



Note, items to be attached to this application are indicated in bold text.

I. Expedition Summary

Expedition name:

Mixed Mammals 2010: Desert rats and hangdogs take on the Bugaboos

Briefly describe the objective of your expedition below:

Our primary objective is to complete multiple long, difficult free climbs in the Bugaboos of the Purcell Range of British Columbia. As our expedition name implies, our team comes from a diverse background of climbing styles and experiences. We jokingly refer to ourselves as desert rats and hangdogs. Indeed, we've spent plenty of time fulfilling these stereotypes: thrashing our fingers on brutal Windgate splitters and dialing beta for the send at the Red River Gorge. That said, we've pushed ourselves in the traditional realm, leading out on committing classics at Turkey Rocks and Eldorado Canyon. We've raced afternoon storms on the Diamond, gasped for air on bigwalls in the Cordillera Blanca, and faced demons in the Black Canyon. Our goal for Mixed Mammals 2010 is to climb challenging routes in a new environment and to take our experience in difficult, front country climbing and further hone our skills on longer, more committing backcountry rock climbs.

Specifically, we hope to climb various classic routes in the central Bugaboo region, complete an ascent of South Howser Tower via the Beckey-Chouinard Route (V 5.10+ or harder with possible variations) or the Catalanian Route (V 5.11), and attempt a first ascent on a major feature in the region (Howser Massif, Bugaboo Spire, Pigeonfeathers, Crossed Fish Spire, or Little Snowpatch).

Location of expedition:

Bugaboo Provincial Park, Purcell Range, British Columbia

Firm expedition dates:

July 14 - August 6, 2010

days in the backcountry:

20

Describe the wilderness character of your expedition:

We will be attempting long (grade III-V) free climbs in an alpine setting. To approach these climbs, we will be travelling across alpine tundra and minor glaciers and snowfields. We will establish our first basecamp at Applebee Campground below the Crescent Glacier. From there we will make day excursions to climb various shorter, less committing routes (see itinerary) to acquaint ourselves with the region, weather patterns, and climbing style. During this time, we also plan to use rest days and poor weather days to scout several features as potential first ascent options. After ten days at Applebee Campground, we will move our basecamp to the East Creek Basin below the Howser Massif where we will spend five days to attempt routes on the South Howser Tower and the Minaret (see itinerary). The final four days of our trip will be dedicated to an attempt of an unclimbed line on South Howser Tower, Bugaboo Spire, Pigeon Feathers, Crossed Fish Spire, or Little Snowpatch. Depending on the location of our proposed line, we may move our basecamp a third time to make our work on this project easier.

During our first ascent attempt, we will first thoroughly scope our possible line from the ground and nearby features. Depending on the accessibility and difficulty of the intended line, we will consider aid and/or rappel inspection during which we will establish belay/rappel stations and assess objective hazards (especially rock quality and available protection). After a thorough assessment, we will attempt a complete free ascent of our line.



II. Participant Qualifications

List expedition members, anticipated date of graduation and Wilderness First Responder or Wilderness Emergency Medical Technician certification expiration in the table below.

Expedition Member	Date of Graduation	WFR expiration date*
Chris Barlow	July 2010	February 2011
Nathan Brand	December 2010	will renew May, 2010
Tim Gibson	May 2010	will renew May 26-30, 2010

* If WFR training is needed, list the intended training provider and course date. Funding is not released until all expedition members show proof of WFR or WEMT.

Are all proposed expedition members experienced and/or trained to meet your expedition objectives? Yes No

NOTE: If any expedition member is deemed unqualified, funding may be denied.

Describe your team's plan to solidify technical skills prior to the start of the expedition. (The RKMF provides education grants for technical training to support CC students in planning and executing responsible wilderness expeditions. Visit www.rittkelloggfund.org for information.)

N. Brand and T. Gibson will be completing a Wilderness First Responder recertification in May of 2010. We provide proof of enrollment as soon as it is available.

As a team, we will spend 2-3 days in the spring of 2010 practicing rock rescue techniques and snow/glacier travel skills in the outdoors in environments as similar as possible (i.e. rock/snow/ice) as that of the Bugaboos.

Attach the Ritt Kellogg Memorial Fund Expedition Application – Individual Questionnaire for each expedition member (includes outdoor-skills résumé, references, copies of WFR certification, copies of relevant training certification, and medical release).

Attach the Participant Acknowledgement and Assumption of Risks & Release and Indemnity Agreement, read and signed by each applicant and their parent (even if applicant >18 years).

Attach the Expedition Agreement, read and signed by all expedition members.



III. Expedition Logistics, Gear, and Food

Describe how expedition members will travel from home to the trailhead and back again.

C. Barlow will fly from Colorado Springs to Jackson, WY on July 13. He and N. Brand will drive from Jackson to the Bugaboo Provincial Park Trailhead (~15 hours), arriving at the TH on the night of July 14. Meanwhile, T. Gibson will drive from Anchorage, AK to the TH over July 13 and 14 and meet C. Barlow and N. Brand on the night of July 14. On Aug. 4, we will all descend to the TH and begin driving to Jackson, WY. C. Barlow will fly back to Colorado Springs on Aug. 6.

Attach a detailed, day-by-day itinerary, including maps, elevations, route topos, tide charts, etc., as appropriate.

Do you have plans to re-ration during the expedition? Yes No
If "yes", describe the re-rationing plan below.

Before moving basecamp from Applebee Campground to the East Creek Basin, we will return to the trailhead (~3 miles) for a re-ration of food stored in vehicle.

Describe how you will prevent wildlife from getting into your food.

The Applebee Campground has permanent food-hang structures. While there, we will use dry-bags to hang food in these structures. When at the East Creek Basic site, we will free hang food from boulders with accessory cord.

Attach a detailed food list and show how it meets the caloric needs of the expedition.

Attach a thorough equipment list, including the detailed description of the contents of the First Aid kit.



Ritt Kellogg Memorial Fund Expedition Application - Group Application

Are all expedition members familiar with Leave No Trace principles? Yes No
Describe how you will adapt LNT principles to meet the environment of your expedition.

All expedition members will follow all seven LNT principles throughout all aspects of our trip. The two portions of our trip present significantly different considerations for minimizing impact. The Applebee Campground area is quite popular and has infrastructure (i.e. food hangs and pit toilets) to accommodate a larger number of visitors. Here, we will utilize the pit toilet and food hangs. We will camp in the established campsites available to concentrate our impact on the bombproof rock tentsites. The East Creek Basin is more remote and much less popular. Here, we will continue to camp on rock or another durable surface. We will bury human waste more than 200 feet away from water and at least 6 inches deep in soil. We will pack out all other waste. We will carry five Wag Bags in which we can deposit human waste when a pit toilet or adequate soil are not available. Our travel in both sectors will be almost entire on trails, glaciers, and rock. We will establish our kitchens away (~30 yards) from our tent to further diffuse our impact and reduce the likelihood of attracting wildlife to our sleeping area.

While climbing (and descending from our climbs), we will use removable, clean protection on established routes to minimize the need to fix protection. Adequate planning, time management, and reconaissance will contribute to our ability to climb and descend efficiently and on-route so that we can follow established lines and utilized in-place belay/rappel anchors. We plan to employ alpine-style tactics to move quickly through dangerous and environmentally sensitive terrain, another impact-minimizing strategy. During our first-ascent attempt, we will carry a hammer, pitons, and a hand drill. Our intention is to follow clean, natural lines and employ good routefinding and creativity to minimize the need to leave permanent anchors; however, we will consider fixing protection, especially for descent anchors, should conservative judgment dictate the need.

Are there cultural considerations for the expedition area? Yes No
If "yes", describe how you will address those concerns.



IV. Risk Management Plan

List the anticipated hazards of your expedition and explain how they will be evaluated, avoided and managed. **NOTE:** Failure to identify major hazards and how they will be managed may result in denial of funding. (Attach more pages if necessary.)

Please see attached "Risk Management Plan."



Ritt Kellogg Memorial Fund Expedition Application - Group Application

Describe your plans if you need to self - evacuate in the event of an emergency.

In general, our evacuation plan will be to travel from the site of an incident down to basecamp, through Applebee Campground and the Conrad Kain Hut, to the trailhead. While actually climbing, our best retreat will most often be a rappel descent of our route or an adjacent one; however, we may also be able to join a different route or simply be forced to continue up and over (high on the Beckey-Chouinard, for example) our climb. Before ascending any climb, we will thoroughly assess the various retreat options and climb alternatives and make our retreat plan accordingly.

We will follow standard WMI protocol for patient assessment, treatment, and evacuation. Depending on the severity of the injury and situation, our response could be as minimal as a descent to basecamp for a few days' rest or could require us to stabilize the patient at the site of the incident and initiate a search-and-rescue operation to bring the patient to definitive medical care. If the patient is able to move and requires evacuation, we will take the most logistically simple route from the site of the accident toward the trailhead. For a route such as the Beckey-Chouinard and others in the East Creek Basin, we may not return to our basecamp first, but simply descend to Applebee Campground, the Conrad Kain Hut, or the car. We will utilize standard rock rescue techniques for assisting the injured person to the base of the climb and then proceed with an evacuation to the main Bugaboo trailhead and the closest hospital (in Golden, BC). If it is necessary, we will contact the hospital ahead of time and arrange an ambulance to meet us at the trailhead.

For particularly committing objectives, we will consider carrying our satellite phone with us on our ascent to enable us to initiate a rescue while on our route. We are hesitant to say that we will carry it on all climbs because a) it is a significant addition in weight and b) it could potentially create an inaccurate sense of the real accessibility of rescue resources.

Describe any measures taken for expedition members with medical histories that warrant special preparedness.

Nathan Brand experienced an allergic reaction to bee stings 8 years ago. He has since been stung and had no abnormal reaction. We will bring two doses of epinephrine, 50 mg of benadryl, which he will carry it at all times, disclosing its location to his climbing partners prior to every outing.

List emergency resources available in the vicinity of your expedition (phone #s for ranger station, hospital, etc).

Royal Canadian Mountain Police recommend simply calling 911 for emergency services. The nearest hospital to Bugaboo Provincial Park is in Golden, British Columbia. Golden also offers a search and rescue operation as does the town of Columbia.

Golden & District General Hospital
835 9th St.
Golden, BC V0A 1H2
(250) 344-5271

Golden Search and Rescue: (250) 344-2221
Columbia Search and Rescue: (250) 342-9292

List emergency communication devices you will be carrying. If none, explain why.

3 Cellular Telephones
1 Iridium Satellite Telephone



V. Budget

Attach a detailed expedition budget and write totals in USD below. (Do not round numbers up. Emergency money, supplies for first aid kits, and gear purchases are not funded. First aid kits may not be rented.)

Transportation: \$892.94
Food and Fuel: Fuel: \$49.39; Food: \$859.89
Maps/Books: None.
Communication Rental: \$79.80
Permits/Fees: Camping: \$150
Gear Rentals: None.
Total Funding Requested (not to exceed \$1500 per applicant): \$2032.02

Describe what measures you have taken to minimize expenses.

We have saved money by using the NOLS ration system, which is based on simple, bulk items that are significantly less expensive than the highly processed "backcountry" cuisine products. We are mostly traveling in car to the Bugaboos, reducing our travel budget. Because we are completing an expedition based on rock climbing objectives, we already own the major equipment that would be costly to rent.

Mixed Mammals 2010

Expedition Members:

Chris Barlow, Nathan Brand, Tim Gibson

Expedition Itinerary

July 13-4: T. Gibson drives from Alaska to Bugaboo Provincial Park Trailhead.

C. Barlow flies from Colorado Springs to Jackson, WY. C. Barlow and N. Brand drive from Jackson, WY to trailhead to meet T. Gibson.

July 15: Hike to Applebee Campground; establish basecamp.

July 15- 24: Basecamp #1, Central Bugaboos Region (Applebee Campground)

Objectives (in the most likely order we will attempt them):

- McTech Arete (III 5.10a), Paddle Flake (III 5.10b), Energy Crisis (III 5.11) – Crescent Spire
- Sunshine Crack (IV 5.11-) – Snowpatch Spire (3063m)
- East Face (V 5.10a) – Pigeon Spire (3124m)
- North Tower Direct (IV 5.11+) – Snowpatch Spire (3063m)
- Cooper-Gran Route (V 5.11) – Bugaboo Spire (3176m)
- Cleopatra's Alley (V 5.12a) – Pigeon Spire (3124m)

July 25: Move basecamp to East Creek Basin via Bugaboo-Snowpatch Col or Bugaboo Glacier routes.

July 25-Aug. 4: Basecamp # 2, East Creek Basin

Objectives:

South Howser Tower (3398m)

- Beckey-Chouinard (V 5.10+) with possible variations: Lost in the Talus (5.11-) or Lost in the Towers (5.11)
- Catalonian Route (V 5.11)

The Minaret (a sub-feature of South Howser Tower)

- Bad Hair Day (V 5.12-)
- Cameron's Pillar (V 5.11d)

First ascent attempt

Possible Objectives:

- Central or South Howser Tower
- West Face of Crossed Fish Spire
- West Face of Little Snowpatch
- East Face of Bugaboo Spire
- West Face of Pigeon Feathers

August 4: Descend to trailhead; all begin drive to Jackson, WY.

August 6: C. Barlow flies to Colorado Springs.

