The Black Mat Layer

- Not all "black mats" are black; some are light gray
- Not all formed by impact; non-impact ones formed by natural processes
- Non-impact black mats formed at different times, usually at the end of the Ice Age between about 14,500 and 11,500 years ago
- However, black mats were more widespread 12,800 years ago
- Even so, they are not present at about 25% of all YDB sites found
- Of the two types of black mats found, the first is enriched in charcoal and soot that formed in wildfires.
- The second type of black mat contains high quantities of carbon from decayed algae and other plants that likely were killed by abrupt environmental and climatic changes triggered by the YDB impact
- In 12,800-year-old black mats, impacts markers, such as spherules, meltglass, and nanodiamonds are found in and/or just below the mat

NOTE: this website is a brief, non-technical introduction to the YDB impact hypothesis. For in-depth information, go to "Publications" to find links to detailed scientific papers.

Impact-related Dark Layers

- Dark layer
- Melted spherules
- Nanodiamonds
- Carbon spherules
- Glass-like carbon
- Charcoal
- Soot
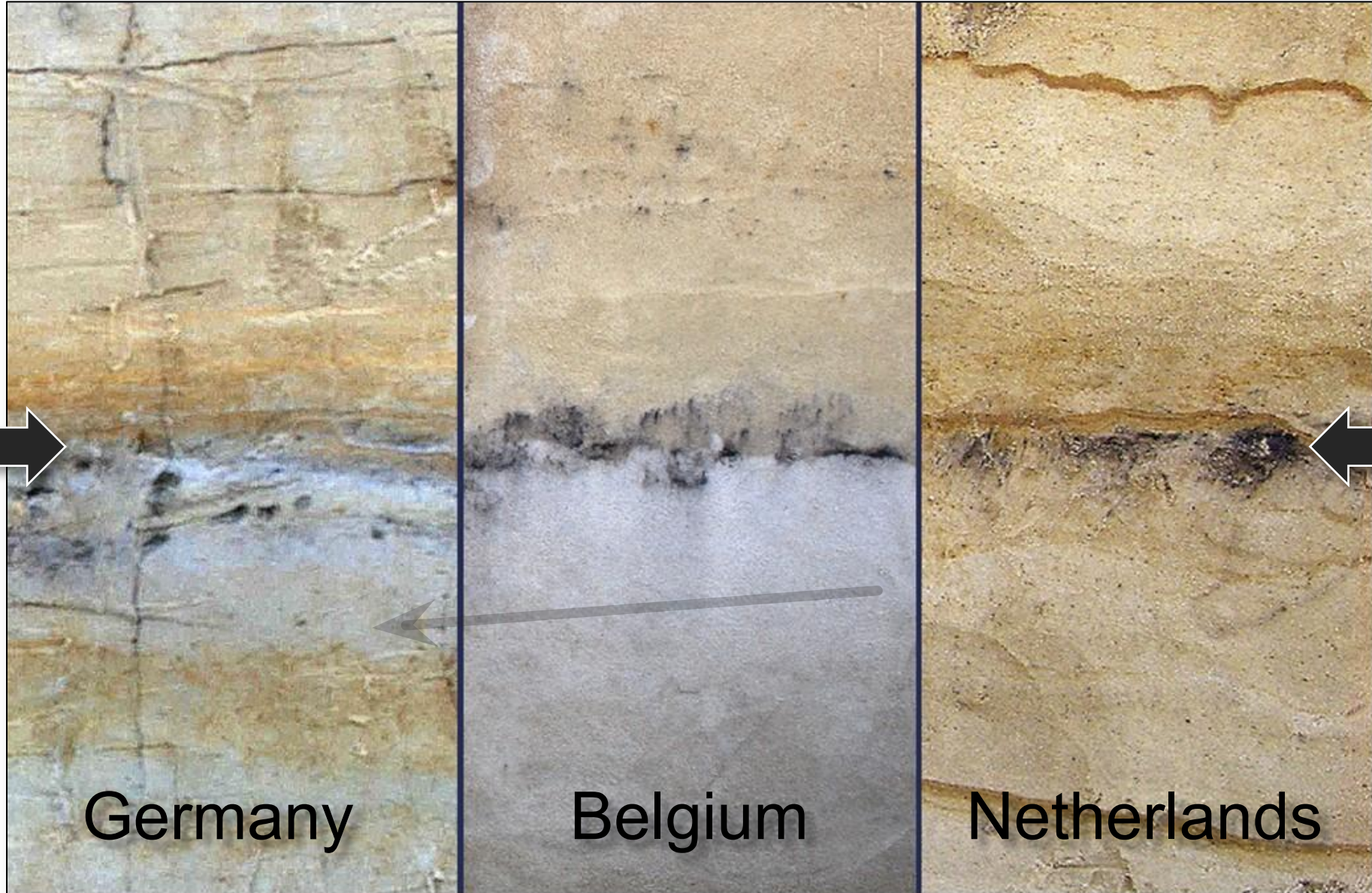- Fullerenes

