

DAPTO HIGH SCHOOL



NAME: _____
GEOGRAPHY CLASS: _____
TEACHER: _____

YEAR 9

SNOWIES TRIP

2008

A GEOGRAPHICAL STUDY OF

WHERE WE ARE GOING?

AND

WHY WE ARE GOING THERE?

WHERE ARE WE GOING? – THE SNOW BUT WHAT'S IN BETWEEN IT AND DAPTO?

WHY ARE WE GOING? TO EXAMINE

- a) One of the five engineering wonders of the world – The Snowy Mountain Scheme
- b) One of Australia's **most at risk** ecosystems – The Snowy River
- c) One of Australia's most distinct National Parks – **KOSCUISZKO**
and of course

- d) To **SKI** – yippie

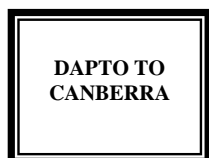
↓
(pronounced Kuuz / shush / ko)
by the Polish

INSTRUCTIONS

SECTION A

TO BE COMPLETED FROM DAPTO TO OUR FIRST STOP (COVERS PAGES 3 & 4)

WORTH 31 MARKS



1. **On Map 1** mark in the location of the Snowy Mountain using your own knowledge and map 2. (5 marks)
2. **On Map 2** highlight the route take from Dapto to Jindabyne (will need the whole trip to complete this properly – be careful, any mistake loses a mark) (1 mark)
3. Complete **observation questions 1 – 21** by looking out the window mostly in an easterly direction as we travel south-south west (from Picton to Canberra) (25 marks)

SECTION B

TO BE COMPLETE BETWEEN OUR FIRST STOP AND COOMA (LUNCHTIME) (COVERS PAGES 5 – 8)

WORTH 44 MARKS



4. Read pages 5 and 6 and complete the questions (23 marks)



5. Read the newspaper article on page 7 and answer the questions on page 8. (21 marks)

SECTION C

TO BE COMPLETED BETWEEN COOMA AND JINDABYNE (COVERS PAGES 9 & 10)

WORTH 26 MARKS



6. Use the stimulus material on page 10 to answer the questions on page 9. (26 marks)

SECTION D

TO BE COMPLETED ON FRIDAY ON THE WAY HOME (COVERS PAGES 10 & 11)

