Race Readiness Report

Alex Thornton · Ultra Trail Snowdonia 100km

> *This report covers one theme at a time - distance, then vertical load, then terrain, then pacing, then logistics. Each section is self-contained. Read it through once, then return to whichever theme your preparation needs most.*

THEME 1 - DISTANCE

Distance & Time-on-Feet Readiness compares your longest race against the target, adjusts for the extra energy cost of climbing, and estimates your finish window. The question is not just whether you have run far enough - it is whether you have spent enough time on your feet under fatigue.

THEME 2 - VERTICAL LOAD

Vertical Load Readiness is often where the decisive gap lives. It compares the total ascent this race demands against your career best, examines descent load separately - steep downhill damages muscles that climbing does not - and puts the biggest single climb on the course against the biggest you have tackled. If this section shows red, it is the primary preparation priority.

THEME 3 - TERRAIN

Two pages cover terrain. **Terrain Readiness** gives the headline: which surface types the race uses and how much experience you have on each. **Terrain Gap Analysis** goes deeper, listing every specific terrain type with the exact kilometres you have accumulated. Terrain gaps show up as race-day surprise - sections feeling harder than expected because your body has not adapted to that gradient and surface together.

THEME 4 - PACING

Pacing & Effort Management shows how effort is distributed across the course: where the major climbs fall, how much of the course is genuinely steep, and what each kilometre costs relative to flat running. These pages answer the question most people ask too late - where to hold back, and where it is safe to push. A third page then compares this course's **Pacing Complexity Index** - scored 0-100 using effort variability, gradient transitions, and recovery availability - against the athlete's previous races, to show whether the pacing challenge is new territory or familiar ground.

THEME 5 - AID & LOGISTICS

Aid Station & Logistics maps the support points, gaps between them, and drop bag availability. Logistics failures are rarely about fitness - this section flags where the risk lies.

THEME 6 - PHYSICAL READINESS

Physical Readiness Checks contains what race data cannot generate: self-reflection questions only you can answer, and targeted physical tests derived from the specific gaps this report identifies. They surface imbalances and asymmetries that accumulate quietly and show up loudly in a long mountain race.

The final pages are for action. **Suggested Preparation Priorities** orders specific steps by urgency across training, strength, terrain, race prep, and equipment. **Suggested Preparation Races** identifies nearby events ranked by how well each one closes your specific gaps.

Executive Readiness Verdict

Overall verdict · Main strength · Primary limiter · Top preparation priorities

WHAT "RACE READY" MEANS HERE: You have the physical foundation to complete this race safely without being overwhelmed by its specific demands. It does not mean you will win or that preparation is complete. Where gaps exist, this report identifies them specifically.

OVERALL VERDICT — **Aerobically capable, but race-specific gaps remain**

Alex has demonstrated the endurance to complete distances longer than Ultra Trail Snowdonia 100km — the longest recorded race is Hardwolds 80 (128 km). The main concern is not distance — it is vertical load. The target race demands 6,770 m of ascent (64 m/km), 2.6× more than the best on record (2,600 m).

STRENGTHS & LIMITERS

BIGGEST STRENGTH

Alex has already proven the ability to complete ultra-distance events longer than Ultra Trail Snowdonia 100km. The longest recorded race — Hardwolds 80 (128 km, 2025) — shows basic endurance and willingness to stay on course for a long time are not in question.

BIGGEST LIMITER

Vertical load is the main limiter. Ultra Trail Snowdonia 100km includes 6,770 m of ascent, compared with Alex's best recorded ascent of 2,600 m (Hardwolds 80, 2025). That is 38% of the target race demand.

RACE-DAY RISK FACTORS

MAIN RACE-DAY RISKS

Repeated steep climbs causing unsustainable effort spikes — no equivalent training stimulus visible in race history.

Effort trap — the distance alone may feel manageable, masking the much larger vertical and terrain demands.

TOP PREPARATION PRIORITIES

Priority area	Status	Action
Vertical load	Major gap	Mountain-specific climb blocks required
Technical terrain	Major gap	Specific technical trail exposure required before race day
Aid station gaps	Moderate	Plan nutrition and hydration for gaps up to 25 km

RECOMMENDED NEXT STEP

Do not treat this as a distance problem. Preparation should focus on mountain-specific vertical load: long sustained climbs, controlled technical descents, and at least one training block that replicates steep mountain terrain before race day.

Readiness assessment is based on available race-history data, course profile, terrain classification, and modelled race demands. It is not a guarantee of performance or safety.

Readiness Scorecard

How Alex measures up against Ultra Trail Snowdonia 100km across every key dimension

Distance — Strong

128 km best vs 105 km target (121% of target)

Best race distance meets or exceeds target.

Ascent — Major gap

2,600 m best vs 6,770 m target (38% of target)

Target ascent significantly exceeds best on record. Vertical load is the primary risk.

Descent — Strong

123.0 km covered of 43.8 km demanded — 6,770 m total descent

Descent experience broadly covers race demands.

Terrain specificity — Strong

234.0 km trail/fell vs 71.7 km demanded (326% of target)

Trail and fell experience well matched to course demands.

