

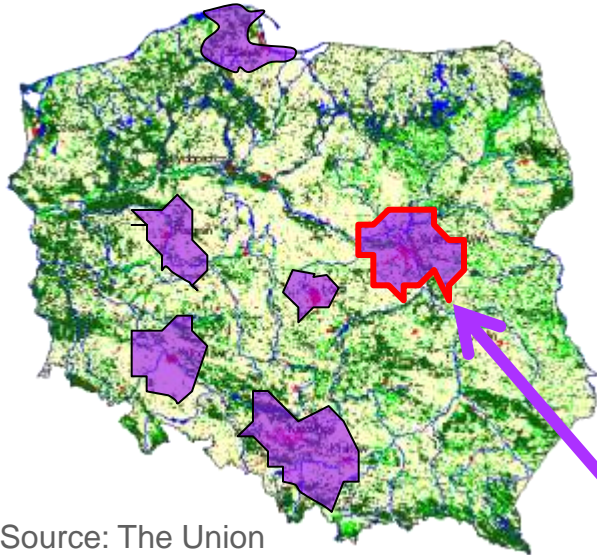


dr Agata Cieszewska
Department of Landscape Architecture
Warsaw University of Life Sciences

Green belt of Warsaw Metropolitan Area

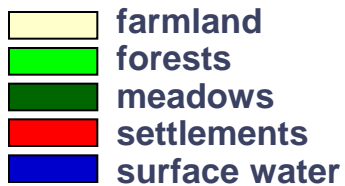


Introduction



Source: The Union of Polish Metropolises

Land use



Metropolitan areas population over 1million

Poland
 EU Country (2004)
 46% farmlands
 28% forests
 13% meadows
 Population 38 million
 Population density 122 p/sq km

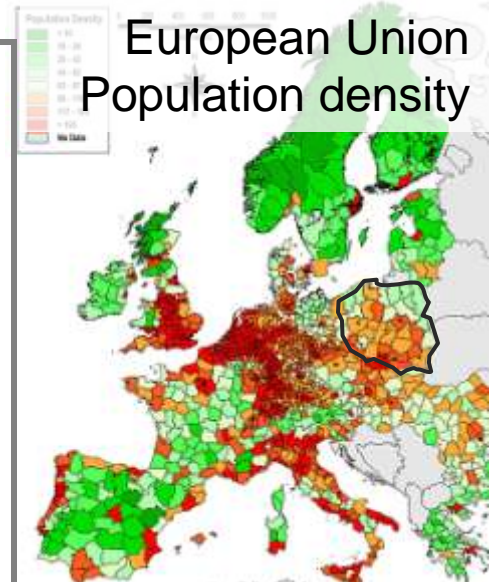
European Union Land cover



Warsaw Metropolitan Area

- Population over 3.2 million
- Area 9925 sq km
- Population density 323 p/sq km
- Population density in urban fringe 165 p / sq km

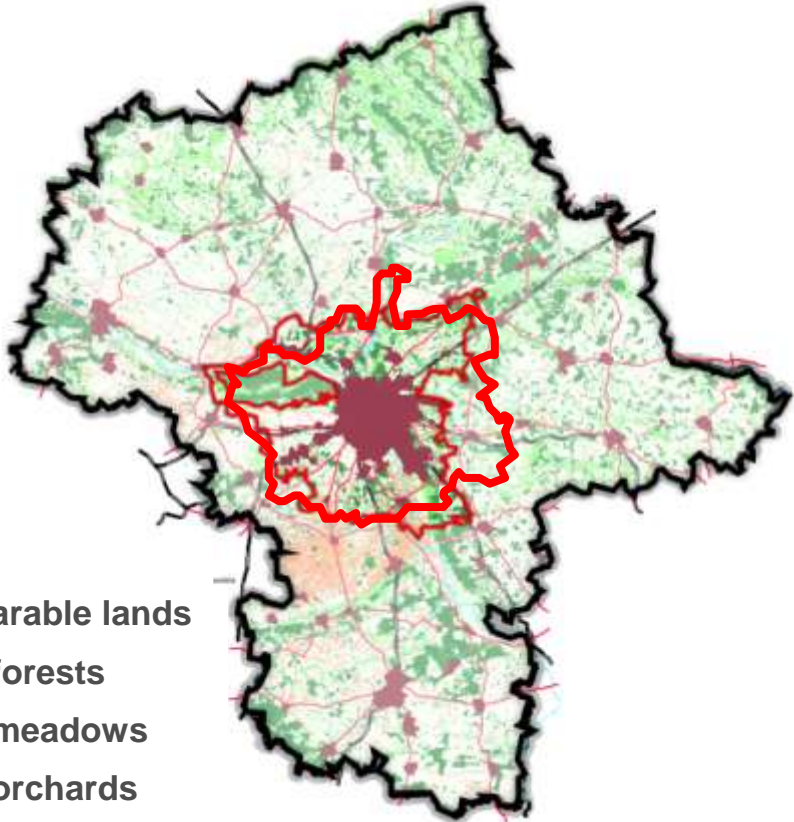
European Union Population density



Introduction



Warsaw Metropolitan Area
within Masovia Voievodship (Region)



- arable lands
- forests
- meadows
- orchards
- built up areas

Warsaw Metropolitan Area

- 24% of Masovia Voievodship
- 992.000 ha
- 23 mi x 28 mi (37 km x 46 km)
- 76 communities
- Landscape:
 - plains + river valleys
- Land use
 - 53% farmlands
 - 21% forests (60% state forest)
 - 11% meadows
 - 12% built up areas

