Zoning and Opportunity Spectrum Planning in a Discontinuous Environment
– Planning for Tourism and Outdoor Recreation in the Luleå Archipelago, Sweden

Rosemarie Ankre & Lars Emmelin
Abstract

Zoning is generally used as a planning instrument to handle land use conflicts. In recreation planning in Sweden, zoning systems such as the recreation opportunity spectrum model has been applied in mountain areas. An underlying assumption of the ROS-system is a gradient from the urban to wilderness allowing the planner to provide a spectrum of recreation opportunities. In contrast, the Swedish coastal areas consist of a discontinuous environment which challenges a zoning. Archipelagos are essentially discontinuous with respect to many of the important spatial variables. Zoning in the archipelagos in Sweden has so far followed a zoning logic from physical geography; the assumption being that the gradient from inner, wooded zones to outer treeless would also be a gradient from the more urban or human influenced cultural landscape to a more pristine, “marine wilderness” in the outer.

In 2003, a questionnaire survey to visitors was conducted in the Luleå archipelago, Sweden. Based on the results, the study examines the spatialization of the visitor characteristics, the activity patterns etc in relation to the ongoing planning of the area. This paper explores the planning challenges in adapting zoning to cope with recreation and tourism development as well as with the other land and resources uses that municipal comprehensive planning is charged with. Thereby possible conflicts are identified, and the potential of zoning is explored.

Keywords: Zoning, coastal areas, discontinuous environment, visitor attitudes and conflicts.
1. Introduction

Tourism in coastal areas is growing faster than any other tourism branch in the world. Because of the complex relationships between opportunity, image, perceived benefit, cost and history; coastal areas are attractive tourist destinations. New technology has created new activities and locations that offer a varied tourism by the sea (Orams, 1999). In Sweden, there are resources of land and water that give a great potential of tourism and outdoor recreation (Turistdelegationen, 1998), not least in the coastal areas. These areas’ physical environment and the offered activities have a great power of attraction on visitors. At the same time, the coastal areas consist of unique nature and culture (SOU 1996:153; SOU 2000:67).

There are various factors that make an archipelago discontinuous. The geographical pattern of the archipelagos consists of scattered nature and biotopes: “It is important to take care of the mosaic characterised nature values that define the coastal areas and archipelagos’ woods as well as other coastal and archipelago environments.” (Author’s translation, Frisén, 2000 p. 34). The areas of the Swedish archipelagos are tiny and of high value for conservation with vulnerable nature and culture that are sensitive to interference. In the significance for conservation, the values of landscape aesthetics, the experiences and the history are included (Frisén, 2000). At the same time, the archipelagos are attractive for recreation and for tourism expansion. The coastal areas’ physical environment and the possibility of different activities have a great power of attraction on visitors that encourage further development of tourism and outdoor recreation. The coastal areas and archipelagos are to increasing extent important areas to the urban population and their interests of recreation (SNA, 1993). Noteworthy, the activities that could be performed (e.g. sailing, wind surfing, angling etc.) may also differ depending on where one is in the archipelago.

Accessibility is another reason for the discontinuity of the archipelagos. Some areas of the Swedish archipelagos are easier to reach than others since private owned boats give an opportunity to move freely in comparison to tour boats that direct visitors to certain areas. The transportation to and from islands in an archipelago are viewed differently by a permanent population and conservationists together with representatives of outdoor recreation. The former are interested in less isolation and to get merchandise transported while the latter is concerned by conservation. Second homeowners want to get easy access to their houses but without loosing the feeling of peace and quiet (Nordin, 2005a). Restrictions and regulations also control visitors, e.g. bird sanctuaries and military command areas.

In coastal areas and in the archipelagos of Sweden, the boundaries between rural and urban living is often blurred (Nilsson, 2000) and there is a mix of a permanent and a seasonal...
population. It creates a discontinuity. In the cities, people maintain a rural lifestyle, but on the other hand there are many people living in the countryside who have an urban lifestyle. Therefore, the countryside is not consistent in the character of its social space as maintained by Nilsson (2000). The difficulties to view the archipelago as a homogeneous area is also emphasised by Nordin (2005a) who encourages further investigations of people’s lives and occupations in different parts of such a landscape. Depending on where one lives in the archipelago the life conditions may differ. Traditional industries (e.g. fishing, forestry and agriculture) are diminishing but still exist in some places in the archipelagos. These industries are linked to a permanent population that is decreasing while seasonal living in second homes is common in certain areas. Reiter (2004a) the countryside is developing to be more urban than rural. It is a landscape consisting of small enterprises that nowadays falls back on the urban demand, e.g. the tourism industry instead of agriculture.

Modernisation such as increased mobility, new technology, economic restructuring, changing land use policies and public services, and communication patterns (e.g. Internet) has made the differences between urban and rural, traditional and modern less distinct (Kaltenborn & Williams, 2002). In conclusion, the discontinuous landscape of an archipelago is formed by a mosaic of values, life-styles and land use forms that may cause conflicts of interest. By this means, there are various factors that make an archipelago discontinuous. The result is a mosaic of values, life-styles and land use with conflicts of interests as consequence. This paper explores the planning challenges in adapting geographical zoning; to deal with tourism and outdoor recreation development as well as with the other land and resources uses that local comprehensive planning is charged with.

Based on a visitor survey in 2003 conducted in the Luleå archipelago, northern Sweden (see Figure 4), possible conflicts are recognized and the potential of zoning is explored. Based on the results, the spatialization of the visitor characteristics, the activity patterns etc. are put in relation to the ongoing planning of the area. The following questions will be analysed and discussed:

- What conflicts of land and water use can be identified in the Swedish coastal areas and the Luleå archipelago?
- Are there any conflicting visions of the land and water use within the Luleå municipality’s organisation and between the municipality and the visitors?
- What are the attitudes to noise and future noise-free zones in the Luleå archipelago?
- What obstructions can be identified regarding applying zoning in discontinuous landscape of an archipelago?

Conflicts may be reduced by planning frameworks. Noise is an important factor in nature and culture settings, and in recreation areas. However, the attitudes to noise differ which may cause conflicts. In this paper, it will be an attempt to apply zoning out from the planning framework Recreation Opportunity Spectrum (ROS) on a Swedish coastal area to see if the model is applicable in a discontinuous landscape in the context of creating noise-free areas from motorboats.

2. Conditions for planning in a Swedish archipelago

Sweden has international restrictions to adjust to and pursue by its membership in the European Union (EU), examples on this are the Convention on Biological Diversity (CBD)\(^1\),

\(^1\) An “umbrella convention” of nature and natural resources which commitments concern the conservation of biological diversity and sustainable use of biological resources (www.biodiv.org, 2005).
the Agenda 21 and the Baltic 21. From 1996 to 1999, the European Commission operated a demonstration program on Integrated Coastal Zone Management (ICZM) which Sweden is not a part of. Sweden has explained that there already is a legal and institutional framework in place to cover the requirements where fifteen nationally defined Swedish environmental quality objectives (see below) relate to the coastal zone (www.europa.eu.int, 2005). In Sweden, there are national, regional and local levels of responsibility and obligation within the planning systems. There is no specific legislation for the coastal areas except the shore protection but there are some political documents which purpose is to influence the development, e.g. Sweden’s National strategy for sustainable development and the municipal comprehensive plans (Boverket, 2003).