Equipment List

Climbing Equipment

Ropes: 2 x 9.4mm 60m dynamic

Protection:

- 2-3 sets of camming devices (microcams - #5 Camalot)

- 2 sets of stoppers, including RPs

- 1-2 small Ballnuts/Sliders

- 6-8 quickdraws

- 6-8 slings w/ carabiners

- 2 double-length slings

- 2 nut tools

Bolt kit: hand drill, 3 drill bits, blow tube, wrench, 5 knifeblade pitons, 8 2.5" x 3/8" stainless steel wedge anchors and hangers, wall hammer

Anchor/bail gear: assorted nuts and hexes for fixed anchors, 30 ft 7mm cord, 4 screwlinks/rappel rings, pocket knife

Personal equipment: 1 per expedition member

- Includes: harness, helmet, belay/rappel device, climbing shoes, cordelette w/ locking carabiner, third hand/prusik cord, mountain ax, crampons, crampon-compatible footwear, extra locking carabiners

Camping/Cooking Equipment

1 4-man expedition tent, Cooking tarp

Whisperlite stove, 5.5 liters of white gas (1/4 liter per day x 22 days), MSR Repair Kit

Jetboil stove, 11 fuel canisters (1/2 canister/day x 22 days), Jetboil heating mug (1 liter)

3 dry bags for food storage

40 ft. accessory cord for food hangs

5 Wagbags

Water purification: iodine

1 4-quart pot, non-stick frying pan (Fry-bake or similar)

2 dromedary bags

Spotting scope/binoculars

Satellite phone

Lightweight shovel

Personal Equipment

Clothing: water/wind-proof top and bottom layer, insulating layers (down/fleece), base layers, liner gloves and heavy gloves, hat, heavy socks (3 pairs), hiking boots, camp shoes

Headlamp with extra batteries

2 lighters

Sleeping bag and pad

3 liters water storage (combination of Camelbak-style hydration system and water bottles)

Bowl w/ lid, spoon

Small daypack/mini-haulbag

Large backpack

First Aid Kit Contents List

Antibiotics

1 Z pack Zithromax: broad spectrum antibiotic (two pills first day one pill after that, 5 day course
– for skin and wound infection or strep)*
10 pills (250 mg) Cipro (twice a day until diarrhea stops and 5-6 for respiratory or urinary tract
infection)*
Topical antibiotic: Batctoban*

Pain Management

100 pills of 200 mg ibuprofen
100 pills regular strength acetaminophen (325 mg tabs)
20 codeine (30mg tabs) *

Allergy Medication

20 pills Allegra one pill a day
4 Epi-pens *
Cortizone cream
1 Albuteral inhaler*
20 pills Benadryl (25mg tabs)

Hard Goods†

Emergency water purification iodine tabs
20 Band-aids
2 sheets moleskin
1 sheet Duaderm (second skin for burns)
Irrigation syringe
Athletic tape
6 4x4 inch sterile gauze
Non-latex gloves
Pencil and paper
EMT shears
Suture kit
4 Safety pins, tweezers
Thermometer
Emergency Blanket

* We will be completing our expedition under the guidance of a licensed medical physician who will prescribe these medications with explicit and strict protocols for usage.

† For climbing days, both teams will carry a pared-down first aid kit (see Risk Management in Group Application).

Food List

We decided to use the NOLS ration system, equation, and food list for its versatility, simplicity, and cost effectiveness. With the NOLS equation (1.75 lbs. of food per person per day), we should take approximately **116 lbs. of food total**. This amount covers the quantity of staples for our time in the backcountry. Because our expedition has some unique considerations (i.e. basecamp set-up coupled with long, light-and-fast alpine ascents), we have added certain items to that base weight to give us more versatility and variety for our diet while in the mountains. Below is detailed spreadsheet of food items, quantity, and pricing.

WEIGHT TOTAL				116	GRAND TOTAL				859.89
Breakfast	Weight	Price	Total						
Granola	4	4.29	17.16	Sausage	3	5.9	17.7		
Cereal	4	7.22	28.88	Bagels	5	3.92	19.6		
Oatmeal	3	1.64	4.92	Cheese	4	14.23	56.92		
Pancake mix	2	3.88	7.76	Craisins	2	4.38	8.76		
Powdered milk	2	7.04	14.08	Dried fruit mix	2	13	26		
Hashbrowns	4	4.4	17.60						
Total	35		219.38						
Snacks	Weight	Price	Total		Weight	Price	Total		
Peanut butter	1	14.92	14.92	Jerky	2	10.44	20.88		
Trail mix I	2	7	14.00	Dried mango	1	12.74	12.74		
Yogurt Pretzls	2	4.57	9.14	Cashews	2	10.34	20.68		
PB-filled Pretzls	2	4.67	9.34	Chocolate chips	1	4.92	4.92		
Peanuts	2	3.62	7.24	Wasabi Pea	1	4.94	4.94		
Sausage	2	5.9	11.80	M&Ms	3	6.83	20.49		
Cheese	3	14.23	42.69	Animal Crackers	2	5.61	11.22		
Ramen	2	2	4.00	Crackers	2	4.31	8.62		
Non-rationed	#	Price	Total						
Clif Bars	50	1.5	75.00	Chocolate bars	6	2.66	15.96		
Total	30		308.58						
Dinner	Weight	Price	Total						
Pasta	4	1.86	7.44	Tempeh	3	7.93	23.79		
Dried beans	3	5.89	17.67	Quinoa	4	3.74	14.96		
Tortillas	4	2.79	11.16	Falafel mix	2	4.71	9.42		
Rice	3	2.28	6.84	Hummus mix	2	6.41	12.82		
Cheese	5	14.23	71.15	Subdried tomatoes	0.5	12.25	6.125		
Potato Pearls	4	4.16	16.64	Polenta	2	1.06	2.12		
Soup mix	1.5	8.06	12.09	Flour	2	1.03	2.06		
Non-rationed	#	Price	Total						
Tuna	3	3.84	11.52	Cake Mix	1	3.85	3.85		
Fresh vegetables	3	4	12.00	Sausage	3	5.9	17.70		
Brownie Mix	1	3.36	3.36						
Total	40		262.72						
Miscellaneous	Weight	Price	Total	Non-rationed	Weight	Price	Total		
Oil	1.5	3	4.50	Spices	n/a				
Brown sugar	1.5	1.4	2.10	Tomato Paste	0.5	6.44	3.22		
Dried vegetables	1	9.89	9.89	Soy sauce	0.25	1.6	0.4		
Hot chocolate mix	2	2.37	4.74	Balsamic vinegar	0.25	1.12	0.28		
Electrolite drink mix	2	4	8.00	Vanilla	0.25	4.8	1.2		
Protein powder	2	5	10.00	Baking powder	0.25	2.97	0.7425		
Coffee	1	10	10.00	Biodegradable soap	1	6.51	6.51		
				Yeast	0.25	3.88	0.97		
				Brewer's yeast	0.5	3.88	1.94		
				Powdered eggs	0.5	9.15	4.575		
Total	11		49.23		3.75		19.99		

Expedition Budget

Transportation

Gas:

Anchorage, AK to Trailhead – \$365.76 (calculated by gasbuddy.com and adjusted by 25% for summer price increase)

Jackson, WY to Trailhead - \$128.18 (calculated by gasbuddy.com with adjustment)

Flights: Colorado Springs to Jackson, WY - \$349 + \$50 checked baggage fee = \$399

Total Travel Cost: **\$892.94**

Food and Fuel

Fuel:

White gas – \$3.64 per liter x 5.5 liters = \$18.2020.02

Jetboil fuel - \$2.67 per canister x 11 canisters = \$29.37

Total Fuel Cost - **\$49.39**

Total Food Cost: **\$859.89** (See "Food List" for detailed budget)

Maps/Books

We already own *Bugaboo Rock* and *The Bugaboos*, the two comprehensive climbing guidebooks. These books contain detailed topos of our intended routes and overview maps of the Bugaboo area.

Communication Rental

Iridium Satellite Phone: \$19.95/week x 4 weeks = **\$79.80**

Permits/Fees

Camping: \$5/person x 3 people x 10 nights (in Applebee; East Creek Basin is free) = **\$150**

Gear Rentals

None.

Total Funding Request: \$2032.02

Risk Management Plan

List the anticipated hazards of your expedition and explain how they will be evaluated, avoided and managed.

Technical Climbing

Rock climbing is inherently dangerous, and engaging in this sport in remote alpine settings increases the seriousness of all risks involved. Therefore, we have taken the time and care to consider potential hazards to most effectively evaluate, avoid, and prepare for these dangers. Thorough consideration of hazards beforehand will allow for a more conscientious expedition with the ability to make better decisions in less time. Each expedition member has undergone the training and experience to responsibly climb big routes in the Bugaboos, and we have extensively considered and discussed potential hazards and accidents. Our first and foremost method of mitigating risk will be prevention by considering the risks ahead of time and using conservative judgment. If, however, an accident does occur we have formulated plans for evacuation. We will thoroughly plan each climb including retreat/alternatives and turn-around times. This being said, our over-arching management strategy is moving efficiently, monitoring weather signs, carrying proper equipment to protect ourselves well and to be self-sufficient, and generally having a more conservative decision-making strategy than we would in front-country rock climbing.

Steep terrain

Any time a fall would have consequences, be it on steep ice or rock, we will rope up. Short-ropeing or short-pitching may be used to move quickly through 4th or easy 5th class terrain. Anything harder will be pitched out and led with traditional gear. We will employ ice axes, crampons, and snow bollards when traveling on steep snow and ice.

Lead falls

Our group is well acquainted with lead falls on traditional gear. We have pushed ourselves on traditional climbs and learned how to do so safely. This being said, it is important for us to consider that the consequences of any injury in the Bugaboos would be much more serious than if it were to occur in a front country location. We will try to over-protect when climbing and make sure to protect traverses for the follower. Therefore, we plan to only climb routes with reasonable rock quality and consistently good protection. Our aim is also to avoid any situations where large lead falls are possible. We will always wear helmets, whether leading or following.

Rock fall

Rock fall in big alpine settings like the Bugaboos is a very real threat. The best way to manage this hazard is simply to avoid areas with high risk for rock fall. Furthermore, we will wear helmets while climbing. If it is necessary for us to be in areas with increased risk of rock fall, we will move quickly and take the most protected route possible. The Bugaboo-Snowpatch Col presents a significant rock fall hazard, so we will move efficiently over this pass and only approach when things are most frozen and solid (i.e. early morning). We will not climb under other parties.

Rappelling/descending

Rappelling and descending technical routes presents many hazards. The normal risks associated with rappelling are compounded in areas like the Bugaboos by factors such as darkness, fatigue and hurriedness. To better manage these risks (the most significant of which is rappelling off the end of the rope), we will employ backup methods (i.e. auto-block, kleimheist, or fireman's belay), tie knots in both ends of the rope, and use the BARK (Buckle, Anchor, Rappel device, Knots) double-check system. If there are strong winds or many obstacles for ropes to snag on, we will rappel with coiled ropes. We will

follow standard practices to avoid stuck ropes, which can lead to rock fall and prevent a timely descent. When a descent involves many obstacles we will make many, short rappels. We will always carry two ropes for full-length rappels, which will help us get off the wall efficiently in case of emergency.

Route-finding

Getting off-route poses a number of threats. To best avoid getting off route, we will research each route extensively with the use of maps (see gear list), guidebooks, online resources, and from direct accounts of others who have done the route. During all approaches and while hiking to new camps, we will carry appropriate maps to aid in navigation. Additionally, we will carry copies of route topos to aid in route finding decisions on the wall and during descents. Before each climb we will determine the best escape route for emergencies at different points on the route. Depending on the situation, this could involve rappelling the route, rappelling new terrain, topping out and hiking down or any combination of these.

Equipment (use/ loss/ malfunction)

We will rely heavily on technical equipment each time we go climbing. This means that proper use and attention to the condition of our equipment is integral to our safety. We have all become accustomed to checking one another's knots, harnesses and gear before starting any route or descent and will continue this in the Bugaboos. We will check all fixed points of protection for their solidity because the extreme freeze-thaw cycles can loosen placements.

The following is a list of equipment to bring on every multipitch climb:

Group gear: lighter, food, water, 2 epi pens, 4 tylenol, 4 Ibuprofen, 1 Codien, 5 Band-aids, 1 4X4 sterile gauze, two pairs of nitrile gloves, 1 roll of tape, 1 small knife, route topo, extra anchor equipment (to reinforce fixed anchors), emergency blanket
Personal gear: hat, insulating layer, waterproof layer, crampons and shoes, mountain axe, head lamp, standard climbing equipment

Glaciers

Our expedition is planned for mid-July to early August, which is mid-season in the Bugaboos. This means that there will be plenty of snow filling crevasses, seracs and burschrunds, but also means that these hazards may be hidden. Therefore, we must take the utmost care when traveling on glaciers, traveling as rope teams with rescue equipment readily available. Furthermore, the goal of our expedition is to free climb the Bugaboos' immaculate granite, not to push ourselves on technical ice or snow terrain. We will avoid technical, unstable glaciers and snow/ice whenever possible: however, many approaches do involve some glacial travel, so we have considered the hazards involved. Mainly, we will mostly stay on well-traveled routes, stay as far away from hazards as possible, hike on rocks when feasible, and when on hazardous glacial terrain, move as a rope team with crampons and ice axes.

Crevasses

We will mostly avoid crevasses-crossings while traveling on glaciers in the Bugaboos. We will dedicate a day in the spring to practice crevasse rescue and then review this practice while in the field. Traveling over the Bugaboo-Snowpatch Col involves mitigating crevasses and will require special attention. In general, we will rope up whenever we have concerns with crevasses.

Seracs

We will always opt for rappelling or climbing up rock faces rather than traveling near serac terrain. The most serious seracs near our expedition are on the eastern edge of the Vowell Glacier below the West face of Bugaboo Spire. We, like most climbers, will avoid this aspect of the Spire.

Bergschrunds

If we encounter Bergschrunds either at the beginning or end of routes, our first strategy will be to avoid them. If this is unfeasible, we will use snow bollards or other anchors to rappel down them and get onto the rock or glacier.

Avalanches

Sluff avalanches have killed climbers on the Bugaboo-Snowpatch Col and pose a threat in a number of other areas in the Bugaboos. Although each expedition member has much familiarity with backcountry snow travel, we recognize that snow conditions and weather patterns will be different from what we are used to. We will avoid traveling on avalanche prone terrain and in the path of such terrain. We will make sure to approach steep snow terrain only when it is frozen.

Weather

Storms

We will only climb during stable weather, based on the best information available to us. While on routes, we will be aware of weather signs to anticipate coming storms and retreat from routes when necessary. We will always carry extra warm and waterproof layers and extra food and water in case we become stranded due to weather. Again, we will be conservative in our decision to continue or retreat with signs of inclement weather.

