

4 Services provided by nature

- 4.1 This section provides evidence about the different services provided by nature. Specific services may be of interest to different policy makers and practitioners, so you may choose to focus just on those. Alternatively, you may be interested in overarching themes such as economic competitiveness, so [Chapter 2](#) and [Chapter 3](#) may be useful in identifying how the environment contributes to those themes.
- 4.2 It is important to note that not all services provided by nature are included here. The ones chosen are the ones which on the basis of current evidence are most important in the context of environmental projects. The ones selected are also those for which we have available scientific and economic evidence.

4k Social cohesion

There is good evidence suggesting that the natural environment contributes to social cohesion. This appears to be particularly the case for well-maintained greenspaces.

Introduction

- 4.62 Social interactions can impact on people's health and overall wellbeing. Increased interaction between people may also lead to reduced crime and improved community resilience in the face of natural hazards. This section examines the evidence that the natural environment contributes to increased social interactions, and thereby to increased social cohesion.
- 4.63 Social cohesion describes the extent to which people within a community share similar values, and trust and support one another for the common good. A more socially cohesive community may experience a range of benefits, including health, safety, and improved collective resilience.
- 4.64 There is peer-reviewed evidence to suggest that social cohesion reduces crime, even when deprivation is controlled for (Hirschfield and Bowers 1997). A nationally representative US study of adults over 50 found a strong decrease in the risk of stroke for individuals living in more socially cohesive communities, even after controlling for demographic and psychological characteristics (Kim, Park et al. 2013).
- 4.65 In Australia, social cohesion was found to contribute to bushfire preparedness by giving people the support and resources to confront the bushfire risk, and by increasing the prominence of the issue through more people talking about it (Prior and Eriksen 2013)¹¹⁶. The same effect could be expected to occur for other natural hazards.

Theory of change



Can the benefit be quantified?

- 4.66 To a certain extent, yes. It is possible to quantify some social benefits, and to link this to exposure to the natural environment. However, a number of factors other than social interactions may also contribute to these outcomes. Additionally, the benefit of the social interaction is likely to be affected by the individuals involved, the content, quality and timing of the interaction, among other factors.
- 4.67 In principle, decrease in crime due to increased social cohesion can be monetised, and there are official values for the economic and social costs of crime. Current UK government values used are £1.8 million per homicide, £3,925 per burglary, and £1,750 per common assault (Home Office 2011).

How strong is the evidence?

- 4.68 The evidence that the natural environment contributes to social cohesion tends to be specific to particular case studies and locations, and very little UK evidence exists. However, the case studies seem highly suggestive of the potential benefits of the natural environment.

¹¹⁶ This study examined at-risk areas within two different Australian cities, Hobart and Sydney.

Evidence

- A study of the impact of greening vacant lots in Philadelphia, USA was conducted between 1999 and 2008. This found that greening was correlated with statistically significant reductions in gun crime and disorderly conduct. The authors suggest that criminal activity may be discouraged in areas which are seen to be well maintained (Branas, Cheney et al. 2011)¹¹⁷.
- Another study in Philadelphia found that an abundance of vegetation in general was associated with lower rates of assault, robbery and burglary, but not thefts (for example, pickpocketing/shoplifting, which may be more opportunistic). This effect held even after neighbourhood socio-economic status was considered (Wolfe and Mennis 2012)¹¹⁸.
- In Baltimore, USA, a similar study found that a 10 percent increase in tree cover was associated with a 12 percent decrease in crime. The crime reducing effect was far stronger for trees on public rather than private land. In a few small areas however, the effect was reversed, with increased tree cover being associated with increased crime. The authors suggest that this is due to different types of vegetation and management, with low and overgrown areas offering better crime opportunities. This may in turn cause people to avoid these areas and further encourage crime (Troy, Grove et al. 2012)¹¹⁹.
- In Los Angeles, the number of parks within half a mile was found to be a strong predictor of increased collective efficacy (a measure of social capital reflecting cohesion among neighbours and willingness to work for the common good) (Cohen, Inagami et al. 2008)¹²⁰.
- When studying two different urban parks in Nijmegen, the Netherlands, researchers observed that very few interactions between strangers actually occurred. Any interactions tended to be incidental, as individuals did not generally go to the park with the intention of meeting new people. Occasional 'small talk' did occur however, and was viewed positively by those involved. The authors suggest that these positive interactions may contribute towards building trust amongst different groups (Peters, Elands et al. 2010)¹²¹.
- Although park spaces can be unhelpfully dominated by one ethnic group leading to exclusion and inter-community tension, Gobster reports evidence from Chicago that suggests that parks can be active agents promoting inter-community relations in a way which is almost unique in urban life (Gobster 1998).

References

Branas, C., R. Cheney, et al. 2011. "A difference-in-differences analysis of health, safety, and greening vacant urban space." *American Journal of Epidemiology* **174**(11): 1296-1306.

Cohen, D., S. Inagami, et al. 2008. "The built environment and collective efficacy." *Health and Place* **14**: 198-208.

¹¹⁷ This study uses a difference-in-differences approach, comparing areas that contain greened vacant lots with areas with untreated lots. The authors note that as the lots chosen for greening were not completely random, it is possible they do not match with untreated lots on all characteristics.

¹¹⁸ Vegetation abundance was assessed using remote satellite imagery, and therefore was unable to consider factors such as how well the vegetation was maintained, or the visibility it allowed.

¹¹⁹ The authors note that their model may be affected by omitted variables, and therefore the 12 percent decrease in crime due to a 10 percent increase in vegetation may be an overestimate of the impact of vegetation.

¹²⁰ It is worth noting that the surveyed population was 58% Latino, and Latino ethnicity was found to be positively correlated with collective efficacy. The authors noted that parks in Los Angeles also tend to be well maintained.

¹²¹ This study combined observations with park user interviews in one large park (83 ha) and one small neighbourhood park (1 ha). Results are suggestive but should not be viewed as definitive due to the small scale of the study.

- Gobster, P. 1998. "Urban parks as green walls or green magnets? Interracial relations in neighborhood boundary parks." *Landscape and Urban Planning* **41**(1): 43-55.
- Hirschfield, A. and K. Bowers. 1997. "The Effect of Social Cohesion on Levels of Recorded Crime in Disadvantaged Areas." *Urban Studies* **34**(8): 1275-1295.
- Home Office. 2011. "IOM Efficiency Toolkit Phase 2: revised unit costs of crime and multipliers." Retrieved 10th November, 2013, from <https://www.gov.uk/government/publications/unit-costs-of-crime-and-multipliers-revised>.
- Kim, E., N. Park, et al. 2013. "Perceived neighbourhood cohesion and stroke." *Social Science and Medicine* **97**: 49-55.
- Peters, K., B. Elands, et al. 2010. "Social interactions in parks: stimulating social cohesion?" *Urban Forestry and Urban Greening* **9**: 93-100.
- Prior, T. and C. Eriksen. 2013. "Wildfire preparedness, community cohesion and social-ecological systems." *Global Environmental Change* **23**(6): 1575-1586.
- Troy, A., J. M. Grove, et al. 2012. "The relationship between tree canopy and crime rates across an urban-rural gradient in the greater Baltimore region." *Landscape and Urban Planning* **106**: 262-270.
- Wolfe, M. and J. Mennis. 2012. "Does vegetation encourage or suppress urban crime? Evidence from Philadelphia, PA." *Landscape and Urban Planning* **108**: 112-122.