

## **Title Panel Description:**

### **Title:**

DINOSAURS OF BC

### **Image:**

A dark-orange silhouette of a *Ferrisaurus* dinosaur stands over an angular, rusty-red background. The prehistoric creature stands in profile, balanced on its two hind legs, with its two small arms protruding from its chest. The dinosaur's profile suggests a beaked mouth and a bony shield protruding from the back of its head.

### **ROYAL BC MUSEUM Logo:**

To the right of two human figures, turned with their arms raised over their heads while encircling a small tree, is the text: ROYAL BC MUSEUM.

## **Exhibit Physical Description:**

The space for this colourful and dynamic exhibit is between 90 and 140 m<sup>2</sup> (950 to 1500 square feet), all on one level. The exhibit has a single entrance, with visitors able to move through the exhibit and leave the way they came in. The cases containing the fossils are largely arranged around the exhibit perimeter, with a few set up in the middle of the floor, along with the life-sized model of Buster.

The exhibit contains:

- Eight cases containing 31 fossils, casts and reproductions.
- A life-size reproduction of a dinosaur, a *Ferrisaurus*, which has been named “Buster.”
- A smaller-scale, tactile version of Buster.
- A set of 3D-printed Buster bones.
- 17 free-standing text panels filled with information about dinosaurs in BC, adorned with text, various artist renderings, photos and different colour schemes.
- Three interactive experiences and two video screens displaying information.
- Braille descriptions of the displays, panels and fossils.

## **Panel 1 Description:**

### Description:

Similar to the DINOSAURS OF BC panel, the colour scheme of this panel is rusty red over brown, which is repeated on other panels in the exhibit.

### Title:

DINOSAURS IN EVERY CORNER  
A New Age of Discovery

### Text:

Most people don't think of British Columbia as a place where you can find dinosaurs. The mountains and forests that make this province unique also make it hard to find rocks of the right age and type to contain dinosaur bones. New research by palaeontologists at the Royal BC Museum and across the province is slowly revealing the secrets of the dinosaurs that once inhabited these lands. Dinosaur fossils have been found in all corners of the province, in places that might surprise you—along rivers, on beaches, in coal mines and up in the mountains.

### Image:

Image title: *Ferrisaurus* takes a drink.

In this idyllic, water-colour-style scene, *Ferrisaurus*, a sheep-sized dinosaur, sips water from a forest stream or pond. It stands in the shadows formed by the exotic canopy above, perched on rocks along the riverbank. Sun filtering through the trees shimmers in the water and causes rippling reflections on a rock face behind *Ferrisaurus*. As the dinosaur lifts its head, water drips from its beaked mouth.

Caption: Illustration courtesy of Rebecca Dart.

## **Panel 2 Description:**

### Title:

ACKNOWLEDGEMENTS

### Text:

The fossils in this exhibit come from the ancestral territories of the Gitksan and Tahltan peoples, the K'ómoks, Tla'amin and Qualicum First Nations, the Ktunaxa Nation and from Treaty 8 territory.

Research on the dinosaurs of the Sustut Basin was supported in part by grants from BC Parks, the National Geographic Society, the Dinosaur Research Institute and the Natural Sciences and Engineering Research Council of Canada. Many thanks to BC Parks, the BC Fossil Management Office, and Angela and Eric Van Velzen of Suskeena Lodge for logistical support of fieldwork.

### **Panel 3 Description:**

Title:

TRACKWAY HUNTER

Text:

Time to hunt for trackways! Trackways are trace fossils and can tell us about animal movement and behaviour. For example, you can figure out if a dinosaur walked on two or four legs and even how large and fast it might have been. Groups of tracks can reveal if animals were travelling alone or in herds.

In British Columbia, trackways can tell us what dinosaurs were present even when there are no bones preserved. Look out for hidden trackways as you travel through the exhibit. Like a good palaeontologist, keep track of how many different tracks there are. Be sure to check at the exit to see whose tracks you found, and whose you missed.

## **Panel 4 Description:**

### Description:

Next to the title, an image of British Columbia is displayed, with a star highlighting a location in northeastern BC, very close to the eastern border.

### Title:

TUMBLER RIDGE TYRANTS  
Tracking BC's Tyrannosaurs

### Text:

In 2015, palaeontologists announced the discovery of footprints near Tumbler Ridge made by tyrannosaurs walking through mud. They were probably from *Albertosaurus sarcophagus*, a type of tyrannosaur that lived a few million years before *Tyrannosaurus rex*. One of the tyrannosaurs seems to have had an injured foot, missing one of its toe tips.

A few years later, a hiker spotted an unusual shape in a boulder. It was the impression of a bone from a tyrannosaur's skull! Most of the bone had eroded away, but a detailed impression remained. Palaeontologists are still trying to figure out what species of tyrannosaur it belonged to.

### Image 1:

Photorealistic rendering of an *Albertosaurus sarcophagus*, moving through a swampy, grassy bog in a clearing. It is dusk, as pink-tinted clouds stretch over a muted sky. Scattered trees dot the landscape. One foot of the *Albertosaurus* is planted firmly in the mud, while the other is lifted, poised almost like a modern-day heron. The hulking beast has two relatively small arms dangling below a barrel-shaped chest. Its large, reptilian head, adorned with distinctive orange flashes and showing a rounded snout, hovers a few metres above the ground. Over its greenish-grey skin on its torso and legs, there are distinctive brown spots, similar in shape to those of a cheetah or a dalmation. Stretching across its long, thick tail are stripes, more akin to zebra skin.

Credit: Image courtesy of Henry Sharpe.

Caption: *Albertosaurus sarcophagus*, a relative of *Tyrannosaurus rex*, was the apex predator of Western North America 70 million years ago.

### Image 2:

Photo of a man and a woman examining the sloping bank of an idyllic stream near the forest. The hot summer sun shines overhead.

Caption: Charles Helm (left) and Manda Maggs (right) search for tyrannosaur footprints near the trackway site.

Image 3:

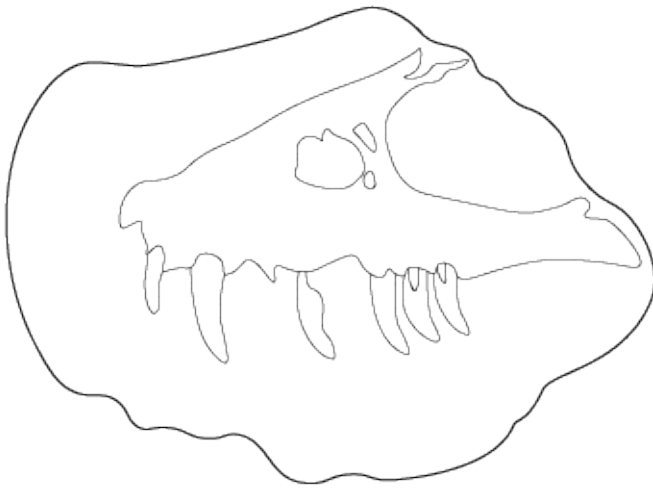
Photograph of two fossilized footprints impressed into river rock.

Credit: Image originally published in Richard T. McCrea et al., "A 'Terror of Tyrannosaurs': The First Trackways of Tyrannosaurids and Evidence of Gregariousness and Pathology in Tyrannosauridae," *PLOS One* 9 no. 7 (2014).

Caption: The tyrannosaur footprints marched directly into a steep riverbank.

## **Reader Rail 1 Description:**

The objects listed below can be found in **Case 1**, named “Tumbler Ridge Tyrants.”



### **Object 1:**

Title: 1. Cast of tyrannosaur maxilla (upper jawbone) and teeth

Scientific Name: Tyrannosauridae

Object Details: Cast of PRPRC 2017.01.001

Size: 7 cm (d) × 45 cm (w) × 32 cm (h) (2.7 × 17.7 × 12.5 inches)

Unknown formation, Late Cretaceous

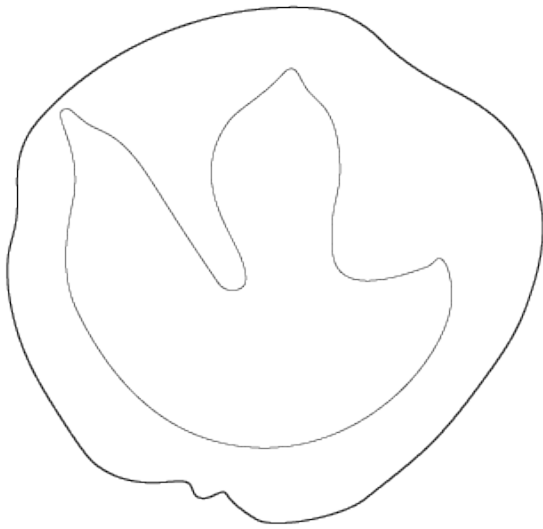
(100.5 to 66 million years ago)

Tumbler Ridge, BC

Discovered by Rick Lambert

Description: Rick Lambert found a boulder with a natural mould of the upper jaw of a tyrannosaur. The bone had mostly eroded away, leaving an impression behind in the sandstone. This is a cast of that impression. The jawbone is a light, rust-coloured impression, oriented horizontally in the grey cast. The shape and profile of the jawbone is reminiscent of a fish or a shark swimming through the water. The tyrannosaur's six visible teeth are sharp and long, pointed downward and highlighted by their shiny, black appearance. A measuring tape stretched across the cast measures 45 cm (17.7 inches).