Technical terrain — Major gap

0.0 km technical vs 22.2 km demanded (0% of target)

No comparable technical trail experience — specific exposure required.

Effort load — Strong

151.6 km effort-equiv. best vs 175.5 km target (86% of target)

Total effort load well within demonstrated capacity.

Aid logistics — Moderate

7 stations · longest gap 15.3 km

Gaps up to 25 km — carrying nutrition and water requires planning.

Overall confidence — Moderate

3 of 19 terrain demand types fully covered

Capable overall but specific gaps need targeted preparation.

Strong = demands met at ≥80% of target level (≥70% for distance). Moderate = partial but meaningful preparation. Major gap = significant shortfall requiring targeted preparation. All ratios expressed as athlete best / race target — a higher percentage means better coverage.

2 — Distance & Time-on-Feet Readiness

Race scale vs Alex's demonstrated capacity · Effort-adjusted distance · Time estimate

RACE DISTANCE — RACE REQUIRES VS ATHLETE HAS DEMONSTRATED

RACE REQUIRES	ALEX HAS DEMONSTRATED
105	**128**
km geographic distance	km best race distance
175.5 km effort-adjusted	Hardwolds 80 (2025)

0% — **121% of target distance** — 100%

Alex's best race distance (128 km — Hardwolds 80, 2025) exceeds the target of 105 km. Basic endurance capacity is not in question. The preparation focus should shift to the vertical and terrain-specific demands rather than raw distance.

EFFORT-ADJUSTED DISTANCE (FLAT-EQUIVALENT KM)

Effort-adjusted distance expresses the total energy cost of a race as an equivalent flat distance, using the Minetti grade-adjusted energy model. It accounts for climbing and descending costs so races of different profiles can be compared fairly. Raw geographic distance and effort-adjusted distance will always differ on mountain courses.

RACE EFFORT-ADJUSTED TARGET	ALEX'S BEST EFFORT-ADJUSTED
175.5	**151.6**
flat-equivalent km	flat-equivalent km
avg 1.67× effort per raw km	Hardwolds 80 (2025)

0% — **86% of target effort load** — 100%

Effort-adjusted distance at 86% of target — a step up but manageable. The 125.9 km effort equivalent of Ultra Trail Snowdonia 100km is larger than the geographic distance because of its climbing load.

TIME-ON-FEET ESTIMATE

ESTIMATED FINISH WINDOW	BASED ON	LONGEST RACE ON RECORD
22h 6m – 27h 36m	Hardwolds 80 (21h 42m finish)	Hardwolds 80 (21h 42m)

22h 6m to 27h 36m on course is significantly longer than Alex's longest previous race (21h 42m at Hardwolds 80). Planning and practising race-day nutrition, pacing, and kit management for this duration is essential — not optional.

3 — Vertical Load Readiness

Ascent demand · Biggest climb comparison · Final-third climbing

ASCENT — RACE REQUIRES VS YOUR BEST

RACE REQUIRES	YOUR BEST
6,770	**2,600**
metres total ascent	metres best single race
64 m per km average	Hardwolds 80 (2025)

0% — **38% of target ascent** — 100%

Vertical load is the primary preparation risk. The 6,770 m target is 2.6× higher than anything on record. This requires a fundamental shift in training focus toward mountain-specific climbing.

BIGGEST SINGLE CLIMB — RACE VS YOUR BEST

RACE'S MAIN CLIMB	YOUR BEST CLIMB
1,018 m ↑ over 6 km	**190 m ↑ over 1 km**
km 70–76 · avg 17%	Hardmoors Saltburn Trail Marathon (2023)

Your best climb is 5.4× smaller than the race's main climb

The main climb on Ultra Trail Snowdonia 100km is more than twice as large as any climb in your race history. This is the most significant mountain-specific preparation gap. Finding training routes or races that include climbs of comparable length and gradient is a preparation priority.

LATE-RACE VERTICAL LOAD

FINAL THIRD ASCENT	% OF TOTAL ASCENT	FINAL-THIRD EFFORT MULTIPLIER
1,781 m	**26%**	**1.20×**

Late-race climbing is moderate — 26% of total ascent in the final third. Neither heavily front- nor back-loaded; consistent pacing across the whole course is the priority.

3 — Vertical Load Readiness (continued)

Descent demand · Biggest descent comparison

DESCENT — RACE REQUIRES VS YOUR EXPERIENCE

TOTAL DESCENT	DESCENT SECTIONS	YOUR DESCENT KM
6,770	43.8	173.3
m descent (race)	km of descending terrain	km logged in race history

The race includes 6,770 m of total descent across 43.8 km of descending terrain. Eccentric quad loading on repeated technical descents creates muscle damage that flat or climbing training does not replicate. You have 173.3 km of descent experience on record — 395% of the race demand. Specific downhill training and eccentric loading work should be a priority regardless of current fitness level.

BIGGEST SINGLE DESCENT — RACE VS YOUR BEST

RACE'S MAIN DESCENT	YOUR BEST DESCENT
912 m ↓ over 6 km	284 m ↓ over 4 km
km 76–82 · avg 15.2%	Hardmoors 55 (2022)

Your best descent is 3.2× smaller than the race's main descent

The main descent on Ultra Trail Snowdonia 100km is more than twice as large as any single descent in your race history. Steep technical descending under fatigue is a distinct skill — seek out training runs with comparable sustained descents before race day.