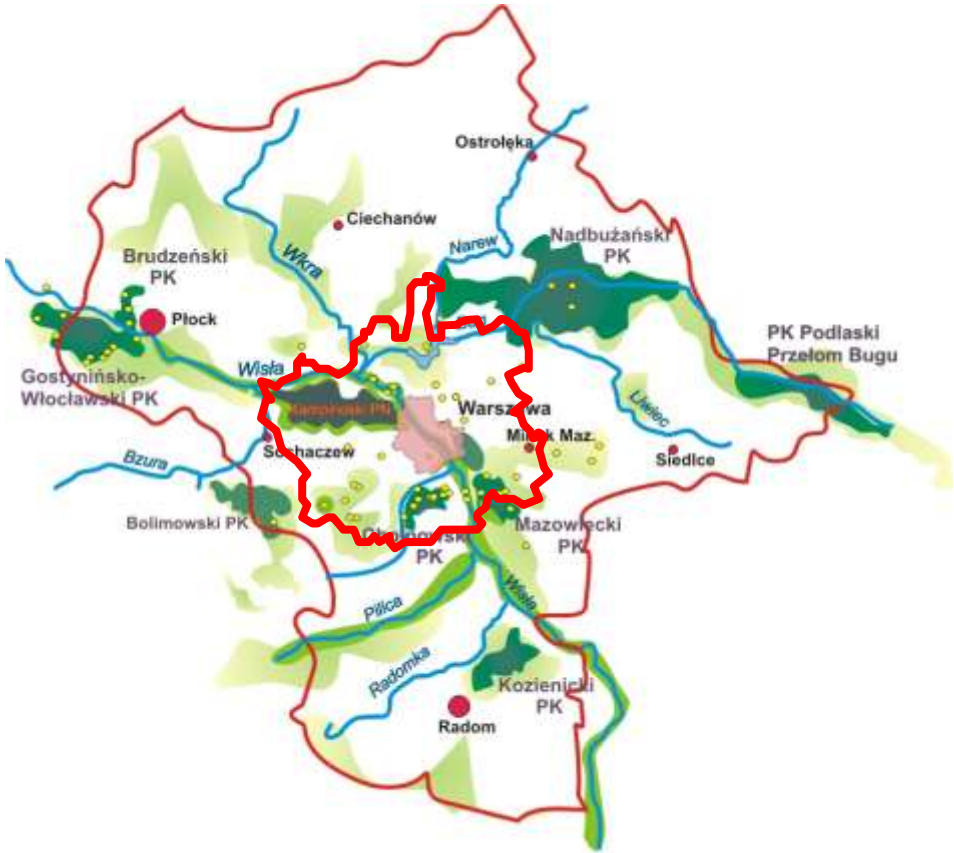
Introduction

Warsaw Metropolitan Area
 within Nature Conservation
 of Masovia Voievodship (Region)



Warsaw Metropolitan Area

- 40% Protected areas
- 10% Compulsory protection plan



- National Park (4,5%)
- Regional Parks (5,1%)
- Natura 2000 Sites (EU Reserves)
- Landscape Protection Areas
- Nature reserves
- Warsaw
- Other main cities
- Rivers
- Mazovia voievodship border
- Warsaw Metropolitan Area

Warsaw Metropolitan Area— history- planning tradition



Protection of Warsaw Surroundings

1 Environmental function:

Air flow wedges

Polders in floodplain of Vistula river

2 Recreational

Forest planting

1934 Functional Warsaw Plan – environmental function – protection of airflow wedges, river valleys as polders for high water level in floodplains

1949 Forest Belt around Warsaw – environmental function + recreational – protection and planting of forest belt in Warsaw's suburbs

1971 Agricultural and Forest Land Protection Act– forests around big cities in the radius of 10km are dedicated for recreation (later precise to cities over 50 000 inhabitants)

Central planning

Warsaw Green Belt – history- planning tradition

1989 Post – communist Transition of Political System in Poland

New problems

1. Significant decrease of regional planning – more crucial local planning because of decentralisation process
2. Intensive development of suburbs – according to global trends with suburbs expanding as well as relation to liberalisation of planning rules

New approach

Global trends in Environmental Planning

1. Expanding of environmental benefits of green belt to eco benefits (ecological network)
2. Environment within the city - Urban Natural System, green infrastructure urban ecosystem...

Warsaw Green Belt Proposal

Practical needs: Warsaw Metropolitan Area Regional Plan

Cooperation of

- Masovia Regional Planning Office
- Warsaw University of Life Sciences,
Department of Landscape Architecture
 - Prof. Barbara Szulczewska
 - Dr Agata Cieszewska



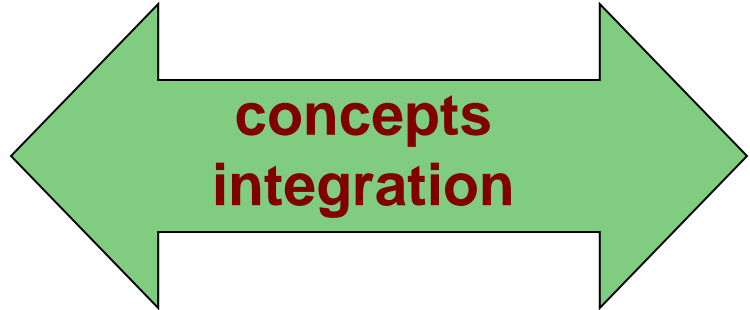
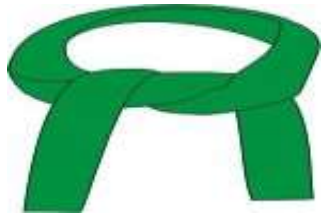
Environmental study for
Regional Plan
of Warsaw
Metropolitan Area