The Swedish central environmental legislation is gathered in the Environmental Code since 1999. Its function is to promote a sustainable development. Another law is the Planning and Building Act. It legalises the spatial planning and should obtain a high-quality economising of land, water and building. It gathers a large part of the legislation and regulates the municipalities and the nation’s participation in the spatial planning and in exploitation processes (Nyström, 2003). Except for these legislations there are other national spatial restrictions such as the right of public access, the shore protection, nature conservation, areas of national interest and the environmental objectives. In Sweden, the outdoor life has been strongly influenced by ‘the right of public access’ where everyone can move freely across private land in the countryside within certain limits. Land owners have to accept other peoples’ occasional presence on their land, but there should be no damages or disturbances. As maintained by Sandell (1997 and 2001) the right of public access has become a natural part of the Swedes’ connection with and use of nature. It is a vital part in the tourism industry and other outdoor activities. The coastal areas and the beaches are strongly protected by Swedish legislation by the shore protection which function is to conserve the environment ecologically and for recreation. The county administration boards are responsible for the shore protection but are able to delegate the total or partial responsibility to the municipalities (www.naturvardsverket.se, 2005).

Furthermore, the Environmental Code describes certain areas of national interest where nature and culture are of priority when diverse demands compete with each other. The environment should be used so that ecological, social and socio-economic requirements are satisfied and that good management is promoted. Some areas of specific interest can also be indicated, like areas for outdoor life and nature conservation which are principal for tourism (Turistdelegationen, 1998). Another spatial restriction is the fifteen national environmental quality objectives (e.g. A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos) that the Swedish Parliament adopted in 1999. These describe the quality and the conditions of nature and culture to create sustainability in a long term. The national environmental quality objectives are defined more precisely by means of interim targets which indicate direction and time perspective. The county administrative boards have put together regional environmental objectives and interim targets (Miljömålsrådet, 2004).

Continually, on a regional level the county administration boards represent the state and take care of and co-ordinate the interests of the nation in the planning system. The county administration boards are responsible for investigating the work of the municipalities and

---

2 It is a long term middle state co-operation within the Agenda 21 by the countries around the Baltic Sea (www.nutek.se, 2004).

3 Current by the sea, lakes and streams. It includes land and water areas (also beneath the surface) 100 meters from the shore line but can be extended to 300 meters.
have the power to invalidate their plans and to demand new outlines (Boverket, 1996). On the local level of planning, the comprehensive plan⁴ is the obligation of every municipality by Swedish law 1987. The comprehensive plan has a central role in the planning and building legislation; it covers the whole municipality and its land and marine areas. It is a source of knowledge where the public interests are considered together. In the Planning and Building Act (Ch. 4. 6§), it is stated that the municipality has to make the comprehensive plan public for 2 months before it is accepted and the meanings and the consequences of the plan should be clear. The point with participation is that knowledge improves, that negative consequences and conflicts can be prevented, and that there will be greater understanding for the decision-making. It means better support and trust for the comprehensive plan (Svensson, 1999).

Planning is a social inter-action. Different users – e.g. politicians, planners, the public and different interest groups – have different benefits and use of the comprehensive plan. Certain areas can be planned more specifically by the juridical detail plans which are legally binding and are a support for further planning and permissions. The comprehensive plan should give clear directions and information to the municipality’s inhabitants. The involved authorities and individuals may require a clarification by an advanced comprehensive plan where the planning decisions deal with a clearly-defined geographical area. Advancements of the comprehensive plan have proved to be useful in creating a dialogue between citizens (Boverket, 1996). Every municipality can rather freely decide the contents of its comprehensive plan, but the municipal council must accept it first. Even though the comprehensive plan is obligatory it is not legally binding. Therefore, the municipalities can relinquish from it when creating other plans. The comprehensive plan is initially a visionary function for a future development with guidance for the municipalities and other authorities’ decisions about the land and water use, and for their continued planning and examination of e.g. building permits.

3. Conflicts of conservation and tourism in the Swedish archipelagos and coastal areas
Spatial planning regards especially the conservation interests of nature and outdoor recreation against interests of use. It is mainly in the municipalities’ coastal areas and in the archipelagos that conservation for outdoor recreation and of nature and culture is found (Boverket, 1995). The attractiveness of tourism and outdoor recreation in the archipelagos is mainly based upon nature and culture values. Conflicts may arise when the interests of nature conservation and tourism are either against each other or other interests of land and water use e.g. the shore protection, protected areas, second homes, dredging, establishment of wind power stations and golf courses etc. The activities in coastal areas use land and water directly or indirectly affect the environment. Therefore, it is a risk that these areas will irrevocably change that complicates the possibilities of permanent living and maintenance. Also, it has a negative impact on the recreation value of the coastal areas and the archipelagos (SOU 2000:67).

The Swedish Environmental Advisory Council (SOU 2000:67) states that there is a paradox in society’s interest of conserving the nature and culture values in the archipelagos. The values that one wants to conserve represent a life that does not exist any longer. There should be a local and regional development in these areas that are compatible with conservation. Nowadays the permanent population in the Swedish archipelagos consists of a traditional population with local industries for a livelihood, together with a new group of permanent people who commute or work on distance, or are part-time pensioners. A permanent

---

⁴ In Swedish “översiktsplan”. A translation is somehow difficult; other terms could be a master plan or a synoptic plan. However, in this article the comprehensive plan is regarded as the most appropriate translation. Authors’ comment.
population demands i.a. service, infrastructure, water, sewage and a good housing environment which mean expensive investments. In the sparsely populated coastal areas, as in the northern part of Sweden the municipalities are concerned about second homes being used for permanent living (Ankre, 2005). Permanent houses have in some Swedish coastal areas been transformed into second homes which cause concern (Arén et al., 2000). Consequently, there are different regulations regarding second homes and permanent living depending on what coastal area it concerns.

The values of nature and culture are dependent on the professional activities of traditional industries while the tourism industry is reliant on service from the area and its permanent population (SOU, 2000:67). Even though there is a state of dependency between the leisure sector and the industrial sector, conflicts of interests can arise because of the competition over the resources. An example of a conflict between tourism and traditional industry (e.g. fishing) is pleasure boats anchoring on a fishing place (Arén et al., 2000). The stakeholders (e.g. the local population, the second home owners and the temporary visitors) in coastal areas built a complex pattern in their relationship to each other. Not only can there be conflicts between these groups but with these groups united against other visitors, and finally within the different stakeholder groups due to different attitudes (see e.g. Wallsten, 1988; Kaltenborn & Emmelin 1993; Segrell, 1995 and Müller, 1999). Also the different activities of the stakeholders can cause conflicts, for example between the ones who have motorboats and the ones who do not.

