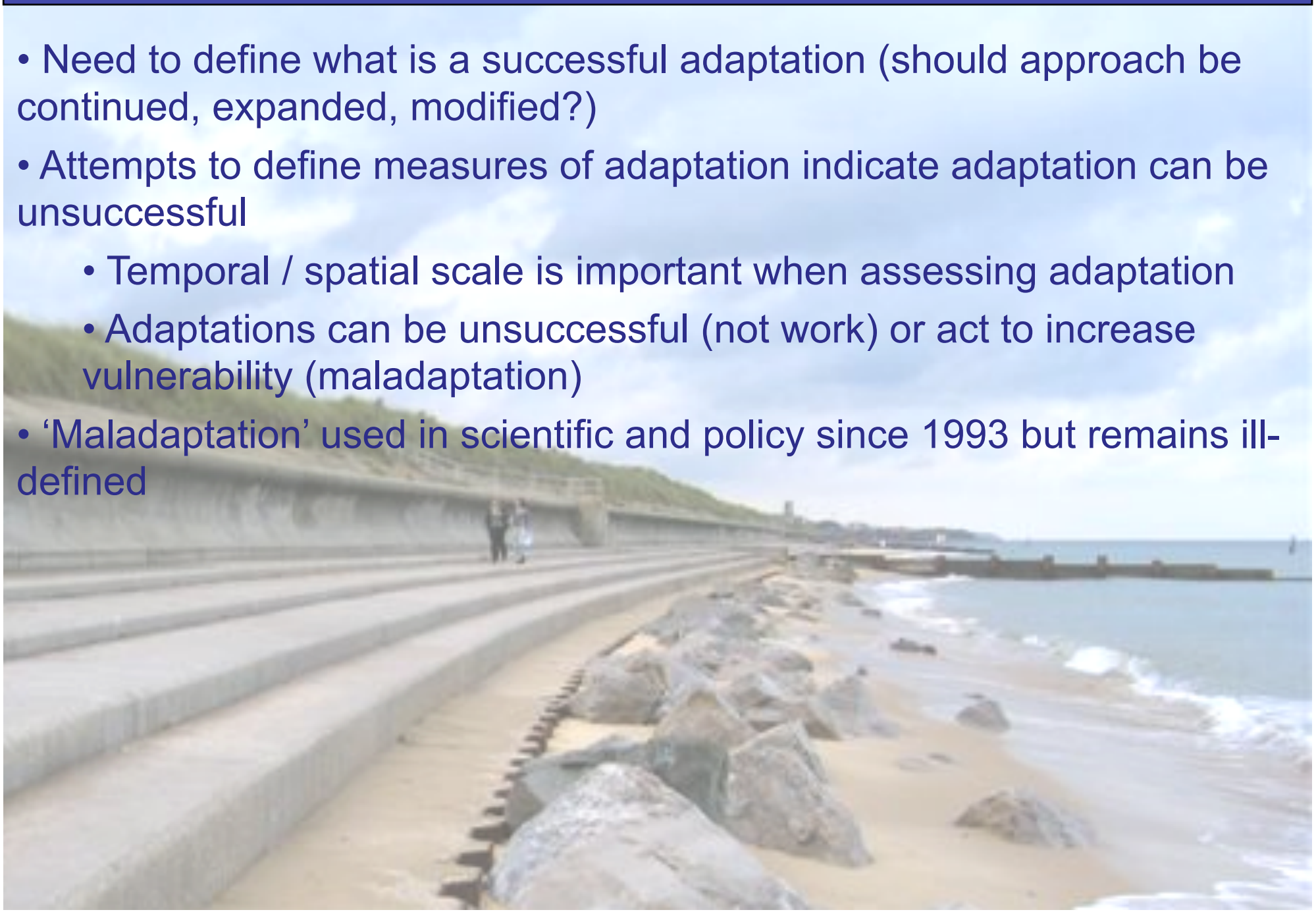
The evolution of ‘maladaptation’



