Notes from the Icehouse

Opening a technical field. Ecological restoration, local knowledge and citizen science

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I write this short piece as the second wave of the SARS-CoV-2 pandemic begins in Romania. It is too early to be certain about the causes of the pandemic, but several scholars have suggested climate change and accelerated environmental degradation as possible explanations. Human encroachments, they say, have subjected ecosystems to new stresses and produced devastating outcomes. If this is so, ecological restoration and nature conservation could help to reduce our exposure to suddenly-threatening zoonotic viruses by mitigating environmental change.[1] A bright side of what we are experiencing as the pandemic rages is growing global awareness of the need for greater

[1] J.A. Harris, Richard J. Hobbs, E. Higgs and J. Aronson. 'Ecological restoration and global climate change', *Restoration Ecology* **14** (2) (2006): 170–176.

protection and restoration of nature. This essay draws examples from Eastern Europe to argue for new approaches to ecological restoration that pay heed to the words and wisdom of people living in close contact with areas being restored. Through such listening and learning, we would hope to turn ecological restoration from a rather technical activity, understood and practised by a handful of illuminati, into a more popular activity in which citizens take full part.

Ecological restoration is the 'process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed' by human activity. This is the 2004, and most widely accepted, definition given by the Society for Ecological Restoration (SER), the leading international organisation working on the science, practice, and policy of ecological restoration.[2] Work in this field is divided, broadly, between theoretical approaches – in which the natural sciences are heavily involved (especially as restoration ecology) while the social sciences and humanities play a more muted role – and the action-oriented work of reconstructing damaged ecosystems which is, in principle at least, open to both categories of scientists. Understood as efforts to restore entire ecosystems (rather than as ameliorative land management schemes), ecological restoration projects concerned with 'all the parts' are generally said to have begun in the 1930s, perhaps on Curtis Prairie in the arboretum of the University of Wisconsin in the USA.[3] Such projects are much more recent in the former socialist countries, where they emerged only in post-socialist times. In other words, ecological restoration was almost unknown in most of Eastern Europe before the 1990s. When introduced there, it depended upon the import of new ideas and expertise about nature from the west; it also fell short of the SER recommendation that efforts at ecosystem restoration should involve stakeholders or indigenous communities whose knowledge should be used in design-

[2] M.A. Palmer, J.B. Zedler and D.A. Falk, 'Ecological theory and restoration ecology', in M. Palmer, J. Zedler and D. Falk (eds), *Foundations of Restoration Ecology* (Washington, Covelo, London: Island Press, 2016), p. 4.

[3] W.R. Jordan III and G.M. Lubick, *Making Nature Whole: A History of Ecological Restoration* (Washington: Island Press, 2011).

ing and implementing projects.[4] In Southeast Europe there are no indigenous communities but rather 'locals', that is villagers whose families have lived in places for generations, and who have depended, heavily, upon that habitat for their everyday needs.

Consider, as archetypes, a couple of high-profile ecological restoration initiatives along the Danube River in Eastern Europe. On the Bulgarian banks of the Lower Danube two sites were the focus of ecological restoration projects between 2005 and 2010: Persina Nature Park in Belene and Kalimok Brashlen Boblata near the town of Turtrakan. Both projects aimed to restore parts of the former floodplain that had been radically changed by the socialist regime. In the 1960s, an amphibious landscape near Belene was transformed into a huge agricultural field by three closely-linked initiatives: the building of high levees along the Danube; land improvement works; and the development of a thick network of infrastructure (drainage and irrigation systems, electric pumps, thousands of kilometres of pipes, headrace canals etc.). Much changed. A periodic wetland was destroyed; soils were altered and intricate patterns of local relief were eliminated; extensive areas of a rich biodiverse landscape, once widely-accessible as a quasi-commons, were declared off-limits to many and devoted to the mechanized cultivation of single crops and pastures for the animals of collective farms. Several permanent ponds became state fisheries. After decollectivisation (land privatisation) in the 1990s, agriculture and animal husbandry became less important for the national economy, and many Bulgarians migrated (with other East Europeans) to Western European countries. Much agricultural land fell idle. Early in the twenty-first century, the World Wildlife Fund (WWF) and the World Bank led an effort to restore part of the former floodplain within Persina Nature Park, established in 2000 by the Bulgarian state to encompass 2,800 hectares of farmland reclaimed during the socialist era. Some 2,500 of these hectares were on the island of Persina (amounting to approximatively one third of its area), and 300 hectares in the Kikusha swamp. The lead agencies,

[4] See https://cdn.ymaws.com/www.ser.org/resource/resmgr/docs/standards_2nd_ed_summary.pdf

Figure 1. An ecologically restored area in Persina Nature Park. June 2014. Photo by Stelu Serban.

which contributed much of the US $7.5 million cost of the project, worked with a multitude of Bulgarian partners, NGOs such as the Green Balkans and the Bulgarian Society for the Protection of Birds, and state agencies and ministries from Sofia and nearby cities.[5] Restored to conditions similar to those that prevailed in 1960s, the forest, floodplain, marsh, aquatic habitat and crop land of Persina today sustain a great variety of birds, fish and terrestrial animals as well as a lavish flora (see Figure 1).