Accessibility is a crucial question in the archipelagos. Since the landscape consists of islands, it is necessary to either have access to a private boat or public transportation. Islands offer something special in comparison to massive land because one has to travel by boat or airplane to reach the destination. To be detached from the mainland also gives an important physical and psychological aspect to the visit (Baum, 1995). But the transport mean of boats have negative effects. Pleasure boats, transport to and from islands and shipping result in not only discharges and land erosion but also noise (Miljö- och planeringsavd., Stockholms län, 2001). Since noise is defined as an unwanted sound it makes the concept subjective (SOU 2000:67), but the problem with noise should be viewed comprehensively; who is disturbed and where, by what noise and in what situations? Also, in coastal areas it should be considered how much individuals are disturbed by noise when discussing how burdened an area is by it. In an area where individuals do not assume noise, low sound-levels may be very annoying in comparison to an area where one expect noise (Banverket, 2002). In coastal areas, individuals may be disturbed by noise from e.g. motorboats, jet skies, air planes and cars. In 2003 the Swedish Association of Local Authorities had a questionnaire to the municipalities concerning noise. In that survey, 45% of the municipalities declared that a source of noise was shipping and pleasure boats. Yet, this type of noise had not been mapped at all among the municipalities (Boverket, 2003).

The coasts and the archipelagos of Sweden give a great opportunity to have an active boat life. The boat is a means of transportation, an important implement in the fishing industry and a popular recreation activity (SOU 2000:67). Nevertheless pleasure boats may cause conflicts and there are reasons to separate organised boat tourism (such as clubs and organisations) and “wild” tourism where the latter more often bring about conflicts regarding use and effect upon nature. Not the entire boat tourists view the rules of the right of public access correctly. Also, the right of public access is used to give reason for unjustified actions e.g. to put up tents near homes, fires and leaving garbage (http://www.ises.abo.fi/kurser/nat/Miljo/enveco/essays/meg/2000/2000_17.pdf, 2003). In conclusion, motorboats are natural in the archipelagos both for pleasure and business where
the fishing industry is dependent on motorboats. In Sweden, motorboats are used in archipelagos to get access to various islands both for the permanent population and the visitors but the motorboats are common in recreation as well. There are over a million boats and a majority of those are equipped with a motor (SOU 1996:170). This activity creates noise that may be perceived as disturbing for other users in the same area.

Silence is vital in the Swedish planning of tourism development and conservation. The environment of sound is an important part of the experience of nature and culture, and outdoor life. To be undisturbed, and feel peace and quiet are wanted when being in nature. One wants to get away from noise (SOU 1993:51).

According to the Swedish Environmental Advisory Administrative, motor driven recreational activities should be limited within certain areas especially in areas which are of environmental and recreational value. People’s wish for peace and quiet together with nature conservation and environmental use should be the criteria for the selection of the areas with restrictions against motorboats (SOU 2000:67). A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos is one of the Swedish national environmental objectives. In one of its interim targets it is stated that “By 2010 noise and other disturbance from boat traffic will be negligible in particularly sensitive and designated archipelago and coastal areas.” (Miljökonsult, 2004 p. 59). SEPA has submitted proposals to the government concerning guide values for noise in recreational and other areas. It has also proposed indicators for use in assessing sound quality in areas with no or very limited noise. These indicators define good environmental quality and should also be of use in determining negligible noise levels (Miljökonsult, 2004).

**SILENCE - AS A GOAL**

**THE NATIONAL LEVEL**

“By 2010 noise and other disturbance from boat traffic will be negligible in particularly sensitive and designated archipelago and coastal areas.”

**THE REGIONAL LEVEL** (sector integration and control of local level)

Environmental objectives
- Spatial restrictions
- Regional economical development (e.g. tourism)
- Conservation (e.g. nature and recreation)

**THE LOCAL LEVEL**

- Planning for conservation and use

**THE VISITOR**

- Attitudes
- Wishes

**Figure 1. The consideration of silence in coastal areas in the Swedish planning organisation.** (By Ankre & Emmelin).

In the Swedish governmental organisation, it is a goal and a vision to achieve silence with a balance between conservation and use. This attitude permeates the different levels of planning of Figure 1. It depicts the different levels of the Swedish planning organisation and the visions
of regulating noise (the environmental objectives) and why noise should be regulated (development and conservation). On a national level, there is the interim target concerning noise from motorboats. The regional level has elaborated regional environmental objectives. The question of silence is visible in the regional level’s spatial restrictions and conservation of nature and areas for recreation. Silence is relevant in the interest of a regional economical development and growth. The local level is regulated by the regional and silence is considered in the planning for conservation and use.

Finally, it is relevant to examine the attitudes and wishes among the visitors – what are their opinion of silence or disturbance, and where? Boat traffic with pleasure boats is mainly not regulated. The National Board of Housing, Building and Planning (2003) declares that there is no estimation of who many people who are exposed to noise from boat traffic, neither if they are residents or in relation to recreation. To attain the interim targets it is important that the Swedish municipalities consider these in their planning and keep an active environmental work (Miljömålsrådet, 2004). Effective planning requires knowledge of the visitors and their attitudes.

4. Planning frameworks and zoning

One means of controlling conflicts is the Recreation Opportunity Spectrum (ROS) which is a planning framework where zoning is applied on the landscape. It has been outlined in several publications (Clark & Stankey, 1979; Driver et al., 1987; Emmelin, 1997; Manning 1999; Stankey et al., 1999). The ambition is to find a balance between the use and the conservation; a variety of recreation satisfies the need for experiences and directs people to certain areas that protect nature. There are opportunities for activities in certain areas that realise people’s desired experiences (Driver et al., 1987).

The ROS supports zoning and development of recreation experiences where areas are classified and divided after the environmental conditions and the recreational activities. The background of the ROS was that it encouraged diversity. Since there were other management activities present in the setting where the recreation took place, it was important that the framework made assessment and evaluation of the shared effects between recreation and other activities possible. Finally, it initiated guidance to planning in terms of a consumer-oriented paradigm, where visitors’ preferences were important (Stankey et al., 1999). As maintained by Stankey et al. (1999) the idea of the ROS is:

- to meet the demands of different environments for recreation reaching between wilderness and affected nature,
- to get easier valuations of effects and consequences between recreation and other interests and,
- to put management on a behavioural foundation to make the consumers’ values more valid.

In the ROS, the landscape is divided into factors which are considered to provide possibilities for different experiences, see Figure 2. The environmental conditions are the qualities of the physical landscape, the social conditions how the landscape is used and managerial conditions are which measurements that are done in the area. Noteworthy, the total of the factors creates a spectrum. This spectrum contains different classes where the areas are zoned after primitive, semi-primitive, non-motorized, semi-primitive motorized, rustic, concentrated, and the modern urbanised (Manning, 1999).
Users with different interests and activities should therefore choose areas which correspond to their preferences. He or she has to be well-informed and make a choice to achieve their experience goals. Also, management has to be part of a rational process to create concrete goals for various areas and have the means to fulfil the goals (Emmelin et al., 2005). When applying the ROS, one should be attentive that the environmental, social and managerial factors can be combined in different ways to generate recreation opportunities, as pointed out by Manning (1999). The ROS is an organising or conceptual framework where management judgment is needed in the application. The purpose of the ROS is to divide a region into geographical perceivable areas with various contents. The separation is both spatial and qualitative (Manning, 1999).

