

EUROPEAN LANDSCAPES

past, present and future

Culture 2000 Project Ref. No. CH-A2-UK-2077

FINAL REPORT

1 October 2004 – 31 October 2007



Through satellite imagery, airborne survey, fieldwork, geophysics and excavation, the aim of the project is to promote the exploration, public appreciation and conservation of heritage sites and landscapes across Europe.



Education and Culture

Culture 2000



ENGLISH HERITAGE

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24	GERMANY*	State Authority for Culture and the Preservation of Monuments, Mecklenburg-West Pomerania
28	GERMANY*	Cultural Heritage Service Baden-Württemberg
32	GERMANY	Institute for Landscape Management, University of Freiburg
34	HUNGARY*	Baranya County Museum Authority, Pécs
38	ITALY*	University of Foggia
42	ITALY*	University of Siena
46	ITALY	University of Salento, Lecce acting for the Agency for Euromediterranean Cultural Heritage
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The complete Final Report or individual reports from partners can be downloaded from:

e-landscapes.com or

<http://www.muzarp.poznan.pl/EuLandscapes/EuLandscapes/index.htm>

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PHOTO-MAPS AND AIR PHOTOGRAPHS IN POLAND

Old and new resources for Poland's landscape heritage

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Background and objectives

Poland and much of Europe possesses a largely un-recognised landscape resource in a widespread coverage of German military photo-maps from the 1930s and 1940s, showing the landscape as it was before the radical changes of the post-war years. The full historical potential of these photo-maps has yet to be assessed.

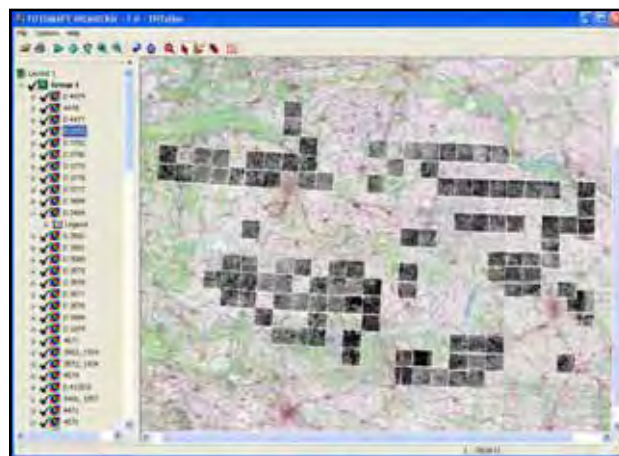
Until recently little money has been allocated in Poland to exploratory air photography, which has been seen as a relatively 'new' technique despite its widespread use elsewhere in Europe. It has to compete for funds with Poland's long-standing programme of ground-based survey, the Polish Archaeological Record or AZP. This now covers the greater part of Poland and holds over 700,000 entries. The existence of the AZP provides an unrivalled opportunity for Polish aerial survey to be even more effective, adding 'shape' to sites known only from surface scatters of archaeological material and revealing archaeological and landscape features where no evidence is visible at ground level.

The Polish contribution to the Culture 2000 project has pursued four main aims:

- To identify the location, number and quality of the German photo-maps across Europe and to test methods of making them more widely available.
- To create a database system linking ground-based and aerial evidence.
- To carry out aerial survey in a number of study areas, along with mapping of the results
- To take part in the Europe-wide network of contacts, meetings and discussions and to publicise the project and its achievements through the Internet.

German photo-maps

Unfortunately, the search for photo-maps (by Włodek Rączkowski) failed to locate any in the National Archive in Poznań. The National Museum in Szczecin was found to hold an as yet un-catalogued collection of aerial photographs taken before and during WWII, but unfortunately no



Left: One of the 1:25000-scale German photo-maps from the 1930s and 1940s, that provide a valuable record of the landscape before the radical changes of the post-war years. Above: Part of the Internet presentation of known photo-maps in Poland.

