



Quantifying abandoned mine lands in the U.S.

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USMIN

Featured

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Arranged by Relevance

USGS Topographic Mine-related Symbols



These data are a digital version of mine and prospect-related symbols found on USGS 7.5- and 15-minute series historical topographic maps (1888 - 2006).

Map Service by USGS_GGGSC 7/24/2019

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Rare Earth Element Occurrences in the United



This data release provides descriptions of more than 200 mineral districts, mines, and mineral occurrences (deposits, prospects, and showings) within the United States that are

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Global Distribution of Selected Mines, Deposi



The geospatial data represents the global distribution of selected critical mineral resource features for 23 minerals or mineral commodities.

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Tungsten Deposits in the United States



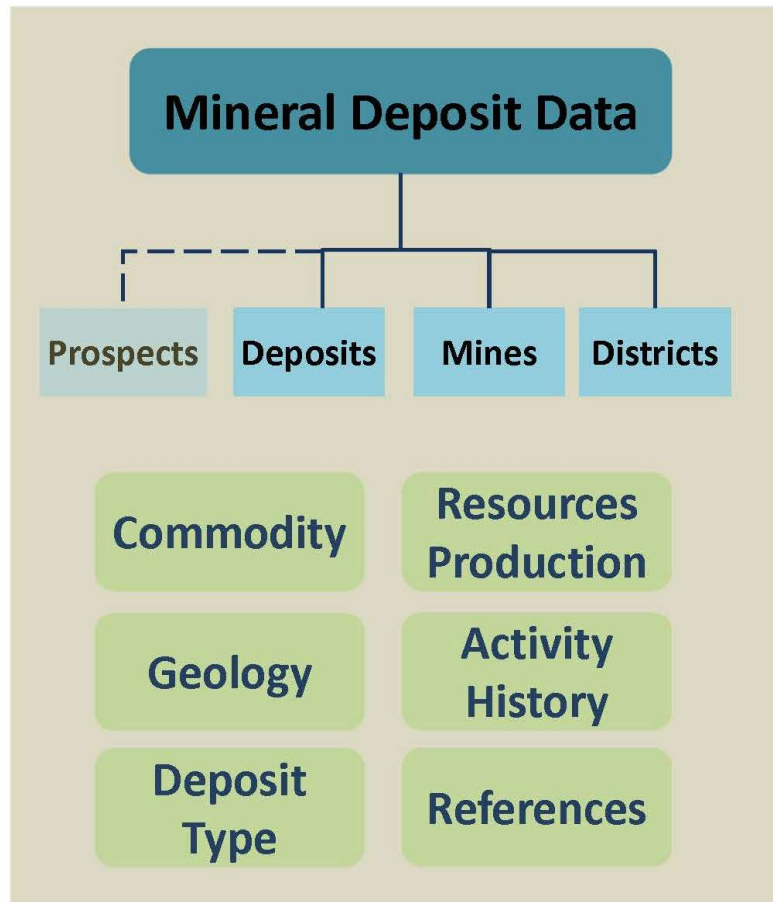
This data release provides descriptions of more than 80 of the largest tungsten mineral districts, mines, and mineral deposits within the United States.