4 — Terrain Readiness

Proven terrain types vs priority gaps · Surface-level experience matched to race demands

SURFACE COMPOSITION — WHAT THE RACE COURSE REQUIRES

Note: Terrain classifications are derived from race database data and GPS track analysis. They may not capture all technical features of individual course sections. Use these classifications as a guide for preparation, not a definitive map.

PROVEN TERRAIN TYPES

Terrain types this race demands where Alex has demonstrated experience.

Mild Descent — 119.0 km
Trail · 9 races
✓ Demand covered

Mild Climb — 105.0 km
Trail · 9 races
✓ Demand covered

Flat — 72.0 km
Gravel · 6 races
✓ Demand covered

Sustained Climb — 5.0 km
Trail · 3 races
87% of race demand met

Sustained Descent — 4.0 km
Trail · 3 races
84% of race demand met

PRIORITY TERRAIN GAPS

Race demands where Alex's experience is insufficient or absent.

Steep Descent — No experience
Gravel · race needs 16.2 km

Rolling — No experience
Trail · race needs 11.1 km

Steep Climb — No experience
Technical Trail · race needs 11.0 km

Steep Climb — 12% of demand
Trail · race needs 8.4 km
Has: 1.0 km

Sustained Descent — No experience
Gravel · race needs 6.1 km

WHAT THIS MEANS FOR PREPARATION

Alex has 4 terrain types in the race profile with no equivalent experience on record. These are not just preparation gaps — they are potential sources of race-day surprise and overexertion. Specific terrain exposure before race day is a priority, not a nice-to-have.

See the next page for the full terrain gap table showing exact experience vs race demand for every terrain type on course.

4 — Terrain Gap Analysis

Full gap table: race demands vs Alex's exact and cross-terrain experience

Covered (3) Partial (4) Surface gap (5) No experience (7)

GRAVEL

28.3 km gap · 30.8 km demanded

Gradient	Race needs	You have	Status	Cross-terrain
Steep Descent -11.4%	16.2 km	—	No experience	—
Sustained Descent -5.6%	6.1 km	—	Surface gap	8.0 km Trail
Very Steep Climb +14.7%	3.4 km	—	Surface gap	1.0 km Trail
Rolling -0.5%	2.6 km	—	No experience	—
Flat -1.6%	2.5 km	72.0 km	Covered	351.2 km Trail

TRAIL

23.1 km gap · 38.6 km demanded

Gradient	Race needs	You have	Status	Cross-terrain
Rolling +0.3%	11.1 km	—	No experience	—
Very Steep Climb +17.9%	8.4 km	1.0 km	12% of demand	—
Sustained Climb +5.6%	5.8 km	5.0 km	86% of demand	8.0 km Gravel
Sustained Descent -4.8%	4.8 km	4.0 km	83% of demand	4.0 km Road
Steep Descent -8.2%	3.0 km	—	No experience	—
Mild Descent -3.4%	2.9 km	119.0 km	Covered	46.3 km Gravel
Mild Climb +2.2%	2.6 km	105.0 km	Covered	46.0 km Gravel

TECHNICAL TRAIL

22.1 km gap · 22.1 km demanded

Gradient	Race needs	You have	Status	Cross-terrain
Steep Climb +8.7%	11.0 km	—	Surface gap	1.0 km Trail
Very Steep Descent -18.7%	5.4 km	—	No experience	—
Flat -0.2%	3.0 km	—	Surface gap	423.2 km Trail
Mixed -1.0%	2.7 km	—	No experience	—

FELL

11.0 km gap · 11.0 km demanded

Gradient	Race needs	You have	Status	Cross-terrain
Steep Descent -9.8%	5.5 km	—	No experience	—
Very Steep Climb +16.4%	5.5 km	—	Surface gap	1.0 km Trail

ROAD

1.0 km gap · 3.0 km demanded

Gradient	Race needs	You have	Status	Cross-terrain
Sustained Climb +4.2%	**3.0 km**	2.0 km	67% of demand	11.0 km Trail

