

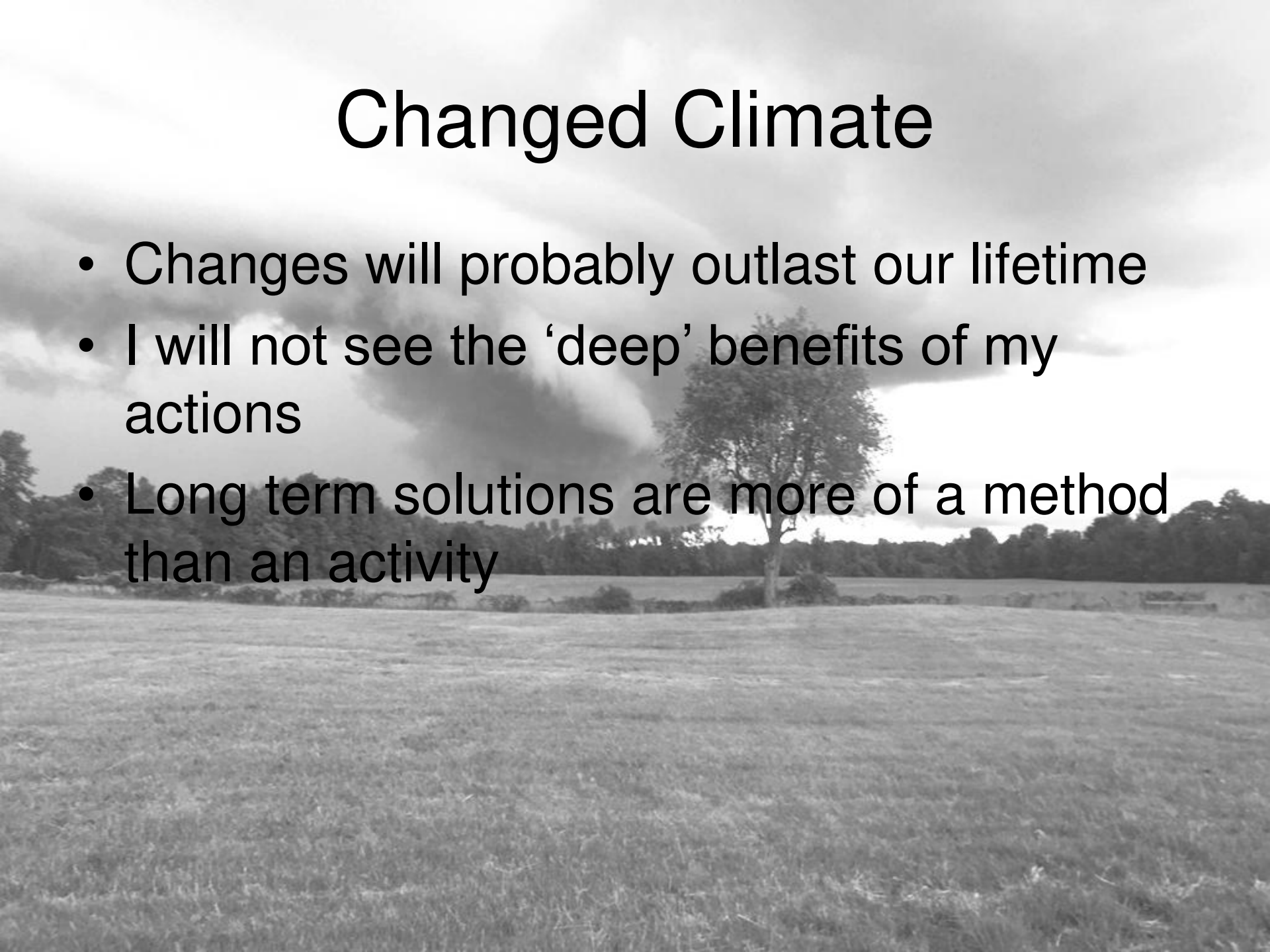
Farming In a Changed Climate

NFU National AGM 2016
Ironwood Organics



Changed Climate

- Changes will probably outlast our lifetime
- I will not see the 'deep' benefits of my actions
- Long term solutions are more of a method than an activity



Pressure from all sides



- Physical Environment Impact
 - Too much and not enough (wind, precipitation, temp)
 - Unstable temporal fluctuation
 - Soil management
- Crop Impact
 - Physical
 - Disease
 - Nutrition
- Financial impact
 - Volatile revenue stream / crop prices
- Physical infrastructure impact
 - Possible capital losses