German photo-maps. A search of the Central Military Archive in Warsaw showed that its air-photographic material is still un-catalogued and therefore very difficult to access, whether for air photographs or for photo-maps. A database of over 1300 photo-maps and mosaics so far located at Poznań, Słupsk and Warsaw in Poland and at Keele in the United Kingdom has been completed and posted on the project's central website. The search for further photo-maps and WWII photographs will continue beyond the end of the Culture 2000 project.

Database development to link aerial and field-walking evidence

A major feature of the project has been the design and implementation (mainly by Andrzej Prinke and Włodek Rączkowski) of a database application (*Aph_Max*) for the storage and analysis of air photo archives in several institutions. This has been used initially for mass data entry of the 3000 air photographs taken during the aerial archaeology school at Leszno in 1998, now held by the Adam Mickiewicz University. The Culture 2000 project has thus allowed the creation of a third and essential module in a heritage management system which has been under development for several years at the Poznań Archaeological Museum. It will enhance the management of air photo collections through the creation of unique files for each photograph. These can then be compared with other datasets such as text descriptions for individual sites. The *Aph_Max* database will shortly be linked to the complementary datasets of the AZP so that each can complement and supplement the others in the recording, protection and management of sites and monuments, whether known from ground-based survey or from aerial evidence.



Two screens from the *Aph_Max* database system

Aerial survey, mapping and interpretation

Important discoveries were made by Dariusz Krasnodębski during 15 hours of survey over the Vistula, Bug and Narew Valleys and the Bielsk Plain in north-eastern Poland, areas previously little explored from the air. The 3500 photographs taken during these flights recorded a significant number of previously unknown sites, including early medieval strongholds and Roman-period burials. Of equal importance, two supposed strongholds were shown by aerial survey and ground observation *not* to be genuine archaeological features. The partial destruction by ploughing of several deserted villages was documented, allowing a degree of protection to be provided in the future. Photographs were also taken of medieval hillforts, multi-phase Roman-to-medieval settlements, a prehistoric graveyard, and a host of traditional towns and villages along with characteristic landscapes.

A total of just under 74 hours of flying by Włodek Rączkowski in Wielkopolska, Kujawy, Lubusz Land, Lower Silesia and western Pomerania produced almost 5000 aerial photographs, recording hundreds of archaeological sites, many of them previously unknown and here revealed as variations in colour or height in the ripening crops. So-called 'pit-alignments', well known in other parts of Europe, were recorded for the first time in Poland in two of the survey areas. There were also spectacular traces of previously unsuspected long barrows and trapezoidal buildings from the Neolithic period, often at locations that had produced no archaeological evidence on the ground. Other settlements were represented by groups of pits.



Typical results of the recent aerial survey flights in Poland: two medieval fortresses (left), a typical village layout (top right) and the cropmarks of sunken houses and pits in a previously unknown settlement.

Aerial records were also made of numerous villages, medieval towns, granges, manor houses, monasteries and churches, as well as more recent industrial and military features, typical landscapes and archaeological excavations in progress.

The most sensational discovery, however, was that of a 'lost' medieval town, Szamotuły, in Wielkopolska region, known to have burned down in the 14th century and now shown to have been rebuilt to virtually the same layout some distance away from its original site. The discovery appeared prominently in many newspapers and TV news items, and raised great interest throughout Poland. Both academic archaeologists and the general public were shown by this remarkable discovery that aerial survey has a huge potential for revealing previously unrecognised parts of the cultural heritage. The discovery has resulted in many invitations for public and academic lectures, for popular and specialist publications and for discussions about the possible use of aerial reconnaissance in other parts of Poland.

The time taken to deal with these discoveries (and the large number of images acquired) restricted the amount of mapping and overall analysis that could be completed within the Culture 2000 project but this work will continue and be intensified after its completion.