However, how to implicate and use the ROS is not an obvious task. To use the framework correctly, Wallsten (1988) deems that there have to be clear and described goals on what should be offered in the area and where, how and for whom. Even if relationships may be more complex than those in the setting classes and that user preferences may not overlay an environment in linear fashion, the concept of the ROS gives a useful foundation for planning and managing natural resources for recreation and tourism (Kaltenborn & Emmelin, 1993; Shafer & Inglis, 2000).

The key limitation of the use of the ROS is the emphasis on the setting at the expense of the type of visitor, as claimed by Hall and Page (2002). The reason is partly that earlier cultures from the landscape planning and architecture professions have suggested visitor management could be largely addressed through site and facility design. This approach stemmed from a view of site factors as the locus of values (Emmelin, 1997). Also the ROS has not been widely adopted by heritage managers in the late 1980s and early 1990s (Hall & Page, 2002). A shortcoming of the ROS is the understanding of how experiences realised by recreationists are made possible by different settings (Kliskey, 1998).

The ROS-method has been implemented in North America and in New Zealand (Kliskey, 1998) but Swedish planning has not been greatly inspired by the ROS or similar management frameworks. Fulufjället is a national park where the Swedish Environmental Protection Agency (SEPA) for the first time applied a strict zoning after the ROS in 2002. The zoning will implement the national park’s magnitude and meaning to get local support (Fredman et al., 2005). There is a difference between the North American and Swedish management of resources. The management of outdoor life in North America is executed on publicly owned land, which not only are protected areas but also productive areas. Thereby the ROS has a function to balance recreation and other production e.g. forestry. So far, in the application of
the ROS in Sweden, the dilemma is rather the opposition between nature conservation and use, and other forms of recreation exploitation. The ‘the public right of access’ gives other prerequisites for regulations of activities and admittance which requires an adjustment of the ROS to Swedish conditions (Emmelin et al., 2005).

Continually, there is an extension of the ROS; the Water Recreation Opportunity Spectrum (WROS). It provides guidance for water resources (e.g. coastal zones, lakes, rivers, marine protected areas etc.) and its goal is to provide planners and managers with a framework for conserving a spectrum of quality and diverse water recreation opportunities. According to Aukerman and Haas (2004), the WROS can be applied to any water resource, although it is less practical on very small areas. The WROS is a tool for understanding the type and location of six types of water related recreation opportunities. The factors from the ROS are put into six WROS classes described as zones with different distance from developed and populated cities ranging across a spectrum of urban suburban, rural developed, rural natural, semi primitive and primitive classes. Each WROS class is defined by a particular “package” of activities, setting attributes, experiences, and benefits. E.g. the activity of low-speed motorboating is represented in all classes except the primitive. Jet boating is in comparison not represented as an accepted activity in the semi primitive and the primitive class (Aukerman & Haas, 2004). The WROS has been applied in e.g. the San Luis Reservoir, a California State Park, US (www.parks.ca, 2005).

Today, planning’s implication in politics is recognized and also the planners’ interactions. A lot of their work is about communication and it has been a development of contemporary theories - the communicative planning - which is a critique of strategic rationality of synoptic and strategic planning. They rely on Habermas’ The theory of communicative action (1984). The communication is related to get knowledge and to use the knowledge within planning that could achieve integration and communication between people (Nyström, 2003). An example of one of the new directions is collaborative planning by Healey (1997) who defines it as how political communities may organise to improve the quality of their places (for further discussion and critique see e.g. Pennington, 2002 & Harris, 2002).

![Paradigms of planning and nature conservation](After Emmelin et al., 2005).

Planning can be viewed as a field of tension, as depicted in Figure 3. Two dichotomies are combined in the matrix; the calculating dimension vs. the deliberative dimension and the central vs. the local. The calculating dimension has a scientific perspective on finding the right answers. The decisions are built on science that makes them legitimate. The deliberative
dimension determines the answers based on agreement with the decisions built on politics. This causes conflicts and the dimensions define separate paradigms for planning and conservation. The paradigm of expertise and nature conservation is placed in the field of *central-calculating*, while the paradigm of local and deliberative decision-making is placed in the field of *local-deliberative* (Emmelin et al., 2005). The arrow between the dichotomies shows the interaction of expertise and deliberative planning.

According to Emmelin and Lerman (2004), the two paradigms for planning and conservation can especially be expressed by applying the Environmental Code and the Plan and Building Act. The first can be placed within the field of central/calculating since it puts great value in scientific knowledge and norms in the decision-making. The Plan and Building Act can be placed within the field of local/deliberative; the decision-making is made by political authorities. It enhances both initiative and immunity of local authorities and to increase public participation in planning.

Also the ROS as a planning framework within rational and synoptic planning can be applied in the matrix. In the ROS, the visitor makes a rational choice to obtain certain experiences and the management is constructed rationally with concrete and measurable goals for the different zones. Earlier there have been no participation from a local level and the ROS has been directed by experts and professionals (Emmelin et al., 2005). Figure 3 illustrates the problems and demands of new planning forms that nature conservation faces where the ROS exemplifies the contradictions and tensions in planning paradigms. The ROS and the paradigm of nature conservation have earlier been placed in the field of *central-calculating*. However, the development towards communicative and collaborative planning with local decision-making has also affected this planning framework. Stankey et al. (1999) argue that if the ROS is executed primarily as expert-based it will be difficult to implement it where there are conflicts over goals and disagreements of cause-effect relationships. The ROS has in this manner developed to become a more modern planning framework (Emmelin et al., 2005):

- to admit the legitimacy of different groups’ values and interest in an area,
- to admit that other knowledge than the scientific is necessary,
- to give scientific knowledge as information to stakeholders rather than only being the base for decision-making,
- to have active involvement and learning among the stakeholders.

The development of the ROS has been caused by practical and concrete experiences of the problems that might occur in the planning and management together with the influence of collaborative planning (Emmelin et al., 2005). The contemporary planning theory is more empirical than the rational theory, according to Baum (1996).