3 Mitigation Strategies

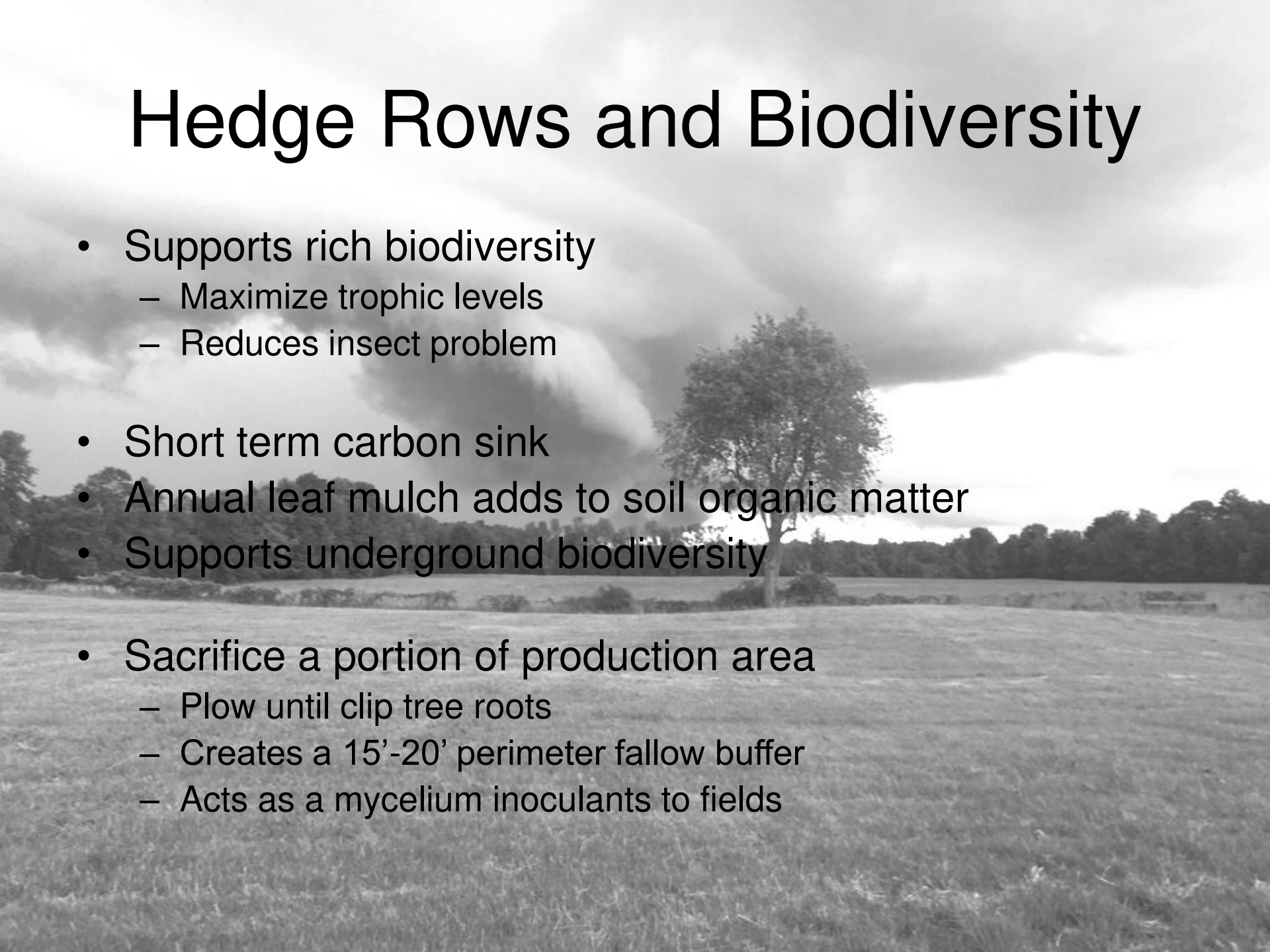
1. Modulate / dampen the physical effects
2. Biodiversity
Diversity -> Resiliency -> Sustainability
3. Crop, varieties and diversity
 - Annual, perennial, permaculture
 - Above and below ground
 - Temporal shift (from season to decades)

Trees and hedge rows

- Deciduous trees mechanical slow winds
- Tap-root trees
 - Cycle water
 - Resistant to strong winds
- Mitigates extreme temperatures
 - Protects against late/early frosts
 - Reduces wind-chill
- Creates 'pathways' to connect contiguous forest blocks.
- In Summer slows wind
 - Decrease transpiration and evaporation
 - Decreases cereal lodging
 - Reduces soil erosion
- In winter, aids in snow deposition
 - Increases aquifer recharge
 - Reduce soil erosion
 - Traps blowing soil from 'elsewhere'
 - Insulates fall cereals
 - Habitat for overwintering birds

Hedge Rows and Biodiversity

- Supports rich biodiversity
 - Maximize trophic levels
 - Reduces insect problem
- Short term carbon sink
- Annual leaf mulch adds to soil organic matter
- Supports underground biodiversity
- Sacrifice a portion of production area
 - Plow until clip tree roots
 - Creates a 15'-20' perimeter fallow buffer
 - Acts as a mycelium inoculants to fields



Soil Organic Matter



- Soil biology is
 - Critical to nutrient cycling
 - Key to moisture retention
 - Important in deep carbon sink (Glomalin)
- Soil organic matter:
 - My organic matter feeds soil biology
 - Soil biology stores moisture
- Now that we have moisture, lets keep it
- Retore soil capital – key to sustainability
 - Do not trade capital for revenue

Crops

- Heritage / open pollinated varieties
 - Drought adaptable
 - Flexible vernalization (winter / spring cereals)
 - Winter cereals act as fall covers
- Genetic polyploidy /plasticity
 - Wheat, potato
- Lower but more stable yields
- Crops from outside of existing growing area
 - Nut orchards
 - Sweet potatoes



We are Climate Pioneers