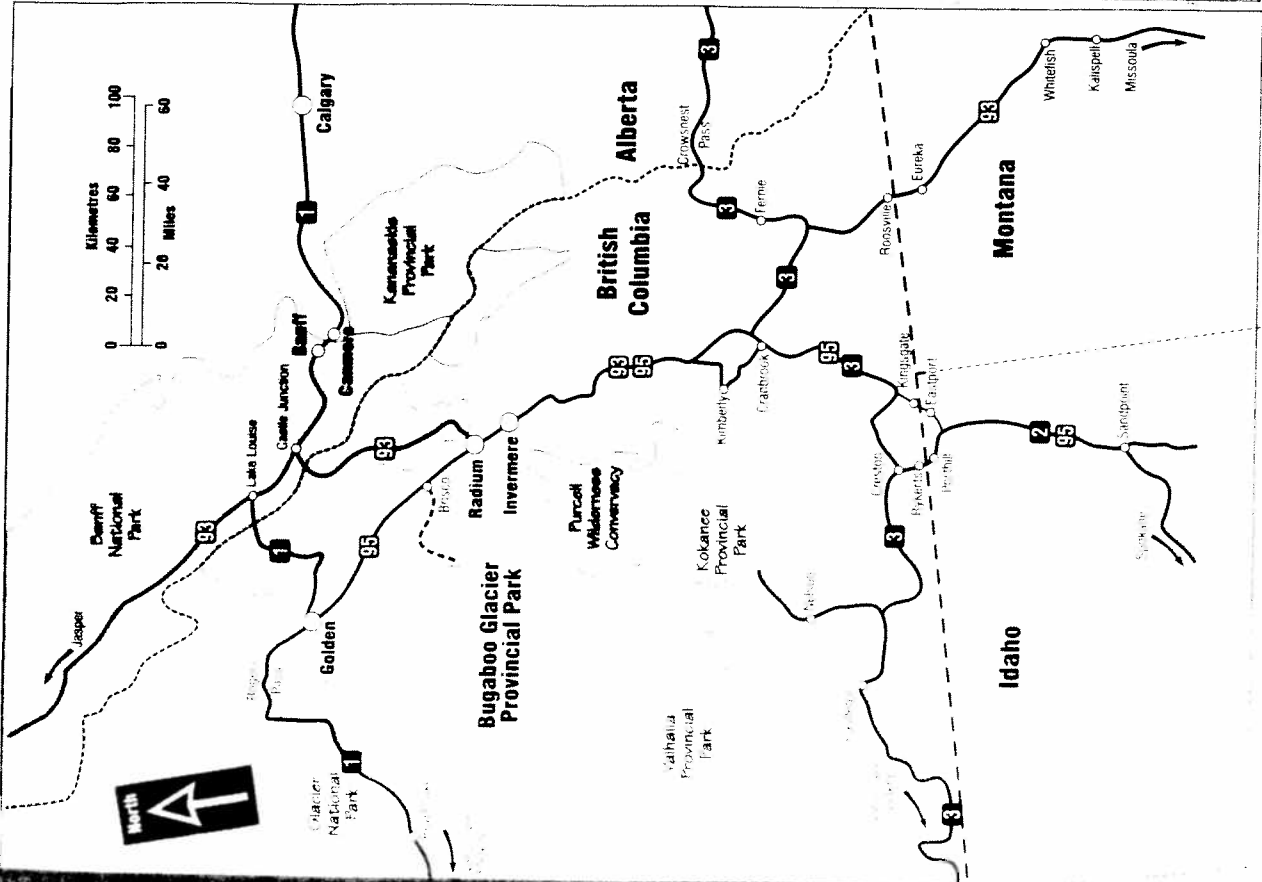
Lightning

The prominent towers and spires of the bugaboos present a significant lightning threat. Our first strategy will be simply to not climb when we are aware of approaching weather fronts that may involve electrical storms. Secondly, we will retreat if faced with approaching storms. If we cannot retreat before a thunderstorm approaches, we will try to avoid exposed summits, alcoves, and crack systems and we will rid ourselves of metal gear and use packs and ropes for insulation.

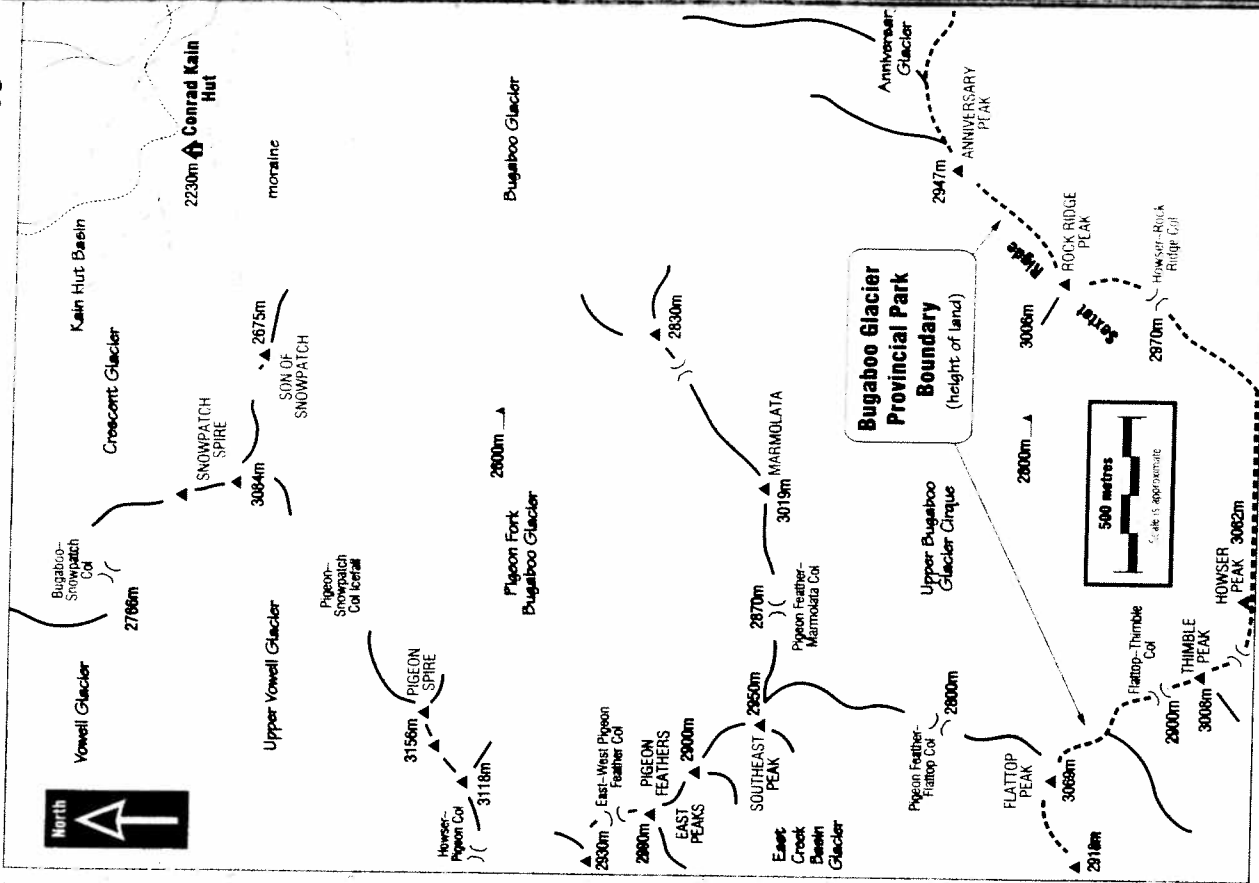
Sun exposure

High altitude and snow travel increase the effect of sun exposure. We will cover ourselves with clothes, wear sunglasses, and bring (and apply) lots of sunscreen and zinc oxide.

