



TRAINING FOR THE SEDONA XTREME HIKE



Hello, Xtreme Hiker! This is it! You've registered. You've started your fundraising. You've got the gear and apparel you need. Now it is TIME TO TRAIN!

Training is critical to ensure you enjoy the Xtreme Hike experience. If a physical fitness training program is new to you, it is recommended you consult with your physician. In addition to getting outside and hiking, we recommend incorporating strength and endurance training into your schedule. We've created this guide to expose you to beneficial exercises and understand the correct form for completing them.

Have questions or concerns? Reach out to your assigned Hike Guide or CFF staff for additional support and resources. Now go out and TRAIN!





ABOUT YOUR PACE

How fast should I hike? Hikers move at different speeds due to physical abilities, physical size, terrain, and weather conditions. For the Xtreme Hike, you should be able to cover 2.3 - 3.0 miles per hour over mixed terrain.

I am a slow hiker, can I still go? Yes, however you will need to maintain an average pace. All hikers are encouraged to hike with a group of similarly paced hikers. Our Hike Guides will be dispersed among the hikers and a sweep team will ensure no hiker is left on the trail.

Weeks until Sedona Hike	Miles / Per Hike	Assent Elevation Change (may not be possible in some regions – increase your mileage!)
12	5-6	500 ft.
11	5-6	500 ft.
10	6-8	500 ft.
9	6-8	700 ft.
8	6-8	900 ft.
7	8-10	1,000 ft.
6	8-10	1,000 ft.
5	10-12	1,000 ft.
4	12-15	1,000 ft.
3	12-15	1,000 ft.
2	6-8	500 ft.
Hike Week	No Training Hike	N/A

Additional Training: Build Strength, Balance & Flexibility (for your 'off the trail' days)

During the Xtreme Hike, you will encounter different terrain. You will hike on sand, pebbles, rocks, and boulders. You will need to build strength, balance, and flexibility to prevent injuries (like a sprained ankle) on these unstable and uneven surfaces. The remainder of this packet focuses on information and exercises to help do this.

Targeting the Gluteus Medius By Courtenay Schurman, MS, CSCS

The Muscle

The gluteus maximus and gluteus medius are two large muscles in the buttocks that contribute greatly to forward and upward propulsion, and to lateral or sideways motion. The gluteus maximus, along with the hamstrings, are recruited in any forward bending movements involving hip extension, resulting in the thigh or top of the pelvis moving backward, such as in step-ups and stiff-legged deadlifts (see www.bodyresults.com/e2hamstrings.asp for descriptions), good mornings, squats, lunges (see www.bodyresults.com/e2freelegs.asp for variations), or traditional deadlifts.

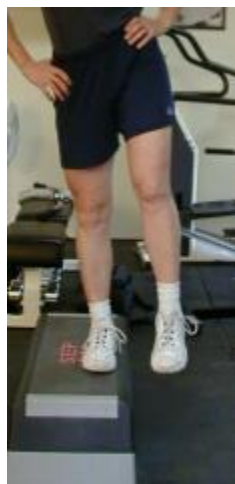
The role of the gluteus medius, on the other hand, is to help steady the pelvis so it does not rotate downwards or sag when the opposing side is lifted or not supported with the other leg. It also assists with lateral movement away from the midline of the body, i.e. moving the thigh outward with hip straight. It lies on the side of the hip directly above the larger, “meatier” gluteus maximus. The gluteus medius can be somewhat neglected in the quadriceps-dominant activities of running, which primarily involves forward movement in a straight line, and in cycling. Sometimes knee pain can be caused by overusing quadriceps muscles when glute muscles are not “carrying their proper burden.”

Who Needs a Strong Gluteus Medius?

If you tend to experience sore or tight hips in early season as you are getting accustomed to the additional weight of carrying your backpack, then you may want to incorporate several of the following targeted exercises for a few weeks leading up to your first backpacking, hiking, or climbing trip to focus on the gluteus medius and balance out the larger hip and thigh muscles.

If you want “rump results” without doing traditional strength training, simply add a backpack to your elliptical, stair, hill climbing, or treadmill workouts and you will add nice shape and definition to the buttocks. The following exercises are just as advantageous for those who venture to the gym to sculpt the posterior as they are for those who need power and stamina going uphill (that’s YOU!). The exercises are arranged in order from easiest (or most targeted) to most challenging (i.e. requiring the most balance, practice, or technical skill to perform properly) and should be added to your program in similar fashion.