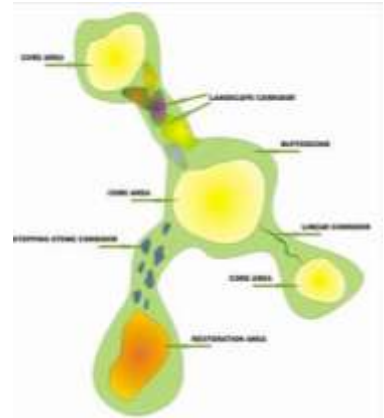
Warsaw Green Belt
proposal

Warsaw Green Belt Proposal - Idea

green belts

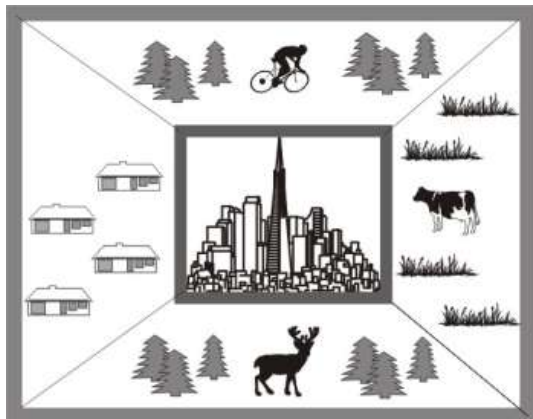


ecological network



Warsaw Green Belt Proposal - Assumption

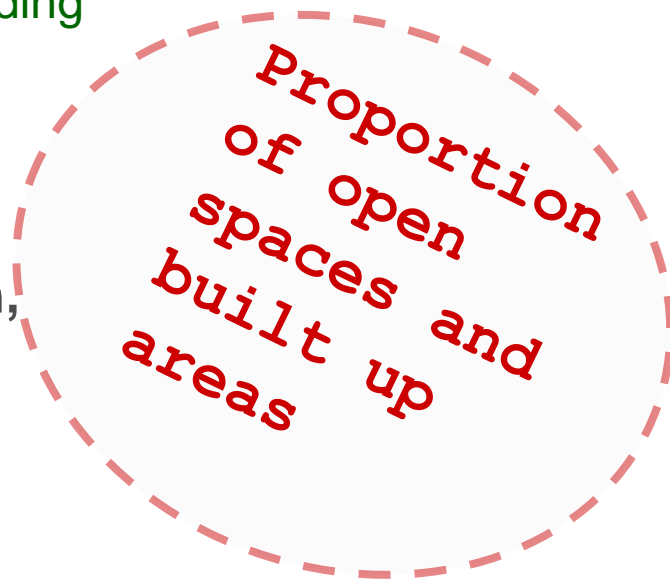
1. Green belt assumption



Supporting of 'Traditional' Greenbelt Functions:

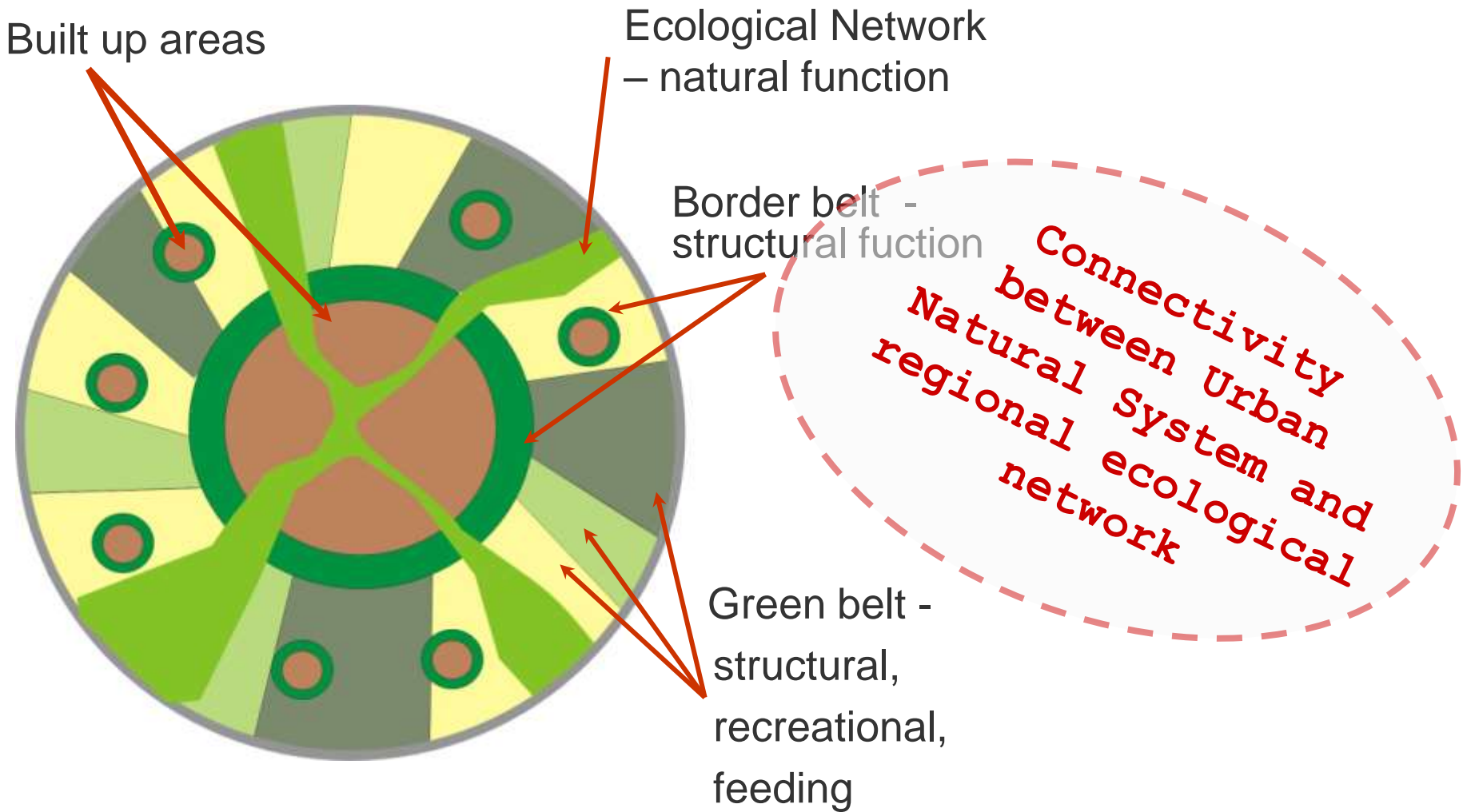
- 1 Structural to stop the development of built up areas
- 2 Recreational
- 3 Feeding

1. **Structural function of the Green Belt has to be connected to other function, that not collide with the main one (agriculture, forestry, recreation)**
2. **Open spaces support environmental, recreational and feeding function**



Warsaw Green Belt Proposal- Assumption

2. Ecological network assumption



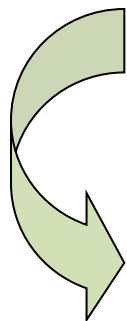
Warsaw Green Belt Proposal - Assumption

➤ **Green Belt**

– proportion of open spaces

➤ **Ecological Network**

– ecological values, potential for connectivity



**Each of elements is identified separately
by different criterion (different function)**

Warsaw Green Belt Proposal - Goals

- 1) sustain and protect the natural connectivity – **ecological network** between Urban Natural System of Warsaw and regional ecological network
sustain also environmental function
(hydrological, climatic and biological)
- 2) **limitation of built up areas** development
- 3) to **assure proper proportion between open space**
and built up areas

