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Canyoning

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Australian

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Adventure Activity

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Good Practice Guide

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Guidance for horizontal and *vertical canyoning* in wet and dry canyons.

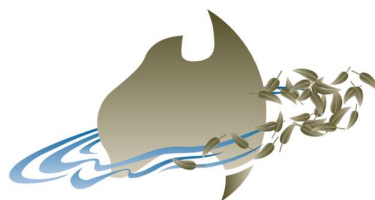
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17 Traditional Owner Acknowledgement

18 We acknowledge the *Traditional Owners* of Country throughout Australia and their continuing connection
19 to land, waters and community. We pay our respects to the people, the cultures and the Elders past and
20 present.

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29 Australian Adventure Activity Standard and the Good Practice Guides are a guide only. *Activity providers*
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42 Australian Adventure Activity Standard Steering Committee members who assisted in compiling, drafting
43 and ratifying the documents:

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 - are not liable for any loss resulting from an action taken or reliance made on any information
- 45 or material contained within the Australian Adventure Activity Standard, Good Practice Guides
- 46 and associated documents.
- 47

48 Version details

Version	Date	Details
1.0	23 Sept 2019	Version one release.
2.0	2026	

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51 Foreword

52

53 "When I experience dadirri, I am made whole again. I can sit on the riverbank or walk through the trees;
54 even if someone close to me has passed away, I can find my peace in this silent awareness. There is no
55 need of words. A big part of dadirri is listening."

56 **Dr Miriam-Rose Ungunmerr-Baumann AM**

57

58 The Australian Adventure Activity Standard and Good Practice Guides are designed to ensure effective,
59 responsible, sustainable and safe delivery of adventure activities to *dependent participants*. They can help
60 people across the outdoor sector to develop appropriately managed adventure activities which enhance
61 individuals and our communities, while protecting the environment and culturally significant places. In
62 doing this, these documents can help ensure that people will continue to enjoy the benefits of adventure
63 activities well into the future.

64 Best wishes for all your adventures.

65 **The Australian Adventure Activity Standard Steering Committee.**

66 **Outdoor Council of Australia.**

Creation

The Australian Adventure Activity Standards (AAAS) and accompanying Good Practice Guides (GPGs) were developed through a national project and launched in 2019. They drew together, and built upon, the various state and territory-specific adventure activity standards that had previously operated across Australia, replacing a fragmented set of arrangements with a single, nationally consistent voluntary framework. The original development drew on the input of a wide range of outdoor and adventure activity experts with extensive experience, supported by expert advisory groups and informed by open consultation across *activity providers*, education authorities and other stakeholders.

The Steering Committee gratefully acknowledges the members of the various focus groups, industry consultation, working groups and expert advisors for their work and contributions, and thanks the State and Territory Governments for funding the original development.

The AAAS and GPGs are now maintained by the Outdoor Council of Australia (OCA). They are subject to comprehensive review at least every five years, with targeted reviews undertaken in response to serious incidents, fatalities, relevant court decisions, or material changes in regulation or practice. Reviews are overseen by the Steering Committee and conducted in accordance with the AAAS Review and Update Methodology — a pragmatic, mixed-methods process combining legislative and regulatory analysis, currency checking of cited standards and instruments, stakeholder consultation, data-informed *risk assessment*, and structured expert input through the Expert Advisory Group, followed by open public consultation before endorsement.

The first comprehensive review under this methodology was undertaken in 2025–26. The review was facilitated, and the Standard and Good Practice Guides drafted, by The OREAS Group Dr David Marsden for and on behalf of the Outdoor Council of Australia. The Outdoor Council of Australia gratefully acknowledges the contributions of all who took part in the review:

- Dr David Marsden (PhD), Lead Consultant (The OREAS GROUP)
- Lori Modde, Project Sponsor (OCA Chair)
- the members of the AAAS Steering Committee, who provided governance, direction and endorsement of the reviewed documents;

Lori Modde, OCA Chair, Outdoors NSW, ACT
David Marsden, Lead Consultant, The OREAS Group
Andrew Atfield, Tasmania Government
Andrew Knight, Outdoors Victoria
Dom Courtney, Outdoors Queensland
Jodie Freund, South Australian Government
Katie Brown, Outdoors WA
Mitchell Hardy, NT Government
Neil Le Febvre, Outdoors WA

- the members of the Expert Advisory Groups, who contributed specialist knowledge and reviewed drafts across the Core and activity Good Practice Guides; and
- the *activity providers*, education authorities, peak bodies and individuals who contributed through public consultation, focus groups, and submissions.

Further details of the creation and review of the AAAS and GPGs can be found at www.australianaas.org.au, where updates are also published.

Funders

The Steering Committee gratefully acknowledges and thanks the State and Territory Governments for funding the original development and 2026 review.

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Preface

About these documents

The Australian Adventure Activity Standard (AAAS) and related Good Practice Guides (GPGs) are an industry good-practice framework for safe and responsible planning and delivery of outdoor adventure activities with *dependent participants*.

The AAAS and related GPGs provide guidance on responsible activity delivery, including safety and respect for the environment, cultural heritage and other users. They are not a full legal compliance framework.

Activity *providers* are encouraged to obtain independent professional and legal advice in relation to their obligations and duties in delivering adventure activities and should reference the relevant laws to the area in which they intend to undertake the adventure activity.

Dependent Participants

A *dependent participant* is a person who is owed a *duty of care* by the *activity provider* and who wholly or partially on the provider's systems, processes and operational practices for the support, supervision, guidance or instruction needed to take part in an activity. In most cases this means a participant who reasonably relies on the provider for their safety. The degree of dependence may vary over the course of an activity.

Considerations for determining whether a person is a *dependent participant* may include, but are not limited to:

- whether the organisation is providing a service or product to the person
- whether the organisation owes the person a *duty of care* in the circumstances
- whether the person reasonably relies on the provider for the support, supervision, guidance or instruction needed to participate safely.

Considerations for determining the **level of dependence** may include, but are not limited to:

- the foreseeable level of competence of the participant in the activity, and the degree of reliance this creates on the provider's work system, including reliance on *activity leaders*
- the foreseeable level of self-reliance of the participant to reasonably manage their own safety
- the variation, or possible variation, in the degree of dependence or self-reliance throughout the activity
- the individual context, nature and circumstances of the activity
- the relevant circumstances and particular facts relating to the responsibilities assumed by the provider.

Does the Standard and Good Practice Guides apply to me?

The Australian Adventure Activity Standards (AAAS) and associated Good Practice Guides (GPGs) are primarily designed to support activity *providers* conducting lead or supported adventure activities involving *dependent participants* with the aim of delivering safe, responsible and well-managed experiences. Each *provider* must determine, based on their specific circumstances, whether the participants they work with are dependent and/or their level of dependency on the provider's systems and operations. Providers should use the AAAS and relevant GPGs to ensure that the activities they lead are planned and delivered in accordance with the Standard.

Australian *providers* operating internationally can use the AAAS and GPGs as a benchmark for safe practice, while complying with the laws and relevant standards of the jurisdiction in which the activity is conducted. Legal advice should be obtained where activities cross jurisdictions.

181 *Activity providers* include outdoor education and adventure businesses, schools, universities, TAFEs, camps,
182 clubs and organised “meet-up” groups, youth organisations, not-for-profits, and community-based
183 organisations that deliver adventure activities to *dependent participants*. An individual may also be an
184 *activity provider* where they hold the ultimate legal *duty of care* to participants. “The Standard” and the
185 GPGs apply to a provider as a “whole organisation” rather than to “specific roles” within it.

186 Some providers may have their own standards or guidelines appropriate to their *duty of care*. These should
187 be reviewed periodically to ensure current *duty of care* expectations are met, and “the Standard” and the
188 GPGs may assist with such reviews.

189 Are they legally binding?

190 The AAAS and GPGs are not legal requirements. However, they may refer to specific laws and regulations
191 which may be legally binding on *activity providers*. Some *land managers* and other organisations may
192 require compliance. This may be as a condition of obtaining a licence, permit or other permission, or some
193 other condition (e.g. a contract).

194 Under Australian common law and relevant legislation, *providers* have a legal *duty of care* towards
195 *dependent participants* in some circumstances. In broad terms, the legal duty requires *providers* to take
196 reasonable care that their actions and omissions do not cause reasonably foreseeable injury to *dependent*
197 *participants*.

198 It is important to be aware that adventure activities in Australia operate within a complex legal landscape.
199 *Activity providers* must understand the obligations that apply to them and seek independent professional
200 and legal advice where any obligation is unclear.

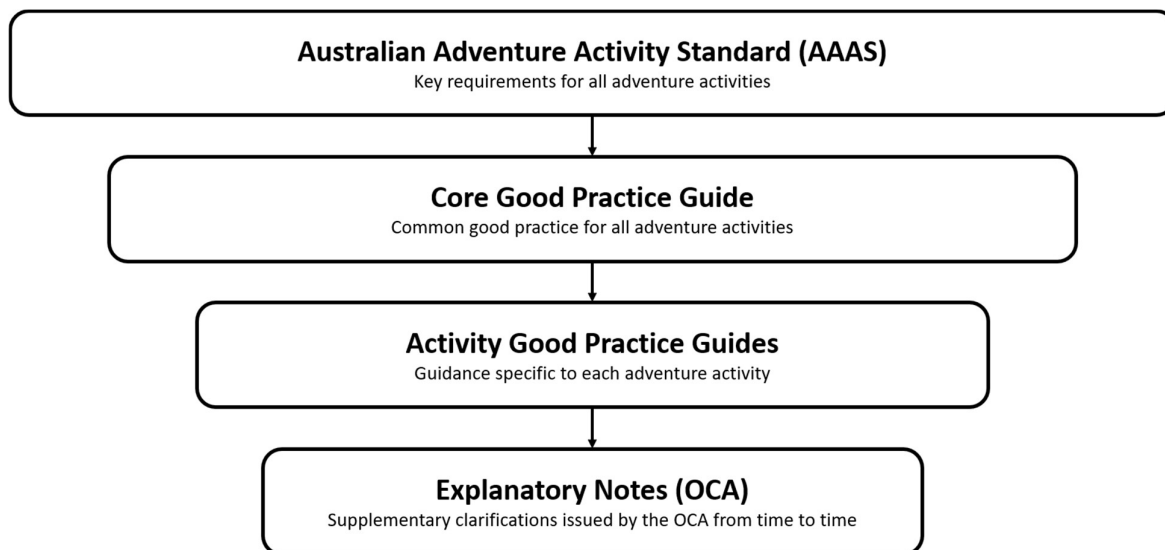
201 The following obligations include, but are not limited to, those set out in detail in Appendix A — Principal
202 legal obligations, grouped by the function each obligation performs:

- 203 • Work health and safety — the foundational legal duty for the majority of providers, including the
204 primary *duty of care*, officers' due-diligence duty, consultation, safe systems of work, and
205 notifiable-incident reporting.
- 206 • *Duty of care*, negligence and consumer protection — the common law *duty of care*, the Civil
207 Liability Act (or equivalent) of each state and territory, and the Australian Consumer Law.
- 208 • Protection of children and vulnerable persons — Working with Children and Working with
209 Vulnerable People schemes, Child Safe Standards and Reportable Conduct Schemes.
- 210 • Transport of participants — land, water and air — heavy vehicle, road transport, domestic
211 commercial vessel, recreational marine and civil aviation obligations.
- 212 • Land access, environment and cultural heritage — park, Crown land and reserve licensing, the
213 EPBC Act, Aboriginal cultural heritage law(s) and/or regulation(s), and biosecurity duties.
- 214 • Information privacy, equity and employment — the Privacy Act and Australian Privacy Principles,
215 anti-discrimination law(s) and/or regulation(s), and the Fair Work Act and relevant award.
- 216 • Substances, food and licensed items — medicines and poisons, food safety, liquor and tobacco,
217 and firearms obligations.
- 218 • Activity-specific licensing — fisheries and recreational fishing licensing, and animal welfare duties.

219 Appendix A is an orientation only and is not exhaustive. It does not constitute legal advice, and the relevant
220 law(s) and/or regulation(s) of the jurisdiction(s) of operation must in each case be determined and
221 complied with.

222 Structure of the Standard and Good Practice Guides

223 The guidance for adventure activities comprises several related documents. For any activity, the AAAS (the
224 Standard), the Core GPG, the relevant activity GPG, and any applicable Explanatory Notes issued by the
225 Outdoor Council of Australia, from time to time, should be consulted.



226

227 *Figure 1.1: Structure of the Standard and Good Practice Guides*

228 The documents present cumulatively more specific information. Providers should determine how they use
229 the AAAS and GPGs based on their context and need, and are encouraged to draw on them when
230 developing and reviewing their standard operating procedures. Activity providers are encouraged to obtain
231 independent professional and legal advice on their obligations and to reference the laws relevant to the
232 area in which they operate.

233 Interpretation of the Standard and Good Practice Guides

234 The following words and phrases are used in all documents and have specific meanings:

235 **Must:** used where a provision is mandatory, if the provider is to operate fully in accordance with AAAS or
236 GPGs. (This is equivalent to the keyword “shall” used in other voluntary standards e.g. Standards Australia,
237 other International Standards Organisations (ISOs) etc.)

238 **Should:** used where a provision is recommended, not mandatory. It indicates that the provider needs to
239 consider their specific situation and decide for themselves whether it applies or is relevant. A “should”
240 statement describes good practice. Departure from a “should” statement does not of itself establish a
241 breach of duty — a provider may meet its obligations by other means appropriate to its context — but
242 providers should be able to explain the basis for a different approach.

243 **Can/cannot:** indicates a possibility and capability.

244 **May/need not:** indicates a permission or existence of an option.

245 **But are/is not limited to:** used to indicate that a list is not definitive and additional items may need to be
246 considered depending on the context.

247 The following formatting is used throughout:

248 Defined words are in italics. They are defined in the Glossary.

249 Examples are in smaller italic 9-point font.

250 In document references are underlined. References are to section heading titles.

251 External web or Australian AAS & GPG document links are dotted underline italic.

252 1 Introduction

253 The purpose of this section is to provide reference information for the writers and users of this document.

254 1.1 Canyoning introduction

255 Canyoning involves the descent and/or ascent of geological formations created by a watercourse using a
256 range of techniques. These formations can range from open sided waterways to deep, narrow, steep-sided
257 valley, often have vertical walls, cliffs and waterfalls. The cleft between these walls are the result from
258 weathering and water erosion over geologic timescales. This creates a watercourse, which can be perennial
259 or intermittent resulting in “wet” and “dry” canyoning and the possibility of rapid changes in water level
260 and flooding to occur.

261 The terrain features may include:

- 262 • deep, narrow gorges with waterfalls, log-jams, rock-jams and cave-like structures or open face
- 263 waterfalls, escarpments and/or exposed cliff-lines
- 264 • river and water features such as dry creek beds and sections of water that may include dark, deep,
- 265 cold, slow moving pools and/or fast-moving water creating white-water conditions
- 266 • horizontal terrain that can traversed
- 267 • tracks and/or unmodified landscapes.

268 Due to the terrain it is generally difficult to access, traverse and egress. A range of a techniques are used to
269 traverse the terrain, and may including abseiling, bouldering, bushwalking, *rock climbing* and swimming.
270 Swimming might use a *buoyancy aid* as assistance.

271 Depending on the terrain features, a canyon may present opportunities for horizontal and/or *vertical*
272 *canyoning*.

273 *Horizontal canyoning* involves the ascent, traversing and/or descent of steep and narrow watercourses
274 where any fall safety required can be achieved using *spotting* or a *deep-water belay*. This activity involves a
275 combination of multiple skills such as bushwalking, *bouldering* and swimming with or without *buoyancy*
276 *aids*.

277 When horizontal canyons are involved, it may be unclear sometimes if the activity is canyoning or
278 bushwalking. The environment and the techniques used to traverse the terrain needs to be considered in
279 determining the activity type and the relevant Good Practice Guide (GPG). Refer to Appendix T Canyoning
280 grading for additional information on assessing the difference.

281 *Vertical canyoning* involves *horizontal canyoning* and the descent, traversing and/or ascent of vertical (or
282 near vertical) *natural surfaces* where fall safety cannot be achieved using spotting due to the *fall height*.
283 Technical roping techniques such as abseiling, *rock climbing* and lowering (e.g. V-Lowers) are used to provide
284 fall safety for vertical elements encountered. *Vertical canyoning* can involve a single section or multi-pitch
285 canyoning.

286 When vertical canyons are involved, it may be unclear sometimes if the activity is canyoning or
287 abseiling/*rock climbing*. The environment and the techniques used to traverse the terrain needs to be
288 considered in determining the activity type and the relevant GPG.

289 1.2 Exclusions

290 Activities that are not covered by this Good Practice Guide are:

- 291 • activities associated with Camping while on overnight or extended canyoning activities
- 292 • use of a water craft such as a canoe, kayak or raft

- 293 • activities within a cave
- 294 • use of flying foxes while canyoning.

