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Mountain Peatlands of Western North and South America: The influence of climate, lithology and disturbance on vegetation and ecosystem services

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The distribution, abundance and characteristics of peatlands vary widely across western North and South America. Hypermaritime regions of the northwestern and southwestern coasts are covered by largely ombrotrophic peatlands. Peatlands in this region cover more than 30% of the land area and export carbon to stream and ocean systems that are critical for supporting fisheries. In more continental regions all peatlands are fens that occur in mountain valleys with strong ground water discharge. In humid climates peatlands are moss dominated but in continental regions peatlands are dominated by vascular plants, particularly species of Carex in the northern hemisphere and may have little moss cover. Water chemistry influences vegetation composition and ecological processes and may be controlled by bedrock lithology or climate/vegetation interactions. Elevation strongly controls peatland presence and characteristics. In northern, southern and coastal regions peatlands are most common in lowlands, while in more arid and continental regions peatlands are present only at the highest elevations in mountain regions. Peatlands have been used for livestock grazing throughout the US where they provide the largest areas of productive herbaceous vegetation in warm or hot summer regions. Many of these peatlands have been influenced by a range of disturbances including ditches built to make fens more suitable for livestock grazing and forage production, peat mining, and other processes. In the northern and central Andes fens are managed by indigenous peoples for livestock use. Peatlands in certain areas are hydrologically connected to glacier meltwater.