WORTH 12 MARKS



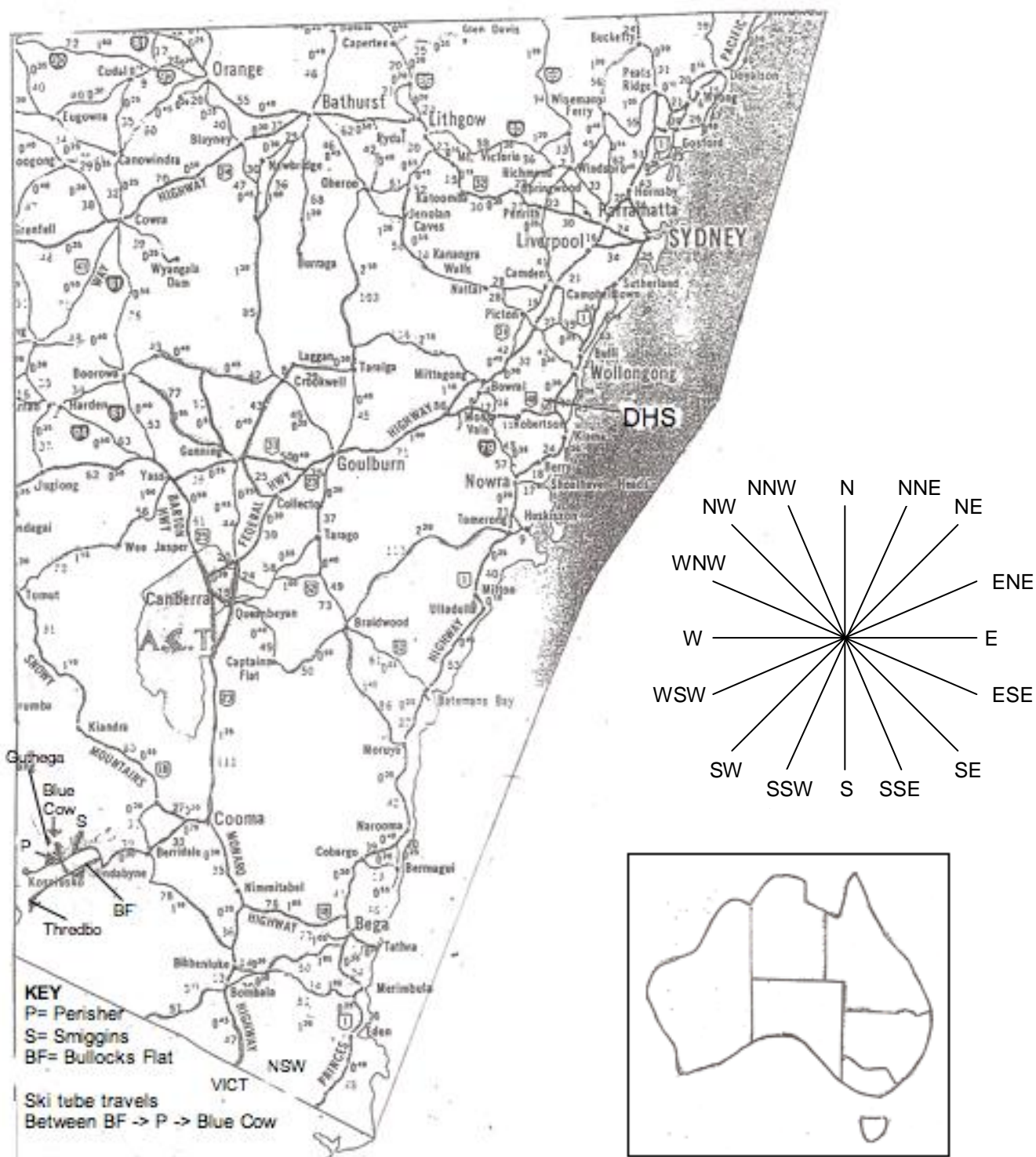
7. Data collection (Primary Research) and informed opinion. To be completed on the snow and on the way home. (12 marks)
8. Complete the evaluation on page 11

CONCLUSION TELL MR BATEMAN 'HE'S A WONDERFUL PERSON'

<p>TOTAL MARKS</p> <hr/> <p>113</p>
--

WORTH NOTHING
Well maybe 1 or 2 marks

MAP 2 Shows the route taken from Dapto to Jindabyne



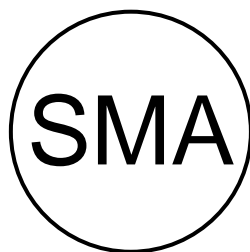
On Map 2 (use 3 different colours)

1. Highlight route taken
2. Shade in the ACT (Australian Capital Territory) – use brown
3. Shade in our skiing area – use blue

**OBSERVATION QUESTIONS
FROM START OF HEADING SOUTH TOWARDS SNOW
ON THE HUME HIGHWAY**

(1 mark each)

