

# Hazard Resilience Index (HRI)

## *Astronomical Hazards*

Asteroid, Comets, and Meteor Crashes  
 Geomagnetic Storms  
 Space Object Crashes

### Astronomical Hazards

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Please refer to the Hazard Resilience Index Instructions (HRI) document for more information on using this document.

### Asteroid crashes, Comet Crashes and Meteorites

Hazard Resilience Rating      High Resilience       Low Resilience       Need More Info       Not Applicable

Yes	No	Need More Info	Not Applicable	FACTORS	This is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based asteroid, comet and meteorite crash exercises have taken place in schools and community-at-large (e.g., table-top or full-scale exercises).	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify community residents of a potential asteroid, comet or meteorite crash.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place with the Canadian Space Agency to notify emergency response personnel of a potential asteroid, comet or meteorite crash.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place mechanisms to discuss asteroid, comet and meteorite crashes with Subject Matter Experts or Traditional Knowledge holders who have knowledge about, for example, possible warnings and appropriate responses that will avoid alarm while keeping the community safe.	<input type="checkbox"/>

## Geomagnetic Storms

<b>Hazard Resilience Rating</b>	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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Yes	No	Need More Info	Not Applicable	FACTORS	This is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based geomagnetic exercises have taken place in the community-at-large (e.g., table-top or full-scale exercises).	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has worked with utilities to ensure that sufficient systems are in place to avoid long-term power outages and overheating of transformers and other malfunctions due to geomagnetic storms.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has worked with pipeline companies to ensure the pipelines are not subject to excess corrosion where geomagnetic storms could then cause leakage from pipe.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify community residents of potential geomagnetic storms.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place with Public Safety Canada to notify emergency response personnel of potential geomagnetic storms.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place mechanisms to discuss geomagnetic storms with Subject Matter Experts or Traditional Knowledge holders who have knowledge about, for example, possible warnings and appropriate responses that will avoid alarm while keeping the community safe.	<input type="checkbox"/>

## Space Object Crashes

<b>Hazard Resilience Rating</b>	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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Yes	No	Need More Info	Not Applicable	FACTORS	This is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based space object crash exercises have taken place in the schools and community-at-large (e.g., table-top or full-scale exercises).	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify community residents of a potential space object crash.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify emergency response personnel of a potential space object crash.	<input type="checkbox"/>

## References

Matheny, J. G. (2007). Reducing the risk of human extinction. *Risk Analysis*, 27(5), 1335-1344.

NASA. (2006, 15 March). *Solar storm warning*. Retrieved from [http://science.nasa.gov/science-news/science-at-nasa/2006/10mar\\_stormwarning/](http://science.nasa.gov/science-news/science-at-nasa/2006/10mar_stormwarning/)