

*Naturally-Occurring
Asbestos in
Serpentine Soils
Education Program*

*Rachel Elkins and Julie Frazell,
University of California Cooperative Extension*

A Joint Project of

**Lake County Air Quality
Management District**

and

**University of California
Cooperative Extension**



Discussing

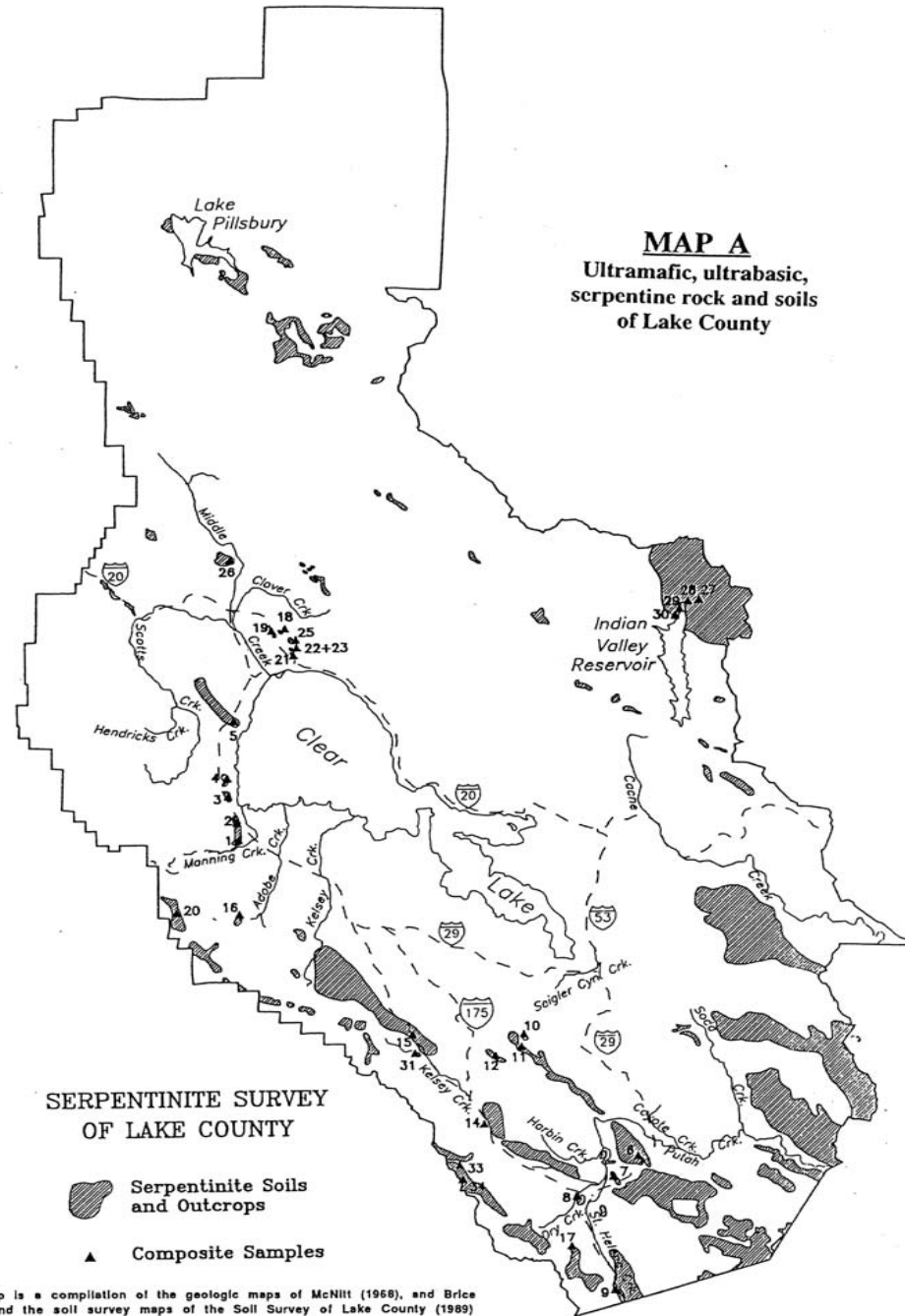
**Community Concerns About
Asbestos-Containing
Rock or Soil**

