



Malmö University



ECOSIMP

# Content analysis of ecosystem service concepts in comprehensive plans for Malmö municipality in southern Sweden

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## Introduction

Supported by the Swedish Environmental Protection Agency the research project ECOSIMP is developed in close collaboration with seven coastal municipalities in the county of Skåne in southern Sweden. Since the municipalities along the coastline face a range of environmental challenges, several case studies are aimed at understanding local municipality planning processes. The overall research objective is to understand the premises of implementing the Ecosystem Service (ES) approach in municipal planning and decision making. Motivated by Malmö city undergoing major urban changes (Figure 1 and 2) this case study examines to what extent ES concepts are accounted for in Malmö municipality comprehensive plans.

## Method

A content analysis was made and focused on concepts expressing ES in the 1980, 1990, 2000, and 2012 comprehensive plans. A quantitative analysis recognized concepts if they expressed ES according to the *supporting, provisioning, regulating, and cultural* ES groups in the Millennium Ecosystem Assessment (2005). The employed ES coding protocol was similar to the one Wilkinson et al. (2013) used in their comparative study of ES in comprehensive plans of Melbourne, Australia, and Stockholm, Sweden. The number of ES concepts were counted for each year and also categorized into the supporting, provisioning, regulating, and cultural ES groups. The categorization was nonexclusive, allowing each concept in more than one ES group at the same time. An additional qualitative analysis focused on which types of ES concepts that are used in the plans.

## Results

Results show that the “ecosystem service” concept itself is not used before the 2012 comprehensive plan. The quantitative analysis of the total number of ES concepts used in the comprehensive plans shows a large increase from 1980 to 1990 and thereafter a gradual decrease to 2000 and 2012, where 2012 is lower than 1980 (Figure 3).

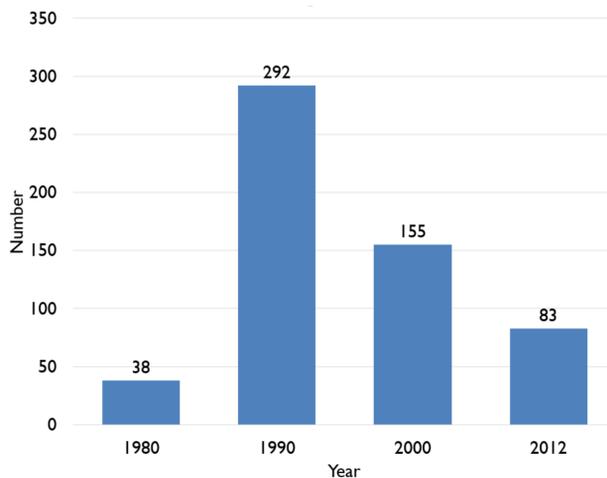


Figure 3. Number of concepts expressing Ecosystem Services (ES).

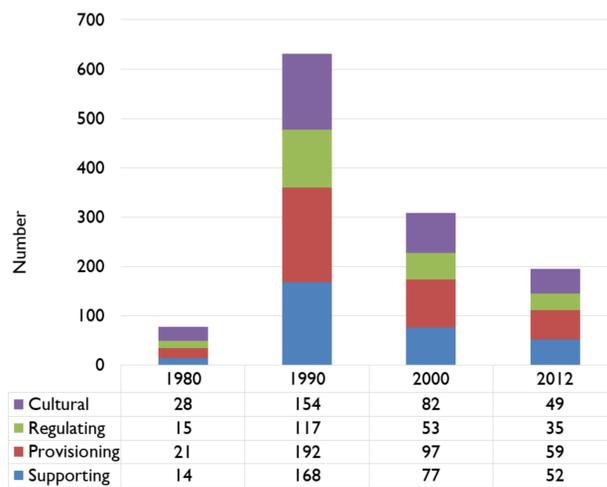


Figure 4. Number of times concepts express Ecosystem Service (ES) groups.

Table 1. Ranking of Ecosystem Service (ES) groups.

Years	Supporting	Provisioning	Regulating	Cultural
1980	4	2	3	1
1990	2	1	4	3
2000	3	1	4	2
2012	2	1	4	3

The introduction of the Swedish natural resources law in 1987 could explain the peaking number in 1990. If latter comprehensive plans build upon former, the concept usage can be interpreted as increasing from 1980 and forward. Each separate ES group shows the same time trend as the total number of ES concepts (Figure 4). The ranking of the ES groups changes between the years while the regulating and supporting services stands out as least and most important, respectively (Table 1). Altogether, these results indicate a shift into using ES concepts in municipality planning processes. The qualitative analysis shows that there is a change in the types of ES concepts used, e.g. “land use” and “green areas” in 1980 and “biological life cycle” and “biodiversity” in 2000 indicates a shift in municipality planning processes towards a more holistic view of the importance of ecosystems for a sustainable society and healthy life. Although somewhat uncertain, these results could indicate an introduction of the ES approach in the Malmö municipality planning processes.

## Conclusions

The results indicate

- a shift into using ES concepts in municipality planning processes
- a shift in municipality planning processes towards a more holistic view of the importance of ecosystems for a sustainable society and healthy life
- a possible introduction of the ES approach in the Malmö municipality planning processes.

## References

Millenium Ecosystem Assesment (2005). *Volume 1: Current State & Trends*. Washington, DC: Island Press and World Resources Institute.

Wilkinson, C., Saarne, T., Peterson, G. D., and Coldin, J. (2013). Strategic spatial planning and the ecosystem services concept – an historical exploration. *Ecology and Society*, 18 (1): 37.

## New land is built on former water areas. Changes between 1989 and 2015.



Figure 1. Aerial photograph of Malmö in 1989, taken from southeast. Source: City of Malmö



Figure 2. Skyscape photograph of Malmö in 2015, taken from southwest. Source: Nils G. A. Ekelund