

An Asteroid Wiped Out the Dinosaurs. What's next?

The potential effects of various-sized asteroid impacts are shown using Reston, Virginia, as the target. The time-scales shown are AVERAGE intervals for the entire Earth. Of course, it's extremely unlikely that an asteroid of any size will hit Reston!



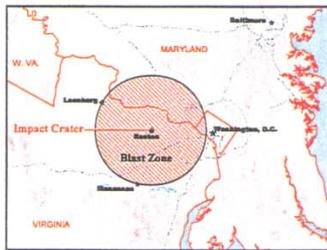
EVERY YEAR
Asteroid size: Up to 5 meters (15 feet).
Crater size: None. Most burn up in atmosphere.
Energy: Up to 10 kilotons.
Examples: Some break up, dropping meteorites (a daily occurrence somewhere on Earth)

HAZARDS
Blast damage: None.
Ocean impacts: Harmless.
Other effects: No person known to have been killed. Two people hit (minor injuries). Several cars hit in the U.S.



EVERY 100 YEARS
Asteroid size: 30 meters (100 ft).
Crater size: Explodes in air (stony objects) or makes small crater (metallic objects)
Energy: 1 megaton.

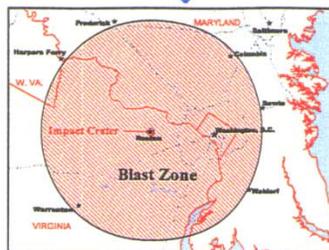
HAZARDS
Blast damage: If it hits land, 8 km (5 mile) radius.
Ocean impacts: Minimal hazard.
Other effects: May drop meteorites.



EVERY 500-1000 YEARS
Asteroid size: 50 meters (160 ft).
Crater size: Explodes in air (stony objects) 1 km (half mile) crater (rare iron objects).
Energy: 10's of megatons.
Examples: Tunguska, Meteor Crater
HAZARDS
Blast damage: 25 km (15 mile) radius (airbursts).
Ocean impacts: Cause little damage.
Other effects: Some dust in atmosphere.

Every 100 years (somewhere on Earth)
 Every 500 to 1000 years (somewhere on Earth)

Every 10,000 years (somewhere on Earth)



EVERY 10,000 YEARS
Asteroid size: 200 meters (650 ft).
Crater size: Several km (a mile) wide.
Energy: 200 megatons.
Examples: None in recorded history.

HAZARDS
Blast damage: 50 km (30 mile) around crater.
Ocean impacts: Tsunamis threaten coastal areas.
Other effects: Significant dust in air.

Data taken from Morrison and others (1994). For more information, contact Jeff Grossman, U.S. Geological Survey, Reston, Virginia.

Every 100 million years

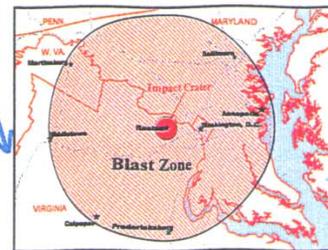
EVERY 100 MILLION YEARS
Asteroid size: 10 km (6 miles).
Crater size: 200 km (>100 miles) across.
Energy: 100 million megatons.
Examples: The impact that wiped out the dinosaurs

HAZARDS
Blast damage: Continental scale.
Ocean impacts: Devastating tsunamis.
Other effects: Global climate change. Global wildfires. Mass extinctions.



EVERY MILLION YEARS
Asteroid size: 2 km (over a mile).
Crater size: 40 km (25 miles) wide.
Energy: 1 million megatons.
Examples: Asteroid 1997 XF11, which recently made news, is this size. It will pass close to Earth in 2028.

HAZARDS
Blast damage: 800 km (500 miles) around crater.
Ocean impacts: Devastating tsunamis.
Other effects: Dust in air affects global climate.



EVERY 100,000 YEARS
Asteroid size: 1 km (a half mile).
Crater size: 15 km (9 miles) wide.
Energy: 1000 megatons.

HAZARDS
Blast damage: 80 km (50 miles) around crater.
Ocean impacts: Major tsunamis threaten large areas.
Other effects: Dust in air affects climate.