Object 2:

Title: 2. Cast of a tyrannosaur footprint

Scientific Name: *Bellatoripes fredlundi*

Object Details: PRPRC 2011.11.001

Size: 20 cm (d) × 63 cm (w) × 75 cm (h) (7.5 × 24.8 × 29.5 inches)

Wapiti Formation, Late Cretaceous

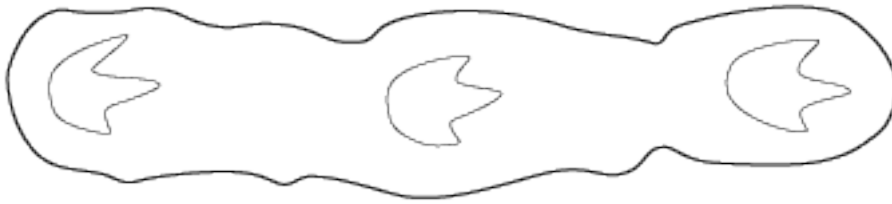
(ca. 79 to 68 million years ago)

Tumbler Ridge, BC

Discovered by Aaron Fredlund

Description: This is a cast of a footprint from a tyrannosaur trackway found by Aaron Fredlund near Tumbler Ridge. Palaeontologists painted latex into the original footprint to make a mould and then poured plaster into the upside-down mould to make this exact copy.

Set in light-brown, rust-coloured stone, the cast of the three distinct toes of the tyrannosaur is highlighted in a darker-brown shade, appearing not unlike a leaf you would find on the ground in the fall. A measuring tape stretched across the cast measures the width: 63 cm (24.8 inches), just over 2 feet wide.



Object 3:

Title: 3. Tyrannosaur trackway (3D-printed)

Scientific Name: *Bellatoripes fredlund*

Object Details: PRPRC 2011.11.001

Size: approximately 15 × 66 cm (6 × 26 inches)

Wapiti Formation, Late Cretaceous (ca. 79 to 68 million years ago)

Tumbler Ridge, BC

Discovered by Aaron Fredlund

Photogrammetric model courtesy of Charles Helm.

Description: This model of the tyrannosaur trackway found near Tumbler Ridge was created using a technique called photogrammetry. A computer assembles dozens of photos from different angles into a 3D version of the fossil. The arrow marks the footprint represented by a full-size cast here. Three footprints lie in the cast, arranged horizontally as the tyrannosaur walked along the soft earth or mud. The pointed toes of the creature extend out from the footprint.

## **Panel 5 Description:**

### Description:

The colour theme for this and other panels to follow is burnt orange with dark brown.

### Title:

THORNY WANDERERS

Armoured Ankylosaurs of the Peace Region

Next to this title, an image of British Columbia is displayed, with a star highlighting a location in northeastern BC, near the eastern border.

### Text:

Footprints from ankylosaurs have been found near Tumbler Ridge since 2000. These armoured dinosaurs had wide bodies covered in bony plates and spikes. They left behind broad four-toed footprints and crescent-shaped handprints with five fingers. A few isolated vertebrae—bones from the spine—were found on the banks of the Pine River in 1930 but were only recognized as ankylosaur bones by palaeontologists in 2020. These were the first dinosaur bones discovered in British Columbia by European settlers.

### Image 1:

Artist's photorealistic rendering of an *Ankylosaurus*, standing on all fours, its broad head bowed down. This creature sports rows of large, rusty-brown spikes protruding along the length of its back, extending to its long, upturned, pointed tail. Two long horns or tusks extend backwards from the creature's shoulders. A symmetrical set of larger spikes shield the dinosaur's neck and shoulders. The dinosaur's softer underbelly is lighter coloured, while its legs appear to be covered in rust-coloured, scaly skin.

Credit: Image courtesy of the Royal Tyrrell Museum, Drumheller, AB.

Caption: Nodosaurid ankylosaurs, like this *Borealopelta markmitchelli*, had large spikes on their shoulders and sides.

### Image 2:

Photograph of the muddy-green waters of the Pine River in Peace Country. A rock cliff, framed by evergreen trees, forms the river's steep, sloping bank.

Caption: Ankylosaur bones were discovered in rock outcrops along the Pine River.

### Image 3:

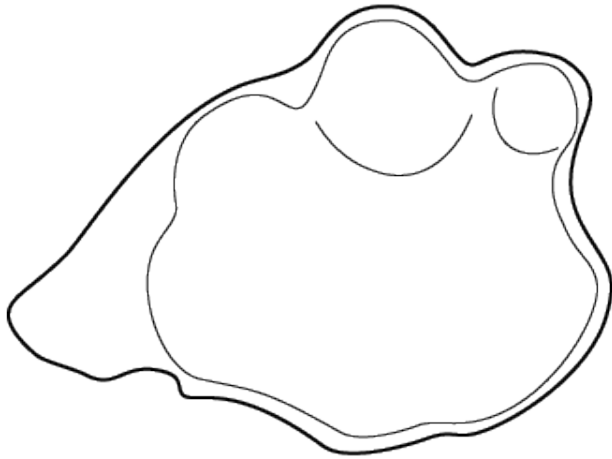
In a summertime snapshot, two smiling young boys flank a middle-aged man, who also smiles, wearing a baseball cap. The trio all stand on a flat rock sloping along a riverbank, posing next to white-coloured fossilized footprints impressed into the rock.

Credit: Photo courtesy of Charles Helm.

Caption: Mark Turner (left), palaeontologist Rich McCrea (centre) and Daniel Helm (right) stand next to an ankylosaur tracksite that Mark and Daniel found while tubing down Flatbed Creek during the summer of 2000

## **Reader Rail 2 Description:**

The objects listed below can be found in **Case 2**, named “Thorny Wanderers.”



### **Object 1:**

Title: 1. Ankylosaur footprint natural cast in sandstone

Scientific Name: *Tetrapodosaurus borealis*

Discovered by Matthew Vavrek

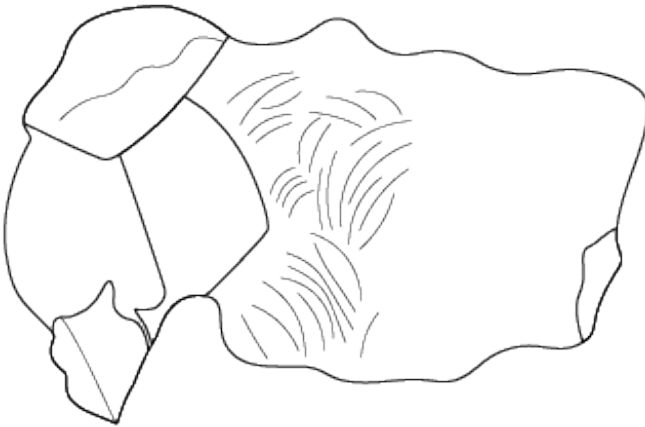
Object Details: RBCM P1476

Dunvegan Formation, Late Cretaceous

(ca. 100.5 to 93.9 million years ago)

Chetwynd, BC

Description: Four-toed ankylosaur footprints were most likely made by nodosaurid ankylosaurs, which had huge shoulder spikes but lacked the tail club of their close relatives the ankylosaurid ankylosaurs. Almost 30 cm (1 foot) across and cast in sandstone with brown and golden hues, the fossil features lumpy protuberances.



Object 2:

Title: 2. Ankylosaur vertebrae (backbones) and ribs in sandstone

Scientific Name: Ankylosauria

Discovered by Merton Williams

Object Details: CMN 59667

Loan courtesy of the Canadian Museum of Nature

Dunvegan Formation, Late Cretaceous

(ca. 100.5 to 93.9 million years ago)

Chetwynd, BC

Description: These vertebrae have a distinctive shape that tells palaeontologists they came from an armoured dinosaur, even though they are fragmentary. In a chunk of sandstone measuring close to 18 cm (7 inches) across and 27 cm (10.6 inches) tall, the bottom parts of a backbone are fused with the top part of another backbone. The ribs are apparent between strips of sandstone on the opposite side of the fossil.

## **Panel 6 Description:**

### Description:

Next to the title, an image of British Columbia is displayed, with a star highlighting a location on southeastern Vancouver Island.

### Title:

DINOSAURS AT SEA

An Ornithomimid from Denman Island

### Text:

Rocks from the age of dinosaurs are common along the eastern side of Vancouver Island and the Gulf Islands. So why haven't many dinosaur bones been found there? These rocks were formed from mud and sand deposited on the ocean floor, but dinosaurs only lived on the land. It took special circumstances for their bones to wash into the ocean and become preserved as fossils. This tailbone is one example. It belonged to an ornithomimid dinosaur, a feathery plant-eater with a long neck and long legs.

