

Kinglake National Park

An excursion and fieldwork resource for schools



Congratulations for taking the leap outdoors!

Excursions and field trips are an important part of the educational experience for students, offering hands-on, concrete experiences that are important for reinforcing key concepts taught in the classroom.

Our aim is that every student leaves a park or reserve with a greater appreciation not only of its unique values, but how these are connected to other places and larger issues, and a desire and the know-how to get involved in making a difference.

Our excursion/fieldwork resources aim to help students:

- develop a sense of wonder, curiosity and respect for our parks and the people and environments they support
- develop their knowledge of their own locality and region and how places are connected
- understand the changes that are occurring in our parks and what strategies are being employed to manage these changes
- consider some of the complex interrelationships between the physical environment and the flora, fauna and fungi that live in our parks
- become informed, responsible and active citizens who contribute to the protection of our special places.

This resource is designed to provide teachers with ideas for planning exciting and experiential learning activities out in our beautiful parks, reserves and waterways.

We would love to hear about ways we can improve this resource to support teachers who take their lessons outdoors. Please contact education@parks.vic.gov.au with your feedback.

Why visit?

No-one will forget the devastating bushfire of February 2009 that burnt through Kinglake National Park and the surrounding farmlands. It is the largest national park in Victoria, 65 kilometres north-east of Melbourne. The park has 22,360 hectares of rolling, forested hills and fern gullies, divided into four distinct blocks. Prior to the fire, Kinglake National Park protected almost 600 native plant species, over 40 native mammals and 90 native bird species. Monitoring of species and their return continues. Bushwalking, picnics, camping, horse riding, cycling and nature study are all popular activities in the park. In spring, keep an eye out for wildflowers in bloom. Winter is a good time to discover fungi, mosses and lichens.

For teachers

This self-guided excursion is designed to be linked to the Victorian Curriculum for the subjects of geography, science and history, but can be enjoyed by a wide range of students who want to explore, discover and learn about our parks. It is suitable and scalable from Levels 5–VCE. Some suggested linkages to the Victorian Curriculum are provided below:

Subject	Level	Content descriptions
Geography	5–6	Factors that shape places and influence connections
	7–8	Water in the world Landforms and landscapes
	9–10	Environmental change and management
	VCE	Unit 1: Hazards and Disasters
Science	5–6	Biological sciences
	7–8	Biological sciences Earth and space sciences
	9–10	Biological sciences
	7–8	Aboriginal and Torres Strait Islander peoples and cultures

The field trip can be done in two hours, or you can opt to stay for a day.

For additional information on the park, download the [visitor guide](#) or visit the [Kinglake National Park](#) webpage for additional information including facilities, management plans, maps and images.

This excursion guide can be used in conjunction with Parks Victoria's video: [Kinglake, a forest recovery story](#).

Before you go

Make sure you have reviewed the information provided for planning an excursion at <http://parkweb.vic.gov.au/learn> for safety and permit requirements and have checked the facilities available.

For activities such as bushwalking (including overnight camping) and rock climbing, group sizes are generally restricted to 10 people or less. Multiples of 10 are acceptable where campsites cater for larger groups. For appropriate group sizes please refer to the [Adventure Activity Standards](#).

All groups are required to let us know you're coming. Please complete a Group Activity Statement downloadable from <http://parkweb.vic.gov.au/learn> and email to: groupactivities@parks.vic.gov.au at least four weeks prior to arrival. This will assist us to alert you to any park closures, storm damage or management activities such as planned burning or pest animal programs that may affect your visit. It also forms part of your group's emergency management plan and provided quick access to emergency contacts, should your group need assistance.

You will be visiting a national park, an important home to many species of plants and animals, some found in only a few other areas, and others nowhere else in the world! Please remember to keep to the paths, don't pick or take any vegetation and take your rubbish home with you.

