



Experience the extraordinary
beauty of one of Canada's
rarest ecosystems.

SELF-GUIDED TOUR BOOKLET

Welcome to Canada's Desert!

Osoyoos Desert Centre's boardwalk is a 1.5-km loop with numbered stops along the way. This booklet shares points of interest for each stop and fun facts about the local habitat and wildlife.

Enjoy your tour!

Take the path to your right

Start Here



**This habitat is extremely fragile.
Please stay on the boardwalk
at all times.**

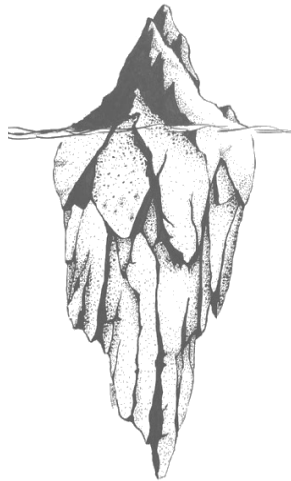
**Smoking is not permitted on
Osoyoos Desert Centre grounds.**

STOP 1: The Habitat

Look at the bush growing next to the numbered marker—this is antelope-brush (*Purshia tridentata*). It is one of the dominant plants here. In fact, “antelope-brush ecosystem” is another name for the desert environment around you. Located at the very southern end of the Okanagan Valley, the antelope-brush ecosystem is one of Canada’s rarest and most endangered habitats.

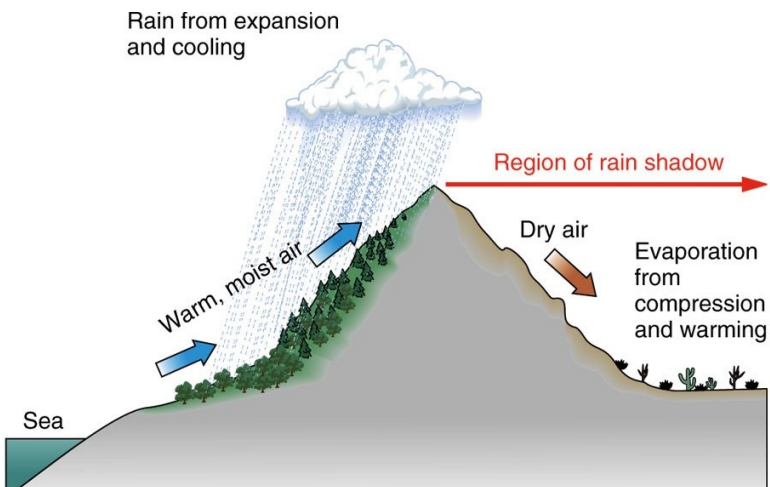
An antelope-brush can grow more than 3 metres high and is one of the tallest plants in this ecosystem. Just like an iceberg’s mass is far greater below the surface of the water than above it, the antelope-brush’s roots

extend far below the surface of the ground, stretching down 4 - 5 metres or more. These long taproots help the antelope-brush survive by absorbing moisture deep beneath the surface.



Why So Dry?

Many people are surprised to find such a hot, dry environment in Canada. So why is the Okanagan Valley so dry? It's all about the mountains!



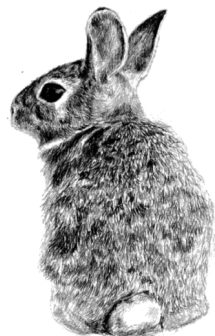
The Cascade and Coastal Mountain Ranges rise in between the Pacific Ocean and the Okanagan Valley. When moist air from the ocean rises over these mountains the air cools and water vapour in the air condenses, releasing moisture in the form of rain or snow. By the time the air travels down the other side of the mountains and into the Okanagan Valley it is dry and warm.

