

UNFC application to sand and gravel resources in an Austrian pilot area

S. Pfleiderer, Geol. Survey of Austria



RESOURCE MANAGEMENT WEEK 2021

ENABLING SUSTAINABILITY PRINCIPLES IN RESOURCE MANAGEMENT

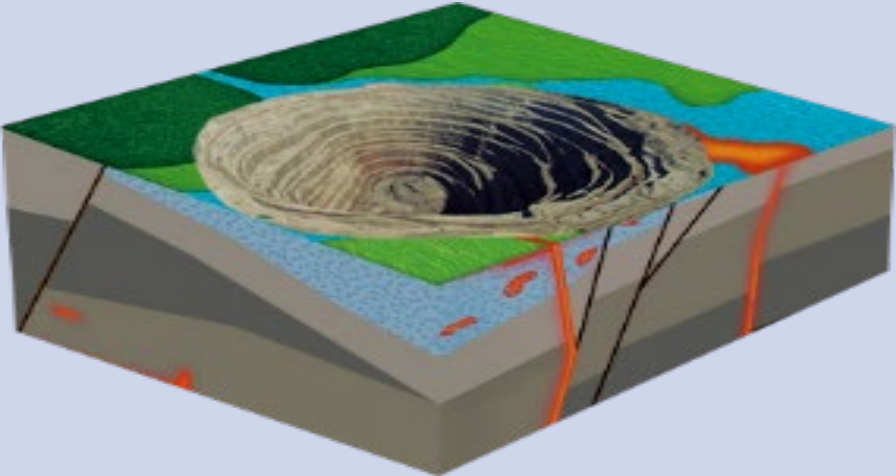
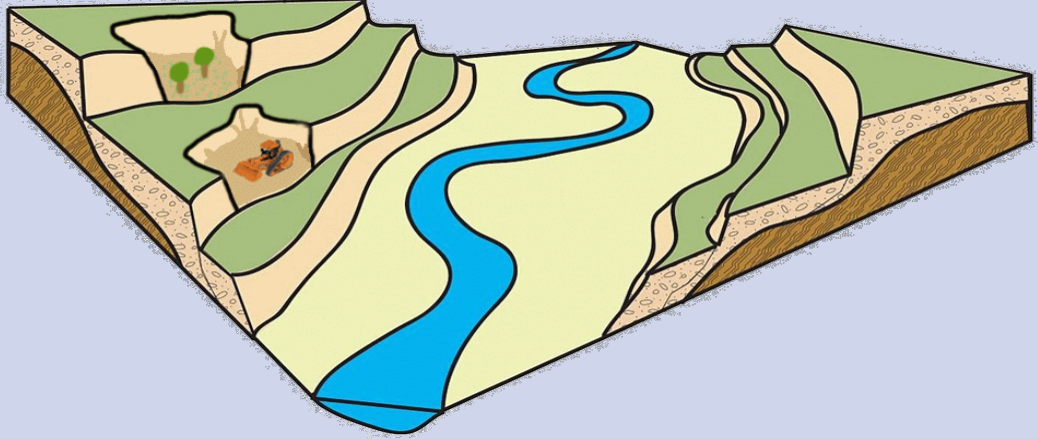


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Classification of sand and gravel resources at a regional scale