Warsaw Green Belt Proposal – step by step

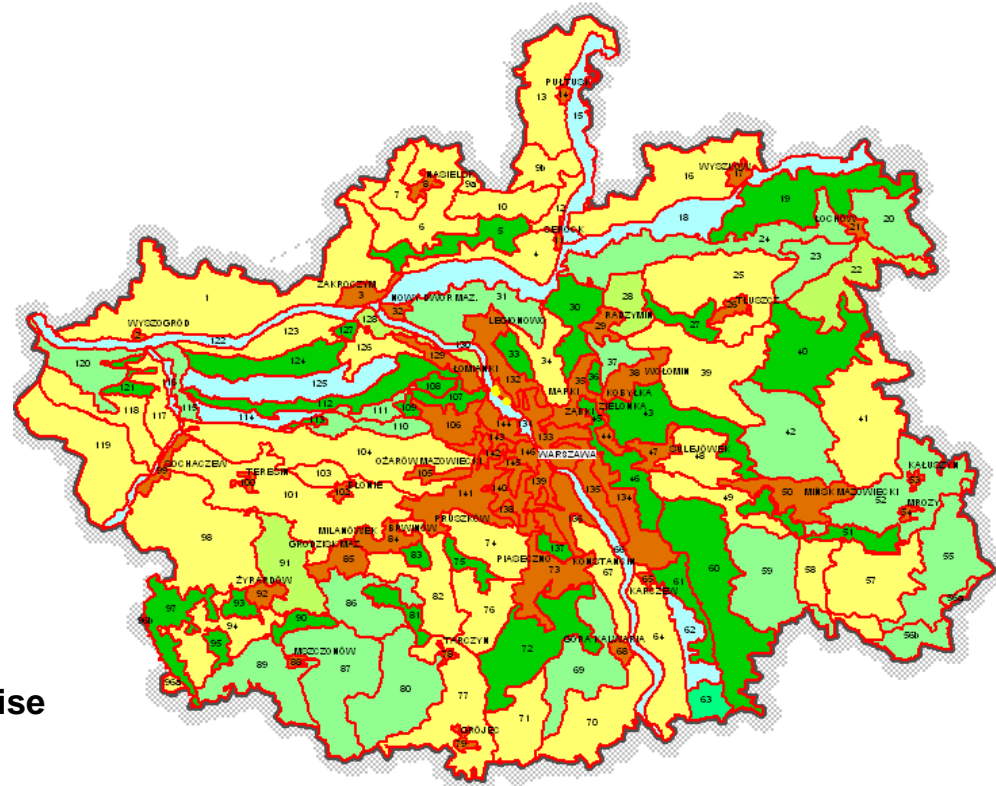
1) Landscape character type

Criteria:

Land use

Relief and types of grounds

Water condition


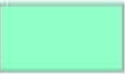
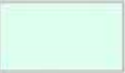



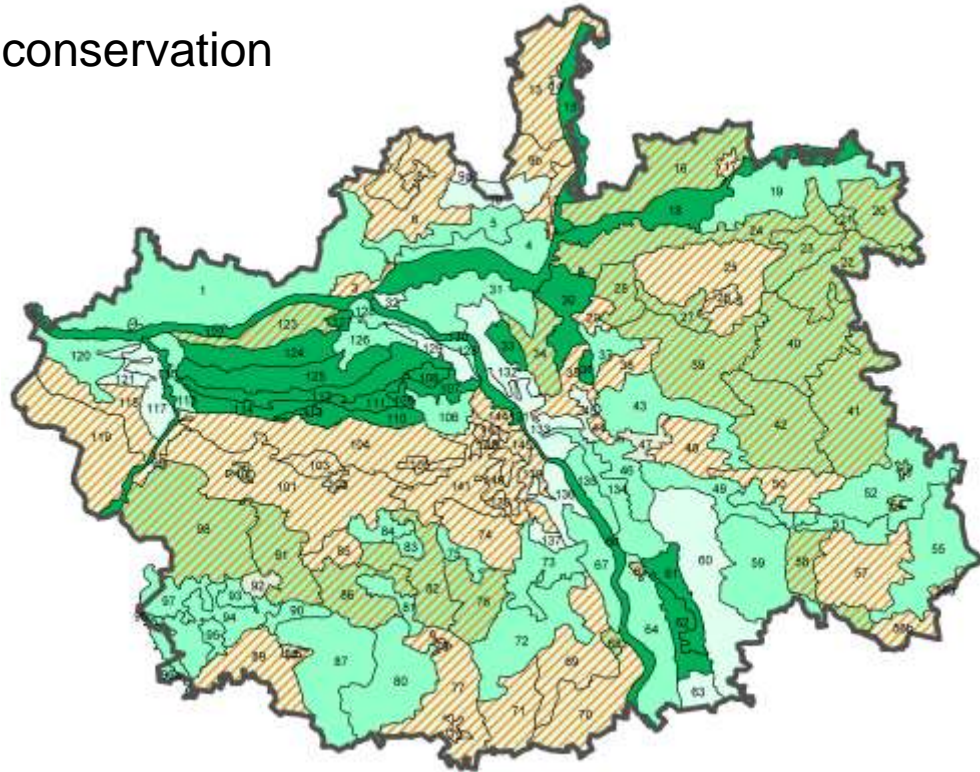
Warsaw Green Belt Proposal – step by step

2) Potential for future function – ecological network

Criterion:
Ecological connectivity

Verification – relation to nature conservation

-  High potential to join the ecological network
-  Medium potential to join the ecological network
-  Low potential to join the ecological network
-  Lack of nature conservation



Warsaw Green Belt Proposal – step by step

2) Potential for future green belt function

2a) Evaluation for recreation

Criteria:

