

# THE HAZARD OF SEISMIC SURVEYS

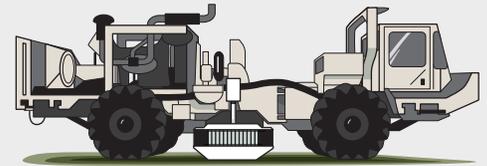
## in the ARCTIC NATIONAL WILDLIFE REFUGE

**Perched on** the northernmost edge of America's frontier, the Arctic National Wildlife Refuge is a finely calibrated ecosystem that many birds migrate 7,000 miles to reach. That's because it's a safe and advantageous place to raise their young. But if seismic surveys proceed, caravans of trailers, equipment and 40-ton seismic trucks will crush plants, reroute water, alter the permafrost and deliver myriad injuries to the delicate tundra.



### HOW IT WORKS

To locate oil, "thumper" vehicles weighing up to 90,000 pounds grind methodically across the tundra 24 hours a day. A hydraulic panel



sends massive shock waves deep into the earth. The way

those waves bounce back indicates if oil reserves hide below.

### HOW MAPPING SCARS THE LAND

Crisscrossing trucks will carve 20,000 miles—almost the Earth's entire circumference—of ruts into the fragile tundra.



The tracks mark out a grid with rows as little as 650 feet apart.

That's the length of the U.S. Capitol building.



The tire ruts can disfigure the landscape for decades. These tracks are 30 years old and still clearly visible.



Each truck track would be over ten feet wide—or about two people across.



10 feet

### HOW THE TUNDRA WILL CHANGE



#### TODAY

Stands of grasses and tiny ponds dot the landscape, creating nooks where wildlife can thrive.



#### DURING SURVEYS

Truck tires threaten to flatten bird nests and polar bear dens across the tundra plain.



#### IN THE FUTURE

Altered water flow will waterlog the grasses and shrubs on the tundra, upending the food web for the region.

### HOW BIRDS WILL SUFFER



Dunlins rely on low, coastal tundra; seismic testing can crush mounds where they nest.



Tundra Swans reuse nests and may be forced to spend precious energy rebuilding them.



The American Golden Plover's higher, drier habitat is vulnerable due to lack of snow cover.