irrespective of past, current or future mining projects



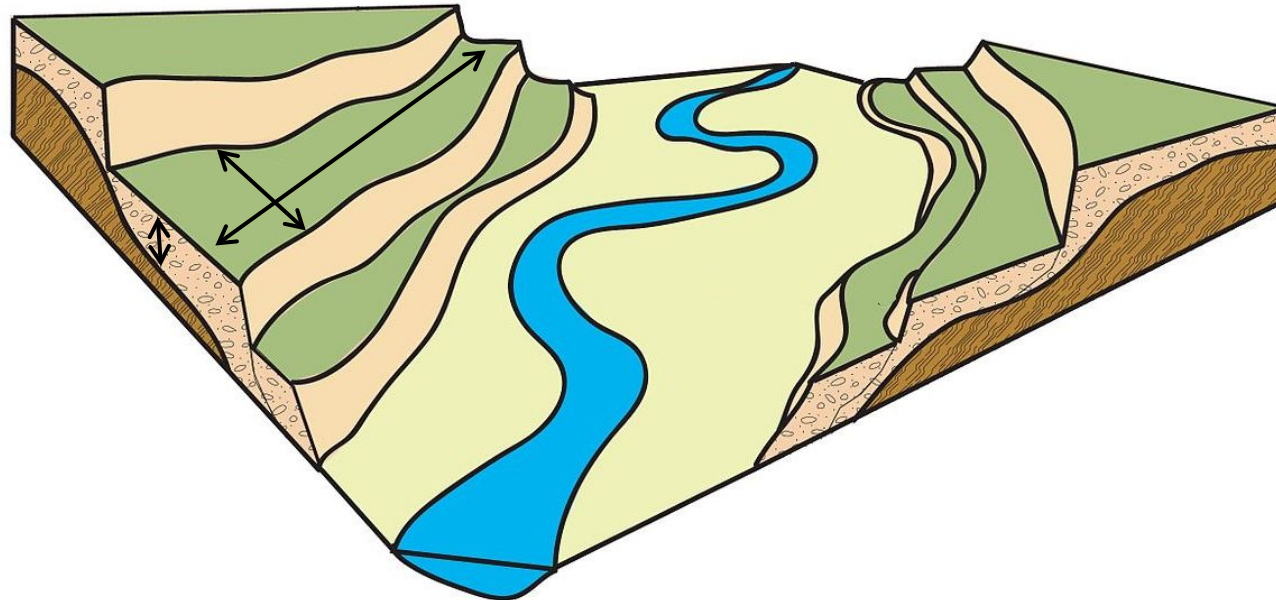
traditional UNFC application	UNFC application to sand & gravel
	
intensive exploration before mining	very limited exploration phase G4?
technical feasibility study	no technical feasibility study F4?
high cost & high risk operation	low cost & low risk operation
project based	occurrence based

Allocation of E-axis and F-axis

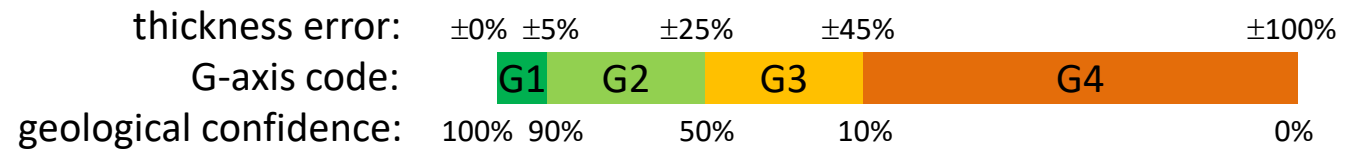


active pit	permitted area	E1
around active pit / around former pit / no pit	safeguarded areas	E1
	outside conflict areas <ul style="list-style-type: none"> • mining likely without conflict • no negative environmental effects • socially acceptable 	E2
	inside conflict areas <ul style="list-style-type: none"> • negative environmental effects to be compensated • social acceptance to be negotiated 	E3.1 / E2
	inside legal (or <i>de facto</i>) ban	E3.2