295 1.3 Related activities

296 This GPG ought to be read in conjunction with any other relevant GPGs for:

- 297 • bushwalking
- 298 • abseiling (i.e. abseil and climb GPG)
- 299 • camping
- 300 • canoeing, kayaking and rafting (i.e. Inland water paddle-craft GPG)
- 301 • caving
- 302 • climbing (i.e. abseil and climb GPG).

303 2 Management of Risk

304 *Risk management* in outdoor and adventure settings is highly context-specific. In natural environments
305 there is an almost infinite range of combinations of participants, purpose, weather and local conditions,
306 and every provider differs in structure, size, philosophy and operating environment. *Risk management*
307 therefore cannot be a 'tick-the-box' exercise or a 'one size fits all' approach; risk systems should be flexible,
308 adaptive and highly responsive to the circumstances of each activity, drawing on recognised frameworks
309 such as AS ISO 31000:2018 and AS ISO 4980:2023.

310 The section guides providers to build a risk system that fits their own structure and operating environment
311 rather than copying another organisation's. A volunteer-led club might apply it as a lightweight but
312 documented plan with strong dynamic assessment in the field; a commercial operator might use it to
313 underpin a formal, audited *risk management* system. In every case it directs the provider to make risk
314 thinking flexible, adaptive and responsive to the actual circumstances of each activity.

315

316 2.1 Management of risk

317 *See Core GPG (2 Management of Risk).*

318 2.2 Context Matters

319 *See Core GPG (Management of Risk).*

320 2.3 Risk management framework and process

321 *See Core GPG (Management of Risk).*

322 2.4 Risk management plan

323 *See Core GPG (Management of Risk).*

324 2.5 Dynamic risk assessment

325 *See Core GPG (Management of Risk).*

326 2.6 Incident reporting

327 *See Core GPG (Management of Risk).*

328 3 Planning

329

330 Sound planning is what turns intent into safe and consistent delivery. Clear management and approval
331 processes help a provider manage risk, with the people responsible for approving processes, plans and
332 procedures varying according to the organisation's context. Good planning considers the purpose of the
333 activity, the people involved, group size, the cultural and environmental values of the place, and what to do
334 when conditions change or things go wrong.

335 Here the guidance helps a provider translate intent into a repeatable, defensible process. Approval roles
336 can be scaled to context — a single coordinator in a small operation, or a tiered sign-off structure in a larger
337 one. The material can shape activity-plan templates, prompt early engagement with *Traditional Owners*
338 and *land managers*, and ensure emergency planning and field documentation are in place and reviewed
339 before participants arrive.

340 3.1 Canyoning activity plans

341 Refer Core GPG – Activity Planning.

342 Canyoning activity planning considerations may include but are not limited to:

- 343 • geology, features, watercourses and obstacles within the canyon
- 344 • protecting from fall from height hazards
- 345 • protecting from water related hazards
- 346 • appropriate techniques for overcoming obstacles:
 - 347 ○ climbing
 - 348 ○ abseiling
 - 349 ○ swimming and wading
 - 350 ○ slides and jumping into water
- 351 • length of activity and time required
- 352 • the grade and difficulty of the activity
- 353 • the supervision required
- 354 • likelihood and consequences of changing water levels including flooding
- 355 • *personal thermal protection* necessary
- 356 • opportunities for rest breaks
- 357 • escape routes
- 358 • remoteness of site
- 359 • high points that are or will be above the highest water level
- 360 • group size
- 361 • group skill levels
- 362 • height of pitches, number of abseils and technicality
- 363 • equipment requirements
- 364 • ability to carry equipment
- 365 • how often the canyon is visited and likely environmental impact
- 366 • possible usage of canyon by other groups on the same day
- 367 • *activity leaders* recent familiarity with route
- 368 • *land manager's* permission and requirements
- 369 • any other relevant considerations listed in this document and the Core GPG.

370 3.2 Canyoning emergency management plan

371 A *non-participating contact* must be used as part of the emergency management plan.

372 Emergency management plans must address:

- 373 • the likely difficulty of establishing communication with external support and emergency services

- 374 • the relevant *triggers* and procedures when a group has become overdue or failed as planned to
- 375 confirm the group is safe
- 376 • mapping of access and escape options
- 377 • *activity leader* induction training and ongoing practice on emergency access and escape routes
- 378 • fauna and flora risks
- 379 • catchment features
- 380 • weather assessment, forecasts and observations
- 381 • relevant considerations identified throughout this document and the Core GPG.
- 382 • procedures for managing *flash flooding* and rising water levels (refer 5.5 Water).

383 Emergency management plans must consider the need:

- 384 • for pre-rigging emergency access ropes or ladders
- 385 • managing hypothermia, hyperthermia and fatigue
- 386 • equipment loss or damage
- 387 • emergency equipment requirements and access.
- 388 • arrangements for a backup team or additional *activity leaders* where the activity context requires
- 389 it
- 390 • communication of the activity area and intended route to relevant local emergency services.

391 The use of relevant rescue systems and procedures must be practiced periodically.

392 Where there is only one *activity leader*, the emergency management plan must have arrangements that

393 allow participants an adequate and appropriate communication system if the leader becomes

394 incapacitated.

395 Also refer Core GPG – Emergency planning section.

396 3.3 Management and approval of activities

397 See *Core GPG (Planning)*.

398 3.4 Group size

399 See *Core GPG (Planning)*. Group size for this activity is addressed under *Participants in this guide*.

400 3.5 Cultural, environmental and historical values

401 See *Core GPG (Planning)*.

402 3.6 Emergency management planning

403 See *Core GPG (Planning)*.

404 3.7 Activity leader required documentation

405 See *Core GPG (Planning)*.

406 4 Diversity, equity and inclusion

407 Adventure *activities* are delivered by, and for, people of diverse identities, abilities, cultures, life

408 experiences and circumstances. Recognising that diversity, and providing equitable opportunities for safe

409 and meaningful participation, is fundamental to safe and effective practice.

410 In practice this section guides providers to design activities that include rather than exclude, applying

411 across interactions between leaders, participants and others encountered during an activity. A provider can

412 use it to review enrolment and communication practices for barriers, build cultural and psychological safety

413 into leader briefings, and ensure complaint and review mechanisms are visible and accessible. It is intended
414 to be read alongside the Participants and Responsibilities sections rather than in isolation.

415 The recommendations in this section apply alongside, and inform the application of, the subsequent
416 sections of the Core, including without limitation 5 Participants, 5.3 *Vulnerable participants*, 5.5 Privacy of
417 information, 4.3 Cultural safety, 4.4 Psychological safety and dignity, and 8 Responsibilities and roles. Those
418 sections continue to apply in their own terms; where requirements overlap, the more onerous applies.

419 4.1 Diversity of participants and leaders

420 *See Core GPG (Diversity, equity and inclusion).*

421 4.2 Inclusive practice

422 *See Core GPG (Diversity, equity and inclusion).*

423 4.3 Cultural safety

424 *See Core GPG (Diversity, equity and inclusion).*

425 4.4 Psychological safety and dignity

426 *See Core GPG (Diversity, equity and inclusion).*

427 4.5 Information, communication and consent

428 *See Core GPG (Diversity, equity and inclusion).*

429 4.6 Leader competence

430 *See Core GPG (Diversity, equity and inclusion).*

431 4.7 Concerns, complaints and review

432 *See Core GPG (Diversity, equity and inclusion).*

433 5 Participants

434 Every activity depends on the people taking part, and on the information and support they receive before
435 and during it. Pre-activity information and communication help potential participants, parents or legal
436 guardians and client organisations make an informed decision about taking part, and continue through
437 consent, acknowledgement of risk, and the care of those who may be vulnerable. Supporting participants
438 well — from first enquiry to supervision in the field — is central to safe and respectful practice.

439 Its purpose is to help a provider ensure people know what they are signing up for and are appropriately
440 supported once they arrive. Pre-activity information can be adapted to the audience and activity,
441 participation restrictions set defensibly, and additional safeguards put in place for *vulnerable participants*
442 and minors. The supervision guidance lets a provider calibrate direct versus *indirect supervision* to the
443 activity, environment and group.

444 5.1 Participant considerations

445 Refer Core GPG – Participants and Activity purpose sections.

446 This section is to assist in the alignment of participant skill and dependency with the challenges of the
447 activity.

448 Participant considerations should include but are not limited to:

- 449 • participant aims and objectives
- 450 • the effect of the temperature of the environment on individual and groups of participants
- 451 • swimming ability
- 452 • ability to jump into water
- 453 • familiarity with and experience in a moving water environment
- 454 • fitness
- 455 • experience with heights
- 456 • abseiling and roping experience
- 457 • previous canyoning experience.

458 5.2 Canyoning information provided pre-activity

459 Pre-activity information should communicate:

- 460 • an overview of the planned activity
- 461 • difficulty of access
- 462 • remoteness from medical facilities
- 463 • associated hazards and risks
- 464 • if there will be a point where abseils, climbs, water features or jumps make it impossible to
- 465 backtrack
- 466 • participant roles and responsibilities
- 467 • clothing requirements for *personal thermal protection*
- 468 • appropriate footwear
- 469 • ability to carry weight
- 470 • other relevant items as per Core GPG - Information provided pre-activity.

471 5.3 Group size

472 Considerations when determining group size must include:

- 473 • canyon grade – including vertical, aquatic and commitment grade
- 474 • site capacity
- 475 • site related legislation or regulation
- 476 • the time allowed to enable all participants in the group to complete the activity is sufficient and
- 477 realistic and does not compromise safety
- 478 • having appropriate supervision for *non-actively participating* participants
- 479 • considerations for determining group size outlined in Core GPG.

480 *See Core GPG (Participants) for the general requirements and further detail.*

481 5.4 Supervision and management during the activity

482 5.4.1 Recommended supervision ratios

483 Supervision ratios must be determined by a *risk management* process and considerations listed below and

484 in the Core GPG.

485 Considerations for determining supervision requirements may include:

- 486 • the obstacles, hazards and risks
- 487 • canyon grade – including vertical, aquatic and commitment grade
- 488 • characteristics of the site
- 489 • type of canyoning
- 490 • supervision requirements of participants who are *non-actively participating*
- 491 • time for the *activity leaders* to allow all participants to undertake the activity being sufficient and
- 492 realistic
- 493 • participant training progression and competence

- purpose of activity
- general considerations for determining supervision requirements outlined in the [Core GPG](#).

The following table provides examples of commonly used supervision ratios used when Canyoning:

Table 5.1: Recommended supervision ratios

Vertical canyon difficulty (Grade)	Aquatic canyon difficulty (Grade)	Commonly used supervision ratio* (leader: participants)
V1	A1	1:8 to 1:15
V2	A2	1:6 to 1:12
V3	A3	1:4 to 1:10
V4	A4	1:3 to 1:8
V5	A5	1:2 to 1:6

Note: * While commonly used supervision ratios, these may vary depending on the specific context of the specific activity and *risk management* procedures in place. Refer to the considerations for determining supervision ratios noted above for more details.

The supervision requirements and ratios for programs that train/teach participants to become canyoning guides or instructors should be determined on a case-by-case basis, according to the progress of those participants towards being fully independent canyoning guides or instructors themselves.

Considerations for deciding when more than *activity leader* is required irrespective of the number of participants may include but is not limited to:

- jumps, slides or siphons with no ability to reascend
- moving water hazards that requires multiply supervision points (e.g. entry & exit, entry & hazard, exit & hazard etc.)
- abseiling into moving water graded A5
- multi-pitch abseiling that involve mid-route hanging belays
- multi-pitch abseiling that involve mid-route belay stations that require an *activity leader* to establish (e.g. no pre-existing anchors at station).

5.4.2 Supervision of belay systems

More information about the supervision of *belay systems* can be found in the Abseil & Climb GPG. The supervision ratios in the table above apply.

5.4.3 Single activity leader – all canyoning

Where there is only one *activity leader*, the emergency management plan must ensure participants can summon outside assistance (e.g. trigger a PLB) if the leader becomes incapacitated (refer 3.2 and Core GPG – Emergency planning).

5.4.4 Single activity leader – vertical canyoning

Refer Abseil & Climb GPG for single-leader belay and lead-climbing procedures in vertical environments.

5.5 Activity management

5.5.1 Progression through a canyon

Procedures must be used to reduce the potential of:

- unanticipated changes in water levels impacting activity safety
- falls from height hazard and risks (refer [7.6 Vertical canyoning activity management](#))
- water related hazards and risks (refer [7.7 Aquatic canyoning activity management](#))
- slippery surfaces related hazards and risks
- rock fall hazards and risks

- 531 • being unaware of recent changes to a canyons natural formations and associated hazards and
532 risks.

533 An activity brief must be provided to participants (refer Core GPG and 7.5.3 *Activity briefing*).

534 5.5.2 Knowledge of site

535 The knowledge and experience of the activity site that *activity leaders* require before leading participants
536 should be considered when allocating *activity leader* roles. For canyons graded above V5, A5 or
537 commitment C5, the *activity leader* must have prior knowledge and experience of the site before leading
538 participants there.

539 5.5.3 Activity briefing

540 The information and requirements to be communicated may include but are not limited to:

- 541 • the plan for the activity
- 542 • participant roles and responsibilities
- 543 • relevant hazards and risks and relevant procedures to address the risks
- 544 • appropriate personal clothing and footwear requirements
- 545 • *personal thermal protection* requirements
- 546 • requirements for when and where any Personal Protective Equipment (PPE) is required
- 547 • correct fitting of equipment and this to be checked before use
- 548 • canyoning techniques appropriate to the current and anticipated terrain
- 549 • techniques and procedures to address relevant hazards and risks
- 550 • procedures for system for toileting and personal hygiene
- 551 • food and drinking water sources, requirements or recommendations
- 552 • procedures to avoid becoming lost or separated
- 553 • procedures if someone does become lost or separated
- 554 • techniques or procedures to reduce environmental impact
- 555 • systems of communication used
- 556 • relevant procedures to reduce over-crowding and to provide efficient group movement
- 557 • emergency response if the *activity leader(s)* are injured or incapacitated
- 558 • any other relevant activity information or procedures.
- 559 • Systems of communication used, including that mobile phones may not function in canyons and
560 the use of a PLB or equivalent.

561 5.6 Vertical canyoning activity management

562 5.6.1 Vertical Canyoning activity information for participants

563 The information and requirements to be communicated for *vertical canyoning* may include but are not
564 limited to:

- 565 • information and requirements listed in canyoning information above
- 566 • relevant *vertical canyoning* hazards and risks including but not limited to fall from height, falling
567 objects and water submersion
- 568 • relevant procedures to address the risks
- 569 • any requirements to have equipment and systems checked before being relied upon
- 570 • relevant abseiling and/or climbing techniques
- 571 • the correct use of *belay systems* or other fall protection systems
- 572 • the system for transferring between *belay systems* or other fall protection systems
- 573 • the release from *belay systems*.

574 5.6.2 Fall from heights

575 Considerations for the likelihood of a fall from height should include but are not limited to:

- 576 • how close to the edge people are
- 577 • the slope of the surface being stood on
- 578 • the stability and grip of the surface being stood on
- 579 • available hand holds
- 580 • obstacles that need to be negotiated
- 581 • abilities of participants including the ability to follow instructions.

582 To reduce the potential for falls from height, procedures should include:

- 583 • designating what areas that are not to be enter
- 584 • designating *waiting areas*
- 585 • designating areas that can only be accessed when attached to a *belay system*.

586 5.6.3 Unprotected climbing

587 *Unprotected climbing* is a form of climbing activity where a fall protection system or *spotter* is not used.

588 *Unprotected climbing* must only be used where the risk is acceptably low of a fall from height indicate
589 the climb does not require the use of a fall protection system or *spotter*.

590 Considerations when *unprotected climbing* should include but are not limited to:

- 591 • the likelihood of falling
- 592 • the *fall height* involved
- 593 • the hazards within the *fall zone*
- 594 • whether the surface has holds on vertical, inclined and/or overhanging surfaces
- 595 • the body orientations of the person that the holds permit
- 596 • the need for *spotting*
- 597 • the possibility of falling objects
- 598 • the supervision required.

599 An appropriate helmet should be worn when *unprotected climbing*.

600 Adequate supervision must be provided for participants both actively and *non-actively participating*.

601 The number of climber's that can be supervised while *unprotected climbing* must be based on the:

- 602 • the ability and need for providing *direct supervision* or *indirect supervision* of the climber(s)
- 603 • the available distance separating multiple climber's.

604 5.6.4 Bouldering

605 *Bouldering* while canyoning is a form of climbing activity, limited in height and for which fall safety can be
606 achieved by a *spotter* providing control of a fall or use of a *deep-water belay*.

