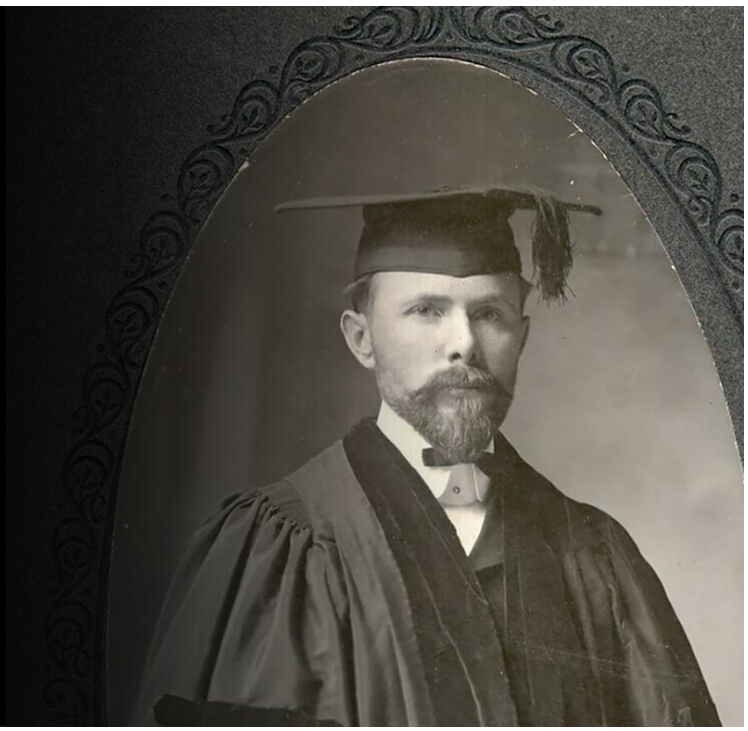
1

Joseph Hutton

- 1873 Born in Indiana on a farm
- 1899 degree In Education Indiana State Normal School
- Taught in rural country schools and Superintendent.
- 1908 BS. Botany – University of Chicago
- 1910 MA in Geology from University of Illinois
- 1911-1939 Professor of Agronomy at South Dakota College of Agriculture and Mechanic Arts (SDSU)

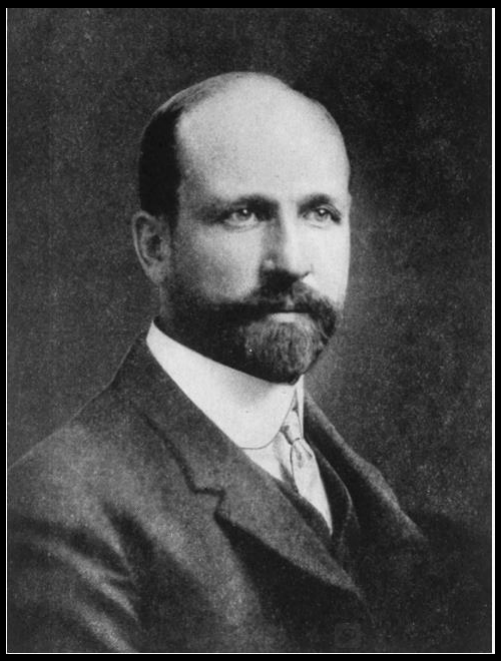


2

Pioneers in Soil Science

Cyril G. Hopkins

- 1866 Born in Minnesota
- Age 14 moved to Estelline, South Dakota
- Taught in SD rural schools –almost died in Children Blizzard
- 1890 Graduated from SDSU
- 1890- 1892 SDSU Assistant in Agricultural Chemistry.
- 1893 – Graduated from Cornell
- 1894 - Chemist of the University of Illinois Agricultural Experiment Station.
- 1900 – Head of Agronomy Department University of Illinois.



3

"If the art of agriculture has ruined the land, the science must restore it".