However, no local people were involved in designing and implementing the restoration work. Local residents are also banned from the restored ecosystems and the Nature Park, although their families

[5] Details of the Management plan of the Park are available at https://www.persina.bg/indexdetails.php?menu_id=11, accessed 27 July 2020.

Figure 2. One of the channels relinking Babina Island to the Danube. May 2016. Photo by Stefan Dorondel.

had lived with and from those waters and forests for generations.

In the Romanian part of the Danube Delta similar ecological restoration projects have aimed to restore the biodiverse landscapes transformed between 1960 and 1989 by the socialist government's efforts to convert areas deemed 'unproductive' to intensive agriculture. Perhaps the first ecological restoration in Central and Eastern post-socialist Europe was the island of Babina, on the Chilia branch of the Danube. The 2,000-hectare island was restored in 1994 by a joint team of experts from Romania and WWF Germany.[6] By breaching the levees built by the socialist regime to transform the island into a rice field, the Danube was again allowed to flood the

[6] For more details see S. Dorondel and S. Serban, 'Ecological restoration in liquid societies. Lessons from Eastern Europe', *Nature and Culture* (forthcoming).

interior of the island and restore an ecosystem destroyed in the mid-1980s (see Figure 2).

Again, local residents were ignored, neither consulted when plans to ecologically restore an area were made, nor involved in the work of restoration thereafter.

International NGOs and Bulgarian and Romanian experts are not dismissing local people through suspicion or animus. Certified 'experts' in the restoration field, they simply ignore the possibility that locals, most of them fishermen for generations, have anything valuable to contribute to their projects. Even if they wanted to involve locals in their endeavours, they would probably find it difficult to regard this as 'serious research', because all of them have expertise in natural sciences or engineering not in social sciences. Some project experts did talk to villagers but as a public relations exercise rather than with the expectation of seriously engaging them in the project. This has been a significant and potentially debilitating oversight. Villagers not only live with, know well and need the various attributes of the local landscapes; many have detailed knowledge of local ecologies and past landscapes. Such knowledge would seem to be of great value to the Bulgarian and Romanian projects alike, because in both countries detailed maps and documents pertaining to places targeted for restoration have been destroyed or are 'missing'.

The reluctance of experts to engage local people in Eastern Europe is more unsettling as it directly contradicts the global advancement of 'citizen science' defined by the Oxford English Dictionary as the involvement of citizens in collecting scientific data in collaboration with or under supervision of professional scientists and official scientific institutions.[7] Moreover, the importance of general public engagement in addressing environmental problems is vital for a sustainable future, free of environmental crises.[8] Engaging local people in ecological restoration projects would transform these products

[7] M.V. Eitzel et al., 'Citizen science terminology matters. Exploring key terms', *Citizen Science: Theory and Practice* **2** (1) (2017): 1–20.

[8] A. Irwin, *Citizen Science: A Study of People, Expertise and Sustainability* (London and New York: Routledge, 1995).

of 'high modernism' and its discontents into more locally accepted and valued actions.[9] Now, many such projects are perceived, despite their restorative focus, as blueprints from on high, inflicted upon local people; their important roles, for humankind collectively, in enhancing biodiversity and mitigating climate change and its associated 'bads' are lost sight of entirely. The alternative, which I imagine with hope, is a near future in which large parts of the public, local or not, would be involved with, and supportive of, ecological restoration initiatives and similar actions.

Asked, in the 1920s, why he wanted to climb Mount Everest, the Englishman George Mallory famously retorted: 'Because it is there!' His answer in many ways exemplifies the hubris of modern humans in their commitment to conquering 'wild nature' 'because it is there'. These words may as well be the epitaph of the Anthropocene. The attitude that they embody did not begin in recent times but reached a peak after the Second World War[10] and it has brought the Earth to the brink of disaster. We should remember that Mallory died on Everest in 1924, on his third attempt to conquer that piece of 'nature' and that his body was not found for 75 years. Engaging local people, through citizen-science, in the socio-natural processes of ecological restoration might help to counteract contemporary environmental havoc and form one important step among the many we need for survival.

[9] J.C. Scott, *Seeing Like a State. How Certain Scheme to Improve Human Condition Have Failed* (New Haven and London: Yale University Press, 1998).

[10] J.R. McNeill and P. Engelke, *The Great Acceleration: An Environmental History of the Anthropocene since 1945* (Cambridge, Mass. and London: Harvard University Press, 2016).