Credit: Short, N. M., Sr, 1996

**K-Pg Fireball Layer
(dinosaur extinction)**

YDB has the same impact material as K-Pg

**YDB Impact Layer
(mammoth extinction)**

Black Mat in Europe

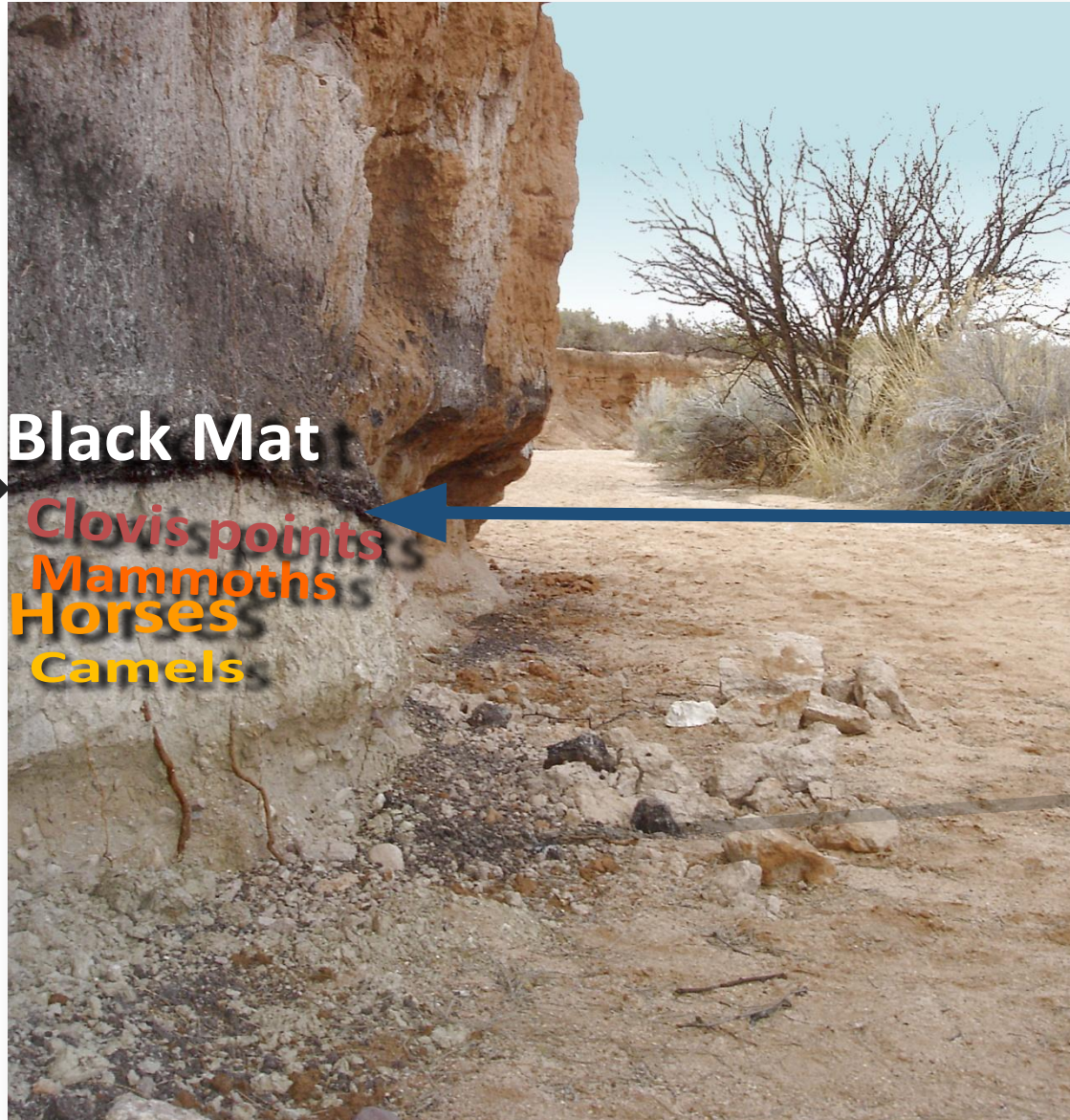**Black Mat at Murray Springs, AZ**

12,800 yrs ➤
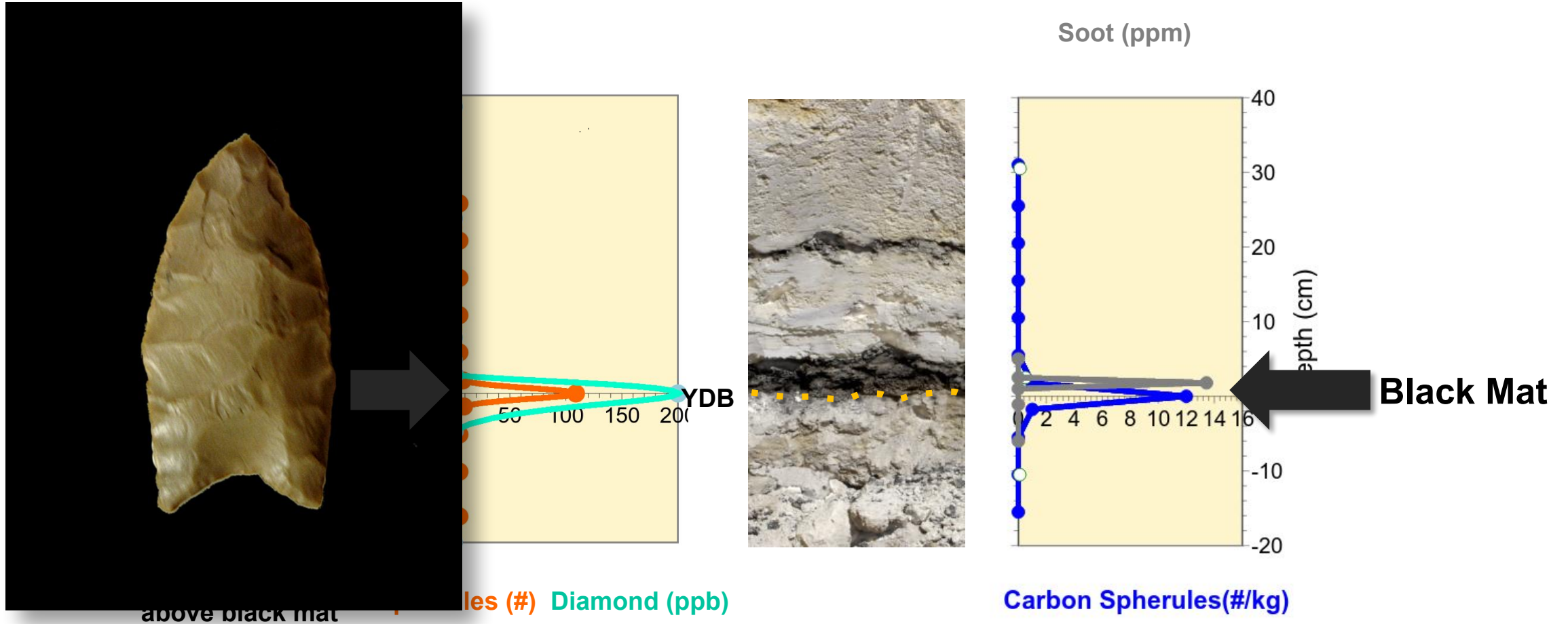
Black Mat

Clovis points
Mammoths
Horses
Camels

Black mat lies above
_____

✓ Impact material