5. The Luleå archipelago, northern Sweden
The Luleå archipelago is located 100 km south of the polar circle. It consists of approximately 750 islands (Figure 4) with about ninety people as a permanent population. The area is located in the Gulf of Bothnia as part of the Norrbotten archipelago that lies next to the border between the administrative provinces of Västerbotten and Norrbotten to be extended to the Finnish frontier (Hederyd et al., 1999). Furthermore, the area is within the Norrbotten county and the Luleå municipality, the latter with around 70,000 inhabitants. Luleå city, with 45,000 inhabitants, is the seat of the county government and a natural communication centre because of its geographical position. The harbour is one of the largest in Sweden calculated in tonnage. Ore and steel are important primary products in the region (Luleå kommuns turistblad, 2003).
Moreover, the Baltic Sea is one of the world’s largest areas with brackish water. The low content of salt is caused by fresh water from rivers and a cold climate. The brackish water and the land rise have together created certain prerequisites for a special nature development with shallow land and beach meadows. The Luleå archipelago has been declared as an especially valuable landscape with extraordinary nature and culture, with several nature reserves and bird sanctuaries (Hederyd et al., 1999). Because of the land rise, the formation of this coastal landscape is slowly but persistently changing. When Sweden was covered by the inland ice the earth crust was pushed down by heavy ice. When the ice melted 9 000 years ago, large parts of Sweden were covered by water before land began to rise. Today the land rises by just under a centimetre a year in the Gulf of Bothnia which conclusively means that the land area gradually becomes larger and the shoreline higher. The consequences are thereby that the water volume in the Baltic Sea is decreasing; boat-houses and bridges end up on dry land and the groundwater level is reduced (SNA, 1992).

The Luleå archipelago is of national interest and the environment should be used so that ecological, social and socio-economic requirements are satisfied and that good management is promoted. During both summer and winter time, the archipelago is a place for recreation and outdoor life for the inhabitants of Luleå city and other visitors. Pleasure boats are one of the main activities and more than 8.000 small boats make the Luleå municipality one of the Swedish municipalities with the most boats (www.lulea.se, 2004). Tourism is viewed by its municipality as the next productive industry in the Luleå archipelago. The landscape has special qualities for outdoor life, and many people have second homes in the area. The active outdoor life like sailing, fishing, driving snowmobile, skiing and skating, is also intense in the archipelago. Several islands have accommodations and facilities (e.g. bridges, barbeque places, guest harbours and saunas) that are built and managed by the municipality (Hederyd et al, 1999).

There are two zoning systems in the Luleå archipelago. One zoning is official, where the archipelago is divided into an inner and an outer part by the Norrbotten county administrative board (Figure 4). The official zoning regulates the shore protection. The Luleå municipality is only allowed to give exemption from the shore protection in the inner archipelago (100 meters from the water) while the county administration board is responsible of the exemptions in the outer archipelago. The Luleå municipality has stated that the archipelago should be recognised through the perspective of sustainability. In the outer archipelago there are demands from individuals to establish second homes but in the comprehensive plan it is stated that the outdoor recreation is of priority in this area (Stadsarkitektkontoret Luleå, 1990).

The municipal department Archipelago/Outdoor life works after an in-official zoning of the archipelago, of three zones see Figure 4. The inner archipelago is defined as zone 1, the middle as zone 2 and the outer archipelago as zone 3. The in-official zoning is established after the area’s carrying capacity concerning how many visitors the area can manage. In consideration to the nature interests and the environmental differences of vulnerability, there is an informal policy regarding how many people it should be in various parts of the archipelago. The islands closest to the mainland should be able to obtain more visitors in comparison to the outer islands which are the most vulnerable areas. Hence, the largest

---

amount of visitors should be directed to the inner parts of the archipelago while there are more restrictions against visitors in the outer zone (Kommunstyrelse Luleå kommun, 2002).


In Figure 4, the ten most visited places in the survey are depicted. The most visited place (Kluntarna) is located in zone 3 as the third and the fourth most visited places. In zone 2, one finds the second (Hindersön) and the sixth most visited places. The other five places are in zone 1. Ultimately, there are eighteen nature reserves in the Luleå archipelago distributed among the zones after the in-official zoning. The nature reserves with most hectares are in zone 3 where three of the nature reserves consist of open water. The amount of nature reserves are equal between zone 2 and 3 while it is only four nature reserves in zone 1 and also fairly little hectares. There are eight bird sanctuaries in the Luleå archipelago. The bird
sanctuaries normally have no admittance May 1 to July 31, but there could also be extended limitations against visits to August.

Within the Luleå municipality, a municipal administrative and a municipal executive board have the comprehensive authority. Subordinated are various committees which are organised in administrations and offices. These are also organised into assorted departments. In this article, there will only be an account for the committees which are involved in the planning and development of the Luleå archipelago, Figure 5. These committees, offices and departments have various goals and assignments that affect the planning and development of the archipelago.

**Figure 5. The Luleå municipality’s system of governing.** (By Ankre & Emmelin).

The local building committee is responsible of the municipality’s general progress. It supervises the observance of the Planning and Building Act and settles building and destruction permits and the exemptions from the shore protection in the inner archipelago. The local building committee is to appoint out certain detail plans and to prepare other plans. The town planning department is organised mutually under the municipal executive board (concerning the planning of the land and exploitation) and the local building committee
The environment office has the accountability to lead and co-operate the municipality’s work with nature conservation and to investigate and approve of separate sewage. It also measures noise levels (www.lulea.se/lulea/LuleaKommun, 2005).

The committee for recreational activities develops leisure and tourism activities together with establishments for the future needs for the people who live and work in the municipality. This includes the area’s visitors. The needs for establishments for recreation of the public, the associations and the societies should be fulfilled. Recreation areas and establishments should be suitable for the disabled and be accessible for the ones who want to exercise tourism and leisure activities. The Luleå municipality Leisure is within the committee for recreational activities and consists of three departments with an administrative service which is accountable for the budget. In 1995, the municipal council of Luleå established a separate programme called Luleå municipality Archipelago within the committee for recreational activities’ field of interest in Luleå. In 2004, the programme was subordinated under the Luleå municipality Leisure with a special division called Archipelago/Outdoor life that manages the municipality’s physical facilities for active outdoor life on the main land. In the archipelago it should encourage recreation, tourism and the activities connected by establishing, managing and developing recreation establishments and excursion places. The Youth Leisure/Tourism department is responsible for questions concerning the youths, information, activities, arrangements and customer investigations. It manages the tourist information. The Exercise/Sports department should offer establishments for the exercise, the contest and the recreation to the public and different associations (www.lulea.se/lulea/LuleaKommun, 2005).

All physical facilities and activities concerning the archipelago are gathered within the department Archipelago/Outdoor life. Its work has to be carried out in co-operation with other administrations, various associations of interest, organisations and companies, and together with the population of the archipelago. The department’s goal is to take care of the interests of the archipelago’s permanent population and to create better possibilities for the industry and the market activities. It should also take action for the conservation of nature and culture, and encourage the visiting industry and tourism to develop. The Archipelago/Outdoor life is responsible for transports, garbage collections, markings and maintaining establishments and excursions. To some extent the department is also answerable for the marking of fairways for pleasure boats and the fishing industry (Hederyd et al, 1999).