Collecting data

We encourage you to gather primary data during your excursion to support a truly immersive and hands-on experience. Pictures, drawings and records of sightings are all easy to take and don't require a research permit. If you'd like to do something that involves moving off the paths, including transects or quadrats, please complete an [application for a research permit](#).

Structuring your excursion

Kinglake National Park, open daily, has four distinct areas. The natural environment of much of the park was affected by the Black Saturday fires of 2009. Road access to some areas and the level of the walking tracks prohibits school groups from visiting many areas. The most suited area for school groups to visit is the Sugarloaf Block – enjoy fantastic sights of the city from Mt Sugarloaf and take in the spectacular view at Mason Falls.

Access to Sugarloaf Block is from the Whittlesea-Kinglake Road at Pheasants Creek along National Park Road. After entering the national park travel to the car park at Mt Sugarloaf (550 metres above sea level). Here there is a panoramic view of the plains from the Great Dividing Range, including the high-rise buildings of Melbourne in the distance. A sense of the scale of the park is evident from here and from along the road. Students should be able to identify areas where the fire devastated the forest. The regenerating undergrowth is beginning to block some of this view.

On the return trip down the road encourage students to study the destroyed forest areas either side of the road. Near the national park entrance turn onto the road to Mason Falls Picnic Ground. Bus parking is provided here and there are ample facilities and space for groups to lunch. A number of interpretative signs describe the park and outline the walks available.

The walk to Mason Falls and the Lyrebird Circuit are recommended. The pathways here are broad, gravelled and well maintained. Along the route to Mason Falls, an interpretative sign explains the different forms of vegetation found on the slope with changing angles, quality of soils and levels of sunlight. The forest changes from messmate forest to mountain grey gums.

As you walk, listen to the water in Running Creek as it makes its way toward the falls. Listen also for birds, especially the lyrebird. If the group is particularly quiet a lyrebird may be spotted or you may see scratchings

on the edge of the pathway indicating its recent presence. This YouTube clip explains how the lyrebird imitates other birds <https://www.youtube.com/watch?v=6G9HWhj3GfM> (2.28 mins).

After a short walk (15 minutes) you will arrive at the viewing platform built out over the valley to provide a clear sighting of the 45-metre falls on Running Creek. The water is captured a short distance away on top of the Great Dividing Range along the ridge road from Whittlesea to Kinglake. The water flows into other tributaries but ultimately finds its way to the Yarra River. On the viewing platform an interpretative sign explains the development of the area throughout the centuries.

Return towards the picnic ground but veer left onto the Lyrebird Circuit. The sign for this pathway is somewhat obscured by the flourishing regeneration of the vegetation. After a short distance a left turn will take you to the upper most part of the falls where an interpretative sign explains mudstone and fossils. Do not attempt to cross the water. Return to complete the Lyrebird Circuit (10 minutes). Interpretative signs on this pathway explain the plants in the gully, Carmen's mill site (1919–1922), survival of a mountain grey gum, the timber tramway, and ferns and fungi.

Your walk will bring you back to where you started in the picnic ground, where there is recognition of the lyrebird counts undertaken annually by volunteers since 1988.

The Black Saturday fires in 2009 caused such devastation within the natural environment and the nearby built environment, including loss of human lives. As you drive from the national park back along National Park Road look for evidence of the change to the natural environment and see how people are rebuilding their lives.

Learn and discover

1. Landscapes and landforms

The base rocks of the Kinglake area are sedimentary mudstone and sandstone that formed on the bed of an ancient sea. Some 440 million years ago, the Kinglake area lay under a shallow sea in the "Melbourne trough". At this time, the only animal life consisted of marine creatures such as trilobites, echinoderms, sea sponges and graptolites. Primitive land plants had only just evolved. The very warm, wet climate meant that there was massive erosion of mud and sand from surrounding areas into the Melbourne trough, trapping many of these marine animals which now appear as fossils in the mudstone. This process continued for about 50 million years resulting in a layer of mudstone over 1000 metres thick, 45 metres of which is exposed at Masons Falls.

