Contents

1 Introduction ......................................................... 1
   1.1 Human Activity as a Geomorphic Factor ................. 3
       1.1.1 Impact of Mining on the Landscape ............. 5
       1.1.2 Anthropogenic Denudation as a Research Problem . 11
   1.2 Research Methods and Data Sources ......................... 13
   1.3 Environment of Study Area .................................. 17
   References .......................................................... 22

2 A Brief History of Mining in the Upper Silesian Coal Basin .... 31
   2.1 Iron Ore Mining ............................................. 31
   2.2 Zinc and Lead Ore Mining ................................. 32
   2.3 Hard Coal Mining ........................................... 34
   2.4 Rocks Resources Mining .................................... 43
   References .......................................................... 48

3 Anthropogenic Landforms in the Upper Silesian Coal Basin ... 51
   3.1 Excavations .................................................... 53
   3.2 Spoil Tips ..................................................... 57
   3.3 Subsidence Troughs ......................................... 61
   3.4 Sinkholes ...................................................... 69
   3.5 Fissures and Thresholds .................................... 77
   References .......................................................... 79

4 Changes in Morphometric Parameters of Terrain Caused by Mining ........................................ 83
   4.1 Changes in Altitude ......................................... 84
   4.2 Changes in Relative Heights ............................... 86
   4.3 Changes in Slope Inclinations ............................. 89
   References .......................................................... 93
5 Changes in the Circulation of Matter in Drainage Basins

5.1 Changes of Physicochemical Properties of the Transported Matter

5.2 Sediment Production Zone

5.3 Transfer Zone

5.4 Deposition Zone

References

6 Changes in the Circulation of Matter in Landlocked Basins

References

7 Anthropogenic Denudation Rate in the Upper Silesian Coal Basin

7.1 Anthropogenic Denudation Rates Calculated from Raw Materials Output

7.2 Anthropogenic Denudation Rates Calculated from Morphometric Analysis

7.3 Forecasts of Anthropogenic Denudation

References

8 Anthropogenic Denudation Rate in Other Mining Areas

8.1 Mining Areas in Poland

8.2 The Ostrava-Karvina Coal Basin, Czech Republic

8.3 The Ruhr Coal Basin (the Ruhr District), Germany

References

9 Conclusions

Index
The Impact of Mining on the Landscape
A Study of the Upper Silesian Coal Basin in Poland
Dulias, R.
2016, VIII, 209 p. 56 illus., 2 illus. in color., Hardcover
ISBN: 978-3-319-29539-8