Finally the Luleå municipality has a municipal nature conservation plan as a device to accomplish the intentions of the Agenda 21. The plan describes and systematises areas that should be protected and the plan has to be implemented in the Luleå municipality’s board and committees’ planning. The nature conservation plan is cooperation between the environment office, the technical department, the Luleå municipality Leisure and the town building department. It expresses the background and the motives for the municipal conservation of nature. However, the outdoor life is not included in this document even though: “In certain sensitive areas, disturbance from the outdoor life and the motorboat traffic may occur. … On some well-visited islands with sensitive vegetation there is a risk of a far too much wear on the ground if the visitor frequency gets too high.” (Authors’ translation, Luleå kommun, 2000 p. 34). It is stated in the document that tourism and

---

6 Aims to reach the sustainable development of a territory, to be able to meet today’s necessities while conserving the possibility for future generations of satisfying their needs. The responsibility for a sustainable development is not only on a national or a regional level, but on a local. Every Swedish municipality should have a local Agenda 21 for the environmental work in the municipality (http://www.mls.miljo.gu.se/agenda21/, 2005).
recreation in the archipelago should be accomplished so that the area’s values and biological variety should not be threatened.

6. Data collection
In 2003, a questionnaire survey to visitors was conducted in the Luleå archipelago. The questionnaire was mailed to 891 individuals and two reminders were sent out with a new copy of the questionnaire in the last one. The total number of completed surveys was 522 with a final response rate of 62 percent. There is no special non-response analysis included in the study. The questionnaire survey consists of attitude questions in relation to development in the Luleå archipelago, the visitors’ geographical location, activities and experiences. The respondents also give their opinion of Swedish coastal areas in general. The addresses were collected from places in both the archipelago and on certain coastal areas within the municipal boundaries of Luleå since the municipality includes Brändön, Hertsölandet and Rörbäck-Sandöskatan in its mapping of establishments in the Luleå archipelago. However, the town planning department in Luleå does not regard these coastal areas as part of the archipelago in its region description (Stadsbyggnadskontoret Luleå, 2004).

The respondents include leaseholders of second homes, people staying at the municipality’s lodges for rent at Kluntarna and Småskär, and those who had bought season cards for the guest harbours. The addresses were sent by the Luleå municipality and Luleå tourist agency. Two camping locations at Brändö and Rörbäck also provided the study with addresses. Another approach to get addresses was to hand out registration cards at a tour boat’s trips and various establishments. The visitor was asked to fill in his or her name, address, age and gender and when he or she had arrived to the area and when to departure. Finally, the visitor should answer what the main purpose had been with the visit in the Luleå archipelago. However, a misconception was the number of people who would fill in the registration cards. The returned registration cards proved to be fewer than expected and the staff at the establishments explained that they had had little or no time to fulfil the agreement.

In the survey, there is a dominance of men by 64 percent. The number of males dominates within the address groups of second homes and guest harbours where the season cards for boat places had been purchased. This could be related to who is in charge of the boat, where males more often tend to think of themselves as the “captain” of the boat and therefore take the administrative responsibility (Meyer, 1999). Significantly more males owned second homes than females in the survey. Perhaps it is more common that males are registered as the owners of second homes than females, even though second homes are owned by couples. Also, it was more male respondents among the ones who had been to the camping places. A hypothesis is that it might be the male of the household who sign in when registering and is the one who is in charge of the economic responsibilities during the vacation. All this could explain why there are more men then women in the survey, yet there might be an uneven distribution of male and female visitors in the area. In comparison, women dominated in the groups where the respondents travelled with the tour boat, as among the ones who visited Klubbviken, Kluntarna and Småskär.

In this study, the differences of attitudes toward noise among all the respondents but also between the groups of respondents within four groups will be recognised. The in-official zoning of the Luleå archipelago is a starting-point. The respondents noted to which places they had been to in the archipelago and the places were divided after the in-official zoning. The number of places is five in zone 1, nineteen in the zone 2 and fifteen in zone 3 (see Table 1).
Table 1. *The respondents’ dispersion in the Luleå archipelago.*

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of categorised respondents</th>
<th>Zone</th>
<th>Number of places</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>61 (of which 52 had been to places exclusively in zone 1)</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>133 (of which 15 had been to places exclusively in zone 2)</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>188 (of which 48 had been to places exclusively in zone 3)</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>92</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>474</td>
<td>-</td>
<td>39</td>
</tr>
</tbody>
</table>

The respondent was categorised into different groups depending on if he or she had visited one zone exclusively, or if the respondent had visited a majority of places in one zone. E.g. if a respondent has been to places located only in zone 1 or has been to places in zone 1 with more than 50 percent, he or she is categorised into group 1. If a respondent had visited an equal number of places among the zones, he or she is categorised into group 4 that gives a comprehensive illustration of the respondent’s views. It is thereby not a zone depicted in Figure 4.

In Table 1, the number of respondents in the various groups is represented in relation to the question of experiencing noise from motorboats, see below. In zone 1 and 3, there are almost an equal number of respondents as regards the ones who had been to the places within only one zone (48 respectively 52 respondents). However, when the majority of visited places affects the categorising, zone 2 and 3 have the majority of respondents (133 respectively 188).

7. Different conflicts of land and water use in the Luleå archipelago

Certain conflicts of interests have been acknowledged by the Luleå municipality that also can be distinguished in the survey results. It is therefore possible to compare the different views regarding land and water use in the Luleå archipelago from the stand points of the Luleå municipality and its comprehensive plan, the committee for recreational activities and its department Archipelago/Outdoor life with the attitudes of the respondents in the survey.

In 2002, the Environment office made a follow up of the consideration of the nature conservation plan in the Luleå municipality’s work. One of the administrations that mainly were affected by the nature conservation plan was the Luleå municipality Leisure. The investigation showed that the department Archipelago/Outdoor life had not specified any visions or activity goals in relation to the nature conservation plan. Neither was there any defined activities planned in direct connection with the nature conservation plan. However, in the evaluation it is stated that: “… the staff constantly has the plan present in the daily work and considers the interests of the plan when there are issues that concern nature.” (Author’s translation. Kommunstyrelsen Luleå kommun, 2002 p. 126 §60). In the nature conservation plan of Luleå it is maintained that dredging could disturb a main part of the biological production of the area. Dredging of fairways, marinas and increased building of second homes combined could lead to great consequences in the future. Another problem is that the dredging deposits are being dumped on valuable beaches and wetlands (Luleå kommun, 2000). In the survey, 92 percent of the respondents was positive to dredging of navigable fairways and harbours in the Luleå archipelago. Because of the land rise in the archipelago, some of the harbours and the navigable fairways have been dredged since it leads to a greater access for the shipping, the ferryboats and the sailing boats. Some of the dredging has been organised by the Luleå municipality leisure and the Archipelago/Outdoor life.

The present comprehensive plan of the Luleå municipality is restrictive against new establishments of second homes within the densely populated area of Luleå city (15 km round the city). It is to avoid future conflicts with the city’s expansion and recreation, but also to
prevent municipal investments in new roads, water and sewage since there are concerns that there will be permanent living in the second homes. However, new second homes have been built in the area and the permanent living in second homes has increased (Stadsarkitektkontoret Luleå, 1990; Kommunfullmäktige Luleå, 2002). At the same time, to create and maintain a living countryside, a special plan of improvement for the Luleå municipality’s rural areas has been adapted. Apart from the regulations of the Planning and Building Act, new localisations in rural areas are not prevented except when there is a conflict with ongoing land use, with common interest or with nature conservation (Kommunfullmäktige Luleå kommun, 2002). In the survey, 17 percent of the respondents answered that they would like to have their home in the Luleå archipelago permanently. Just above eight percent would like to live permanently in their summer house. In addition, three percent would be interested in buying a second home for permanent living.