– Cyril G. Hopkins

4

Joseph Hutton's Calling

Science in the Service of Agriculture
Cyril G. Hopkins 1910
presentation at Illinois Academy of Science

- Permanent Agriculture, a farm never wears out.
- Soil health is the source of all life
- Soil Conservation is the greatest "material problem" to be solved.
- Saving soil is only second to saving one's soul

"Some people are converted only to religion, but I was converted to his [Hopkins']philosophy of agriculture and have never been a backslider."

-Joseph Hutton

5

"Soil Science includes many of the sciences: meteorology, geology, botany, zoology.

All of these sciences are involved in soil science, and all of them may be understood by people who will take the time to study them."

– Joseph Hutton

6

Pioneers in Soil Science

A. N Hume

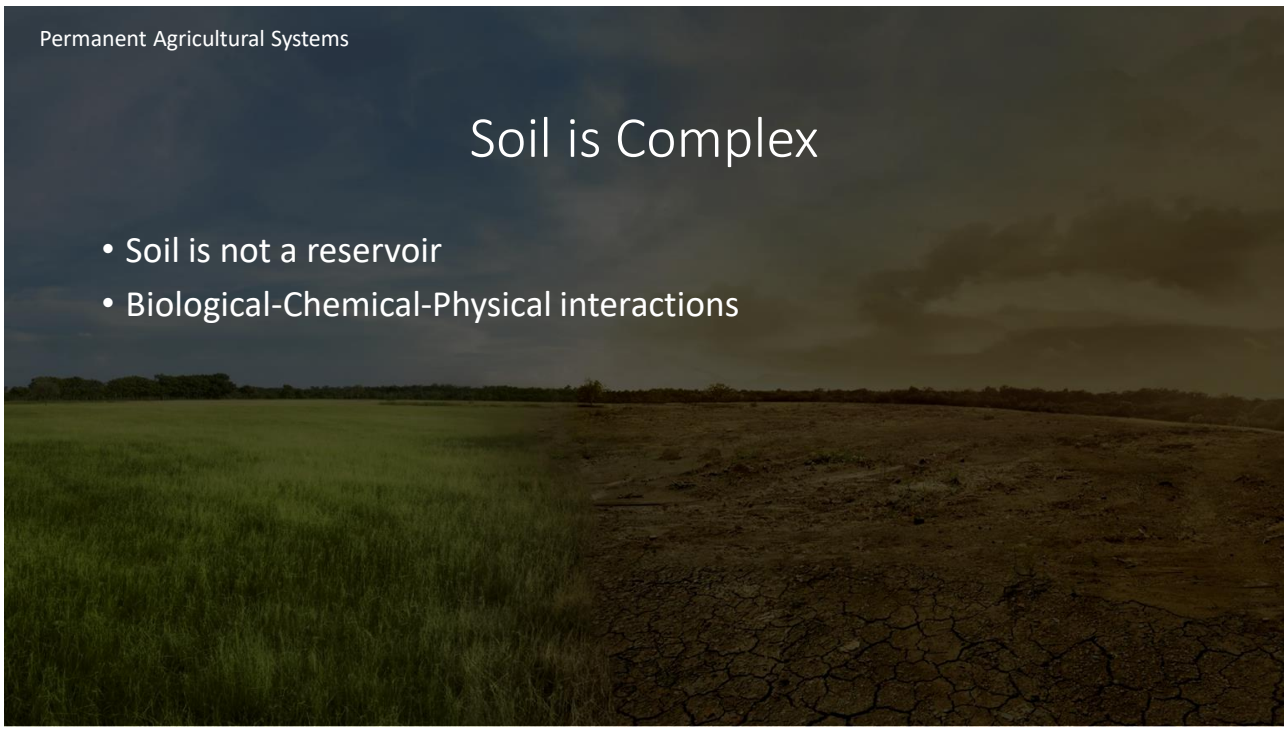
- Plant geneticist specializing in corn
- Hopkins colleague at U of Illinois
- 1911 – 1943 – SDSU Head of the Agronomy Department
- 1914 – 1st Director of the SD Soil Survey. Placed Hutton in charge of field work.