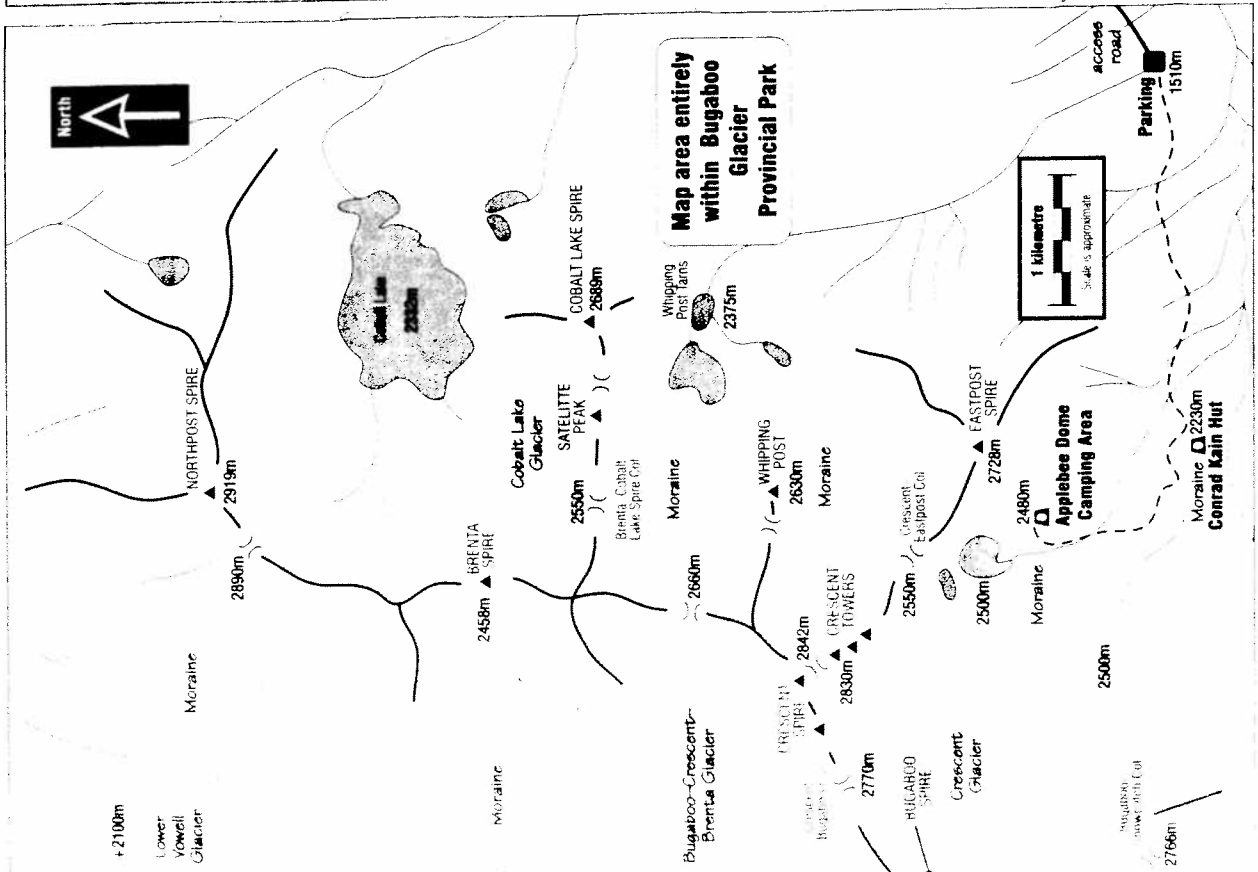
18 MAP — SOUTHEAST BRITISH COLUMBIA



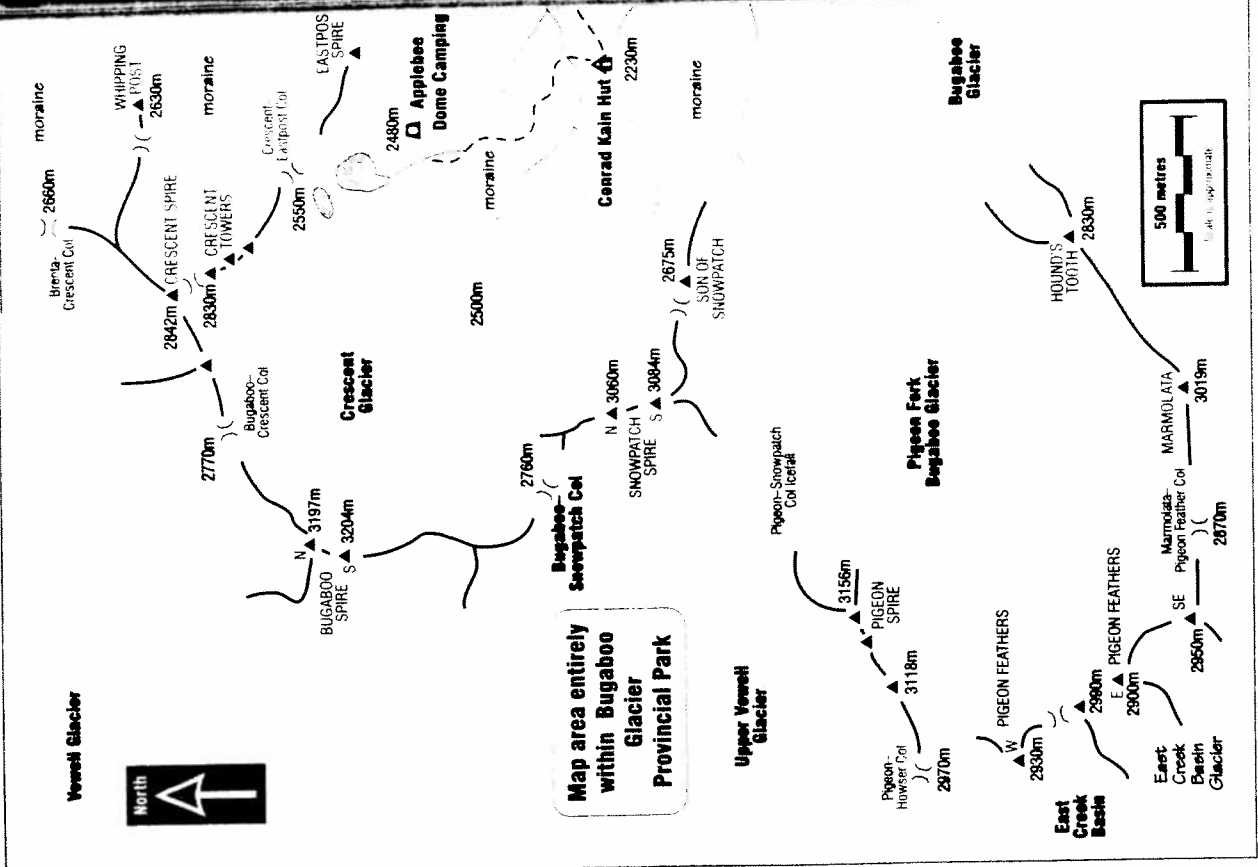
MAP — BUGABOO GLACIER PEAKS 19

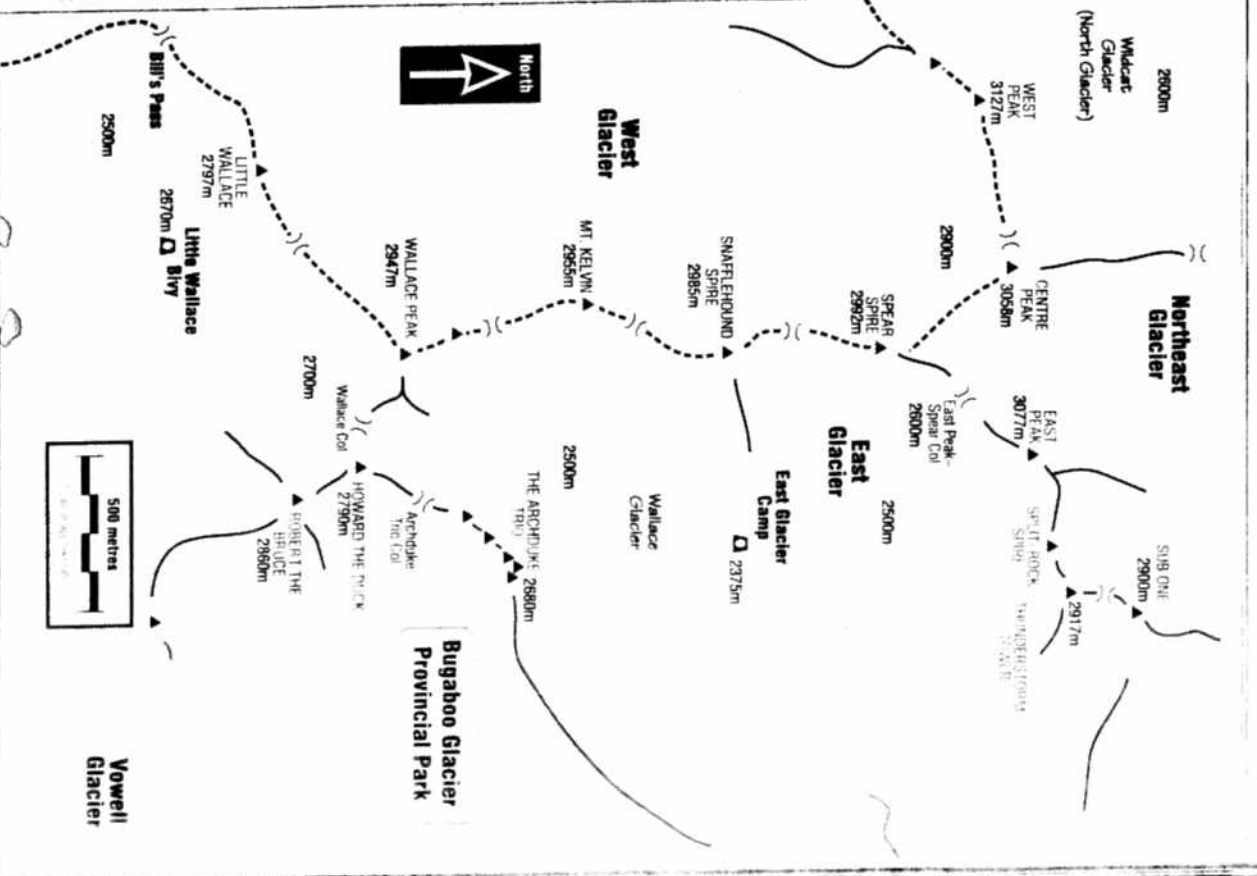
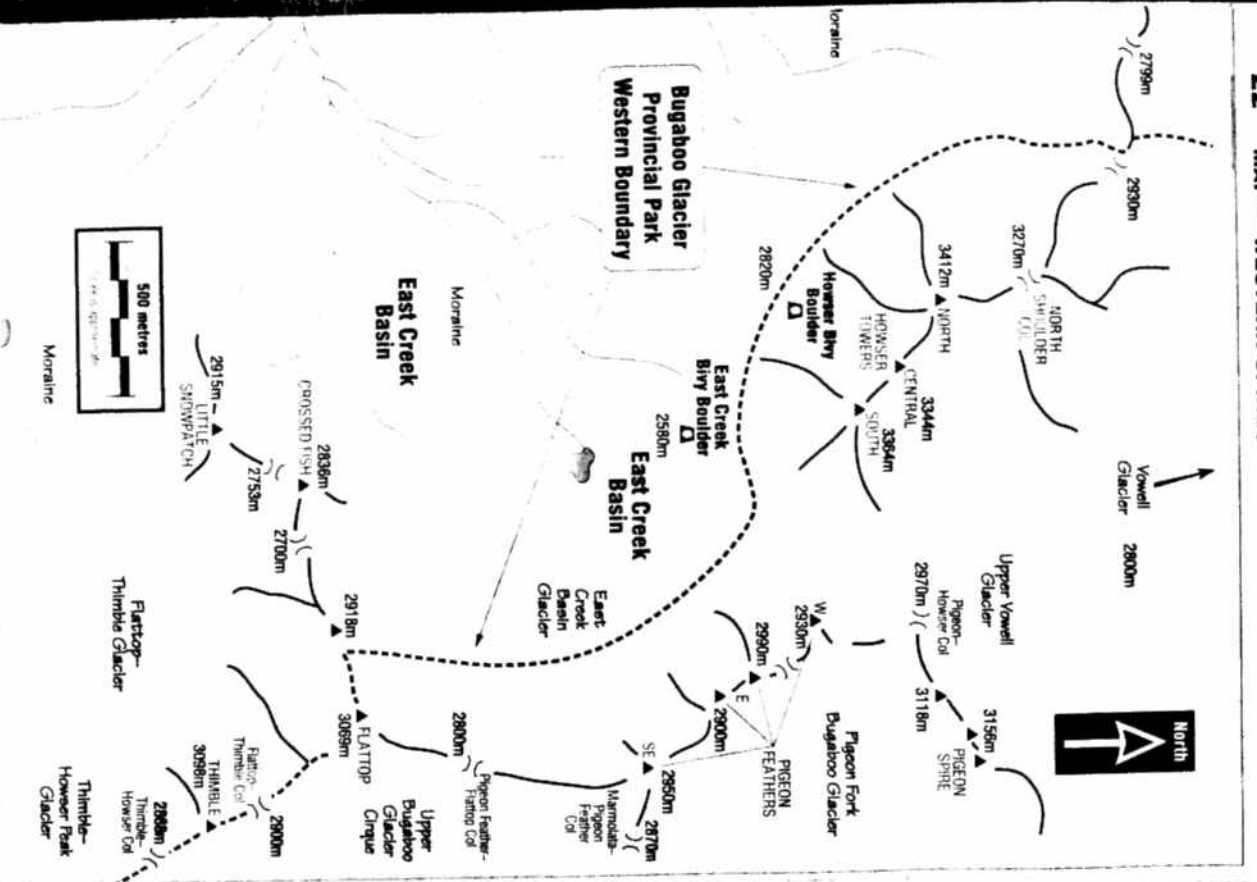


20 MAP — EASTERN SPIRES

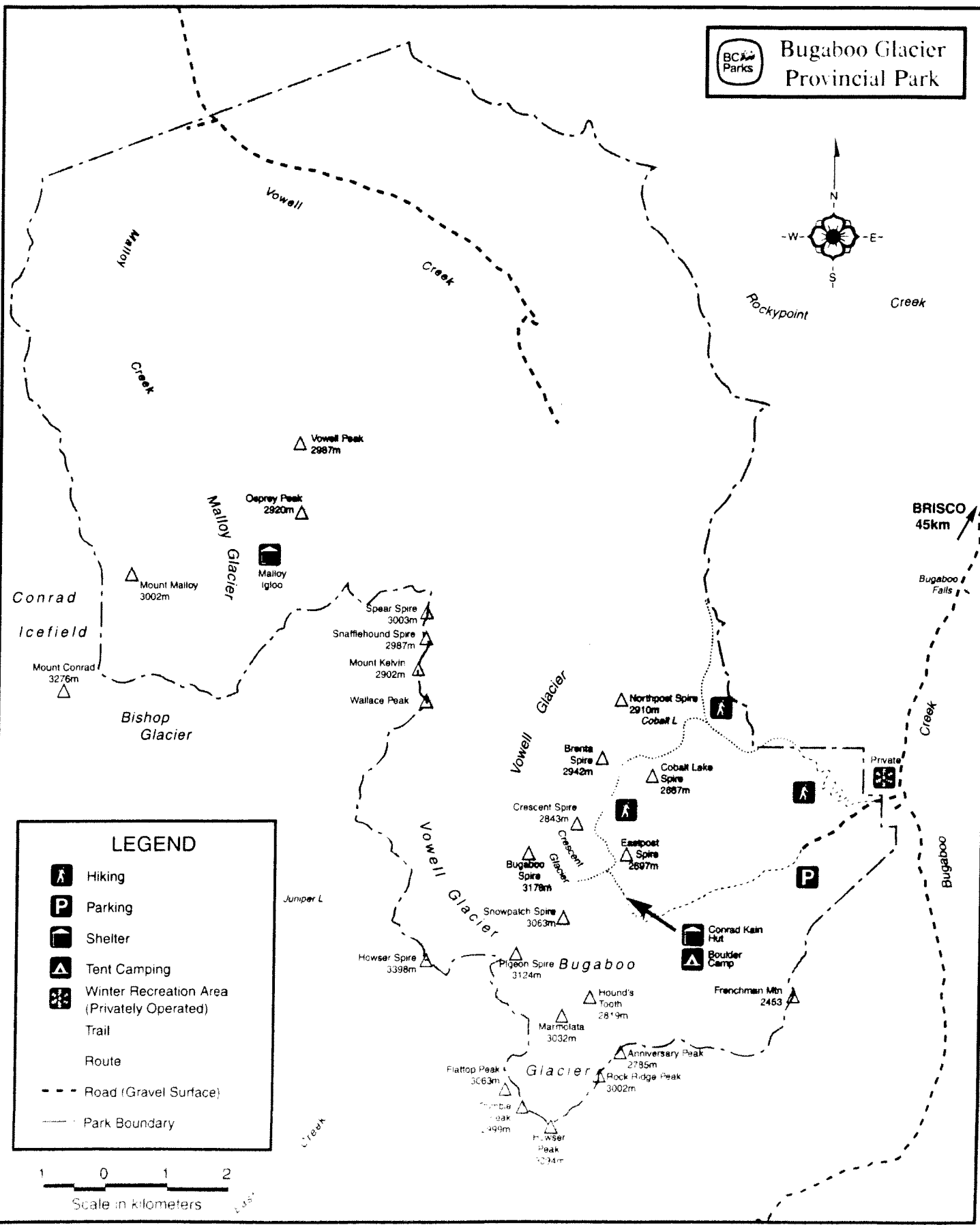
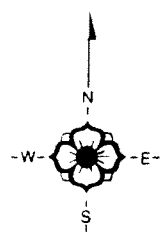


21 MAP — CENTRAL SPIRES



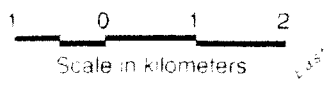


BC Parks Bugaboo Glacier Provincial Park



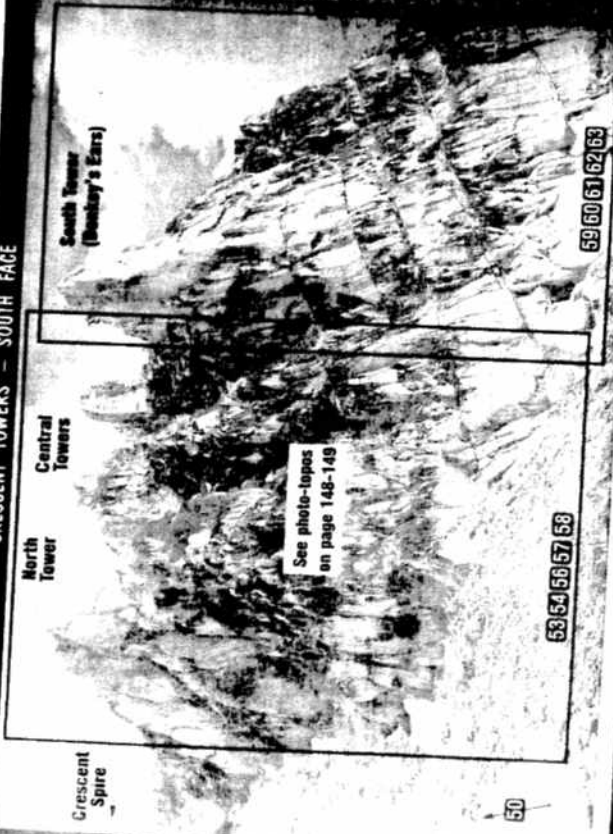
LEGEND

- Hiking
- Parking
- Shelter
- Tent Camping
- Winter Recreation Area (Privately Operated)
- Trail
- Route
- Road (Gravel Surface)
- Park Boundary



146 EASTERN SPIRES

CRESCENT TOWERS - SOUTH FACE



EASTERN SPIRES 147

CRESCENT SPIRE - MCTECH ARETE AREA



See peak photo on page 118

Photo 118
Photo 118
Photo 118

ROUTES: 39 (120) 40 41 (121) 42-44 (122) 45-46 (123) 47-49 (124)

146 EASTERN SPIRES

CRESCENT SPIRE - MCTECH ARETE AREA

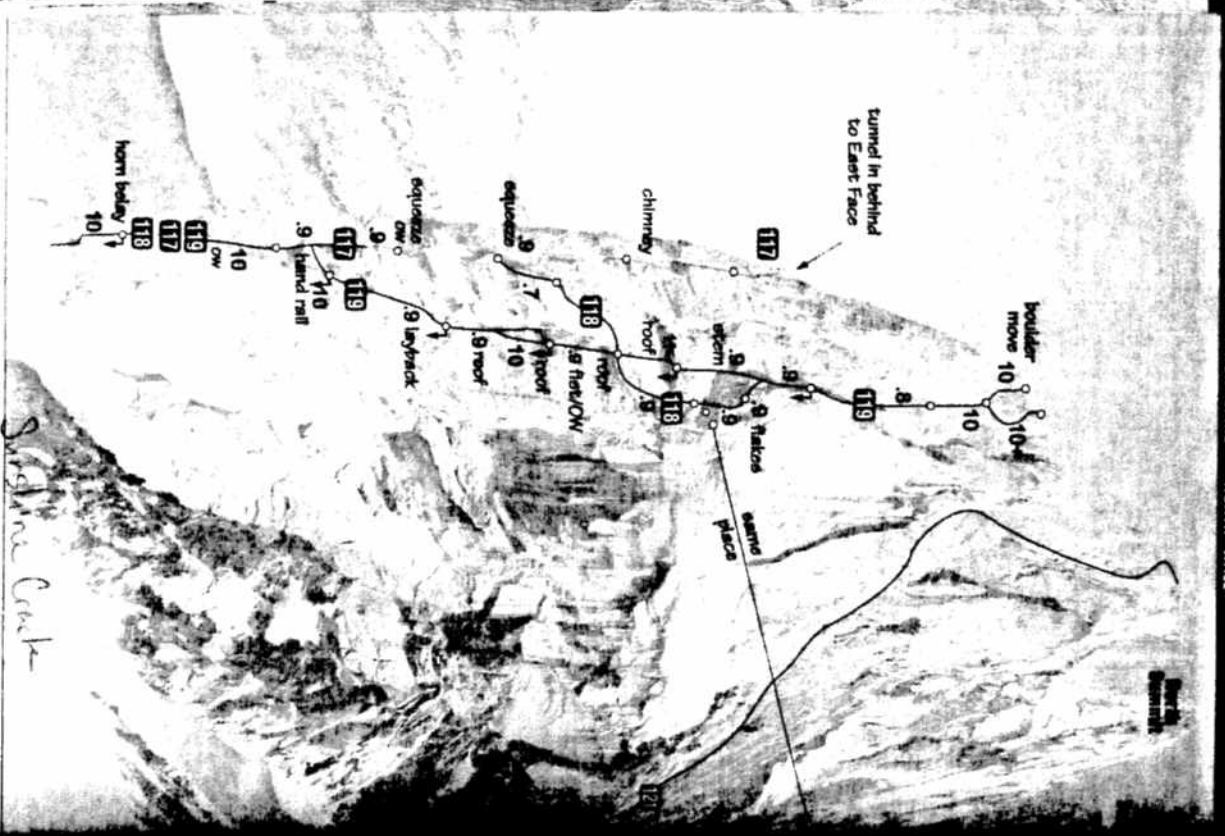


ROUTES: 50 (125) 36 (119) 37 (120) 38 (120)