~Community Concern~

**The Possible Risk of Disease
Associated With Repeated
Exposure to
Asbestos-Containing
Rocky-Soils or Dust**

Mapped Serpentine Areas in Lake County

Source: Lake County AQMD

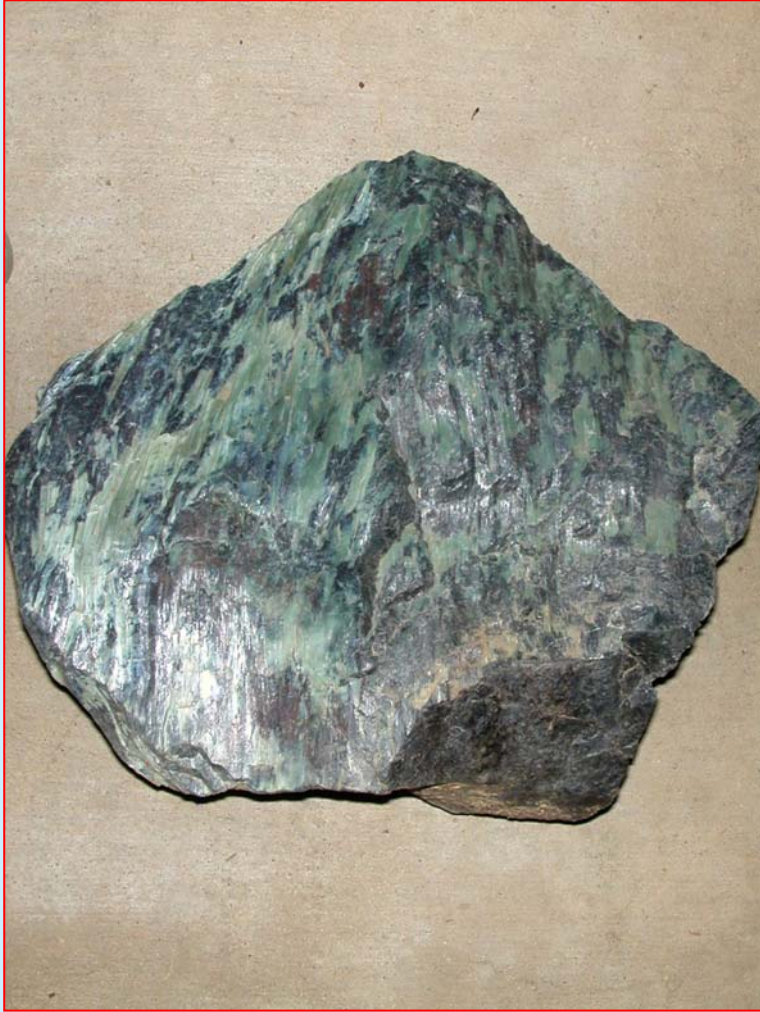


What Is Serpentine ?

- California's state rock
- Contains fibers, also know as asbestos
- Asbestos can have health consequences



How to Recognize Serpentine



Greenish-gray in color with a waxy appearance.

Soils contain 10 % or more rock.