STOP 2: A Home For Many

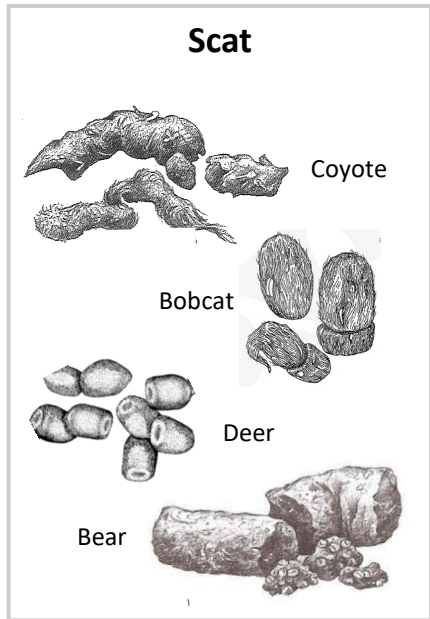
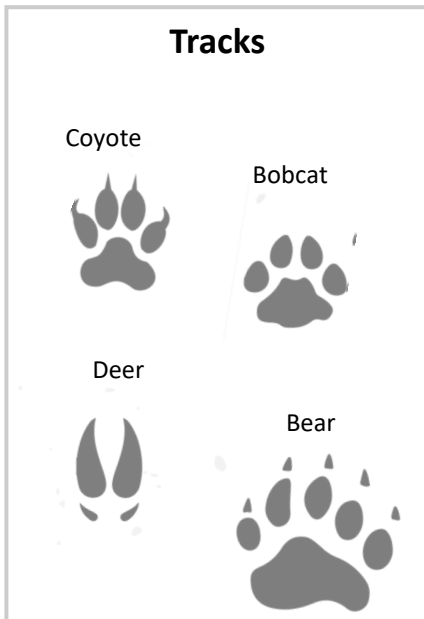
In an environment where daytime temperatures can soar, animals are often more active at night (nocturnal) or at dawn and dusk (crepuscular). Although an incredible variety of species live here, you may not see much wildlife during the day when many animals are resting. If you look closely though, you'll find plenty of evidence of animal activity. Keep an eye out for coyote scat (poop), animal tracks (especially deer), and holes (usually dug by rodents). Look carefully and you might discover a black widow spider web, a California quail nest or some other fascinating bit of animal evidence!



*The Nuttall's Cottontail (*Sylvilagus nuttallii*) is the smallest rabbit species in the province. It is often found in habitats dominated by antelope-brush, sagebrush and rabbitbrush. In BC its range is restricted to the southern Okanagan and Similkameen valleys.*



Wildlife Evidence



Coyote (*Canis latrans*) — Coyote tracks have claw marks. Their scat is sometimes on the boardwalk—look for bits of bone and fur.



Bobcat (*Lynx rufus*) — Bobcats have retractable claws so their tracks have no claw marks.



Mule Deer (*Odocoileus hemionus*) — Deer tracks are often visible on wildlife trails. Their scat looks like small pellets.



Black Bear (*Ursus americanus*) — Bear scat is often filled with seeds and insect parts. Their paw prints are about the width of a pie plate.



Wildlife Clues

Animal signs like burrows and webs provide clues to who is living here. What animal clues can you discover on your walk?



Rodent hole (about 2-3 cm)

Small, round holes are usually made by mice or other rodents. Tiny mounds are likely made by insects.



Black widow spider web

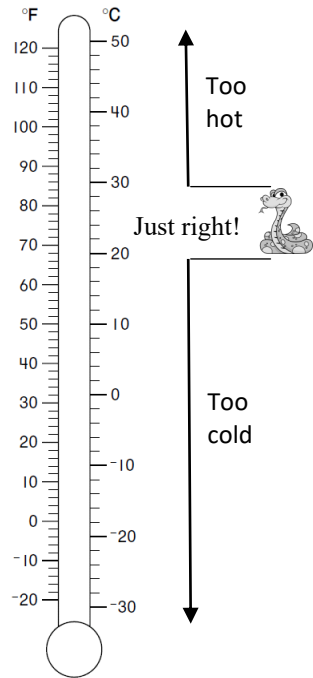
Black widow spiders make chaotic, asymmetrical webs. Orb Weaver spiders make wheel-shaped webs.

STOP 3: Snake Survival

What is the temperature today? Snakes will not be out if it is very hot or very cold. Like all reptiles, snakes are ectothermic (cold-blooded), which means their body temperature varies with the environment.

So what do snakes do? On hot days, they retreat to the shade of a rocky crevice, hole, or other cool place. During winter, they gather together in dens called hibernacula. Hibernacula provide the necessary conditions for survival, including high humidity and above-freezing temperatures.