### Image 1:

Artist's rendering of a bird-like creature called a *Rativates evadens*, wading in shallow water. This relatively small dinosaur, resembling an ostrich, sports a downy covering over most of its brownish body, embellished with darker-brown spots. Its small head features beady eyes, set deep into their sockets, and a beaked, toothless mouth. Like many other dinosaurs, it also has a long tail trailing behind it. Feathers protrude from both of its arms, forming wings extending from its elbow to its small front claws. The dinosaur has scaly feet, not unlike a chicken or eagle, and its large feet, which step lightly through the water, have three toes.

Credit: Image courtesy of Andrey Atuchin.

Caption: Ornithomimids, like this *Rativates evadens*, were feathery and resembled ostriches.

### Image 2:

An underwater scene: A 3.5-metre-long (12 feet), blue, whale-like creature called a *Kourisodon puntledgensis*, is surrounded by shell-covered *Pachydiscus*, which float all around it. The mosasaur is suspended, floating in the blue-green water, its nose extending toward the surface, with four stubby, club-shaped flippers protruding from its sides. The creature's tail stretches into a blade-like fluke.

Credit: Image courtesy of Henry Sharpe.

Caption: The mosasaur *Kourisodon puntledgensis* and the ammonite *Pachydiscus* swam the ancient seas that are now preserved on Vancouver Island.

Image 3:

A photograph of a rocky, barnacle-covered beach at low tide, with a forested peninsula in the background. The rocks on shore exhibit smooth ridges caused by water erosion.

Credit: Image courtesy of Raymond Graham.

Caption: The beaches of Denman Island (off the east coast of Vancouver Island) are made of rocks formed on the ocean floor 78 to 76 million years ago.

Image 4:

With a lighthouse and coastal mountains in the background, three men examine a rocky beach at low tide in the sunshine.

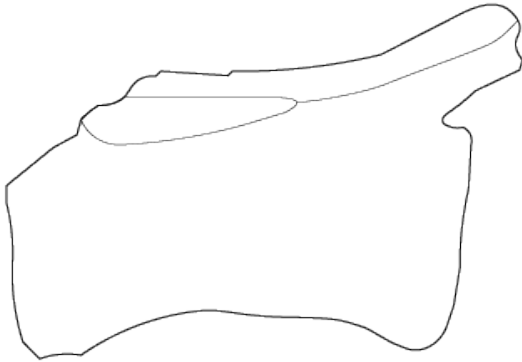
Credit: Image courtesy of Raymond Graham.

Caption: Jim Burgess (left), Timon Bullard (centre) and Jesse Burgess (right) search for fossils on Denman Island.



## **Reader Rail 3 Description:**

The objects listed below can be found in **Case 3**, named “Dinosaurs at Sea.”



### **Object 1:**

Title: 1. Ornithomimid caudal vertebra (tailbone)

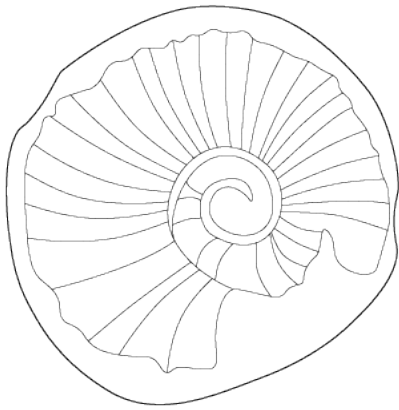
Object Details: RBCM.EH2010.001.0001  
Cedar District Formation, Late Cretaceous  
(ca. 79 to 73 million years ago)  
Denman Island, BC  
Discovered by Timon Bullard

Text: How did a single tailbone from this ornithomimid get washed into the ocean? Perhaps a storm washed parts of a decaying carcass on a beach into deeper waters.

Description: The preserved tailbone is a dark-grey, rectangular rock segment. A tube-shaped cavity in the fossil extends from one end to midway through, and the opposite end of the fossil has a horseshoe-shaped profile and is also concave in a region where it possibly was previously attached to another bone. The fossil is approximately 3.3 cm (1.3 inches) long.

### **Text (for the following ammonite fossils):**

While dinosaurs roamed the land, ammonites (coil-shelled relatives of squids and octopuses), clams and many other marine animals filled the Late Cretaceous seas. These fossils were collected from the Northumberland Formation of Hornby Island, and are about 76 to 72 million years old.



Object 2:

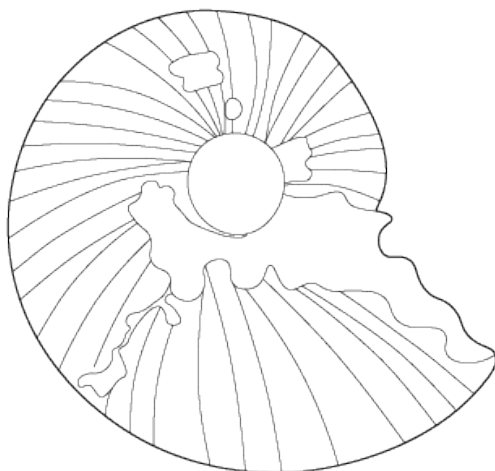
Title: 2. Ammonite

Scientific Name: *Pachydiscus suciaensis*

Object Details: RBCM.EH2008.011.06050

Discovered by Joe Haegert

Description: A spiral-shaped, tightly wound, ridged shell impression on a dark-coloured rock. The spiral is largest around the outer circumference of the fossil, becoming smaller as it winds toward the centre, like a bugle that has been wrapped into a ball. At the widest end of the spiral, there is a round exit portal, where the soft, squid-like body and tentacles of the ammonite protruded. In life, the creature's snake-like tentacles would trail behind it in the water. The fossil is approximately 5 cm (2 inches) in diameter.



Object 3:

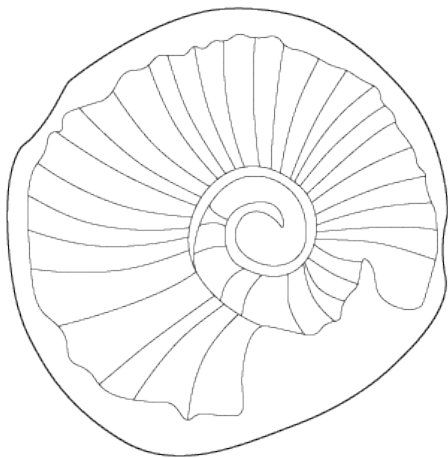
Title: 3. Ammonite

Scientific Name: *Pachydiscus suciaensis*

Object Details: RBCM.EH2008.011.00466

Discovered by Joe Haegert

Description: This specimen presents a more off-white colour, with the cracked ridges of the ammonite's shell not appearing as distinctly as some other fossils. The fossil's spiral shape and round opening are still evident. The fossil is approximately 7.5 cm (3 inches) in diameter.



Object 4:

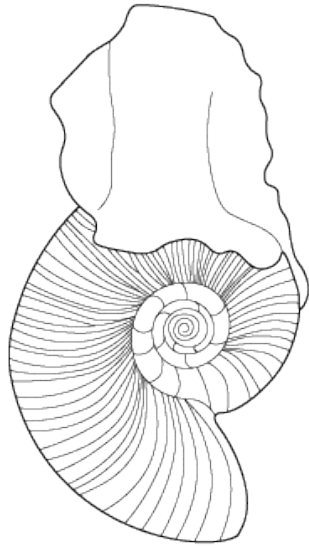
Title: 4. Ammonite

Scientific Name: *Pachydiscus suciaensis*

Object Details: RBCM.EH2008.011.11232

Discovered by Joe Haegert

Description: Another ammonite specimen, set in black rock, its ridges translucent grey, the inner spiral well-preserved. The fossil is approximately 13 cm (5 inches) in diameter.



Object 5:

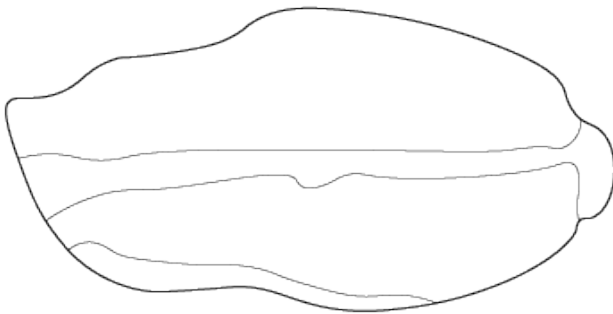
Title: 5. Ammonite

Scientific Name: *Gaudryceras denmanense*

Object Details: RBCM.EH2008.011.00482

Discovered by Joe Haegert

Description: This dark-coloured fossil with gold highlights has very distinct spiral coils, details visible even on the inner coils. Except for its blackish, silvery complexion, this well-preserved specimen looks very much like a shell you might find on the beach. The fossil is approximately 10 cm (4 inches) in diameter.



