

# Outdoor programmes

## EVIDENCE BRIEF

Outdoor programmes like Outward Bound involve some form of therapeutic outdoor pursuit. There is clear international evidence that outdoor programmes produce short-term reductions in criminal behaviour for adolescent offenders. The New Zealand evidence for reduced recidivism is mixed, but all evidence suggests that outdoor programmes help participants make positive improvements on social and psychological domains.

### OVERVIEW

- Outdoor programmes, often called wilderness challenge programmes and adventure therapy, aim to improve antisocial behaviour and social/psychological well-being through challenging physical and mental activities.
- Outdoor programmes are typically more intensive than other recreational programmes (e.g. after school sports) but less militaristic and discipline-based than boot camps.
- There is clear international evidence that outdoor programmes produce short-term reductions in criminal behaviour for adolescent offenders, although the evidence for long-term reductions and adult offenders is still unclear.
- International evidence suggests that outdoor programmes involving higher levels of intensity and explicit therapeutic components are more effective at reducing criminal behaviour.
- International evidence also suggests however that outdoor programmes may not reduce criminal behaviour for serious adolescent offenders.
- There is mixed evidence that outdoor programmes reduce criminal behaviour in New Zealand, this evidence is limited by

methodological issues and is unclear in terms of effectiveness for different ages and ethnicities.

- Both international and New Zealand evidence suggests there are a wide range of other physical, academic, social, emotional, and behavioural benefits from participation in outdoor programmes.

### EVIDENCE BRIEF SUMMARY

Evidence rating:	Promising - short-term reductions for adolescent offenders.
Unit cost:	\$3,050 average for non-offenders on Outward Bound. \$5,000 average for Duke of Edinburgh.
Effect size (number needed to treat):	For every 3-12 offenders receiving treatment, one fewer will reoffend.
Current spend:	\$0 from public sector.
Unmet demand:	Unknown.

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## WHAT ARE OUTDOOR PROGRAMMES?

Outdoor programmes include a wide range of programmes involving outdoor activities or experiential learning (learning by doing), which aim to improve problem behaviours and social/psychological well-being.<sup>i</sup>

Outdoor programmes are typically more intensive than other recreational programmes (e.g. after school sports) but less regimented than boot camps, which typically involve rigorous daily schedules and disciplinary responses for misbehaviour (e.g. push ups).<sup>ii</sup>

A typical example of an outdoor programme is Outward Bound. Outward Bound courses involve physical and psychological challenges (e.g. rock climbing, caving, solo expeditions) that involve elements of physical conditioning (e.g. hiking, running), technical training, survival skills, and team work.<sup>iii</sup> In New Zealand Outward Bound is typically only available to non-offenders.

Outdoor programmes are usually run in groups led by health professionals who use challenging physical and mental activities to foster opportunities for personal and social growth.<sup>iv</sup>

Outdoor programmes vary widely in their settings, programme lengths, the activities involved (e.g. tramping, rock climbing, or ropes courses), whether they include explicit therapeutic components (e.g. cognitive behavioural therapy), and whether they are stand-alone programmes or part of a larger therapeutic programme. Outdoor programmes also vary with regards to the individuals they are designed for and are available for youth, adults, and families from offender and non-offender populations.<sup>v</sup>

Although these programmes are available for non-offender populations, this brief focuses on

the effects of these programmes for adult and adolescent offenders.

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## DO OUTDOOR PROGRAMMES REDUCE CRIME?

### International evidence

International meta-analyses have consistently found that participation in outdoor programmes significantly reduces criminal behaviour for adolescent offenders (ages 10 – 21).<sup>vi</sup> These reductions have been found when comparing levels of criminal behaviour before and after programmes,<sup>vii</sup> and when comparing the criminal behaviour of those who attended outdoor programmes with matched or randomised control groups.<sup>viii</sup>

Notably, the positive meta-analytic effects found for outdoor programmes are based on samples of predominantly young Caucasian males and are mostly based on short follow-up periods for comparing rates of recidivism (i.e. 6 to 12 months). Some research indicates that when rates of recidivism are compared over longer follow-up periods the crime reducing effects of the programmes disappear, suggesting the positive effects on crime may only be short-term.<sup>ix</sup>

No meta-analyses or systematic reviews have specifically looked at the effect of outdoor programmes on adult criminal behaviour. However, meta-analyses have found that the positive effects of outdoor programmes on other outcomes (e.g. academic, behavioural, clinical, and social outcomes) are similar for those below and above 18 years old.<sup>x</sup>

A large meta-analysis comparing the effects of adolescent outdoor programmes with other types of adolescent interventions found no significant difference between the crime reducing effects of outdoor programmes and other therapeutic interventions including behavioural and cognitive-behavioural treatments.<sup>xi</sup> Despite non-significance, the effect

sizes for behavioural and cognitive-behavioural treatments were much larger than outdoor programmes, meaning these types of programmes may still have greater practical significance for adolescent offenders.

