Southwestern snake-necked turtles

What are they and why are they important?

Also known as a long-necked or oblong turtle, they are a **native freshwater species**, living in the wetlands and waterways of southwestern Australia.

They have a **distinctive long-neck** which cannot be retracted into their shell. This is an evolutionary adaption which allows them to:

- **Feed more effectively** by having a greater range to ambush their prey.
- **Manoeuvre better** through dense vegetation and between submerged rocks & debris in the water.
- **Observe surroundings more clearly** more and take evasive action before potential predators get too close.
- **Regulate their** body temperature **more efficiently** by adjusting the position of the head and neck to optimise heat absorption.
- Take in air to breathe from the surface of the water **at a safer distance**.
- Have a **reproductive advantage for males** during the mating season, by playing a role in courtship displays and in resolving territorial disputes.

Turtles are culturally significant to Indigenous Australians and embody ancestral knowledge, serving as a totem, a messenger and a guardian.

They are **ecologically important** as a keystone species, playing an **essential role in nutrient cycling** and **improving water quality**. They help to **maintain the health of the aquatic environment** by eating carrion and controlling pest species.

Bibra Lake - Nesting female southwestern snake-necked turtle
(taxonomic name: Chelodina oblonga)

Walliabup Wildlife Warriors

Yaakan or Booyi mural - Bibra Lake
(Whadjuk Noongar turtle names)

Coal Dam Park - male and female turtles in breeding season

Southwestern snake-necked turtles

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Turtle lifecycle

Our snake-necked turtles are **capable of surviving for more than 50 years** in the wild. Individual life expectancy is dependent upon several factors, including:

- **Resource availability** - quality and abundance of their food sources.
- **Environment** - habitat condition and presence of predators.
- **Genetics** - diversity and health of the local gene pool.

Maturity is reached after 10 to 15 years. Females lay up to three clutches of 3 - 16 leathery eggs each season between September and January.

Nesting is triggered in spring and early summer by low pressure weather systems, with increased humidity and an air temperature above 17°C. Females leave the wetlands to find a suitable location to lay their eggs - usually travelling between 1 and 300m but can be as far as 800m.

Egg incubation period ranges from 150 to 250 days depending upon nest conditions. Hatchling emergence from the nest is variable, with most surfacing in autumn and others choosing to overwinter and appear in spring.

Juvenile survival is low, with less than 5% likely to reach adulthood under normal circumstances. In the absence of unnatural deaths, **99.5% of adults are expected to survive each year**.

Turtle calendar

Spring hatchling emergence

Nesting season

Breeding period & seasonal migrations

Seasonal migrations

Aestivation (dormancy)

Autumn hatchling emergence

Southwestern snake-necked turtles

Why are our turtle populations under threat?

They are listed on the IUCN Red List as **Near Threatened**.

This means that they require early action to prevent further decline and are more likely to become **Vulnerable**, **Endangered** or **Extinct** in future.

This status is outdated and hasn't been reviewed since the 1990s. A lack of scientific data is limiting the reclassification process.

Key issues resulting in their decline

Reduction in quality and **increased fragmentation** of their wetland habitats through **urban development**.

High risk of **death by vehicle strike** on local roads from **increasing traffic** and **inadequate controls**.

Greater **risk of predation** when they venture onto land. Modified landscapes make turtles **more visible to foxes & ravens** – attracted by discarded human food.

Ineffective conservation strategies. Progress is limited by inflexible management approaches, insufficient resilience planning and "business as usual" mindsets of decision makers.

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The evolution of Turtle Trackers...

The Turtle Tracker program began in 2019 at Bibra Lake as a citizen science program to upskill the community in **protect nesting females and their nests** from September to November. This became part of the SOSNT project in 2022. Volunteers self-evolved the program by **extending tracking to January**, **maintaining protected nests**, **assisting turtle hatchlings** and **gathering data on key issues** impacting turtles.

