

Handy nature: Mobile telecommunication as a tool for biodiversity preservation

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In the 1970s and 80s nature preservation issues became a global social phenomenon, and environmental protests and organizations expanded dramatically. But in the 1990s and at the beginning of the new millennium environmentalism and nature preservation seem to have lost momentum. This fact is not immediately apparent, since public discourse is still focused on global climatic change, the storing of nuclear waste, the hole in the ozone layer and loss of biodiversity, and protection of nature has become an important part of the political agenda (Grove-White, 1993). In principle there are many people willing to participate, however there has been no visible progress in the last decade.

This 'environmental lethargy' could be explained by the alienation of people from the natural environment. People no longer identify with nature; they think of it as something distant, not directly connected to them (Ingold, 1993). The main reason for alienation is human 'settlement' in the virtual environments made by people (and for people). These environments are mainly created by information and communication technology (ICT), i.e. television, the Internet, telecommunications etc. These new environments actually change the construction of identity, organization of life, and political performance (Rheingold, 2003), and change attitudes toward the biophysical environment (Little, 1999). Virtual environments also create 'scattered' or 'domesticated crowds' (Nastran Ule, 1994, pp. 277), suggested by the mass media and communicated via ICT. The feeling that 'anything goes' is typical for individuals in this new social environment, and has the simultaneous opposition that 'nothing is possible'. Therefore the real challenge is the activation of these 'scattered crowds' in order to transform potential energy into kinetic, to step out of simulation (Baudrillard, 2003) and re-connect to the natural environment. The step 'back to nature' could be made by means of ICT, which usually represents an obstacle between the virtual and real worlds; but ICT in this case becomes a tool for addressing and exploring nature.

How can this be achieved? Biodiversity researchers and mobile telecommunications operators should establish an ICT application for locating animals using GPS or GSM tracking devices (cf. Stevenson et al. 2003), and plants and different types of habitats using other monitoring tools. Data on animal movements, vegetation growth and other similar changes in habitats is presented as readable map on a mobile telephone screen. Application users can then focus on one or more species or habitats, learn more about them from concise descriptions, pictures, short videos and sounds received via a mobile multimedia encyclopaedia, follow updated information and locations of GPS or GSM animal tracking, use their images as background and their sounds as ring-tones, and also have a possibility to re-name a chosen (or tracked) creature. Self-chosen and self-denominated themes (animals, plants etc.) namely have a deeper meaning for users than nameless creatures seen in textbooks, classical encyclopaedias or on television screens, and identification with living creatures and anthropomorphism – attribution of human characteristics and qualities to animals, plants etc. (Einarsson, 1993) – in the longer term brings

about a deeper relation of mobile telephone users to non-human beings and eventually encourages them to survey real and not only virtual nature.

For the successful implementation of 'mobile monitoring', data does not flow only in one direction, i.e. from the centre to users, but as well in the other direction, from the users to the centre. Mobile telephone users are therefore able to participate and send observation data from the field to the central office. But they can also exchange information about what they observe in their surroundings. This kind of mediation and collection of data enables a faster and more widespread type of volunteer biodiversity monitoring and provides a foundation of self-organized social networks for nature preservation. The data sampled by network members can be eventually combined with research efforts of more formalized and established (or professional) governmental and non-governmental organizations, and the application users' feedback can become a mean for biodiversity preservation policy-making.

Such an application could not, of course, be without flaws. Combining ICT with biodiversity monitoring raises many unsolved ethical problems. For example, is it possible to design an effective and harmless tool for GPS or GSM tracking? Should information on tracking and biodiversity monitoring be kept only by professionals or should it be completely free and available to the public? Can too much public interest in nature do more harm to the environment than no interest?

In short, biodiversity monitoring and surveillance by mobile telephony, taking the ethical shortcomings into consideration, could be an important supplement to contemporary scientific methods, and the use of such an information system could turn mobile communications into an important medium for environmental education, consciousness-raising and also participatory policy-making. Furthermore, the realization of such an interdisciplinary project, which combines anthropological, biological, technological and environmental approaches, might provide some basic environmental knowledge to the public, especially non-interventional methods of biodiversity monitoring and species surveillance. Such an approach – if correctly designed and applied – could also provide one of the possible solutions to mobilize the 'scattered crowds', to raise public awareness and end 'environmental lethargy' in the new millennium, to combine the work of amateurs and professionals, and to reach the 2010 target of halting biodiversity loss in the European Union.

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