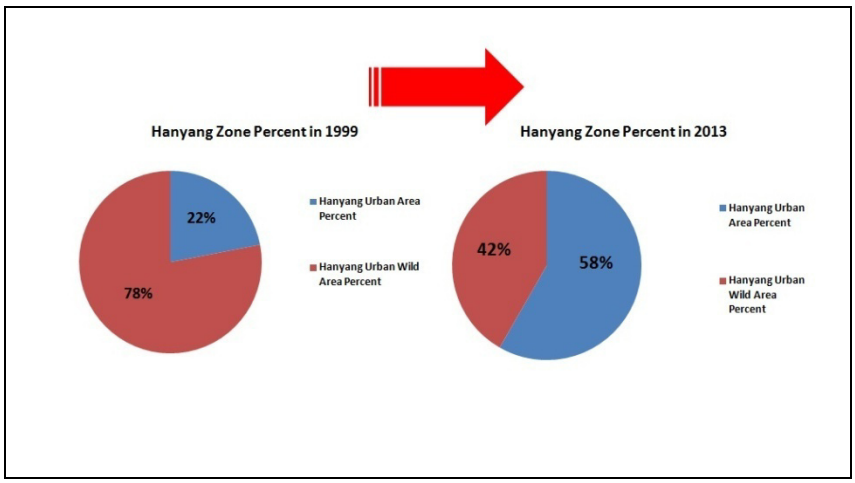

Figure 7 Hanyang Zone's Changes Percent Graph from 1999 to 2013

An Urban wild area in Hanyang zone has changed since 1999 (figure 7). Hanyang zone had urban wild area 78 percent, but they had urban area 22 percent in 1999. It means an urban wild area was larger than urban areas in Hanyang zone. When the time pass, an urban wild area in Hanyang zone is smaller. Hanyang had urban wild area 42 percent, but they had urban area 58 percent in 2013. It means Hanyang zone has an urban wild area and urban area that are similar size. Both Hanyang zone and Hankou zone have downsized scale of urban wild areas.

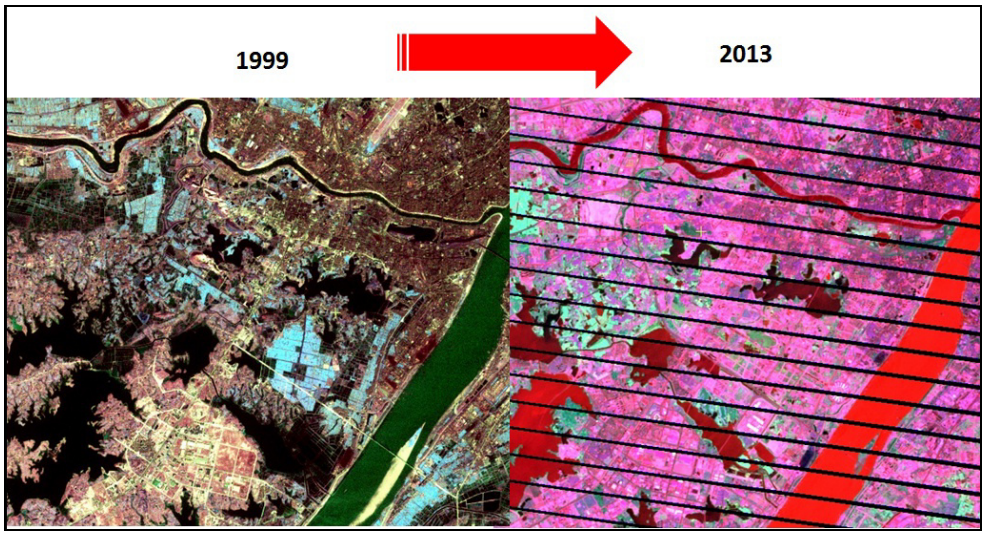

Figure 8 Hanyang Zone's Changes Satellite Images Band 2, 4, 5 and PAN from 1999 to 2013.