7

8


Permanent Agricultural Systems
Based on Investigation of Soils
• Soil survey
• Experiments
• Measurements and Observations

9


Permanent Agricultural Systems
Soil is Complex
• Soil is not a reservoir
• Biological-Chemical-Physical interactions

10


Permanent Agricultural Systems
Materials removed must be renewed
• Nitrogen, Organic Matter, Phosphorous
• Natural Processes

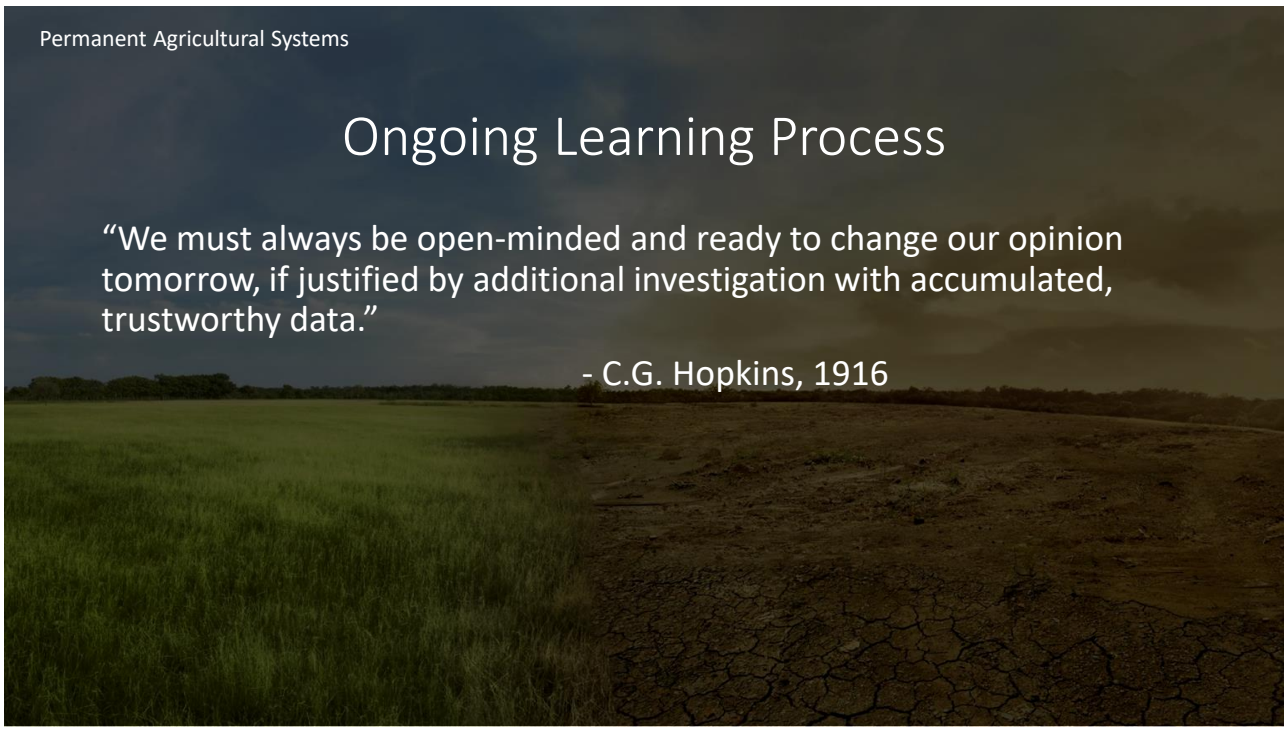
11


Permanent Agricultural Systems
Soil Management is Critical
• Rotations, Legumes, Livestock, Manure, Perennials, Cover crops
• Informed additions of Fertilizers