194 SNOWPATCH SPIRE

APPROACH / DESCENT: 179-180

SNOWPATCH SPIRE - NORTH WALL



ROUTES: 117-118 (197) 119 (198) 121 (198)

SEVERAL SPIRES

SNOWPATCH SPIRE - NORTH FACE FROM THE BASE

195 SNOWPATCH SPIRE



ROUTES: 117 118 (197) 119 (198)

Bugaboo-Snowpatch Col
north-side slope

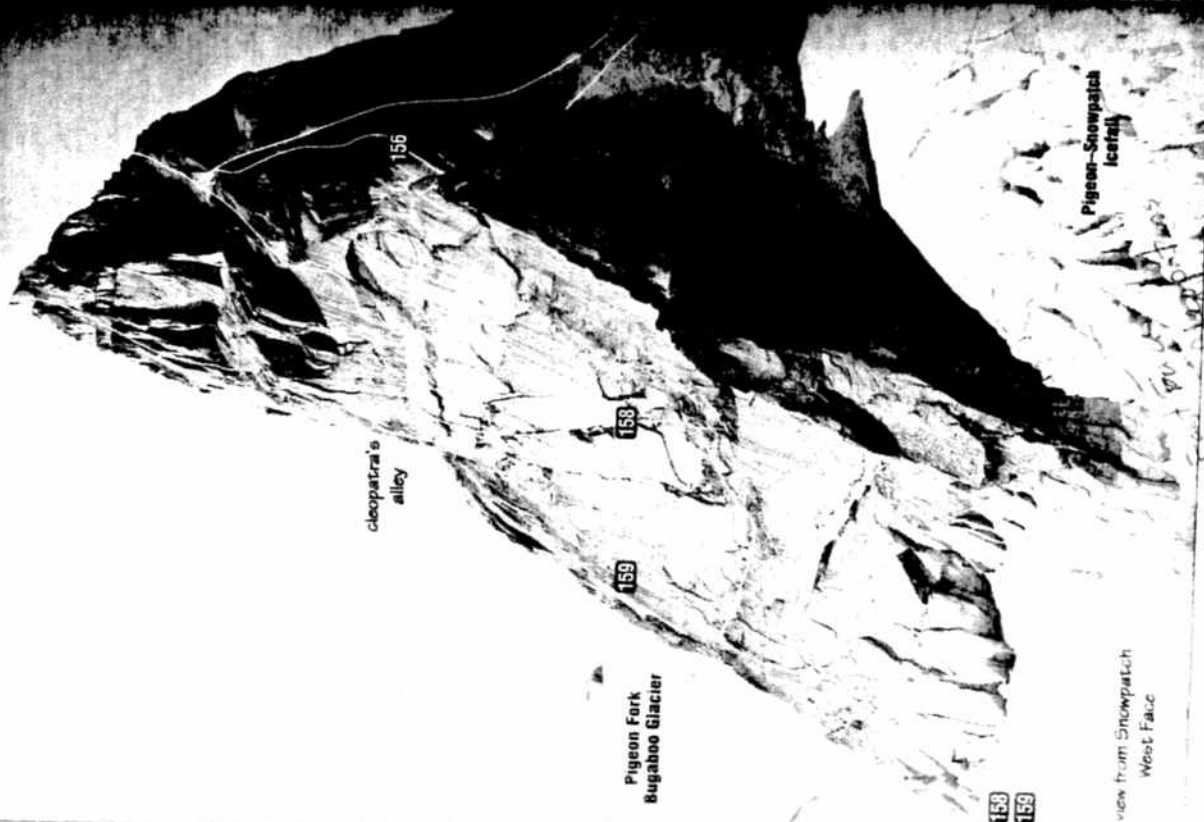
photo: early July 2002

benchmark

234 PIGEON SPIRE

APPROACH / DESCENT: 221-222

PIGEON SPIRE - SOUTH FACE



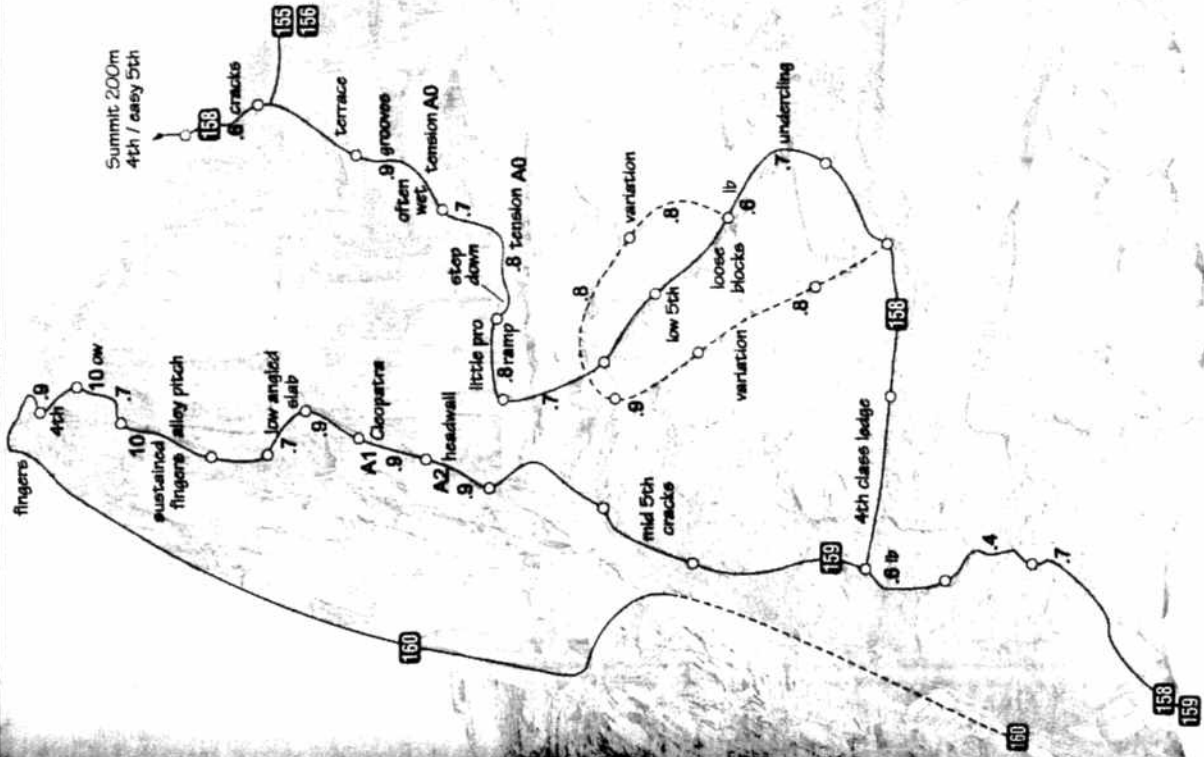
Pigeon Fork Bugaboo Glacier

view from Snowpatch West Face

ROUTES: 155 (225), 156 158 (226), 159 (227)

CENTRAL SPIRES

PIGEON SPIRE - EAST FACE



Summit 200m 4th / easy 5th

fingers

4th

10

ow

sustained fingers

alloy pitch

low angled

elab

A1

Cleopatra

A2

headwall

little pro

down

.8 ramp

.8 tension AD

often wet

grooves

terrace

.8 cracks

155

156

158

7

undercling

variation

.8

loose blocks

lb

variation

.8

low 5th

.8

158

4th class ledge

.8 lb

159

4

7

158

159

160

ROUTES: 155 (225), 156 158 (226) 159 160 (227)

156 **Millar-Shepard** AD 5.6 (6-10h) 8p 232

S. Minor, S. Shepard, July 1961

The *Millar-Shepard* is a variation of the *North Face* that follows the rock to the left of the gully, joining the *North Face* at the upper snowpatch.

From the flat glacial area above the Bugaboo-Snowpatch Col contour down past the base of the north buttress and the *North Face* gully until below a notch beside the small pinnacle called the *Pigeon Toe*. Climb to the notch and follow the edge of the slab right to a short, steep wall. Climb the wall on the right end to gain the ridge-crest at the edge of another slab. Continue right to climb a sharp arete that leads to the start of the upper Y-shaped snowpatch on the *North Face*. Climb the snow patch to either of the *North Face* options or continue up cracks left of the snowpatch and gain the *Cooper-Kor* option to the *North Face* above the snowpatch, there-by avoiding the snow and ice.

Bring a normal free climbing rack and an ice axe and crampons if climbing the snowpatch option.

157 **Pigeon Toe** AD- 5th (5-6h) 3p 232

David Bernays, James McCarthy, July 1964

The *Pigeon Toe* is usually climbed for entertainment during foul weather or as a bonus to the *Millar-Shepard*. The views across the east face are grand.

Approach as per the *Millar-Shepard*. Climb to the notch and continue up the right-hand wall to the west summit.

158 **Cooper-Kor** *** aka *Sugar Bowl* TD- 5.10 (5.9 A0) (10-14h) 18p 235

Ed Cooper, Leifon Kor, August 1960

FA, Elthamstead, Buchanan, July 1974

This classic line follows a long and devious route up the elegant east face. What it lacks in directness of line it makes up for with the bold and intricate nature of the headwall pitches. This route is **challenging for the second** due to its traversing pitches.

Approach via the Pigeon Fork of the Bugaboo Glacier to gain the left edge of the east face. **1-3:** Climb diagonally right up a flake and a crack to a belay (5.7). Zigzag up a short 5.4 pitch and continue up to gain the left end of the fourth-class ledge system that cuts across the face (5.6). **4-6:** Traverse right, east a crack system (variation) to the far end of the ledge. **7:** Undercling up and right to a layback crack curving back left to the start of the long left-trending chimney system (5.7). **8-9:** Follow the fourth and low fifth class chimney system over loose blocks to belay at its end. The variation cracks (5.8) passed on the traverse and parallel variation cracks above the chimney system (5.8) join here. **10:** Climb straight up over a small 5.7 roof continuing up the crack to belay above another small roof near the base of the headwall (5.7). **11:** Climb the short distance up the crack to the headwall and traverse right along the slab-headwall junction past a shallow corner system and descend to a small ledge belay. Protection is only possible in three places on this friction pitch, which can make it intimidating for the second climber (5.8). **12:** Continue right and up a short crack past a fixed pin to a small ledge with fixed pins. Downclimb or tension down and right from the pins to gain

a shallow corner that is followed up to a fixed pin belay on a ledge (5.8, A0). **13:** Tension right from the belay to gain a crack and grooves that are followed up the steepening wall past fixed pins to a belay at the higher of two ledges (5.9). This pitch is often wet. **14:** Follow easy cracks above, past a patch of snow to a flake belay. **15:** Climb left, switching cracks to gain a corner and a belay at the ridge-crest (5.6). Follow broken ground, right of the ridge-crest, for about 200m to the main summit. *5.12*

159 **Cleopatra's Alley** * TD *5.10-A2* (12-16h) 13p 235

Dave Knox, Tom Thomas, Gil McCormick, August 1987

This route climbs the left edge of the east face in a straight line to the main summit. There are only two short sections of aid on the climb that will likely go free.

Approach via the Pigeon Fork of the Bugaboo Glacier and follow the first three pitches of the *Cooper-Kor* to the fourth-class ledge system. **4-6:** Climb straight up the left edge of the face following low-mid-fifth class cracks to gain the base of the headwall. **7-8:** Climb two pitches of mixed free and aid up connecting cracks to a ledge belay below the large slab (5.9, A2). **9-10:** Continue up cracks and over small ledges (5.9) to gain the big slab. Climb up the left side of the slab to a belay left of a big wet corner. **11:** Climb a pitch of sustained 5.10 finger-cracks to a ledge belay. **12:** Continue up right and climb a 5.10 offwidth right of a wet chimney to a ledge belay. **13-14:** Follow fourth-class terrain to belay below a 5.9 finger crack, which is followed to the ridge-crest very near the main summit.

160 **Southeast Buttress** TD 5.8 A2 ♦ (12-16h) 11p 235

Fred Beckey, Steve Marris, July 1963

This route climbs the buttress-like face between the great east face and the broken south face that lie below the main and middle summits respectively. The exact location of the line is uncertain.

Approach via the Pigeon Fork of the Bugaboo Glacier and ascend the right side of the broken slabs that lie left of the east face. Follow gullies and slabs to a large terrace beneath the steep upper face. Follow a steep aid corner beginning with an overhang for 100m to a ledge belay. Cracks and easier aid climbing lead out right to gain a small bivy ledge. A long solitary aid crack leads up to mixed free and aid pitches, then eases off in difficulty. A final short, steep wall leads to the summit.

161 **Southeast Slabs** AD 5.6 ♦ (8-10h) 11p? 237

D. Davis, G. Markov, August 1972

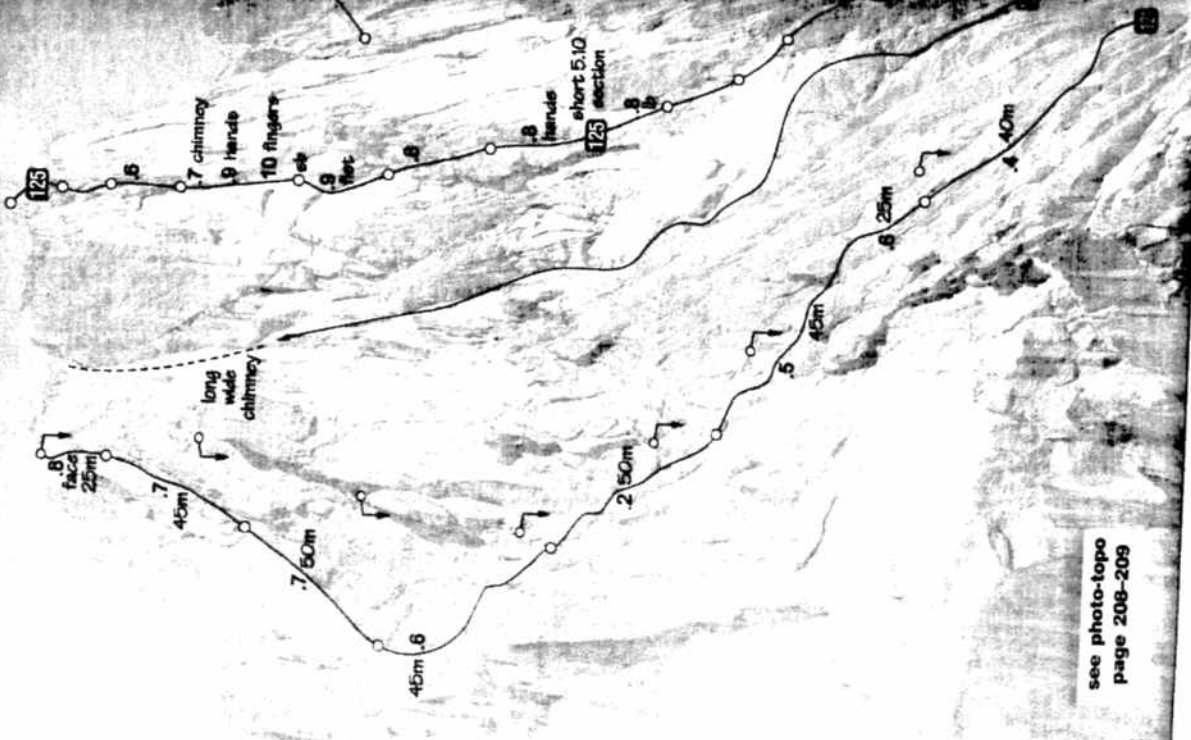
This route follows the *Southeast Buttress* up the lower slabs to gain the terrace. It then traverses scree ledges left to gain the long slab below the middle summit that is followed to the col between the first and middle summits. It is accessed from the Pigeon Fork of the Bugaboo Glacier.