1	The part of the major highway we are travelling down on is known as?	R DRIVE
2	What major river system is found approximately 110 kms out of Goulburn?	N
3	What is the number of the National Highway we are travelling on?	
4	What is the name of the Nest 90 km out of Goulburn?	P NEST
5	What town does one take to get to Avon Dam?	B
6	What foodstuff is grown at Tennessee Orchard?	A
7	What town does one take to get to Wombeyan Caves?	B
8	What is the name of the river we cross approximately 85 kms out of Goulburn?	N
9	What is the name of the river we cross approximately 70 kms out of Goulburn?	W
10	What town/forest do we pass approximately 66 km from Goulburn?	S
11	What forest turnoff do we pass approximately 65 km out of Goulburn? (on our west)	B
12	What is the name of the highway that leads to Wollongong approximately 57 km out of Goulburn?	I
13	What is the price of petrol at the Shell Garage approximately 55 km out of Goulburn?	
14	What is the name of the state forest approximately 53 km out of Goulburn?	P
15	What type of human activity approximately 51 km out of Goulburn leads to extreme land degradation through the process of erosion?	L
16	What river do we cross approximately 45 km out of Goulburn?	P
17	What type of transport stop is located at Marulan?	T
18	What height above sea level is the great diving range approximately 71 km out of Canberra?	
19	What is the number of the highway we travel on from Goulburn to Canberra?	
20	What is the name of lake 50 km out of Canberra?	G
21	<p>AT THE REST STOP (our first scheduled stop)</p> <p>a) WHO is remembered _____ (1 mark)</p> <p>b) WHY is he / she remembered? _____ (2 marks)</p> <p>c) WHEN did the event happen? _____ (1 mark)</p> <p>d) WHERE did the event happen? _____ (1 mark)</p>	



THE SNOWY MOUNTAINS SCHEME (SMS)

The Snowy Mountains Scheme of a hydro-electric and irrigation complex located in south-eastern Australia. It impounds the waters of the **Snowy River** and its tributary, the **Eucumbene**, at high elevations and diverts them inland by tunnels driven westwards through the Snowy Mountains to the Murray and Murrumbidgee Rivers.

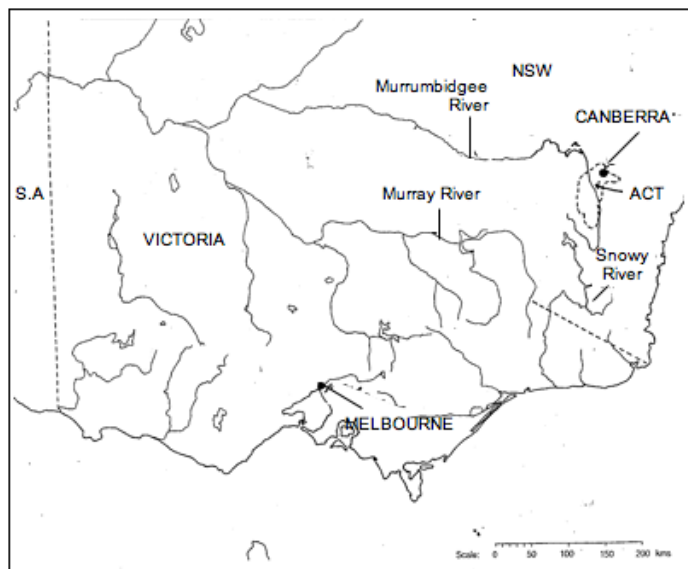
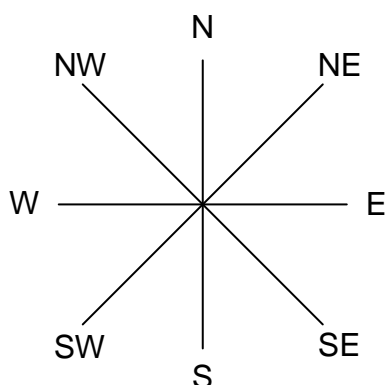
In travelling through the trans mountain tunnels and shafts, the diverted waters fall over seven hundred and sixty metres, generating large quantities of electricity as they pass through the power stations to the irrigation storages west of the Snowy Mountains.

The Scheme's total generating capacity is 3 740 000 kilowatts. Each year it provides an additional equivalent of 2 350 000 mega litres of water for irrigation in the Murray and Murrumbidgee Valleys.