From figure 8, Hanyang zone has had landscape changes since 14 years. Hanyang zone had many urban wild areas in 1999 but they lost some urban wild areas in 2013 such as agricultural areas between two lakes (light blue color from figure 8), agricultural areas in north-west side (near Hanshui River and light blue color) and some small lakes in north side (near Hanshui River). Wuhan city's people extend urban area and they do not lose only urban wild area in quantity, but they also lose in quality. For example, feature of lakes in Hanyang zone was not pollution in 1999 because they were dark color, but they changed to pollute in 2013 because they were red color.

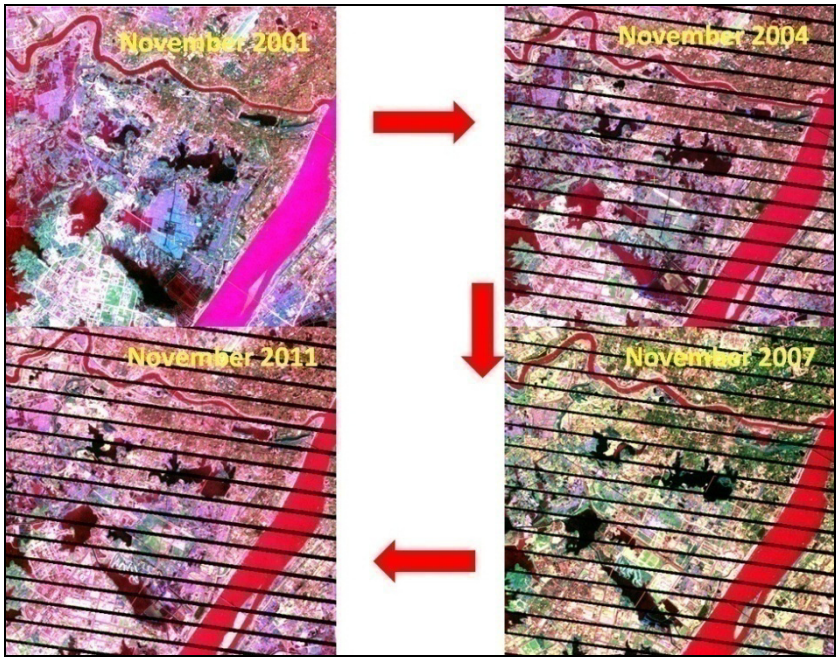

Figure 9 Hanyang Zone's Changes Satellite Images Band 2, 5 and PAN
in November 2001, 2004, 2007 and 2011

From figure 9, we can see that urban wild area in Hanyang zone changes slowly when the time changes. For example, agricultural areas between two lakes, near the Yangtze River and in the south side of Hanyang (blue and purple color in November 2001's picture) and agricultural areas near Hanshui River and north-west side of the Hanyang zone (purple and red color in November 2001's picture) are replaced by urban areas from time to time. Moreover, some small lakes in the north part of Hanyang zone and near Hanshui River disappear slowly. However, some urban wild areas in Hanyang zone is not changed in time condition such as quality of water resources because they are not constant changes. The lakes had many types of sediment in November 2001 and 2004 but they had thin sediments in November 2007. And then they had many types of sediment again in November 2011.

Urban wild area changes at Hanyang zone in holistically view, they lose urban wild area in large quantities because they lose in 36 percent of urban wild area or it is approximately 39.37 square kilometers in 14 years. Or we can say that Wuhan city's metropolitan area has urban wild area loss rate in the 2.57 percent per a year or 2.81 square kilometers per a year. Furthermore, urban wild area becomes an urban area because satellite images show the landscape changes between 1999 and 2013. Some lakes are reclaimed and used for urban development.