READING THIS TABLE

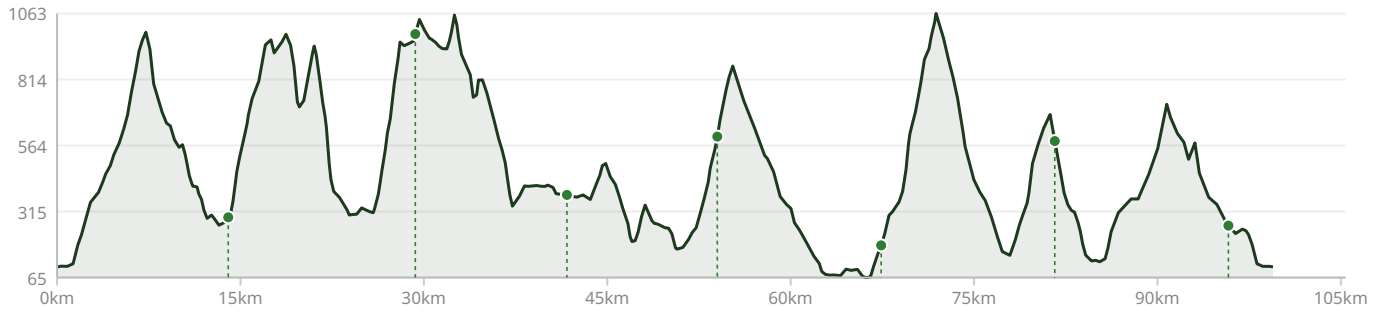
Tables are grouped by terrain surface and ordered by size of gap. Within each table, rows are gradient buckets (Steep Climb, Mild Descent, etc.) sorted by race demand. **Race needs** = total km of that surface at that gradient. **You have** = exact km at the same surface and gradient from confirmed race finishes. **Cross-terrain**= km at the same gradient on a different surface — similar effort, different footing. A “Surface gap” means the gradient is covered but not on this surface. 3 demand types fully covered. 12 with no or only cross-terrain experience.

Caveat: Terrain classifications are derived from GPS track and database data. Local conditions (mud, loose rock, navigation difficulty) may make a section harder than the classification suggests. Use this table as a preparation guide, not a definitive race-day predictor.

5 — Pacing & Effort Management

Elevation profile, climbing load distribution, and effort multipliers for Ultra Trail Snowdonia 100km — how the course is weighted and what that means for pacing. The course averages 64 m per km. Hardmoors 55 (2023) averaged 28 m/km — the goal race has 129% more climbing per km.

COURSE ELEVATION PROFILE



Aid stations shown as markers on the profile. Notable climbs and descents labelled. Use this profile to plan where to ease off, conserve, and push on race day.

ELEVATION COMPOSITION

Climbing 39.7 km · 38%

Descending 43.8 km · 42%

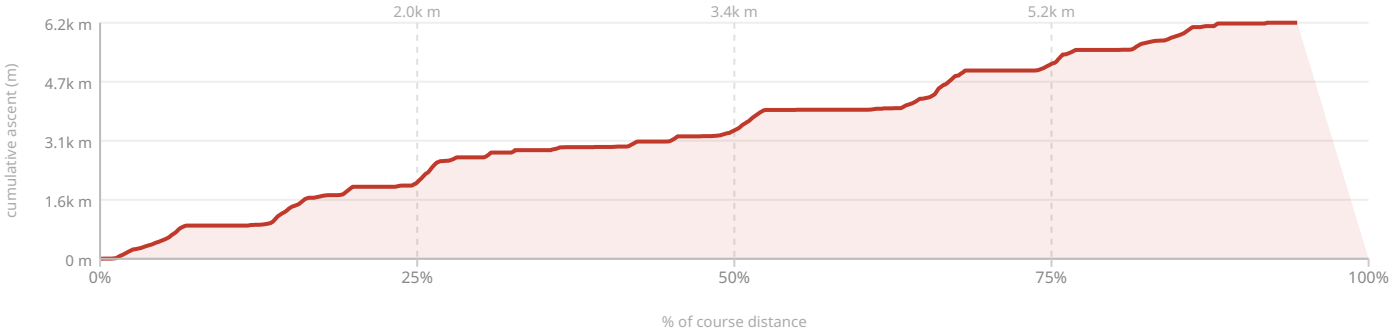
Flat / Rolling 21.8 km · 21%

Evenly loaded — 54% of ascent in the first half. Consistent output required throughout rather than front- or back-loading effort.

KEY SEGMENTS

Segment	Elev.	Dist.
▲ km 70.0–76.0	+1002m	6.0 km
▼ km 76.0–82.0	-912m	6.0 km
▲ km 1.0–7.0	+809m	6.0 km
▼ km 59.0–67.0	-709m	8.0 km
▲ km 14.0–18.0	+693m	4.0 km