1. How has the Snowy Mountains Scheme changed the runoff of water in South Eastern Australia? (4 marks)

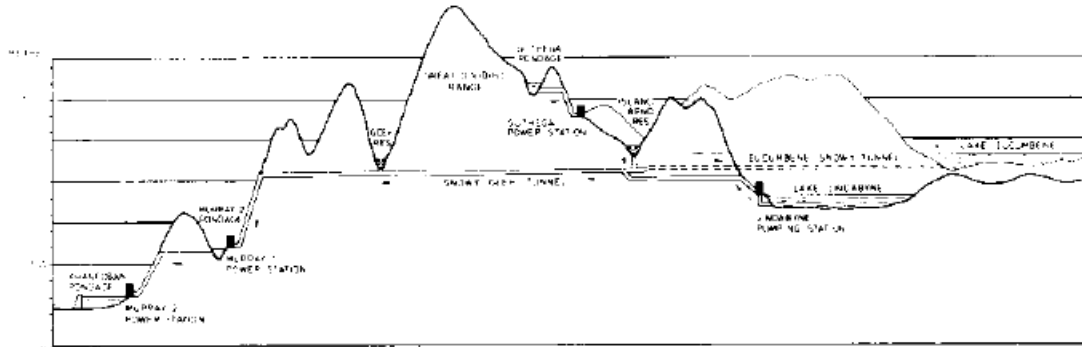
MAP 3

Colour the river flowing seaward (south east) blue and the other 2 (inland, west) brown on map 3. (3 marks)



2. How has the diversion of this water allowed the development of hydro electricity? (4 marks)

On the diagram below colour water in blue and land in brown (2 marks)



3. What is the water used for once it reaches the Murray and the Murrumbidgee river valleys?
(1 mark)

4. How much water is available for irrigation? (1 mark)

5. How much electricity is generated? (1 mark)

6. Why is the Snowy Mountains Scheme referred to as a dual-purpose system? (2 marks)

7. How did the development of the scheme open the area up for tourism? (2 marks)

QUESTIONS TO BE ASKED AT THE SNOWY MOUNTAINS AUTHORITY TALK

8. Who mainly uses (ie which area) the electricity produced by the SMS? (1 mark)

9. What percentage of the electricity produced per year is used on average? (1 mark)

10. Of the two purposes that the SMS was built for (ie electricity and irrigation) which one has benefited the most? (1 mark)

Snowy goes with the flow

SMH, May 14, 2005

The mighty river is slowly regaining its strength after years of neglect, writes **James Woodford**.

APPROACHING the tangled banks of the Snowy River, deep in the Kosciuszko National Park's Byadbo Wilderness, there is a noise not easily forgotten.

It is the sound of rushing, clear water as it passes over cobblestoned rapids - music to the ears of those who have fought to save Australia's most famous inland waterway.

It is just under three years since the release of the first environmental flows into the river and experts say there are early signs of recovery.

Most significantly, the extra water is beginning to carve its way through the mountains of swampy, stagnant sediment that accumulated along almost the entire length of the river after four dams were built on it.

As the Snowy begins to flow colder, deeper and faster than it has for nearly four decades, the newly established Southern Rivers Catchment Management Authority is racing to bring the river back to life.

A Snowy River rehabilitation project officer with the authority, Danny Henderson, says the fact little floods are getting through means there is a more definite channel forming.

It was a fairly big, swampy, broad channel, Henderson says. "I suppose you could say the Snowy River is now looking like a pretty good little creek, and with more time and water it will be a healthy river - similar to what it was but on a smaller scale."

Since 1967, 99 per cent of the river's water has been diverted to the Snowy Mountains Hydro-Electric Scheme, regarded as the nation's greatest engineering feat but one, which effectively killed a national icon.

Then in 2000, under immense political pressure, ecology joined technology at the negotiating table and the Victorian, NSW and Federal governments agreed to restore as much as 28 per cent of the Snowy's original flows.

A river, however, is much more than the water that flows down to the sea, and the Snowy is still in dire environmental health. Its native fish stocks have been decimated, replaced by swarms of feral species such

as goldfish, which got into the river after being used as bait by anglers, and gambusia. The banks were covered in masses of weeds.