210

SNOWPATCH SPIRE

APPROACH: 175 180
DESCENT: 175 180

SNOWPATCH SPIRE - WEST FACE FAR LEFT



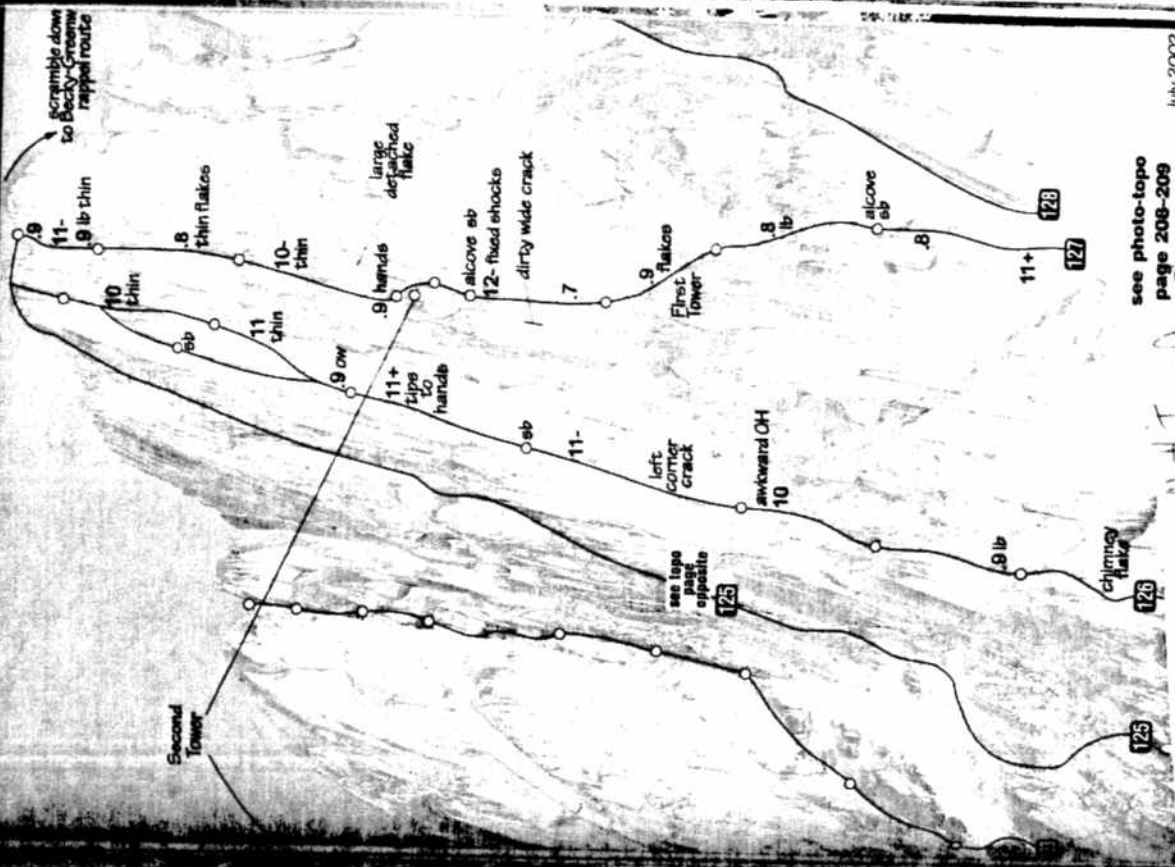
July 2002

ROUTES: 121 122 123 (200) 125 (201)

CENTRAL SPIRES

SNOWPATCH SPIRE 211

SNOWPATCH SPIRE - WEST FACE LEFT



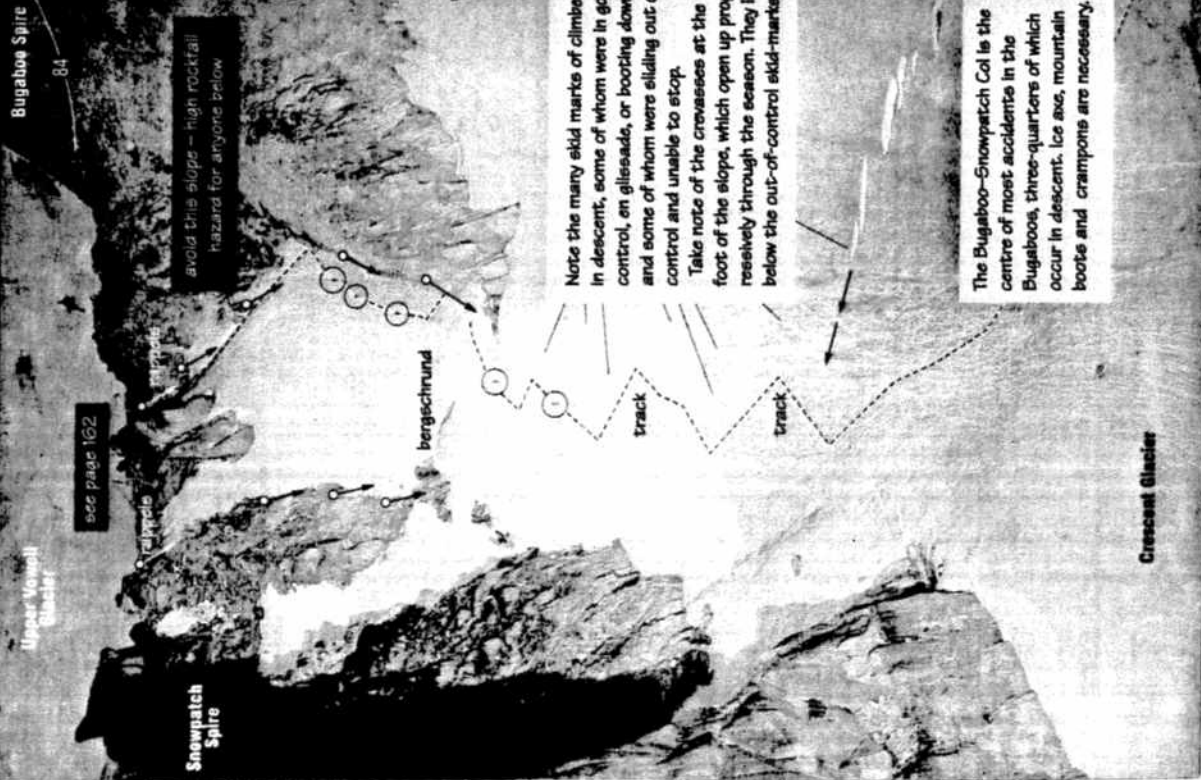
July 2002

see photo-topo page 208-209

North Tower Direct

ROUTES: 123 (200) 125 126 (201) 127 128 (202)

BUGABOO-SNOWPATCH COL - EAST SIDE APPROACH FROM CRESCENT GLACIER



see page 162

Snowpatch Spire

avoid this slope - high rockfall hazard for anyone below

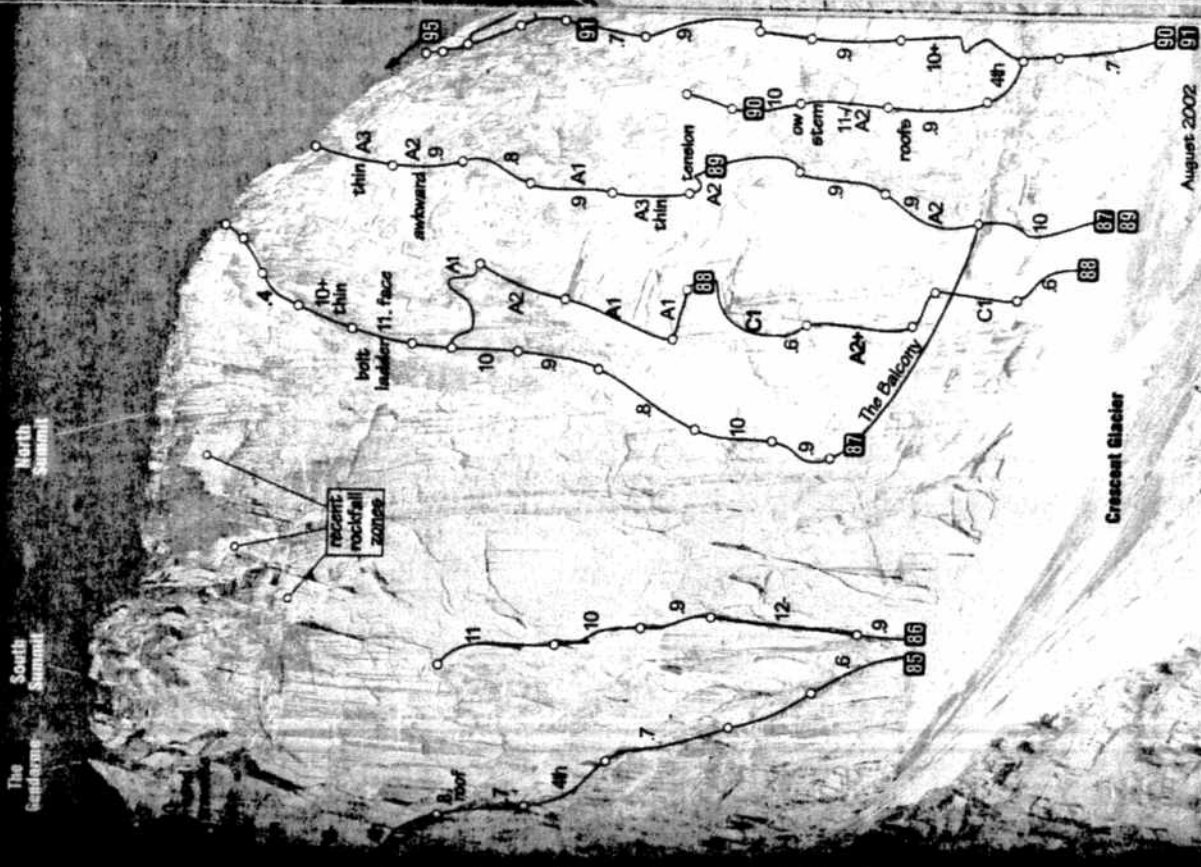
Note the many ekid marks of climbers in descent, some of whom were in good control, on gissasade, or booting down, and some of whom were sliding out of control and unable to stop.

Take note of the crevasses at the foot of the slope, which open up progressively through the season. They lie below the out-of-control ekid-marks.

The Bugaboo-Snowpatch Col is the centre of most accidents in the Bugaboos, three-quarters of which occur in descent. Ice axes, mountain boots and crampons are necessary.

Crescent Glacier

BUGABOO SPIRE - EAST FACE



The Castleface

South Summit

North Summit

Crescent Glacier

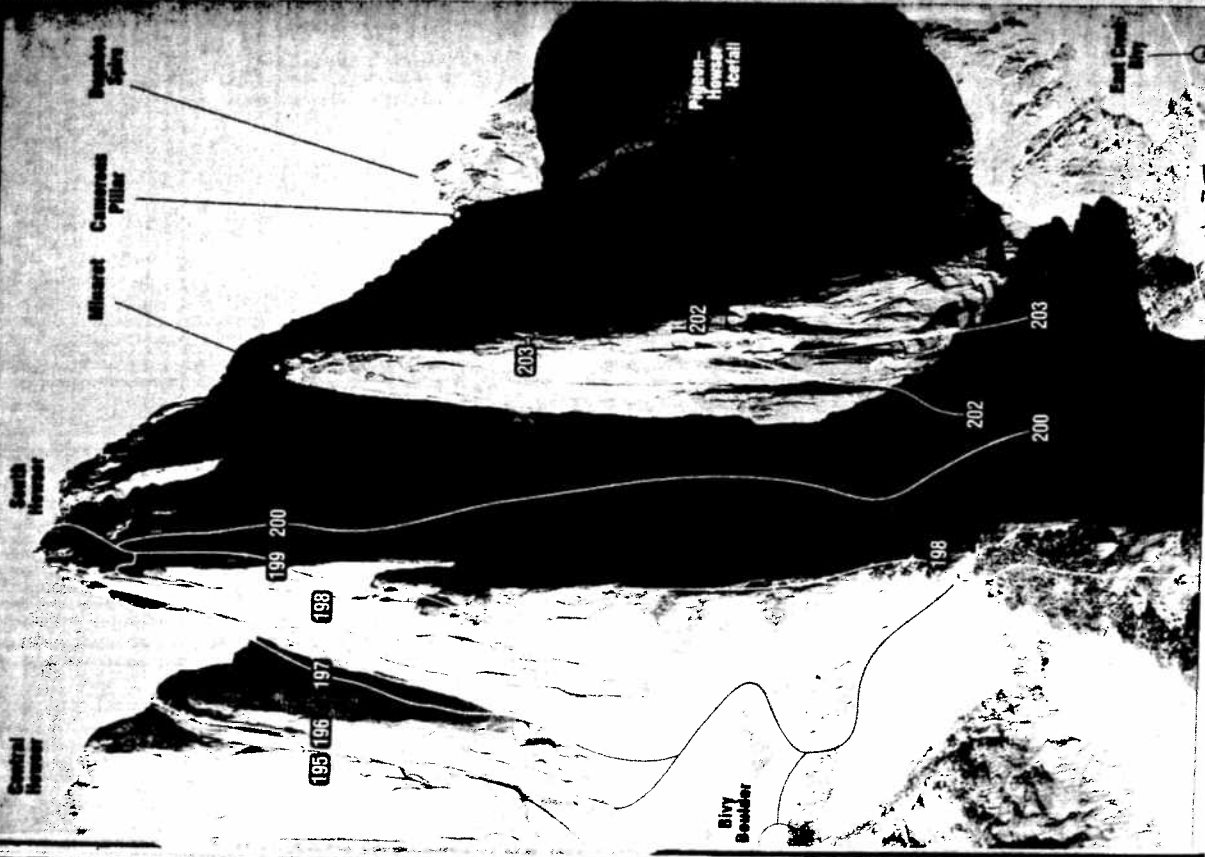
August 2002

274

SOUTH HOWSER - WEST SIDE

APPROACH: 265
DESCENTS: 241

CENTRAL AND SOUTH HOWSER TOWER - WEST AND SOUTH FACES (AERIAL)



