

AN EDUCATIONAL ARTICLE

Senate Document 264

What the U.S. government archived about soil depletion in 1936, and what the science has confirmed in the ninety years since

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In the mid-1970s, on a dairy farm in Northern Ireland, my mother said something to my grandfather that I have never forgotten. She told him that the soil had been depleted, and that supplementation was needed because the food no longer carried what it once did.

She was not a scientist. She was a mother paying attention. And what she was saying, working people had been saying quietly for a long time.

What I learned later is that her observation had already been documented, formally, in the official record of the United States government. Not last year. Not last decade. In 1936.

What Senate Document 264 actually is

Senate Document 264 is a real document. It exists today, available to anyone, in the official archive of the United States Government Publishing Office.

Its full citation is: 74th Congress, 2nd Session, Senate Document No. 264, *Modern Miracle Men*, presented by Senator Duncan Fletcher of Florida on June 1, 1936, and ordered to be printed by the United States Government Printing Office, Washington, 1936.

The document itself is the reprint of a magazine article that originally appeared in *Cosmopolitan* in June 1936. The article was written by Rex Beach, a popular American novelist of the era, and it reported on the work of Dr. Charles Northen, an Alabama-born physician who had given up clinical medical practice to study soil chemistry and its effect on human nutrition.

Senator Fletcher asked for the article to be entered into the Congressional Record. The Senate ordered it printed. From that moment to this one, it has been an official U.S. government publication.

The full text is publicly available, free of charge, from the U.S. Government Publishing Office at [govinfo.gov](https://www.govinfo.gov). The catalog entry is also accessible at [govinfo.gov/app/details/SERIALSET-10016_00_00-062-0264-0000](https://www.govinfo.gov/app/details/SERIALSET-10016_00_00-062-0264-0000).

Anyone reading this article can verify it for themselves. That is the point.

What the document actually said

The core claim of Senate Document 264, made in plain English nearly ninety years ago, was this: the soil on which American food was being grown had been progressively stripped of its minerals, the food grown on that soil therefore

contained fewer minerals than it once had, and the people eating that food were not receiving the nourishment their grandparents had received from the same crops.

Dr. Northen, the physician whose work the article reported on, made his case directly:

“Minerals are vital to human metabolism and health, and no plant or animal can appropriate to itself any mineral which is not present in the soil upon which it feeds.” — Dr. Charles Northen, 1936

He went further. He named the consequence:

“The alarming fact is that foods (fruit and vegetables and grains) now being raised on millions of acres of land no longer contain enough of certain needed minerals, are starving us, no matter how much of them we eat.” — Senate Document 264, 1936

Northen's work in Florida was practical, not theoretical. He demonstrated experimentally that by restoring minerals to the soil, he could double and redouble the mineral content of crops grown on that soil. He produced healthier seed potatoes in Maine, better grapes in California, better oranges in Florida, richer milk in dairy herds, and eggs higher in essential elements. The article documents the case studies in detail.

The honest thing to acknowledge is what Senate Document 264 is and what it is not. It is not a Senate investigation, a peer-reviewed study, or a piece of government-funded research. It is the official preservation, in the U.S. government record, of one physician's pioneering work and one writer's account of it. That alone is significant. What makes it remarkable is what came afterward.

What the science has confirmed in the ninety years since

In the decades after 1936, what Dr. Northen claimed about depleted soil and nutrient-poor food was tested, measured, and re-examined by independent researchers using modern methods. The findings have substantially confirmed what he said.

In 1997, Anne-Marie Mayer, an independent British researcher, published a comparative analysis in the *British Food Journal* titled *Historical changes in the mineral content of fruits and vegetables*. Comparing UK food composition tables

from 1936 to 1991, she reported statistically significant declines in calcium, magnesium, copper, and potassium in vegetables, and declines in magnesium, iron, copper, and potassium in fruits. The largest reduction was copper in fruit, which had fallen to less than 20 percent of its 1936 value [1].