Exercises



Hip Hike – Stand sideways on a step, box or bench at least 4” high, with one leg held free of the bench. It helps to do this exercise facing a mirror, with belt-line or waist-line visible. Keep both hips squared forward and shoulders level. Keeping your standing leg (the one on the bench) straight (no knee bending!), raise your free hip directly upward and then drop the leg down so that your beltline alternately tilts up and down. To increase the difficulty of this exercise, add ankle weights to each leg or hold dumbbells in each hand. This exercise is one that many physical therapists use to help correct what is known as “Trendelenburg gait” in which the affected hip goes into hip joint adduction during each weight-bearing phase (step) of a walking gait. The femur (thigh bone) tends to ride upward, causing a pronounced limp or waddle.



Forward Straight Leg Raise – Lie on one side with bottom leg bent (the one closest to the floor) and top leg extended in front of the body at a right angle to the torso. Keep a slight bend in the top knee, with hips stacked, and avoid shifting the body backward as you lift the leg up. Keep the heel higher than the toe in order to maximally recruit the glutes. Add a ski boot or ankle weights when the weight of the leg becomes too easy. Perform the same number of sets and repetitions on both legs. For greater comfort extend the arm along the floor and rest your head on it for support.



1-leg 1-arm Deadlift – One of our favorite exercises for hip and glute strength, as well as stability and balance in the ankles, calves and feet, is this version of an exercise featured at www.bodyresults.com/e2hike30day-p1.asp that more directly targets the glute medius. Stand on your right foot with a dumbbell in your right hand for 3-8 repetitions, then without changing legs, complete the same number of reps with the left hand before switching to the other leg and repeating half the reps with weight in one hand, half with weight in the other. Bend your standing leg into a squat as much or as little as you feel comfortable doing until you can touch the floor

with the dumbbell. For a challenge, stand on a slightly elevated surface such as 1) a 25# plate, 2) two-by-fours, 3) plyo boxes, or 4) (most advanced) a half-foam roller which will really challenge the lateral stability in the abductors and glutes.



Bridges – Lie on your back with R ankle resting on L knee, L foot flat on floor about two feet from your buttocks, and arms on the outside of either hip for balance. Exhale and press down on the L foot to raise hips off the floor. To ensure that hips stay parallel (i.e. one does not drop to the floor as you lift) place your hands on each hip socket and concentrate on keeping the pelvis level. Repeat same number of sets and repetitions to the other side. A variation is to extend the non-working leg into the air for a

mild hamstring stretch at the same time. Additional similar exercises targeting the hamstrings are pictured and discussed at www.bodyresults.com/e2hamstrings.asp. You can also position a bench a few feet from your buttocks and rest both heels on the bench, then unweight one leg and lift hips upward with the other. For maximum bodyweight challenge, try placing both feet on a ball and allow the ball to roll in closer to the body as you bridge the hips upward until your torso forms a straight line from shoulders to knees.

In-line Dowel Lunge -- Find a line along the floor or the edge of tile or carpet and take a long stride forward so both feet are on that line in a lunge. Hold a dowel behind your back at the nape of the neck and the small of the back to help maintain upright posture. With



shoulders remaining over hips, lower the back knee to the ground until you have right angles to both forward and back knee, but avoid dropping the back knee all the way to the floor. Press upward by driving the forward heel into the floor and maintain balance by keeping knees in over the feet. Front knee should not extend beyond the toes (if they do, take front foot farther forward.)

Calves and Mountaineering

By Courtenay Schurman, MS, CSCS -

Strong and Flexible Ankles & Calves

Most mountaineers are aware of the importance of the large muscles in the glutes, quadriceps and hamstrings for propelling you up and carrying you down hills in alpine climbing, scrambling, and hiking, as well as snowshoe and glacier travel. Rock and ice climbers are likely to spend more of their time

training for grip, forearms and back strength. But what do these diverse groups have in common? A need for strong and flexible ankles and calves! Here we take a closer look at training suggestions to help you keep your lower legs, ankles and feet ready for spring and summer adventures.