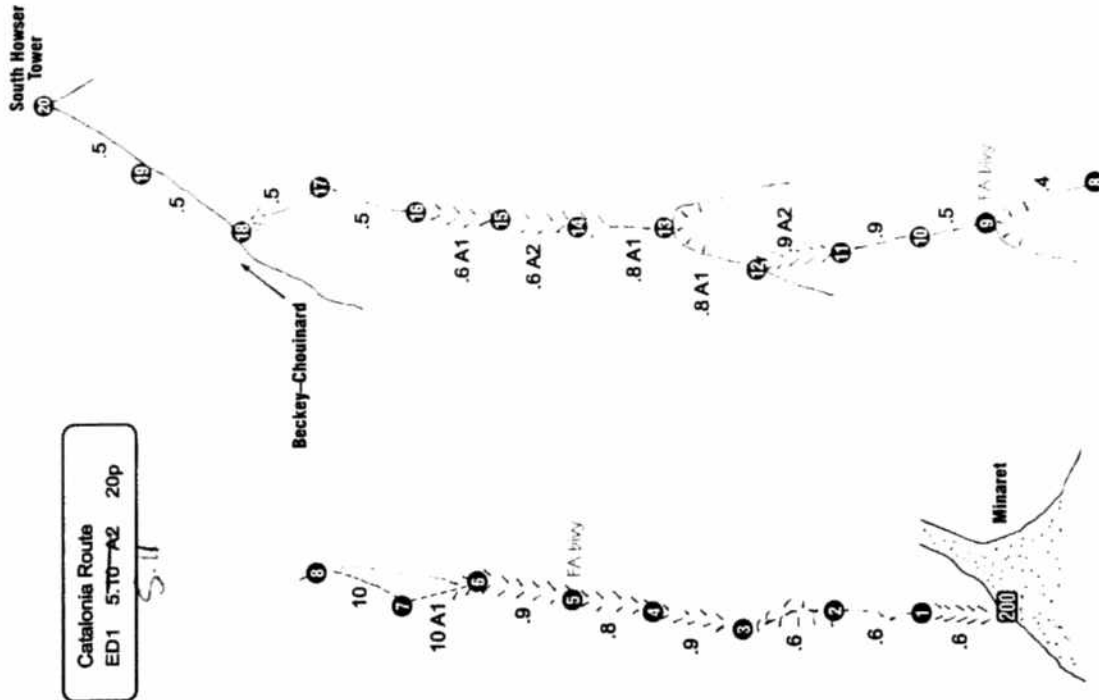
Routes: 195-197 (269) **198** (272) **199** **200** (273)
Lost in the Tower
Becky - Chouinard

WESTERN SPIRES

SOUTH HOWSER - WEST SIDE

275

SOUTH HOWSER TOWER - CATALONIA ROUTE



topo information supplied by first ascent party

Routes: **200** (273)

South Howser Tower — Southwest Buttress

198 Beckey-Chouinard *** TD+ 5.10 (14-20h) 20-22p 276

See the South Howser Tower List
 and the Southwest Buttress List

FS Aug 1967, June 1977,
 CAJ 46:127, 48:130, AAJ 13:241

The Beckey-Chouinard is the Bugaboo classic and one of the most esteemed climbing routes in North America. It is a graceful line on a beautiful peak overlooking the wind and fire valley. The climbing is consistently in the 5.8 to 5.9 range with only the occasional short, cruxy sections and the route has a few easy bivouac spots. The descent is down the opposite side of the tower and requires a few rope rappels from fixed stations.

From the East Creek Basin bivouac follow scree down along the base of the gully descending from the Beckey-Chouinard to gain a shallow scree slope leading up to the ridge. Scramble up third class slabs and over boulders to a ledge above the gully and a large split boulder block's access. **1.** From right to left, boulders, step down right to gain an exposed slab on the right and a large crack (5.5). **2.** Climb up the large crack (5.5). **3.** Where the crest steepens follow cracks left to right of the crest to a ledge below behind a large block (5.7). **4.** A steep crack is just right of the crest to the left edge of a small overhang (large fixed cam). Make an insecure move over the bulge and crack on the left side of the arete, scrambling to the right side part way up. **5.** Climb across to easy ground. Scramble over easy ground to gain a flake of rock leading to the left, which leads to a slab belay, or belay on the right hand side. **6.** Hang right over the arete and cross cracks to gain a right hand corner or belay directly up from the crest belay. Climb the corner to a crack and belay at the start of some scree-covered ledges (5.8, 5.9). **7.** Climb over the crack and belay at the upper bivouac site. **8.** Climb up a chimney and take a short steep crack to a block belay where the wall steepens. **9.** Step left and climb a short strenuous crack to a ledge. Go right to a ledge to reach two opposing corners and climb the righthand to the top of the crack. **10.** Walk left to the furthest corner and climb up to a wide crack in a right facing corner at the far left side of the wall. Climb the wide crack to the top of the small tower and continue to the overhang system. Follow the corner until able to break out left and step left to a steep wall to a small ledge belay (5.10, 5.5m). **12.** Step up above the belay and through a hard balance move right back into the corner. Follow the corner past the gullies blocks and a tough squeeze. Move to a belay (5.10) to reach the corner (5.10). **13.** Climb up the gully over chockstones to a shallow crack into a capped corner. Climb the second crack on the left side to a belay at the base of a long, shallow, right-facing corner (5.9, 5.5m). **14.** Follow the corner to a two-pin belay at a small notch (5.8, 30m).

SOUTH HOWSER — BECKEY-CHOUINARD

HOWSERS INTRO: 239-240
WESTERN SPIRES, MAP: 22

15. Tension left (A0) into a gully (or free at 5.10+) and follow it to a belay at its top (5.6). From the top of the gully, step down right to gain stepped slabs and make a 20m rappel to ledges on the south side. Climb up on right and two distinct buttresses to gain the ridge just right of the arete. It is a steep and broken fourth class terrain with numerous short, mixed fifth class steps. Bivouac sites are possible through here and near the summit. The rappels start about 20m south of the summit where most parties overtake from the broken terrain.

Bring a standard rack with extra 1 1/2" 2 rock cams and one or two dach camms.

199 Lost in the Towers Variation TD+ 5.11 (16-20h) 20-22p 276

Wayne Kinnear, Jim Winkler, August 1980
 FFA Geoff Tomp and Normie, August 1980

Lost in the Towers is a minor variation of the Beckey-Chouinard that is usually climbed by people off route and lost in the towers.

Follow the Beckey-Chouinard to the ledge below the Great White Headwall. Climb the right-most crack, a very inviting right-facing and widening crack right of the standard route (5.10). Continue following the crack as it curves and exits the headwall through a flaring slot (5.10). Tension and aid right (C1) or free (5.11) up over very exposed terrain into a broad, slabby gully. Climb right and up for two pitches through a dihedral and a rock to gain the broken terrain on the Beckey-Chouinard.

200 Catalonian Route ED1 5.10 A2 (1-2d) 20p 275

Jean Cabas, Edward Burgala, Antonio Masera, Juan Valentin, August 1980

The Catalonian Route climbs the large, imposing face between the Beckey-Chouinard and the Minaret and contains relatively little aid climbing.

From the East Creek Basin bivouac site make a short and direct approach up snow to the base of the route just left of the left-hand Minaret gully. **1-3.** Climb an initial crack and continue up slabs to a belay at the base of a long crack (5.6, 120m). **4-6.** Follow cracks and corners to where it starts to steepen (5.9, 140m). **7.** Climb up and left out of the weakness (5.10, A1, 45m). **8-9.** Follow a crack to easier ground and a bivouac site at the top of the first tower (5.10, 65m). **10-11.** Climb up towards the left side of the first tower (5.9, 75m). **12-13.** Climb a crack to the left side of the tower and on to the top (5.9, A2, 90m). **14-16.** Climb cracks and corners to easier ground (5.8, A1, 140m). Climb broken, fourth and fifth class terrain to the summit (5.5, 180m).

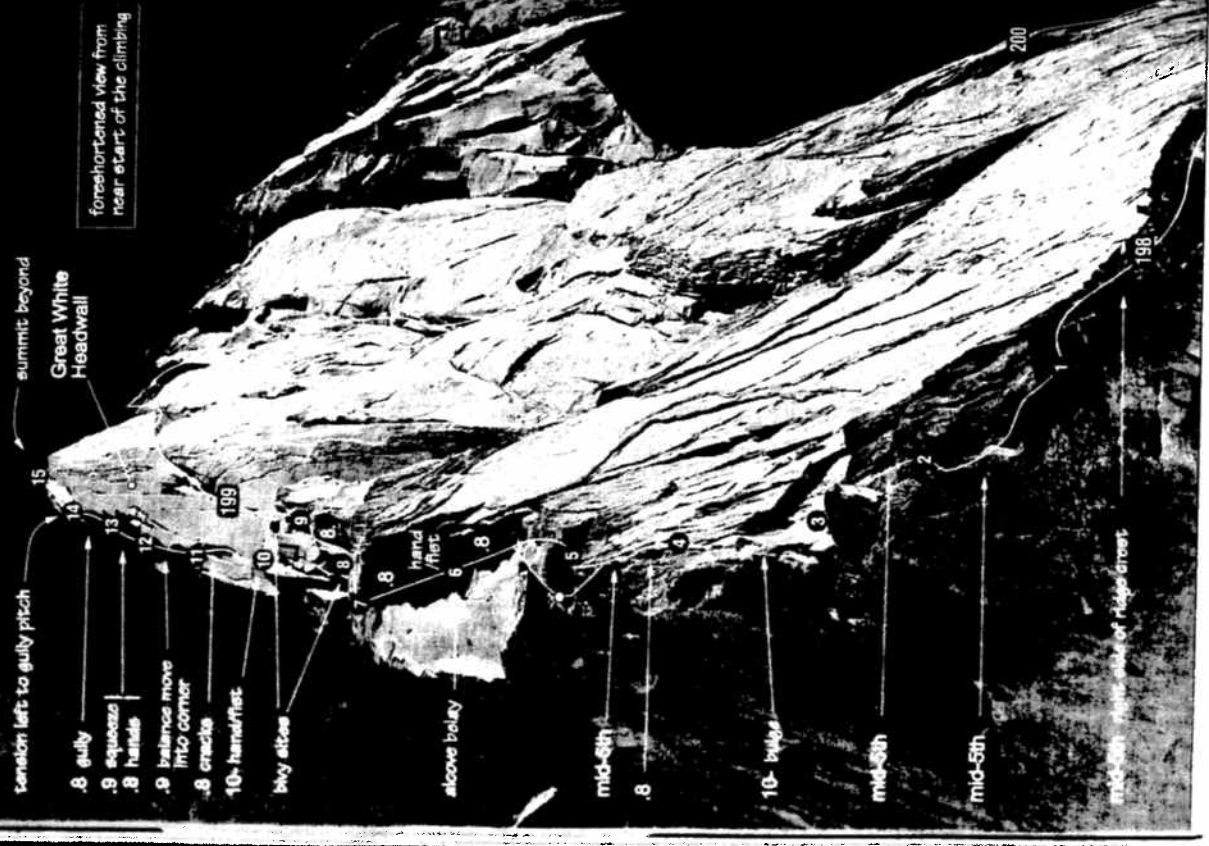
In August 1987, a trailer park in Edmonton Alberta was destroyed with loss of life by a violent tornado. It had passed over the Bugaboo earlier in the day, as Fabio Stedile was attempting to paraglide off the west face of Snowpatch. He was blown off the summit, landing on a ledge on the east face, climbed back up and beat a hasty retreat down the Kraus-McCarthy in the lightning and hail of the ensuing tornado.

