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TITLE: Changes in Climate Extremes and their Impacts on the Natural Physical Environment

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ABSTRACT:

This chapter addresses changes in weather and climate events relevant to extreme impacts and disasters. An extreme (weather or climate) event is generally defined as the occurrence of a value of a weather or climate variable above (or below) a threshold value near the upper (or lower) ends (?tails?) of the range of observed values of the variable. Some climate extremes (e.g., droughts, floods) may be the result of an accumulation of weather or climate events that are, individually, not extreme themselves (though their accumulation is extreme). As well, weather or climate events, even if not extreme in a statistical sense, can still lead to extreme conditions or impacts, either by crossing a critical threshold in a social, ecological, or physical system, or by occurring simultaneously with other events. A weather system such as a tropical cyclone can have an extreme impact, depending on where and when it approaches landfall, even if the specific cyclone is not extreme relative to other tropical cyclones. Conversely, not all extremes necessarily lead to serious impacts. [3.1]

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