12


Permanent Agricultural Systems
Soils, Farms, and Fields are Different
• Not a recipe or formulation
• One size does not fit all

13


Permanent Agricultural Systems
Ongoing Learning Process
“We must always be open-minded and ready to change our opinion tomorrow, if justified by additional investigation with accumulated, trustworthy data.”
- C.G. Hopkins, 1916

14

Conservation Fundamentals

From Soil comes all life
Understand the type of soil for best management decisions
Crop Rotation
Cover crops
Listing fields
Shelter belts
Replenish nutrients

15

1st Soil Survey 1917-1924

"How much is the state spending to find out the facts about soils of the state? Not one cent. How much would it cost to find out? Less than a total of ten cents per acre, payable in installments over twenty years."(66).

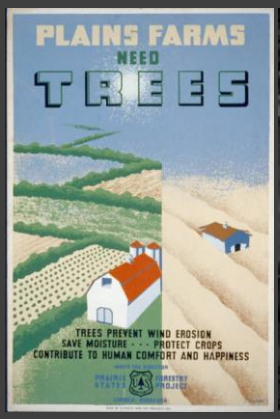
-Joseph Hutton 1929

16

17

- “For almost 25 years I have been crying out against this ruinous process, but in most cases have been met by gibes and jokes and even sneers on the part of people of our commonwealth. They have said, “Oh, that soil will be always with us. We can study it when we have more money. When the taxes are not needed for something else.”
- - Joseph Hutton 1934

18



Soil Conservation Act 1935

19

20

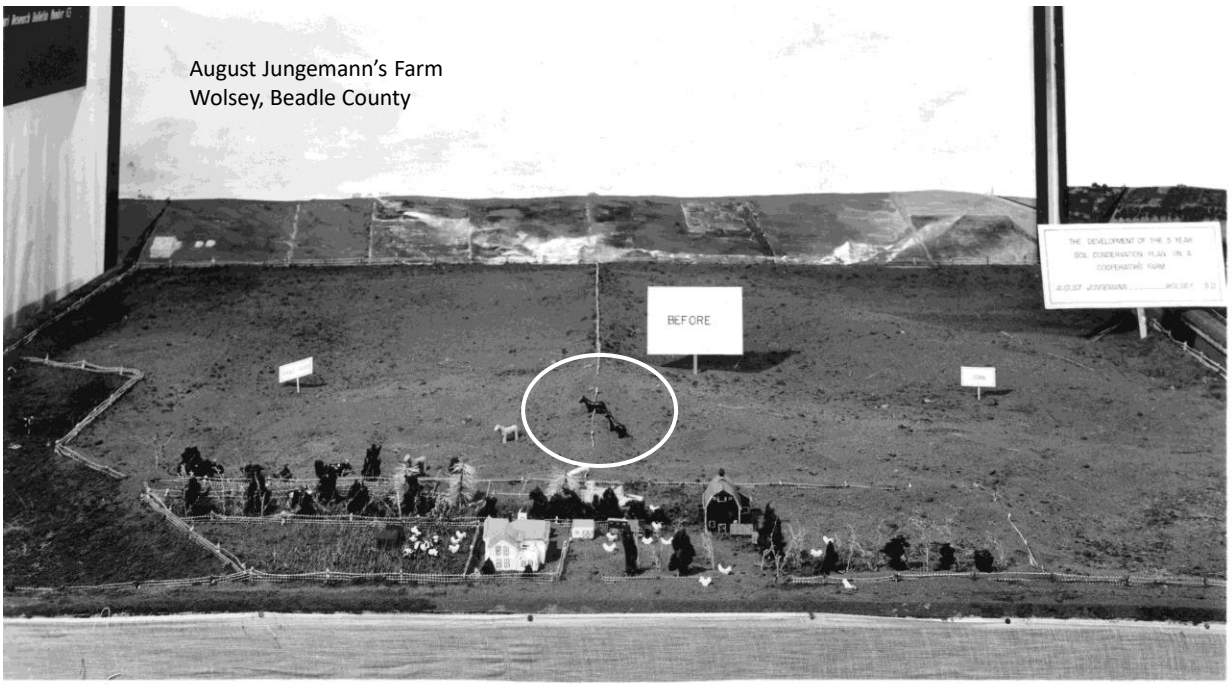
Serial No. 33-197:- NW¼ Sec. 18-111-61, Valley Township. Beadle County, South Dakota. Cut and uncut corn in the same quarter section as the preceding picture, No. 33-196. The soil in the cut section (background) is unprotected and is blowing out rapidly. The soil in the uncut section (foreground) is protected and not being blown out. The wind velocity when this picture was taken, was about 26 M. P. H. (10/15/35).