Object 6:

Title: 6. Inoceramid clam

Scientific Name: *Inoceramus vancouverensis*

Object Details: RBCM.EH2008.011.09644

Discovered by Joe Haegert

Description: Measuring approximately 18 cm (7 inches) long, this fossil presents as a cracked, gold-tinted, football-shaped specimen, with a dark line through it that delineates the two clamshells. The abductor muscle holding the two halves of the clam closed tight is also well preserved.

## **Panel 7 Description:**

Title:

GIANTS OF THE COAL SWAMPS

Sauropods in the Kootenays

Text:

No fossil bones from a sauropod dinosaur have been found in Canada. These long-necked dinosaurs have been found elsewhere in North America, except between 100 and 70 million years ago—palaeontologists are still trying to figure out why. But British Columbia has fossil footprints from sauropods, unlike anywhere else in Canada. They are sometimes uncovered during coal mining in the southeastern part of the province, in rocks that are about 145 million years old. What species could have made these footprints?

Image 1:

A rendering of four *Sauroposeidon proteles* walking in the sandy mud along the waves of a serene, forested shoreline. Filtered sunlight shines down on the long-necked four-legged dinosaurs as they lope along, looking not unlike modern-day giraffes. Flocks of winged creatures cluster in the air around the dinosaurs' heads. The dinosaurs' round, padded feet resemble those of elephants, their massive weight leaving large, circular impressions in the mud.

The sauropods' skin is marked by dark, zebra-like stripes stretching across their sloping backs, and their long, whip-like tails trail behind them, swinging low to the ground. Along the backs of their dark-skinned necks (which extend longer than their bodies) are spines or spikes, becoming longer, moving up the neck to their relatively small heads.

Caption: Image courtesy of Michael Chiappone.

Caption: Sauropods, like these *Sauroposeidon proteles*, were long-necked plant eaters.

Image 2:

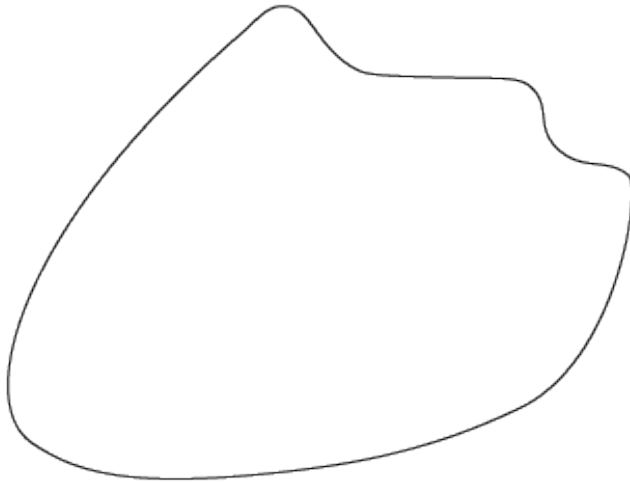
A monochrome image of seven or eight sauropod footprints impressed into cracked, sheer cliffs.

Credit: Image courtesy of Adam Laurin/Line Creek Operations—Teck Resources Limited.

Caption: A drone was used to capture images of sauropod footprints on sheer cliffs.

## **Reader Rail 4 Description:**

The objects listed below can be found in **Case 4**, named “Giants of the Coal Swamps.”



### **Object 1:**

Title: 1. Sauropod footprint, life size 3D print from digital scan of trackway

Scientific Name: *Brontopodus* sp.

Object Details: RBCM P2021.039.0001

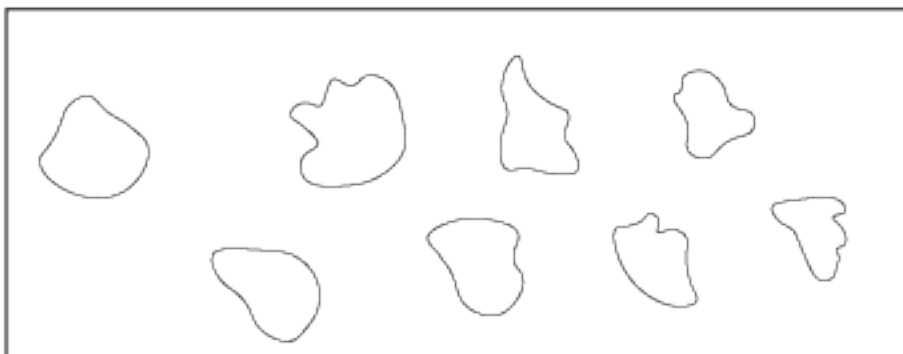
Mist Mountain Formation, Late Jurassic to Early Cretaceous

(ca. 100.5 to 93.9 million years ago)

Teck Line Creek Operations near Sparwood, BC

Discovered by Mikhail Chutskoff

Description: It is too dangerous to make a physical mould or cast of footprints found on vertical walls at the Line Creek Operations coal mine, so mine workers use drones to capture 3D digital models of the footprints. These are then given to the Royal BC Museum to archive, create 3D prints and study. This single, life-size footprint is captured in monochrome grey.



Object 2:

Title: 2. Sauropod trackway, 3D print from digital scan

Scientific Name: *Brontopodus* sp.

Object Details: RBCM P2021.039.0001

Mist Mountain Formation, Late Jurassic to Early Cretaceous  
(ca. 100.5 to 93.9 million years ago)

Teck Line Creek Operations near Sparwood, BC

Discovered by Mikhail Chutskoff

Description: At least eight footprints of a sauropod slowly meandering across a mud flat were found on a vertical rock surface. This scaled-down version of the trackway was 3D printed from a digital scan made using a drone. The pairs of sauropod footsteps lie in a horizontal row in the monochrome grey reproduction of the trackway.



## **Panel 8 Description:**

### **Description:**

The colour theme of this panel is teal-green on white, which is repeated on other panels in the exhibit.

### **Title:**

EXPLORING THE NORTH

New Fossil Expeditions by the Royal BC Museum

### **Image 1:**

An image of British Columbia is displayed, with a star highlighting a location in the north central portion of the province.

Caption: The Sustut Basin is a long, narrow geological region of northern British Columbia that includes rocks laid down by ancient streams and lakes during the age of dinosaurs.

### **Text:**

Famous dinosaurs like *Tyrannosaurus rex* and *Triceratops* lived on a broad, flat coastal plain in what are now the Prairie provinces and Great Plains. What kinds of dinosaurs lived on the other side of the rising Rocky Mountains to the west? To answer that question, Royal BC Museum palaeontologist Dr. Victoria Arbour is exploring rocks in the Sustut Basin in northern British Columbia.

### **Image 2:**

A photograph of a campsite in a remote region where three tents are set up at the base of a gravel-covered hill. A mountain lies in the distant background, and a multicoloured rainbow stretches overhead, following the contour of the slope beyond the tents. Fluffy clouds, sunshine and blue fill the sky.

Credit: Illustration courtesy of Jaclyn Richmond.

Caption: A rainbow shines over the palaeontology team's camp on the Spatsizi Plateau.

## Case Graphic Description:

### Title:

*FERRISAURUS SUSTUTENSIS* PARTIAL SKELETON

### Text:

Buster's skeleton includes parts of the shoulder, arm, leg and foot. White areas show the missing parts of incomplete bones. Although the skeleton is incomplete, these pieces provide enough information for Dr. Arbour to identify Buster as a leptoceratopsid dinosaur and make some guesses about Buster's size and appearance.

*Ferrisaurus sustutensis* partial skeleton.

1. Pedal phalanges (located on the hind foot)
2. Tibia, fibula (joining the hip and upper back leg)
3. Ulna (located in one of the forearms)
4. Radius (located in one of the forearms)
5. Scapula (located in the shoulder)
6. Coracoid (located in the neck and throat region)

### Image:

A two-dimensional silhouette of *Ferrisaurus* is presented over a background of a darkened rock face. Within the silhouette, the missing bone parts are positioned and numbered in their respective locations in the dinosaur's body, as described above. The fossilized bones lie within white, highlighted regions superimposed on *Ferrisaurus*'s silhouette, which represent the complete bones that each fossil fragment came from.

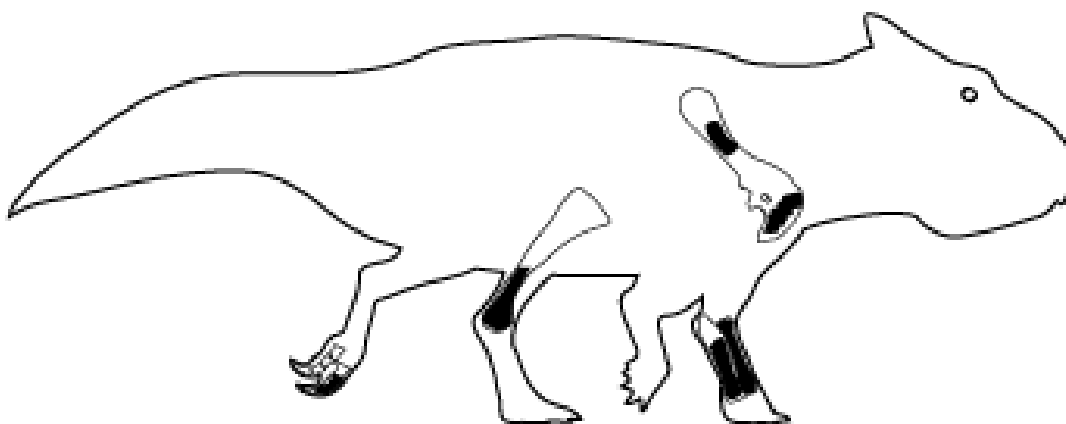
### Object Details

RBCM P900

Tango Creek Formation, Late Cretaceous

(ca. 68.2 to 67.2 million years ago)

Sustut River, British Columbia



## **Floor Mat Description:**

Title:

TRUE OR FALSE

A Floor mat below the interactive game screen. On a teal background with a thin, navy-blue outer border, two navy-blue, dinosaur-footprint-shaped, mirror-image symbols are presented in the middle of the mat. Within the left-side paw is a check mark. In between the paws reads "OR." Within the right-side paw is an "X".

