

SOIL ABUSE on a scale from 1 to 10

**Classification of forms of soil abuse,
ranging from the least to the most dangerous.
Links between soil / plant / human health.**

1. BAD ATTITUDES. Inappropriate or negative expectations can produce self-fulfilling prophecies which can contribute to the disfunction of attempts at cultivation. Trying to impose a certain form of planting on a site for which it is not suited.

2. INAPPROPRIATE INFRASTRUCTURE

BAD SITE LAYOUT. Hard landscaping producing conditions unsuitable for soil health/ plant growth. Shady, boggy, sloping.

PRESENCE OF DELETERIOUS MATERIALS. Likely to degrade producing negative impact on soil ecology, such as synthetics, plastics, woodchip, painted wood.

INAPPROPRIATE PLANTING. Presence of established perennials such as privet, rhododendron, Japanese knotweed, Russian vine or mature trees such as sycamore which will invade and monopolise large areas of soil, to the exclusion of other plants, by competition for water and nutrients and/or by actively repelling them by root secretions.

3. SIMPLE NEGLECT

UP TO ONE YEAR. Seeding of annual weeds and establishment of perennial weeds [docks, dandelions].

2-5 YEARS. Several cycles of annual and biennial weed growth and seeding. Establishment and dominance of mature perennials [nettles, brambles]. Juvenile sapling bushes and trees [willow, hawthorn, buddleia].

OVER 5 YEARS. Overgrown becoming shrubby scrub, juvenile woodland.

4. SOIL LOSS

EXTRACTION, REMOVAL OR PROCESSING OF TOPSOIL.

Without replenishing with loam, organic matter.

EXCESSIVE EXPOSURE TO THE ELEMENTS. Bare soil producing losses to leaching by rain and decreased soil life at the surface by bleaching in the sun.

LOWERED BEDS. Effectively produces raised paths and sunken beds after continuous removal of weeds, turf and crops over an extended period. Increases waterlogging, decreases mean soil temperature and micro- and macro-organism activity.

COMPACTION. Excessive pressure too often over long periods, such as by trampling or use of vehicles, destroys soil structure and dynamism and prevents healthy interaction at surface between soil and air. Increases likelihood of soil being washed away and gullied during heavy rain.

5. CULTIVATION METHODS

INADEQUATE ORGANIC MATTER INPUT to replenish that extracted.

Humus content should be maintained at or above 5% by volume.

INSUFFICIENT DIVERSITY OF INPUTS. Imbalances and shortages of certain chemical components due to prolonged extraction.

INAPPROPRIATE TOOLS.

Rotavators producing impermeable hardpan after repeated use.

EXCESSIVE CULTIVATION.

Too often or too deep destroying topsoil and subsoil structure.

6. MISTREATMENT

EXTENDED MONOCROPPING. MINERALISATION. ACIDIFICATION.

DENITRIFICATION. DEHUMIFICATION.

For instance by presence or application of coal or woodash.

7. OCCASIONAL TOXIC EXPOSURE

Producing the necrosis, migration and decline of soil organisms.

APPLICATION OF CHEMICAL FERTILISER, PESTICIDE, HERBICIDE, FUNGICIDE

SPRAY-DRIFT, ATMOSPHERIC AND AIRBORNE POLLUTION.

8. INERT OR MECHANICAL CONTAMINATION.

Relatively harmless except when disturbed.

BUILDING WASTE. Rubble, mortar, cement, bricks.

GLASS. Especially broken.

PLASTICS. Degraded by exposure to ultraviolet sunlight.

METALS. Especially if degrading, e.g. rusty.

CARCINOGENS. E.g. used oil. ASBESTOS. Dust from dry, freshly fractured blue asbestos lethal.

9. PERSISTENT TOXIFICATION

Lethal if ingested. Uptake in plant metabolism.

LONG-TERM BIOCIDES. E.g. Heavy metal contamination such as mercury.

OVER-FERTILISATION. E.g. Nitrate blooms de-oxygenate watercourses.

INDUSTRIAL DUMPING, LEACHATES AND RUNOFF.

LANDFILL REACTIONS AND EMISSIONS. Mixed organic and inorganic waste cocktails.

10. TOTAL TOXIC OVERLOADS

TERRESTRIAL CATASTROPHE Pinatubo/ Mount St. Helen's

CHANGES TO WEATHER PATTERNS. Greenhouse, ice-age. El Ninjo.

EXTRATERRESTRIAL CATAclysm. e.g. Comet strike.

NUCLEAR WINTER / RADIOACTIVE FALLOUT.

e.g. Chernobyl affecting Welsh pasture /sheep on Benbecula.