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weakly countably compact

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Entry type	Definition
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Synonym	limit point compact
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Related topic	Compact
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Defines	limit point compactness
Defines	weak countable compactness

A topological space X is said to be *weakly countably compact* (or *limit point compact*) if every infinite subset of X has a limit point.

Every countably compact space is weakly countably compact. The converse is true in <http://planetmath.org/T1SpaceT1> spaces.

A metric space is weakly countably compact if and only if it is compact.

An easy example of a space X that is not weakly countably compact is any infinite set with the discrete topology. A more interesting example is the countable complement topology on an uncountable set.