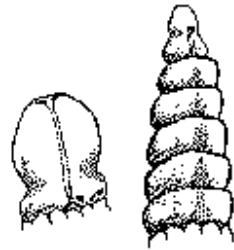
Since snakes can't regulate their body temperature internally, as opposed to birds and mammals, they require less food. Controlling body heat internally takes a lot of energy. Because snakes need less fuel, they are able to survive big swings in food supply and can go months without eating.



Rattlesnake FAQ

What makes a rattlesnake “rattle”?

When threatened, a rattlesnake will vibrate its tail as a warning. The distinctive noise it makes is caused by segments in the tail knocking against each other. A newborn rattlesnake can't rattle because it has only one segment, called



Left – newborn button
Right – unbroken rattle with a button at the tip

a button. A tail segment is added each time the rattlesnake sheds. Because a snake may shed more than once a year, or lose a segment through breakage, it is impossible to tell a rattlesnake's age by counting its rattles.

Is the Western Rattlesnake aggressive?

Western Rattlesnakes (*Crotalus oreganus*) are seldom aggressive. They prefer to retreat when faced with people. If one rattles at you, slowly back away. Rattlesnake bites are rare and usually avoidable.

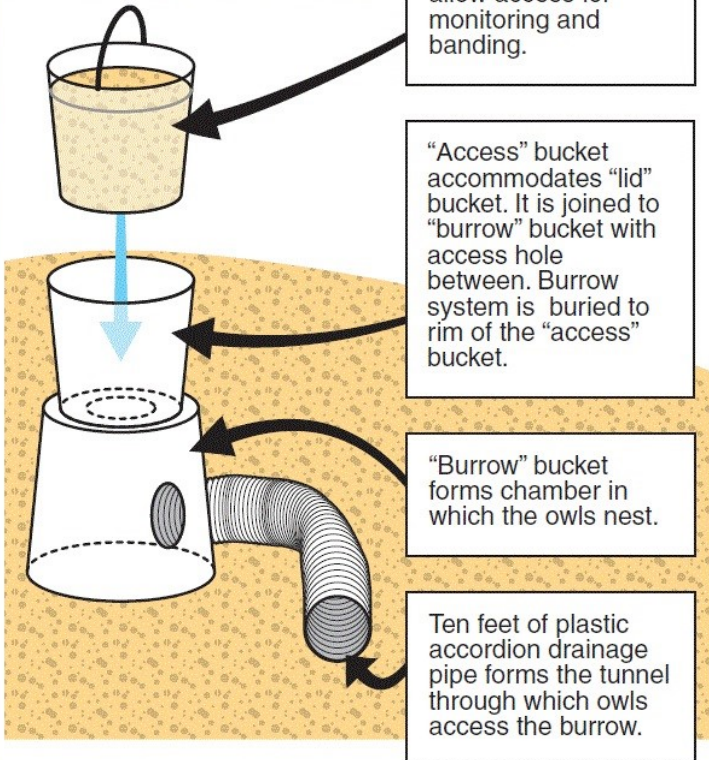
- ♦ Do not pick up a rattlesnake or other wild snake. This will frighten the snake and it might defend itself by striking.
- ♦ If bitten, do not kill or collect the snake. It is a federal offense to harass or kill any native snake species.

STOP 4: Owl Hideaway

To the left of the marker is an example of an artificial burrow used to provide nesting sites for Burrowing Owls (*Athene cunicularia*). Can you find the rocks marking the entrance to the burrow? Do you see the bucket lid covering the nest chamber?

Artificial burrows

Artificial burrows, constructed from plastic buckets, are installed in hand-dug holes on privately-owned ranches, Provincial land and NGO land.



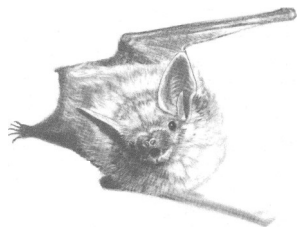
Desert Night Life

Unlike most owls, Burrowing Owls are not strictly nocturnal. They are often active during the day, feeding on insects and other small animals.