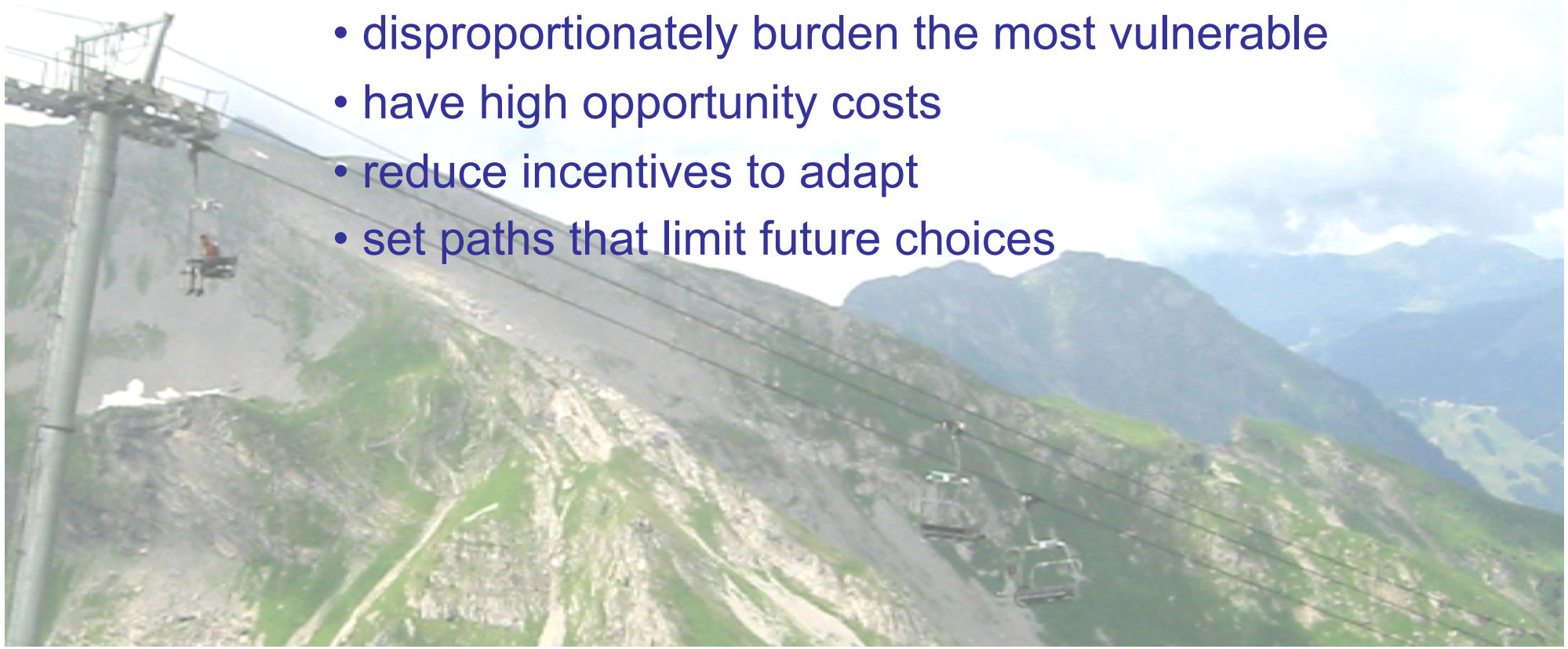
- Need to define what is a successful adaptation (should approach be continued, expanded, modified?)
- Attempts to define measures of adaptation indicate adaptation can be unsuccessful
    - Temporal / spatial scale is important when assessing adaptation
    - Adaptations can be unsuccessful (not work) or act to increase vulnerability (maladaptation)
- ‘Maladaptation’ used in scientific and policy since 1993 but remains ill-defined

Definition and dimensions

"action taken ostensibly to avoid or reduce vulnerability to climate change that impacts adversely on, or increases the vulnerability of other systems, sectors or social groups"

Five dimensions of maladaptation *(actions that, relative to alternatives):*

- increase emissions of greenhouse gases
- disproportionately burden the most vulnerable
- have high opportunity costs
- reduce incentives to adapt
- set paths that limit future choices



Case study: response to water stress in Melbourne

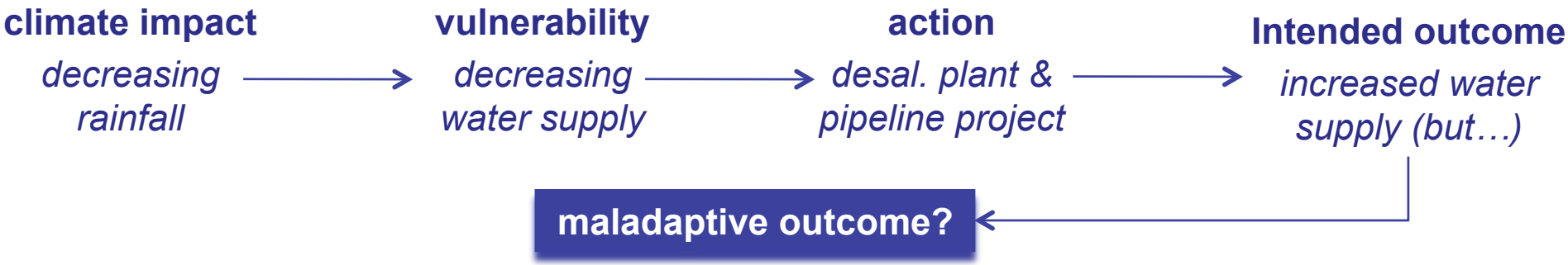
- Annual rainfall below long-term average each year since Oct 1996
- Average reservoir level is <30% since March 2008
- Stream flow and runoff projected to decrease substantially under climate change (IPCC, 2007)

'Climate change and record low rainfall demands a dramatic new approach to how we plan for Victoria's water needs'

(Premier Bracks, 2007)

- Wonthaggi desal. plant: 150 GL/annum max.
- Sugarloaf Pipeline Project: 75 GL/annum max.

Screening the case study for maladaptation



increase emissions of greenhouse gases	*energy intensive process will lead to an increase in GHG production (900,000 tonnes CO_2e)*
disproportionately burden the most vulnerable	*desal. plant located on sites of significance to Bunurong Aboriginal community, higher water costs impact disproportionately on poorer households*
entail high opportunity costs	*cost of implementing other strategies e.g. treating wastewater or rainwater tanks; cost of not building on land significant to Bunurong community; cost of not having pipeline and desal. plant for the local benthic environment*
set paths that limit future choices	*capital (over $3 billion) and institutional commitment to a trajectory based on large infrastructural development, reducing portfolio of future adaptation options*
reduce incentives to adapt	*change in social norm away from responsible water conservation back to increased consumption*