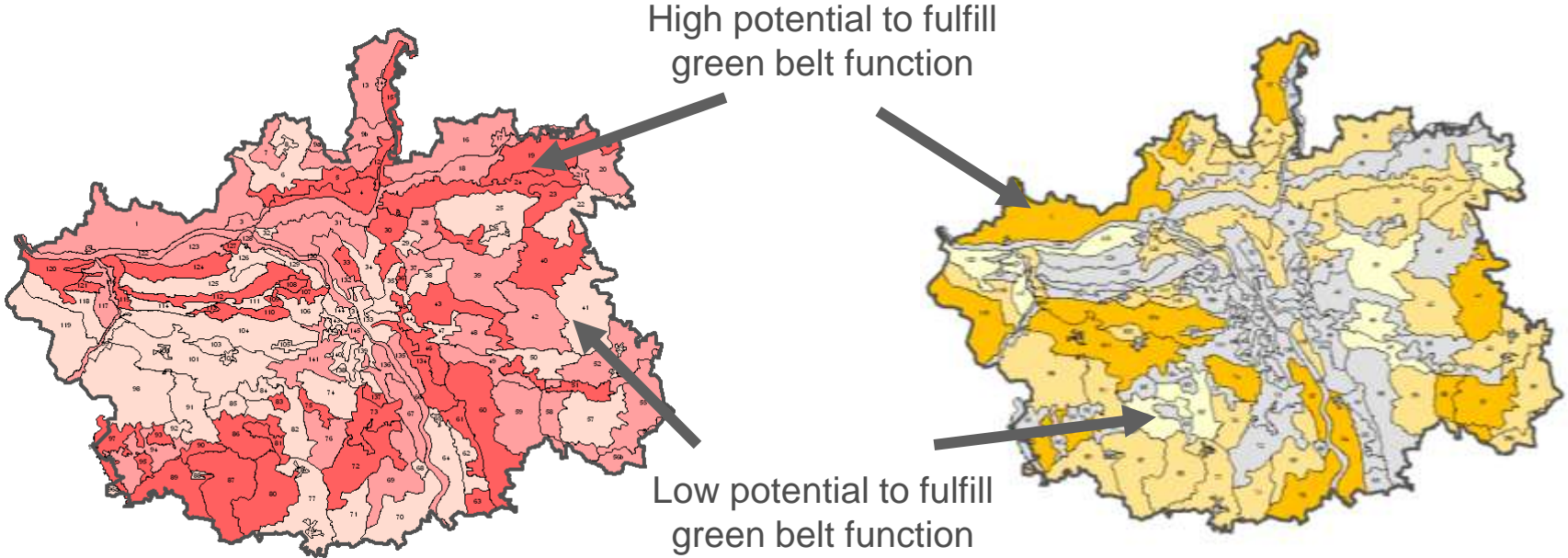
Forest & water bodies share

Cultural heritage

2b) Evaluation for agriculture

Criterion:

Soil classes



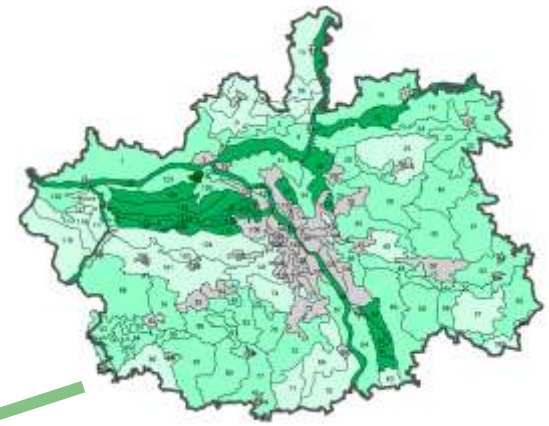
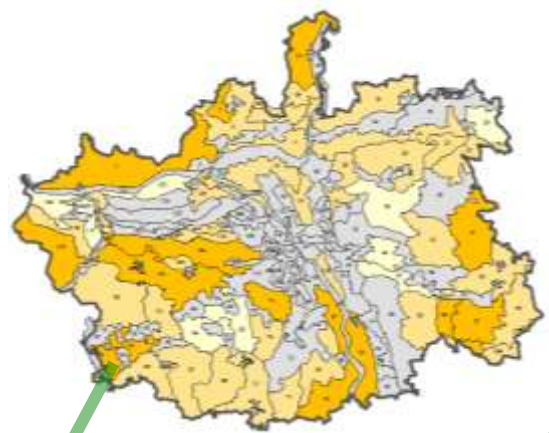
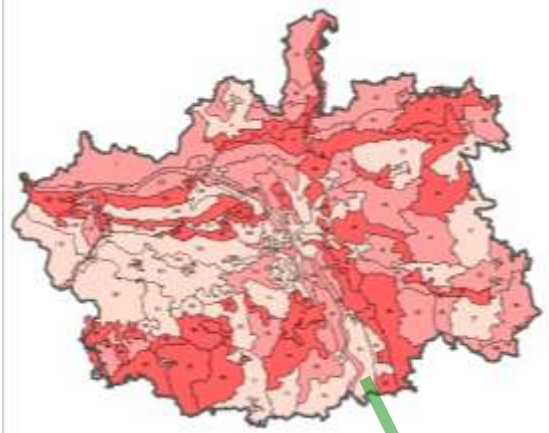
Warsaw Green Belt Proposal – step by step