CLIMBING LOAD OVER COURSE — 54% OF TOTAL ASCENT COMPLETED AT HALFWAY

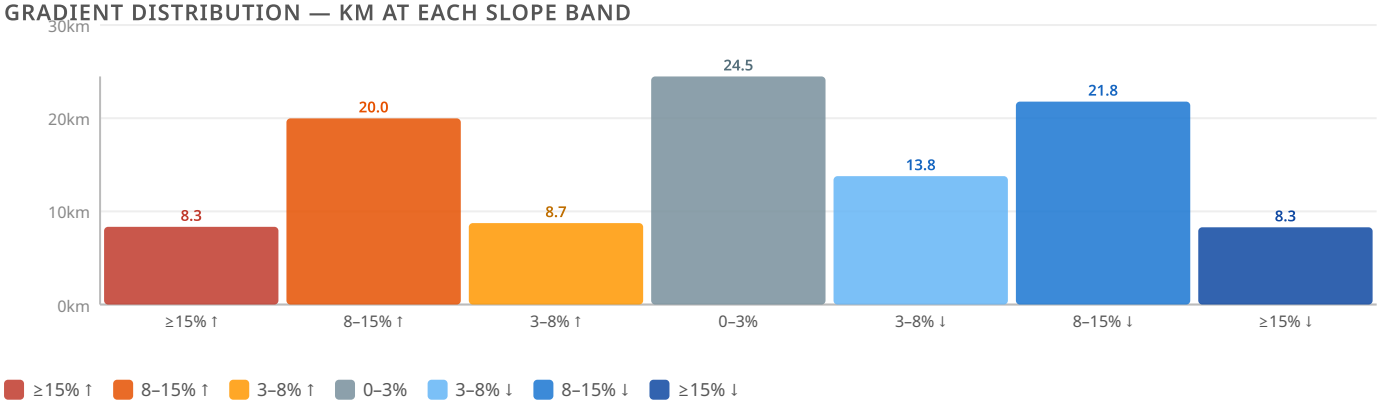


Dashed markers show cumulative ascent at each quarter of distance. Late-loading courses are especially demanding because hard climbs arrive when the athlete is already fatigued. Official course ascent: 6,770 m. Chart uses GPX-smoothed values and may differ slightly.

5 — Pacing & Effort (continued)

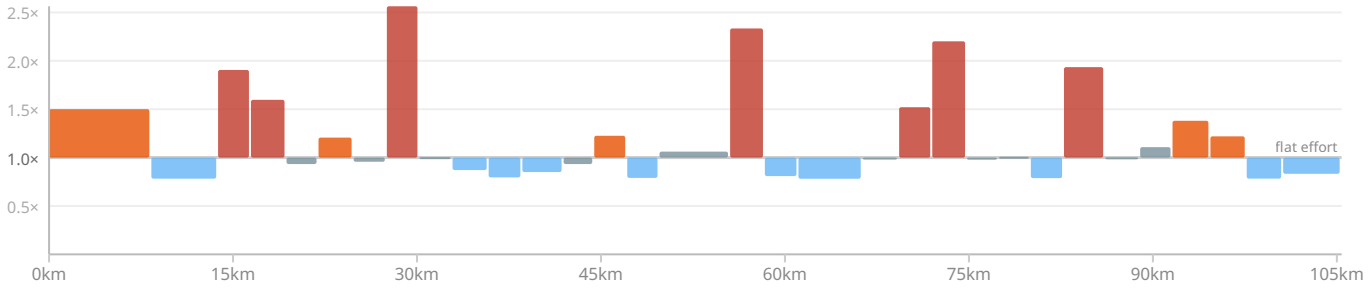
Gradient distribution · Effort multiplier · Pacing complexity · Technical terrain timing

GRADIENT DISTRIBUTION — KM AT EACH SLOPE BAND



23% near-flat (within ±3%), 27% steep uphill (≥8%), 29% steep downhill (≥8%). This course is technically demanding — a large proportion of the course is steep in either direction. A fixed pace target will not work — the athlete must manage effort by feel, shifting between climbing, descending, and recovery throughout.

SECTION-BY-SECTION EFFORT MULTIPLIER — VS FLAT RUNNING



Average effort multiplier: 1.19× — each kilometre costs approximately 1.19× the energy of flat running on average. Each bar shows that section's effort cost.
Downhills are not free — steep descents demand hard eccentric quad loading that accumulates as muscle damage over the second half of the race.

PACING COMPLEXITY & LATE-RACE LOAD

PACING COMPLEXITY	RUNNABLE TERRAIN	AVG EFFORT MULTIPLIER	FINAL-THIRD EFFORT
Moderate	23%	1.19×	1.20×
CV = 0.40	24 km flat sections	per km vs flat	33 km at 1.20×

Moderate pacing complexity — the course has meaningful variation in effort demand but not constant extreme shifts. A broadly consistent effort target is achievable on runnable sections, with disciplined hiking on the steep climbs. Heart-rate zones provide a reasonable guide but expect them to spike on the climbs.

TECHNICAL TERRAIN TIMING

Technical km total	% of course	In final third	In first third
71.7 km	68%	18.9 km	32.9 km

TECHNICAL TERRAIN ASSESSMENT

Most technical terrain is concentrated early. Going too hard on technical ground at the start compounds fatigue over the remainder of the course. Disciplined early pacing on technical sections is key.

The next page compares this course's pacing complexity against the athlete's previous races, using effort variability, gradient transitions, recovery scarcity, late-race complexity, and terrain overlap.

5c — Pacing Complexity Comparison

How difficult this course is to manage compared with your previous races

GOAL RACE COMPLEXITY	PREVIOUS RACE MAX	VS PREVIOUS MAX	MAIN COMPLEXITY DRIVER
66 / 100	38 / 100	+28 pts	Hard sections on non-road or fell terrain
High	Hardmoors 55	New high	Highest sub-score: 100

PACING COMPLEXITY — GOAL RACE VS PREVIOUS RACES

Race	Score	Rating	Complexity bar
Ultra Trail Snowdonia 100km	66	High	
Hardmoors 55 (2023)	38	Moderate	
Hardmoors Saltburn Trail Marathon (2023)	38	Moderate	
Hardmoors 55 (2022)	38	Moderate	
Yorkshire Wolds Ultra (2024)	36	Moderate	
Hardwolds 80 (2025)	34	Moderate	