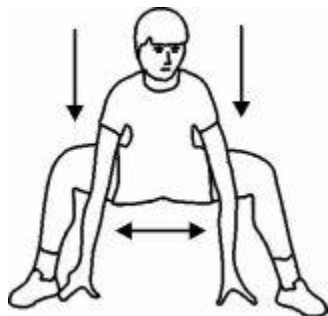
Assessing Flexibility

In order to determine whether you need to pay more attention to your ankles, calves and shins, try the following three “tests.” 1) First, attempt the Frog Stretch below. If you feel really tight in the front of the shins (particularly in the muscle called the anterior tibialis) or you have trouble keeping your heels on the floor, you may benefit from stretching your calves. Try several of the stretches we’ve included in the next section. 2) If, after you stop hiking or climbing, you notice that your calves cramp or become excessively tight, try stretching after your activities and regularly during the week. 3) Assess your own performance--if you have trouble sinking your heels down for friction moves or can’t quite get your feet to move the way you want for foot or toe jams, the answer may be as simple as 5-10 minutes of targeted active stretching.

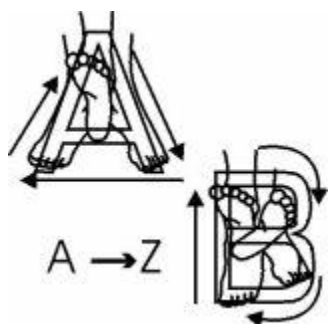
Ankle Stretches:



Standing 1-leg Calf stretch--Hang onto a railing or wall near a block, box or step. Place one foot on the step with the ball of the foot on the edge (as shown in the picture). Drop your heel and contract the glutes until you feel a good stretch in the back of the entire leg. Hold 20 seconds, and then repeat to the other side. If you notice that one calf is much tighter than the other, stretch the tighter side first, and either hold longer on that side or stretch twice.



Frog Stretch--Stand with your feet about 18-24 inches apart (a little wider than shoulder width) and squat down as low as you can while keeping your heels on the floor. Press your elbows against the knees to increase the stretch in your hips and inner thighs. If you have trouble keeping your heels on the floor, you can use a plate or 2x4 under the heels but **ONLY** until you have increased your flexibility to the point where you can keep your heels flat. Keep your torso as upright as possible.



Ankle Circles--One way to increase ankle flexibility in all directions (also useful in post-rehab to regain normal range of motion) is to perform ankle circles or draw the alphabet with your toes. There is no need for excessive movement through the knee; simply move the toes and pivot at the ankles.

Ankle Stability Sand Walk

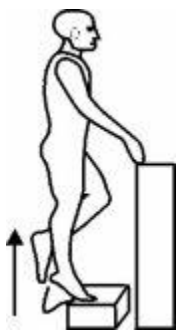
No picture required; this is exactly as it sounds and provides a great training alternative for those who live and train in hot areas. Find a coarse gravel pit or take a walk on a beach where there are plenty of steep sand dunes. Walk up and down the dunes to simulate climbing and down climbing, facing into and out of the dune, and going across, up and down at varying angles. Try it in bare feet (unless for some reason you have been told by a sports medicine professional not to go barefoot). As always, of course, the best way to train for ankle stability and flexibility is to get out there on your climbs and get lots of experience.

Developing Strength

Perhaps you feel you need more strength in the muscles in your feet and calves. How can you be sure? Obviously, if you have had some lower extremity injury (including but not limited to ailments such as plantar fasciitis, an Achilles tendon strain, a sprained ankle, or a broken or fractured bone in the foot), you are most likely already aware of any noted weakness. Elliptical machines provide a suitable training option for non-impact lower extremity rehabilitation--they allow you to continue with your aerobic training, while requiring very little movement through the feet or ankles. Once your injury has healed, the next goal would be to regain the strength in your weaker leg or foot and resume uneven terrain training.

If, on the other hand, you haven't been injured, but you notice that your non-dominant side is significantly weaker than your dominant side, then single-limb strengthening exercises may help. Furthermore, if you are healthy but you spend a lot of time on a fixed foot plate machine such as an elliptical cross-trainer, you will want to supplement such training with uneven terrain work. Try this simple test of balance: stand on one leg and squat down or bend over to touch the floor. If you feel "weak in the ankles," or you topple to one side or the other, try some of the following strength moves.