3) Functions Summary

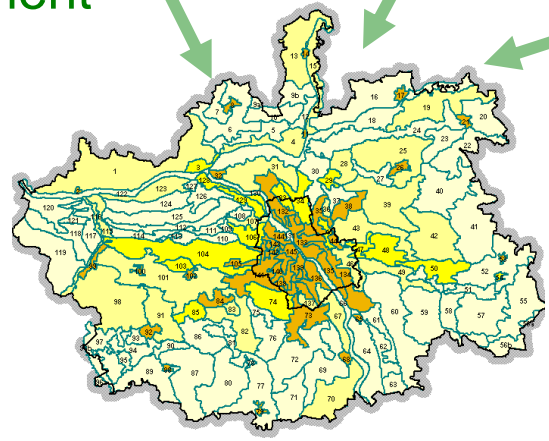
Recreation

Agriculture

Ecological Network – connectivity potential



Development pressure

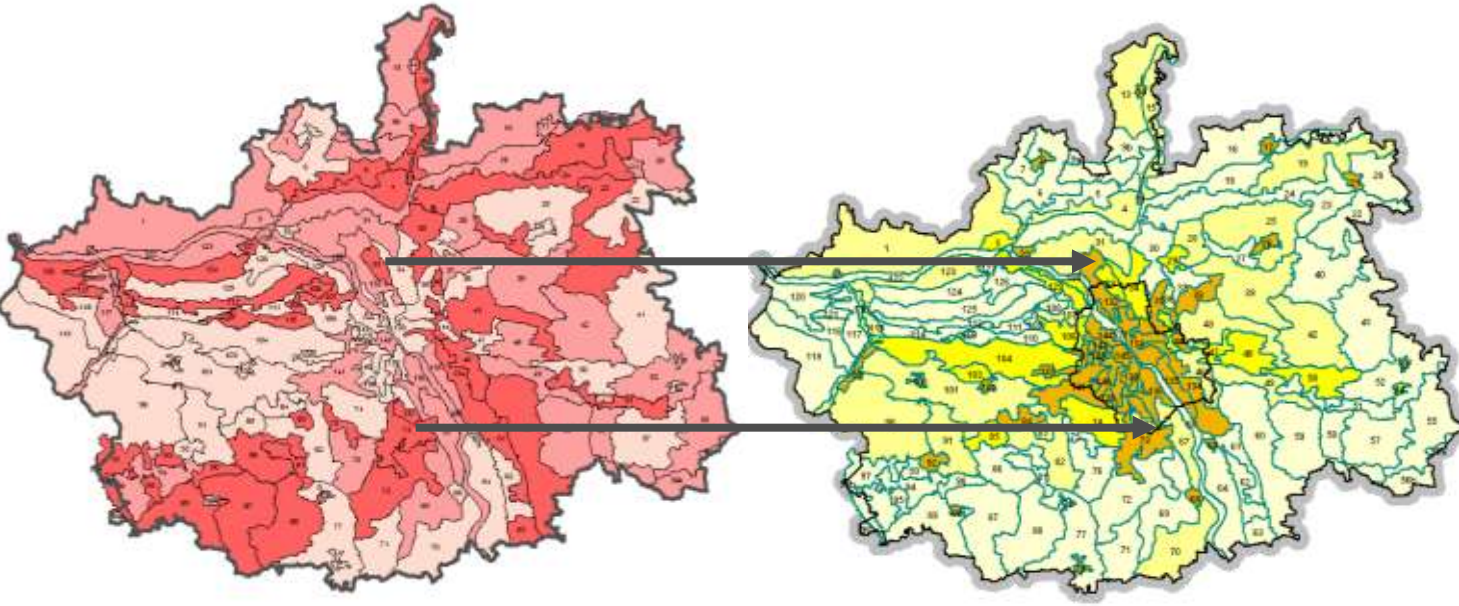


Warsaw Green Belt Proposal – step by step

3a) Where are conflicts between green belt function and future development ?

Evaluation for recreation

Development pressure



High potential for recreation
+
Area under high development pressure

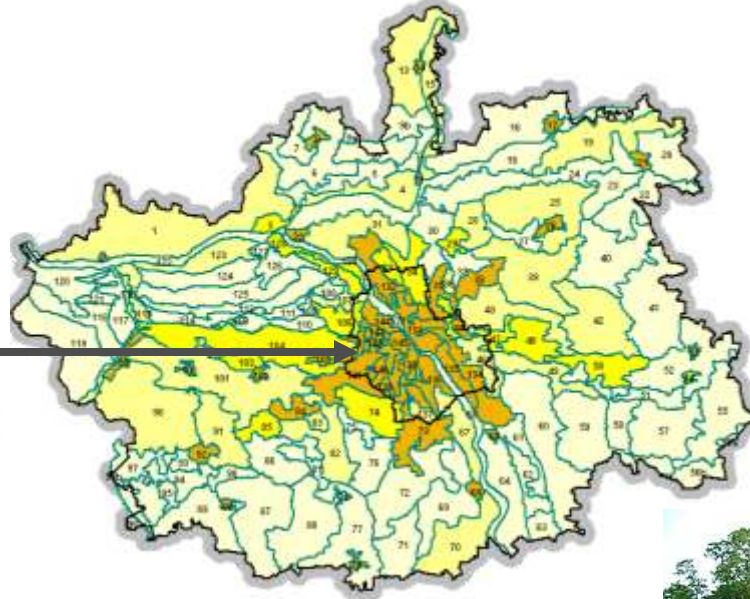
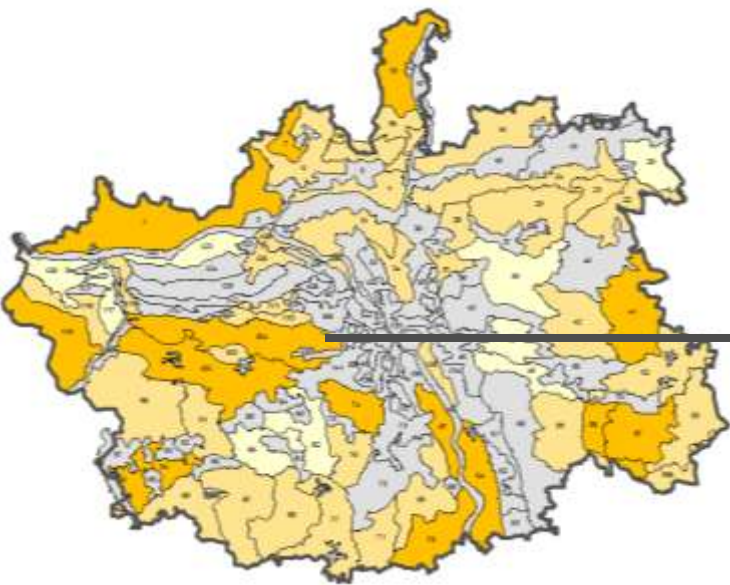


Warsaw Green Belt Proposal – step by step

3c) Where are conflicts between green belt function and future development ?