21

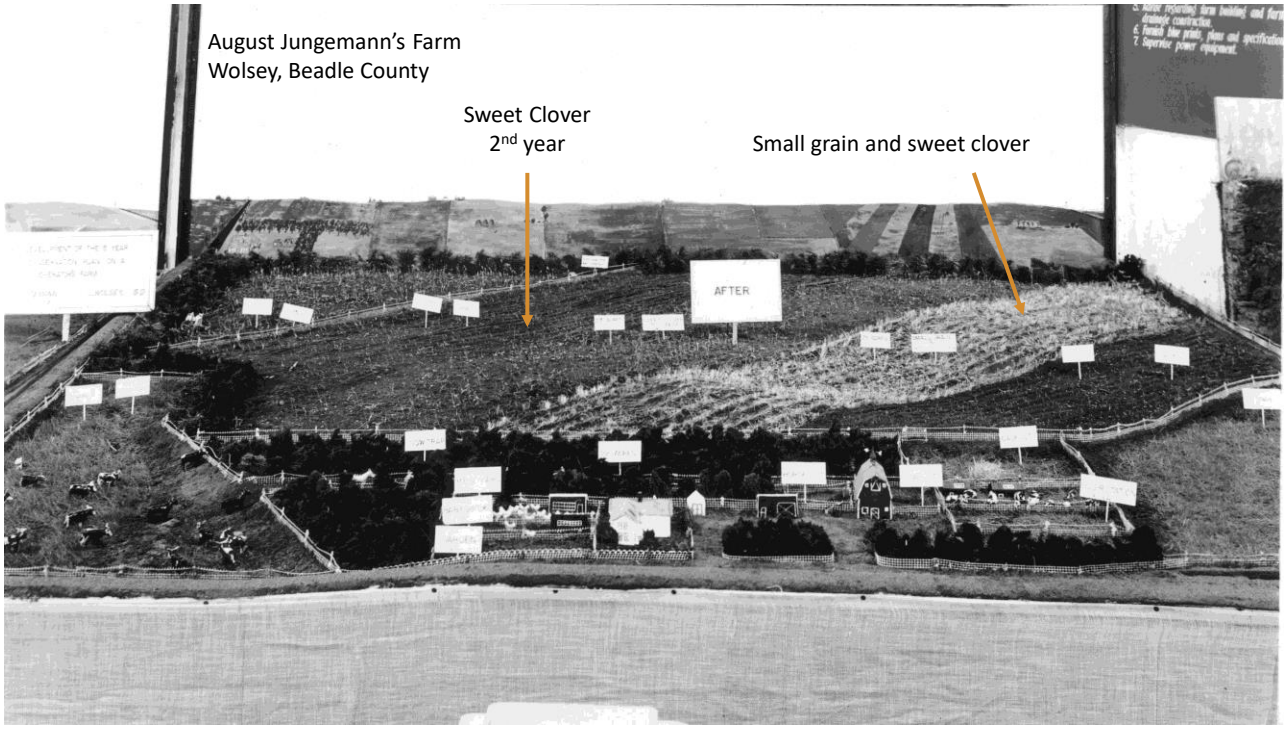
Serial No. 33-202:- Iowa Township, Shue Creek Area, South Dakota. Same field as No. 33-201, human figure (Caird) going South into the 26 mile wind. Small drifts can be seen, in the foreground of the picture, forming on the protected side of each Russian Thistle. (10/15/35)