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USMIN Project



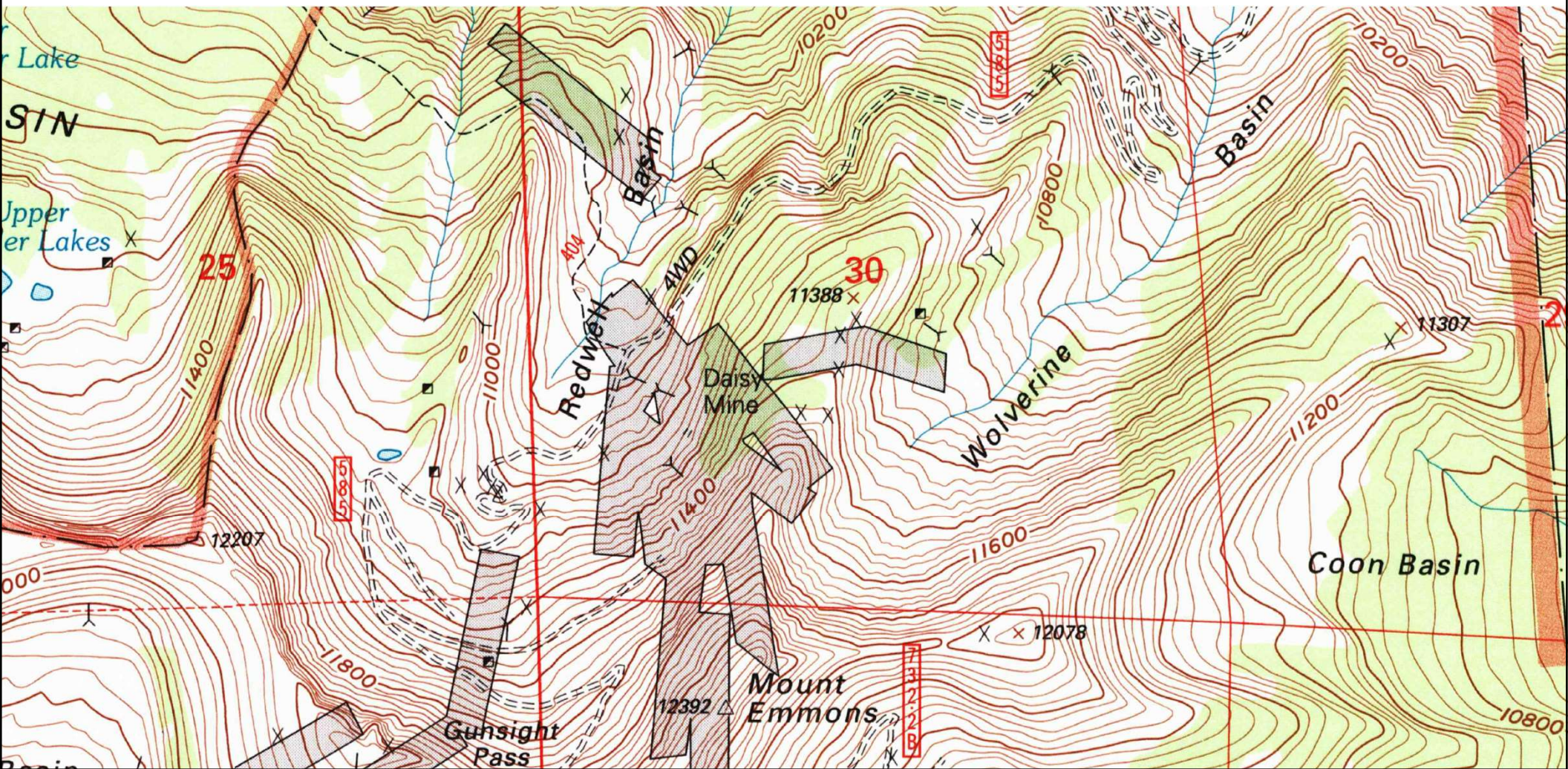
Mine Symbol Data

Adit, prospect, mine, quarry, pit, glory hole, gravel borrow, shaft, dump, open pit mine, placer mine, etc.

1:24,000 1:48,000 1:62,500

The diagram is enclosed in an orange border. At the top is a blue rounded rectangle labeled 'Mine Symbol Data'. Below it are several symbols: a large brown and blue irregular shape representing a mine, and several smaller symbols including a 2x2 grid of blue squares, a blue square, and 'X' marks. Below the symbols is a list of mine types: 'Adit, prospect, mine, quarry, pit, glory hole, gravel borrow, shaft, dump, open pit mine, placer mine, etc.'. At the bottom are three map segments with scale labels: '1:24,000', '1:48,000', and '1:62,500'.