## New Zealand evidence

There is mixed evidence that outdoor programmes reduce criminal behaviour in New Zealand. Several New Zealand studies have found reductions in criminal behaviour for participants of outdoor programmes when compared with matched control groups.<sup>xii</sup> However, some of these studies are limited by small sample sizes and around half of the observed reductions were not statistically significant. Furthermore, most of these evaluations occurred over 20 years ago and the programmes evaluated no longer exist.

There have been several evaluations of outdoor programmes run by New Zealand probation and prison services throughout the 80's and 90's. One evaluation of an outdoor pursuits programme run by the Papakura probation service found that a group of 12 programme participants (aged 16 – 25) had significantly lower rates of reoffending at a 6-month follow-up, compared to a matched control group on a normal probation sentence (30% vs. 51%). However, there was no significant difference in re-offence rates at 12 months.<sup>xiii</sup>

Two evaluations looked at a five-day outdoor course run by the Christchurch probation office. The course consisted of a preparatory orientation weekend and a week in the mountains and bush. The first evaluation looked at 16 course participants (aged 16 – 22;  $M = 17$ ) and found a significant improvement in 12-month reoffence rates (87% vs. 31%) compared to a control group matched on offending and demographic variables.<sup>xiv</sup>

The second evaluation looked at the same Christchurch probation outdoor course over a different time-period and with a larger sample ( $n$

= 40; aged 17 – 46;  $M = 23$ ). This evaluation found that while programme participants made greater improvements in their reoffence rates (60% vs. 50%) and had less overall reconvictions (63% vs. 68%) at a 12-month follow-up compared to a matched control group, these differences were not statistically significant. However, the evaluation did find a significant reduction in the number of offences 12 months post- versus pre-treatment for the course participants in contrast with a non-significant reduction for the control group.<sup>xv</sup>

Another evaluation looked at a 3-week adventure challenge programme which included 2 weeks of fitness training and a 5-day wilderness expedition run out of Rolleston Prison in Christchurch. This evaluation found that a group of 84 prisoners (aged 17-56) who attended the challenge programme were lower on several indices of reoffending, compared to a control group of prisoners who were matched on variables of age, gender, ethnicity, and risk level. Specifically, they found lower percentages of reconviction (46% vs. 50%) and re-imprisonment (14% vs. 20%), less serious reconvictions, longer times to first reconviction, and lower average reconviction rates for outdoor programme participants. However, none of the observed differences were statistically significant.<sup>xvi</sup>

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## WHEN ARE OUTDOOR PROGRAMMES MOST EFFECTIVE?

There is some international research indicating certain features of outdoor programmes – mainly the level of intensity and the presence of a therapeutic component – increase their ability to reduce criminal behaviour. There is also evidence that outdoor programmes are not effective for more serious adolescent offenders.

One meta-analysis found that outdoor programmes that employed more intensive mental and physical activities (e.g. white water rafting) produced larger reductions in criminal behaviour than programmes employing less strenuous activities (e.g. trust falls and low ropes courses).<sup>xvii</sup> The same meta-analysis also found that outdoor programmes that included a therapeutic component (e.g. behaviour management or cognitive-behavioural techniques) were more effective at reducing criminal behaviour than programmes that did not include therapy.<sup>xviii</sup>

In another meta-analysis looking at effective interventions for serious adolescent offenders only, outdoor programmes were found to have no significant effect on reducing recidivism for serious institutionalised and non-institutionalised juvenile offenders. This was in contrast with several other interventions such as interpersonal skills training, which was found to be effective for serious juvenile offenders.<sup>xix</sup>

There is some meta-analytic evidence on the impact of the length of outdoor programmes and age of outdoor programme participants on programme effectiveness. However, these meta-analyses have found opposing results regarding whether shorter or longer programmes are more effective and whether they are more effective for younger or older participants.<sup>xx</sup> Most of these effects were for outcomes other than reoffending.

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## WHAT OTHER BENEFITS DO OUTDOOR PROGRAMMES HAVE?

International and New Zealand research suggests there are a wide range of physical, academic, social, emotional, and behavioural benefits gained from participation in outdoor programmes.