Evaluation for agriculture

Development pressure



High potential for agriculture
+
Area under high development pressure

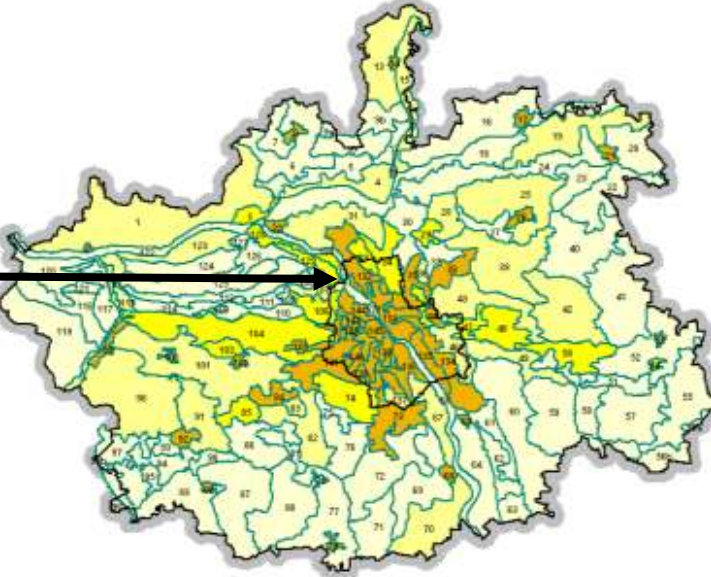
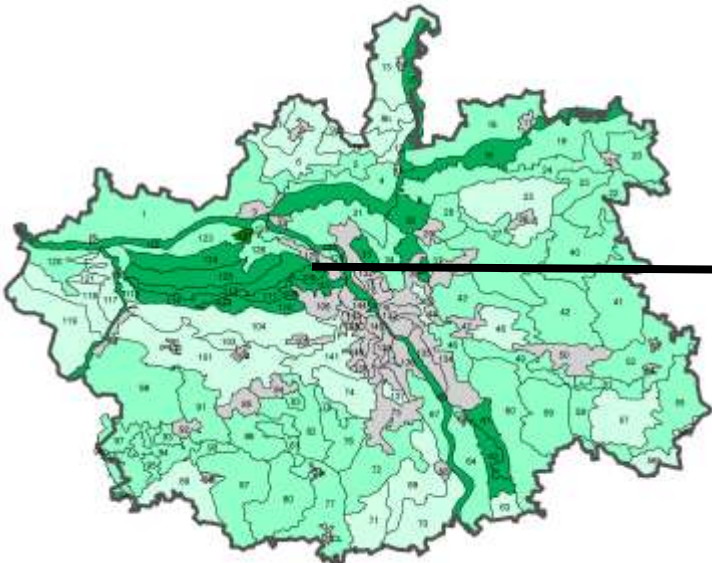


Warsaw Green Belt Proposal – step by step

3c) Where are conflicts between green belt function and future development ?

Ecological Network – connectivity potential

Development pressure

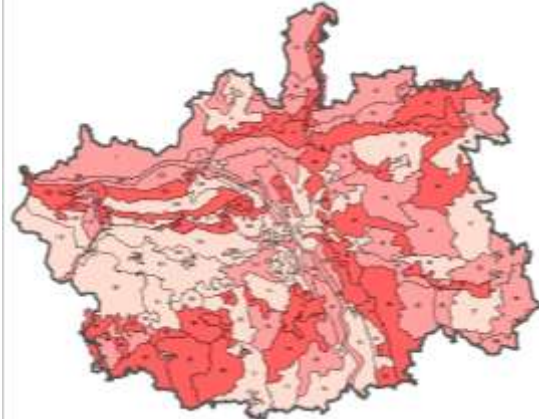


High potential for ecological connectivity
+
Area under high development pressure

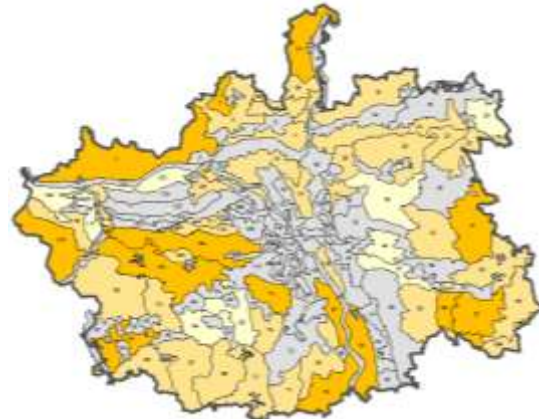
Warsaw Green Belt Proposal – step by step

4) Where is green belt?

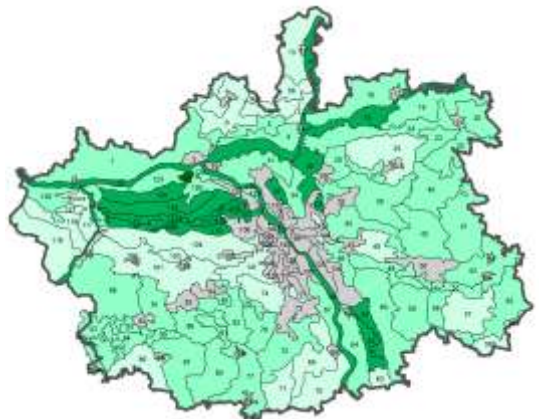
Evaluation for recreation



Evaluation for agriculture



Ecological Network – connectivity potential



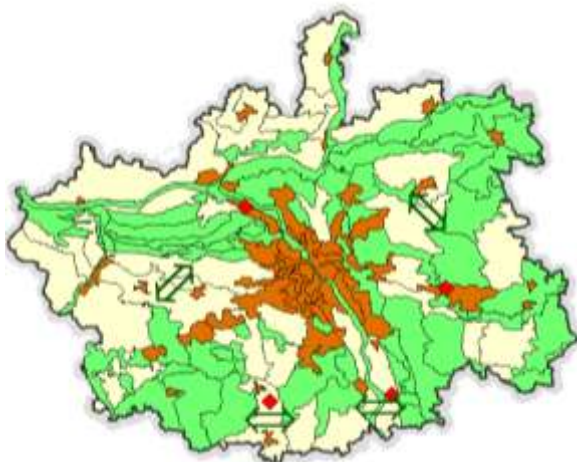
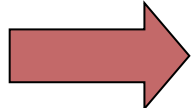
Development pressure