Mine symbols on USGS topographic maps



USMIN topographic database feature classes

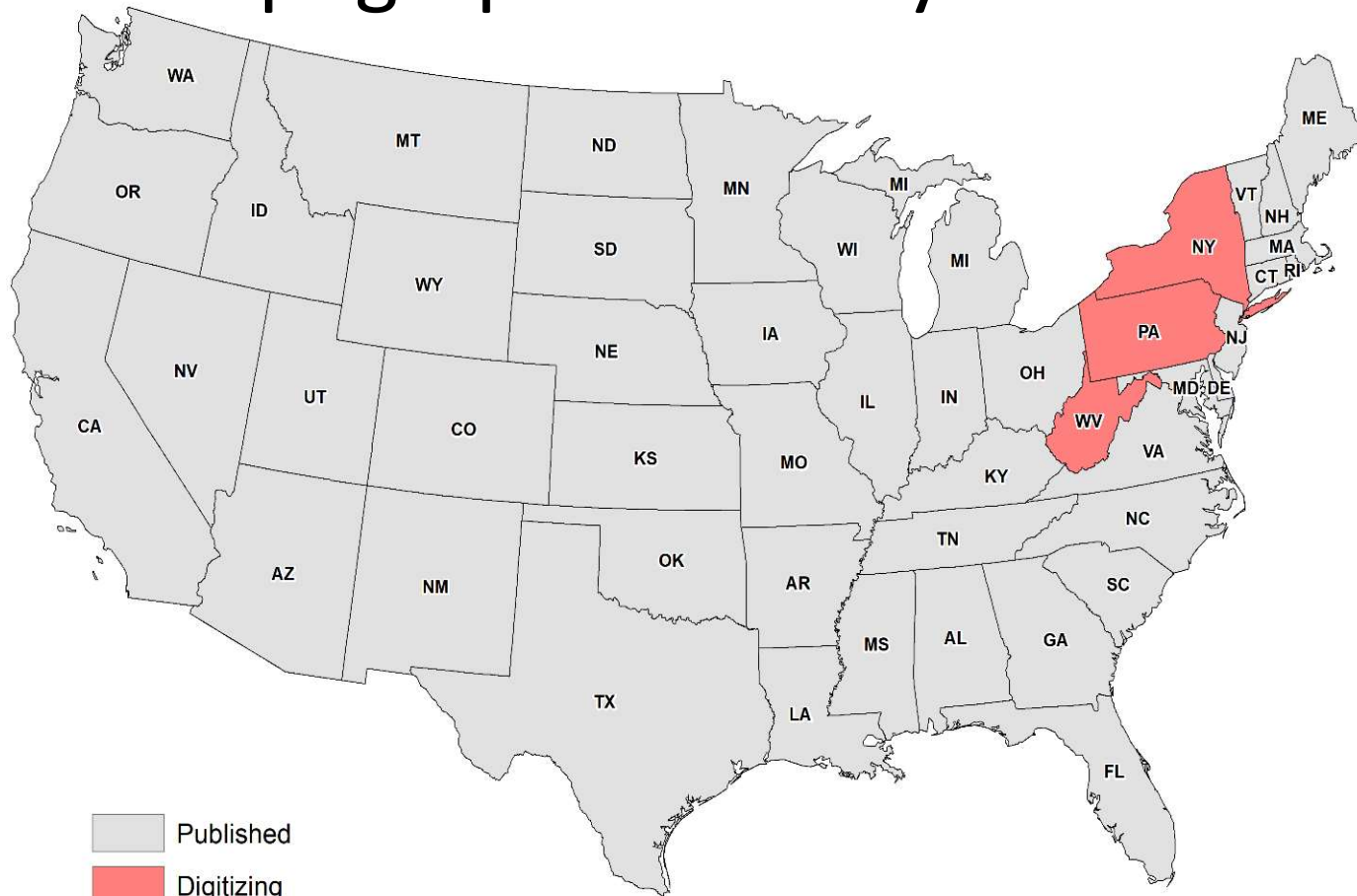
- | | | |
|---|-----------------------------|---------------------------------|
| 1. Adit | 18. Leach pond | 36. Sand and gravel pit |
| 2. Air shaft | 19. Lignite pit | 37. Sand pit |
| 3. Bentonite pit | 20. Mill site | 38. Scoria pit |
| 4. Borrow pit | 21. Mine | 39. Settling pond |
| 5. Caliche pit | 22. Mine dump | 40. Shale pit |
| 6. Cinder pit | 23. Mine shaft | 41. Shell pit |
| 7. Clay pit | 24. Open pit mine | 42. Silica mine |
| 8. Coal mine | 25. Open pit mine or quarry | 43. Slag pile |
| 9. Diggings | 26. Ore stockpile/storage | 44. Strip mine |
| 10. Disturbed surface | 27. Placer mine | 45. Tailings - dredge |
| 11. Disturbed surface - pit | 28. Prospect pit | 46. Tailings - mill |
| 12. Evaporation pond | 29. Pumice pit | 47. Tailings - placer |
| 13. Glory hole | 30. Quarry | 48. Tailings - pond |
| 14. Gravel pit | 31. Quarry - gypsum | 49. Tailings - undifferentiated |
| 15. Gravel/borrow pit -
undifferentiated | 32. Quarry - limestone | 50. Tipple |
| 16. Hydraulic mine | 33. Quarry - pumice | 51. Trench |
| 17. Iron pit | 34. Quarry - rock | 52. Uranium mine |
| | 35. Salt evaporator | |



Preliminary information, subject to revision, not for citation or distribution



USMIN topographic mine symbols—status



Topographic maps reviewed = 94,450+
Points captured = 544,550+
Polygons captured = 122,700+



USMIN topographic database feature classes: KISS

8 feature classes contain 92% of the data

Coal or hard rock

1. Adit
2. Mine shaft
3. Open pit mine
4. Prospect pit

Industrial minerals

1. Borrow pit
2. Gravel pit
3. Quarry
4. Sand pit



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Calculating inactive mine features: Colorado example

- Colorado Department of Public Health and Environment (1980-1982) >23,000 AML physical hazards throughout the State
- Colorado Geologic Survey's estimate (US Forest Service 1991-1999) >20,000 abandoned mine-related features
- USMIN topo data
 - 16,812 coal plus hard rock mining features, not including prospect pits
 - 41,228 with prospect pits
- Errors not accurately and precisely known