## **Panel 9 Description:**

### **Title:**

THE IRON LIZARD

British Columbia's First New Dinosaur

### **Text:**

The Sustut Basin is a series of rocks that appear as a thin crescent on geological maps of British Columbia. These rocks are made of sediments laid down by ancient lakes and rivers that ran through narrow valleys during the Cretaceous period, 145 to 66 million years ago. In 1971, geologist Kenny Larsen picked up some dark-grey fossil bones on a railway beside the Sustut River.

These bones were from a small plant-eating dinosaur that was a distant cousin of *Triceratops*. In 2019, Royal BC Museum palaeontologist Dr. Victoria Arbour and Royal Ontario Museum palaeontologist Dr. David Evans identified the bones as belonging to a new species of dinosaur unique to British Columbia. They gave it the scientific name *Ferrisaurus sustutensis*, the “iron lizard from the Sustut River”—but his nickname is Buster.

### **Image 1:**

*Ferrisaurus* stands atop a boulder in a green, leafy forest. Dappled sunlight shines down on the dinosaur, whose parrot-like beak faces forward, its small eyes fixed on either side of its head. On the top of its skull is a smooth, bony shield extending over the dinosaur's back. On its lower jaw there are black, zebra-like markings. Covering its greyish-green skin, there are dark markings, some circular in shape, while others form horizontal lines extending down its short tail. It walks on all fours, with white, scaly skin covering its chest and belly. *Ferrisaurus*'s feet are equipped with three sharp claws.

Credit: Illustration courtesy of Gabriel Ugueto.

Caption: *Ferrisaurus sustutensis*.

## **Panel 10 Description:**

### **Description:**

The colour theme of this panel is dark blue on white.

### **Title:**

*FERRISAURUS SUSTUTENSIS*

### **Text:**

This model shows what Buster would have looked like when he was alive. Even though Buster's skeleton is fragmentary, palaeontologists can figure out the overall shape and size of Buster's body by comparing his skeleton to similar species known from more complete skeletons.

Model by Brian Cooley.

### **Image 1:**

An illustration showing Buster's relative size compared with a human and *Triceratops*

In the comparison image, presented in white, silhouette-style, the human figure's head is about the same height as the *Triceratops*'s nose. In contrast, *Ferrisaurus*'s nose comes up to the human's knees.

Caption: *Ferrisaurus* was about the size of a sheep (if sheep had long tails). A member of the dinosaur group called Ceratopsia, *Ferrisaurus* was a smaller relative of its more famous cousin *Triceratops*.

## **Buster Replica Description:**

Standing on his hind legs, Buster's beady eyes stare out from his face, dominated by a parrot-like beak with nostrils. He sports a bony shield at the back of his head, and bony cheeks form his large, angular face. The skin around his eyes and nose is orange, while his scale-covered body is predominantly lizard-like green. His muscular legs, ending with clawed feet, hold him upright. Buster's arms are poised outward, as if ready to pounce. His softer underbelly and chest areas are white. Extending from his spine is a 45 cm (1.5 foot) tail, enhanced by vertical orange stripes.

## **Reader Rail 5 Description:**

### **Text:**

Please touch! This is a miniature of Buster the *Ferrisaurus*.

This is a 3D print from a photogrammetric model of a life-size sculpture by Brian Cooley.

### **Description:**

A touchable, smaller-scale replica of *Ferrisaurus* is presented, in greyscale.

Standing on his hind legs, Buster's beady eyes stare out from his face, dominated by a parrot-like beak with nostrils. He sports a bony shield at the back of his head, and bony cheeks form his large, angular face. His muscular legs, ending with clawed feet, hold him upright. Buster's arms are poised outward, as if ready to pounce. His paler underbelly and chest areas feature softer skin. Extending from his spine is a 45 cm (1.5 foot) tail. A small, nondescript human figure stands alongside for scale.

## **Panel 11 Description:**

### Title:

RETURN TO THE SUSTUT RIVER  
Learning about Buster's World

Next to this title, an image of British Columbia is displayed, with a star highlighting a location in northern BC.

### Text:

In 2017, Dr. Victoria Arbour led a team of palaeontologists to the Sustut River in search of more fossils of both *Ferrisaurus* and the other plants and animals that lived alongside it. The team found part of a fossil turtle and dozens of fossil leaves. They also used fossil pollen to figure out that *Ferrisaurus* lived about 67 million years ago. Looking for fossils along the heavily forested riverbanks and abandoned BC Rail line was hard work. More fossil finds in this part of the Sustut Basin won't be easy.

### Image 1:

Aerial photograph of a remote river winding its way through a forested valley. A tall, rocky peak looms in the background.

Credit: Photo courtesy of Jade Simon.

Caption: The Sustut River can only be reached by landing a small plane on a grass landing strip.

### Image 2:

Photograph taken along the shore of the Sustut River. Evergreen trees grow on its banks, and misty mountains fill the background. Low-lying shrubs and driftwood cover a gravel bank just offshore.

Credit: Photo courtesy of Thomas Cullen.

Caption: The 2017 field crew stayed at a steelhead fishing lodge located along the scenic banks of the Sustut River.

### Image 3:

Two women and a bearded man sit and stand on a mossy rock that juts out over the fast-flowing Sustut River. They all pose for the picture, holding their walking sticks and wearing backpacks.

Credit: Photo courtesy of Thomas Cullen.



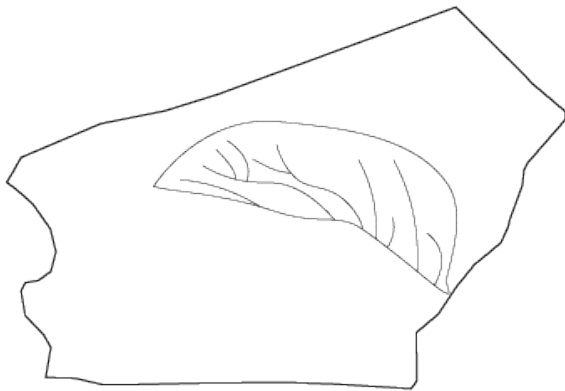
Caption: Dr. Victoria Arbour (right) and members of the 2017 field expedition team, Dr. David Evans (centre) and Jade Simon (left).

## **Reader Rail 6 Description:**

The objects listed below can be found in **Case 6**, named “The Iron Lizard—Bones.”

### **Text:**

These fossils were collected from several sites along the Sustut River in British Columbia during a 2017 expedition by the Royal Ontario Museum. All are from the Tango Creek Formation, which formed between 100.5 and 67.2 million years ago, in the Late Cretaceous.



### **Object 1:**

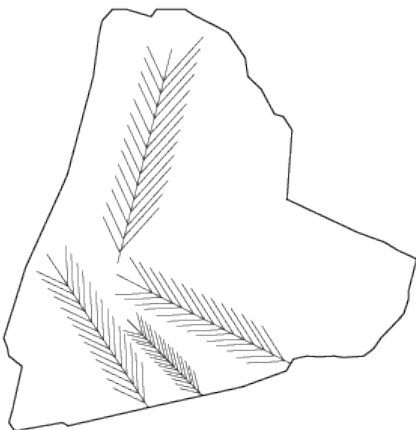
Title: 1. Leaf impression in siltstone

Scientific Name: Angiospermae

Object Details: RBCM P115

Discovered by Thomas Cullen

Description: Impressed upon this rock fragment, a leaf outline is faintly visible as a darkened region in the middle of the stone shard.



Object 2:

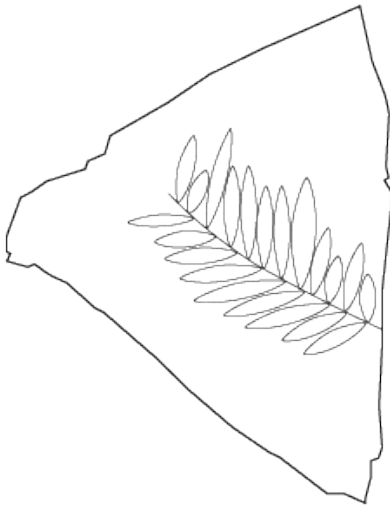
Title: 2. Dawn redwood needle impressions in siltstone

Scientific Name: *Metasequoia*

Object Details: RBCM P41

Discovered by Jade Simon

Description: Tiny, faint leaf impressions on a dark, 6 cm wide (2.5 inches) stone.