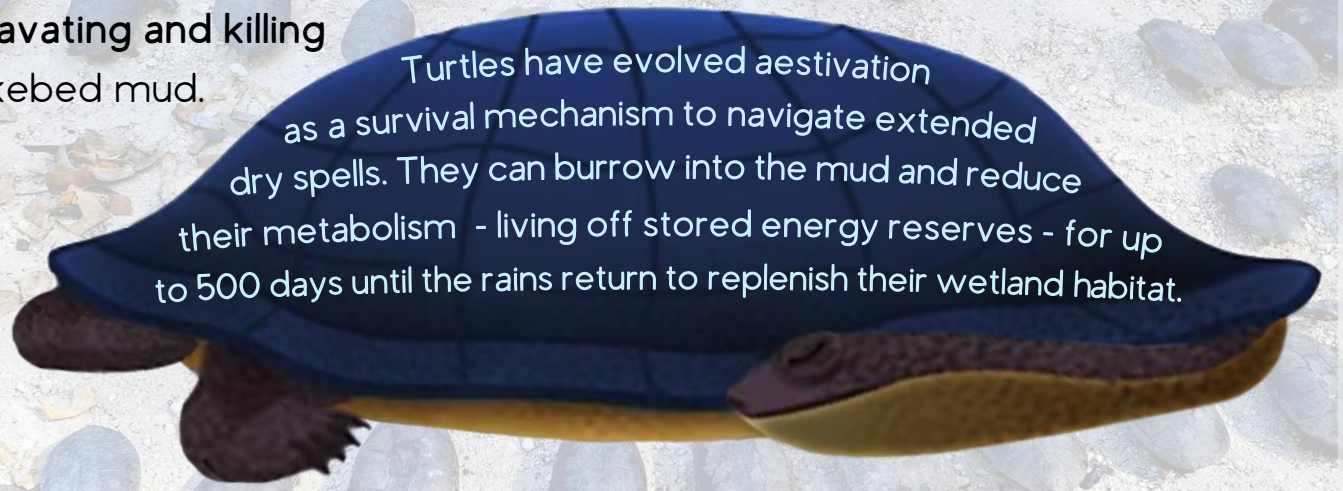
After the **devastating events of April 2024** and with deep concerns regarding the **lack of progress in translating findings into meaningful conservation action**, we formed the Walliabup Wildlife Warriors – a group of passionate, likeminded people, operating within the Wetlands Conservation Society of WA. We share a common goal of **uniting people, educating and campaigning for turtle conservation and the restoration of their wetland homes.**

Southwestern snake-necked turtles

What happened in 2024 at Bibra Lake?

In 2023-24 Bibra Lake experienced a **severe drying event**, due to record high summer temperatures and reduced rainfall. This resulted in **almost all of the lake drying out** between February and June.

During April, community members reported **13 separate fox sightings** at dawn on the dry lakebed. Foxes were seen actively **excavating and killing aestivating turtles** from the lakebed mud.



A volunteer-led survey of the lakebed resulted in the discovery of **over 130 turtle remains** – around 100 were verified as recent deaths.

This event was so **significant** that it **made the local and national news** – read more about the media coverage here.

The success of turtles is reliant on **high rates of adult survival**. Large-scale, unnatural losses of adults from the population are extremely detrimental and **increase the risk of local extinction**.


Bibra Lake fox
Photo: Susan George


Bibra lakebed
Photo: Pamela Orr

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Southwestern snake-necked turtles

Walliabup Wildlife Warriors

Heading for potential extinction...

Bibra lakebed fox
Photo: Paul Markendale

- Under normal circumstances, most of the adult **turtles in Bibra Lake would have survived the long, dry spell by aestivating** – a strategy which has served them well over millions of years.
- They have been **unable to adapt to the European red fox** – having no natural defences against this invasive predator which was introduced into Australia in the mid-19th century.
- **This was not an isolated incident!** Multiple turtle-kills by foxes have been regularly observed by volunteers over several years.
- **Adult turtles are often intercepted** when they **move onto land to nest** and when undertaking **inter-wetland migrations after sunset.**
- **Foxes are also one of the main predators of turtle nests**, digging up their eggs to eat – impacting the viability of future generations.

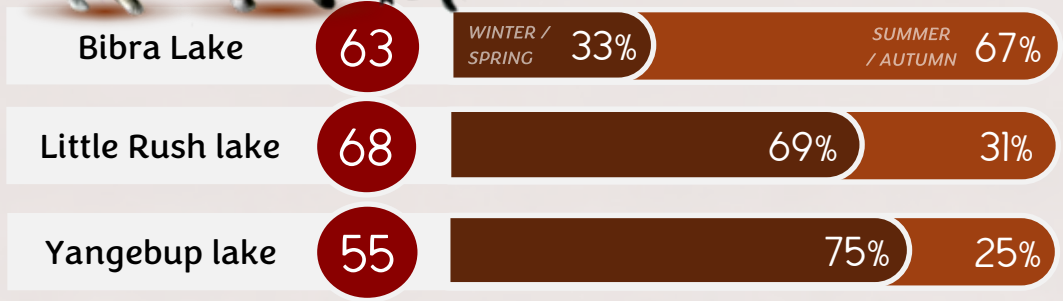
Little Rush Lake - fox den turtle remains
Photo: Paul Markendale

One year on - unfortunately very little has changed

- A **further 298 turtle remains** were found by volunteers between Sep. 2024 and Aug 2025, of which **186 (62%) were recent**.
- **Most were found during the spring nesting season**, prior to the drying of the lakebeds – **highlighting that this is a year-round issue**.
- Many carcasses had **clear evidence of fox involvement**, including head, neck and carapace bites and fox scat & footprints nearby.
- From Oct. 2023 to Aug. 2025, a **total of 447 dead adult turtles** have been recorded at Bibra Lake and Yangebup & Little Rush Lakes.