There is also a battle brewing over where the Snowy's water will come from. Snowy Hydro wants to deliver the water from Jindabyne Dam, while scientists and conservationists believe the Snowy needs to have a wild source if it is to be a true river. The headwaters of the Mowamba, a major tributary, are the logical choice, say those who are fighting for the river.

Historically, the Snowy was treated like an irrigation ditch, says Brett Miners, landscape manager with the catchment management authority.

"The river's got a couple of decades of working out to do," he says. "It's changed so dramatically from what it used to be that it's going to take some time to re-establish its character. The willows have just eaten the sand beds."

Teams of workers are being flown into wild gorges by helicopter to undertake the biggest eradication of noxious willow trees ever attempted in NSW - and possibly in the nation.

The river was choked with innumerable willows - some estimates put the number as high as 10,000 stems per kilometre of river - growing out of an understorey of blackberry.

Of the 184 kilometres of Snowy River in NSW, 165 kilometres have already had a first sweep of poisoning. If the weather holds and conditions remain good, the last 19 kilometres may be finished this year.

Camping out for up to 10 days, chopping with tomahawks and poisoning from dawn until dusk, in the worst patches the bush regenerators are travelling downstream at a tortuous pace measured in kilometres per week. It is a backbreaking, wet, painful and relentless job, where serpent-sized eels and waist-deep mud are an occupational hazard.

The owner of Blackwood's River Restoration, Martin Blackwood, is contracted to guarantee a 98 per cent kill of willows.

"If you get frustrated by it you won't last long, especially when we are poisoning among the blackberry and you get poked in the eye by a dead stick," Blackwood says. "It doesn't pay to look up too often; you just keep your head down and continue from willow tree to willow tree, otherwise you just psych yourself out."

Other teams have been catching native fish from remote tributaries so they can be bred in captivity for release in their hundreds of thousands.

Miners says this work is crucial because, as flows increase, there will be a window of opportunity for native fish to elbow the feral ones out of the way - but only if sufficient stocks are available for release.

"We would like to put 50,000 Australian bass fingerlings per year for three years into the river below Snowy Falls," he says.

The vision is for the river to be restored to its former place as one of the nation's premier bass fishing waterways. Miners says Australian bass are a superior sport and table fish to the exotic trout, but notes that the two can coexist in rivers such as the Snowy. He hopes that over time people will realise the benefits of fishing for the native species.

Numerically the river is currently dominated by goldfish, he says.

A crew of Aboriginal contractors has been planting tens of thousands of native trees, grasses and shrubs on denuded riverbanks. Scientists have been studying the rate of return of river invertebrates and the slow scouring away of foul sediments.

A program offering incentives to farmers who fence off their river frontage is also under way - so far agreements have been reached on keeping stock away from 6.5 kilometres of the Snowy.

Miners says it is possible woody debris may also need to be placed back into the river to help create the turbulence required to scour out sediment and to provide habitat. He believes the job of returning the Snowy to ecological health will be finished when there are healthy populations of another native species - the river blackfish.