✓ End of Clovis culture

✓ End of megafauna

Another view of Black Mat at Murray Springs, AZ

Black mat: 12,800 yrs ago

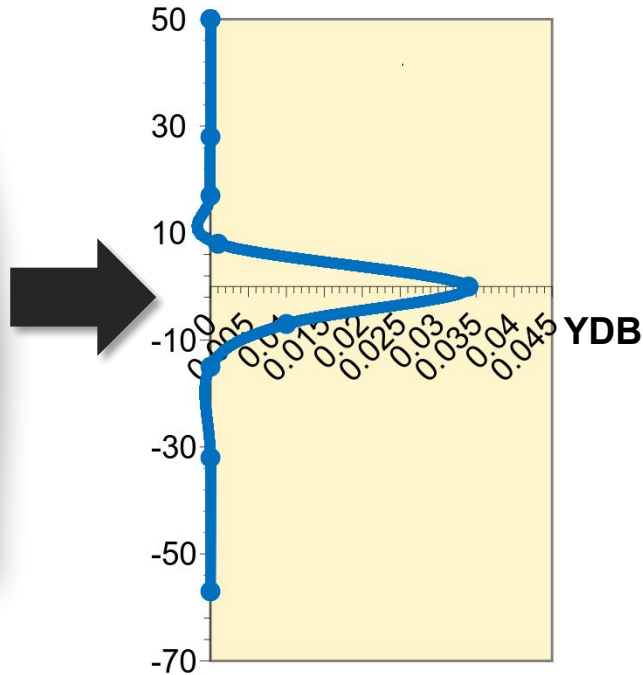YDB markers found below mat at yellow dashed line

Murray Springs, AZ

These images show the association by depth between the black mat and Clovis points, melted spherules, nanodiamonds, carbon spherules, charcoal and soot. Most are just below the black mat.