Preliminary information, subject to revision, not for citation or distribution

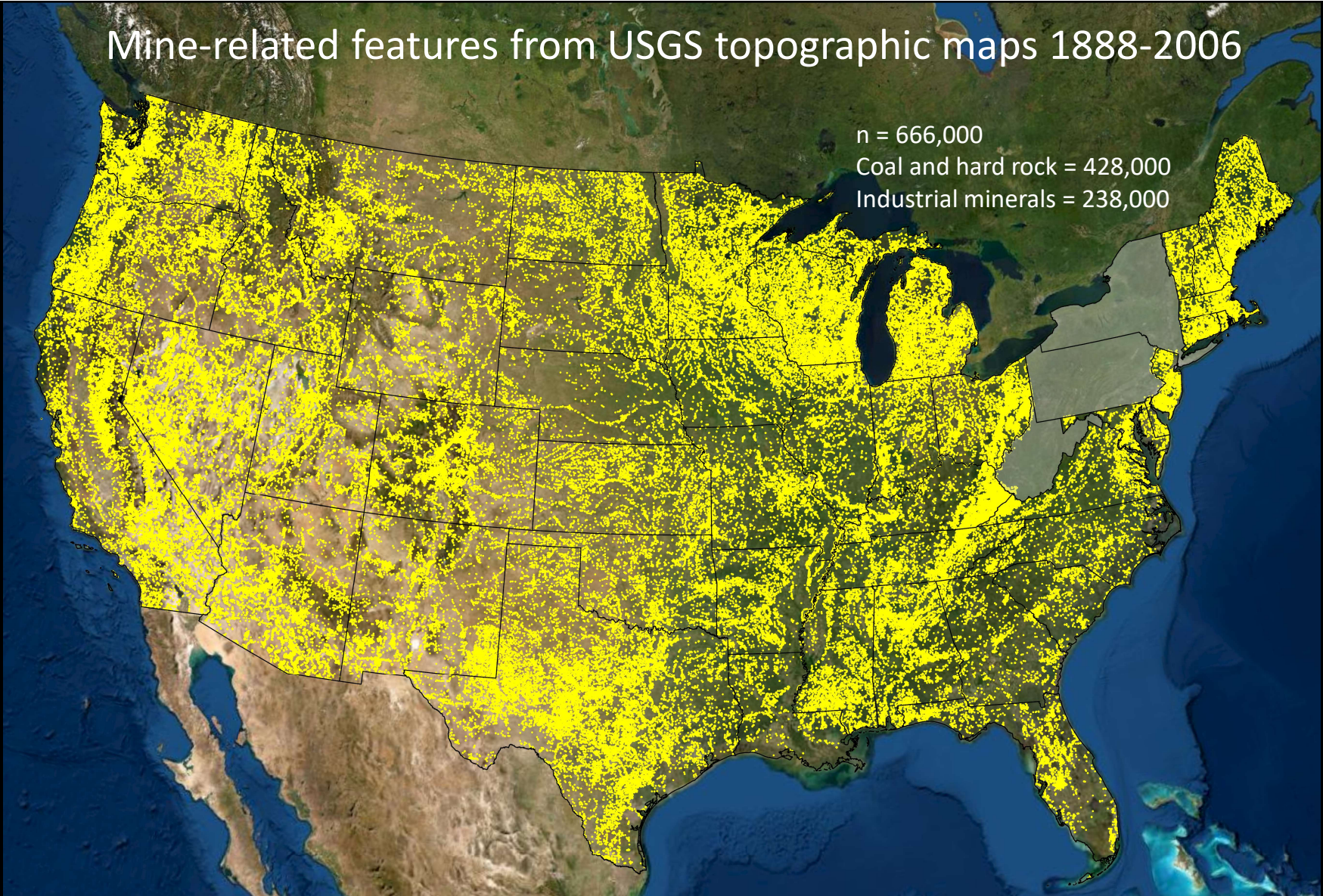


Mine-related features from USGS topographic maps 1888-2006

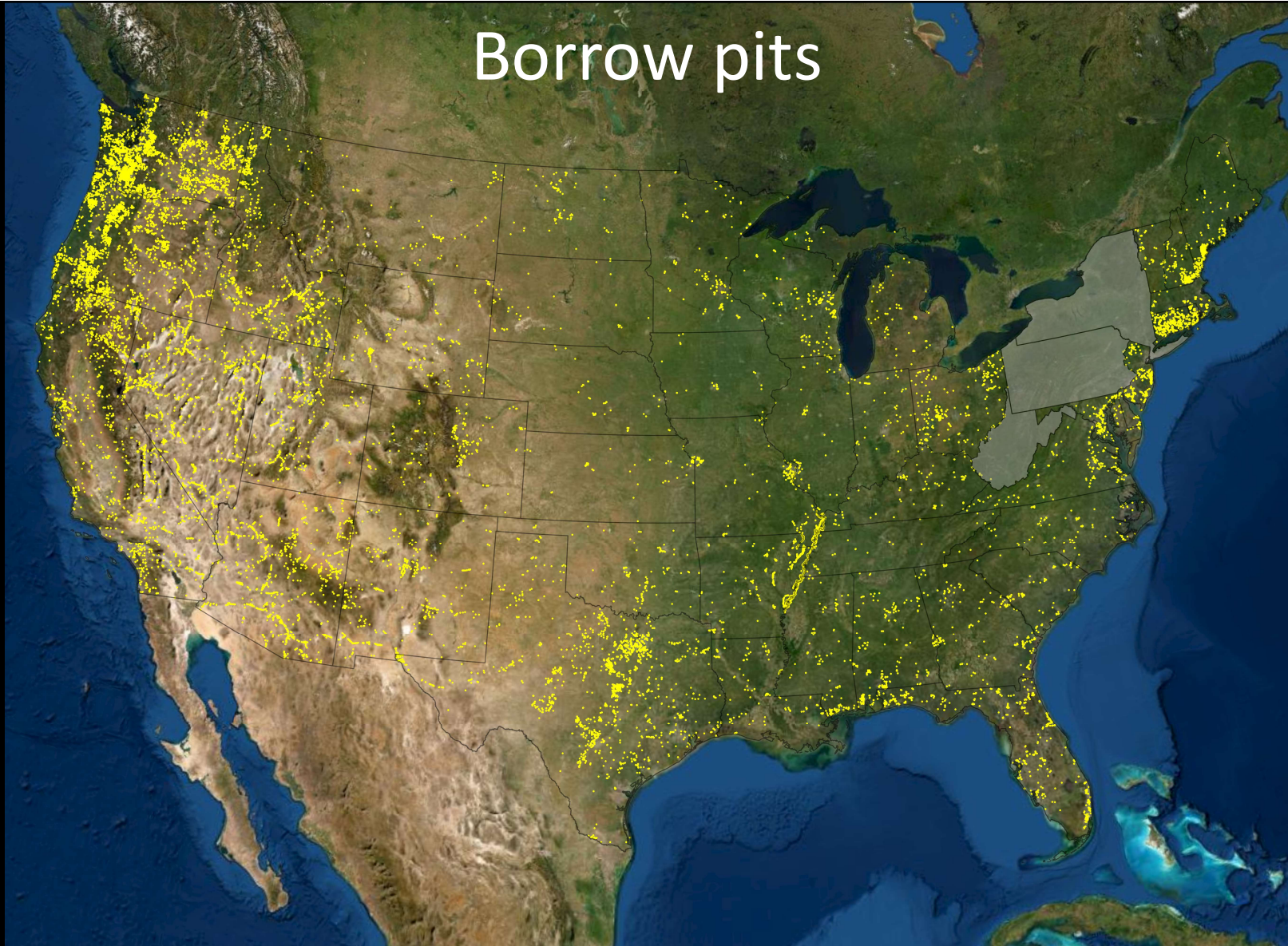