22

23



24


August Jungemann's Farm
Wolsey, Beadle County
Sweet Clover
2nd year
Small grain and sweet clover
AFTER

25


Fred Von Seggern's abandoned Farm
Tripp County, Winner – Dixon area

26


Fred Von Seggern's abandoned Farm
Tripp County, Winner – Dixon area

27


Karnstrum Farm
Hartland township
Beadle County, SD

28


Karnstrum Farm
Hartland township
Wolsey area, SD

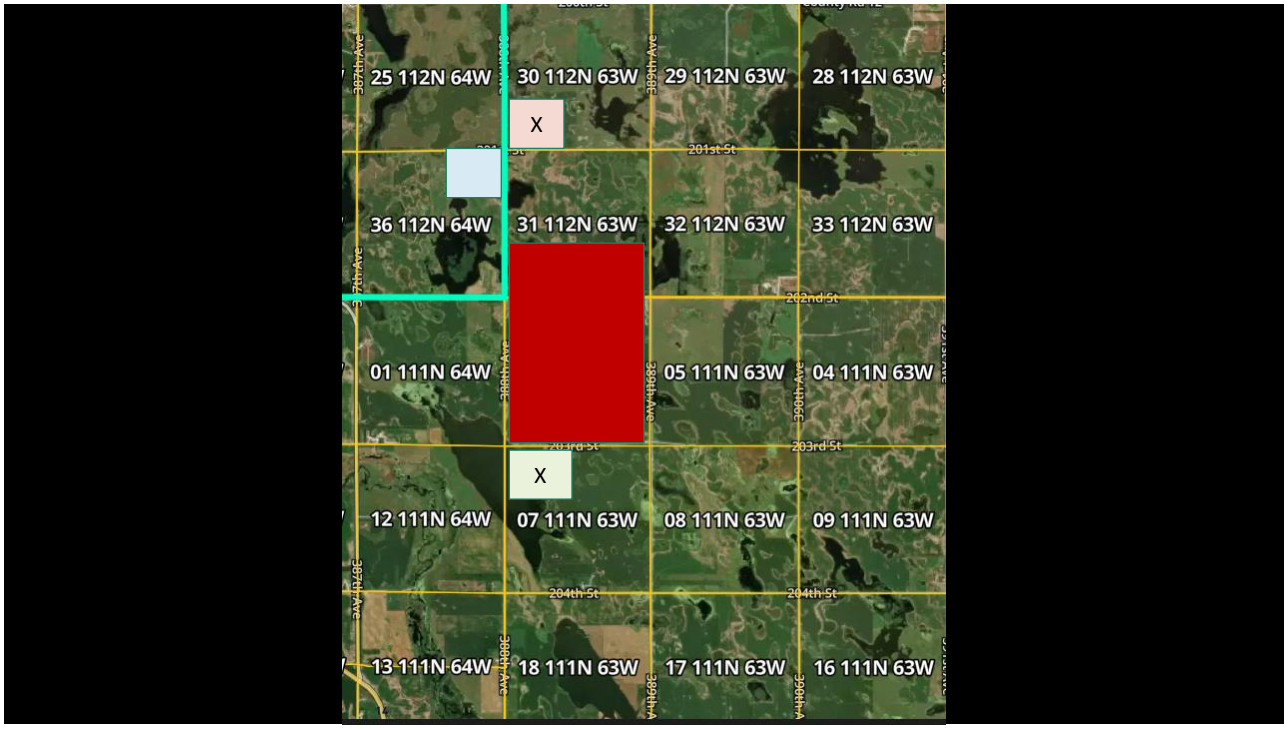
29


Lena Jefferson abandoned farm
Wolsey area, Beadle County

30

31

32


25 112N 64W
30 112N 63W
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201st St
36 112N 64W
31 112N 63W
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33 112N 63W
202nd St
01 111N 64W
05 111N 63W
04 111N 63W
203rd St
X
12 111N 64W
07 111N 63W
08 111N 63W
09 111N 63W
204th St
13 111N 64W
18 111N 63W
17 111N 63W
16 111N 63W