607 The need for *spotting* during the activity must be considered.

608 Considerations when *bouldering* should include but are not limited to:

- 609 • the likelihood of falling
- 610 • the *fall height* involved
- 611 • the hazards within the *fall zone*
- 612 • the need for another fall protection system that is not *spotting* or a *deep-water belay*
- 613 • whether the surface has holds on vertical, inclined and/or overhanging surfaces
- 614 • the body orientations of the person that the holds permit
- 615 • the need for *spotting*
- 616 • the availability of a *deep-water belay* in the *fall zone*
- 617 • the possibility of falling objects
- 618 • the supervision required.

619 An appropriate helmet should be worn when *bouldering* and *spotting*.

- 620 Where participants are *spotting* they must be instructed and appropriately supervised.
- 621 Adequate supervision must be provided for participants both *actively* and *non-actively participating*.
- 622 The number of climber's that can be supervised while *bouldering* must be based on the:
- 623 • the number of *spotters*
 - 624 • the competence of the *spotters*
 - 625 • the ability and need for providing *direct supervision* or *indirect supervision* of both the
 - 626 climber(s) and spotter(s)
 - 627 • the available distance separating multiple climber's
 - 628 • the site considerations including hazards within the *fall zone*.
- 629 5.6.5 Deep-water belays
- 630 Refer Abseil & Climb GPG for *deep-water belay* requirements, including the caution that a *deep-water belay*
- 631 must not be relied upon where it would prevent a fall injury but create a drowning risk.
- 632 5.6.6 Participants belaying or spotting
- 633 Considerations for when participants operate *belay systems* or *spotting* should include but are not limited
- 634 to:
- 635 • participants are willing and capable
 - 636 • appropriate training is provided
 - 637 • the need for ongoing monitoring to ensure:
 - 638 ○ correct technique is used
 - 639 ○ attention to the task is maintained
 - 640 ○ equipment is used correctly
 - 641 • can appropriately communicate with the climber or abseiler
 - 642 • backup systems to support the belayer (e.g. backup belayer).
- 643 5.6.7 Abseiling and Climbing
- 644 To reduce the potential for falls from height, procedures must include:
- 645 • designating what areas that are not to be entered
 - 646 • ensuring ropes are of a sufficient length for the pitch
 - 647 • remove unnecessary slack in *belay system* before use
 - 648 • monitoring the correct use of *belay systems*
 - 649 • monitor attaching to *anchors* or *belay systems*
 - 650 • monitor belay rope(s) to keep them at the appropriate length
 - 651 • monitor *belay systems* to remove unnecessary slack in belay ropes
 - 652 • providing appropriate instruction to mitigate risks caused by the stretch in *dynamic rope*.
- 653 To protect from a fall from height, procedures must include checking participant(s):
- 654 • equipment is correctly fitted before they need to rely on the *belay system*
 - 655 • correct attachment to the *belay system*, abseil system and/or other safety systems.
- 656 To reduce the potential for falls from height, procedures should include:
- 657 • items listed in 7.6.2 Falls from height section
 - 658 • checking participant's equipment is correctly fitted before they need to rely on the *belay system*
 - 659 • checking correct attachment to the *belay system*, safety or other systems
 - 660 • anchoring the *belayer* where the *belay system* relies substantially on the belayers weight to arrest
 - 661 a fall and the weight of the abseiler or climber is greater than that of the belayer.

662 Consideration must be given to the need for separately *spotting* climbers when starting their ascent, until
663 such time the climber reaches a *fall height* where the *belay system* will full operate to stop their fall before
664 they reach the *fall zone*.

665 Checking equipment and attachment must not be delegated to the participants themselves, unless they
666 have demonstrated *competence* in the procedure(s).

667 Considerations for participants not having their belay attachment checked or using a self-belay method
668 should include but are not limited to:

- 669 • the participant has been assessed *competent* in the skill
- 670 • use of an alternative system of checks
- 671 • the initial weighting of the abseil is backed up by another form of safety (e.g. attached by a lanyard).

672 5.6.8 Abseiling specific

673 Equipment and systems to affect a rescue must be available.

674 Abseil *belay systems* must use at least one belay method to protect the abseiler if they lose control of the
675 descent.

676 Belay methods include but are not limited to a separate *top belay system*, *bottom braking*, *deep-water*
677 *belay* or a *self-belay* (e.g. prussik brake).

678 The belay method used must be a releasable *top belay system*, unless other considerations indicate
679 another belay method is more appropriate.

680 Considerations for using a *top belay system* should include but are not limited to:

- 681 • any stretch in the *belay system* still allows it to effectively protect a fall
- 682 • the likelihood of the abseiler spinning or twisting the belay and abseil ropes together (e.g. abseiling
683 over overhangs).

684 Abseiling activity management considerations should include but are not limited to:

- 685 • the starting area affecting the ease of weighting the rope and practising the abseil technique
- 686 • equipment loads to be carried
- 687 • the time a person spends hanging in a harness
- 688 • use of *belay systems* rigged for rescue
- 689 • sites having suitable *activity leader* supervision positions to enable appropriate supervision of the
690 abseiler's descent
- 691 • use of appropriate equipment to prevent the abseiler becoming inverted
- 692 • anchors and equipment are suitable for the peak loads including possible rescue requirements
- 693 • the potential for objects falling onto people below including but not limited to equipment
- 694 • providing instructions on:
 - 695 ○ actions if they lose control of the *descent system*
 - 696 ○ correct abseil technique including body position, speed control and braking.

697 5.6.9 Abseiling with bottom braking

698 The belay method used must be a releasable *top belay system*, unless other considerations indicate that
699 *bottom braking* is more appropriate.

700 Participants operating a *bottom braking* belay should be avoided.

701 Considerations for using *bottom braking* should include but are not limited to:

- 702 • the appropriateness of the system compared to other possible *belay systems*: *top belay*, *self-belay*
703 or *deep-water belay*
- 704 • that any stretch in the *belay system* still allows it to effectively protect a fall

- 705 • the appropriate equipment required to ensure the descent speed is appropriate
- 706 • the ability of the *belayer* to react in time to stop the abseiler
- 707 • the *belayer* having an appropriate location to operate the belay from, including but not limited to
- 708 stable footing
- 709 • the *belayer's competence* or the ability to be appropriately supervised
- 710 • the activity aims, and objectives being suited to the participants
- 711 • any policy requirements of the organisation engaging the provider to deliver activity for its
- 712 participants (e.g. education department policy)
- 713 • the appropriateness of the site
- 714 • situations where abseilers are free hanging and/or negotiate overhangs is suited to the
- 715 participants
- 716 • the ability of the *belayer* to see the abseiler at all times
- 717 • the likelihood of objects falling on the *belayer*.

718 5.6.10 Abseiling with self-belay

719 The belay method used must be a releasable *top belay* system, unless other considerations indicate that a
720 *self-belay* is more appropriate.

721 A *self-belay* system must not be used when abseiling in or through strong vertical water flows.

722 A *self-belay* system must be appropriately attached and rigged to prevent jamming or interfering with the
723 correct functioning of the descender device.

724 During the assessment to confirm *competence* in the use of a *self-belay*, an additional *belay system* must be
725 used to protect the person being assessed until *competence* has been demonstrated.

726 Considerations for using a *self-belay* system (e.g. prussik brake) to protect the abseiler if they lose control of
727 the *descent system* should include but are not limited to:

- 728 • the appropriateness of the system compared to other possible *belay systems: top belay, bottom*
- 729 *braking or deep-water belay*
- 730 • the abseiler being competent in operating the *self-belay* system and releasing the prussik under
- 731 load
- 732 • having available *releasable rigging*, equipment and systems to affect a rescue
- 733 • the stretch in the *belay system* is too great for a *top belay* system or *bottom braking* system to
- 734 effectively protect a fall
- 735 • the amount of vertical water flow that the abseil will occur in or passes through.

736 5.6.11 Abseiling in waterfalls or into water

737 Additional considerations when abseiling waterfalls or into water must include:

- 738 • *features* (e.g. cracks etc.) behind the waterfall trapping the abseiler
- 739 • the force of water hitting the abseiler or belayer affecting their ability to control the abseil or belay
- 740 • the surface conditions enable maintenance of an appropriate stance
- 741 • potential for foot entrapment
- 742 • ability to communication between participants and *activity leader(s)*
- 743 • rope entanglement while in water
- 744 • the flow rate of the water the abseiler is entering.

745 Abseiling waterfalls or into water, additional activity management considerations should include but are
746 not limited to:

- 747 • the abseil rope ends at water level (i.e. no rope floating in the water that could create an
- 748 entanglement hazard)
- 749 • where water with high water flow rates:
 - 750 ○ ending abseils at or above water level

- 751 ○ using an abseil device that allows easy rope release
- 752 • packs not be worn when abseiling in waterfalls with significant water flows
- 753 • the abseiler should be within sight of the *activity leader* in the parts of their descent involving:
 - 754 ○ significant water flows
 - 755 ○ ledges containing pools of water which present a drowning risk
 - 756 ○ *features* which present an entrapment risk
- 757 • appropriate participant assessment and skill progressions to ensure participants are suited to managing their role
- 758
- 759 • *bottom braking* belayers can stand back from the waterfall, have stable footing and good visibility of the abseiler
- 760
- 761 • participants acting as *bottom braking* belayers that may be needed to assist in complex rescues, appropriately assessed at moving an abseiler out of the main flow
- 762
- 763 • appropriate briefing and instruction based on the:
 - 764 ○ hazards of a particular waterfall or water feature below
 - 765 ○ ways to maintain a breathing space through body and head positions
 - 766 ○ how to get clear of the rope if abseiling into water.

767 5.6.12 Abseils using a track-line

768 Refer Abseil & Climb GPG for track-line, lowering and V-lowering requirements.

769 5.6.13 Multi-pitch activities

770 A pre-activity check and ongoing monitoring must be used to confirm that the activity follows and uses the correct route and belay station locations.

772 Procedures must enable appropriate communication between groups at each *belay system*.

773 Participant management practices should be used to prevent overcrowding at belay stations.

774 Participants should have the competence in using basic skills to temporarily operate out of line of sight or communication of an *activity leader*.

776 Additional pre-activity information should include but is not limited to the method of transferring from the activity *belay system* to an anchor and back to the activity *belay system*.

778 5.6.14 Traverse-lines

779 Refer Abseil & Climb GPG for traverse-line requirements.

780 5.6.15 Entanglement and snags

781 Belay rope(s) should be monitored to keep them at the appropriate length and tension, to prevent the possibility of a slack rope becoming entangled or snagged.

783 To avoid entanglement in ropes and devices:

- 784 • long hair must be secured to stop it being able to be entangled
- 785 • loose jewellery and watches (e.g. bracelets and necklaces) should be removed or secured
- 786 • loose clothing and drawstrings should be secured.

787 To avoid being caught or snagged, where there is such a risk:

- 788 • rings should be removed or tapped over
- 789 • body piercings should be removed or taped over.

790 5.6.16 Swinging falls

791 To reduce the potential for injury or damage to participants or equipment consideration should include but is not limited to the possibility of participants:

- 793 • taking a route on an angle that creates the potential for a pendulum swing if control is lost

- swinging or falling against or across hard, abrasive or sharp objects.

5.6.17 Harness hang syndrome

Harness hang syndrome is medical complications due to being “suspended within a body harness for a prolonged period of time (5 to 30 minutes)” (reference: Australian Resuscitation Council – Guideline 9.1.5 – July 2009). Harness hang syndrome can lead to blood pooling, “shock”, unconsciousness and/or death. It is also known as suspension trauma or suspension syndrome.

Rescue systems in place must enable rescue of a person suspended in a harness in timely manner.

Emergency management plans must include:

- rescue of unconscious persons suspended in a harness
- guidance on *trigger points* for considering the possibility of harness hang syndrome occurring
- appropriate actions to follow where harness hang syndrome is suspected, including but not limited to the relevant first aid treatment.

5.6.18 Flying foxes

The use of flying foxes is beyond the scope of this Good Practice Guide.

Providers must assess and address *flying fox* hazards and risks by:

- completion of their own appropriate *risk assessment*
- referral to any other relevant standards or guidelines.

5.7 Aquatic canyoning activity management

5.7.1 Aquatic Canyoning activity information for participants

The information and requirements to be communicated for aquatic canyoning may include but are not limited to:

- information and requirements listed in canyoning information above
- appropriate use of any *buoyancy aids*
- suitable information and instruction on hazard avoidance including but not limited to:
 - wading and/or swimming techniques suited to the route to be negotiated
 - ways to recognise hazards where appropriate
 - hazard avoidance techniques such as ‘white-water float position’ and ‘active swimming’
- suitable instruction provided in take-off and landing positions for jumps or slides, including body, head and limb positions.

5.7.2 Aquatic activity management

Aquatic activity management must include:

- monitoring water levels are within the maximum and/or minimum water level *trigger points*
- monitoring weather conditions and where possible weather forecasts and warnings including flood and flash flood warnings where available
- appropriate storage or management of ropes to avoid entanglement while in water.
- consideration of:
 - the water temperature
 - the length of swims or wades
 - the overall amount of swimming or wading involved.

5.7.3 Buoyancy aids

Considerations on the use of *lifejackets* or other *buoyancy aids* must include:

- the likelihood of falling into or moving through water
- the safety systems used to protect from falling into water

- 837 • the water hazards and risk involved
- 838 • the water temperature
- 839 • the aeration of the water
- 840 • the amount of buoyancy provided by the clothing worn or the equipment used
- 841 • the amount of reduced buoyancy caused by clothing worn or the equipment carried
- 842 • the amount of buoyancy provided by the lifejacket or aid
- 843 • the likelihood of being in water for a long time
- 844 • the likelihood of being washed downstream
- 845 • the swimming ability of participants
- 846 • the impact of the length of the journey and environmental conditions on the participants ability to swim
- 847
- 848 • if needed to assist with jumps into shallow water
- 849 • if needed as a means of holding or supporting people
- 850 • if needed as a means of helping people out of water
- 851 • if provides padding to protect from other injury (e.g. during slides).

852 5.7.4 Jumping into water

853 Hazards and risks when jumping into water that must be considered include:

- 854 • ability of participants
- 855 • any pre-existing or past medical conditions/injuries
- 856 • any items worn that may be loose or become dislodged, lost or damaged (e.g. prescription glasses,
- 857 contact lens, sunglasses, dentures, hearing aids, insulin pumps, cameras, etc.)
- 858 • difficulty and exposure of access routes
- 859 • exposure to potential unintended falls from height
- 860 • falling or jumping outside of the intended *fall zone*
- 861 • the features of the take-off area
- 862 • the horizontal travel distance from the take-off position to the *fall zone*
- 863 • obstacles within the route of the jump
- 864 • the *fall height* involved (see Appendix X Water landings)
- 865 • the depth of and obstacles within the *fall zone*
- 866 • the impact forces when entering the water (see Appendix X Water landings)
- 867 • level of aeration of the water
- 868 • equipment being carried impacting the jumper on landing
- 869 • fast flowing water in the *fall zone* flowing into hazards.

870 Jumps should not be from a height greater than 10 metres.

871 Jumping into water activity management considerations should include but are not limited to:

- 872 • assessment of the *fall zone* (refer 7.6.5 Deep-water belays)
- 873 • participant management ensures they do not interfere with each other's stability in access and
- 874 take-off areas
- 875 • the *fall zone* is clear of other people before each person jumps
- 876 • difficult access, take-offs and/or landings have *direct supervision*
- 877 • appropriate protection against falling used while accesses the take-off areas
- 878 • appropriateness of wearing a pack (e.g. height of jump, impact forces, type of pack, weight of pack etc.)
- 879 • physical characteristics of the participants
- 880 • actively managing jumps into difficult *fall zones*
- 881 • positioning an *activity leader* at the bottom to indicate the required *fall zone* and/or mark a hazard
- 882 • providing a suitable alternative where relevant (e.g. lower jump, abseiling or being lowered)
- 883 • the location and difficulty of the exit from the water
- 884 • briefing participants on appropriate technique
- 885 • features of the take off and technique used

- when wearing a lifejacket it must be correctly fitted and correct technique used to ensure the lifejacket does not dislodge on impact and affect movement
- appropriate technique so that helmets and chin strap do not cause injury when a helmet hits the water on higher jumps.

5.7.5 Slides into water

Hazards and risks when sliding into water that must be considered include:

- ability of participants
- any pre-existing or past medical conditions/injuries
- any items worn that may be loose or become dislodged, lost or damaged (e.g. prescription glasses, contact lens, sunglasses, dentures, hearing aids, insulin pumps, cameras, etc.)
- difficulty and exposure of access routes
- exposure to potential unintended falls from height
- the features of the take-off areas
- the volume of water on the slide
- obstacles within the route of the slide
- the length of the slide involved
- the depth of and obstacles within the *fall zone*
- the impact forces when entering the water
- equipment being carried impacting the slide
- fast flowing water in the *fall zone* flowing into hazards.