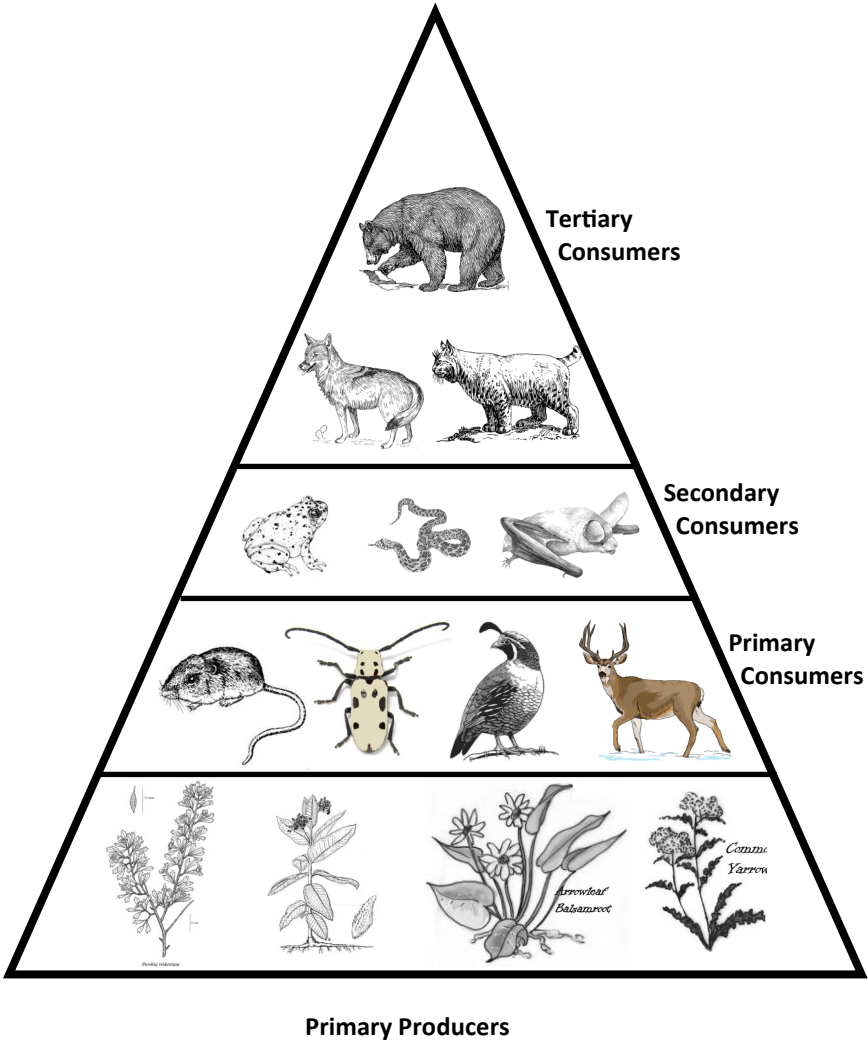
Many other desert species, however, prefer the night life. One true creature of the night is the Little Brown Bat (*Myotis lucifugus*). Although it weighs just 6-7 grams (about the weight of six paper clips), it has a very big appetite. One Little Brown Bat can catch over 1,000 insects in just an hour. Mosquitos, moths and beetles make up a large part of its diet.

DID YOU KNOW?

The Okanagan is home to 14 species of bats. All of the bats here feed on insects. They play an important role in the ecosystem by helping to control insect populations. None of the bats found in Canada eat fruit; fruit-eating bats are found farther south in the tropics.



STOP 5: Trophic Pyramid



"The living world is essentially solar powered."

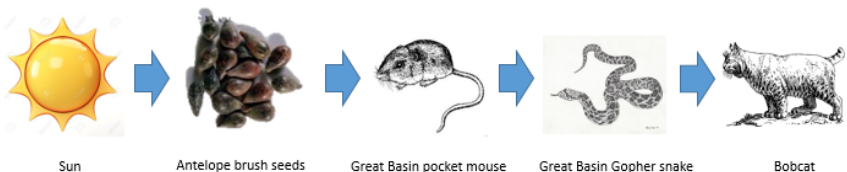
- David Attenborough

The Base Of All Life

By providing habitat and protecting native plants we can indirectly protect and provide habitat for all that are living in this ecosystem. Primary producers include all plants that photosynthesize creating energy from sunlight. This energy then transfers up the pyramid to the higher trophic levels when consumed.

Bobcats for example could not survive if it wasn't for the trophic pyramid that supports them. The protection of habitat and native plants like the antelope-brush attracts great basin pocket mice who love eating antelope-brush seeds. The mice are preyed upon by gopher snakes, and the gopher snakes are eaten by bobcats.