4.3 Wuchang Zone

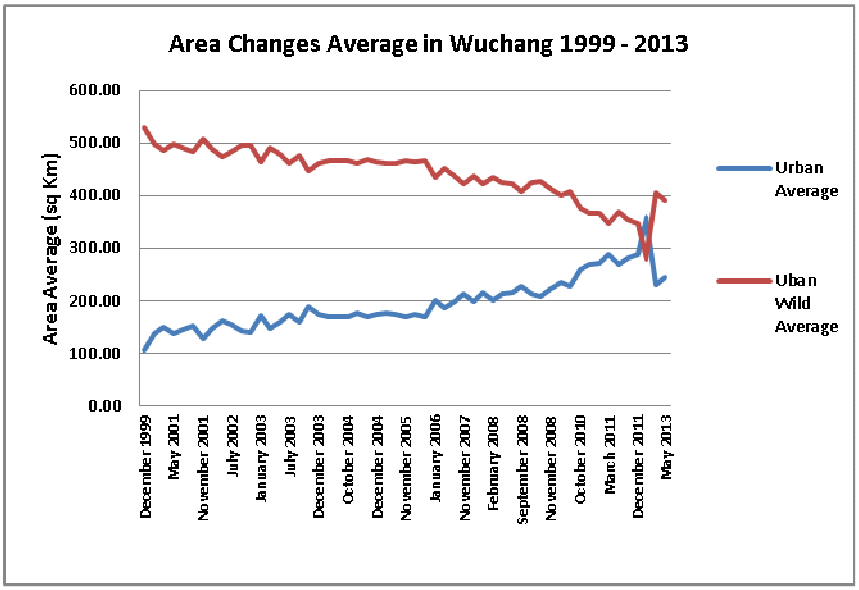

Figure 10 Wuchang Zone's Changes Average Graph in 1999 - 2013

Wuchang zone's case is similar to Hanyang zone's case. Because both Wuchang zone and Hanyang zone had large areas of urban wild area and they had a small area of urban area in 1999 (figure 10). When the time passes, Wuchnag zone had both of areas were likely to have a similar size in 2013. It means urban wild area downward trend between 1999 to 2013. Both graph lines are undulating in whole line because the urban wild area change from the season changes in a year and it is similar in Hankou zone's and Hanyang zone's cases.

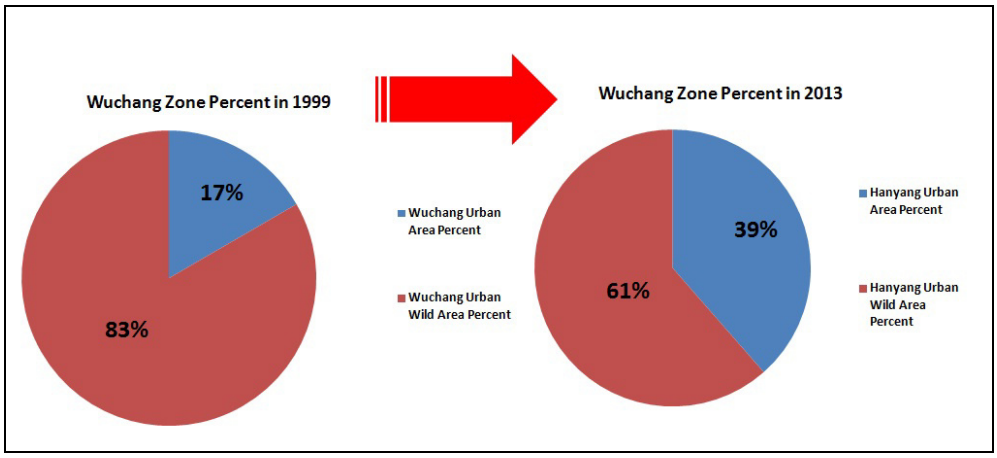

Figure 11 Wuchang Zone's Changes Percent Graph from 1999 to 2013

An urban wild area in Wuchang zone has changed since 1999 (figure 11). Wuchang zone had urban wild area 83 percent, but they had urban area 17 percent in 1999. It means an urban wild area was larger than urban area in Wuchang zone. When the time passes, an urban wild area in Wuchang zone is still larger than urban areas and it is different from Hankou zone and Hanyang zone. Wuchang had urban wild area 61 percent, but they had urban area 39 percent in 2013. However, Wuchang zone, Hanyang zone and Hankou zone have downsized scale of urban wild areas.