Slides into water activity management considerations should include but are not limited to:

- assessment of the *fall zone* (refer [7.6.5 Deep-water belays](#))
- participant management ensures they do not interfere with each other's stability in access and take-off areas
- the *fall zone* is clear of other people before each person slides
- difficult access, take-offs and/or landings have *direct supervision*
- appropriate protection against falling used while accesses the take-off areas
- use of appropriate padding as protection when sliding
- providing a suitable alternative where relevant (e.g. abseiling or being lowered)
- the location and difficulty of the exit from the water
- briefing participants on appropriate technique
- equipment appropriately secured so the possibility of that equipment causing entanglement or entrapment is minimised
- wear and potential for damage to equipment.

5.7.6 Swimming and wading

Hazards and risks when swimming and wading that must be considered include:

- swimming ability of participants
- any pre-existing or past medical conditions/injuries
- if prescription glasses, contact lens or sunglasses are being worn
- *river hazards* including those at the current activity location and downstream
- the speed of the water
- the amount of aerated water and the buoyancy available
- the depth of the water including being too shallow or too deep for the method used
- the base of the watercourse including its stability and grip
- *buoyancy aids* available
- the spacing between and the progress of participants
- floating debris.

933 Swimming and wading activity management considerations should include but are not limited to:

- 934 • matching the activities to the participants abilities
- 935 • using appropriate routes to address entrapment or other hazards and risks
- 936 • swimming competence being checked prior to commencing the activity
- 937 • assessment of swims and wades to ensure:
 - 938 ○ appropriate supervise can be provided
 - 939 ○ appropriate intervention can be used if needed
- 940 • *direct supervision* of difficult swim, wade, exit points or where exiting at a point is integral to
- 941 avoiding hazard(s)
- 942 • swimming over drops only where it does not form and/or flow into a *river hazard*
- 943 • managing weaker swimmers by:
 - 944 ○ using alternatives to avoid the swim or wade
 - 945 ○ swimming with an *activity leader*
 - 946 ○ providing extra buoyancy
- 947 • the location and difficulty of the exit from the water
- 948 • if there is debris floating or flowing in the current
- 949 • how clear the water is and if the base of the watercourse can be seen
- 950 • the depth, speed, and amount of water needed to be overcome to avoid being washed away
- 951 • the base of the watercourse (e.g. pebbles, sand, small rocks or large rocks) that can increase the
- 952 danger of foot entrapment and/or reducing the likelihood of maintaining stable footing.

953 5.8 Pre-activity communication

954 See Core GPG (Participants).

955 5.9 Participation restrictions

956 See Core GPG (Participants).

957 5.10 Vulnerable participants

958 See Core GPG (Participants).

959 5.11 Health and wellbeing

960 See Core GPG (Participants).

961 5.12 Privacy of information

962 See Core GPG (Participants).

963 5.13 Activity leader to participants ratios

964 See Core GPG (Participants).

965 5.14 Activity briefing

966 See Core GPG (Participants).

967 6 Environment

968 Environmental conditions can directly affect the safety of an activity, and everyone involved shares
969 responsibility for protecting the natural and cultural heritage of the places they visit. Weather, fire, water,
970 terrain, wildlife and the requirements of *land owners* and managers all shape what can be done safely and
971 respectfully. Providers must actively identify, reduce and manage both the risks the environment poses and
972 the impact an activity has upon it.

973 For providers, the guidance encourages planning around the localised, in-situ conditions at the specific time
974 and place of an activity, rather than relying on general assumptions. The trigger-point approach can set
975 clear go/no-go and modification thresholds, fire and severe-weather planning can be aligned with the
976 relevant guidance material, and *land manager* requirements confirmed. Activity-specific detail is expected
977 to come from the relevant activity GPG, with this section providing the common baseline.

978

979 6.1 Canyoning environment considerations for planning

980 This section addresses how environmental conditions affect the safety of a canyoning activity and the
981 considerations needed to manage them.

982 There are a number of environmental considerations for canyoning. When planning, providers must
983 consider the aspects relevant to their area of operation. Factors to consider may include:

- 984 • fall from heights and means to protect possible falls
- 985 • the difficulty to traverse vertical obstacles and hazards
- 986 • the potential for rock falls
- 987 • current water levels
- 988 • quality of the water
- 989 • the depth, volume and velocity of water
- 990 • the difficulty to traverse aquatic obstacles and hazards
- 991 • the potential for flooding, *flash flooding* or fluctuating water levels
- 992 • the commitment and duration needed to complete the activity
- 993 • the associated climate conditions
- 994 • the weather conditions including recent, current and predicted weather
- 995 • the water and air temperature
- 996 • the type of geological structure and surfaces of the canyon
- 997 • the changes in the hazards as conditions change and over time
- 998 • current condition of anchors.

999 Other environmental considerations may include but are not limited to:

- 1000 • the type of flora expected (e.g. impeding progress, ability to cut or scratch etc.)
- 1001 • the fauna expected (e.g. risks associated with venomous snakes, ants etc.).

1002 6.2 Canyon difficulty and grading systems

1003 The use of a grading system to establish the difficulty of a canyon may be useful.

1004 Considerations when choosing a grading system should include but are not limited to:

- 1005 • the reason and objective for its use (e.g. communicating to inexperienced participants, identifying leader
- 1006 competencies required to manage participant safety etc.)
- 1007 • its ability to help clarify communication of the risks involved
- 1008 • its grades are bench-marked to reasonably identifiable attributes associated with the canyon
- 1009 difficulty (e.g. prolonged immersion in cold water establishes an aquatic grade benchmark etc.)
- 1010 • its grades consider key risk components (e.g. vertical difficulty, aquatic difficulty and
- 1011 commitment/duration)
- 1012 • those grading and/or using the grading system are competent in using the system
- 1013 • the weaknesses of the system are identified
- 1014 • systems used address any relevant weaknesses of the grading system.

1015 6.2.1 Grading system used in this document

1016 The grading system used in this document is detailed in [Appendix T Canyoning Grading System](#).

1017 This document uses canyon grades as a way to identify when the changing difficulty, indicates a change in
 1018 safety requirements. For example, higher grade (i.e. more difficult) canyons may have additional leader
 1019 competencies recommended.

1020 It rates the vertical difficulty (**v**), the aquatic difficulty (**a**) and the commitment/duration (**c**). While canyon
 1021 quality (**q**) is also part of the grading system, for the purposes of this document it is not used.

1022 The **v** and **a** grades are a number from 1 to 7, while the **c** grade is a number 1 to 6. The higher the number
 1023 the more difficult the canyon is. Grades are written as **v#a#c#** where # equals the grade given (e.g. **v3a4c3**)

1024 Grade ranges: At times the Canyoning Good Practice Guide may list a range of grades to clarify when a
 1025 provision is required.

1026 A range is shown by the grade component followed by #-# (i.e. a number – number). For example, **v2-4** is
 1027 vertical difficulty ranging from grade 2 up to and including grade 4.

1028 Use of other grading systems: While this document uses the system referred to in [Appendix T](#), there are a
 1029 number of other grading systems available that can be used. Refer above for considerations regarding
 1030 choosing a grading system. Although this document uses a particular grading system, it does not imply it is
 1031 the only grading system that can be used. The use of this grading system is recommended but not required.

1032 6.3 Environmental risk management triggers

1033 *Trigger points* must be based on the relevant warnings and actual conditions.

1034 The *risk management plan* and emergency management plan should include guidance on *trigger points* and
 1035 associated actions for:

- 1036 • rain
- 1037 • watercourse water levels
- 1038 • wind
- 1039 • snow
- 1040 • *severe weather* warnings
- 1041 • severe thunderstorm warnings
- 1042 • tropical cyclone advice: watch and warning
- 1043 • extreme cold temperatures
- 1044 • extreme hot temperatures
- 1045 • water quality (e.g. algal blooms and pollution)
- 1046 • air quality ([refer Core GPG](#)).

1047 Actions for triggers may include but are not limited to:

- 1048 • cancellation of activity
- 1049 • postponing the activity
- 1050 • evacuating to a safe location
- 1051 • avoiding areas that have the potential for flooding, *flash flooding* or inappropriate water levels
- 1052 • preparations to avoid the risks associated with lightning
- 1053 • preparations to avoid the risks associated with blizzards
- 1054 • moving to areas that are protected from strong winds and/or hail
- 1055 • managing risks of flying or falling items during strong winds.

1056 6.4 Weather information

1057 Refer Core GPG – Weather information and Appendix W Weather information and warnings. Appropriate
 1058 sources must be used for recent, current and forecast weather and weather warnings.

1059 6.5 Water

1060 6.5.1 Water level information

1061 Sources of water level information to assess the suitability of the water level for the activity should include
1062 but are not limited to:

- 1063 • the Bureau of Meteorology relevant water level information and flood warning information
- 1064 • relevant local information sources (e.g. river gauges, dam operators etc.)
- 1065 • inspection of the site.

1066 6.5.2 Water level risk management

1067 *Risk management plans* must include procedures to mitigate relevant hazards and risks relating to the:

- 1068 • water level being too high (e.g. water flow too great, routes being submerged etc.)
- 1069 • water level being too low (e.g. insufficient water for deep water protection etc.)
- 1070 • water level rising rapidly
- 1071 • canyon flooding.

1072 *Risk management plans* must consider the risk of *flash flooding* and rapidly rising or fluctuating water
1073 levels. When assessing this risk, providers should consider the following catchment and canyon
1074 characteristics, to the extent they are reasonably knowable:

1075 Any water level variations including *flash flooding* that may impact the activity must be assessed prior to
1076 and during the activity. The suitability of water for drinking during and after flooding should be assessed.

1077 Considerations relating to ‘the possibility of further water release into the canyons catchment area’ must
1078 include:

- 1079 • the characteristics of the catchment including:
 - 1080 ○ size
 - 1081 ○ gradient
 - 1082 ○ vegetation types and levels
 - 1083 ○ soil type, character and depth
 - 1084 ○ existence of water bodies (e.g. lakes)
 - 1085 ○ man-made features (e.g. dams, spillways, hydro power stations etc.)
 - 1086 ○ natural dams (e.g. soil, logs, vegetation, rocks etc.)
- 1087 • the current conditions within the catchment including:
 - 1088 ○ current rainfall:
 - 1089 ■ volume
 - 1090 ■ intensity (volume of rainfall during a given period of time)
 - 1091 ■ rainfall location
 - 1092 ○ water saturation levels of the soil
 - 1093 ○ snow conditions and amount of snow available
 - 1094 ○ likelihood of snow melt adding to water levels
 - 1095 ○ forecast weather:
 - 1096 ■ rainfall occurring
 - 1097 ■ rainfall amount
 - 1098 ■ thunderstorms occurring
 - 1099 ■ flooding or *flash flooding*
 - 1100 ■ temperature
 - 1101 ○ impact of other prior events:
 - 1102 ■ bushfires
 - 1103 ■ drought
 - 1104 ■ heavy rain or flooding
 - 1105 ■ heavy snow falls
 - 1106 ○ the characteristics of the canyon including:

- 1107 ▪ profile
- 1108 ▪ width
- 1109 ▪ depth
- 1110 ○ the operation of man-made features including:
 - 1111 ▪ release of water from dams, spillways or hydro-electric plants
 - 1112 ▪ current water levels of dams
 - 1113 ▪ expected inflow of water to the dams.

1114 Considerations relating to the ‘impact of the changing water level on the canyon and the activity’ must
1115 include:

- 1116 • the current water level
- 1117 • canyon gradient
- 1118 • canyon formation
- 1119 • narrow points
- 1120 • the time required to exit the canyon
- 1121 • the availability of high ground
- 1122 • obstacles creating water hazards.

1123 Canyoning frequently involves prolonged immersion and contact with water of variable quality. In addition
1124 to the points mentioned in the Core GPG – Drinking water safety, the following considerations apply.

1125 6.5.3 Water quality

1126 Refer Core GPG – Drink water safety.

1127 Areas where the water is polluted or contaminated may pose a risk to human health should be avoided.

1128 Polluted or contaminated water may include water impacted by:

- 1129 • chemicals
- 1130 • rubbish
- 1131 • sewage
- 1132 • upstream runoff (e.g. urban runoff such as oil from roads, industrial operations etc.)
- 1133 • dead animals
- 1134 • waterborne microorganisms such as:
 - 1135 ○ microbial or bacteria (e.g. e.coli)
 - 1136 ○ protozoa (e.g. gardia)
 - 1137 ○ cyanobacteria (e.g. blue-green algae)
 - 1138 ○ viruses (e.g. hepatitis).

1139 6.6 Bushfire, prescribed fire and fire danger

1140 See *Core GPG (6 Bushfires/fire danger)*.

1141 6.7 Lightning

1142 Whilst thunder is audible groups should avoid:

- 1143 • being on high elements
- 1144 • being in unsuitable locations.

1145 When thunder is audible, a suitable location should be sought, to wait out the thunderstorm.

1146 Considerations for locations to waiting out the thunderstorm should include but not limited to avoiding:

- 1147 • being on the water (e.g. paddling, swimming)
- 1148 • being on high structures
- 1149 • being connected to metal structures, cable or equipment

- 1150 • being on the highest ground in the area
- 1151 • tall trees or structures that may act like a lightning rod
- 1152 • water saturated ground near watercourses
- 1153 • locations where group is unable to spread out
- 1154 • caves or rock overhangs.

1155 6.8 Environmental conditions, safety and impact management

1156 *See Core GPG (Environment).*

1157 6.9 Bushfires, prescribed fire and fire danger

1158 *See Core GPG (Environment).*

1159 6.10 Tree safety

1160 *See Core GPG (Environment).*

1161 6.11 Drinking water safety

1162 *See Core GPG (Environment).*

1163 6.12 Food safety

1164 *See Core GPG (Environment).*

1165 6.13 Wildlife safety

1166 Procedures should be in place to minimise the risks associated with fauna and flora that may be
1167 encountered.

1168 Considerations may include but are not limited to:

- 1169 • snakes (e.g. when blocking progress etc.)
- 1170 • fauna that may dislodge items that create falling objects risks.

1171 *See Core GPG (Environment) for the general requirements and further detail.*

1172 6.14 Environmental sustainability procedures

1173 *See Core GPG (6 Env. sustainability (App L)).*

1174 6.14.1 Travel and camp on durable surfaces

1175 Travelling in an area on durable surfaces may include but is not limited to:

- 1176 • walking on established routes and avoiding vegetated, moss covered or steep creek banks
- 1177 • minimising the use of living trees used as anchors
- 1178 • use of tree protectors and/or wide tape slings when using living trees as anchors
- 1179 • locate activity area and *waiting areas* to reduce repeated soil and root compaction around trees
- 1180 and vegetation
- 1181 • the use of temporary edge protection
- 1182 • use of geological features or artificial anchors where installed, in preference to living trees as
- 1183 anchors
- 1184 • the use of existing site access tracks wherever possible
- 1185 • avoid using the edge of access tracks
- 1186 • choosing sites that are appropriate for the group size
- 1187 • use removable protection in a manner that avoids damage to and protects *natural surfaces*.

1188 6.14.2 Dispose of waste properly

1189 Dispose of waste properly may include but is not limited to:

- 1190 • carry out human waste and personal hygiene waste
- 1191 • carry out food and general waste.

1192 6.14.3 Leave what you find

1193 Leave what you find may include but is not limited to:

- 1194 • avoiding the modification of any *natural surfaces* or removal of natural features
- 1195 • avoiding the removal of selected rock surface vegetation
- 1196 • clean footwear and equipment to avoid the spread of soil borne pathogens (e.g. phytophthora)
- 1197 • the modification of *natural surfaces* or removal of natural features only being carried out with the
- 1198 permission of the *Land Owner* or *Land Manager*.

1199 6.14.4 Be considerate of your hosts and other visitors

1200 Be considerate of your hosts and other visitors may include but is not limited to:

- 1201 • actively managing groups to minimise impact
- 1202 • avoiding blocking access to other users
- 1203 • negotiating with other users regarding shared use of a site
- 1204 • the installation of permanent artificial anchors or equipment only being carried out with the
- 1205 permission of the *Land Owner* or *Land Manager*.

1206 6.15 Land owner and/or manager requirements

1207 *See Core GPG (Environment).*

1208 6.16 Water environments

1209 *See Core GPG (Environment).*

1210 7 Equipment and logistics

1211 The right equipment, well chosen and well maintained, is fundamental to safe delivery. Equipment
1212 requirements differ from one activity and context to another, spanning personal and group gear, first aid
1213 and medication, communications and transport. Deciding what is genuinely needed, keeping it fit for
1214 purpose, and organising the logistics around it are everyday responsibilities for any provider.

1215 It helps a provider decide what equipment is genuinely needed, who is responsible for it, and how it is kept
1216 fit for purpose. The framework can drive equipment checklists matched to each activity, inspection and
1217 maintenance schedules appropriate to scale, and communications and first aid provisions matched to the
1218 remoteness and risk of the activity. It supports consistent logistics decisions without imposing a single
1219 equipment list on every provider.