Martin Street, Lakeport



Campbell Hill, Lakeport

Photographs Courtesy of Lake County AQMD

Unique Shrubby or Stunted Vegetation



UC Davis – McLaughlin Reserve

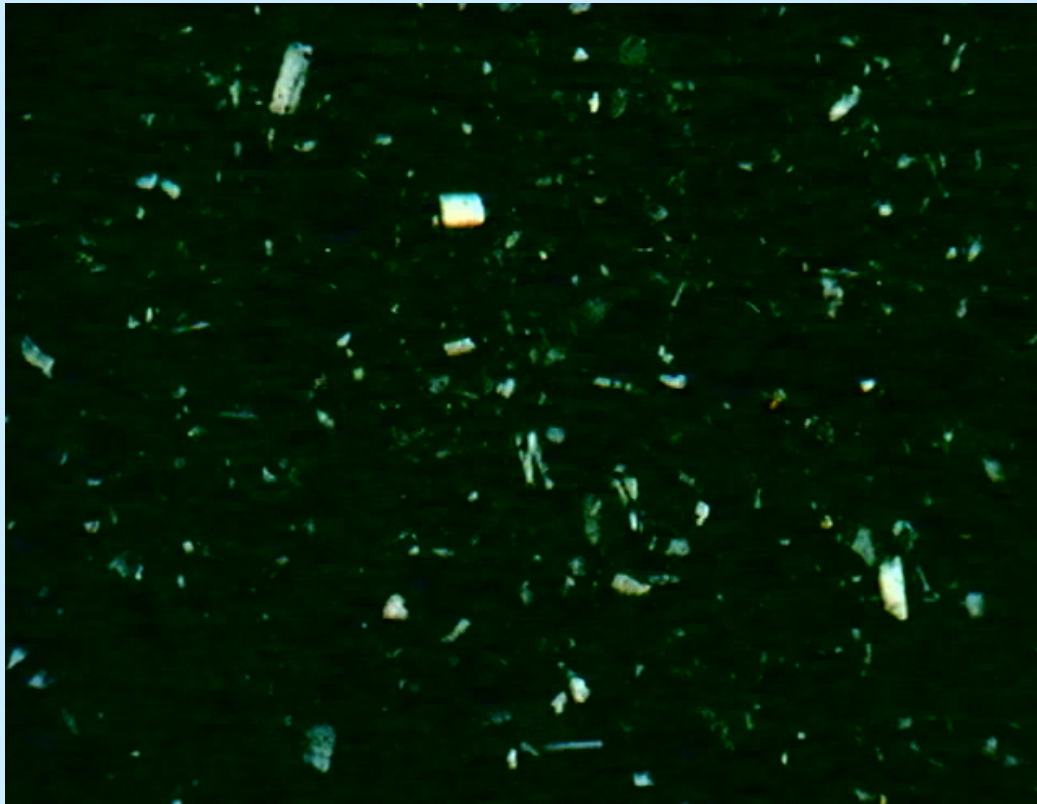
Asbestiform-particles contained in Serpentinite



**Chrysotile
asbestos**

C Donald Greg McGahan ©

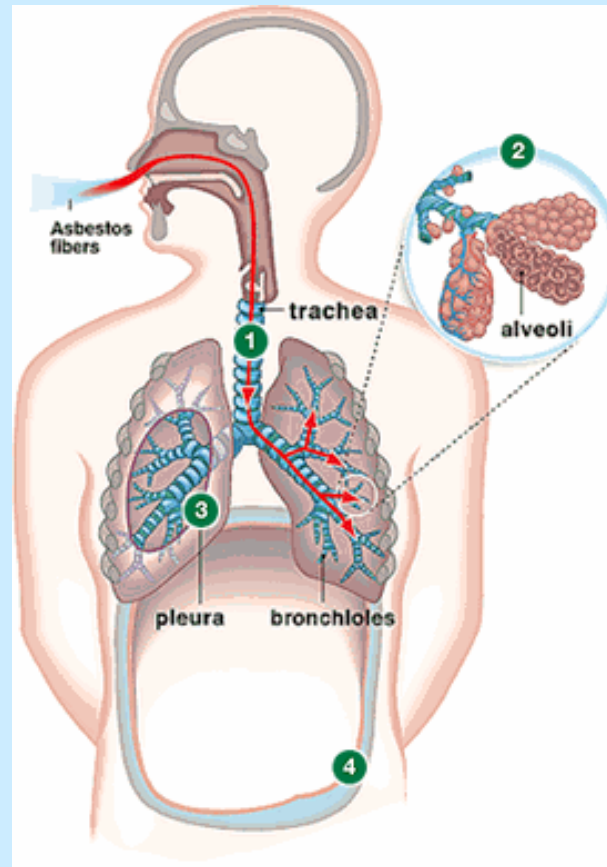
Asbestos is a General Term for Several Types of Naturally- Occurring Fibrous Minerals



Source: Lake County AQMD - Serpentine / Chrysotile Asbestos, Polarized Light 200 sieve, 100x, 1.550HD

How Could Asbestos Fibers Affect My Health?