GOAL RACE — COMPONENT BREAKDOWN

Component	Score	What it means
Effort variability	60	How much the energy cost per kilometre swings across the course. Low: effort is relatively consistent — a steady-state strategy is viable. High: cost changes sharply between sections and a fixed heart-rate or pace target will repeatedly break down.
Steep transitions	24	How often the course switches between materially different gradient bands per 10 km. Low: long sustained sections with time to find a rhythm. High: the course changes character frequently, requiring constant mental and physical gear-changes.
Recovery scarcity	94	How little flat or easy terrain sits between hard efforts — combining the ratio of recovery to hard ground with the length of the longest continuous hard stretch. Low: recovery sections break up the difficulty. High: hard terrain runs back-to-back with little relief in between.
Final-third complexity	39	Whether the course remains demanding and variable in its last third. Low: the finish section is more uniform or easier, allowing the athlete to consolidate. High: late-race sections are just as complex as the rest, when fatigue makes misjudgement most costly.
Non-road hard overlap ★	100	How much of the hard terrain falls on trail, fell, or mountain surfaces rather than road. Low: most of the difficult climbing and descending is on firm, predictable ground. High: steep or hard sections largely coincide with terrain that requires active foot placement and slows movement speed.
Sustained effort burden	100	How long the total pacing challenge must be held, based on the race's flat-equivalent energy cost. Low: a shorter or less demanding race where accumulated fatigue has limited time to compound. High: a long or tough race where every earlier pacing error narrows the margin available later.

★ Highest-scoring component — the dominant source of pacing complexity on this course.

WHAT THIS MEANS FOR PREPARATION

Ultra Trail Snowdonia 100km is the most pacing-complex race in Alex's available history. The difficulty is not just the total distance or ascent — it is the repeated need to change effort. A fixed pace target is unlikely to work. Preparation should include long runs where steep climbs, technical descents, and short recovery sections are practised in sequence.

6 — Aid Station & Logistics

Gap analysis and logistics preparation for Ultra Trail Snowdonia 100km

STATIONS	LONGEST GAP	AVERAGE GAP	DROP BAGS
7	15.3 km	13.2 km	No

COURSE LAYOUT

STATIONS

KM	NAME	GAP FROM PREV	💧	🍊	🩺	🚻	🎒
14.0	Station 1	14.0 km	✓	–	✓	✓	–
29.3	Station 2	15.3 km	✓	✓	✓	✓	–
41.7	Station 3	12.4 km	✓	✓	✓	✓	–
54.0	Station 4	12.3 km	✓	✓	✓	✓	–
67.4	Station 5	13.4 km	✓	✓	✓	✓	–
81.6	Station 6	14.2 km	✓	✓	✓	✓	–
95.8	Station 7	14.2 km	✓	✓	✓	✓	–

Longest gap is 15.3 km — carry a gel or bar leaving the preceding station.

No drop bag support on a 105 km race — confirm kit and nutrition strategy accounts for full self-sufficiency.

7 gaps exceed 10 km — a hydration pack may be worth considering over handheld bottles.

The 15.3 km maximum gap is manageable but requires active attention. Treat each preceding station as a refuelling stop even if you do not feel you need it — the gap ahead may be longer than expected.

7 — Physical Self-Assessments

Tests to identify strength gaps, imbalances, and flexibility limitations that may not be visible in race data.

PRIORITY ASSESSMENTS

Based on uphill, downhill, technical, gravel stability and general asymmetry gaps identified in your experience analysis, the following tests are most relevant.

Split-Squat Control

Imbalance

Gravel stability · Downhill · Uphill

1. Stand in a split stance with one foot forward and one foot behind.
2. Lower slowly until both knees bend comfortably.
3. Push through the front foot to return to standing.
4. Complete 8–12 controlled reps each side.

Record: Record whether one side feels weaker, less stable, painful, or harder to control.

Single-leg sit-to-stand

Strength

Gravel stability · Downhill · Uphill

Long races magnify small asymmetries. If one leg is weaker, the athlete may overload the stronger side, lose efficiency on climbs, or struggle with repeated descents.

1. Sit on a chair or bench with one foot on the floor.
2. Extend the other leg slightly in front of you.
3. Stand up using only the working leg.
4. Sit back down slowly with control.
5. Repeat for as many controlled reps as possible.

Record: Reps each side, depth/control, knee tracking, hip drop, pain, and whether one side feels much harder

Single Leg Balance

Imbalance

Technical · Gravel stability · General asymmetry

Identifies: Ankle stability imbalance

Trail, gravel, fell, and technical terrain all require repeated single-leg landings on uneven ground. If an athlete struggles to stand steadily on one leg, especially with eyes closed or on a soft surface, it may suggest poor ankle/foot control or weak stabilising muscles.

1. Stand on a flat surface
2. Lift one foot slightly off the ground
3. Keep your hips level and your standing knee softly bent.

Knee-to-wall

Flexibility

Technical · Uphill

Identifies: This checks ankle dorsiflexion: how far the knee can travel over the toes while the heel stays down.