1220 7.1 Framework for equipment requirements

1221 *See Core GPG (Equipment and logistics).*

1222 7.2 Equipment requirements

1223 Refer [Appendix U Equipment lists](#) for equipment that may be required.

1224 *See Core GPG (Equipment and logistics) for the general requirements and further detail.*

1225 7.2.1 Aquatic and Horizontal canyoning

1226 Equipment listed below must be manufactured for use in the context of the activity:

- 1227 • Helmets to protect from 'falling object' and/or 'white-water' hazards and risks
- 1228 • Lifejackets (also known as personal floatation device).
- 1229 Procedures must be in place to ensure appropriate clothing and *personal thermal protection* for the
- 1230 expected and foreseeable weather conditions is available.
- 1231 Procedures must be in place to ensure appropriate footwear for the expected and foreseeable terrain is
- 1232 used.
- 1233 Footwear must be fit for purpose, providing adequate grip, drainage, foot protection and durability for the
- 1234 wet, abrasive and uneven terrain expected.
- 1235 **7.2.2 Vertical canyoning**
- 1236 *Vertical canyoning* equipment requirements must include all provisions listed in *horizontal canyoning*
- 1237 above.
- 1238 Equipment must be carried to build improvised anchors.
- 1239 *Vertical canyoning* equipment must be manufactured for use in the context of the activity. (Refer Appendix
- 1240 V Equipment relevant standards.)
- 1241 **7.2.3 Other Equipment**
- 1242 Procedures must identify the appropriate equipment required for the activity.
- 1243 **7.3 First aid equipment and medication**
- 1244 *See Core GPG (Equipment and logistics).*
- 1245 **7.4 Communications equipment**
- 1246 *See Core GPG (Equipment and logistics).*
- 1247 **7.5 Use of equipment**
- 1248 **7.5.1 General equipment use**
- 1249 All equipment must be used with reference to the manufacturers' instructions.
- 1250 Training in the use of equipment used must be provided to *activity leaders* and participants.
- 1251 Before use, the compatibility between and correct functioning of all equipment must be confirmed.
- 1252 Procedures must be used so that relevant provided equipment is hygienic.
- 1253 Provided equipment that may require hygiene procedures includes but is not limited to:
- 1254 • wetsuits
- 1255 • footwear
- 1256 • helmets
- 1257 • other personal attire or *personal thermal protection*.
- 1258 **7.5.2 Personal thermal protection**
- 1259 Considerations in determining the *personal thermal protection* necessary may include but are not limited
- 1260 to:
- 1261 • time and commitment requirements to complete canyon
- 1262 • length, duration, water temperature and frequency of compulsory swimming sections
- 1263 • the time, distance and type of activity required between immersion
- 1264 • the likely weather conditions and ambient air temperature
- 1265 • the topography and possible waiting times to complete obstacles

- 1266 • the physical attributes of likely participants.
- 1267 *Personal thermal protection* should be checked it is in good condition and provides appropriate protection.

1268 7.5.3 Helmets

1269 An appropriate helmet must be worn while canyoning. A suitable helmet should be selected on the basis of
1270 a *risk assessment* that includes the activity and environmental conditions (e.g. falling-object hazards, white-
1271 water hazards). Either a climbing/abseiling helmet or an aquatic (white-water) helmet may be appropriate
1272 depending on the canyon.

1273 Considerations as to the type of helmet used must include:

- 1274 • the hazards and risk of objects falling from height
- 1275 • the water hazards and risks that need to be negotiated (e.g. white-water swimming)
- 1276 • the hazards and risks of sustaining a head injury during the activity.

1277 7.6 Aquatic equipment use

1278 The risk of drowning must be managed. The requirement to wear an appropriate lifejacket or use other
1279 *buoyancy aids* must be determined by the activity *risk assessment*. Where required, procedures must
1280 ensure an appropriately sized and fitted lifejacket is worn.

1281 Considerations when assessing the need for wearing a *lifejacket* or use of other *buoyancy aids* must
1282 include:

- 1283 • aquatic hazards and risks present
- 1284 • the abilities of the participants
- 1285 • the buoyancy provided by *personal thermal protection*
- 1286 • the other *buoyancy aids* available
- 1287 • the impact of fatigue over the length of the activity
- 1288 • the water temperature
- 1289 • the types of obstacles to be overcome
- 1290 • the possibility of water level rises or flooding
- 1291 • the height of any jumps.

1292 All *buoyancy aids* must be suitable for the task and activity.

1293 Appropriate waterproofing and/or waterproof equipment must be used to protect any necessary
1294 equipment identified as needing protection in the *risk management plan*.

1295 7.7 Vertical equipment use

1296 To manage the risk of a fall from height, an appropriate harness must be worn for *vertical canyoning*.

1297 7.7.1 Equipment loading

1298 Equipment will have a *stated strength* that may or may not include a *safety factor*. The type of *stated*
1299 *strength* rating needs to be known before use to ensure equipment is safely loaded. (Refer [Appendix U](#)
1300 [Equipment load ratings](#) for more details).

1301 Equipment with the *stated strength* providing the *Minimum Breaking Strength* (MBS) must have a suitable
1302 *safety factor* applied.

1303 Equipment with the *stated strength* providing the *Safe Working Load* (SWL) must be loaded only to a
1304 maximum of the *Safe Working Load* (SWL).

1305 Reference to the manufacturers' instructions must occur when determining a *safety factor* and/or *safe*
1306 *working load*.

1307 The expected peak load and possible additional loads should a rescue be carried out must be considered
1308 when determining equipment loading.

1309 7.7.2 Connections

1310 Connection methods, equipment and systems used must be periodically reviewed.

1311 Considerations when determining *belay system* connect methods, equipment and systems should include
1312 but are not limited to:

- 1313 • the type of anchor or anchors being used
- 1314 • the redundancy available should an anchor fail
- 1315 • what needs to be attached to the harness (e.g. direct connection to rope or a descender device)
- 1316 • the experience and context of who is completing the connection of the rope to the harness or
- 1317 descender device
- 1318 • the availability of a *competent person* to supervise or check the connection that is completed by a
- 1319 participant.

1320 7.7.3 Connectors – practices relating to use

1321 Carabiners must be used so that no load is intentionally across the gate.

1322 Systems that have loads applied and release so that alignment of *connectors* or equipment may change, or
1323 subject to vibration should be inspected at an appropriate frequency.

1324 The type of *connector* used must be suitable for the task.

1325 Where a *connector* is used in a situation that has no other system redundancy, the connector must be a
1326 *locking or auto-locking* connector. (For example, the connection between descender and harness.)

1327 In situations where participants complete any connection to a harness the connection or knot must be
1328 checked by a person verified as *competent* at the task.

1329 7.7.4 Full body harnesses and chest harnesses

1330 Chest harnesses are only used in combination with a sit harness.

1331 Consideration of the use of a combination chest and climbing sit harness or a full body harness should
1332 occur:

- 1333 • when inversion is intended or likely
- 1334 • when the security of a sit harness cannot be relied upon due to body shape
- 1335 • when the security of a sit harness cannot be relied upon if the person were to experience a pre-
- 1336 existing health, medical or personal condition episode (e.g. epilepsy)
- 1337 • very young participants.

1338 7.7.5 Other vertical equipment – use considerations

1339 *Static rope* should be used except were the *fall factor* indicates *dynamic rope* is required.

1340 *Dynamic rope* must be used for the belay rope:

- 1341 • when *lead climbing*
- 1342 • when a *fall factor* is likely to approach or exceed 0.3
- 1343 • when lanyards are used at or above anchor height.

1344 A procedure regarding participant supplied equipment should be developed.

1345 Where a participant supplies any personal climbing or abseiling equipment, this must comply with the
1346 above equipment requirements and equipment use sections and be serviceable.

1347 Considerations for other equipment use include but is not limited to the ability to communicate with the
1348 abseiler (e.g. use of whistles etc.).

1349 7.7.6 Rescue systems and rigging for rescue

1350 *Anchor systems and belay systems must be rigged for a timely and effective rescue.*

1351 To manage the risk of drowning, abseils in running waterfalls with vertical flows of grade v4 or above must
1352 use *releasable rigging*.

1353 Considerations in rigging systems for rescue should include but are not limited to:

- 1354 • load direction
- 1355 • load magnitude
- 1356 • ability to raise the person
- 1357 • ability to lower the person
- 1358 • ability to conduct sideways hauls
- 1359 • ability to enable an *activity leader* to complete a *contact rescue*
- 1360 • abseiling through running waterfalls
- 1361 • abseiling into water.

1362 7.8 Transport

1363 *See Core GPG (Equipment and logistics).*

1364 7.9 Maintenance of equipment

1365 All equipment must be checked that it is serviceable before each activity or before being used.

1366 Appropriate maintenance of relevant equipment to prevent corrosion should be undertaken before it is
1367 stored.

1368 All equipment should be inspected periodically that it is serviceable.

1369 Appropriate procedures must be in place for inspections and determining the time periods between
1370 inspections.

1371 Equipment and inspection records must conform with any required law or regulation.

1372 An equipment record should be maintained.

1373 Where used, an equipment record should record but is not limited to the:

- 1374 • item individual identifier
- 1375 • date of purchase
- 1376 • date of inspections
- 1377 • recommended or maximum lifespan.

1378 A retirement of equipment policy should be developed.

1379 Considerations for a retirement of equipment policy may include but are not limited to:

- 1380 • type of use
- 1381 • frequency of use
- 1382 • prevailing conditions when used
- 1383 • actual deterioration, wear and tear
- 1384 • extreme usage events or patterns (e.g. impacts, 'catches')
- 1385 • age
- 1386 • years in service
- 1387 • manufacturers recommendations.

1388 *See Core GPG (Equipment and logistics) for the general requirements and further detail.*

1389 7.10 Storage of equipment

1390 Activity equipment must be stored with reference to the manufacturer's recommendations or instructions.

1391 Where no manufacturer's recommendations exist, considerations for storage of equipment may include
1392 but are not limited to:

- 1393 • equipment is clean and dry
- 1394 • the storage is free from harmful chemicals
- 1395 • the storage is free from damp conditions
- 1396 • the storage is free from environmental exposure including Ultra Violet (UV) light and avoids
1397 extremes of temperature
- 1398 • the storage is free from interference of fauna or vermin.

1399 See Core GPG (*Equipment and logistics*) for the general requirements and further detail.

1400 8 Responsibilities and roles

1401 This section sets out the responsibilities and roles of persons involved in the planning and delivery of
1402 canyoning activities under this guide. It must be read in conjunction with Core GPG Section 8, which
1403 contains the generic responsibilities and roles framework applicable to all outdoor activities. Where a sub-
1404 section below states 'See Core GPG', the full requirements for that sub-section are set out in the Core GPG
1405 and apply without modification to canyoning.

1406 8.1 Responsibilities and roles framework

1407 See Core GPG Section 8.1 — the responsibilities and roles framework, including the three operational
1408 leadership roles of *Leader*, *Assistant Leader* and *Support person*, applies without modification to canyoning
1409 activities delivered under this guide.

1410 8.2 Naming conventions

1411 See Core GPG Section 8.2. The Canyoning Guide uses the following role titles:

- 1412 Canyoning guide — this title is used where the Core GPG uses 'Leader'
- 1413 Assistant canyoning guide — this title is used where the Core GPG uses '*Assistant Leader*'
- 1414 *Support person* — as defined in Core GPG Section 8.4.3

1415 8.3 Provider responsibilities to prepare and support leaders

1416 See Core GPG Section 8.3 — the provider responsibilities to prepare and support leaders apply without
1417 modification to canyoning activities delivered under this guide.

1418 8.4 Leader responsibilities and role descriptions

1419 See Core GPG Section 8.4 — the leader responsibilities and role descriptions, including the role descriptions
1420 for *Leader* (8.4.1), *Assistant Leader* (8.4.2) and *Support person* (8.4.3), and the leader fitness for work
1421 requirements (8.4.4), apply without modification to canyoning activities delivered under this guide.

1422 8.4.1 Leader — operational responsibility in the field

1423 The *Leader* carries operational responsibility in the field for the activity and all participants, working within
1424 the provider's systems and direction; see Core GPG Section 8.4.1 for the full role description.

1425 8.4.2 Assistant Leader — delegated responsibility

1426 The *Assistant Leader* supports the *Leader* and carries delegated operational responsibility for defined
1427 elements or participant groups, operating under the *Leader's* direction; see Core GPG Section 8.4.2.

1428 8.4.3 Support person

1429 The *Support person* is a non-technical role that assists *activity leaders* in managing participants and fulfilling
1430 general supervisory and organisational duties, and does not carry the technical responsibilities of a Leader
1431 or *Assistant Leader*. The key responsibilities of this role, and its important limitations — including that a
1432 *support person* must not be treated as an *activity leader* for the purpose of calculating *activity leader* to
1433 participant ratios unless they also hold the relevant canyoning knowledge and skill — are as set out in Core
1434 GPG Section 8.4.3.

1435 8.4.4 Leader fitness for work

1436 Leaders and *assistant leaders* must be physically and psychosocially fit for the demands of the role;
1437 providers must take reasonable steps to manage risks arising from factors including physical and
1438 psychosocial fitness, alcohol, medication, other substances and fatigue; see Core GPG Section 8.4.4.

1439 8.4.4.1 Physical and psychosocial fitness

1440 The provider must ensure, so far as is reasonably practicable, that each person assigned to a Leader or
1441 *Assistant Leader* role is physically and psychosocially capable of the demands of canyoning — which vary
1442 with the activity variant, canyon grade, operational setting and participant group. Leaders must self-assess
1443 their fitness before accepting a role; see Core GPG Section 8.4.4.1.

1444 8.4.4.2 Alcohol, medication and other substances

1445 Alcohol and other substance consumption should be discouraged during or immediately before an activity
1446 where it could impair a leader's performance. Leaders must carry sufficient medication for the full duration
1447 of the canyoning activity and have a contingency if it is lost, damaged or unavailable in the field; see Core
1448 GPG Section 8.4.4.2.

1449 8.4.4.3 Fatigue

1450 Physical and mental fatigue creates significant risk, particularly on multi-pitch and remote canyon routes;
1451 providers must implement reasonable controls including appropriate scheduling, role allocation, travel
1452 arrangements and self-assessment procedures; see Core GPG Section 8.4.4.3.

1453 8.5 Leader readiness and capability

1454 See Core GPG Section 8.5 — the leader readiness and capability requirements, including leadership
1455 knowledge, skill and experience (8.5.1), provider responsibilities under the Outdoor Leader KSE Framework
1456 (8.5.2), first aid (8.5.3), knowledge and skill acquisition (8.5.4), verification (8.5.5), currency (8.5.6) and
1457 verification and currency records (8.5.7), apply to canyoning activities delivered under this guide.

1458 The detailed knowledge, skill and experience required of a Leader is set out in Appendix M of this guide,
1459 and of an *Assistant Leader* in Appendix N. The program planning matrix (leader-matching tool) is set out in
1460 Core GPG Appendix O, the recognition-of-competence pathways in Core GPG Appendix P, and the
1461 indicative experience bands in Core GPG Appendix Q.

1462 8.5.1 Leadership knowledge, skill and experience

1463 The provider must ensure each person in a Leader or *Assistant Leader* role holds integrated knowledge, skill
1464 and experience appropriate to the responsibilities of the role and the specific canyoning context. This is a
1465 non-delegable provider obligation that cannot be satisfied by a qualification alone — it requires active,
1466 documented verification against the role's responsibilities; see Core GPG Section 8.5.1.

1467 8.5.2 Provider responsibilities under the Outdoor Leader KSE Framework

1468 Providers must verify the capability of every person assigned to a Leader or *Assistant Leader* role across the
1469 nine domains of the AAAS Outdoor Leader KSE Framework, scaled to the activity context and the capability
1470 level required for the canyoning activity; see Core GPG Section 8.5.2. The canyoning activity scope, and the
1471 leader requirements that flow from activity variant and canyon grade, are set out at the head of Appendix
1472 M.

- 1473 8.5.3 First aid
- 1474 Leaders must hold a current first-aid qualification appropriate to the activity, environment and applicable
- 1475 work health and safety law(s) and/or regulation(s); for remote and multi-pitch canyon activities a remote or
- 1476 wilderness first-aid qualification should be considered. See Core GPG Section 8.5.3 and Core GPG Appendix
- 1477 L (first aid and medication considerations).
- 1478 8.5.4 Knowledge and skill acquisition
- 1479 Knowledge, skill and experience may be developed through, but is not limited to, formal qualifications,
- 1480 industry training, provider-based programs, structured participation or a combination; no single method
- 1481 has primacy; see Core GPG Section 8.5.4.
- 1482 8.5.5 Verification
- 1483 For each person in a Leader or *Assistant Leader* role, the provider must verify knowledge, skill, experience
- 1484 and currency in context before the person carries the role. The detailed canyoning knowledge, skill and
- 1485 experience against which verification is made is set out in Appendix M (Leader) and Appendix N (*Assistant*
- 1486 *Leader*), and pathway guidance is in Core GPG Appendix P; see Core GPG Section 8.5.5.
- 1487 8.5.6 Currency
- 1488 Knowledge, skill and experience must be current. The provider must determine the minimum currency and
- 1489 recency requirements appropriate to the context — having regard to the activity variant, the canyon grade
- 1490 and environment, the role, the frequency of practice, and the consequences of a lapse in capability — and
- 1491 verify currency for each person in a leadership role before they carry the role. The means by which
- 1492 currency may be established are set out in Core GPG Section 8.5.6.
- 1493 8.5.7 Verification and Currency Records
- 1494 Providers must maintain records of how verification was conducted — including the basis, method, date
- 1495 and person responsible — for each person in a leadership role, retained consistent with the provider's
- 1496 record-keeping obligations; see Core GPG Section 8.5.7.