33


Vernon Evans and his family from Lemmon, SD
Missoula, Montana
July 1936
OREGON OR BUST

34

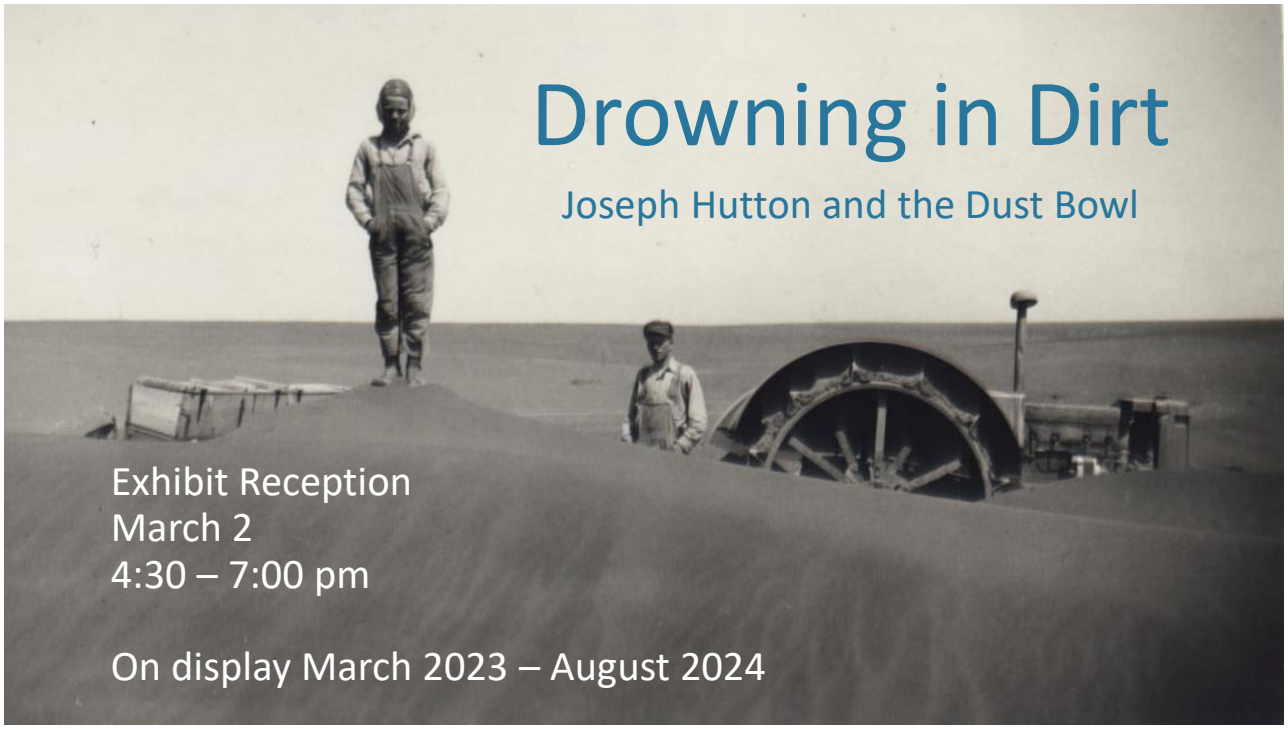
Spreading the Word

- Radio Program
- Wrote Poetry
- Gave presentations
- Published articles and pamphlets

35

His Legacy is Still Contributing to Science

36



37

Thank you

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