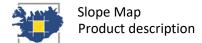


Slope map derived from IslandDEM v1.0

Product	Slope map of Iceland (in Degrees and Percent units)				
Definition	The slope gradient (slope, slope steepness) identifies the steepest downhill slope for a location in a surface: <i>"the inclination of the land surface with respect to the horizontal plane"</i> Basic local land-surface parameters. First partial derivative from surface.				
Units	Degrees [°], Percent [%]				
Resolution	in Degrees, resolution: o 50x50 m o 20x20 m o 10x10 m	in Percent, resolution: o 50x50 m o 20x20 m o 10x10 m			
Extent	Iceland				
Keywords	terrain analysis: DEM derivates, topographic attributes, geomorphometry, first derivatives, steepness , surface parameters				
Category/ application	geomorphology, soil conservation practices, soil mapping, overland flow or channel flow, land management or landscape planning, land capability class, risk and disaster management				
CRS	EPSG:3057 - ISN93 / Lambert 1993 EPSG: 8088 – ISN 2016				
SW	QGIS 3.20.3-Odense, Whitebox Tools version 2.0.0 (Dr. John B. Lindsay © 2017-2021)				
Format	geoTiff, compression deflate				
Data type	Float32				
Calculation	The slope gradient was estimated by Whitebox geotool that uses Horn's (1981) 3rd-order finite difference method (Gallant and Wilson, 2000) ¹				

¹ Gallant, J. C. and Wilson, J. P. (2000) 'Primary topographic attributes', Terrain Analysis: Principles and Applications, pp. 51–85.



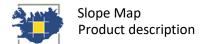
Conversion from degree to percent and vice versa	90°=00% 45°=100% 20°=36.4% 0°=0% -20°=-36.4% -90°=-00%		Explanation: 100 % means, that a straight line spans the same distance in the length as is does in the height. This is at an angle of 45°. That means, there are possible percentage above 100.			
	!! Formulas for conversion: angle in percent = tan(angle in degrees) * 100% angle in degrees = atan(angle in percent / 100%) where: tan is the tangent, atan is the arc tangent. FAO (2006) ² (upper limit %) Canadian (2018) ³ (upper limit %) USDA, (2017) ⁴ (lower and upper limit %)					
	(upper		(upper			
	0.2	Flat	2	Little or no slone	0-3	Nearly level
	0.2	Flat Level	3	Little or no slope	0- 3	Nearly level
	0.2 0.5 1.0	Flat Level Nearly level	3	Little or no slope	0-3	Nearly level
Landform	0.5	Level	3	Little or no slope	0-3	Nearly level
Landform slope class	0.5 1.0	Level Nearly level Very gently	3	Little or no slope Gentle	0-3	Nearly level Gently sloping, Undulating
	0.5 1.0 2.0	Level Nearly level Very gently sloping	-			
lope class	0.5 1.0 2.0 5.0	Level Nearly level Very gently sloping Gently sloping	-			
slope class	0.5 1.0 2.0 5.0 10	Level Nearly level Very gently sloping Gently sloping Sloping Sloping Strongly	9	Gentle	1-8	Gently sloping, Undulating
lope class	0.5 1.0 2.0 5.0 10 15	Level Level Nearly level Very gently sloping Gently sloping Sloping Strongly sloping Moderately	9	Gentle	1-8 4-16	Gently sloping, Undulating Strongly sloping, rolling

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² Food and Agriculture Organization (FAO) (2006) *Guidelines for Soil Description, Food and Agriculture Organization of the United Nations (UN, FAO)*. doi: 10.1016/S0341-8162(99)00067-3.

³ NSDB Canada <from https://sis.agr.gc.ca/cansis/nsdb/slc/v3.2/lst/lf_slope.html>

⁴ USDA (2017) 'Soil Survey Manual Introduction', *Public Law*. doi: 10.1097/00010694-195112000-00022.



Landform slope class [°]	Canadian (2018) ⁵ (upper limit °)		USDA, (2017) ⁶ (lower and upper limit °)	
	2.0	Little or no slope (3%)	Nearly level (0-3%)	
	5.0	Gentle (9%)	Gently sloping, Undulating (1-8%)	
	9.0	Moderate (16%)	Strongly sloping, rolling (4-16%)	
	16.0	Steep (30%)	Moderately steep, hilly (10-30%)	
	30	Extremely Steep (60%)	Steep (20-60%)	
	>30	Excessively Steep (>60%)	Very steep (>45 ≈25°)	
	30-55			Extremely Steep with risk of avalanches

 ⁵ NSDB Canada <from https://sis.agr.gc.ca/cansis/nsdb/slc/v3.2/lst/lf_slope.html>
⁶ USDA (2017) 'Soil Survey Manual Introduction', *Public Law*. doi: 10.1097/00010694-195112000-00022.