276

SOUTH HOWSER - WEST SIDE

APPROACH: 265
DESCENTS: 241

SOUTH HOWSER TOWER — THE BECKEY CHOQUINARD



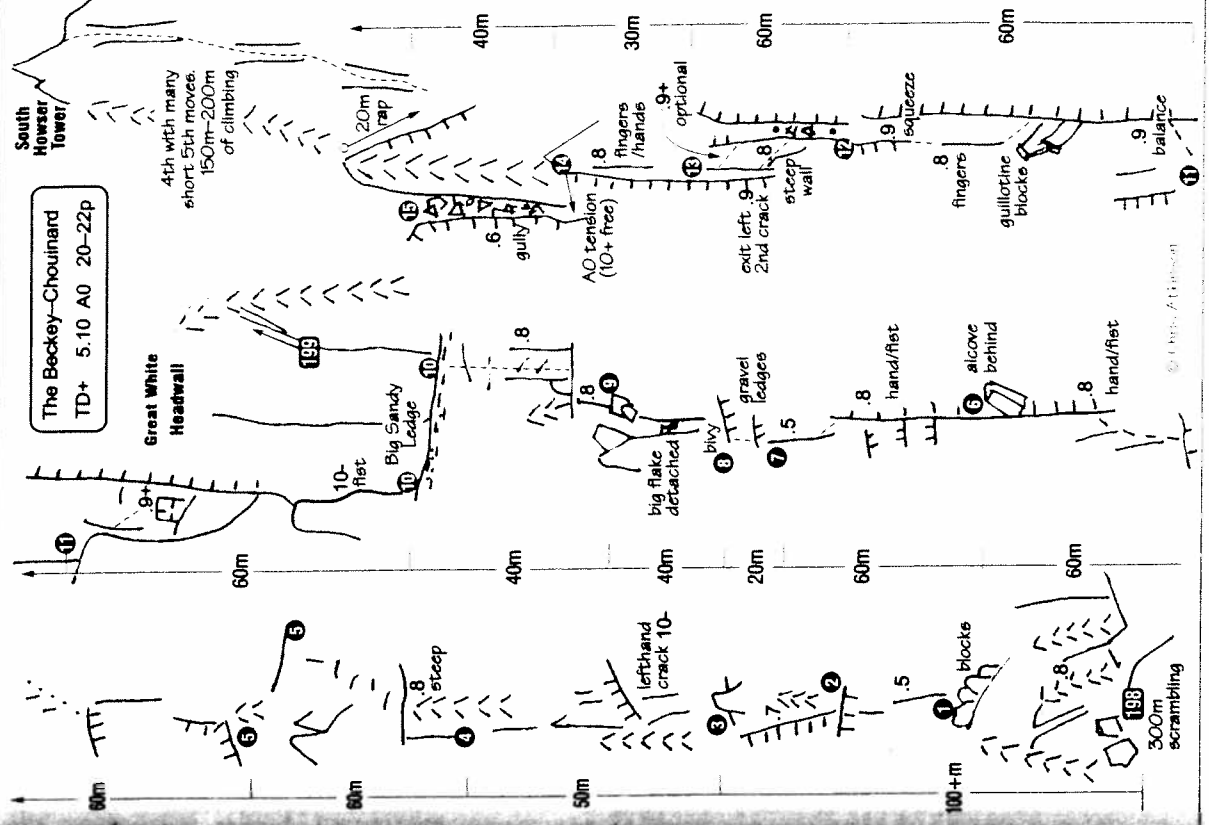
ROUTES: 198 (272) 199 200 (273)

WESTERN SPIRES

SOUTH HOWSER - WEST SIDE

277

SOUTH HOWSER TOWER — BECKEY-CHOQUINARD



ROUTES: 198 (272) 199 (273)

280 THE MINARET

APPROACH: 265
DESCENTS: 241

SOUTH HOWSER TOWER — THE MINARET



Minaret

Pigeon

Pigeon-Howser Col

Pigeon-Howser
Howser
Island

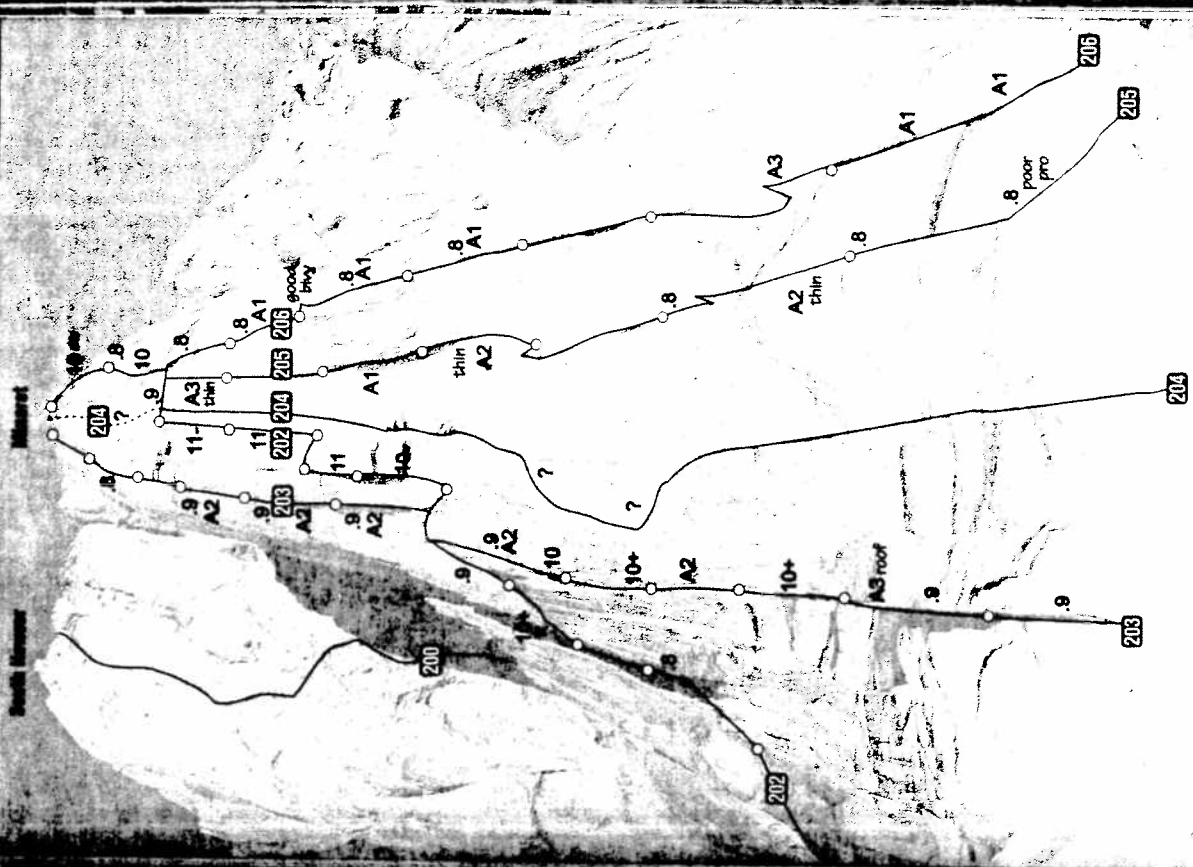
Bad Hair Day

ROUTES: 202 203 (278) 204-206 (279)

WESTERN SPIRES

THE MINARET 281

SOUTH HOWSER TOWER — THE MINARET



Minaret

South Howser

ROUTES: 200 (273) 202 203 (278) 204-206 (279)

South Howser Tower — Camerons Pillar

207 South Face

TD 5.8 A2 ♦ (12-14h) 9p 283

Photo: Marc Piché, 8/19/87, July 1974

The exact position of this line is uncertain but it is believed to climb the left side of the face between the Minaret and the Pigeon-Howser Icefall to join Cameron's Pillar at the top of the vague pillar.

1-2 Gain the far right side of the Minaret and climb up and right for 2 pitches. 3-5 Climb crack systems to a chimney. 6-9 Climb left and up a chimney past a roof to a sling belay. Continue up cracks and a chimney to the top of the pillar and the top of pitch 8 on Cameron's Pillar.

Rappel as for Cameron's Route or continue up more broken terrain to join the East Ridge.

208 Cameron's Pillar • TD+ 5.11+ (10-12h) 8p 283

Photo: Marc Piché, 8/19/87, August 2000

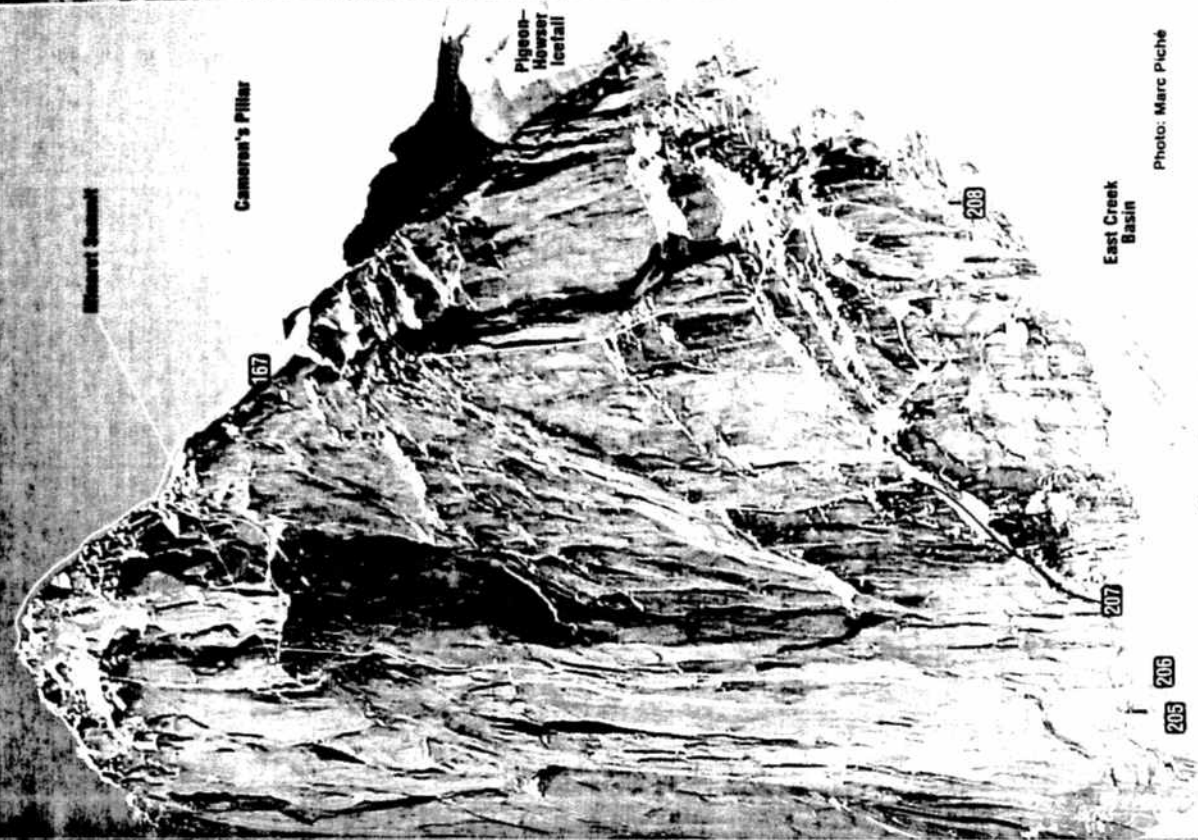
Cameron's Pillar climbs a vague pillar in the middle of the face between the Pigeon-Howser Icefall and the Minaret. The ledge systems are loose but the climbing in between is very good.

From the East Creek Basin bivouac site gain the base of the wall right of the Minaret. Follow the wall right towards the Pigeon-Howser Icefall passing red-varnished rock to gain the first of a series of red-coloured ledges. 1 Climb a right curving crack (5.10). 2 Start up a dihedral switching to a crack on the face of the dihedral and belay on a ledge (5.10). 3 Climb past a teetering pillar, over a ledge, into a chimney and belay behind another pillar (5.8). 4 Follow a black, right-facing corner (5.10). 5 Continue up a left-facing corner onto a ledge and scramble left to its end (5.10). 6-8 Climb three 5.11 pitches up cracks up the steep wall of the orange pillar, switching right to another crack on the last pitch (5.11+).

The first ascent party rappelled the upper three pitches to the ledge, descended fourth class terrain to the low point in the ledge and made another four double rope rappels to the ground. It would also be possible to continue from the top of the pillar up more broken ground to gain the East Ridge.

In August 1987, Fabio Stedile and Frabrisio Defrancesco climbed Surf's Up on Snowpatch in under three hours from the valley car park.

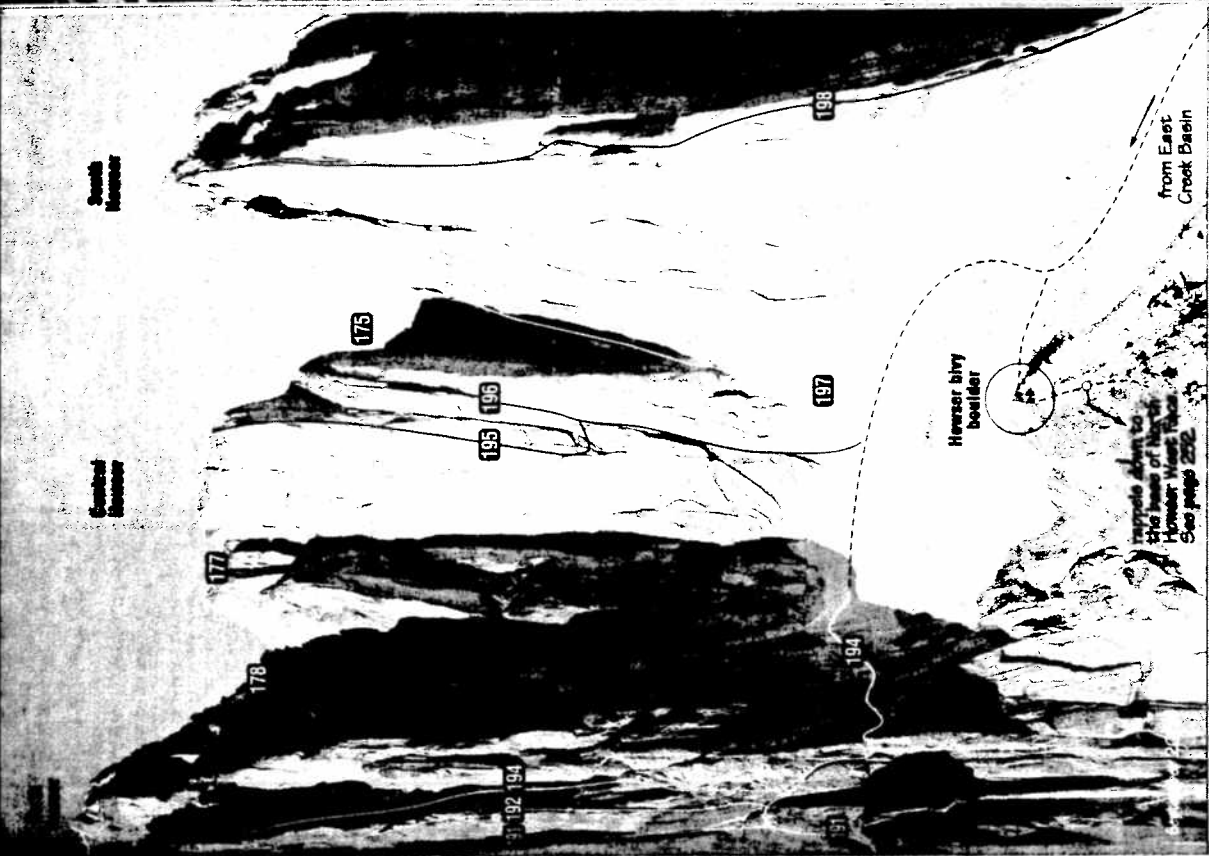
SOUTH HOWSER TOWER — CAMERON'S PILLAR





ROUTES: 194 (268) 195 196 197 (269)
*Central + South
Howser Tower*

August 2002



ROUTES: 191 192 (256) 194 (268) 195-197 (269) 198 (272) 175-176 (244) 178 (245)

298

CROSSED FISH PEAK

APPROACH /
DESCENTS: 296 -297

CROSSED FISH — NORTHWEST SIDE



view from East Creek Basin

ROUTES: 215 (296) 216 (297)

WESTERN SPIRES

LITTLE SNOWPATCH 299

LITTLE SNOWPATCH — NORTHWEST FACE



view from East Creek Basin

ROUTES: 216 217 (297)

APPROACH
DESCENTS: 284

PIGEON FEATHERS — SOUTHWEST FACES IN EAST CREEK BASIN



ROUTES: 209 210 (285) 211 (286)

ROUTES: 212 (286) 213 214 (287)