During the Tertiary Era (60–6 million years ago) there was a general uplift of land giving rise to the Great Dividing Range and its deeply dissected valleys. Between Mt. Disappointment (794 metres) in the west and Mt. Slide in the east is an extensive area that is level or gently undulating. From Kinglake West through to Kinglake and on to Toolangi, a road follows the level land of the Kinglake Plateau which is part of the Great Dividing Range. It has rich deep red soils which support the area's flourishing agriculture. The deep soils indicate that a long period of weathering and soil formation took place before the onset of the present cycle of erosion. The southern slopes of the escarpment have steeper valleys.

2. Water in the landscape

Some visitors to Kinglake National Park are disappointed to find there is no lake at Kinglake! The name actually comes from Alexander W Kinglake (1809–1891), a celebrated English author and lawyer, who wrote of his travels to the Middle East. It appears that Kinglake's books were so popular that at the time it seemed

a fitting choice to name the area after him. Kinglake never visited Australia, although the parish of Kinglake bore his name as early as 1862. Lindsay Beale, one of the first settlers to the district, suggested in 1873 that the town also be named Kinglake.

On the northern slopes of the Great Dividing Range, creeks flow into the Goulburn River which flows on to the Murray, while creeks on the south of the Divide dissect the slopes and flow to the Yarra River. The climate of the region indicates a high level of rainfall (1367 mm at Toolangi weather station) on average, but the devastating bushfire of 2009 followed a 10-year drought.

3. People on the land

The area now known as Kinglake National Park is located within the traditional land of the Wurundjeri Aboriginal community to the south and the Taungurung Aboriginal community to the north. For many thousands of years, the Wurundjeri and Taungurung communities inhabited this area and made use of the abundance of seasonally available plants and animals, and to carry out important cultural duties. Plants and animals served many purposes including temporary shelter, transport, food, medicine, clothing, hunting implements and many other important cultural items. Seasonal movement within their traditional lands was determined by the availability of food and weather conditions. Present day Wurundjeri and Taungurung communities still have a very strong connection with this area. Many Aboriginal sites were uncovered by the fires in 2009 including "scatters" or fragments discarded during the process of manufacturing stone tools. These sites are being surveyed and recorded so that they can be protected forever.

European settlers were first attracted to the Kinglake area when gold was discovered in the foothills, and many camps sprung up around the district. The miners gradually moved up the creeks in their search for gold and the first discovery on the range was made in 1861 at Number One Creek. The township that sprouted there was known as Mountain Rush, just east of the present town of Kinglake. Evidence of mining can still be found around the park in the form of shafts and diggings, so walking off tracks can be hazardous.

The Mountain Rush township only lasted a few years as the goldfields were not exceptionally rich, and the settlers' attention soon turned to timber cutting to supply the needs of a developing Melbourne. Timber was carted from the bush mills to the railway at Whittlesea by teams of horses and bullocks. In the early 1900s an extensive network of timber tramways was established, and it was claimed to be longer than the tramlines of Melbourne. The remains of Carman's Mill and Tramway can be found near Masons Falls picnic area, as can the stumps of huge trees that bear testament to the days of past logging.

By the 1920s the accessible timber resources were severely depleted and potatoes replaced timber as the principle product of the region, along with berry fruits which supplied the Leggos preserving factory, once located in Kinglake Central township. Large areas of the Kinglake plateau with its deep, rich soils were cleared for agriculture. Several prominent locals saw this as a threat to the natural values of the local area and proposed the creation of a national park. Among them were William Laver, Professor of Music at Melbourne University; Sir James Barrett, President of the Town Planning and National Parks Association; and William Everard MLA, after whom Mt Everard was named.