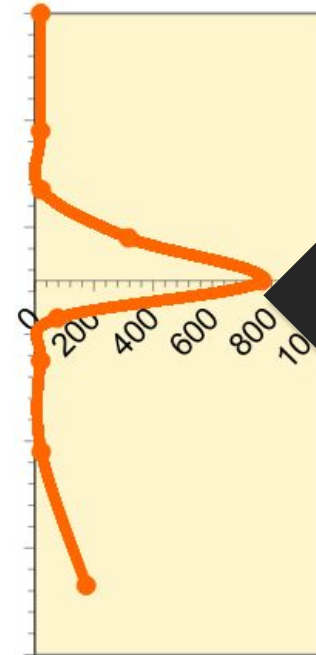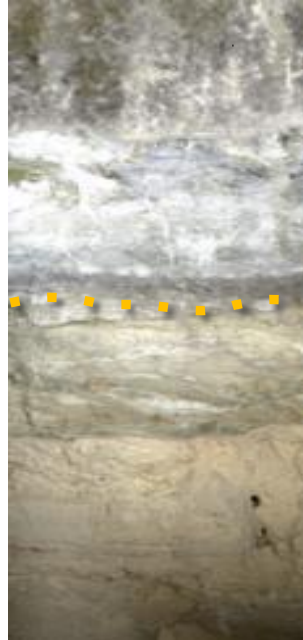
Blackwater Draw, NM

Clovis points are not found above black mat

Glass-like Carbon (g/kg)

YDB

Black Mat

Melted Spherules (#/kg)

These images show the association by depth between the black mat and Clovis points, melted spherules, and glass-like carbon. Most are just below the black mat at yellow dashed line.