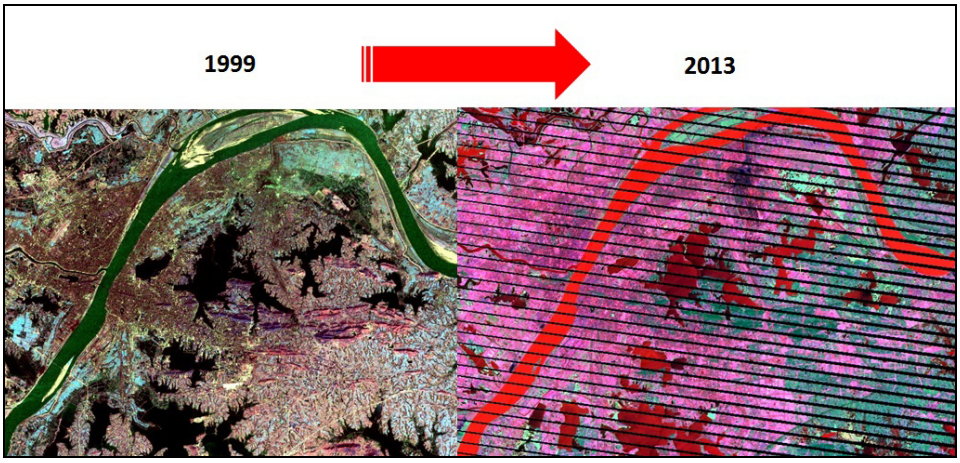

Figure 12 Wuchang Zone's Changes Satellite Images Band 2, 4, 5 and PAN from 1999 to 2013.

Wuchang is the largest area in Wuhan city's metropolitan area because they have size 636.02 square kilometers. Wuchang zone has had landscape changes since 14 years (figure 12). Wuchang zone had many urban wild areas in 1999 but they lost some urban wild areas in 2013 such as some urban forest area between two lakes in the central part of Wuchang zone, agricultural areas in the southwest side (near the Yangtze River and light blue color) and agricultural areas in west side (near East lake and light blue color). They do not lose only urban wild area in quantity, but they also lose in quality. For example, feature of lakes in Wuchnag zone was not pollution in 1999 because they were dark color, but they changed to pollute in 2013 because they were red color.