Another use of land in coastal areas is the establishments of wind power stations. The county administrative board of Norrbotten does not believe that an establishment of wind power stations is possible in the archipelago of Luleå. The nature and culture values are too high and of national interest and the archipelago is also an area where tourism and recreation is important. The outdoor recreation should not be hindered and the protection of the right to use the beaches forbids establishment of constructions that prevent people from entering a domain which they otherwise would have had free access to. Nevertheless, wind power stations can be realised even in these valuable areas if there are any exceptional cases according to the county administration board of Norrbotten (Norrbottens länsstyrelse, 1998). Interestingly, the Luleå municipality does not want to specify restrictions against wind power stations in the archipelago in the comprehensive plan. Instead, the municipality states that there is a lack of central and regional basic data to present a collected municipal addition to the comprehensive plan (Kommunfullmäktige Luleå, 2002). The feelings among the respondents in the archipelago towards a future building of wind power stations in the Luleå archipelago was very negative or negative by 35 percent, while 25 percent was positive and eight percent very positive to such a development.

In 2005, the Norrbotten county administrative board rejected an application of exemption from the shore protection by the Archipelago/Outdoor life. The request concerned two cabins for accommodation which the division had built without permission on the island Brändöskär, situated in the outer zone. The county administrative board did not distinguish any difference between a tourism entrepreneur’s wish to establishment by the shore and an establishment where the municipality is the principal. Also, the Luleå municipality has a deed of transfer for this area with the National Property Board where the municipality has bound oneself to make a nature reserve of this area (Länsstyrelsen Norrbottens län, 2004). The Archipelago/Outdoor life has voluntarily supervised some of the nature reserves in the archipelago without any formal agreement with the county administrative board. The department is often in consultation with the county administration board concerning the questions of nature conservation in the archipelago and would like to have the formal responsibility of management of the nature reserves in the area (Kommunstyrelsen Luleå kommun, 2002). The shore protection is viewed as negative by 37 percent by the respondents in the archipelago. If the respondents had regular access to a second home 56 percent was negative. In comparison, if the respondents did not have regular access 75 percent was positive.

---

7 At the time of writing this is still under discussion.
8. **Attitudes to motorboat noise and noise-free areas**

This section begins with an account for all the respondents’ attitudes to motorboat noise and noise free areas to be followed by comparisons of the respondents. They are divided into the four groups depending on to which places they had visited in the Luleå archipelago in 2003 (see discussion above). The *Statistical Package for the Social Sciences* (SPSS) was used as a statistical programme in the analysis of the data which have been statistically analysed by Chi2-tests.

In the survey, 58 percent has access to a motorboat while 15 percent has access to a sailing boat. In the survey, 39 percent of the respondents have not experienced any noise at all from boat engines. 38 percent of the respondents have almost not at all experienced any noise at all from boat engines. Some noise from boat engines is experienced by 21 percent.

![Graph showing attitudes to motorboat noise and noise-free areas](image)

**Figure 6.** What is your opinion of noise-free areas with restrictions against motorboat traffic in the Luleå archipelago?

As depicted in Figure 6, the ones who did not have access to a motorboat (N=209) has a more positive attitude towards noise-free areas in the Luleå archipelago in comparison to the respondents who did have access to a motorboat (N=287). E.g. 48 percent is very negative or negative if one had access to a motorboat while eleven percent has this opinion if one did *not* have access to a motorboat. There is a significant difference if one had access to a motorboat or not as a result of the Chi2-test.
In the survey, the respondents were asked of their opinions of zoning of motor traffic and noise in Swedish coastal areas in general (N=505) and in the Luleå archipelago (N=500). These views were then compared, as Figure 7 illustrates. There is a significant difference as a result of the Chi²-test concerning the respondents’ attitudes to Swedish coastal areas in general or the Luleå archipelago. The respondents are more positive to larger areas with restrictions in Swedish coastal areas in general then to zoning in the Luleå archipelago.

**Figure 8.** *Did you experience any noise from motorboats during your visit in the Luleå archipelago 2003?*

Comparisons were made between the four groups to put the respondents’ attitudes in a geographical perspective and see if there are any differences depending on where one has been in the area. Regarding the question if one had experienced any noise from motorboats, 55 percent in group one has not at all experienced noise from motorboats (see Figure 8) in comparison to 35 percent in group 2, and 32 percent in group 3 and ultimately 30 percent in group 4. The respondents who had hardly experienced noise from motorboats were represented by 29 percent in group 1, by 38 percent in group 2, by 43 percent in group 3 and by 39 percent in group 4.
Moreover, the ones who have experienced quite a lot or a lot of noise from motorboats were represented by three percent (in group 3) and four percent (in group 4) in comparison to two percent in group 1 and 1 percent in group 2. However, there is no significant difference as a result of the Chi2-test between the groups.

Additionally, the attitude to larger areas with restrictions against motor strength and/or speed in Swedish coastal areas in general, is very negative or negative by 22 percent in group 2 and by eighteen percent in group 3. The very negative or negative attitude has a somewhat lower percentage in group one (14 percent) and group four (12 percent).

The very positive or positive attitude to the same statement is represented in the various groups as follows: in group 1 (59 percent), in group 2 (32 percent), in group 3 (46 percent), and in group 4 (52 percent). Attitudes towards noise-free areas with restrictions against motor traffic in the Luleå archipelago shows that 40 percent in group 2 is very negative and negative and 38 percent in group 3. The respondents in group 1 are very positive by twelve per cent in comparison to group 2 (two percent) and group 3 (five percent).

9. Final discussion

In 2002, the Swedish Christian Democrats presented a bill to the Swedish parliament for silent zones also viewed as valuable resources in outdoor life, culture and tourism. It was stated that there was a legal foundation for silent zones affirmed in the Environmental Code. In the bill it was declared that it should be expected to make an inventory of undisturbed areas and to mark these in the municipal comprehensive plans. However, the bill was rejected by various committees (Bill 2002/03: Bo265). Even though there are certain regional environmental objectives with an interim target regarding noise, no goals or measurements is to be found how to make noise and other disturbance from boat traffic negligible by 2010 in the Gulf of Bothnia. In comparison to the national environmental objective with noise-free zones, the Swedish Environmental Advisory Administrative suggests no general measures regarding noise from motorboats. Instead, measures should be realised on a regional and a municipal level (SOU 2000:67).