1497 Glossary

- 1498 AAAS: Australian Adventure Activity Standard – See Introduction for details.
- 1499 *Anchor*: Any load bearing attachment to which any part of a *belay system* is attached.
- 1500 *Anchor system*: a group of individual *anchors* to which any part of a *belay system* is attached.
- 1501 *Abseiling*: descending vertical or near vertical *natural surfaces* or artificial surfaces using ropes and
- 1502 descending friction devices to manage the descent. It is also known as rappelling.
- 1503 *Activity leader(s)*: collective noun for canyoning assistant guide(s), guide(s) and/or instructor(s).
- 1504 *Belay System*: The means by which the climber or abseiler is protected from an uncontrolled fall or descent.
- 1505 *Belay*: A person that operates the *belay system*.
- 1506 *Bottom belay*: Belaying a climber or abseiler from the bottom of a *pitch*.
- 1507 *Bottom braking*: The controlling of the descent of an abseiler, by a belayer located below the abseiler
- 1508 applying tension to the abseil rope. Used as a method of belaying the abseiler if they lose control of the
- 1509 descent.
- 1510 *Bouldering*: A form of climbing activity, limited in height and for which fall safety can be achieved by the
- 1511 provision of an impact absorbing system, by a spotter providing control of a fall or by a combination of
- 1512 these measures. (Also see *deep-water belay* and *spotter*.)

1513 *Buoyancy aid*: a device that provides additional buoyancy in water. (For example, inflatable mattress,
 1514 waterproofed backpack, kickboard, noodle, etc.) Also see *Lifejacket*.

1515 *Bushwalking*: walking in natural areas.

1516 *Camping*: the use of a temporary site for overnight camping.

1517 *Canyon*: geological formations that involve flowing or dry watercourse(s). (Also known as gorges.)

1518 *Canyoning*: the descent, traversing and/or ascent of a canyon using a range of techniques.

1519 *Carabiner*: (refer *connector*).

1520 *Caving*: entering and/or moving through underground passages and/or caverns.

1521 *Climbing*: ascending, traversing or descending vertical or near vertical *natural surfaces* or artificial surfaces.
 1522 (Also see *rock climbing*).

1523 *Competence*: ability to apply knowledge and skills to achieve expected results.

1524 *Competencies*: the plural of *competence*. Having *competence* in more than one ability.

1525 *Competent: leader/participant/person/assessor*: someone who has the competence to perform specific
 1526 functions.

1527 *Connector(s)*: a metal device used to link components together. A connector may be:

- 1528 • *Non-locking*: a connector that cannot be locked to prevent it opening.
- 1529 • *Locking*: a connector that can be manually locked and unlocked to reduce the possibility of it
 1530 opening
- 1531 • *Auto-locking*: a connector that will automatically lock to prevent it from opening and requires two
 1532 or more deliberate actions to unlock.

1533 *Contact rescue*: a rescue requiring an *activity leader* to manoeuvre to the persons actual location to
 1534 physically assist them.

1535 *Descent system*: the *belay system* that an abseiler operates to control their descent.

1536 *Deep-water belay*: a safety system relying on deep water in a *fall zone*.

1537 *Direct supervision*: where a nominated person responsible for *supervising others* during all or part of the
 1538 *activity* is able to intervene immediately (also see *indirect supervision* and *remote supervision*).

1539 *Dynamic rope*: a specially constructed kernmantle rope that is somewhat elastic under load. The elastic
 1540 'stretch' under load is what makes the rope 'dynamic'. (Also see *static rope*.)

1541 *Fall factor*: is the ratio of the height of a fall (h) (measured before the rope or lanyard begins to stretch) and
 1542 the rope or lanyard length available to absorb the energy of the fall (L). It is used as a representation of the
 1543 severity of a fall when arrested by a *belay system*. It is calculated by (h) divided by (L).

1544 *Fall height*: The vertical distance between the climber's or abseiler's lowest body element and the surface
 1545 beneath.

1546 *Fall zone*: The surface that can be hit by a climber or abseiler falling.

1547 *Feature*: a part of a *natural surface* or artificial surface.

1548 *Flash flooding*: is flooding in a localised area with a rapid onset, usually as the result of relatively short
 1549 intense bursts of rainfall.

1550 *Flying fox*: a means of travel along a sloping rope or cable by attaching to it using a free moving pulley and
 1551 being propelled by gravity.

1552 *Forward abseiling*: abseiling while facing towards the ground.

1553 *GPGs*: Good Practice Guide(s) – See Introduction for details.

1554 *Guided rappels*: an abseil that uses a *track-line*.

1555 *Horizontal canyoning*: the ascent, traversing and/or descent of a canyon where any fall safety required can
1556 be achieved using *spotting*.

1557 *Hydraulics*: refer *river hazards*.

1558 *Indirect supervision*: where a nominated person responsible for *supervising others* during all or part of the
1559 *activity* is in the vicinity but unable to intervene immediately (also see *direct supervision* and *remote*
1560 *supervision*).

1561 *Lead climbing*: where the climber ascends a *pitch* while periodically attaching their rope to fixed or
1562 removable protection.

1563 *Lifejacket*: a worn device that provides the wearer with additional buoyancy in water. (Also known as
1564 Personal floatation device (PFD))

1565 *Lowering*: a descent which is controlled by a rope from above. Also known as ‘passive abseiling’.

1566 *Minimum Breaking Strength (MBS)*: is the magnitude of a load that may permanently distort or damage
1567 equipment but not cause it to break. (Refer [Appendix U – Equipment load ratings](#)).

1568 *Multi-pitch*: a section of a *natural surface* or artificial surface that to ascend, traverse or descend, progress
1569 is made by using more than one pitch and establishing *belay systems* mid route.

1570 *Natural surface(s)*: the geologic structure and flora that forms a cliff or steep face.

1571 *Non-actively participating*: a participant that is waiting to but is not currently doing the activity.

1572 *Non-participating contact*: a suitable person not involved in and not located with those conducting the
1573 *activity*, who is the nominated person to act on behalf of those undertaking the *activity* in accordance with
1574 the emergency management plan. This may include but is not limited to responsibility for alerting
1575 authorities on the failure of those undertaking the *activity* to report in as being safe or return on time.

1576 *Personal thermal protection*: clothing worn to mitigate the effects of the temperature of the canyon
1577 environment.

1578 *Pitch*: a section of a *natural surface* or artificial surface that requires no greater than one length of rope to
1579 ascend, traverse or descend. (Also see *multi-pitch* and *single-pitch*.)

1580 *Rappelling*: see *abseiling*.

1581 *Releasable rigging*: a system where the abseil rope may be lowered in a controlled manner, even while
1582 weighted by a abseiler, by releasing part of the system.

1583 *Remote supervision*: where a nominated person responsible for supervising others during all or part of the
1584 *activity* is not involved in *direct* or *indirect supervision* and is unlikely to be in the vicinity, and would
1585 therefore take time to respond (also see *direct supervision* and *indirect supervision*).

1586 *Responsible person*: a *competent* person who is able to complete delegated elements or tasks during an
1587 activity that does not require the activity-specific competence of a *leader* or *assistant leader*.

1588 *River hazards*: a hazard created by a watercourses’ geology and flora, the water within it or a combination
1589 of both. Common *river hazards* include but are not limited to: aerated water, drops, eddies, entrapment
1590 points, fast flowing water, floating objects, undercut rocks, re-circulations (also called ‘holes’), rapids,
1591 sieves, strainers, submerged objects etc. (Some hazards (e.g. eddies, re-circulations) are also known as
1592 hydraulics.)

1593 *Rock Climbing*: ascending, traversing or descending vertical or near vertical *natural surfaces*. At times also
 1594 used to describe climbing on artificial surfaces. (Also see *climbing*.)

1595 *Safety factor*: the ratio between the *Minimum Breaking Strength* (MBS) and *Safe Working Load* (SWL) to
 1596 provide a safety margin. It is expressed as a ratio (e.g. 8:1). (Refer [Appendix U Equipment load ratings](#)).

1597 *Safe Working Load (SWL)*: is the magnitude of load that does not permanently distort, weaken, damage or
 1598 break equipment and includes a safety margin. (Refer [Appendix U Equipment load ratings](#)).

1599 *Self-belay*: a *belay system* that requires the climber or abseiler to operate and does not use an independent
 1600 belayer or *auto-belay system*. For example, abseiling with a prussik brake would involve a self-belay operated by the
 1601 abseiler.

1602 *Single-pitch*: a section of a *natural surface* or artificial surface that requires no greater than one length of
 1603 rope to ascend, traverse or descend.

1604 *Siphon*: where water passes underneath an obstruction. (Note that this differs to a sieve where the water
 1605 passing through & around obstructions such as rocks, wood or other debris.)

1606 *Sports climbing*: *lead climbing* where the *belay system* relies on permanent fixed anchors for protection.
 1607 (Also see *traditional climbing*.)

1608 *Spotter(s)*: a person or persons who are *spotting*.

1609 *Spotting*: a support process provided by a person, or persons, who offer physical protection of the head and
 1610 upper body of a person should they fall.

1611 *Stated strength*: the magnitude of load that is either the *Minimum Breaking Strength* (MBS) or *Safe*
 1612 *Working Load* (SWL) marked on equipment or listed in manufacturer's literature. (Refer [Appendix U](#)
 1613 [Equipment load ratings](#)).

1614 *Static rope*: a specially constructed low stretch kernmantle rope, that has low elongation under load. The
 1615 low elongation or 'stretch' under load is what makes the rope 'static'. (Also see *dynamic rope*.)

1616 *Top belay*: Belaying a climber or abseiler from the top of a *pitch*.

1617 *Top-rope climbing*: climbing where the *belay system* has its *anchor* or *anchor system* at the top of the pitch
 1618 and uses either a *top belay* or *bottom belay*.

1619 *Traditional climbing*: *lead climbing* where the *belay system* relies on anchors for protection that the climber
 1620 places during the climb. (Also see *sports climbing*.)

1621 *Traverse-line*: A *belay system* secured in a generally horizontal direction to allow horizontal movement.

1622 *Track-line*: a line that guides the path of the abseilers descent. (For example, to divert the abseiler away from an
 1623 obstacle or high water flow.)

1624 *Trigger point*: a particular circumstance or situation that causes an action to occur.

1625 *Unprotected climbing*: a form of climbing activity where a fall protection system or *spotter* is not used. (For
 1626 example, rock scrambling).

1627 *V-Lower*: A lowering technique controlled from above using a two to one haul system, that allows the rope
 1628 to be released from what is lowered without having to unclip a connector. The release is completed by
 1629 releasing one end of the rope and pulling the other, as the rope is free flowing through the connector that
 1630 attached what was lowered to the haul system. Also known as a drop-loop or rolling lower.

1631 *Vertical canyoning*: the descent, traversing and/or ascent of vertical or near vertical canyon surfaces, where
 1632 fall safety cannot be achieved using *spotting* due to the *fall height*.

1633 *Via ferrata climbing*: climbing where the safety system does not use a *belayer* and relies on a series of
 1634 permanent fixed *anchors* that limit the distance a climber can fall.

1635 *Waiting areas:* a location in which to wait prior to undertaking the activity, where it is reasonable for a
1636 person to not be required to use equipment to protect them from a fall from height.
1637
1638

1639 Acronyms

1640 The following acronyms are used in this Good Practice Guide.

1641 AAAS: Australian Adventure Activity Standard

1642 FCAF: Federation of French Alpine Clubs

1643 FFME: French Federation of Mountain Climbing

1644 FFS: French Federation of Speleology

1645 GPG: Good Practice Guide

1646 ISO: International Organization for Standardization

1647 MBS: Minimum Breaking Strength

1648 OCA: Outdoor Council of Australia

1649 PFD: Personal Floatation Device

1650 PLB: Personal Locator Beacon

1651 PPE: Personal Protective Equipment

1652 SNAPEC: Union of Professionals Climbing and Canyoning

1653 SNGM: National Union of Mountain Guides

1654 SNPSC: Union of Professional Speleology and Canyoning

1655 SWL: Safe Working Load

1656 UV: Ultraviolet

1657

1658 Appendices

1659 Appendix A Principal legal obligations

1660 *See Core GPG (Appendix A).*

1661 Appendix B Management of Risk

1662 *See Core GPG (Appendix B).*

1663 Appendix C Summary of AS ISO 31000 – risk management

1664 *See Core GPG (Appendix C).*

1665 Appendix D Risk management process

1666 *See Core GPG (Appendix D).*

1667 Appendix E Risk analysis information

1668 *See Core GPG (Appendix E).*

1669 Appendix F Risk management plan template examples

1670 *See Core GPG (Appendix F).*

1671 Appendix G Dynamic risk assessment process

1672 *See Core GPG (Appendix G).*

1673 Appendix H Benefit–Risk Assessment

1674 *See Core GPG (Appendix H).*

1675 Appendix I Emergency management planning framework

1676 *See Core GPG (Appendix I).*

1677 Appendix J Health & wellbeing considerations for risk management

1678 *See Core GPG (Appendix J).*

1679 Appendix K Privacy of information

1680 *See Core GPG (Appendix K).*

1681 Appendix L Environmental sustainability procedures

1682 *See Core GPG (Appendix L).*

1683 Appendix M First aid and medication considerations

1684 *See Core GPG (Appendix M).*

1685 Appendix N Knowledge, skill and experience — Leader

1686 Each knowledge, skill and experience requirement in this appendix is to be applied by the provider within
1687 the context of the planned canyoning activity — including the activity variant (horizontal canyoning, vertical
1688 canyoning single-pitch, vertical canyoning multi-pitch, or instruction in canyoning skills), the canyon grade

(vertical difficulty v, aquatic difficulty a, commitment c), the operational setting and the provider's own program structure. The requirements are not a minimum checklist to be satisfied mechanically — they are a framework for the provider to assess and confirm the capability of each person in a leadership role against the demands of the specific activity. This appendix contains only the requirements specific to canyoning; the generic Leader knowledge, skill and experience is set out in Core GPG Appendix M.

Activity scope and leader requirements

This guide applies to the planning and delivery of canyoning activities across the range of activity variants, canyon grades and settings commonly undertaken in Australia. The knowledge, skill and experience required of a Leader varies with the activity variant, the canyon grade (expressed as vertical difficulty v, aquatic difficulty a and commitment c), the operational setting and whether the role involves instruction in canyoning skills.

Canyoning encompasses a technically diverse range of activities, from horizontal canyoning involving scrambling, swimming and deep-water belay in low-grade canyons through to vertical multi-pitch canyoning in remote, high-flow watercourses requiring complex rigging, releasable rescue systems and self-sufficient operation over extended commitment durations. Each variant and grade carries distinct technical demands on the leader.

Table N.2: Activity variants and operating settings — canyoning

Activity variant	Setting and characteristics
Horizontal canyoning	Scrambling, swimming, wading and deep-water belay in canyon systems where rope-based fall protection is not required
Vertical canyoning — single pitch	Single abseils using releasable top belay, bottom braking or self-belay; anchors, descent devices and single-pitch rescue
Vertical canyoning — multi-pitch	Sequential abseils with hanging and standing re-belay stations; multi-pitch rope management and rescue
Aquatic canyoning	Canyon activities with significant water features — white-water swims, jumps, slides and abseiling in waterfalls
Instruction	Delivery of canyoning skills instruction and competency assessment within any of the above variants

In addition to the primary activity variant, the canyon grade and operational setting directly affect the knowledge, skill and experience required. A guide must not operate an activity variant or canyon grade beyond their confirmed competence.

The program planning matrix (leader-matching tool) is set out in Core GPG Appendix O. The domains below contain only the requirements specific to canyoning; they do not repeat the generic content of Core GPG Appendix M.

Safety and risk management

the Leader identifies and manages hazards specific to canyon environments — fall from height, moving water, rockfall, rapid changes in water level, prolonged immersion and limited rescue access. This domain covers activity-specific hazard assessment and management that adds to the generic safety framework in the Core.

Knowledge

The Leader understands the hazard profile specific to canyon environments, including fall-from-height consequences, water-related hazards, rockfall, harness hang syndrome, entanglement, hypothermia and the environmental triggers that drive rapid change.