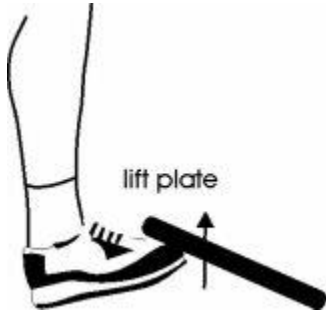
Strength Exercises:



1-leg DB Calf Raise--Position yourself as for the Standing 1-Leg Calf Stretch but hold a substantial dumbbell in the hand of the leg you will be working. Place the other foot behind the ankle and hold on to a railing or wall. Exhale as you lift, inhale as you lower and pause in the lower stretched position for a second or two. Work within the 6-20 reps range, depending on whether you're in a strength cycle (6-10 reps) or endurance/rehab cycle (10-20 reps). Begin with the non-dominant or weaker side first and only complete on the strong side as many as you can successfully complete, with proper form, on the weak side.



Safety Bar 2-leg Calf Raise--Use a safety bar (pictured) with an appropriate amount of weight. If you do not have access to a bar that allows you to keep your arms free to hold on, you can also try loading a substantial amount of weight in your backpack (30 or more pounds) or use a Nautilus-type straight-leg calf raise machine or a Smith rack. Choose whatever option will allow you to have as much range of movement as possible without restriction.



Toe Raises--Use a light-weight plate, resistance band, surgical tubing or manual resistance (such as your own or a friend's hand) for this next exercise to strengthen the muscles in the front of the shins. If you tend to suffer from what some people refer to as "shin splints" when you try to race walk, or if you have suffered from any sort of nerve damage that makes it more difficult to pick up the toes during exercise, then you may benefit from training the anterior tibialis for endurance (i.e. use light weight for many

repetitions). Use a stiff-toed boot if you intend to use anything more than about 5 pounds, so that you don't hurt a toe. If using a band, tie one end to a vertical rod or even a chair leg and pull your toes toward you. To increase resistance, simply move back farther from the attachment surface. Work up to doing this for 2 minutes at a time.

Advanced Balance Exercises **By Courtenay Schurman, MS, CSCS**

No matter how old you are or what you prefer for your favorite physical activity, you can almost always benefit from developing or enhancing your balance. Below we describe advanced variations for three single-limb exercises pictured and discussed elsewhere on the Body Results, Inc. website. We use many of them with our clients who need increased ankle strength and leg endurance, as well as an improved sense of balance directly over the feet. These are great options to include in your lower body strength program several times a week. Place any balance exercises early in your workout program while you are fresh, as they tend to require a lot more concentration and can be quite challenging if you try to do quality balance work when you are already tired.

Please note that there are all sorts of stability devices marketed widely (many of which we use for training variety) such as wobble boards, foam core rollers, SitFit discs, and stability balls. However, to enable the most people possible to perform the selected exercises, we have limited our suggestions to those exercises that require nothing more than your own bodyweight, a few dumbbells (or gallon jugs filled with water), and perhaps a step, sturdy crate, or stair.

The Exercises



1-Leg Hover Step-up--To perform the Hover Step-up, stand sideways (facing the long dimension of the step) on top of a sturdy wide step or box roughly 6-10 inches in height, and dangle your non-working leg off the side of the step. Bend your knee and slowly lower your body until the unweighted foot is just above the floor. Pause for a second before you press back up to a standing position. Keep your weight over your heel, and if you feel any discomfort in the knee, lower the step height to make the movement smaller, press your hips back behind you so the knee does not travel forward of the foot, or try doing the exercise in a mirror to be sure the knee is not wobbling to either side. If it still is uncomfortable, you may want to substitute the Reverse Step-Up instead, pictured and discussed at [knee strength exercise](#).

ADVANCED VARIATIONS: To make this exercise more challenging both for balance and for strength endurance:

- Hold a dumbbell in each hand
- Hover over the floor for anywhere up to 8-10 seconds to really recruit the quads and challenge the small muscles in the ankles and feet
- Increase the height of the step to add range of motion
- To simulate climbing through boulder fields, add a backpack to your back
- Add repetitions or sets
- Hold a dumbbell only in one hand and change hands halfway through the exercise
- Avoid totally straightening the leg so the quads and glutes stay constantly contracted



1-Leg DB Squat--A description of how to perform the 1-legged squat (an advanced version of the static lunge or “dip”) is at www.bodyresults.com/e2alpinetraining.asp. To see if you are ready to include this exercise or its advanced variations, first try to complete a few dips without your rear foot elevated to see how they feel. Avoid jamming your rear kneecap into the ground as you lower to the floor and try to keep your torso erect throughout each repetition.