Object 3:

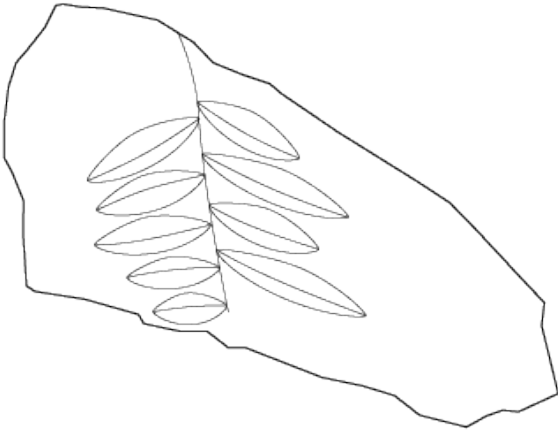
Title: 3. Dawn redwood needle impressions in siltstone

Scientific Name: *Metasequoia*

Object Details: RBCM P39

Discovered by Victoria Arbour

Description: Thin leaves branching out from a narrow branch are impressed on a dark, 6 cm wide (2.5 inches) triangular stone.



Object 4:

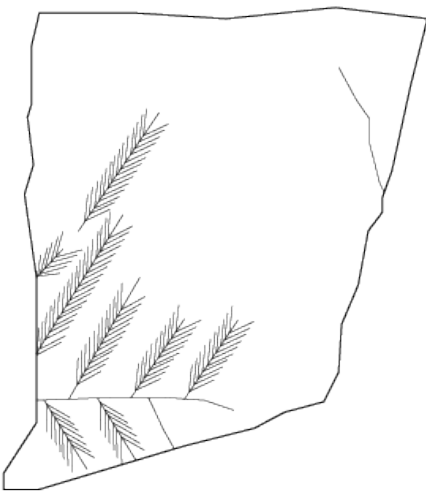
Title: 4. Dawn redwood needle impressions in siltstone

Scientific Name: *Metasequoia*

Object Details: RBCM P34

Discovered by Thomas Cullen

Description: Impressions of seven to eight leaves, spread out over the dark, 6 cm wide (2.5 inches) stone.



Object 5:

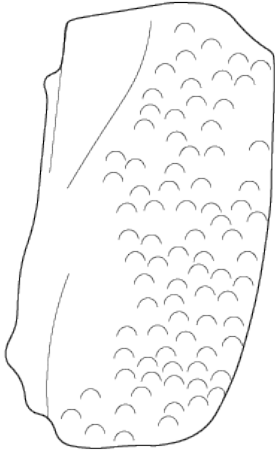
Title: 5. Tree fern leaf impressions in siltstone

Scientific Name: *Coniopteris*

Object Details: RBCM P35

Discovered by Jade Simon

Description: Impressed upon this rock fragment, a leaf outline appears lightly on the grey stone.



Object 6:

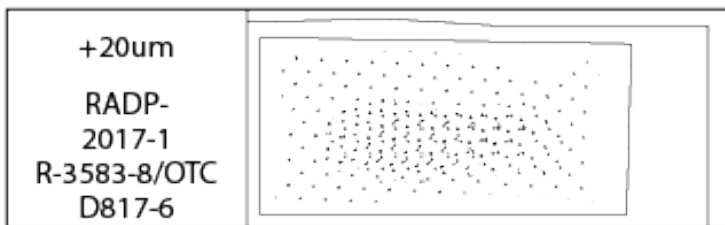
Title: 6. Fragment of turtle shell

Scientific Name: *Basilemys*

Object Details: RBCM P1

Discovered by David Evans

Description: Reptilian, circular impressions on a rounded, 3-by-5 cm (1-by-2-inch) stone.



Object 7:

Title: 7. Glass slide containing microscopic fossil pollen and spores

Object Details: RBCM P114A

Collected by Victoria Arbour

Description: Fossilized pollen and spores form a darkened region, looking like fine dust, on the glass microscope slide.

## **Panel 12 Description:**

### Title:

UP TO THE SPATSIZI PLATEAU  
Adventures in the Alpine

### Text:

Royal BC Museum curator of botany Dr. Ken Marr found a tooth from a tyrannosaur in Spatsizi Plateau Wilderness Provincial Park in 2013. His discovery was the first clue that dinosaur fossils are present in the northern part of the Sustut Basin. Fossils are easier to find on the bare rocky surfaces of the alpine plateaus that dominate this area.

Dr. Victoria Arbour and her team of palaeontologists returned in 2019 to continue the search. After days of finding only wood and leaf fossils, they decided to move camp. Within a few hours they found pieces of large dinosaur bones in huge boulders on a rocky slope. The next four days held great potential. Nature had other plans, though. Within hours of the discovery, an August snowstorm forced the team to leave early. New discoveries would have to wait until another summer!

### Image 1:

A red tent sits amid a snowy landscape, the white expanse dotted only with grasses and scrub-bush. A partially frozen pond lies in the foreground. The rolling hills are dusted with a thin layer of snow, and a foggy shroud of clouds lingers around their slopes.

Credit: Photo courtesy of Thomas Cullen.

Caption: A snowy day on the Spatsizi Plateau in August 2019.

### Image 2:

A rock hammer lies among splinters of fossilized logs, rock and gravel.

Credit: Photo courtesy of Thomas Cullen.

Caption: Splinters of fossilized logs were spotted in several places during the expedition.

### Image 3:

A man stands at the base of a steep hill, covered in rocks. A sprawling plateau stretches out behind him, covered in low-lying moss, lichen and shrubs. A mountain looms in the background.

Caption: Dr. Thomas Cullen scours a rocky slope in search of fossils.

### Image 4:

A woman, wearing a Dinosaur Research Institute baseball cap and sunglasses, takes a smiling selfie with two people standing in the distance behind her. The landscape is flat and grassy, with mountains forming a deep basin beyond.

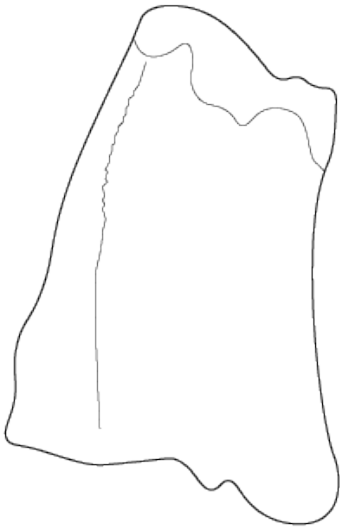
Caption: Dr. Victoria Arbour and 2019 expedition team members Dr. Thomas Cullen (left) and Jaclyn Richmond (right).

## **Reader Rail 7 Description:**

The objects listed below can be found in **Case 6**, named “UP TO THE SPATSIZI PLATEAU.”

### **Text:**

These fossils were collected from Spatsizi Plateau Wilderness Provincial Park, British Columbia, during Royal BC Museum expeditions in 2013 and 2019. All are from the Brothers Peak Formation, which formed between 72.1 and 66 million years ago, during the Late Cretaceous.



### **Object 1:**

Title: 1. Tyrannosaur tooth

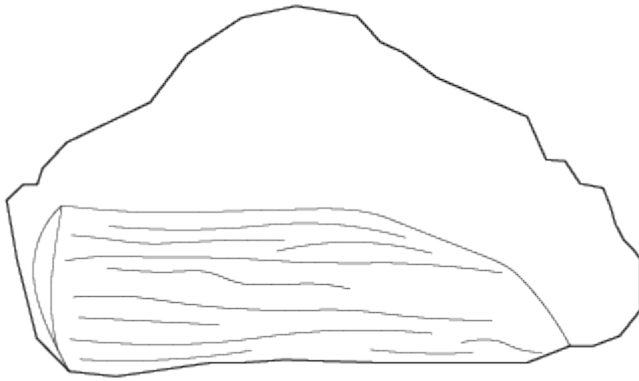
Scientific name: Tyrannosauridae

Object details: RBCM P1557

Discovered by Ken Marr

Description: This fossilized tooth fragment is a slightly shiny, dark-grey artifact, with dark cracks throughout. Its sharp tip is missing, leaving only the main portion of the tooth, measuring slightly less than 2.5 cm (1 inch) long. On the edges of the fossil, a shiny, silvery material has been applied to smooth jagged edges.





Object 2:

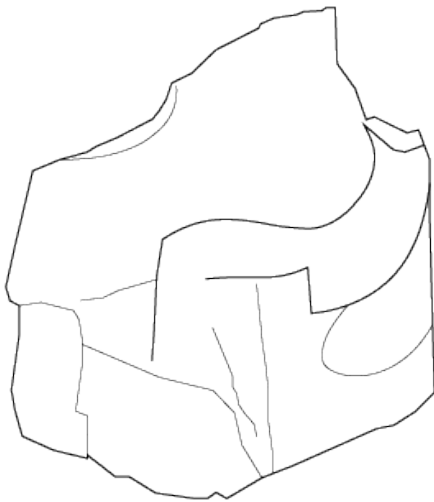
Title: 2. Fragment of possible crocodile jaw embedded in sandstone

Scientific name: Possible Crocodylomorpha

Object details: RBCM 1560

Discovered by Erica Wheeler

Description: This sandy-coloured fragment could be mistaken for a rock except for a worn, long white section along its edge, representing the fossilized bone. The fossil measures just under 6 cm (2.5 inches) long.