International meta-analyses have consistently found that participants of outdoor programmes

make significant improvements on a range of domains including:

- 1) Academic (e.g. grades, performance and attendance)
- 2) Behavioural (e.g. problem behaviour, substance use, and truancy)
- 3) Clinical (e.g. locus of control, depression, anxiety and resilience)
- 4) Family (e.g. family relationships)
- 5) Physical (e.g. weight loss)
- 6) Self-concept (e.g. self-esteem, self-efficacy, and self-confidence)
- 7) Social development (e.g. group cohesion, leadership and social skills).<sup>xxi</sup>

New Zealand research has similarly demonstrated marked improvements for outdoor programme participants in areas of wellbeing, self-efficacy, trust, group cohesion, motivation to change, victim empathy, and family relationships.<sup>xxii</sup>

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## COST-BENEFIT ANALYSIS

A 2016 cost-benefit analysis by the Washington State Institute for Public Policy found that for the average cost of one adolescent offender to participate in an outdoor programme (\$6,457 USD) there was a total benefit of \$18,637 USD in reduced costs associated with crime, labour, health, and education for tax payers, the participant, victims, and the wider economy. That is, for every dollar spent on an outdoor programme, there was a return of \$2.89 USD in benefits.<sup>xxiii</sup>

In comparison with other effective interventions for adolescent offenders, outdoor programmes produced a larger economic benefit than multi systemic therapy (\$2.43 USD benefit for every dollar spent). However, outdoor programmes also produced a much smaller benefit than other programmes for adolescents, such as dialectical behaviour therapy (\$27.84 USD benefit for every dollar spent) and cognitive-behavioural therapy (\$38.30 USD for every dollar spent).<sup>xxiv</sup>

## CURRENT INVESTMENT IN NEW ZEALAND

### Ministry of Social Development

The Ministry of Social Development (MSD) does not currently fund any type of therapeutic outdoor programme for adolescent offenders. However, MSD does currently fund Outward Bound programmes for MSD clients with intellectual or physical disabilities. MSD has budgeted \$158,678 to fund 52 places on these courses for the 2017/2018 financial year, with an average cost of \$3,051 per placement.

### Department of Corrections

The Department of Corrections in collaboration with the Joshua Foundation is currently running the Duke of Edinburgh Hillary Award for youth offenders aged 17 – 19 at Prison Youth Units around New Zealand. The Hillary Award is a voluntary non-competitive award programme for all young New Zealanders aged 14 – 25. The goal of the programme is to have young people from all backgrounds participate in an individually tailored programme to build skills, identity, and self-esteem. Approximately 9,000 young New Zealanders start the programme each year, with approximately 18,500 engaged in the programme at any one time.

The award programme involves several components including recreational or educational skill development, community service, physical recreation, and a group outdoor journey. Each component has specific requirements that must be achieved to earn the award (e.g. 1 hour of community service per week over 6 months). The programme has three award levels: bronze, silver, and gold that can range from 3 to 18 months of participation. Although many components of the Hillary Award are not typical of outdoor programmes, the group outdoor journey component is consistent with other outdoor programmes covered in this brief. Depending on the level of the award, the

outdoor journey component can range from 2 days and 1 night (bronze) to 4 days and 3 nights (gold). For youth offender participants, all outdoor journey components have thus far been completed on prison grounds.

Although run through the Department of Corrections the programme is currently funded by a philanthropic sponsor. This sponsor currently spends \$100,000 on the programme per year, with approximately 20 participants going through at least one level of the programme per year (\$5,000 per participant).

## EVIDENCE RATING AND RECOMMENDATIONS

Each Evidence Brief provides an evidence rating between Harmful and Strong.

Harmful	Robust evidence that intervention increases crime
Poor	Robust evidence that intervention tends to have no effect
Inconclusive	Conflicting evidence that intervention can reduce crime
Fair	Some evidence that intervention can reduce crime
Promising	Robust international <i>or</i> local evidence that intervention tends to reduce crime
Strong	Robust international <i>and</i> local evidence that intervention tends to reduce crime

According to the standard criteria for all Evidence Briefs<sup>1</sup>, the appropriate evidence rating for outdoor programmes is Promising (short-term reductions for adolescent offenders).

This rating reflects that although the international research for short-term reductions for adolescent offenders is strong there is limited evidence for adult offenders and longer-term

<sup>1</sup> Available at [www.justice.govt.nz/justice-sector/what-works-to-reduce-crime/](http://www.justice.govt.nz/justice-sector/what-works-to-reduce-crime/)

reductions. Furthermore, there is limited New Zealand evidence that outdoor programmes reduce reoffending.