Allocation of G-axis

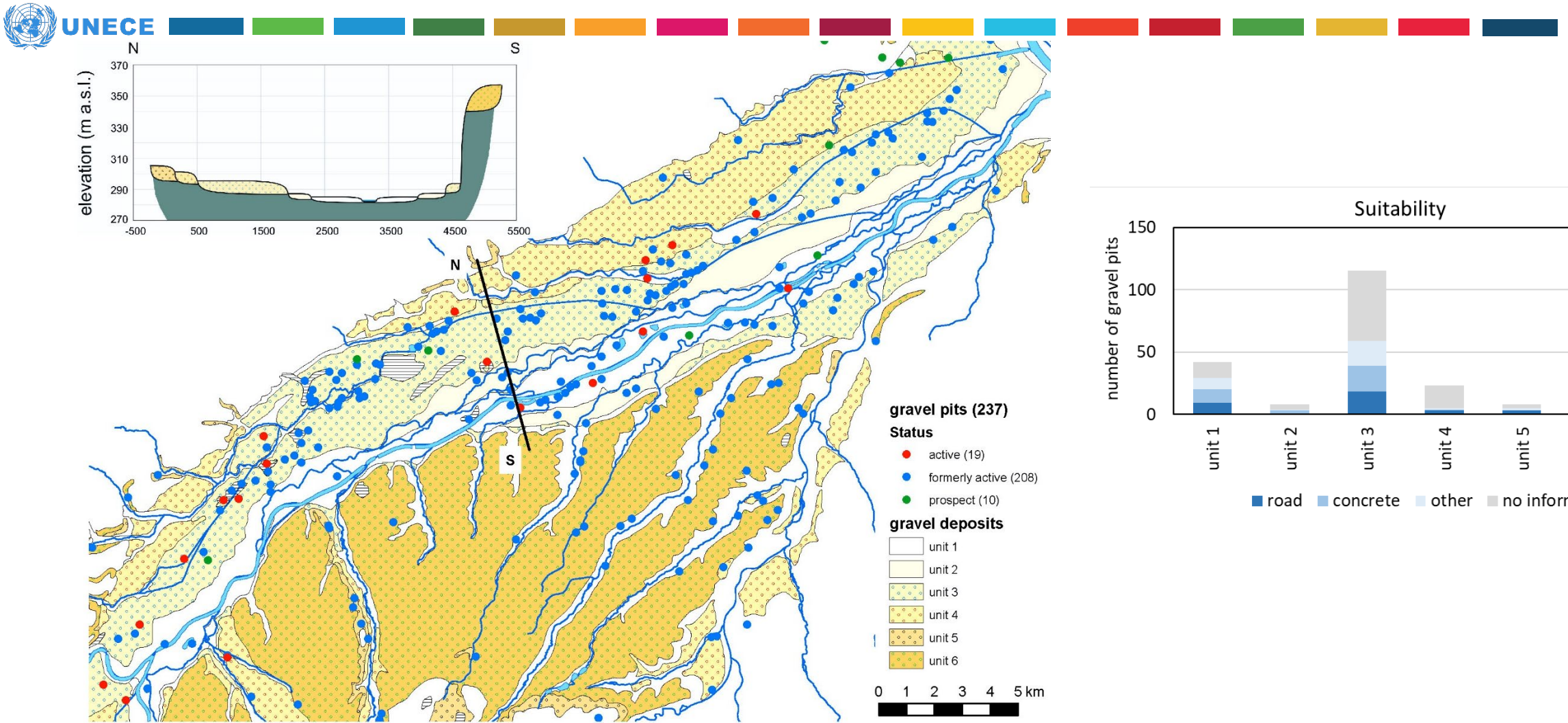


for large deposits:



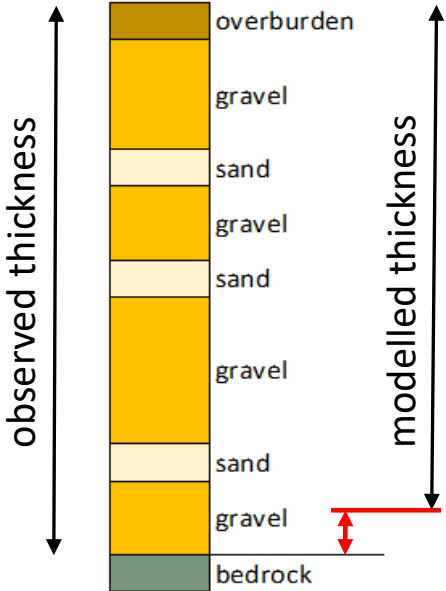
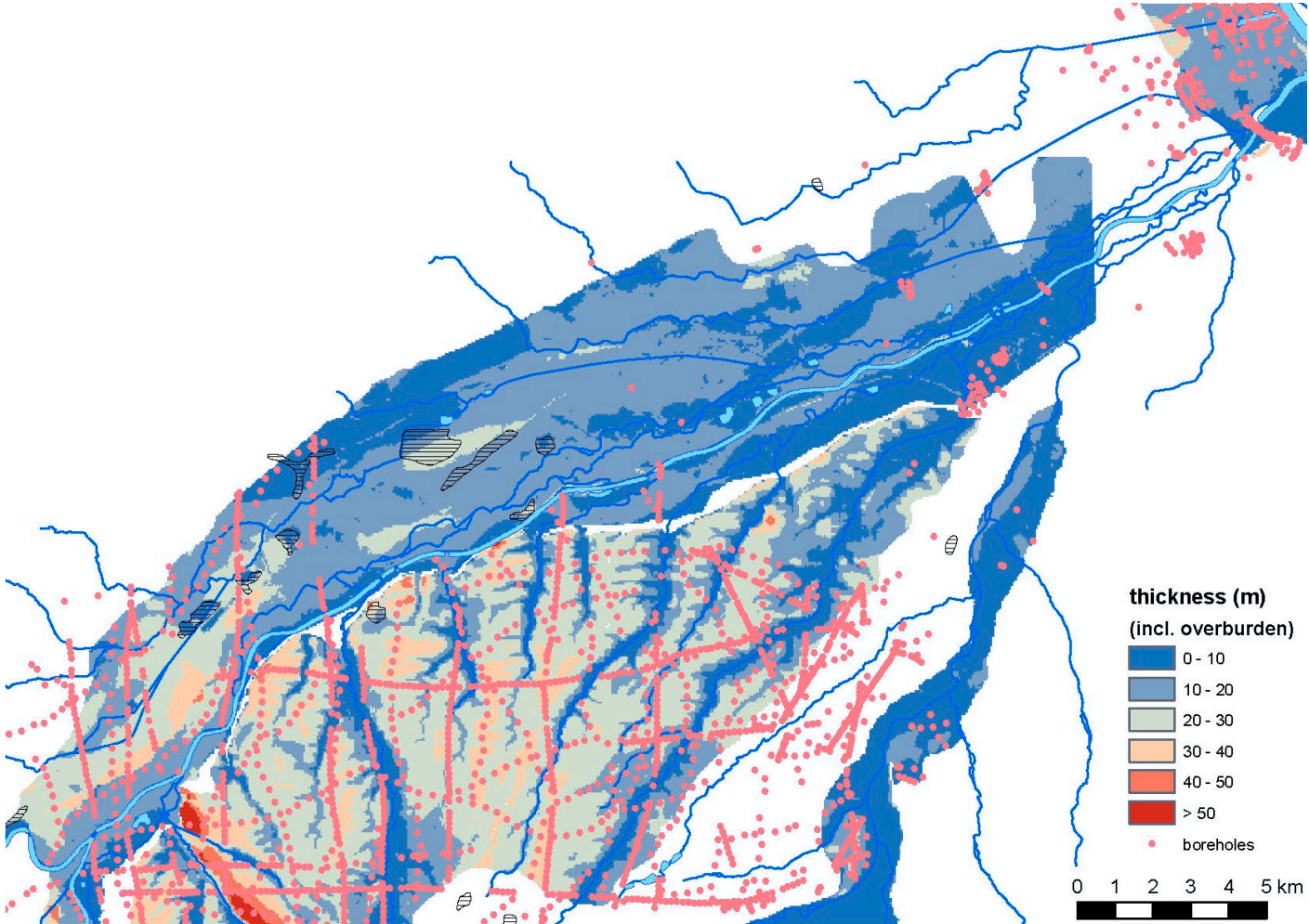
Austrian pilot area