High or Medium potential of Green Belt Function

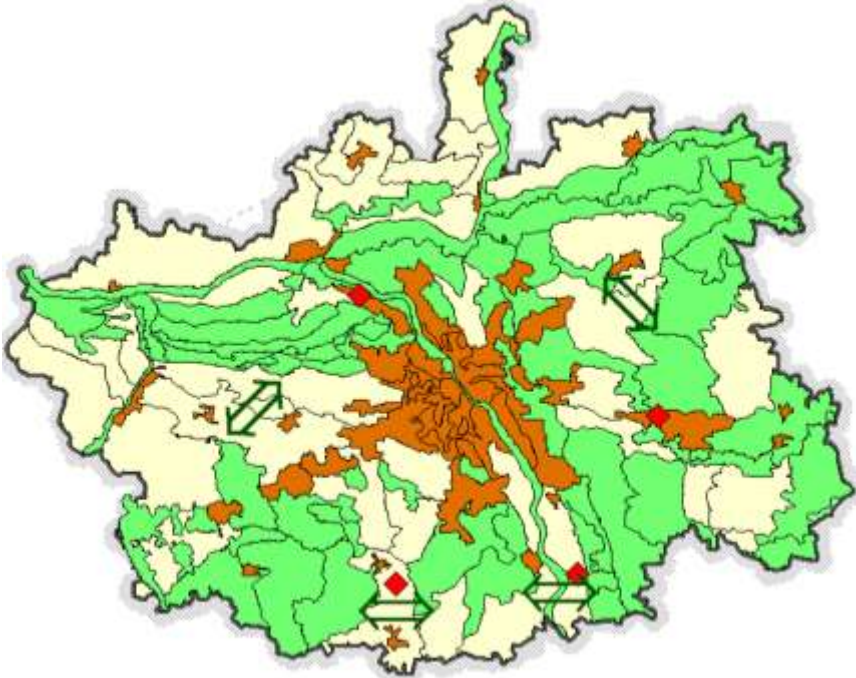
+


Low development pressure




Warsaw Green Belt Proposal – step by step

4) Where is green belt?

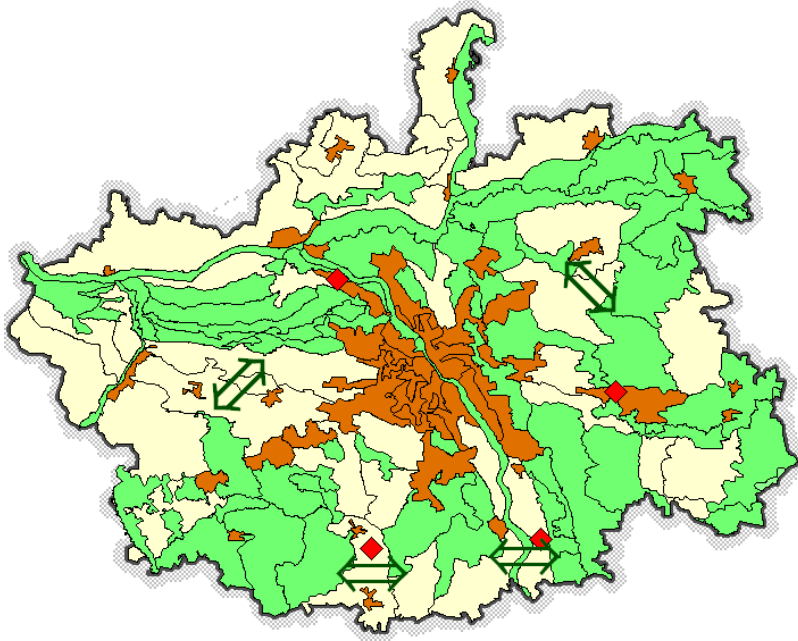


 Areas with high or medium potential for Green Belt and low development pressure

 Green belt gaps (areas with the needs of connectivity)

Warsaw Green Belt Proposal – step by step

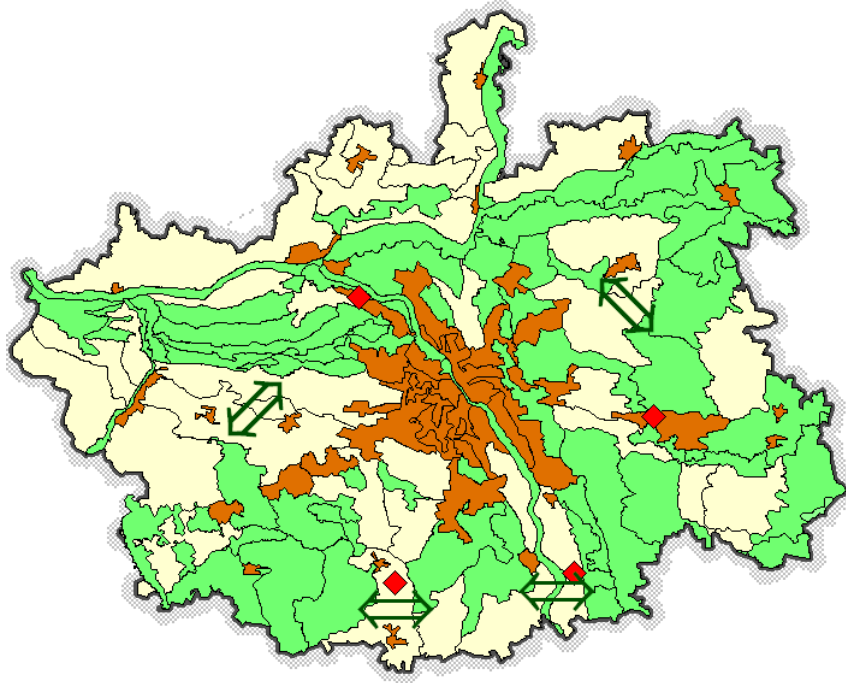
5) What next?



- 1. Green belt (belts) or wedges? ↔ shape
- 2. Isn't green belt too big? ↔ area
- 3. Ecological corridors as core areas and surrounding for buffer zone? ↔ function
- 4. How to fulfill spatial development demands? ↔ implementation

Warsaw Green Belt Proposal – step by step

5) What next?



Implementation of the idea depends besides ecological of other factors:

- social
- economic
- political

Agata Cieszewska, PhD
Warsaw University of Life Sciences
Department of Landscape Architecture

contact
agata_cieszewska@sggw.pl



Thank you