ADVANCED VARIATIONS: To make this exercise more challenging both for balance and for strength endurance:

- perform 15-20 repetitions each leg
- perform the exercise with weight only in one hand, and switch halfway through the set
- place your forward leg on a low unstable surface such as a pillow or cushion, or a narrow board such as a 2x4. If you happen to have balance devices available to you, explore using half-foam rollers, SitFit discs or Wobble boards
- pause for 1-2 seconds at the bottom and do not rest at all at the top position
- perform half-repetitions: go $\frac{3}{4}$ of the way down and stop at $\frac{1}{4}$ of the way so that you get the middle half of the motion – talk about a quad burner!



1-Leg 2 DB/1 DB Deadlift--This exercise (also described at www.bodyresults.com/e2alpinetraining.asp) enhances balance as well as strengthens the glutes, quads, ankles, and hips. Stand on one leg, with the other foot hovering just above the floor behind you for balance. Hold a dumbbell, dictionary, or gallon jug in each hand, and then bend down as low as you can toward the floor without rounding through the back (as shown) before lifting back up to vertical standing position. Relax the foot instead of gripping with the toes; the wider the surface area of your foot on the floor, the more stable you will feel.

ADVANCED VARIATIONS: For more challenging variations, you can also:

- perform this with a weight in only one hand, and switch the weight to the other hand halfway through the set
- pause at the bottom for 1-2 seconds so the muscles contract longer and harder
- increase the weight (in each hand OR offset – i.e. 5 pounds in one hand and 15 in the other -- so the obliques and core muscles get involved as well
- stand with one foot on a weight plate or board (i.e. 2x4”) anywhere from 1-8 inches thick and try to touch the floor from your elevated perch – this increases the range of motion and challenges the glutes maximally
- perform additional repetitions or sets, or add a rowing motion with each hand as you stand upright
- drive yourself upward quickly as though you were going to hop off the floor

Including the Exercises in a Program

These exercises are appropriate for all ages, although modifications are recommended for anyone who may be recovering from a lower-body injury or who already knows that balance is a weakness. If you are trying these exercises for the first time, start by performing the most basic exercise without any additional weight or variation. Start with the leg you think might be weaker or more difficult to perform, and only complete on your dominant (or stronger) leg the number of repetitions that you can successfully do, with perfect form, on your weaker leg. Keep the non-working leg close to the floor until you trust your balance; then try to increase the range of motion and/or resistance. As your balance improves, begin adding variations to increase the difficulty of the exercise. As always, start by determining what you want your balance exercises to do for you in your sport and choose those that will be the most beneficial. Happy training!

DON'T FORGET ABOUT GOING DOWN!

Q. What can I do to strengthen my knees for hiking, particularly on descents?

A. It's possible that you have a muscle imbalance between the vastus lateralis and vastus medialis obliquus quadriceps muscles, quad-hamstring ratio, or even further up in your hips. There are several things you can do to strengthen all the muscles around your knees. One is what we call a VMO Reverse Step-up pictured below.

Place a sturdy box, bench, or step about 6-10 inches high in front of a mirror and stand behind the bench facing it. Place the foot of your weaker or non-dominant leg on the bench, with the toes slightly turned out about 10 degrees. Now, keeping your hips and shoulders square to the front, and arms on your hips or in front of you for counterbalance, slowly lift yourself up on the elevated leg without pushing or rebounding off the floor. Watch what your knee does in the mirror, especially as you slowly lower back down to the floor. If your knee is very wobbly, if it buckles in toward the midline of your body, or if you pitch to one side without being able to balance, then lower the step height 1-2 inches and try again. You can do this forward step-up as a strengthening exercise for the glutes and hamstrings or go on to the exercise pictured below to target the VMO.