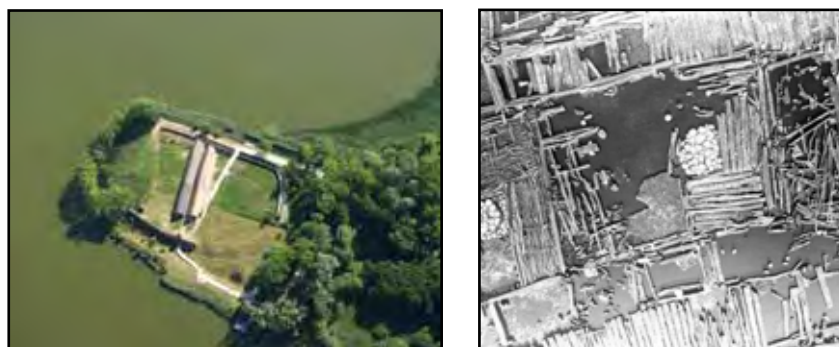
Dr Otto Braasch, from Germany, visited Poland in his own aircraft for two days in July 2007 and gave advanced in-air training to two students who have shown a long-term commitment to the use of aerial archaeology in their future careers.

Culture 2000 network, meetings and website

Students and members of the Polish project team took part in meetings of the Aerial Archaeology Research Group in Germany, Estonia, the UK and Denmark during the project.



Above: Students and contemplative tutors from one of the two workshops held at Poznań during the final year of the project. Left: Cover of the book on aerial photographs in Polish archaeology, Biskupin ... and what next?, published with help from the Culture 2000 project. Below: recent and historical photographs of Biskupin.



They also participated in the Culture 2000 symposium at Helsinki in 2004 and in training schools or workshops in Italy, Lithuania and the UK later in the project, as well as in the final meeting of Culture 2000 co-partners at Prague in October 2007. Material from Poland figured prominently in the major exhibition opened in October 2007 at the Czech National Museum.

Two successful workshops on aerial archaeology and landscape studies were organised by the Adam Mickiewicz University at Poznań in the final year of the project – the first restricted to Polish students, the second for students drawn from countries dispersed widely across Europe and beyond (Armenia, Montenegro, the Netherlands, Estonia, Finland, Romania and Poland).

Throughout the project the Archaeological Museum at Poznań has acted as host to the project's central website, www.e-landscapes.com, to which all of the co-partners have made contributions. It is hoped that the website will be maintained and developed with further news and information for at least three years beyond the life of the Culture 2000 project.

Overall assessment of the project

The project has amply demonstrated the value of aerial survey in Poland and will hopefully assist in securing at least modest funding for the technique in the longer term. Linking the results to the AZP databases will help in the conservation of the sites and landscapes revealed from the air. For the general public the photographs have provided striking evidence of the nature and value of these half-hidden traces of the cultural heritage which Poland shares with Europe as a whole. The photographic materials are already in use for teaching landscape history and have been, and will be, used as illustrations in a variety of publications, both academic and popular. Thanks to this the general knowledge about the potential of aerial photography for landscape studies is growing among professional archaeologists and students, as well as the general public. The general attitude towards aerial survey in Poland is changing.



HIGHLIGHTS 2004-2007

Belgium Air photographs uncover the battlefields of Ypres

Czech Republic Air survey, excavation and a grand exhibition

English Heritage Air photo training schools at home and abroad

Estonia Estonian archaeologists take to the air

Germany (Mecklenburg-Vorpommern) Seeing beneath the waves

Germany (Baden-Württemberg) Iron Age fortresses in their landscape setting

Germany (Freiburg) Airborne laser scanning to 'see through the trees'

Hungary Combining techniques to explore the Neolithic

Italy (Puglia) Uncovering and mapping the past through aerial survey

Italy (Salento) Modern techniques and a Roman harbour

Italy (Tuscany) Air survey, laser scanning and geophysics

Lithuania Raising awareness through aerial archaeology

Poland New discoveries and new systems for heritage conservation

Slovakia Stone Age monuments from the air and on the ground



A LOST TOWN RE-FOUND

Szamotuly, in Poland is a medieval town, its originally open market square now filled with later buildings (top). Until recently historians believed that the town always occupied its present site. This view changed dramatically in July 2006 when spectacular air photographs, taken as part of the Culture 2000 project, revealed its original location at Mutowo, 2.5km away, where it had stood before a disastrous fire in the 14th century. One of the photographs is shown here (centre), rectified to fit the present-day map. In the bottom image the town's large open square, outlined by the dark marks of cellars beneath its surrounding buildings, has been plotted on the rectified photograph, along with the presumed lines of the linking streets.