Steep climbs and descents both demand ankle range. Limited dorsiflexion can make steep uphill hiking less efficient and can force compensations through the knees, hips, or lower back. On descents, poor ankle mobility can also reduce control and make braking feel harsher.

1. Position yourself in a kneeling lunge position, facing a wall
2. Rock forward until you knee touches the wall
3. The test is to see how far back you can move your body until you can't rock forward anymore and still get your knee to touch the wall.

Record: Distance from wall to toes

7 — Physical Self-Assessments (continued)

Additional tests covering areas not highlighted by your specific gap profile.

FOR A FULLER PICTURE

These tests cover areas not highlighted by your specific gap profile but may reveal underlying physical limitations worth monitoring.

Step-down control test

Imbalance

Identifies: Control quality, knee position, pain, shakiness, and left/right difference.

Downhill running requires eccentric control: the quads lengthen while braking the body. If the knee collapses inward, the hip drops, or the athlete cannot lower smoothly, steep descents may become a major limiter. This is especially relevant where the report identifies steep descending and eccentric quad load as a key race demand.

1. Stand on a step or low box.
2. Place one foot near the edge and let the other foot hover off the step.
3. Slowly bend the standing leg and lower the free heel toward the floor.
4. Lightly touch the heel down, then return to standing.
5. Complete 5–10 controlled reps each side.

Record: Control quality, knee position, pain, shakiness, and left/right difference.

Watch for knee collapse, hip drop, wobbling, pain, or side-to-side difference.

Side Plank Hold

Strength

Uneven trail and fell terrain creates side-to-side forces. Poor lateral control can lead to hip drop, wasted movement, poor foot placement, and instability when tired. It is especially relevant on cambered paths, rough descents, and rocky ground.

1. Lie on your side with your elbow under your shoulder.
2. Stack your feet or place one foot in front of the other for balance.
3. Lift your hips so your body forms a straight line.
4. Hold without letting the hips drop or rotate.
5. Repeat on the other side

Record: Record hold time and any side-to-side difference.

This checks lateral core and hip endurance, especially the obliques and glute medius area.

Single Leg Calf Raise

Strength

Identifies: This checks how well each calf can repeatedly lift bodyweight under control.

The calves contribute heavily to uphill propulsion, downhill control, ankle stiffness, and foot stability. In a long mountain race, weak or asymmetric calf endurance can show up as cramping, reduced climbing efficiency, poor descending control, or unstable foot placement.

1. Stand on one leg
2. Raise your heel as high as you can whilst maintaining balance
3. Repeat until you can't do any more
4. Repeat for the other leg and compare results

Record: Maximum controlled reps on each leg, keeping height consistent. A large left/right difference is more useful than the absolute number.

Loaded Step-Up Tolerance

Strength

1. Find a step or box at roughly knee height (20–30 cm).
2. Stand facing the step and place one foot fully onto it.
3. Drive through the heel of the raised foot to step up, bringing yourself fully upright.
4. Lower back down slowly and with control — do not drop.
5. Add load gradually (weight vest or holding a dumbbell) and repeat until form breaks down or discomfort begins.
6. Test both legs and note any side-to-side difference in strength or control.

Record: Maximum load tolerated with good form on each leg. Note any pain, knee cave, hip drop, or large left/right difference.

Record your results

Log your assessment results in your athlete dashboard to track improvements over time.

tortoiseendurance.com/dashboard

Scan to open

7 — Assessment Results

Use this page to record your results. Where a test measures each side separately, a row is provided for each.

ASSESSMENT	SIDE	RESULT
Split-Squat Control Record whether one side feels weaker, less stable, painful, or harder to control.		
Single-leg sit-to-stand Reps each side, depth/control, knee tracking, hip drop, pain, and whether one side feels much harder	L	
	R	
Single Leg Balance		
Knee-to-wall Distance from wall to toes		
Step-down control test Control quality, knee position, pain, shakiness, and left/right difference.	L	
	R	
Side Plank Hold Record hold time and any side-to-side difference.		
Single Leg Calf Raise Maximum controlled reps on each leg, keeping height consistent. A large left/right difference is more useful than the absolute number.	L	
	R	
Loaded Step-Up Tolerance Maximum load tolerated with good form on each leg. Note any pain, knee cave, hip drop, or large left/right difference.	L	
	R	

