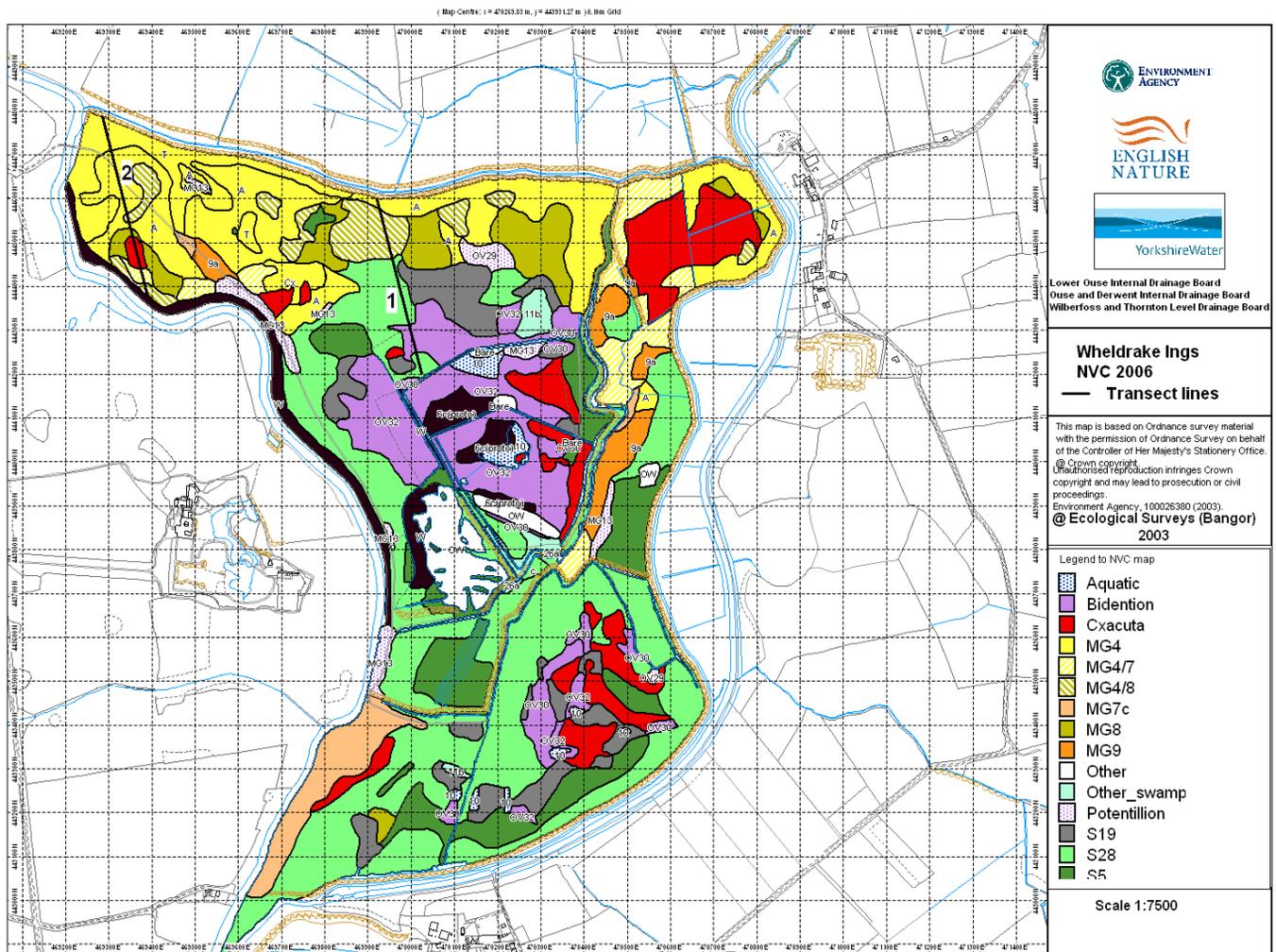


Case Study 7.1 Wheldrake Ings, an alluvial floodplain meadow demonstrating how plant communities are situated in relation to topography and water levels



In lowland river systems with alluvial soils, floodwater that overtops the river bank normally drains towards a back ditch or internal drains, which collect and return the water to the river further downstream. The lowest-lying areas on the floodplain, which hold water for longest after a flood, experience the greatest sediment deposition. This is reflected in the different plant communities that develop according to the hydrology and nutrient status of the soil.

Figure 7.7 NVC map (2006) of communities at Wheldrake Ings showing positions of two monitoring transects. Numbers 1 and 2 and associated lines indicate the location of botanical transects recorded. Findings from each transect are shown in Figure 7.8. Yellow areas show existing species-rich MG4 grassland, grading to wetter communities. © Natural England 1000046223 (2006)





On Wheldrake Ings (part of the Derwent Ings in Yorkshire), botanical monitoring was undertaken to explore the relationship between hydrology, topography and plant community. The monitoring focused on the main areas of Burnet floodplain meadow (MG4; see Figure 7.7). Here, flooding occurs from the river with drainage back to the river through a series of internal drains.

This research found that an elevation difference of only 1.7 m was sufficient to allow plant communities ranging from the terrestrial form of Amphibious bistort mat (A10) to Burnet floodplain meadow (MG4), Kingcup-carnation sedge meadow (MG8) and the dry False oat-grass sward (MG1) to flourish. Figure 7.8 shows the distribution of plant communities along the topographical gradient.

Figure 7.8 Elevation along two transect lines, transect 1 (■) and transect 2 (●) and principal vegetation communities along each transect.