Object 3:

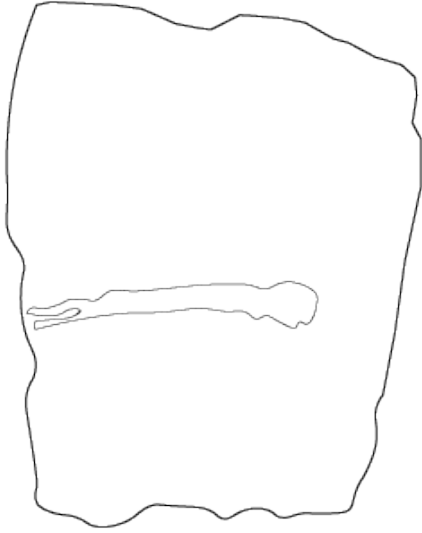
Title: 3. Fragment of limb bone from a large plant-eating dinosaur

Scientific name: Ornithischia

Object details: RBCM P1559

Discovered by Erica Wheeler

Description: A jagged-edged, 13 cm wide (5 inches), stone fossil with shiny gold, grey and rusty-brown hues.



Object 4:

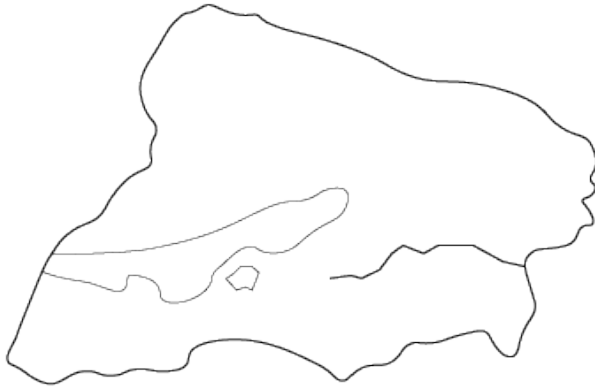
Title: 4. Bone fragment of an unknown dinosaur embedded in sandstone

Scientific name: Dinosauria

Object details: RBCM P1146

Discovered by Thomas Cullen

Description: A porous, brown rock with a long, thin white band pressed into the middle of it, almost bisecting the rock. The impression appears to have partially hollow portions, as if once filled by bone marrow.



Object 5:

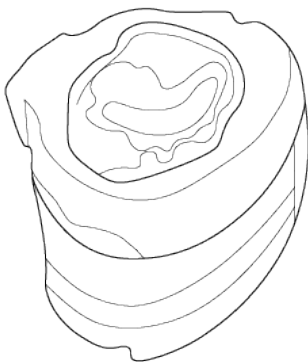
Title: 5. Rib head from an unknown dinosaur embedded in sandstone

Scientific name: Dinosauria

Object details: RBCM P1145

Discovered by Thomas Cullen

Description: Upon this 20 cm (8 inch) chunk of porous sandstone, a white fossil extends approximately 10 cm (4 inches) across the stone's surface, with a slight curve, like a boomerang or cucumber.



Object 6:

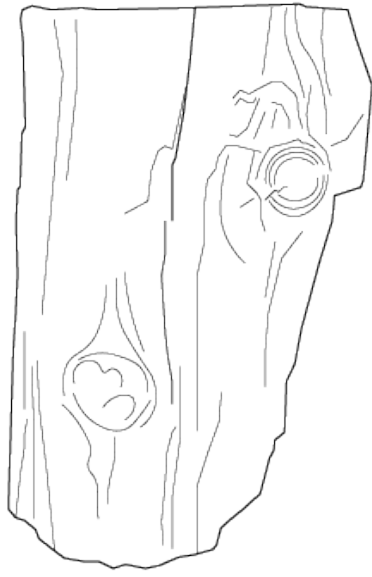
Title: 6. Fragment of possible small meat-eating dinosaur limb bone shaft

Scientific name: Possible Theropoda

Object details: RBCM P1144

Discovered by Jaclyn Richmond

Description: A blue-tinted, 2.5 cm (1 inch) circular fossilized bone fragment containing reddish, porous rock within its centre, giving the fossil the unexpected appearance of a jelly-filled donut.



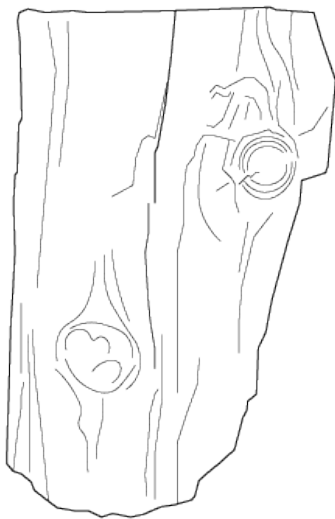
Object 7:

Title: 7. Petrified wood

Object details: RBCM P1131

Discovered by Jaclyn Richmond

Description: A 30 cm long (1 foot) fossil fragment, resembling a piece of pale, washed-out driftwood one might find at the beach.



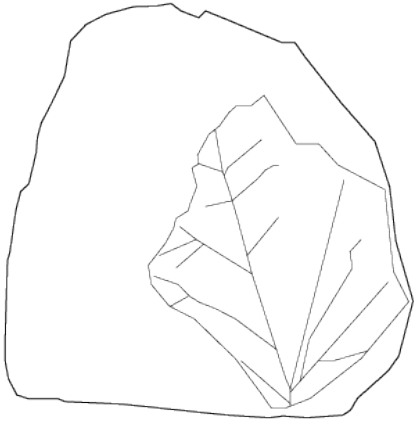
Object 8:

Title: 8. Petrified wood

Object details: RBCM P1138

Discovered by Jaclyn Richmond

Description: Another 30 cm long (1 foot) fossil fragment, also resembling pale, worn driftwood, but this one with two knots appearing on its surface.



Object 9:

Title: 9. Leaf impression in siltstone

Scientific name: Angiospermae

Object details: RBCM P1140

Discovered by Jaclyn Richmond

Description: In this shimmering, gold-coloured 11 cm wide (4.5 inches) fragment, the veins and profile of the fossilized leaf appear clearly, as if a leaf had been pressed into clay.

## **Panel 13 Description:**

### Title:

TOOLS OF THE TRADE

### Text:

Research on the dinosaurs of the Sustut Basin is still in progress at the Royal BC Museum! Each summer, Dr. Victoria Arbour leads a team of palaeontologists to keep looking for dinosaur bones. What fossils do you think they will find?

These are just some of the tools that the palaeontology team packs into their backpacks each day. Brushes (1), cold chisels (2) and rock hammers (3) are used to remove fossils from the surrounding rock. Information is recorded on specimen labels (4) and the fossils might be wrapped in tissue and placed in a specimen bag (5). Sometimes glue or consolidant is applied with an eyedropper (6) or the fossil is wrapped up in plaster bandages (7) to protect it on its journey back to the museum. Flagging tape (8) marks locations to return to the next day. Geological maps (9) point to areas that have the best chance of preserving fossils. Markers (10) are used to write specimen numbers and other information on labels, bags and plaster bandages. Bear bells (11) help keep large animals away, and water purification drops (12) make stream water safe to drink.

### Image 1:

Wearing a wide-brimmed hat, a bearded man uses a long, plastic dropper to drip clear fluid onto a fossil. He sits perched upon rocks on a mountain slope, where snow lies on the gravel in the background.

Caption: Royal BC Museum palaeontology collections manager Derek Larson applies glue to a dinosaur bone on the Spatsizi Plateau.

### Image 2:

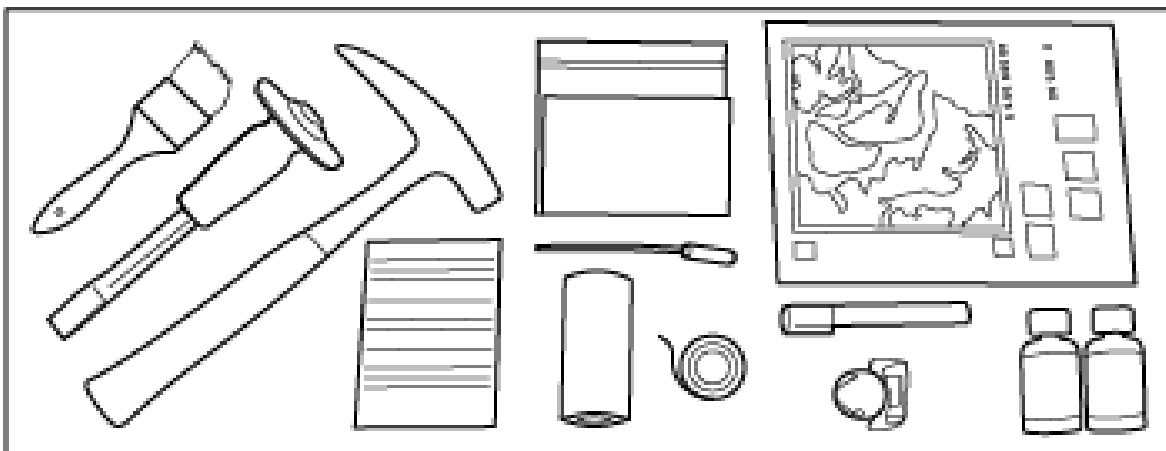
Two young men stand on a mossy mountain plateau. Smiling, they both motion toward a plastic bin and various supplies sitting on the ground between them. The man on the left wears a dark-green rain jacket and winter cap, with binoculars hanging around his neck, while his bearded partner wears glasses, a cap and a red-and-grey fleece jacket.