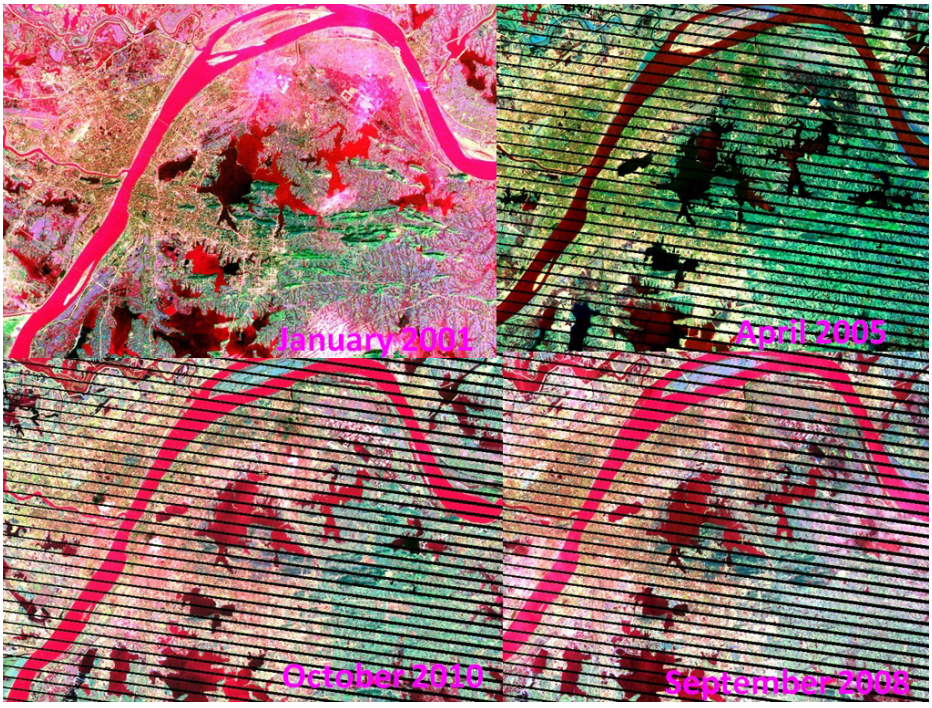

Figure 13 Wuchang Zone's Changes Satellite Images Band 2, 5 and PAN
in January 2001, April 2005, September 2008 and October 2010

From figure 13, we can see that urban wild area in Wuchang zone changes slowly when the time changes. For example, urban forest areas around East Lake and agricultural areas near the Yangtze River and in the south-west of the Wuchang zone (purple and red color in January 2001's picture) are replaced by urban areas when the time pass. However, some urban wild areas in Wuchang zone is not changed in time condition such as quality of water resources because they are not constant changes. Lakes inside Wuchang zone had many types of sediment in January 200 but they had thin sediments in April 2005. And then they had many types of sediment again in September 2008 and October 2010.

Urban wild area changes at Wuchang zone in holistically view, they lose urban wild area in 22 percent or it is approximately 139.20 square kilometers in 14 years. Or we can say that Wuhan city's metropolitan area has urban wild area loss rate in the 1.57 percent per a year or 9.94 square kilometers per a year. Furthermore, urban wild area becomes an urban area because satellite images show the landscape changes between 1999 and 2013. Some urban forest areas are reclaimed and used for urban development.

From the analysis of urban wild area changes in Wuhan city's metropolitan area: Hankou zone, Hanyang zone and Wuchang zone: show that urban wild area decrease in 14 years. Their lose urban wild area in 26.82 percent or it is approximately 238.30 square kilometers. We can say that Wuhan city's metropolitan area has urban wild area loss rate in 1.92 percent per a year or 17.02 square kilometers per a year. Wuhan city's people lose many kinds of urban wild area such as agricultural areas, lakes and urban forests. Urban wild areas are replaced by urban area and human's utilization. In quality of urban wild area in Wuhan city's metropolitan area, we cannot indicate significantly that urban wild area changes because of time condition. Because they have not qualitative evidence from satellite images for conclusion but Wuhan city's satellite images show that water resources at metropolitan area has pollution in 14 years.

The Wuhan city's metropolitan area had urban wild area 50.70 percent or 450.42 square kilometers in 2013. It looks like the large size of urban wild area in the city, but it is likely to be reduced in the future if the rate of urban wild changes is similar as in the past. It will be a big problem for urban ecosystem balancing inside Wuhan city's metropolitan area in the future.

5. Wuhan City's Urban Wild Area Ecosystem in Land Resources Ecological Approach

If we want to study the relationship between urban wild area and urban area in land resources' ecology, we should understand the eco-interaction. Thus the study of the relation and interaction between large areas should be based on an ecological method. Both areas' characters can be compared with group of lives that are two ecosystems inside one ecosystem: urban area and urban wild area inside a city's ecosystem (Richard T.T. Forman, 1995). We can apply ecological interaction between animals in ecosystem in urban wild area changes. These are:

5.1 Land Symbiosis: Symbiosis mean living together, so land symbiosis are peaceful relationships between urban area and urban wild area in a city because no one disturbed and hurt each other. This condition will happen when city people can keep a balance between urban area changes and urban wild changes in quantity and quality. The relation between both areas can be mutually supporting, benefit-sharing and one party get the benefit but the other party is not disadvantaged. This land eco-relation shows that a city has natural friendly public policy, sustainable development and green unequal treatment (Yong Geng, 2010).