In 2004, Donald Davis and colleagues at the University of Texas published a study in the *Journal of the American College of Nutrition* comparing USDA nutrient data for 43 garden crops between 1950 and 1999. They reported statistically reliable declines in protein, calcium, phosphorus, iron, riboflavin, and vitamin C across that fifty-year period [2]. Davis attributed the decline to what he called the environmental dilution effect: modern crop varieties bred for higher yield draw the same quantity of minerals from the soil but spread them across more biomass, so the concentration per serving falls.

The mechanism that Dr. Northen named in 1936 has been confirmed at the soil itself. The United States Geological Survey publishes detailed maps of the geochemical composition of American topsoils. Their data shows that essential trace minerals, including selenium, are distributed unevenly and are absent or low across large agricultural regions [3]. The official USGS soil data is publicly available at pubs.usgs.gov/sir/2017/5118.

Modern agricultural practice has been shown to make the depletion worse rather than better. Peer-reviewed work has documented that glyphosate-based herbicides, used at industrial scale in modern farming, bind to certain mineral nutrients in soil and reduce their availability to growing plants [4].

What one physician described in 1936 as the impoverishment of the American food supply has been measured, re-measured, and confirmed by independent peer-reviewed research across multiple decades.

What this looks like in Canada today

The consequence of nutrient-poor food, predicted in 1936 and measured ever since, shows up in modern Canadian health data.

The Canadian Community Health Survey, the most comprehensive nutritional dataset Canada produces, has documented that meaningful percentages of Canadian adults consume less than the Estimated Average Requirement for several essential nutrients, including magnesium, vitamin A, calcium, and vitamin D. The Health Canada analysis is publicly available [5].

Vitamin D is the clearest documented case. Statistics Canada analysis of the Canadian Health Measures Survey reported that approximately one in three Canadians has blood vitamin D below the threshold considered adequate for bone health, with the proportion rising through the winter months [6]. The Statistics Canada report is available at statcan.gc.ca.

Magnesium intake is similar. Peer-reviewed analyses have consistently found that roughly half of adults in North America consume less magnesium than the recommended amount [7]. Magnesium is a cofactor in hundreds of enzymatic processes in the body.

None of these are findings from supplement companies. They are findings from Statistics Canada, from Health Canada, and from peer-reviewed nutrition research. They describe a Canadian population that mostly considers itself well-fed.

What this means for an ordinary person

Ninety years ago, a physician in Florida warned that the soil on which American food was grown had been depleted, that the food grown on it no longer carried what it once did, and that the people eating it were quietly being shortchanged. The United States Senate preserved that warning in the official government record.

Ninety years of subsequent research, conducted independently in different countries by different scientists using different methods, has substantially confirmed the core of what he said. The food has measurably less in it than it used to. The people eating it have measurably less in them than they should.

This is not a fringe concern. It is documented in the official records of the U.S. government, in peer-reviewed scientific journals, in the published data of Statistics Canada and Health Canada, and in the soil maps of the United States Geological Survey. The links to all of those sources are provided above.

My mother understood this in the 1970s without needing a citation. She was right. The work of Dr. Northen in 1936, the peer-reviewed research since, and the Canadian survey data today all say the same thing she said: the food has changed, and a sensible person responds by paying attention to what they are actually getting from it.

Where to begin

If you would like to understand what a sensible nutritional response looks like for your own situation, I offer personal consultations at Advanced Healing & Health. The consultation is a structured conversation about what you are actually eating, what you may or may not be getting from it, and what a thoughtful approach might look like for you specifically.

Call 705-715-8716, or visit advancedhealing.ca.

References and primary sources

The primary historical document referenced in this article:

United States Senate. *Modern Miracle Men*. 74th Congress, 2nd Session, Senate Document No. 264. Presented by Senator Duncan Fletcher of Florida, June 1, 1936. Ordered to be printed by the United States Government Printing Office, Washington, 1936.

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