Today the Wurundjeri and Taungurung people continue to live, practice and strengthen their cultures. The [Wurundjeri Land and Compensation Cultural Heritage Council Aboriginal Corporation](#) and [Taungurung Clans Aboriginal Corporation](#) are Registered Aboriginal Parties, representing the traditional owners of the area we now call Kinglake. They ensure that Wurundjeri and Taungurung culture and connection to place is maintained into the future.

4. A unique ecosystem

This unique ecosystem experienced a disaster in 2009 when fire burnt 98 per cent of the national park. Today the recovery period continues as the ecosystem readjusts. Fortunately for many animal and bird species, the unburnt and less severely burnt areas offered refuge, along with the species own survival techniques.

Kinglake National Park is a foothill forest ecosystem – many of the plants grow on the limits of a suitable environment. Seven vegetation communities can be identified: (1) The Open eucalypt forest of mixed species such as messmate stringybark and narrow-leaf peppermint grow to 25m tall with a low highly diverse understorey including a range of shrubs, grasses and herbs. (2) The Damp/Riparian Forest or tall eucalypt forest of mountain grey gum and manna gum, has a dense understorey, including tree ferns occurring in gullies and along riparian corridors. (3) The Dry forest of Broad-leaved peppermint and mountain grey gum has a low understorey made up of heaths and peas. (4) Shrubby open forest occurs on the ridges and exposed slopes, with red box and silver top Ash having a distinct middle understorey layer and a ground cover of grasses and herbs. (5) Foothill forest on the lower slopes and in gullies has medium to tall eucalypt forest (messmate stringybark and narrow-leaf peppermint), with a dense understorey and diverse ground layer. (6) Dry grassy forest has low open, poor form eucalypt forest (narrow-leaf peppermint, mountain grey gum and long leaf box) with a low and sparse understorey on ridges and steep slopes. (7) Wet Forest occurs in sheltered sites of gullies and on southern aspects, with tall eucalypt overstorey (mountain ash) and a dense shrubby understorey that has a moist, fern rich ground layer. This mountain ash area is unique to this park. Page 8 of the Kinglake National Park masterplan contains a map of all the vegetation classes: http://parkweb.vic.gov.au/__data/assets/pdf_file/0006/523752/Kinglake-NP-Master-Plan.pdf.

With such diversity of vegetation, Kinglake National Park was home to a large variety of bird, mammal and reptile species. However, many of the animals can be hard to see as most are nocturnal, particularly the mammal species. Thirty-six native species had been recorded in the park. They included the eastern grey kangaroo, swamp wallaby, brush-tailed possum, common ring-tailed possum, feathertail glider, sugar glider, greater glider, yellow-bellied glider, common wombat, long-nosed bandicoot, brown antechinus, dusky antechinus, white-footed dunnart, swamp rat, water rat, short-beaked echidna, platypus, and a number of bats. Several hundred koalas were reintroduced into the park after 1970 after having been almost totally wiped out during wildfires in 1926 and 1939. The brush-tailed phascogale occurred in the park; their status in Victoria is vulnerable. The tiger quoll was present and its status in Victoria is endangered. Ongoing monitoring of species continues in the aftermath of the 2009 fire.

There have been 182 species of birds listed for Kinglake National Park. Important species included brush bronzewing, wedge-tailed eagle, peregrine falcon, powerful owl, tawny frogmouth, brush cuckoo, superb lyrebird, rufous fantail, satin flycatcher, pink robin, spotted quail thrush and pilot bird. Introduced bird species included house sparrow, common starling, common blackbird, common mynah, European goldfinch, and green finch. The return of bird species continues to be monitored.