If inhaled or swallowed fibers may result in disease

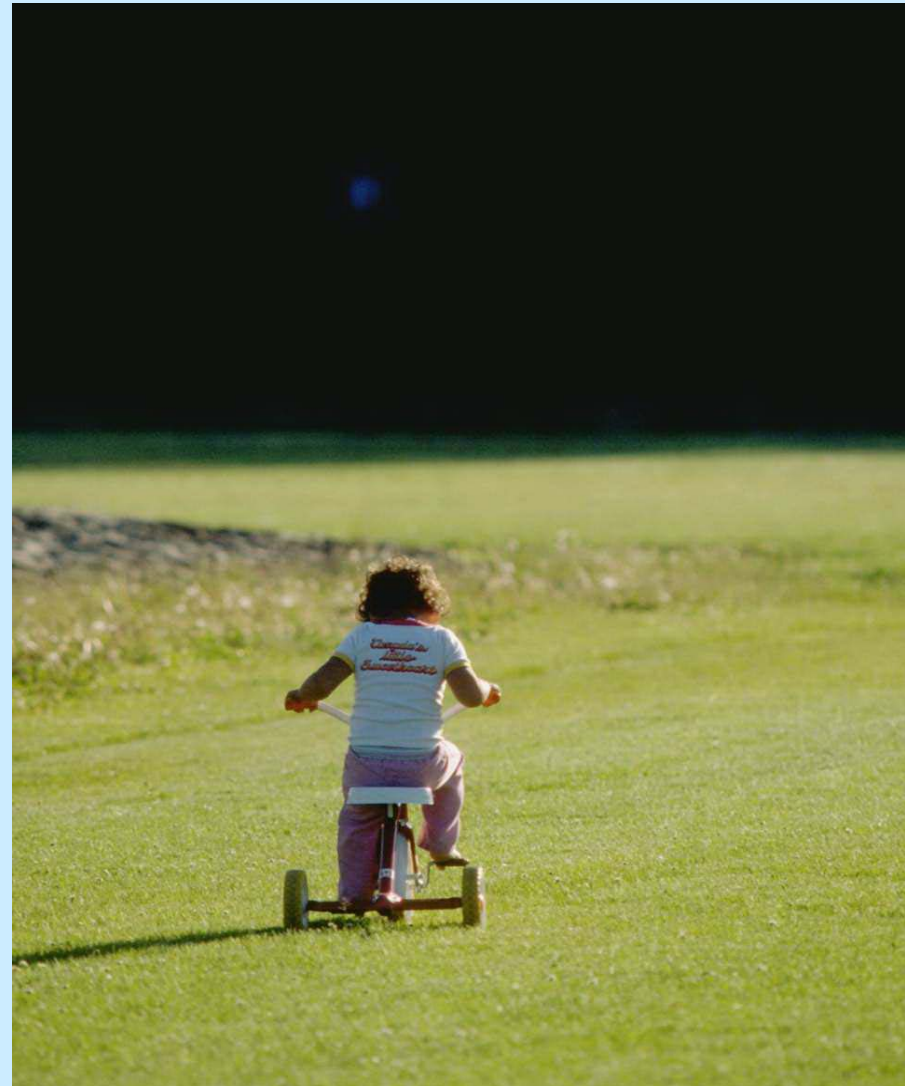


Smoking increases the chance of lung cancer

20-plus years may pass before disease appears.

Children Need Extra Protection

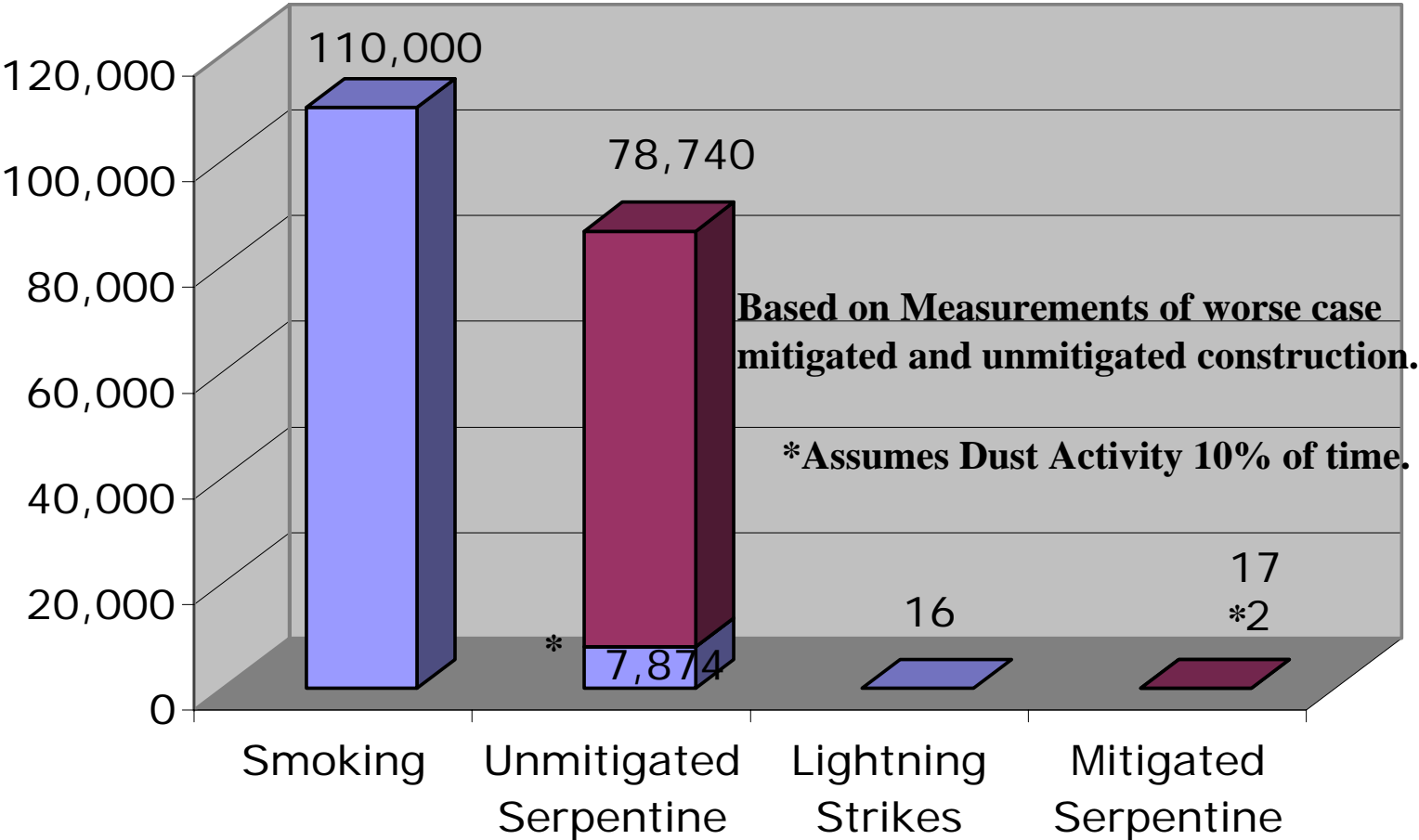
- Have a higher breathing rate
- Spend more time playing outside
- Reduce exposure now to reduce possible disease in 20 or more years



