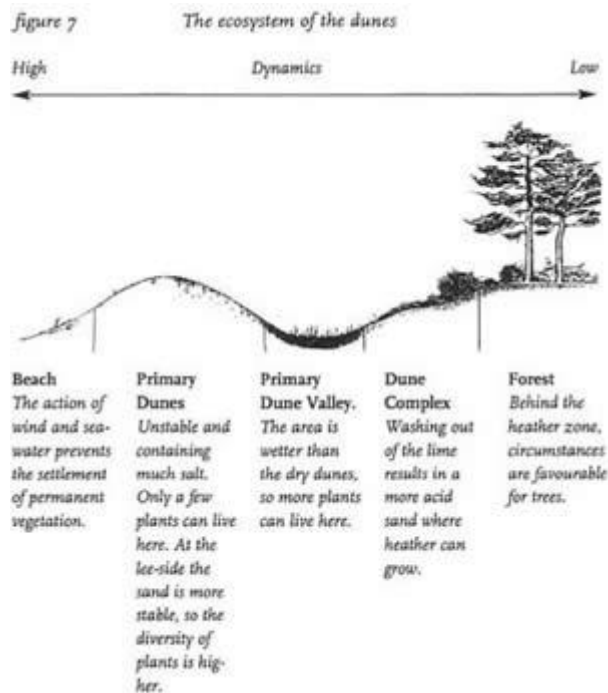


1996 iGeo – The Hague, The Netherlands

The Fieldwork

The structure of a typical coastal landscape

In general the beach can be divided into a zone with regular tidal influence and a higher part, inundated only when extreme high water levels occur. On this higher part of the beach some pioneer plants with high salt tolerance can settle. The dune landscape can be divided in: primary dunes, primary dune valleys and the dune complex. These morphological units have their own soil and vegetation characteristics (figure 7 + 8).



Nearby the sea the sediment contains lime, originating from fragmented shells. Therefore the plants near the coast line have a high lime tolerance. With increasing distance from the coast line the lime content is diminishing and other (secondary) plant species with a low lime tolerance can develop. In the older parts of the dune landscape even trees can thrive. The polder can not be divided into significant natural land units because it is entirely cultivated now.

The characteristics of a coastal landscape are summarised in figure 8.

Landscape unit:	Morphology:	Soil:	Vegetation cover:
beach: tidal lands	flat	hydro-sand soil	bare
beach: dry	flat	hydro-sand soil	bare/almost bare
primary dunes	logitudinal hills	xero-sand soil	grasses
primary dune valleys	low depressions/valleys	hydro-sand soil	grasses and shrubs
dune complex	complex of parabolic and dome shaped hills	hydro-sand soil	shrubs and trees
polder	flat with elevated ridge	hydro-clay soil	pastures and fields

Fieldwork: research questions and exercises

The fieldwork exercise in the Oranjezon area will be carried out along a transect. The observations will focus on soil, soil hydrology, geomorphology and vegetation/land use.

The main research question is: To what extent the fieldwork area at Oranjezon is a typical coastal landscape? (compared with the typical coastal landscape as described in section 3 and figures 7 + 8). Give reasons for your answers and illustrate them with evidence from your fieldwork area.

The research question should be answered after carrying out the exercises A E in the field and at the lab in the school in Oostkappelle.

In the field you will work in a multi national group of four. Each group will be provided with a map for every person and per group:

- a standard auger
- plastic bags for soil samples
- plastic bottles for water samples
- tables for soil description
- tables for vegetation description
- a sample card to determine soil colour
- a sample card to determine soil texture

Every group will be accompanied by one of the assistants of the organising committee who will act as an observer. The observer may only respond to questions regarding clarification of the fieldwork exercises.

During the fieldwork no contact between groups is allowed.

Upon arrival in the fieldwork area at Oranjezon a transect route will be assigned to you/your group. Walk inland from the coast line to the polder along the transect route that is assigned to your group. Observe the landscape and map the boundaries between the units. After the fieldwork you have to produce a map of the transect with a short description of the landscape units that you have found. Use the information about geomorphology, soil, hydrology and vegetation that you have gathered in the field (exercises A/E).

A. Describe the characteristics of the soil of every landscape unit at representative points. A good soil description requires a bore profile (use a standard auger) showing the horizons. Describe soil color and texture and explain the spatial pattern of the soils in the fieldwork area. Use the standard forms and sample tables that are provided.

B. Describe the vegetation at a representative point of every landscape unit. Try to find out which plants are characteristic for a landscape unit and which plants are more general. Use the standard forms that are provided. Explain the spatial pattern of vegetation in the fieldwork area.

unit	% trees > 3m.	% shrubs	% herbs	% bare	total %

C. Take samples of the top horizon in every bore hole and put them in the plastic bag that were provided (one plastic bag per bore hole). In the lab in the school in Oostkappelle you can sieve the samples and determine the content of shell particles by using a stereomicroscope. Explain the different values found for the various landscape units.

D. Take samples of the surface water in the canals and put them in the plastic bottles. In every transect there are 2 canals: one in the dunes and one in the polder. In the lab in the school at Oostkappelle you have to determine the chloride content with a test set. Explain the different values found for the various landscape units.

E. Draw a map and a cross section of the landscape along your transect (for an example of a cross section see figure 7). Describe the various landscape units you have found. Include information about geomorphology, soil, hydrology and vegetation in your transect area. At the school in Oostkappelle additional copies of the map of the fieldwork area will be available.

Finally: answer the main question of the fieldwork exercise.

Present your results in an individual report with the following content: - Name - Number of the group/transect - Title of your report - Answers to all the exercises (A/E) - A map and a crosssection of your transect, a description of the different land units in your transect - An answer to the main research question and your own conclusions.

The report may not exceed 5 pages. Aside from the map and the crosssection of your transect and the explanatory text the report may include graphs, tables, and additional maps that support your reasoning.

Acknowledgements

- de Jong, C. & ten Brinke, W.: Het Nederlandse Landschap, University of Nijmegen / ten Brinke, Meppel.
- Pannekoek, A.J. : Geologische Geschiedenis van Nederland, and 6 Staatdrukkerij, Den Haag, 1956.
- van der Borgt, M. : Grond onder je voeten, Centre for Environmental and 7 Education Zeeland, Goes, 1996.

Appendix II

Fragment of a Contour Line Map of Zeeland 1:5000, Nutsbedrijf Zeeland, Middelburg.

Appendix III

Marking scheme fieldwork

Max	Aspect	Score
	Results of the field research (19 marks):	
	Answers to the main research question and the sub-questions: structure of the information, clarity and punctuality	
2	Map	
2	Cross section.	
2	Other forms/graphs etc.	
2	Answer to subquestion A	
2	Answer to subquestion B	
2	Answer to subquestion C	
2	Answer to subquestion D	
5	Answer to the mainquestion	<input type="text"/>
	Level of performance (7 marks)	
3	Level: relate results of fieldwork to the theory and own knowledge	
2	Creativity/originality	
2	Reflection: critical remarks about the exercises and the results, suggestions for improvement	
-2	In case of insufficient contribution to group activities in the field	<input type="text"/>
	Presentation (9 marks)	
3	Text: title, structure of the text, the use of geographical concepts	
2	Visualisation: use of illustrations e.g. maps, drawings, graphics	
2	Appearance and lay-out	
2	Overall impression	<input type="text"/>
35	Maximum number of marks	
	Total score	<input type="text"/>