The Norrbotten county administrative board has the exact same interim target regarding noise as the national environmental objective (see above) in its regional environmental objective A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos. The ambition of the Norrbotten county is to fulfil the demands proclaimed in the national environmental objective (Länsstyrelsen i Norrbottens län, 2004). Yet the Norrbotten county administrative board regards it as difficult to estimate whether the regional environmental objective A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos as a whole will be achieved or not before the next generation (www.bd.lst.se, 2005). Instead noise and disturbance from snow mobiles in the Luleå archipelago has been viewed as a problem and has been directed to the Luleå municipality to solve. An establishment of noise-free areas with no snow mobile traffic is viewed by the Luleå municipality Leisure and the Environment office to be within the intentions of the interim target regarding noise. It would be a contribution to the fulfilment of the regional environmental objective. The committee for recreational activities has decided to investigate suitable areas where no snow mobiles would be allowed and also how these areas would be protected. A problem is to identify suitable areas, how to formulate the regulations and how to supervise the noise-free areas (Fritidsnämnden, 2004). Thus noise from boat traffic is not mentioned in this context.

The Luleå municipality’s interpretation of conservation and development has its contradictions concerning the municipality; between the committee for recreational activities
and the department Archipelago/Outdoor life. The municipal administrative and the municipal executive board have different interpretations then the Archipelago/Outdoor life. The latter has established the in-official zoning where the islands closest to the mainland should be able to obtain more visitors in comparison to the outer islands which are the most vulnerable areas. Nevertheless in the survey in 2003 the most visited place (Kluntarna) is located in zone 3 together with the third and the fourth most visited places. In zone 2, one finds the second and the sixth most visited places. The Archipelago/Outdoor life wants to expand the tourism in the outer zone, but the question is how the in-official zoning should be implemented and by what means? Why are the visitors not directed to the inner archipelago as stated in the work of the Archipelago/Outdoor life? The zoning is not enlightened for the visitors instead it is a working tool for the department in its tourism development. It would be interesting to investigate if the protected areas in the Luleå archipelago are prepared for the unchecked and sometimes intensive visits given that the largest areas of nature reserves are located in the outer part of the archipelago.

Hall (2000) claims it is necessary to identify different conflicts of interest in coastal areas to be able to understand if planning towards a sustainable tourism development is successful or not. It requires management of and understanding of the different kinds of conflicts that exist or can arise within a tourist destination. By restricting certain recreation activities from some areas that are valuable or sensitive and the uses that are in contradiction, zoning may solve or at least reduce the problem of conflicts. By the management of conflicts, the visitors may reach a higher satisfaction (Manning, 1999). Noise can be viewed as the core of the ROS and the WROS. If one expects a wilderness experience, noise from motorboats are not parts of the presumed experience that may cause conflicts. In the dimensions from the untouched to the developed, noise is a concrete experience of the visitors which is associated with the unnatural, a high density and the developed.

In the Swedish comprehensive plans, tourism needs to be viewed comprehensively and should be discussed collectively. There is a un-clarity of the decision-making (see Figure 3) which is expressed by the two paradigms of two dimensions of the Environmental Code and the Plan and Building Act. Since many of the regulations of conservation, tourism and outdoor-recreation are built upon these legislations, problems and uncertainty come about in the planning and the decision-making (Emmelin & Lerman, 2004). A planning process with a bottom-up perspective and communication must involve the fact that previously not known themes and interest groups could be revealed. There has to be openness for what values (attitudes, activities, groups) that has to be considered regarding the need of knowledge (Vuorio, 2003). Also, new knowledge together with development of society and changed values make regularly modifications of the comprehensive plan necessary. The confidence in the comprehensive plan relies on the national and local authorities’ acceptance of the comprehensive plan’s guiding principles and that the authorities use the plan as a foundation for their decisions (Boverket, 1996). The comprehensive plan gives citizens, interest groups and others the opportunity to have a direct dialogue with experts and decisions-makers. The dialogue may create further understanding and knowledge for the environment. Nevertheless, to get a good connection between different levels of society for planning, the central and institutional rules have to be combined with influence with the bottom-up perspective (Boverket & Naturvårdsverket, 2000).

The Swedish coastal areas’ environments are highly discontinuous because of e.g. the geography and the varied accessibility. Noise-free areas in the archipelagos could be hindered by the wish for accessibility. In the survey, the respondents who had been to places in zone 2 (group 2) had the most negative attitude to both to larger areas with restrictions against motor
strength and/or speed in Swedish coastal areas in general and noise-free areas with restrictions
against motor traffic in the Luleå archipelago. The access to a motorboat or not in the Luleå
archipelago affects the opinion of noise-free areas in the archipelago. Among all respondents, it
is a position of “not in my backyard” regarding the attitude to noise-free areas in the Luleå
archipelago where the respondents have spent their vacation. In comparison, the respondents
are more positive to restrictive areas against motorboat traffic in Swedish coastal areas in
general. The impacts of use limits on the visitor experience are not widely understood. If one
does not have knowledge of the visitors at a regional scale, one can not understand how use
limits affect people visiting the area and why some use limits are rejected (Freimund and Cole,
2001).

One should also note that the percentage of negative experience of noise from motorboats is
not high. This should be put in relation to Figure 1 where various levels of strategy and
planning have silence as a goal and vision but where the visitors might have another vision
referring silence. Do they want silence and how much of silence do they want?

One could question if the WROS is functional since the archipelago is discontinuous. The
pattern of zones within a multiple-used area should avoid sudden transitions from highly
protected areas to areas of relatively little protection. Day (2002) maintains that gradation in
zone types should be applied wherever possible. Breeding sites should be included in zones
with no public access or within an appropriate seasonal closure. Split zoning (i.e. partial
zoning, like around a single feature as an island resulting in part of the area as one type of
zoning while the remainder is another) may cause problems for public understanding,
observance and enforcement (Day, 2002).

Zoning in Swedish archipelagos, has so far followed a zoning logic from physical geography;
the assumption being that the gradient from the inner, wooded zones to the outer treeless
zones also represent urban or human influenced cultural landscape the inner zones to a more
pristine, “marine wilderness” in the outer zones. In the Swedish coastal areas, nature reserves
have been applied to separate the use. However, there should be a more ranked clarification
since there is a risk that the archipelagos will be divided into just two separate zones; very
developed or protected areas with severe restrictions (Emmelin, 1997). Future zoning may
involve areas restricted from motorised boat traffic to eliminate noise (SOU 2000:67). Zoning
might be useful but there should be other principles than the spectrum from “urban” to
“primitive”. E.g. sometimes motorboats have to be allowed in so called primitive areas
because of accessibility to remain a permanent population or the traditional industry of
fishing. The unofficial zoning that is used by the municipality in tourism development and
planning of the Luleå archipelago could therefore be identified as too rough and large-scaled.
It is also evident in the number of visitors in places in the outer zone. The planning
frameworks in the archipelago should be more insightful of the variation of such a landscape
as an archipelago.
References


Management Vol. 17, No. 1 pp. 41-50.

Unpublished literature
Bill 2002/03: Bo265. Daniel Kihlström et al.

Internet
http://www.lulea.se/lulea/AlltomLulea/Svenska/Sport_fritid/skargard/personal/default.htm 4/3-2004
http://europa.eu.int/comm/environment/iczm/home.htm 27/5-2005
http://www.lulea.se/lulea/LuleaKommun/Organisation/start 31/3-2005