Energy transferred in a food chain begins with the sun



By having a resilient healthy first layer of primary producers, we can sustain healthy, biodiverse ecosystem.

STOP 6: Digging it here

Lots of wildlife like to dig. Some dig in order to protect themselves from dangers above ground, others dig in order to catch smaller burrowing animals. Coyotes for instance are great diggers. Coyotes roam around sniffing small holes that belong to mice or gophers. With their keen sense of smell they can tell if their prey is in those holes. If so, they dig and dig and try to catch it! If their prey does not have a second way out of its burrow, the lucky coyote will be all set for dinner.



Badgers are even better diggers. Their strong forearms and huge claws make them the best digging animal in the world! They can dig a complex network of burrows called a sett. A large sett can be up to 2 metres deep and 300 metres long! They dig to catch prey or to create a shelter. Because they love to migrate, they don't stick around their freshly dug burrows for too long. These abandoned burrows are then used by many species becoming a small site with high biodiversity.



A Unique Friendship

Coyotes and badgers share much of the same territory so one would expect them to compete for food. This, however, is not the case. There is a mutualistic relationship between them and in fact badgers and coyotes both benefit from joining forces.

How do they work together? Coyotes and badgers are known to team up and hunt together. Coyotes are quick and agile runners and can chase down prey such as a gopher. If the gopher escapes into a burrow, it's the badgers time to shine, digging after the gopher as it heads underground. If the gopher is lucky enough to escape from the badger with a different exit hole, it will end up above ground again where the coyote will be waiting for the chase to begin anew. The probability of catching prey increases when this odd couple works together. Their mutually beneficial relationship allows them to eat more and use less energy when hunting.



STOP 7: Plant Profiles

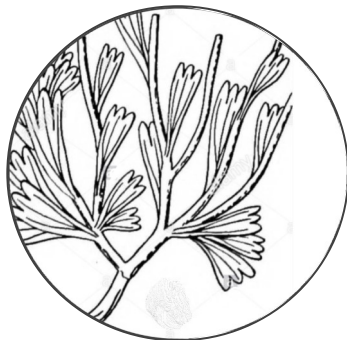
Notice the nearby plants—can you find the shrubs pictured below? One way to identify plants is to look closely at their leaves. Some plants may also have a tell-tale fragrance. If you gently rub the leaves of a sagebrush you can smell its distinctive scent.



Antelope-brush

(*Purshia tridentata*)

has a dusty green appearance. Its leaves are very small and have three rounded “teeth” at the tip as indicated by its Latin name *tridentate*.



Big Sagebrush

(*Artemisia tridentata*)

is pale blue or sage green in colour. Its leaves are slightly longer than antelope brush leaves and have the same three bump pattern.



Rabbitbrush

(*Ericameria nauseosa*)

is the same colour as sagebrush but has very slender leaves that look very similar to pine needles.

Wildflowers



Sagebrush Mariposa Lily

(Calochortus macrocarpus) has beautiful purple flowers that bloom in June and July. “Mariposa” is Spanish for butterfly, aptly named as their petals resemble butterfly wings.

Arrow-leaved Balsamroot

(Balsamorhiza sagittata) is one of the first plants to bloom in the spring. Because of its yellow flowers it is often called the Okanagan Sunflower.



Common Yarrow

(Achillea millefolium) has white flowers and blooms from late spring to early fall. It is an important nectar plant for butterflies.



STOP 8: Cactus Close-up

Look for a thumb-sized cactus—this is the brittle prickly-pear (*Opuntia fragilis*). Prickly-pear is the Okanagan’s only native cactus species.

The prickly-pear’s long, sharp spines are actually modified leaves designed to minimize moisture loss. The spines also protect the plant from predators and even help it

“hitchhike.” If you brush up against the spines, a segment of the cactus will often break off and attach itself to your shoe. When the segment

eventually falls to the ground, it gives the hitchhiker pod a chance to set down roots and start growing. These hitchhikers attach themselves to animals as well.

The flat, fleshy pads on the cactus are branches or stems. In spring the pads absorb water, plump up and turn bright green. In winter the cacti become dormant and lose water to protect themselves from freezing. They turn red or purple as photosynthesis stops.