Any Exposure to Asbestos Fibers Involves Some Risk of Disease

- The more fibers you are exposed to, the higher the risk of disease.
- The fibers that remain in the body are thought to be responsible for asbestos-related disease.
- Reducing exposure will reduce risk of disease.

Deaths/Cancers Per Million Population Exposed (70 year lifespan of exposure)



If Asbestos-Containing
Serpentine Soils or Rock is
Located on Your Property:

**Reduce Activities
Which Create Visible Dust**

Outdoor Activities That Generate Dust When Soil is Dry

- Trenching
- Grading
- Plowing

- Rototilling
- Leaf Blowers
- Digging

Practice Proper Dust Controls With All Outdoor Activities

- Pre-soak ground thoroughly
- Use water to clean walkways
- Landscape exposed areas
- Remove exposed shoes or clothing before entering the house

Stabilize the Soil to Reduce Dust and Natural Weathering

Cover serpentine landscapes with:

- ✓ Serpentine tolerant plants
- ✓ 3-6 inches of organic mulch
- ✓ 3-6 inches of asbestos free soil



How Fibers May Enter The Home

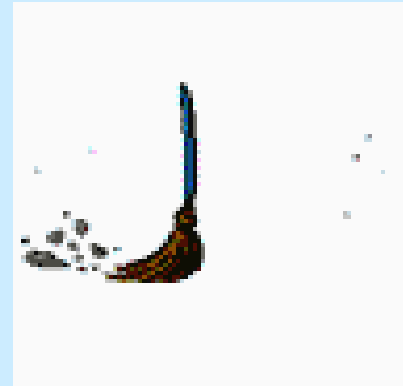
- Asbestos fibers settle on shoes and clothes and can be tracked into the home.
- Fibers can be transferred to others by pets.