There were 25 species of reptiles at Kinglake National Park. These included tree goanna, mountain dragon, marbled gecko, delicate skink, grass skink, black rock skink, blotched blue tongue, common blue tongue, lowlands copperhead, eastern small-eyed snake, white-lipped snake, tiger snake, red-bellied black snake. Twelve species of frog had been found in the park including the southern brown tree frog and the growling grass frog. A number of important fish species were also to be found. Broadfin galaxias, whose status in Victoria is rare, was found in the park. Mountain galaxias, river blackfish, yabbies, freshwater crayfish and

freshwater mussels were found. The presence of a large population of introduced Brown Trout in Arthur's Creek at the park boundary has almost eliminated the native mountain galaxias and contributed to the elimination of the broad-finned galaxias. Populations of mountain galaxias have also been recorded in the head waters of Diamond and Jehosaphat Creeks on the south side of the Divide and Hirts Creek to the north. These are populations of regionally rare fish.

5. Regeneration

Most of Kinglake National Park is covered with eucalypt forest. Many of the trees show a green flush of new growth along their trunks following the 2009 fire. This is a survival feature that assists in recovery after loss of foliage, damage or intense heat. Approximately 98 per cent of the park was burnt by the Black Saturday bushfires in February 2009. Each species has its own survival features, for example, grass trees send up tall flowering spikes full of seed and tree ferns are protected by thick bark. Acacias survive due to regrowth from root suckers and soil stored seed. Gradually other species have germinated in the park including bush peas, cassinias, heath, tussock grass and orchids. A number of birds and mammals can again be seen in the forest. Lyrebirds are out gathering food, while the wallabies are feeding on the fresh new shoots.

The 2009 fire began outside the park, where there was tragic loss of human life and devastating consequences to the local community, but now the natural environment is making a remarkable recovery. Bare areas with weeds, particularly thistles, have been overtaken by eucalypts. Mountain ash trees have regenerated prolifically in the Wallaby Creek catchment, where only about 150 old trees survived. Myrtle beech in some gullies of the Plenty River headwaters were severely affected and may be replaced by eucalypts. Threatened species surveys have shown impressive regeneration of swamp bush-pea and round-leaf pomaderris. The spot-tail quoll, yellow-bellied glider and forest owls have been particularly impacted, as has the brush-tailed phascogale. Lyrebirds and wombats have been remarkable survivors – there is speculation that lyrebirds may have taken refuge in wombat holes.

In the Sugarloaf and Everard Blocks, due to vegetation types and the high intensity of the fire, vegetation is expected to regenerate at a slower rate, resulting in a dense understorey over the next 15 to 20 years and ultimately multi-stemmed trees. The landscape character in these areas is likely to vary somewhat from the pre-fire landscape permanently as a result.

6. Managing the park today

In 1928, an area of 5585 hectares was permanently reserved as a site for a National Park. Several small additions between 1928 and 1978 brought the area of the park to 5836 hectares. In 1980 the size of the park almost doubled to 11,270 hectares; additional areas added throughout the 1980s brought the park size to 11,430 hectares. In 1995 the park almost doubled again when a further area of 10,170 hectares was added. Its current size is 22,360 hectares. The park is used for a wide range of activities including hiking, camping, horse riding, picnics and mountain bike riding https://www.youtube.com/watch?v=4QVYHs-jS_Q (Parks Vic 5.13 mins Development of a sustainable mountain bike track).

Kinglake National Park has long been prone to fire. Serious fire incidents occurred in 2006 before the devastation of February 2009. http://parkweb.vic.gov.au/__data/assets/pdf_file/0006/523752/Kinglake-NP-Master-Plan.pdf (page 9 has a map of the fire intensity across the region). Each time the plant and animal species have returned. This video <https://www.youtube.com/watch?v=b2slam8qpcQ> (Parks Vic 10.59 mins) looks at the recovery of the national park.

The ridges within the park receive high rainfall (1200 mm annually). Past logging and clearing led to topsoil erosion, especially in the Chads Creek catchment, and severe gully and sheet erosion, which has been contour ripped in an attempt to halt it. Clear felling of Mountain Ash reduced the habitat of tree dwelling species which relied on tree hollows for nesting sites. It is likely that Kinglake National Park had become a refuge for the recolonisation of nearby disturbed forests.