STOP 9: A Fragile Layer

Check the ground around you—do you see much sand? Sand might be expected in a desert, but in this ecosystem it's better when the sand is covered by lots of native plants. When you see exposed sand, it means a very special layer on top of the soil—called the biotic crust—has been damaged. The biotic crust is extremely fragile and when disturbed, it can take generations to re-grow.

To get a better look at the crust:

- ♦ Find a patch on the ground that looks like black dried up moss.
- ♦ Drop a bit of drinking water on the patch (please no pop or juice!!).
- ♦ Keep watching for half a minute or so.

Did the ground turn a bright green or rich brown? That's the biotic crust you're seeing! It's formed by dozens of living organisms—mosses, lichens, algae, fungi and bacteria. Together they create a soil layer that retains moisture for plants, transfers nutrients into the soil below, and allows seeds to hold onto the ground for germination. The biotic crust helps keep the desert's vegetation alive and is the reason you see so many plants in areas where the habitat is undisturbed.

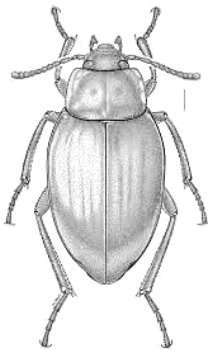
STOP 10: Intriguing Insects

The plants and soil here support a rich diversity of insects and other invertebrates. Do you see any flying or crawling nearby? Some species are very rare and not found anywhere else in Canada. Among them is the endangered native ground mantis (*Litaneutria minor*) found only at the extreme southern end of the Okanagan Valley.



European Mantis

(*Mantis religiosa*) is an introduced species of praying mantis. It is usually seen from late summer to early fall, it is about 5 cm long and varies in colour from green to brown.



Darkling beetle

(*Eleodes* spp.)

is another frequently sighted insect. It's also commonly called the desert stink bug. This large, black beetle will raise its back end into the air and emit a foul-smelling spray when threatened.

STOP 11: Back to the Future

At the end of the last ice age thousands of feet of ice covered where you are standing. Glaciers once extended through the Okanagan Valley into northern Washington. As the glaciers moved, great masses of earth and rock were carved out and pushed forward. Basins were created that later filled with water and became the lakes you see today. After the glaciers melted 10,000 years ago, broad “benches” of sand, silt and gravel were left behind. Look to the east and west of Osoyoos and you will see benches—level areas of land with slopes above and below them.

Ice age animals like woolly mammoths and giant bison once roamed the valley, but are now extinct. Today many of the plants and animals living here are fighting their own battle against extinction. Some species have already disappeared; many others are on the brink of extinction and need our help.



Pygmy short honed lizard
Locally extinct



Greater Sage Grouse
Locally extinct

STOP 12: Under Siege

The antelope-brush ecosystem is under enormous pressure from human activities. Look around and you can see the impact of housing, roads, agriculture, industry and other development. Pressure on the habitat will only intensify as the Okanagan's population increases. Conservation efforts are essential if this endangered ecosystem, and the species that depend on it are to survive for future generations.

To learn more about the conservation efforts of the Osoyoos Desert Centre:

- ♦ Visit our website at www.desert.org
- ♦ Follow us on social media and don't forget to tag us on the beautiful photos you take



- ♦ Be sure to share your experience with others. Review us on Google, TripAdvisor or Yelp!

**We hope you enjoyed your
tour today.**

Be sure to stop in at our Interpretive Building and explore our interactive displays. Or take a tour through our Native Plant Garden to learn all about the types of trees, shrubs and flowers native to the South Okanagan Similkameen.

Together We Can Make a Difference

Each of us can make choices to help nature.

There are so many small ways that we can make a BIG difference!

- ◆ Use native plants in your garden.
- ◆ Install a nestbox for native birds.
- ◆ Create habitat for bees, butterflies and other species in your garden.
- ◆ When enjoying the outdoors, stay on trails, keep pets on leashes and avoid disturbing wildlife.
- ◆ Become a member or volunteer with the Osoyoos Desert Centre or a local conservation organization in your neighbourhood.



**Thank you for visiting the
Osoyoos Desert Centre!**

**Read more about our habitat and the
species that live here on our website
www.desert.org**

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Osoyoos Desert Centre



@desert_centre

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education efforts possible.**

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