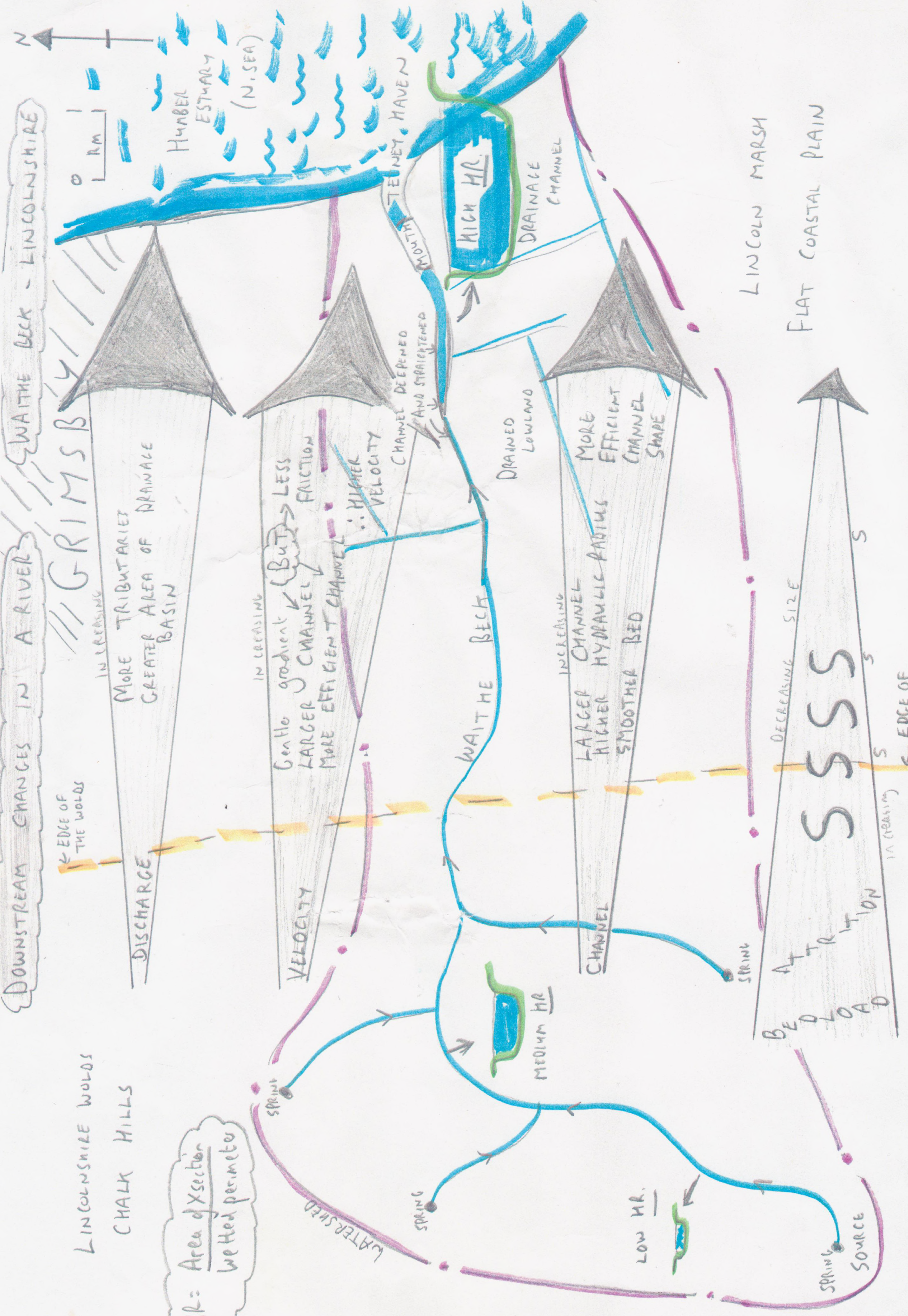


DOWNSTREAM CHANGES IN A RIVER



EDGE OF THE WOLDS

LINCOLNSHIRE WOLDS  
CHALK HILLS

$$HR = \frac{\text{Area of X section}}{\text{Wetted perimeter}}$$

GRIMSBY  
INCREASING  
MORE TRIBUTARIES  
GREATER AREA OF DRAINAGE  
BASIN

VELOCITY  
INCREASING  
Gentle gradient (BUT) → LESS FRICTION  
LARGER CHANNEL  
MORE EFFICIENT CHANNEL  
∴ HIGHER VELOCITY

CHANNEL DEEPEND AND STRAIGHTENED

DRAINED LOWLAND

CHANNEL  
INCREASING  
LARGER CHANNEL  
HIGHER HYDRAULIC RADIIUS  
SMOOTHER BED  
MORE EFFICIENT CHANNEL SHAPE

SPRING

ATTRITION  
BED LOAD  
IN (RELATION)

DECREASING SIZE

EDGE OF THE WOLDS

LINCOLN MARSH  
FLAT COASTAL PLAIN

0 1 Km

HUMBER ESTUARY (N. SEA)

TENNEY HAVEN

HIGH HR.

DRAINAGE CHANNEL

N