Settlement and horse riding along Wild Dog Creek and its feeder gullies led to erosion, while at Chalmers Ridge, north of Steels Creek, soil erosion was caused by gold mining, rabbit and vehicle activities.

Since the devastation of 2009 bushfire, a new Master Plan was introduced to guide the future development of the park http://parkweb.vic.gov.au/__data/assets/pdf_file/0006/523752/Kinglake-NP-Master-Plan.pdf

Discover and reflect

You might like to enhance your field trip with some activities that help students record and extend their learning back into the classroom. You might like to:

1. Take photos to create an annotated photolog or poster of your field trip to share with classmates. You could use social media to share it with friends.
2. Create a short video that helps tell one of the six stories outlined above to share with classmates.
3. Map your field trip using software such as Scribblemaps or Tour Builder, annotating what you've learned at various points. Include on your map the height of the trees at different locations.
4. Create a sound map of various points around the park, taking a series of 30 second audio recordings, referenced back to points on a map. Students can also record their audio observations on paper, using lines made from a central point to indicate the direction, type and frequency of sounds they hear, and whether it adds or detracts from the environment.
5. (a) Use the following data rainfall data from Toolangi weather station to create a bar graph showing the average rainfall expected each year in this region.

Toolangi weather station

Month	Average rainfall (mm)
January	85.4
February	75.8
March	85.5
April	105.9
May	122.9
June	111.4
July	119.9
August	137.5
September	137.0
October	129.4
November	127.0
December	116.5
Average total	1366.8

- (b) In which season is most rainfall expected? Calculate the total for that season.

- (c) In which season is least rainfall expected? Calculate the total for that season.
 - (d) How does this level of rainfall compare with the rainfall at your location?
 - (e) The Great Dividing Range, in particular the area around Kinglake, is a source of water for the Yarra River. How does this rainfall help to sustain the river's flow?
 - (f) In a period of drought, such as occurred from 1999–2009, these figures would look very different. To see how much rainfall fell during the drought visit:
[http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=139&p_display_type=da
taFile&p_startYear=&p_c=&p_stn_num=086142](http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=139&p_display_type=dataFile&p_startYear=&p_c=&p_stn_num=086142)
 - (g) What impact would a period of drought have on the forest?
6. Research the formation of a waterfall and draw a diagram to show its key features, such as the hard rock, the retreat of the waterfall upstream, plunge pool and step valley. Discover some of the world's great waterfalls, such as Niagara Falls (North America); Victoria Falls (Africa); Iguazu Falls (South America).
 7. Plant species change throughout the park. Discover how the change in slope and of soils impacts on plant species.
 8. Bushfires can be very destructive, however, some plants in the Australian forests require fire for regeneration. Why do you think some Australian plants need fire or smoke to germinate? Discover examples of some of these plants.
 9. In the autumn of 2010 rainfall was excessive for that time of the year. What effect would heavy rain have on exposed soils?
 10. Using Google Earth and the time clock, describe the area around Mason Falls prior to the fires, in the months after the fires, and today.
 11. Interview the Park Ranger or Friends Group member (you could do this via Skype before or after the field trip). In particular, find out about the recovery of the park after the bushfire of 2009.
 12. Discuss the role national parks play in connecting people to their environment, or influencing people's personal relationships to nature.

Get active

Contact the [ParkConnect team](#) if you would like to get your students involved in some hands-on volunteer activities in Kinglake National Park.

Parks Victoria respectfully acknowledges the Traditional Owners of what is now known as Victoria. For many thousands of years they have lived in harmony with, and carefully managed the Country for which they have a deep spiritual connection. Contemporary Aboriginal people are proud of their ancestry and in addition to their inherent rights, they have spiritual and cultural obligations to ensure that their ancestral land and culture is managed responsibly and appropriately.