n = 666,000

Coal and hard rock = 428,000

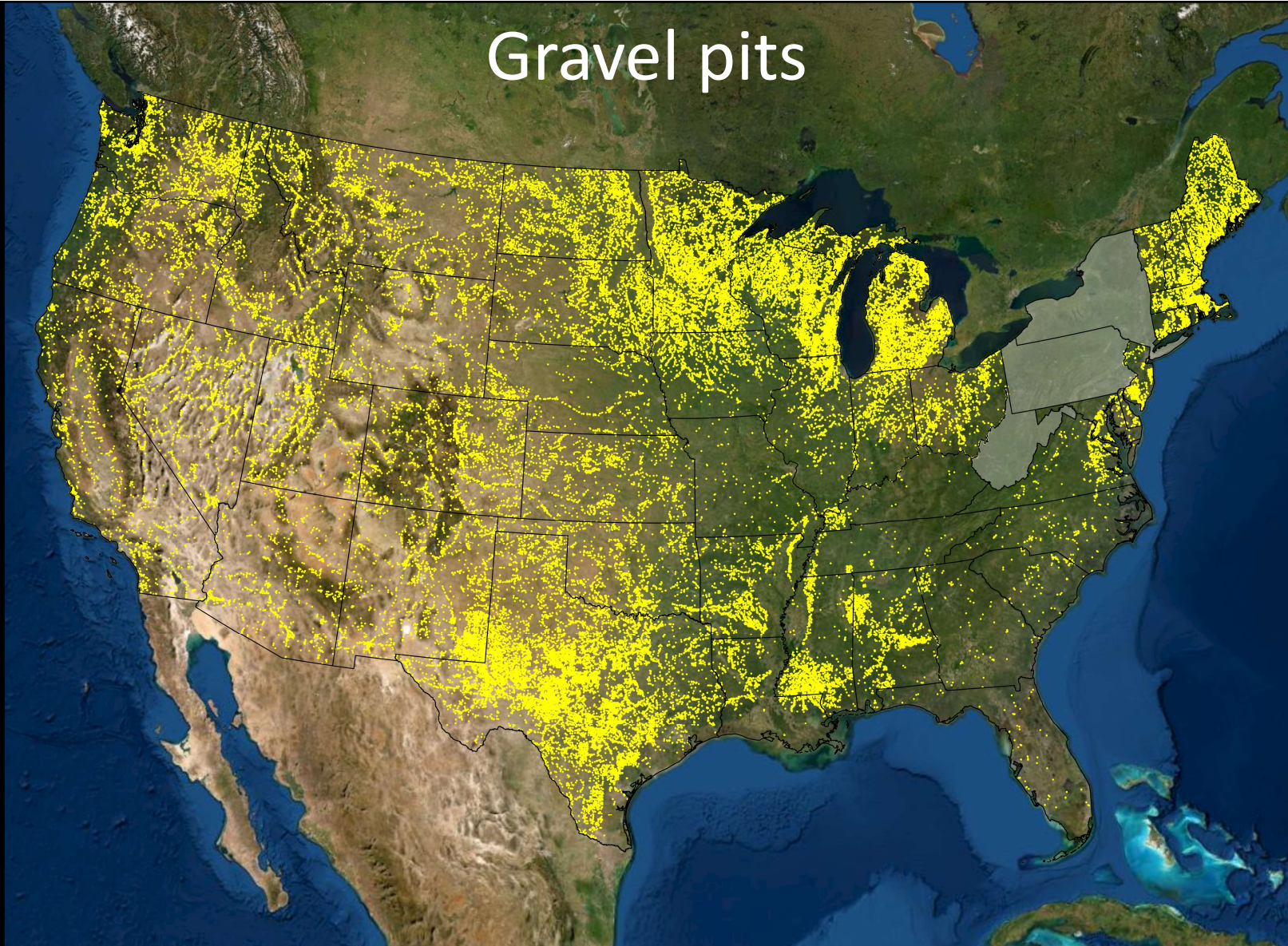
Industrial minerals = 238,000



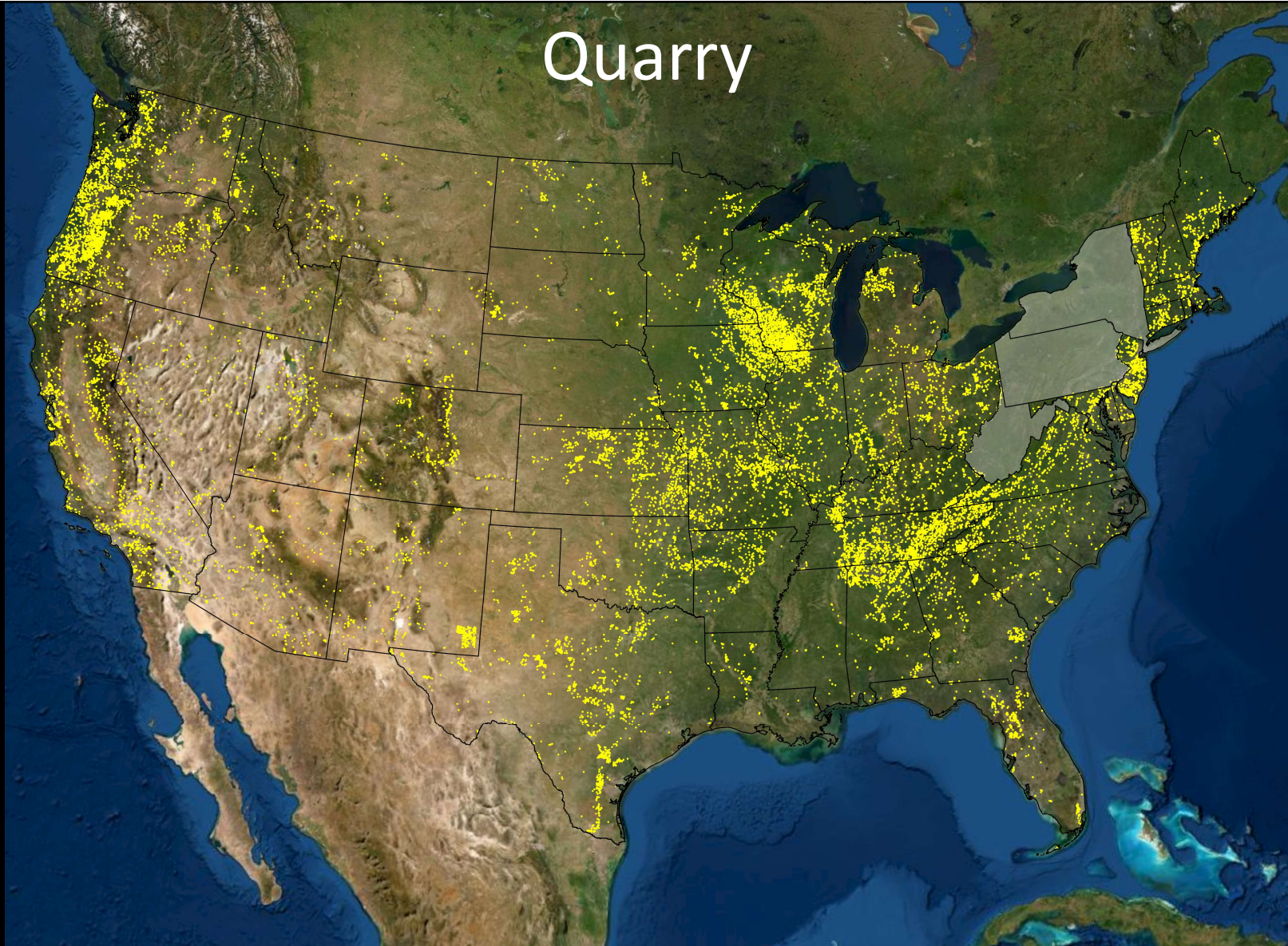
Borrow pits



Gravel pits



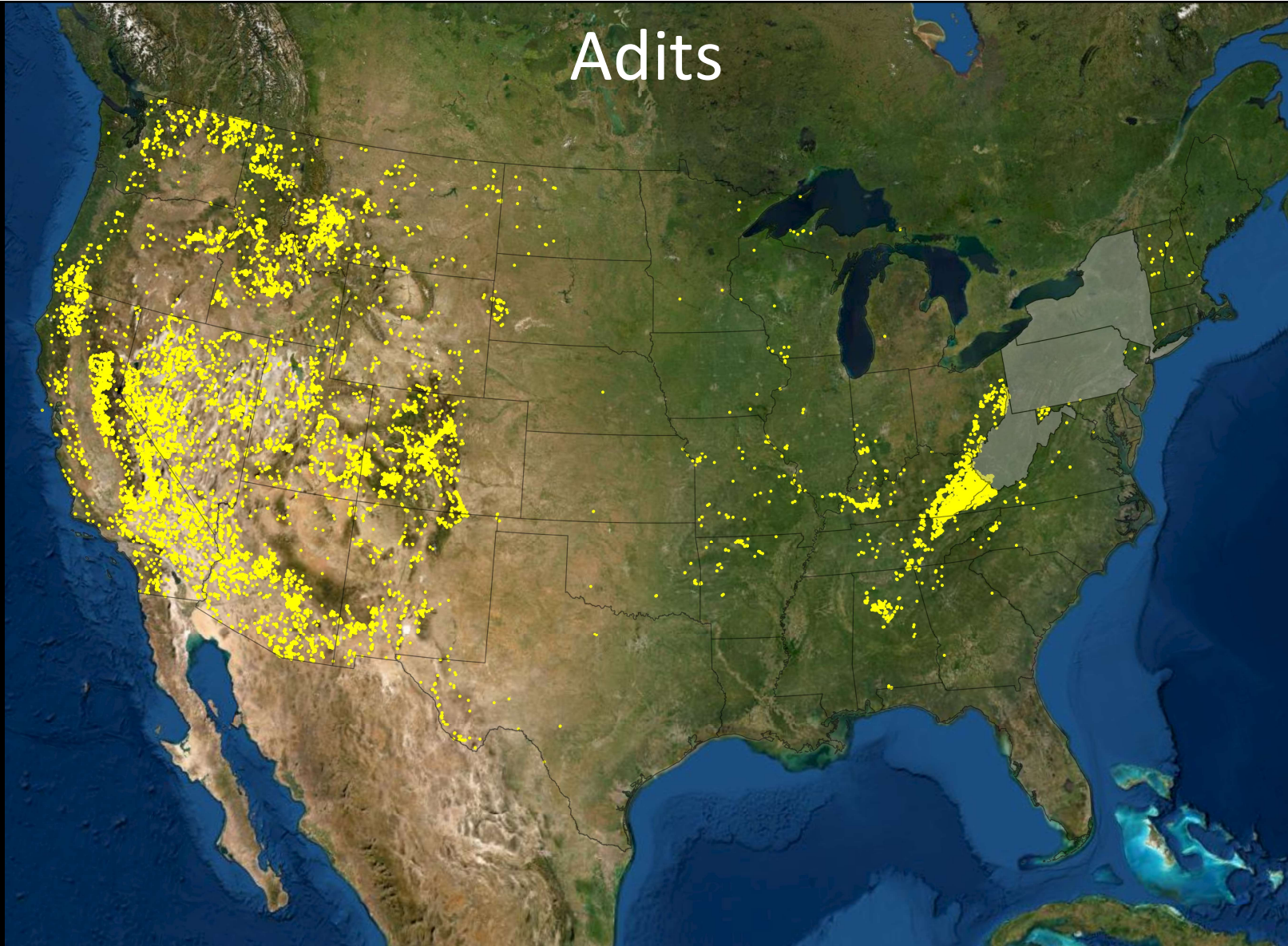