1721 This should include, but is not limited to: fall factor and the consequences of belay or anchor failure where
1722 canyon geometry limits rescue access; hydraulics, recirculations, siphons, foot entrapment, prolonged
1723 immersion, rising water and flash flooding; rockfall risk in narrow watercourses; harness hang syndrome
1724 and the critical rescue time window per Australian Resuscitation Council Guideline 9.1.5; entanglement
1725 risks including rope ends in moving water, loose clothing, long hair and jewellery; hypothermia from
1726 prolonged cold-water immersion; canyon water-quality contamination sources; failure modes of belay
1727 systems in wet, sandy and gritty conditions; and catchment, rainfall and dam-release triggers that affect
1728 canyon water levels.

1729 **Skills**

1730 The Leader applies canyon-specific safety management skills throughout the delivery of canyoning
1731 activities.

1732 This should include, but is not limited to: inspecting anchors, belay systems and equipment before each
1733 pitch for water damage, sand, grit and correct configuration; managing rockfall risk through helmet fitting,
1734 participant positioning in constrictions and group spacing; conducting dynamic risk assessment at each
1735 pitch, water feature, jump, slide and constriction; recognising harness hang syndrome in a suspended
1736 participant and executing immediate releasable lowering and first-aid management; recognising rapid
1737 changes in water level and initiating canyon escape or alternative route procedures; assessing fall-zone
1738 water depth, aeration, current, obstacles and downstream hazards before deep-water belay decisions; and
1739 managing rope and entanglement risks.

1740 **Experience recommended**

1741 The Leader has operated in canyon environments across a range of grades, wet and dry conditions, and has
1742 managed canyon-specific safety incidents.

1743 This should include but is not limited to: operating in horizontal and vertical canyoning across a range of
1744 wet and dry canyons and grades; managing anchor and belay systems, water hazards and participant safety
1745 in canyon environments; and recognising and responding to changing water levels, equipment failure,
1746 harness hang syndrome and participant safety incidents.

1747 **Technical activity leadership**

1748 This domain covers the technical knowledge, skill and experience specific to canyoning. The primary
1749 variables are activity variant (horizontal canyoning, vertical canyoning single-pitch, vertical canyoning multi-
1750 pitch), canyon grade (vertical difficulty v, aquatic difficulty a, commitment c) and instruction context.
1751 Capability must extend to the highest variant and grade in which the guide operates.

1752 **Knowledge**

1753 The Leader understands the technical content of canyoning across the activity variants within their scope —
1754 horizontal canyoning, vertical canyoning single-pitch and multi-pitch, aquatic management and (where
1755 applicable) instruction in canyoning skills — including equipment, anchor and belay systems, rescue
1756 systems and the specific demands of each variant.

1757 This should include, but is not limited to: horizontal canyoning techniques including scrambling, spotting,
1758 swimming, wading, deep-water belay, jumps and slides, and the fall-protection limits of each; vertical
1759 canyoning single-pitch including static and dynamic rope selection, descending and belay devices, anchor
1760 systems (fixed artificial, naturally occurring and artificial removable), releasable top belay, bottom braking,
1761 self-belay, deep-water belay, required knots, abseil technique on dry and wet surfaces, belaying others, and
1762 single-pitch stuck-abseiler rescue; vertical canyoning multi-pitch including doubled-rope, single-rope and
1763 releasable abseil-line techniques, pitch-changeover procedures at hanging and standing re-belay stations,
1764 mid-route belay station establishment, and multi-pitch rescue; aquatic canyoning including buoyancy aid
1765 selection and use, white-water hazards and self-rescue, river-crossing technique, jumps and slides per
1766 Appendix X (Water landings), and abseiling in waterfalls and into water with releasable rigging at v4 or
1767 above; and general canyoning including harness selection, helmet selection (EN 12492:2025 or EN

1768 1385:2012), personal thermal protection, rescue equipment, contact rescue, communication systems, the
1769 v/a/c grading system, equipment standards per Appendix V, and instruction methodology where the
1770 instructor role applies.

1771 **Skills**

1772 The Leader applies the practical technical skills required to operate the relevant canyoning variants safely,
1773 including rigging, belaying, abseiling, water management, rescue and (where applicable) instruction.

1774 This should include, but is not limited to: selecting, rigging, inspecting and operating top-belay (releasable),
1775 bottom-braking, self-belay and deep-water-belay systems for single-pitch canyon abseils; selecting and
1776 using fixed artificial, naturally occurring and artificial removable anchors with equalisation and back-up;
1777 rigging and managing doubled-rope, single-rope and releasable abseil-line systems for multi-pitch canyons;
1778 managing pitch changeover at hanging and standing re-belay stations; establishing mid-route belay
1779 stations; supervising white-water swims, wades, slides and jumps; managing abseils in waterfalls and into
1780 water with releasable rigging at v4 or above; performing white-water self-rescue, stuck-abseiler rescue and
1781 contact rescue; tying and checking all required knots; and (where applicable) demonstrating, instructing
1782 and assessing participants in canyoning skills.

1783 **Experience recommended**

1784 The Leader has operated the activity variants within their scope in canyon conditions across a range of
1785 canyons, grades, water levels and participant ability levels.

1786 This should include but is not limited to: rigging and managing anchor and belay systems for the relevant
1787 variants in canyon conditions; briefing, equipping and supervising participant groups in horizontal and/or
1788 vertical canyoning; practising and applying stuck-abseiler rescue, harness hang syndrome rescue and water-
1789 related rescue techniques in scenario or real conditions; leading participants on multi-pitch canyon routes
1790 and/or canyons with waterfall abseils where these form part of the activity scope; and (where the
1791 instructor role is held) delivering instruction across multiple sessions and assessing participant performance
1792 against defined criteria.

1793 **Leadership and group management**

1794 This domain covers group management challenges specific to canyoning — participants progressing in
1795 single file through narrow watercourses, the simultaneous management of active and waiting participants
1796 at belay stations, and the supervision implications of canyons where line-of-sight and voice communication
1797 are frequently broken.

1798 **Knowledge**

1799 The Leader understands the supervision challenges specific to canyon environments — single-file
1800 progression, simultaneous management of active and waiting participants, and the supervision ratios and
1801 additional-leader requirements that apply.

1802 This should include, but is not limited to: the supervision challenge of managing single-file progression and
1803 simultaneous active and waiting participants; the supervision ratios for top-belay, bottom-braking, self-
1804 belay and multi-pitch contexts; situations that require more than one activity leader irrespective of
1805 participant numbers (e.g. jumps with no reascent, abseiling into moving water grade A5, multi-pitch with
1806 mid-route hanging belays); and the Assistant Leader role including the risk-assessment requirement that
1807 must be completed before an assistant is used to affect the supervision ratio.

1808 **Skills**

1809 The Leader applies the positioning, coordination and supervision skills required to manage canyon groups
1810 across pitches, water features and constrictions.

1811 This should include, but is not limited to: positioning within the canyon to maintain supervision of both
1812 active and waiting participants at belay stations and water-feature take-offs; coordinating assistant

1813 canyoning guides in belay management, tie-in inspection and waiting-group supervision; and managing
1814 group progression through canyons to prevent overcrowding at belay stations or take-offs.

1815 **Experience recommended**

1816 The Leader has managed canyoning groups across single-file progression and multi-pitch belay stations,
1817 including coordinating assistant canyoning guides.

1818 This should include but is not limited to: managing canyoning groups in single-file progression and at multi-
1819 pitch belay stations; and coordinating assistant canyoning guides in managing belay systems, waiting-group
1820 supervision and bottom-braking belay positions.

1821 **Decision-making and judgement**

1822 This domain covers decision-making requirements specific to canyoning, including the proceed, modify or
1823 cancel triggers that are particular to canyon environments where water level, weather and commitment
1824 combine to create rapidly developing risk.

1825 **Knowledge**

1826 The Leader understands the specific proceed, modify or cancel triggers for canyoning activities and the
1827 implications of canyon commitment grade on the time available to respond.

1828 This should include, but is not limited to: rainfall (volume, intensity and location across the catchment),
1829 water levels (current, predicted and gauge readings), severe weather warnings, severe thunderstorm
1830 warnings, tropical cyclone advice, water quality, lightning, participant fatigue and cold stress as triggers;
1831 and the implications of commitment grade (c1–c6) on escape time, available escape options and the
1832 identification of irrevocable points in the canyon route (e.g. jumps, slides or siphons with no ability to
1833 reascend).

1834 **Skills**

1835 The Leader applies assessment and decision-making skills to proceed, modify or cancel canyoning activities
1836 based on water level, weather and catchment conditions.

1837 This should include, but is not limited to: assessing current and predicted catchment conditions, weather
1838 and water levels before and during the activity to make and communicate proceed, modify or cancel
1839 decisions; and confirming, before committing to a canyon, that the assessment supports continuing past
1840 any irrevocable points.

1841 **Experience recommended**

1842 The Leader has made proceed, modify or cancel decisions for canyoning activities in response to changing
1843 water levels, weather and catchment conditions.

1844 This should include but is not limited to: making proceed, modify or cancel decisions in response to
1845 changing water levels, weather and catchment conditions across a range of canyons.

1846 **Planning and program management**

1847 This domain covers planning requirements specific to canyoning that extend beyond the generic planning
1848 framework in the Core.

1849 **Knowledge**

1850 The Leader understands the canyon-specific site survey, single-leader operation and emergency
1851 management planning requirements.

1852 This should include, but is not limited to: canyon site survey requirements including geology, features,
1853 watercourses, obstacles, pitch heights and technicality, remoteness, anchor condition and any pre-existing
1854 rigging, and current and predicted water level and weather; single activity leader operation including

1855 additional planning, communications, participant pre-attachment and rigging requirements; and emergency
1856 management planning addressing non-participating contact, pre-rigged emergency access, hypothermia
1857 and hyperthermia management, equipment loss or damage, periodic practice of rescue systems, and the
1858 use of mapping for access and escape options.

1859 **Skills**

1860 The Leader applies pre-activity canyon survey and emergency planning skills.

1861 This should include, but is not limited to: conducting a pre-activity canyon survey including assessment of
1862 route, anchors, water level, weather and emergency egress before participant arrival; and developing a
1863 canyoning emergency management plan addressing in-canyon communications, the overdue-group
1864 procedure, triggers and procedures for in-canyon emergencies, and access and escape options.

1865 **Experience recommended**

1866 The Leader has conducted pre-activity canyon surveys across a range of canyons, seasons and conditions.

1867 This should include but is not limited to: conducting pre-activity canyon surveys at a range of canyons
1868 including wet and dry, single-pitch and multi-pitch, and across seasons and conditions.

1869 **Environment and place-based knowledge**

1870 This domain covers the environmental and terrain knowledge specific to canyon environments — geology,
1871 hydrology, weather and the grading systems used to characterise canyon difficulty.

1872 **Knowledge**

1873 The Leader understands the canyon geology, hydrology, weather, grading systems, water-quality factors,
1874 fauna and flora, and environmental sustainability practices that apply to canyoning.

1875 This should include, but is not limited to: canyon types and geological formations (open watercourses, deep
1876 narrow gorges, log-jams, rock-jams, cave-like structures, escarpments, exposed cliff-lines) and their
1877 implications for route selection, anchor placement, rockfall risk and water behaviour; catchment hydrology
1878 including size, gradient, vegetation, soil type, dam and spillway operation, snow conditions, soil saturation
1879 and the timeframes over which catchment conditions translate to canyon water levels; the canyon grading
1880 system used in this guide (v1–v7, a1–a7, c1–c6 per Appendix T); weather and climate factors and the
1881 Bureau of Meteorology and local sources of weather and water-level information; canyon water-quality
1882 contamination sources; canyon-specific fauna and flora hazards; and canyon-specific minimum-impact
1883 practices including anchor protection, tree sling use, soil compaction avoidance and footwear hygiene.

1884 **Skills**

1885 The Leader applies catchment interpretation, grading and minimum-impact skills in canyon environments.

1886 This should include, but is not limited to: interpreting catchment information (rainfall, soil saturation, snow
1887 conditions, dam release status and forecast) to predict canyon water levels for the duration of the activity;
1888 applying the canyon grading system to identify when changing difficulty changes leader competency
1889 requirements; and applying canyon-specific minimum-impact practices including anchor protection, route
1890 selection, waste management and footwear hygiene.

1891 **Experience recommended**

1892 The Leader has operated in canyons across multiple seasons and water-level conditions and has applied the
1893 canyon grading system in practice.

1894 This should include but is not limited to: operating in canyons across multiple seasons and water-level
1895 conditions including post-rainfall, post-flood and drought conditions; and applying the canyon grading
1896 system in route selection, briefing and risk assessment across a range of canyons.

1897 Communication and interpersonal skills

1898 This domain covers communication requirements specific to canyoning, where waterfall noise, canyon
1899 geometry and the separation of participants across pitches and water features frequently limit voice
1900 communication.

1901 Knowledge

1902 The Leader understands the call-and-response systems and alternative communication methods used
1903 where waterfall noise, canyon geometry or distance limits voice communication.

1904 This should include, but is not limited to: standard call-and-response sequences for canyon abseils (on
1905 belay/belay on; abseiling/abseil on; off belay/belay off); rope-tug, whistle and visual signals where voice
1906 communication is limited by waterfall noise or cliff geometry; and inter-group radio communication for
1907 multi-pitch canyons and procedures for managing shared-canyon progression.

1908 Skills

1909 The Leader applies standard canyoning communication calls and adapts to alternative methods.

1910 This should include, but is not limited to: using standard canyoning communication calls clearly with
1911 participants; and adapting to rope-tug, whistle and radio communication when voice communication is
1912 limited by waterfall noise, distance or canyon geometry.

1913 Experience recommended

1914 The Leader has used standard and alternative communication methods effectively in canyons with limited
1915 voice communication.

1916 This should include but is not limited to: using standard communication calls and alternative methods
1917 effectively in canyons with limited voice communication, including in multi-pitch and waterfall canyon
1918 contexts.

1919 Self-management and professional practice

1920 Not modified for canyoning — the requirements of Core GPG Appendix M (domain M.8) apply in full.

1921 Outdoor living, activity and travel skills

1922 This domain covers the access, travel and field-craft skills specific to canyoning, including off-track
1923 approach, equipment carriage in water environments and multi-day canyoning logistics.

1924 Knowledge

1925 The Leader understands the approach and egress, waterproofing, navigation and (where applicable) multi-
1926 day logistics requirements for canyoning.

1927 This should include, but is not limited to: approach and egress requirements including off-track bushwalking
1928 and load-carrying with full canyoning equipment including rope, harness and personal thermal protection;
1929 waterproof equipment management for documentation, communications and critical equipment during
1930 canyon immersion; canyon-specific navigation including the use of route descriptions, GPS, topographic
1931 map and feature recognition in environments where map detail and reception are limited; and multi-day
1932 canyoning logistics including the interface with the Camping GPG where overnight stays are involved.

1933 Skills

1934 The Leader applies approach, gear management, waterproofing and navigation skills for canyon activities.

1935 This should include, but is not limited to: carrying and managing canyoning equipment to and from canyon
1936 entries and exits including off-track travel and load-carrying in wet conditions; waterproofing and
1937 protecting documentation, communications and critical equipment for canyon immersion; and navigating

1938 to and within canyons using a combination of map, compass, GPS, route descriptions and feature
1939 recognition.

1940 **Experience recommended**

1941 The Leader has accessed and operated in canyons requiring off-track approach or significant load-carrying.

1942 This should include but is not limited to: accessing and operating in canyons requiring off-track approach or
1943 significant load-carrying with full canyoning equipment; and where the activity scope includes multi-day
1944 operation, managing equipment, navigation and logistics across multi-day canyoning activities.

1945 **Appendix O Knowledge, skill and experience — Assistant Leader**

1946 This appendix sets out the knowledge, skill and experience expected of an Assistant Leader (assistant
1947 canyoning guide) carrying the role described in Section 8.4.2. The role is structured against the same nine
1948 domains as Appendix M; the requirements of Appendix M apply, with the variation that each domain is
1949 applied at the level of the delegated tasks, under the direction of the Leader and within the provider's
1950 systems. This appendix contains only the requirements specific to canyoning; see also Core GPG Appendix
1951 N.

1952 **Safety and risk management**

1953 As for Safety and risk management — the Assistant Leader must be able to identify canyon-specific hazards
1954 including fall-from-height, water-related hazards, rockfall and harness hang syndrome in their assigned
1955 role, follow the guide's safety procedures and contribute to emergency response under the Leader's
1956 direction. They are not required to lead risk-management planning for the overall activity.

1957 **Technical activity leadership**

1958 As for Technical activity leadership — the Assistant Leader must hold the technical skills, equipment
1959 knowledge and rescue capability sufficient for the specific tasks delegated by the guide. This may include
1960 supervising the waiting group at a belay station, operating as bottom-brake belayer where assessed as
1961 competent, monitoring participant tie-in and harness checks, assisting with equipment management in
1962 approach and egress, and supervising swimming, wading and water-feature take-offs. The Assistant Leader
1963 must not operate anchors, belay systems or rescue procedures beyond their confirmed competence
1964 without direct supervision of the guide. A risk assessment must be completed where the Assistant Leader is
1965 used to affect the supervision ratio.