sand and gravel deposits and pits



Austrian pilot area

thickness model



deviation from model
→ G axis uncertainty

Austrian pilot area

land use data

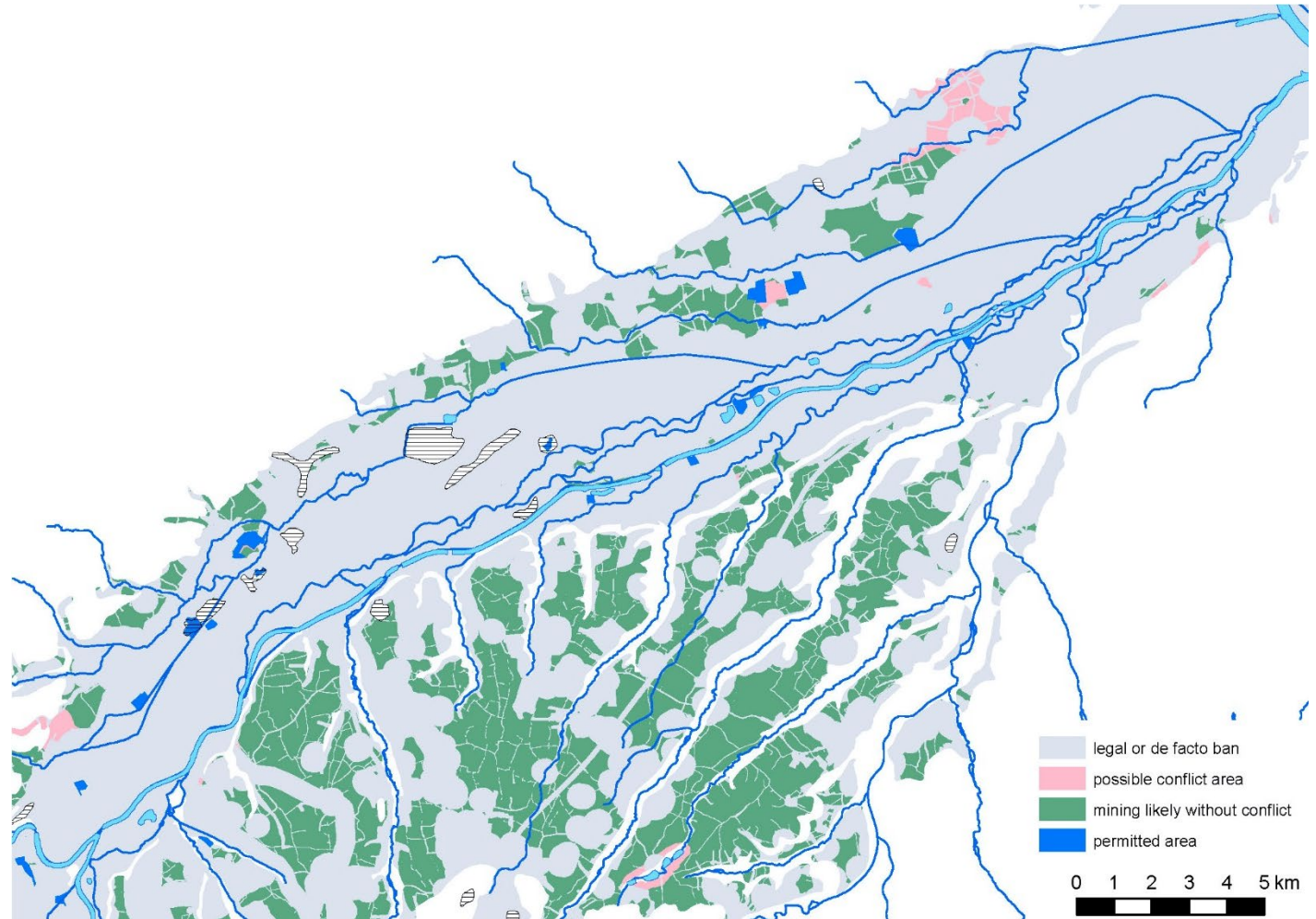


legal or *de facto* ban:

- building land
- recreational areas
- water protection zones
- national parks / protection zones
- important forests
- negative zones
- cultural / natural monuments
- sensitive game passageways

possible conflict areas:

- ecological areas
- green zones
- Natura2000 areas
- game passageways

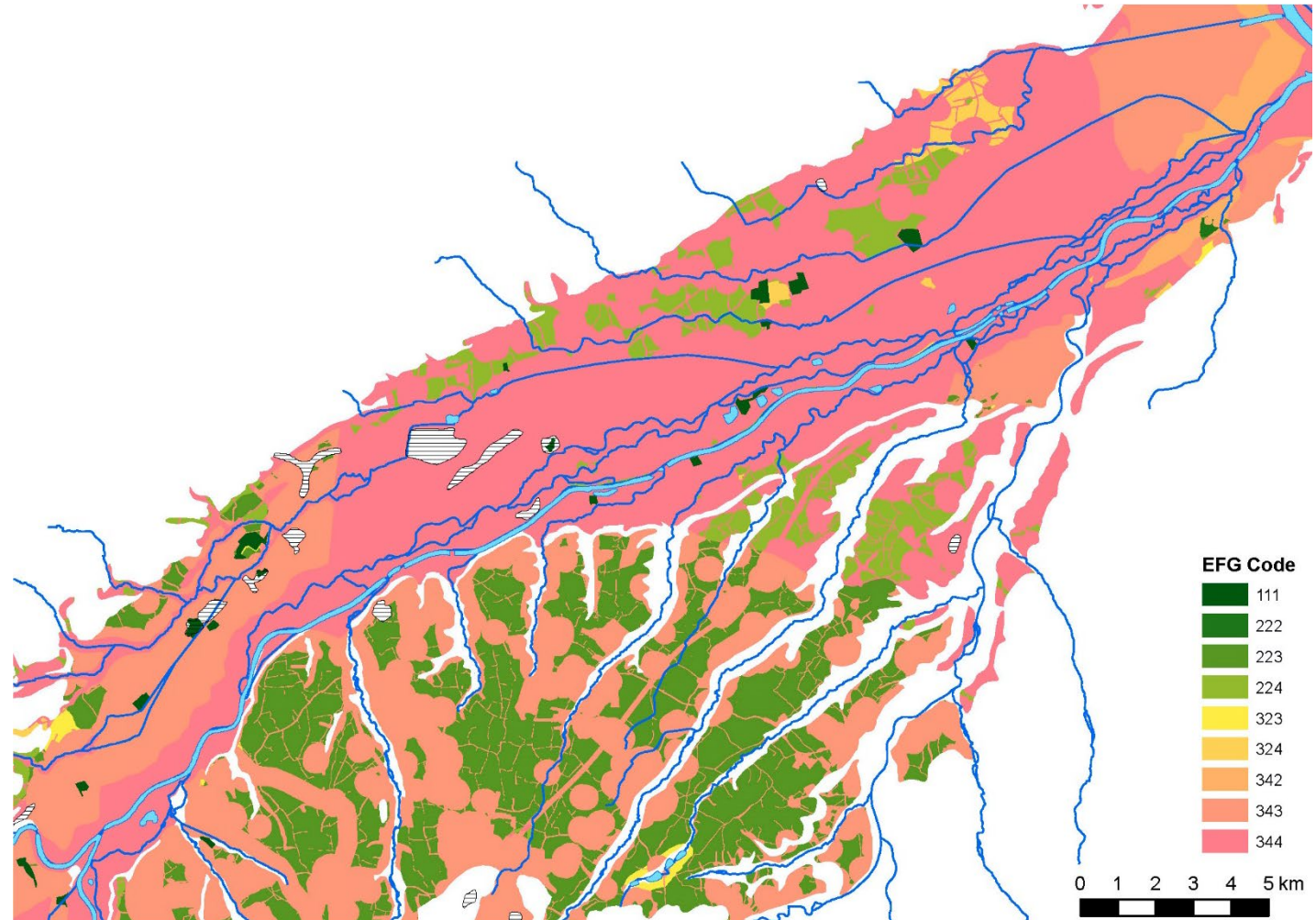


Austrian pilot area

UNFC classification



EFG Code	Volume (mio m ³)	
	suitable for concrete	suitable for road construction
111	13	17
222	1	0
223	8	859
224	27	173
322	0	0
323	1	8
324	3	24
342	48	0
343	512	1477
344	1080	1237



- UNFC classification irrespective of past, current or future mining projects
- new set of criteria for deriving EFG codes at a regional scale
- new, GIS-based approach using
 - spatial planning data
 - geological maps
 - borehole logs (& thickness models)
 - mining data
- only suitable for sand and gravel deposits
- results compliant with current UNFC definitions of E-, F- and G-axis categories

Thank you!

Sebastian Pfleiderer

Sebastian.Pfleiderer@geologie.ac.at

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