Caption: Brady McBride (left) and Derek Larson (right) with bins of food and fossil collecting supplies needed for fieldwork on the Spatsizi Plateau.

## **Case 7 Description:**

The tools listed below can be found in **Case 7**, named “Field Gear/Tools.”

1. Brush: A light wooden-handled brush with 5 cm (2 inch) bristles, similar to a painter’s brush, but smaller.
2. Cold chisel: A metal tool with a characteristically shaped cutting edge and a handle with a flat, round top (to facilitate hammering into rock).
3. Rock hammer: A specialized hammer used for splitting and breaking rocks. It has a rubber handle and two metal heads: one is a flat head and the other a pick head, tapering to a sharp point.
4. Specimen labels: Pre-printed pad-sized sheets for recording specimen data.
5. Specimen bags: Small plastic bags or packets for fossils and other specimens.
6. Eye-dropper for glue: A small plastic tube with a bulbous end for squeezing and a hole in the tip for the application of glue.
7. Plaster bandages: White bandages to provide a base for the application of plaster.
8. Flagging tape: Used to mark dig locations.
9. Geological map: A special-purpose map used to show various geological features such as strata, contour lines, faults and folds.
10. Marker: Black felt marker.
11. Bear bell: A small bell that can be easily carried to warn away wild animals.
12. Water purification drops: Bottles containing water purification chemicals, such as chlorine dioxide.



## **Activity Panel Description:**

### Title:

FOSSIL FASHION

### Text:

Get our palaeontologist ready for the dig. Try to imagine the weather and the landscape. What clothes and tools will she need? Once she is ready, take a photo and share it to @RoyalBCMuseum.

### Description:

A magnetic sandwich board holds a background image of a mountainous valley, similar to the dig sites around northern BC. A tall rocky mountain looms over a valley covered in lichen and low-lying vegetation. In the foreground, a rocky slope appears on the lower left.

Sticker magnets available to create the scene include:

- A bag of tools.
- A helicopter carrying a crate, contained by a cargo net suspended under the cockpit.
- A figure of a crouching palaeontologist, wearing a T-shirt, shorts and sunglasses and holding a brush.
- Two camping tents and a sleeping bag.
- A figure holding a circular power saw, wearing a mask and leaning forward.
- A grid with several squares representing plaster bandages.
- Specimens wrapped up in plaster bandages.



## **Panel 14 (Front) Description:**

This panel is two-sided.

### Title:

TRACKWAY HUNTER

Check your finds.

### Text:

Whose tracks did you find? Whose did you miss?

### Image 1:

In a burnt-orange colour, several of the larger, three-toed tyrannosaur footprints.

Sub-Title: TYRANNOSAURS

Text: Tyrannosaurs walked on their hind legs and left three-toed footprints. Their toes are usually narrow, and they left impressions of sharp claws.

### Image 2:

In dark brown, several of the smaller, three-toed hadrosaur footprints. On the top of each footprint are smaller, arc-shaped impressions.

Sub-Title: HADROSAURS

Text: Duck-billed dinosaurs usually walked on all four legs. Their footprints are wide and have three toes with blunt hoofs. Their handprints are much smaller and shaped like ovals or crescents.

### Image 3:

In the burnt-orange colour, several of the smaller, longer, four-toed hadrosaur footprints. On the top of each footprint are smaller, five-fingered handprints.

Sub-Title: NODOSAURS

Text: These armoured dinosaurs walked on four legs. Their footprints are round and have four wide toes. Their handprints are smaller and have five short fingers pointing a little to the side.

### Text:

More finds on the other side.

(located at the bottom of the panel, accompanied by an arrow pointing horizontally to the right)

## **Panel 14 (Back) Description:**

### Title:

TRACKWAY HUNTER

More Finds

### Image 1:

In a dark orange colour, six small footprints appear, very much like a series of a child's handprints impressed into the mud.

### Sub-Title: LEPTOCERATOPSIDS

Text: Palaeontologists haven't found any footprints from a leptoceratopsid like Ferrisaurus yet, but we can guess what kind of tracks they would leave based on their skeletons. Their footprints would be small and have four long toes, and their handprints would be even smaller with five short fingers.

### Image 2:

In a burnt-orange colour, four bird-like, three-toed footprints.

### Sub-Title: ORNITHOMIMIDS

Text: These ostrich-like dinosaurs walked only on their hind legs. Their footprints have three narrow toes. They look similar to tyrannosaur footprints but are smaller.

### Image 3:

In a dark orange colour, a series of six thicker, rounder footprints, similar in appearance to a modern elephant or a bear.

### Sub-Title: SAUROPODS

Text: Long-necked dinosaurs walked on all four legs. Their footprints are huge ovals with sharp, sideways-pointing claws. Their handprints are much smaller and shaped like ovals or crescents.

### Text:

More finds on the other side.

(located at the bottom of the panel, accompanied by an arrow pointing horizontally to the right)

## **Panel 15 (Front) Description:**

This panel is two-sided, in a navy-blue on white colour scheme.

### Title:

END OF THE DINOSAURS

Big Changes and New Beginnings

### Text:

At the end of the Cretaceous period, 66 million years ago, an asteroid the size of Mount Everest slammed into Earth. The skies darkened, plants died and the planet got cold. The environment changed too quickly for most animals to adapt. Big dinosaurs like *Tyrannosaurus*, and even small ones like *Ferrisaurus*, could not adapt to the changes. The only dinosaurs that survived this mass extinction were birds.

Palaeontologists know a lot about the pre-asteroid dinosaurs of the coastal plains on the eastern side of the Rocky Mountains. But we know almost nothing about those that lived in the mountain valleys. Did *Tyrannosaurus* or *Triceratops* ever venture there? Were dinosaurs in decline and already on their way to extinction before the asteroid impact, or were they thriving? Exploring the Sustut Basin and discovering new fossils will help us answer those questions.

## **Panel 15 (Back) Description:**

### Title:

HOW RAVEN ACCIDENTALLY WIPED OUT THE DINOSAURS

### Text:

“At a certain point in history, the Raven mythologies stop. I am interested in continuing them. To stay consistent with the tone of the old stories, the Raven mythologies focus on humour while attempting to bring the stories into the present day. What did our ancestors think when they encountered a massive fossil? How Raven Accidentally Wiped Out the Dinosaurs tells the tale of how one of Raven’s schemes elsewhere in the cosmos backfired, sending him smashing into Earth—obliterating life as it was and clearing the way for human civilization.”

Alison Bremner

### Image 1:

In this image, styled similar to that of a totem pole, a navy-blue coloured dinosaur with a large head, sharp teeth, pointed , sharp claws and long tongue is presented with its body curved into a “U” shape. The dinosaur’s body buckles backwards as a brightly coloured, red raven crashes, head first, into it. The force of the impact results in the raven’s head imbedding itself deeply into the dinosaur’s stomach, whose long, reptilian tongue sticks out of its mouth.

Credit: Image courtesy of Alison Bremner

Caption: “How Raven Accidentally Wiped Out the Dinosaurs” vector reproduction of original acrylic on canvas.

## **Panel 16 Description:**

This panel features intersecting triangles in red, black, teal and white.

### Title:

ROYAL BC (Travelling) MUSEUM

Connecting voices, stories and places across the province.

A QR code in the shape of a mammoth is situated in the middle of the panel, under which is the text: "Scan Me."

### Text:

BEYOND THE MUSEUM WALLS

British Columbia's provincial museum has welcomed millions of visitors to enjoy extraordinary exhibitions that have brought to life magical worlds. Over the years, we've brought you up close with the people, other animals, plants and fungi that call British Columbia home, as well as some of its past inhabitants, like the dinosaurs.

As part of the mammoth effort to modernize the Royal BC Museum, we're thrilled to be taking exhibitions and satellite displays such as this one beyond the museum walls and out into the communities across the province!

We're reimagining what it truly means to be a museum for all British Columbians. Thank you for sharing this journey with us.

### ROYAL BC MUSEUM Logo:

To the right of two human figures, turned with their arms raised over their heads while encircling a small tree, is the text: ROYAL BC MUSEUM.