The Reverse Step-Up has direct application to hiking or climbing down stairs, hills, and mountains. Select a step height that works for you without excessive knee wobbling. Start in front of the step, on the floor, facing away from the step, with toes that are up on the step turned out about 5-10 degrees. Slowly step backward and onto the step, lifting up on your toes and allowing heel to return to the step, making sure the leg on the step is doing the lifting without pushing off with the leg on the floor. Then reverse the movement and slowly lower back to the floor. Do this slowly and under control. Repeat for desired number of repetitions. On each repetition, try to mentally force your knee to stay tracking right above your middle toe and slightly pressed outward rather than allowing it to collapse in toward the midline of the body. Perform this exercise 2-3 times a week, 2-3 sets of 10-12 repetitions, taking 2 seconds to lift and 2 seconds to lower.

Make sure you are warmed up first. Very often the second and third sets will feel much more stable as the legs get warmed up and familiar with the exercise. Single limb exercises such as this, step-ups, walking lunges, and single-leg squats will do wonders for your balance and strengthen the smaller muscles in your ankles and the larger muscles around the knees and hips.

Mastering Uneven Terrain **By Courtenay Schurman, MS, CSCS**

Do you find yourself struggling whenever you traverse boulder fields, steep talus, or scree slopes? Are you tired of repeatedly rolling or straining your ankles? Do you need some helpful exercises you can do in the gym to prepare you for the trials of rugged mountainous terrain? Below we introduce three new exercises to add to your arsenal: the balanced 1-leg calf raise, walking lunge, and stagger-stance dumbbell good morning.

The Exercises



Balanced 1-leg Calf Raise--Place a 2x4 on the floor in front of you with a heavy weight plate or dumbbell on the other end to ensure that the board stays in place. Place the ball of your working foot on the edge of the board and drop your heel until it comfortably touches the floor. Try using your own bodyweight as resistance until your balance improves; then add dumbbells in each hand or a loaded pack to your back. Exhale and lift up onto your toes as high as possible, then inhale as you lower. Your goal is to master this exercise without holding onto anything for balance. Initially, you may need to move your arms around to counterbalance or have them out wide as though you are on a tightrope. Begin

with your non-dominant or weaker side first, and only complete on the strong side as many as you can successfully complete on the weak side maintaining proper form. Start with 1-2 sets of 6-8 repetitions, building to 2-3 sets of 12-15.

Walking Lunge--The walking lunges exercise involves linking 6-10 strides together at a time (picture shows the first stride). To perform the exercise, stand with feet parallel and shoulder width apart. Take a moderate stride forward with your right foot, keeping shoulder width distance to prevent toppling over sideways. Keep your torso vertical, shoulders directly over hips, and lower your body until your knee barely grazes the floor. As you stand up again, bring the left leg forward to meet the right but continue past as you smoothly step forward with the left foot, repeat until you have completed the desired distance or number of steps. If you feel discomfort in the forward knee, check to be sure the knee stays behind the shoelaces; if you feel discomfort in the back quad, shorten the range of motion or take slightly smaller steps. Start with bodyweight only, then add a dumbbell in each hand or pack to your back once you master form and need added resistance. You can count strides, continue for a certain amount of time, or go until your quads ache for a break.



Stagger-Stance Dumbbell Good Morning--To perform this variation on a good morning, hold a dumbbell in each hand and place one foot forward of the other about two feet, with 90% of your weight on the front leg. Your back leg will be used primarily for balance, and to prevent cheating you should be up on your toes of the back leg. You should feel a dramatic stretch through the hamstrings and glutes of the forward leg. Inhale as you prepare to hinge forward at the hips, keeping your back flat and pressing your buttocks backward to keep your weight over the heels. Exhale as you raise the torso and weight back up fully to vertical. Emphasis should be on keeping the back flat so the glutes, hamstrings, and smaller stabilizing muscles in the forward leg get worked rather than the lower back. Start with a very light weight in order to master form before increasing the resistance. Be sure that you have no back issues when performing this exercise, and if you have any questions about form, have a qualified trainer go over it with you for proper execution.



Track Your Training: Keep a Record of Your Progress

Here we've provided a log you can use to track your training. Make copies to record your hikes and 'off the trail' training to keep track of your progress. Work hard and have fun!

HIKER TRAINING LOG

Hike Date: _____ Weeks Before Xtreme Hike: _____

Hike Location: _____

Hike Duration: _____ Hike Distance: _____

NOTES: _____

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Training Date: _____ Weeks Before Xtreme Hike: _____

Training Focus: _____

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