1966 **Leadership and group management**

1967 As for Leadership and group management — the Assistant Leader supervises participants in their assigned
1968 section of the canyon (e.g. managing the waiting group at a belay station, supervising tie-in, supervising
1969 swimming or wading) and reports changed conditions or participant difficulties promptly to the Leader.

1970 **Decision-making and judgement**

1971 As for Decision-making and judgement — the Assistant Leader must recognise developing canyon hazards
1972 — rising water level, deteriorating weather, participant fatigue and cold stress — and communicate these
1973 immediately to the Leader, and make immediate safety decisions within their assigned tasks while referring
1974 all anchor, belay, rescue and route decisions to the Leader.

1975 **Planning and program management**

1976 As for Planning and program management — the Assistant Leader must be familiar with the canyoning
1977 activity plan, their specific assigned tasks, the emergency management plan, the non-participating contact
1978 arrangements and the communication arrangements with the Leader.

- 1979 **Environment and place-based knowledge**
 1980 As for Environment and place-based knowledge — the Assistant Leader must have sufficient canyon-
 1981 specific knowledge to carry out their assigned duties safely, including awareness of rockfall zones, water-
 1982 feature hazards, the canyon grade and emergency egress points.
- 1983 **Communication and interpersonal skills**
 1984 As for Communication and interpersonal skills — the Assistant Leader must be proficient in standard
 1985 canyoning communication calls, whistle and rope-tug signals, be able to brief participants on their assigned
 1986 task requirements, and communicate promptly with the Leader about anything affecting safe delivery.
- 1987 **Self-management and professional practice**
 1988 As for Self-management and professional practice — the Assistant Leader must self-assess fitness for work,
 1989 maintain currency in the competencies relevant to their assigned tasks, and operate within professional
 1990 and ethical boundaries.
- 1991 **Outdoor living, activity and travel skills**
 1992 As for Outdoor living, activity and travel skills — the Assistant Leader must be able to carry and manage
 1993 canyoning equipment appropriate to their assigned tasks, travel safely to and from canyon entries and
 1994 exits, and maintain personal thermal protection and waterproofing for their own equipment.
- 1995 **Appendix P Recognition of competence: pathways to verification**
 1996 See Core GPG Appendix P. The recognition-of-competence pathways — formal qualifications and training,
 1997 provider-based assessment and prior learning — apply without modification to canyoning activities.
- 1998 **Appendix Q Indicative experience bands and evidence expectations**
 1999 See Core GPG Appendix Q. The indicative experience bands and evidence expectations support the
 2000 provider’s verification of leader experience for canyoning activities.
- 2001 **Appendix R Australian Bureau of Meteorology weather warnings**
 2002 **and trigger points**
 2003 *See Core GPG (Appendix R).*
- 2004 **Appendix S Program planning matrix: leader-matching tool**
 2005 See Core GPG Appendix O. The program planning matrix (leader-matching tool) applies without
 2006 modification to canyoning activities. Providers rate the three factors — provider support and backup
 2007 availability, environment and proximity, and activity complexity — and read off the recommended
 2008 minimum leader configuration. For canyoning, activity complexity is informed by the activity variant,
 2009 canyon grade (v, a and c) and operational setting (see Appendix M, Activity scope and leader
 2010 requirements). Note that technically complex activities — particularly multi-pitch canyoning, abseiling in
 2011 running waterfalls of grade v4 or above, abseiling into moving water of grade A5, and canyons with high
 2012 commitment (c3 and above) — may demand advanced technical, water-management and rescue skills even
 2013 in well-supported settings.
- 2014 **Appendix T Canyon grading system**
 2015 *See the Core GPG.*

2016 **Introduction**

2017 The grading system is based on the English translation of the French grading system that is used in New
2018 Zealand. The original translation source can be found at: <http://www.kiwicanyons.org/legend/grading/>
2019 (Used with Permission). Refer the end of this section for further detail.

2020 **Assumptions**

2021 The grading is indicative of the most difficult compulsory section of the canyon and reflects the technical
2022 skill required to descend that part.

2023 The level of difficulty is set by at least one of the situations listed in the table(s) being found in the canyon.

2024 When grading aquatic difficulty, it should specify the water flow it is applicable for or based on.

2025 When grading commitment, it should specify the number of people in the group and their relative
2026 experience. (General usage with the Good Practice Guide would normally see groups experience being
2027 *activity leader(s)* are competent at canyoning, while all others in the group are dependent participants.)

2028 Grading any technical activity is always an exercise in compromise.

2029 In the grade, there is no way to distinguish between a canyon with one difficult section and another canyon
2030 where the whole canyon has difficult drop after difficult drop.

2031 The gradings must be used in conjunction with route descriptions and maps to gain a better understanding
2032 of the overall difficulty of the trip.

2033 Canyons may change with every flood, to the point that the initial grade may change.

2034 **Grading**

2035 Canyon grading has 3 parts:

- 2036 • difficulty of the vertical and aquatic sections
2037 • commitment and
2038 • quality

2039 **Difficulty:**

2040 Vertical difficulty – The letter ‘v’ followed by a number from 1 to 7. Rock climbing grades used in the
2041 descriptions are from the free climbing Australasian Ewbank system and the Aid climbing Grade. See
2042 Wikipedia grade comparison:
2043 [https://en.wikipedia.org/wiki/Grade_\(climbing\)#Free_climbing_ratings_comparison_table](https://en.wikipedia.org/wiki/Grade_(climbing)#Free_climbing_ratings_comparison_table)

2044 Aquatic difficulty – The letter ‘a’ followed by a number from 1 to 7. White-water grades referred to in the
2045 grade descriptions are from the international white-water grading system. See Wikipedia international
2046 white-water grades: https://en.wikipedia.org/wiki/International_scale_of_river_difficulty

2047 Note: The current difficulty numbers only reach 7, but more difficult canyons in the future could require
2048 higher numbers.

2049 **Commitment:**

2050 Commitment – The letter ‘c’ (for commitment and duration of the canyon) followed by a number from 1 to
2051 6.

2052

2053 **Quality:**

2054 Quality – An optional grading. The letter ‘q’ (for the quality/beauty/fun factor of a canyon) followed by a
2055 number from 0 to 4.

2056 **Examples:**

2057 Example of presentation: **v3a2c3q2**

2058 Example of grading a canyon:

- 2059 • each component is rating separately (e.g. vertical difficulty then aquatic etc.)
- 2060 • the most difficult compulsory section of that component is selected and rated (e.g. the hardest
- 2061 vertical section in the canyon has “rappels anchors are difficult to reach”)
- 2062 • the statement “rappels anchors are difficult to reach” in the table is graded a difficulty v4
- 2063 “difficult” so the grade v4 is assigned
- 2064 • the next component is assessed (e.g. aquatic) in the same way.

2065 **Notes:**

2066 The highest-grade difficulty statement is always used for grading – for example:

- 2067 • if both “Rappel anchors are easily reached.” and “Rappels are easy. <= 30m.” occurs then the
- 2068 grade is v3
- 2069 • if either “Rappels anchors are difficult to reach and/or Rappels > 30m” occurs the grade is v4
- 2070 • so even if “Rappel anchors are easily reached” but “Rappels > 30m” then it is graded v4
- 2071 • and if “Rappels anchors are difficult to reach” but “Rappels are easy. <= 30m.” then grade v4 i.e.
- 2072 same as the dot point 2 example above.

2073 See next page for grade tables.

2074 Background to system

2075 There are several different canyon grading systems around the world.

2076 The above grading system is based on the English translation of the French grading system. It is used in New
2077 Zealand.

2078 The original source was <http://www.kiwicanyons.org/legend/grading/> (Used with Permission).

2079 The presentation of the grades - as presented in the NZ translation - have been modified with the:

- 2080 • commitment grade expressed as a number rather than roman numeral
- 2081 • quality grade expressed as a number rather than a number of stars
- 2082 • addition of white-water grades in some of the aquatic difficulty descriptions.

2083 Overview of the French system

2084 The modern sport of canyoning has its roots strongly centered in Europe, and in particular France. As the
2085 sport began to really take off, a number of French Outdoor Associations standardised their grading systems
2086 in 2003.

2087 The gradings presented are the English translation of those agreed on by the French Federation of
2088 Mountain Climbing (FFME), with support from the French Federation of Speleology (FFS) in conjunction
2089 with the National Union of Mountain Guides (SNGM), the National Union of Professionals Climbing and
2090 Canyoning (SNAPEC), the National Union of Professional Speleology and Canyoning (SNPSC) and the
2091 Federation of French Alpine Clubs (FCAF).

2092 The French grading system aligns with best international practice.

2093

Difficulty rating	“v”: Vertical difficulty criteria (e.g. vertical surface, climbing, setup, rappels, multi-pitch, flow & pools)	“a”: Aquatic difficulty criteria (e.g. swims, current, hydraulics, slides, siphons & jumps)
1 Very easy	• No climbing or down climbing. • No rappels, rope normally unnecessary for progress.	• No water or calm water. • Swimming optional.
2 Easy	• Easy climbing and down climbing with little exposure. • Rappel anchors are very easily reached. • Rappels are very easy <= 10m.	• Swims less than 10m in calm water. • Short, low angled slides • Simple jumps less than 3m.
3 A little Difficult	• Climbing moves to grade 12. A little exposure, which may require the use of a rope. • Setting hand lines is easy. • Rappel anchors are easily reached. • Rappels are easy. <= 30m. • Rappels are separated by enough room to regroup. • Low Vertical flow. Rappels land in pools with calm water.	• Swims less than 30m in calm water. • Slight current in places. • Long or moderately angled slides. • Simple jumps between 3 and 5m
4 Difficult	• Climbing moves to grade 15 or A0. Exposed and/or requires belaying and protection. • Setting handlines is difficult and delicate. • Rappels anchors are difficult to reach and/or Rappels > 30m • Rough rock edges requiring rope wear management. • Rappels with obscured sections and/or landings pools. • Multi-pitch rappels with relatively spacious re-belay stations. • Low to moderate vertical flow that can begin to cause imbalance or entrapment. • Landing pools have current.	• Prolonged immersion in cold water. • Moderate current in places. • Large or steep slides. • Siphons of less than 1m in length and / or depth. • Simple jumps between 5 and 8m • Jumps with difficult trajectory and/or landing of less than 5m.
5 Quite Difficult	• Canyon surface is very slippery and/or has significant obstacles • Exposed climbing moves up to grade 18 or A1. • Retrieving the rope is difficult or has to be done whilst swimming. • Multi-pitch Rappels may have hanging re-belays. • Medium to high vertical flow. Crossing the flow requires correct route selection and balance. • Requirement to cross pools with current during the descent.	• Prolonged immersion in cold water resulting in a substantial heat loss. • Current strong enough that it could affect a swimmer's path through the water. • Hydraulics such as eddies, recirculation's, holes may trap a Canyoners for a short period of time. (White-water grade 2) • Large Siphons up to 2m in length and / or depth. • Simple jumps between 8 and 10m. • Jumps with difficult trajectory and/or landing of 5 to 8m.

Difficulty rating	“v”: Vertical difficulty criteria (e.g. vertical surface, climbing, setup, rappels, multi-pitch, flow & pools)	“a”: Aquatic difficulty criteria (e.g. swims, current, hydraulics, slides, siphons & jumps)
6 Very difficult Exposed	• Canyon surface exceptionally slippery and/or loose. • Exposed climbing moves to grade 19 or A2. • Setting hand lines is very difficult and very delicate. • Requirement to build advanced and/or delicate natural anchors • Rappel anchors are very difficult to reach. • Strong to very strong vertical flow • Sustained waterfalls • Crossing the flow is very difficult, requiring effective management of selected route and / or balance. • Rappel landing pools are turbulent and/or with significant current.	• Moderate current that makes a selected swimming path or stopping point difficult to achieve. • Hydraulics such as eddies, recirculation's, holes may trap a Canyoner for a moderate period of time. • Siphon of up to 3m depth and / or length. • Technical siphon, up to 1m deep, with possible current. • Simple Jumps between 10 and 14m • Jumps with difficult trajectory and/or landing of 5 to 8m.
7 Extremely Difficult Very Exposed	• Exposed climbing moves > grade 19 or A2 • Limited visibility of route and frequent obstacles. • Very strong to extremely strong vertical flow • Very sustained waterfalls that lead into one another without a gap. • Crossing the flow is extremely difficult; requiring anticipation and specific rope management, manoeuvre, balance, support and pace. • Requirement to move through powerful current at the end of a rappel or rappel landing in a very turbulent pool with powerful current. • Control of breathing: sections where you must hold your breath.	• Strong current that makes a selected swimming path or stopping point extremely difficult to achieve • Hydraulics such as eddies, recirculation's or holes may trap a Canyoner for a prolonged period of time. • Siphons over 3m in length and / or depth. • Technical and committing siphon, more than 1m tall, with current or no visibility. • Simple jumps greater than 14m • Jumps with difficult trajectory and/or landing greater than 10m.

2096

2097 *Table T.4: Grade tables*

Rating	Commitment/ duration “c” Criteria	French/NZ Rating
c1	• Able to get out of a flood quickly. • Escape is easy throughout the Canyon • Total time (approach, descent, return) less than 2 hours.	I
c2	• Able to get out of a flood in less than 15 mins • Escape takes up to 30 minutes. • Total time (approach, descent, return) is between 2 and 4 hours.	II
c3	• Able to get out of a flood in less than 30 minutes. • Escape takes up to 1 hour. • Total time (approach, descent return) is between 4 and 8 hours.	III
c4	• Able to get out of a flood in less than 1 hour. • Escape takes up to 2 hours. • Total time (approach, descent return) between 8 hours and 1 day.	IV
c5	• Able to get out of a flood in less than 2 hours. • Escape takes up to 4 hours. • Total time (approach, descent return) is between 1 and 2 days.	V
c6	• Getting out of a flood takes more than 2 hours • Escape requires more than 4 hours. • Total time (approach, descent return) is more than 2 days.	VI

2098

2099 *Table T.5: Grade tables*

Rating	Quality “q” Criteria	French/NZ - stars
q0	Canyons that have been descended but are not really worth the effort required. Included so people searching for new canyons know to discount these streams.	No stars
q1	Locally Significant Canyons. Good canyons that are worth the effort required to descend	*

q2	Regionally Significant Canyons.	**
q3	Canyons of above average quality that are worth returning to several times	***
q4	Nationally significant Canyons. The highest quality canyons, with an excellent mix of good access, beauty, fun and challenge. Canyons of International significance.	****

2100 Appendix U Equipment load ratings

2101 Refer Abseil & Climb GPG for equipment load ratings.

2102 Appendix V Fall factors

2103 See the Core GPG.

2104 Appendix W Weather information and warnings

2105 See the Core GPG.

2106 Appendix X Water landings

2107 The higher the distance of a fall or jump into water, the faster the person is travelling when they hit the water. The faster the person is moving the more potential for injury.

2109 Consideration of the water entry speed and potential for injury should be assessed for water landings.

2110 Water impact information to consider

2111 Table: Water entry speed

2112 *Table X.6: Water impact information to consider*

Height of Jump	Water entry speed (approx.)	Potential for injury considerations caused when hitting the water
3m	27 km/hr	- Known injuries have occurred at about these heights that include perforated ear drums, bruising, dislocations. - There is potential for other injuries, but specific data could not be located for these height ranges.
5m	36 km/hr	
10m	50 km/hr	
Approx. 16.8m and above	66 km/hr and above	Possible severe bruising (internal and external), strains to connective tissue securing the organs, haemorrhage to lungs/other tissue, rib and basala skull fractures, compress fractures of spine/injure disks, break bones, dislocated joints and/or concussion. <i>(See: Survival of high-velocity free-falls in water April 1965, Office of Aviation Medicine Federal Aviation Agency USA)</i>

2113

2114 A study *Survival of high-velocity free-falls in water* April 1965, Office of Aviation Medicine Federal Aviation
 2115 Agency USA (<https://apps.dtic.mil/docs/citations/AD0620021>) of 44 survived impacts (note 1) of free falls
 2116 of 16.8m (55 feet) or above found that:

- 2117 • “No correlation between velocity (or distance of fall) and the degree of trauma found; rather,
 2118 injuries appear to be more dependent upon body position at all levels of force.” (p.6)
- 2119 • “The pattern of impact injuries in the feet and buttocks-first position showed a high incidence
 2120 (68%) of fractures...” (p.6)
- 2121 • For face first (belly flopping) and supine (back first) “...impacts in water, all individuals received
 2122 injuries with 100% incidence of internal trauma... and 100% body contusions.” (p.6)

2123 Note 1: In the study, “the total population that fell under these conditions is not considered here since fatal
 2124 cases are not included. Therefore, the actual incidence of survival is not shown...” (p. 2).

2125

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