8 — Suggested Preparation Priorities

Specific preparation actions derived from gap analysis and course demands

Priority	Action	Category
Priority	**Develop quad strength for climbing** The race requires 6,770 m of ascent; career best in a single race is 2,600 m. Add loaded step-ups, uphill repeats, and weighted split squats.	Strength & Conditioning
Priority	**Eccentric loading for steep descents** The course has 30.1 km of steep descent. Add downhill running repeats, eccentric step-downs, and loaded single-leg heel drops to build resilience.	Strength & Conditioning
Priority	**Ankle stability for uneven terrain** The course includes gravel and technical/rocky terrain with limited experience in your history. Add single-leg balance progressions, resistance band eversion work, and trail-over-road training.	Strength & Conditioning
Priority	**Seek technical trail exposure** The race includes rocky, technical terrain with no direct precedent in your recent race history. Technical trail confidence requires specific exposure; it cannot be developed on road or groomed trail.	Terrain Specificity
Priority	**Build a fuelling strategy** For a 105 km race, active fuelling is non-negotiable. Target 60-90 g carbohydrate per hour above 3-4 hours, practised at race pace in your long sessions.	Race Preparation
Recommended	**Practise efficient power hiking** Only 23% of the course is near-flat — most athletes will hike the majority of the climbing. Practise uphill hiking at race effort, focusing on arm drive and cadence.	Terrain Specificity
Recommended	**Confirm footwear for the terrain** The course includes technical rocky sections and gravel tracks. Ensure your race shoes provide a rock plate and maximum grip. Test your footwear on comparable terrain before race day.	Equipment
Recommended	**Carry nutrition for long unsupported stretches** The longest gap between aid stations is 15.3 km. Take a gel or snack at the preceding station. Practise carrying nutrition at race pace in your long training runs.	Race Preparation

These recommendations are generated from race profile data and athlete history. They are not a complete training plan — priorities are ordered from highest to lowest urgency based on the gap analysis.

9 — Suggested Preparation Races

Races within 500 miles of Alex's race base that best address identified experience gaps for Ultra Trail Snowdonia 100km · base inferred from race history

1. Lakeland 100

25% gap coverage

📍 82.8 mi away ↔ 164.4 km ↑ 6,138 m

Coverage

EXPERIENCE GAPS ADDRESSED:

- **Very Steep Climb** / Trail — **14.0 km** (100% of your 11.0 km gap)
- **Steep Descent** / Trail — **8.0 km** (100% of your 3.0 km gap)
- **Very Steep Descent** / Trail — **11.0 km** (100% of your 2.0 km gap)

Training plans available

We have structured plans for Lakeland 100.
Scan to view start dates and durations.

Scan for plans

2. Lakes in a Day

19% gap coverage

📍 89.4 mi away ↔ 77.0 km ↑ 3,498 m

Coverage

EXPERIENCE GAPS ADDRESSED:

- **Very Steep Climb** / Trail — **7.0 km** (64% of your 11.0 km gap)
- **Steep Descent** / Trail — **3.0 km** (100% of your 3.0 km gap)
- **Very Steep Descent** / Trail — **6.0 km** (100% of your 2.0 km gap)

Training plans available

We have structured plans for Lakes in a Day.
Scan to view start dates and durations.

Scan for plans

3. Lakeland Trails 100k

14% gap coverage

📍 79.4 mi away ↔ 100.9 km ↑ 3,698 m

Coverage

EXPERIENCE GAPS ADDRESSED:

- **Very Steep Climb** / Trail — **4.0 km** (36% of your 11.0 km gap)
- **Steep Descent** / Trail — **5.0 km** (100% of your 3.0 km gap)
- **Very Steep Descent** / Trail — **4.0 km** (100% of your 2.0 km gap)

Training plans available

We have structured plans for Lakeland Trails 100k.
Scan to view start dates and durations.

Scan for plans

Races scored by how much of your identified experience gaps they address, weighted by km needed. Location inferred from centroid of athlete's career race history. Races already completed by this athlete are excluded.

Data limitations: This report is based on publicly available race results and course data. It does not account for training completed outside of race events — an athlete may be significantly better prepared than their race history alone suggests. Injury history is not assessed; a history of injury at this distance, terrain type, or training load may affect the likelihood of completing the goal race in ways this report cannot identify. Use this report as a structured input for planning, not as a definitive assessment of an individual's readiness.

Training Plans Available for Ultra Trail Snowdonia 100km

We offer structured training plans tailored to this race — from 8-week programmes to full 6-month build cycles. Scan the QR code to view available plans and start dates.

tortoiseendurance.com/feeder-races/ultra-trail-snowdonia-100km

Scan to view plans

APPENDIX A

Complete Race History

All 12 races on record for Alex Thornton

YEAR	RACE	DIST (KM)	ASCENT (M)	TIME	OVERALL	CATEGORY	STATUS
2025	Hardwolds 80	128	2,600	21h 44m	28	—	FINISHED
2024	Hardwolds 40	74	1,266	9h 36m	54	—	FINISHED
2024	Lakeland 50	79	3,226	—	—	—	DNF
2024	Yorkshire Wolds Ultra	54	1,419	8h 18m	41	—	FINISHED
2023	Hardmoors 55	85	2,374	13h 55m	87/213	—	FINISHED
2023	Hardmoors Saltburn Trail Marathon	46	1,364	6h 28m	121	—	FINISHED
2022	Hardmoors 55	85	2,374	14h 22m	112/223	—	FINISHED
2022	Hardwolds 40	74	1,266	9h 47m	74	—	FINISHED
2022	Wold Rangers Way Ultra	52	891	7h 44m	22	—	FINISHED
2021	Hardmoors Farndale Marathon	46	0	6h 05m	158	—	FINISHED
2021	Hardwolds 40	74	1,266	10h 15m	89	—	FINISHED
2018	Hardmoors Wainstones Marathon	44	0	5h 42m	178	—	FINISHED