SNOWY GOES WITH THE FLOW 15 / 5 / 05

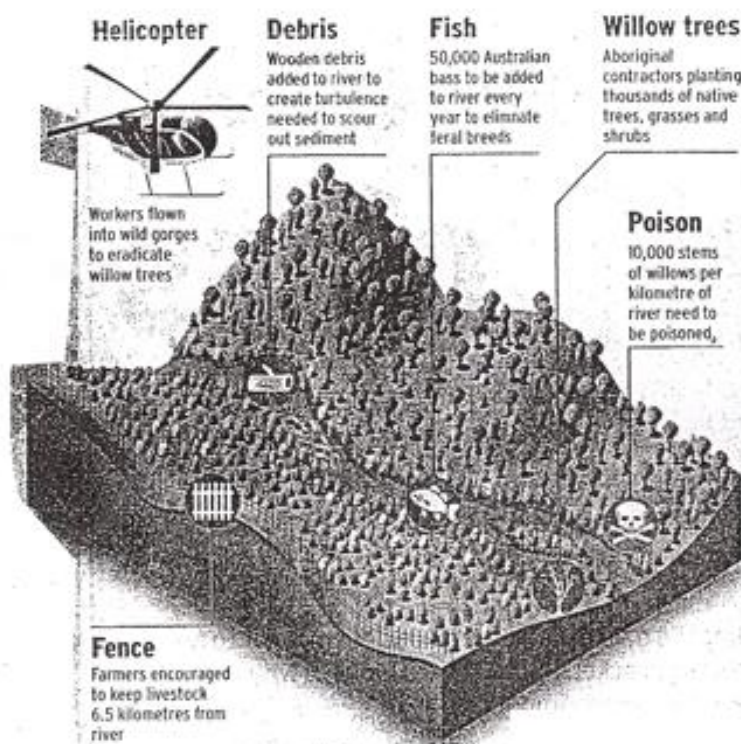
Read the **newspaper article** on page 7 and fill in the gaps below.

In 1967 _____% of the Snowy River's flow was diverted to be used in the _____ Scheme. The effects of decades of this reduced river flow are now evident in the fact that;

1. _____ stocks have been reduced or decimated and replaced by _____ species, such as gold fish.
2. river _____ have been covered with masses of _____, especially willows.

In 2000 a decision was made which changed this river system. It was then that the _____, _____, _____ and _____ governments agreed to restore as much as _____% of the Snowy's original flow back into the river, however, despite these recently introduced improvements, the Snowy River is still in environmental trouble. The plan to rehabilitate the river over the next 10 years includes the following strategies;

1. _____ of willow trees along the river banks.
2. _____ the native fish from tributary rivers, _____ them and releasing them back into the Snowy.
3. Rehabilitation of _____ river banks with the planting of thousands of _____ trees, grasses and shrubs.
4. Farmers being encouraged to _____ off their river frontage land so that _____ cannot graze and erode this land.



*SUSTAINABLE
DEVELOPMENT OR
DESTRUCTION*

Sustainable development basically mean using the resources on offer now for our survival and enjoyment without destroying the opportunity for future generations of people to use and enjoy them also.

Is future proposed development of Kosciuszko National Park sustainable development or destruction of resources forever?

The ski industry like most industries seeks to increase profits every year and the main way is to attract more people (with money to spend) to the Ski Resorts, which are on land leased from the National Park.

(Use the newspaper article on page 10 to fill in the gaps)

The ideas proposed to attract more people are: (26 marks)

- Convert _____ square metres (treble the size of Dapto High School main oval) of National Park bushland into a R_____ to hold 60 mega litres of water (ie 60 O_____ S_____ P_____) to be used in times of low snowfall from water into M_____ M_____ S_____.

and

- Open snow covered winter roads to P_____ and C_____ P_____ during winter allowing more people (via cars and buses) access to the resorts because ski tube moves only _____ people per day and couldn't take more than _____ people per day without an upgrade.

Green groups suggest increasing numbers of tourists should not be allowed to say 'O____ T____ S____' because increased numbers of short and long term residents means increased demand for I_____ (eg roads, housing sewerage disposal etc.) which means increased stress on an already F_____ environment.

Green groups suggest accommodating the tourists in surrounding towns such as J_____, A_____, K_____ and T_____ and moving them to and around the resorts by S_____ B_____ and the S____ T_____.

