

The two Swedish sub-global assessments cover semi-urban and urban areas.

Both areas face high rates of socio-economic change, challenging the capacity of ecosystems to generate goods and services.

Map of Sweden with the two sub-global assessment areas: Kristianstad Wetlands and the Stockholm metropolitan area



Photo: Jakob Lundberg

Stockholm metropolitan area



Photo: Patrik Olsson/N

Kristianstad Wetlands

200 km

The Millennium Ecosystem Assessment (MA) is being undertaken at local, national, regional and global scales. It incorporates both local and scientific knowledge to meet the needs of decision-makers for information on the links between ecosystem change and human well-being.

MA focuses on ecosystems' capacity to provide goods and services and includes the efforts of 1,600 leading natural and social scientists, studying the ecological, economic and social aspects of this capacity.

The overall challenge is to find ways to increase human well-being through sustaining the resilience of ecosystems – their capacity to cope with environmental change and disturbances. This is related to societies' capacity to adapt management and institutions to ecosystem dynamics.

The MA is a collaboration of government agencies, non-governmental organisations, UN-agencies, leading science organisations and the private sector. It is authorised by the Convention to Combat Desertification, the Convention on Biological Diversity, the Ramsar Convention on Wetlands and the Convention on Migratory Species.

For more information please visit: www.millenniumassessment.org/

More information about the Swedish MA-assessment can be found at: www.ctm.su.se/ma

The Swedish assessments are coordinated by The Centre for Transdisciplinary Environmental Research (CTM) at Stockholm University, in collaboration with other departments, in particular the Department of Systems Ecology.

The assessments are conducted in cooperation with the Beijer International Institute of Ecological Economics, at the Royal Swedish Academy of Sciences, and the Stockholm Environment Institute (SEI).

This brochure is produced in collaboration with Albaeco (www.albaeco.com), a non-profit organisation working with science communication.



www.ctm.su.se



www.beijer.kva.se



www.sei.se



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“The Millennium Ecosystem Assessment is an unprecedented contribution to our global mission of development, sustainability and peace.”

UN Secretary-General Kofi Annan

Results from: Millennium Ecosystem Assessment in Sweden

*Strengthening Capacity to
Manage Ecosystems Sustainably
for Human Well-Being:*

The Millennium Ecosystem Assessment is the most extensive study ever performed on the linkages between the world's ecosystems and human well-being. It focuses on the capacity of ecosystems to provide goods and services important to human development.

Kristianstad Wetlands

The “rich wetlands of Kristianstad” (Kristianstads Vattenrike) is a semi-urban area of 110,000 ha in south-eastern Sweden. It includes the catchment area of the River Helgeå in the Municipality of Kristianstad, as well as the coastal zone of the Hanö bay of the Baltic Sea. It comprises Sweden’s largest flooded meadows landscape that is used for grazing and haymaking.



Kristianstad Wetlands

Photo: Patrik Olofsson/IN

The area was deemed of international importance by the Ramsar Convention on Wetlands in 1974. It is now in the final stage of becoming a Man and the Biosphere (MAB) Reserve of the UN Educational, Scientific and Cultural Organisation, UNESCO.

Results from the Kristianstad assessment:

The overall goal of this sub-global assessment has been to understand the emergence and organisation of a successful adaptive co-management system (box 2).

The assessment will continue until the end of 2005. Preliminary results suggest that:

- A key person played a crucial role through identifying unique ecological and cultural-historical values, formulating a broad vision and building trust among various stakeholders.

• The vision was to change the perception of the area, from being “water-sick” to “water-rich”, and *enhance the values generated by the ecosystems*. The conceptual ambiguity concerning “sustainable development” has thus been overcome.

- The Ecomuseum, a small municipal organisation established in 1989, has become a bridging organisation where different stakeholders meet, identify common interests and solve conflicts.

- Flexible social networks have emerged around sub-projects.
- The management is based on an adaptive learning-by doing approach rather than set “prescriptions.”

- A mix of general (scientific) and context-specific (local) knowledge is used by the steward organisations involved in ecosystem management.

- All collaboration is voluntary. Trust-building, value formation and identifying win-win solutions have therefore been necessary.

- The Ecomuseum has no regulating or enforcement capacity. This has been appreciated by farmers and facilitated collaborative learning.

Photo: Karin Magtorn



5 unique aspects of the Swedish sub-global assessments:

Explicit focus on the underlying socio-economic drivers of ecosystem management

Performed in urban environments

Among the few sub-global assessments of MA conducted in a high-income country

Use social science methods to the same extent as natural science methods

The assessments are based on the theories of resilience (box 1) and adaptive co-management (box 2).

Box 1

Resilience is the capacity of an ecosystem to cope with disturbances, such as storms, fire and pollution, without shifting into a qualitatively different state. A resilient ecosystem has the capacity to withstand shocks and surprises and, if damaged, to rebuild itself.

The resilience and long-term capacity of ecosystems to generate valuable ecosystem services depends on:

- ecological dynamics;
- the organisational capacity to manage and adapt to these dynamics;
- the institutional capacity to provide a learning environment and appropriate incentives.

Human and ecological systems need to be perceived for what they are, namely interwoven **social-ecological systems**. Understanding the resilience of such social-ecological systems is the very essence of sustainable development.

Box 2

Adaptive co-management is an approach based on collaboration among agencies, researchers and local stewards. Management of ecosystems is regarded as experiments, with the consequent need for monitoring, evaluation and constant improvement. It requires horizontal (local) as well as vertical collaboration.

Stockholm Urban Assessment

Stockholm created the world’s first legally protected National Urban Park (NUP) in 1995. The 2,700 ha park is located in the middle of the capital city and is of national interest due to its unique natural and cultural values. It is the most frequently visited park in Sweden with 15 million annual visitors.



National Urban Park, Stockholm

Photo: Jakob Lundberg

Presently a considerable loss and transformation of its ecosystems is occurring due to urban sprawl. Several green areas have become fragmented and isolated. This threatens biodiversity and the provision of ecosystem services that promote human health and well-being. Such services include: air filtration, noise reduction, surface water drainage, pollination, seed dispersal and recreational/cultural values.

Results from the Stockholm assessment:

The assessment has investigated: 1) biodiversity patterns, ecosystem dynamics and ecosystem services, 2) the interplay between different actors involved in management, and 3) existing barriers and bridges for strengthening social-ecological resilience (box 1).

Preliminary results suggest that:

- Biodiversity governance in Stockholm focuses on protected areas and physical planning of e.g. “green wedges”. However, also golf courses, allotment areas and cemeteries function as links and hot spots for biodiversity and the generation of ecosystem services.

- Animal seed dispersers, such as jays, and pollinators, such as bumble bees, function as keystone species that link different habitats in the fragmented urban landscape.

- A large proportion of urban green areas are informally managed. There is, however, little integration of existing forms of land use and their landholders in formal management.

- More than 65 organisations representing 175,000 members are involved in the use and management of ecosystem services in the NUP. Many of these actors tend to be overlooked when assessing park management.

Photo: Jakob Lundberg



- Locally managed green areas generate valuable knowledge that can be incorporated into the overall adaptive co-management of the urban ecosystems in the Stockholm metropolitan area.

- Evaluation and monitoring are often lacking in management plans of the urban green areas.

- Attempts at adaptive co-management already exist. For example, the “Tyreså-project” co-ordinates watershed management between six municipalities, and handles up-stream/down-stream conflicts.