5.2 Land Antagonism: refers to a relationship where only one party gets all the benefits while the other party is in disadvantage. Land antagonism is benefiting unilateral relationship between urban area and urban wild area. On the other hand, both parties take and give benefit together, but it is not equal benefit sharing, thus urban wild will lose natural balance in the urban wild ecosystem. This condition will happen when city people cannot keep balance between urban area changes and urban wild area changes in terms of quantity and quality. The relation between both areas can be urban wild parasitism, urban wild chopping, competition for the uses of live things in urban wild and urban wild balancing prohibition. This land eco-relation shows that a city has a non-natural friendly public policy, balancing problem between industrialization and environmental protection and human centric development.

Both of land ecosystem interactions are normal of land resources phenomena because human land uses and land development must disturb and implicate natural ecosystem and natural land unavoidably. Human's interference with urban wild areas happen in deliberate and unconsidered ways because every human activity needs land resources for goods and services manufacturing (Nancy B. Grimm, 2008). We can see that land ecosystem relationship of the city has which category interactions when the time pass in one period. Land symbiosis is good interaction between two land ecosystems because it is a sustainable way to keep balance between urban area and urban wilderness area. On the other hand, land antagonism is not a sustainable way for interaction between urban area and urban wild area because humans can get environmental problem if they lose natural balance of the city.

In Wuhan city's metropolitan area case, urban wild area was inverse changes with urban area between 1999 to 2013. So the land ecological interaction between urban wild area and the urban area is land antagonism because the size of urban wild area in Wuhan city's metropolitan area reduces in fourteen years. Urbanization of Wuhan city's metropolitan area is increased size and it is influenced by the urban wild area reduction. Not only urban wild area has quantitative changes in Wuhan city, but they also have qualitative changes. When we analyze all satellite images, we cannot summarize that qualitative changes of urban wild area come from urbanization because they have urban wild changes from season change conditions. However, we can extrapolate that the quality of urban wild area changes tends worse because they get some signals from satellite images for example, increasing frequency of sediment in the natural water resources within the metropolitan area, changes of natural area become agricultural area and changes of vegetation types. All signals are significant with urban wild area changes, but we can not verify them from the macro - scale study as this research.

6. Conclusion: The Past to The Future of Wuhan's Urban Wild Area Ecosystem

Wuhan city is one of the important city in the People's Republic of China because they are top ten rankings by population (Demographia, 2014). Moreover, Wuhan city is good economic performance rankings because they stay in the 30th of the rankings in 1993 – 2007, 12nd of the rankings in 2007 – 2011 and 9th of the rankings in 2011 – 2012 (Emilia Istrate, 2012). So all information show that Wuhan city will develop and thrive from the present into the future, but all of the changes are human side and it is not natural side.

If development and changes of Wuhan city are similar urban wild area's changing rate from 1999 to 2013, it means Wuhan city's citizen will lose urban wild area in the future. It is not the best way for them because they will lose ecosystem services, natural resources' services, food production area, good habitat and natural ecosystem. Urbanization is not only based on economic and commercial factors, but it should base on natural, environmental and ecological factors because they are sustainable way for citizen, city and mankind (Nik Heynen, 2006).

We need economic and commercial development, and we cannot reject the importance of natural area and urban wild area at the same time because they are key elements of life in globalization. The balancing administration between urbanization and urban wild area conservation is an important proposition for Wuhan city's citizen and government and it is challenging in capitalism and consumerism stream.

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