QUESTIONS 3 & 4 ARE TO BE ANSWERED ON FRIDAY ON THE WAY HOME

3. While on the show conduct your own survey. Ask anyone you meet if they are staying 'on the snow. Keep an account of those that say **YES** and those that say **NO**. (9 marks)
- a) Number who said **YES** = _____
- b) Number who said **NO** = _____
- c) Total of a) and b) = _____
- % of those saying **YES** = a) _____ x 100 ÷ c) _____
- % of those saying **NO** = b) _____ x 100 ÷ c) _____
4. What do you think? Go with the proposed development or go with the Green groups and why? Are profits more important than the fragile ecosystem? (3 marks)
-
-

Tourist influx seen as threat to fragile mountains

SMH, June 11, 2003

By Stephanie Peatling, Environment Reporter

A new waste site, improved access for cars and a reservoir for man-made snow are being considered for Kosciuszko National Park as it becomes a four-seasons destination.

But moves by PlanningNSW to ease environmental pressure on the park have been attacked by green groups as a blueprint for urbanisation.

The proposals are in a departmental discussion paper that offers development guidelines. The paper flags potentially controversial infrastructure decisions as the number of visitors to the park increases.

Among the potential projects is the new reservoir for man-made snow at Perisher Range, which would hold 60 megalitres of water - the equivalent of 60 Olympic swimming pools - and cover 10,000 square metres.

Also, opening roads into Perisher and Charlotte passes during winter would be considered, as the ski tube - a train that takes skiers to the passes from the car park - reaches capacity.

The tube moves 6300 people a day, but

However, environmentalists want the State Government to focus on accommodating the increasing number of tourists in surrounding towns such as Jindabyne, Adaminaby, Khancoban and Tumbarumba.

Groups such as the National Parks Association of NSW and the Colong Foundation for Wilderness say pressure on the park should be alleviated by moving visitors around by shuttle bus and the ski tube.

The executive officer of the National Parks Association, Andrew Cox, said the discussion paper "merely provides a recipe for turning the alpine resorts into another urban town" instead of having "real limits placed on development in the park".

The fragility and high value of alpine environment made ecologically sustainable management and development of the resort areas important, and this created challenges for planning, as the pressures towards growth mounted, the paper said.

More tourists are indicating they care about their impact on the environment, according to research by Tourism NSW. The type of tourists that visit the

snowfields were likely to prefer ecologically sensitive development, the research found.

But it also showed that the ageing tourist population wanted more large-scale, resort-type development and activities based near resorts instead of guesthouses, which have been more common in the area in the past.

The increasing tourist numbers to the park means the ski resorts, especially Mount Selwyn, need more water.

And an existing landfill site for the resorts has also reached its limit with waste now being transported to Canberra and Victoria for treatment or recycling.

The paper suggests creating large dump sites in Cooma and Jindabyne.

It said the quality of the park could not be maintained if huge amounts of waste were stored within it.

Climate change issues would become more important too, the paper said. Rising temperatures were likely to affect the amount of snow falling on the alps.

The CSIRO has been commissioned to investigate the long-term impact of climate change on the industry.

FOR THE WAY HOME ON FRIDAY**EVALUATION****The Good, The Bad and The Ugly**

In previous years we have asked ski trippers to list what they thought was good and bad about the trip. Below are the areas most commented on.

The cooking	Learning to ski ie ski lessons	Toilets
Skiing	Seeing snow for the first time	T-bars
Being with friends	Warm rooms	Bed
Stacks (skiing) ie falling over while skiing	Mini bus	Snow Hydro Show
Snow conditions	Lenny saying "morning" (6am wakeup)	Lunch
Bus trip	Meeting other people	Carrying skis
Snowball fights	Showers	Ski boots
Freedom	9.30pm bedtime	Ski hire
Ski instructor	Ski tube	Scout camp
Night meetings	Geography Booklet	Stopping at McDonalds on the way home
Teachers	The cold	ANYTHING ELSE

You are asked to pick your best three and worst three (if you have any) and most favourite to least favourite foods served for dinner and write them in the spaces provided below.

Best Three

Best _____
 2nd Best _____
 3rd Best _____

Worst Three

Worst _____
 2nd Worst _____
 3rd Worst _____

Food Served for Dinner

Most Favourite _____
 2nd Favourite _____
 3rd Favourite _____
 Least Favourite _____

Any other comments _____