Indoor Activities Which May Spread Asbestos Fibers in the Home

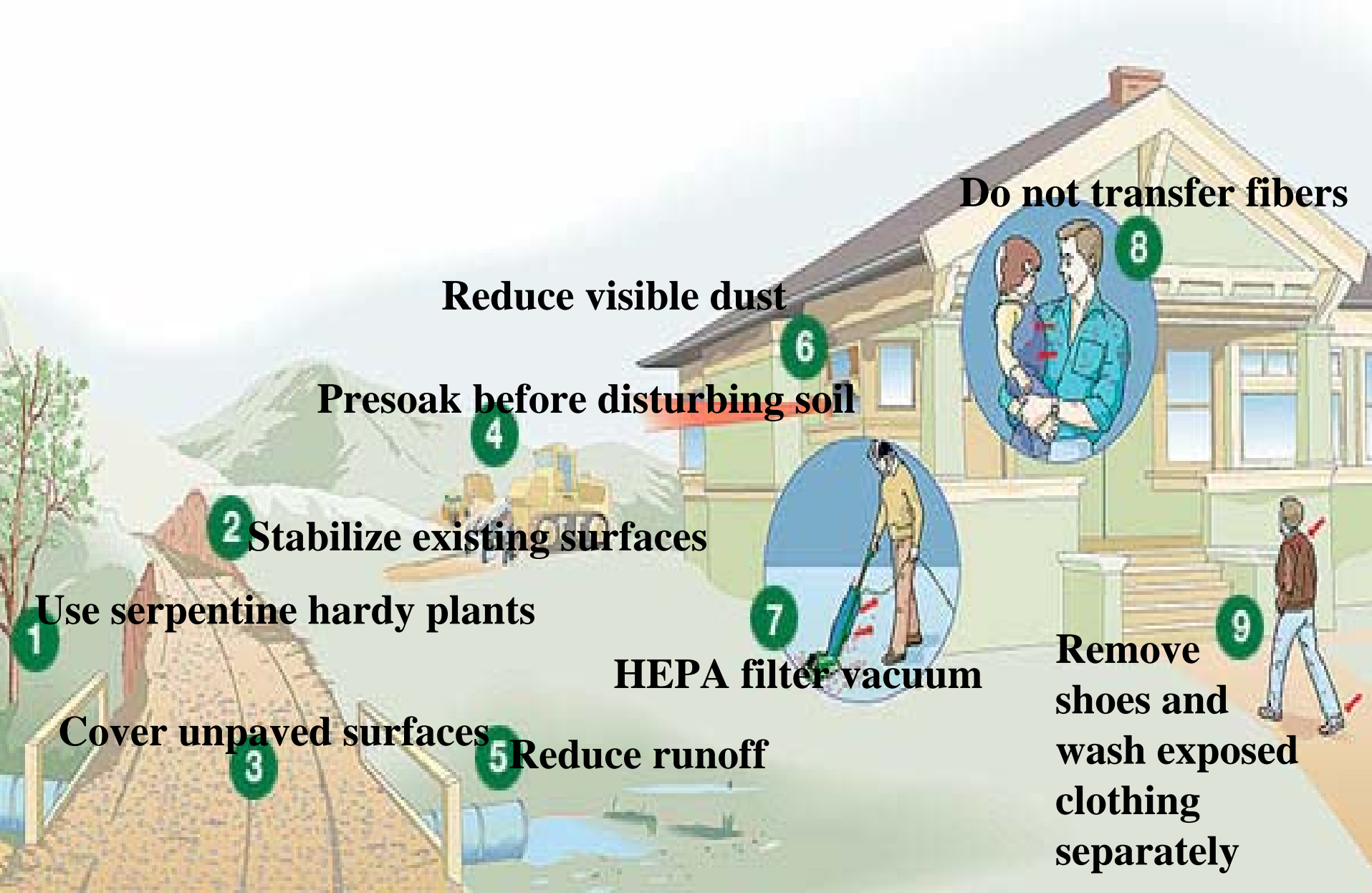
Take care when:

- Sweeping
- Vacuuming
- Dry Cloth Dusting
- Feather Dusters



Ways To Reduce the Spread of Fibers in the Home

- Damp cloth dusting
- Washable area rugs
- HEPA filter vacuum
- Damp mop
- Wash exposed clothing separately



1 Use serpentine hardy plants

2 Stabilize existing surfaces

3 Cover unpaved surfaces

4 Presoak before disturbing soil

Reduce visible dust

7 HEPA filter vacuum

Do not transfer fibers

9 Remove shoes and wash exposed clothing separately

**Just as sun screen has become
commonly used to reduce our
risk of skin cancer**

**Reducing visible dust will
reduce our risk of disease
associated with asbestos-
containing dust**

Acknowledgments

- California Air Resources Board
- Lake County Air Quality Management District
- University of California Cooperative Extension
- California Geological Survey
- UC Davis McLaughlin Reserve

A photograph of a rocky, dry landscape with numerous purple flowers. The flowers are scattered across the scene, some in full bloom and some as buds. The rocks are dark and jagged, and the surrounding vegetation is sparse and dry. The text "Thank You" is overlaid in the center in a white, serif font.

Thank You

Photograph Courtesy of Lake County AQMD