Quarry



Sand pit



Adits



Mine shafts



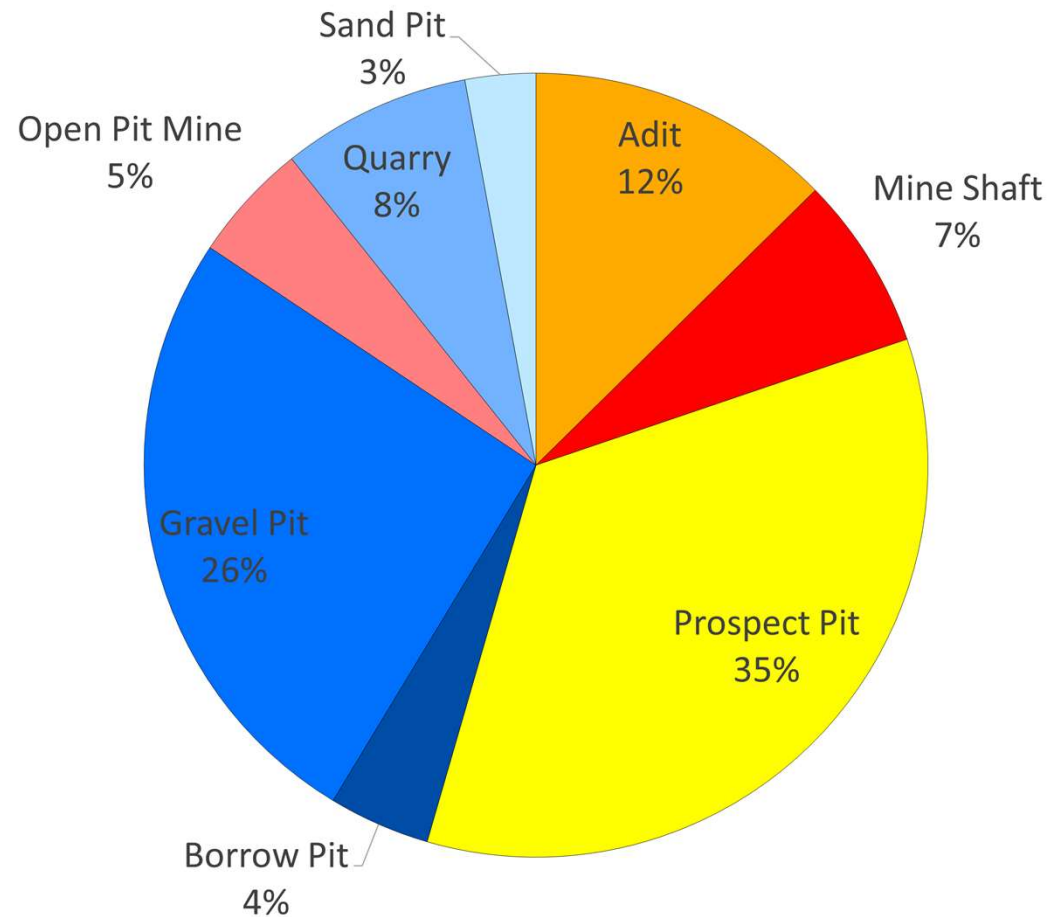
Open pit mines



Prospect pits



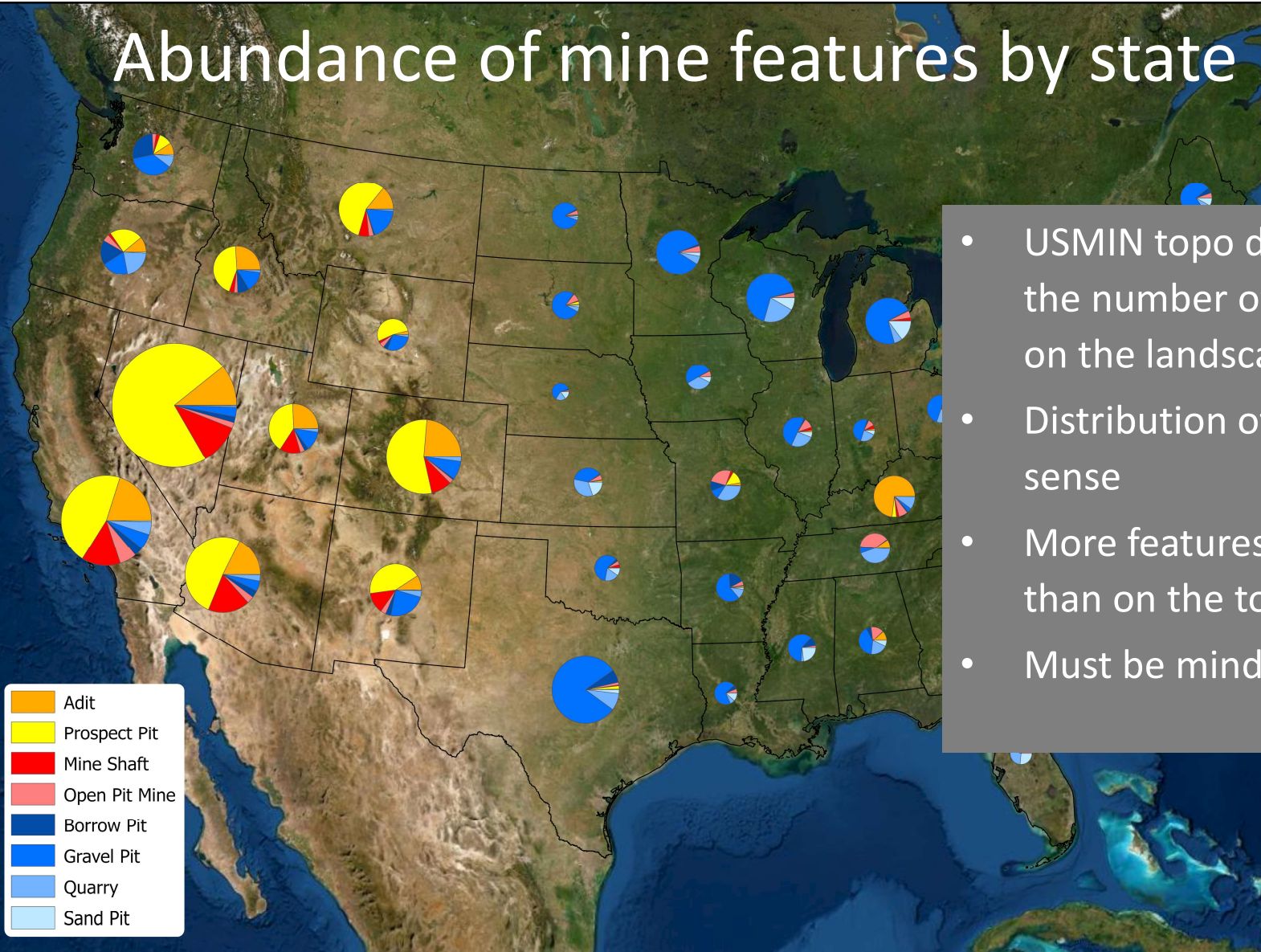
Most abundant mine-related features



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Abundance of mine features by state



- USMIN topo database can quantify the number of mine-related features on the landscape
- Distribution of mine features make sense
- More features on the landscape than on the topographic maps
- Must be mindful of errors

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Questions?



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