As per the standard definitions of evidence strength outlined in our methodology, the interpretation of this evidence rating is that:

- Robust international or local evidence that interventions tend to reduce crime.
- Interventions may well generate a return if implemented well.
- Further evaluation desirable to confirm interventions are delivering a positive return and to support fine-tuning of intervention design

**First edition completed:** June 2017

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## FIND OUT MORE

### Go to the website

[www.justice.govt.nz/justice-sector/what-works-to-reduce-crime/](http://www.justice.govt.nz/justice-sector/what-works-to-reduce-crime/)

### Email

[whatworks@justice.govt.nz](mailto:whatworks@justice.govt.nz)

### Recommended reading

Wilson, S. J., & Lipsey, M. W. (2000). Wilderness challenge programs for delinquent youth: A meta-analysis of outcome evaluations: *Evaluation and Program Planning*, 23, 1-12. doi: [https://doi.org/10.1016/S0149-7189\(99\)00040-3](https://doi.org/10.1016/S0149-7189(99)00040-3)

Lipsey, M. W. (2009). The primary factors that characterize effective interventions with juvenile offenders: A meta-analytic overview. *Victims and Offenders*, 4, 124-147. doi: <http://dx.doi.org/10.1080/15564880802612573>

## Citations

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- <sup>i</sup> Bowen & Neill 2013
- <sup>ii</sup> Wilson et al 2005, Wilson & Lipsey 2000
- <sup>iii</sup> Bedard et al 2003
- <sup>iv</sup> Bowen & Neill 2013, Wilson & Lipsey 2000
- <sup>v</sup> Bowen & Neill 2013, Hattie et al 1997
- <sup>vi</sup> Bedard et al 2003, Bowen & Neill 2013, Hattie et al 1997, Wilson & Lipsey 2000, WSIPP 2017a
- <sup>vii</sup> Bowen & Neill 2013, Hattie et al 1997
- <sup>viii</sup> Bedard et al 2003, Wilson & Lipsey 2000, WSIPP 2017a
- <sup>ix</sup> Bedard et al 2003, Clem et al 2015, Hattie et al 1997
- <sup>x</sup> Bowen & Neill 2013, Hattie et al 1997
- <sup>xi</sup> Lipsey 2009
- <sup>xii</sup> Campbell et al 1982, Davie 1992, Lambie et al 2000, Mossman 1998, Zampese 1997
- <sup>xiii</sup> Cited in Davie 1992 and Zampese 1997
- <sup>xiv</sup> Campbell et al 1982
- <sup>xv</sup> Campbell et al 1982, Davie 1992
- <sup>xvi</sup> Mossman 1998
- <sup>xvii</sup> Wilson & Lipsey 2000
- <sup>xviii</sup> Wilson & Lipsey 2000
- <sup>xix</sup> Lipsey & Wilson 1999
- <sup>xx</sup> Bowen & Neill 2013, Cason & Gillis 1994, Hattie et al 1997, Wilson & Lipsey 2000
- <sup>xxi</sup> Bedard et al 2003, Bowen & Neill 2013, Cason & Gillis 1994, Hattie et al 1997, Wilson & Lipsey 2000
- <sup>xxii</sup> Mossman 1998, Zampese 1997
- <sup>xxiii</sup> WSIPP 2017a
- <sup>xxiv</sup> WSIPP 2017b

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## SUMMARY OF EFFECT SIZES FROM META-ANALYSES

Meta-analysis	Treatment type/population	Outcome measure	Reported average effect size	Number of estimates meta-analysis based on	Percentage point reduction in offending (assuming 50% untreated recidivism)	Number needed to treat (assuming 50% untreated recidivism)
Hattie et al (1997)	N/A	Recidivism post programme	d = .55*	3	0.23	4
Hattie et al (1997)	N/A	Recidivism post programme to follow-up	d = .10(NS)	8	0.05	22
Wilson & Lipsey (2000)	Primarily Caucasian male delinquents (age <i>M</i> = 14; range 10 - 21)	Arrests and self-reported antisocial behaviour	d = .18*	22	0.08	12
Bedard et al (2003)	Primarily Caucasian male delinquents (aged 10 – 18)	Recidivism	d = .31**	13	0.14	7
WSIPP (2017)	N/A	Recidivism	d = .51**	8	.22	5
Bowen & Neill (2013)	Primarily Caucasian male delinquents (aged 11 – 19)	Recidivism	d = .90*	7	0.34	3
Bowen & Neill (2013)	N/A	Aggression	d = .39*	41	0.17	6
Bowen & Neill (2013)	N/A	Anger	d = .64*	12	0.26	4
Bowen & Neill (2013)	N/A	Conduct disorder	d = .39*	6	0.17	6
Lipsey & Wilson (1999)	Serious non-institutionalised juvenile offenders	Recidivism	d = .07 - .17 (NS)	4	0.03 – 0.08	13 - 32
Lipsey & Wilson (1999)	Serious institutionalised juvenile offenders	Recidivism	d = .04 - .12 (NS)	5	0.02 – 0.12	18 - 55

\* Statistically significant at a 95% threshold

\*\* Statistically significant at the 99% threshold

d=Cohen's d or variant (standardised mean difference)

NS: Not significant

NR: Significance not reported