Bibra Lake fox with turtle
Photo: Susan George

Yangebup lake is a permanent waterbody where the lakebed does not dry in summer. Turtles have no need to aestivate here, with the vast majority of deceased turtles found resulting from predation and road deaths during nesting & inter-wetland migrations.



Recent turtle remains found: *Sep. 2024 to Aug. 2025*

Southwestern snake-necked turtles

This is only the tip of the iceberg!

There will be **many more undiscovered turtle remains** in addition to those recorded by volunteers.

Foxes carry kills back to their dens and cache them in larders to eat during times when food is scarce.

Thick bushland around the lakes and **vegetation regrowth** on dry lakebeds **obscured further findings**.

Listen to a local fox expert and feral invasive species controller discuss these issues in a radio interview.

Fox monitoring program

To **improve understanding of fox activity** around our wetlands we self-funded the purchase of trail cameras.

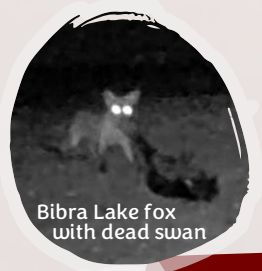

Bibra Lake fox
Photo: Ken Browning

7 locations were monitored in 2025 at Bibra Lake and Yangebup/Little Rush lake reserves.

Between **April and July 2025**, a total of **737 fox sightings** have been recorded on our cameras.

This **persistently high activity** was despite a period when a **local fox control program was undertaken**.

Sightings are **reported to the council** on a weekly basis **to help inform their feral control management**.


Bibra Lake fox with dead swan

Foxes are generalist predators and **impact many native wildlife**. The remains of quenda, possums & waterbirds were frequently seen during our surveys around the wetlands and at fox den sites.

In spring 2024, two den sites were found at Little Rush Lake with over 50 turtle remains in the immediate area


Photo: WA Wildlife

Foxes are responsible for spreading sarcoptic mange, suspected to be a **primary reason for a recent reduction in local quenda populations** – see WAW hospital's post.

In urban areas there are multiple council, government and private lands. **Co-ordinated approaches are essential for effective fox control.**

"Foxes are migratory and move long distances" is often used as a catch-all by management bodies to justify the prevalence of foxes. However, a recent Terrestrial Ecosystems report found that most urban foxes in Perth have small home ranges - averaging 3.2km^2 in size, signifying **that informed, fit-for-purpose local programs can be successful in improving fox management.**

Total monthly volunteer camera trap fox sightings: *April to July 2025 (over 4 month period)*

Southwestern snake-necked turtles

What else have we done to try to make a difference?

Appealing to decision makers

1. Issued a letter to **lobby WA state** government to highlight the widespread fox problem
2. **Met with politicians** to speak up for our wildlife and advocate for change
3. Submitted a **motion to Elector's meeting** to increase fox control
4. **Petition to council** for quarterly fox control – collecting 700 signatures from the community


BIBRA LAKE TURTLE TRACKERS – DEPUTATION TO THE CITY OF COCKBURN COUNCIL 14 May 2024

The **Turtle Trackers project** was developed in 2019 by **Murdoch University** and the **City of Cockburn**.
A **citizen science initiative** with volunteers at Bibra Lake **protecting nesting female turtles and their nests.**

OUR BIBRA LAKE TURTLES ARE GOING EXTINCT!

Fox observed killing turtle Bibra Lake – 1 April 2024 | Foxes observed killing turtle Bibra Lake – 13 April 2024 | Fox observed excavating turtle Bibra Lake – 23 April 2024

What has happened?

- A combination of an **uncontrolled fox population and drying wetlands** resulted in a **mass turtle mortality event at Bibra Lake** this autumn. **Foxes** were able to access the dry lake-bed to **excavate and kill turtles aestivating** in the mud.
- **Observed** by members of the public **from early April. Follow up surveys** by turtle trackers led to **recovery and ID of over 96 deceased turtles** and **evidence of high fox activity** - verified by Save our Snake Necked Turtles (SOSNT) & WA Wildlife.

"This is a devastating finding, the loss of almost 100 turtles from the population will have a major impact on the future survival of the species in Bibra Lake."
Dr Anthony Santoro - Turtle ecologist and SOSNT Project Lead

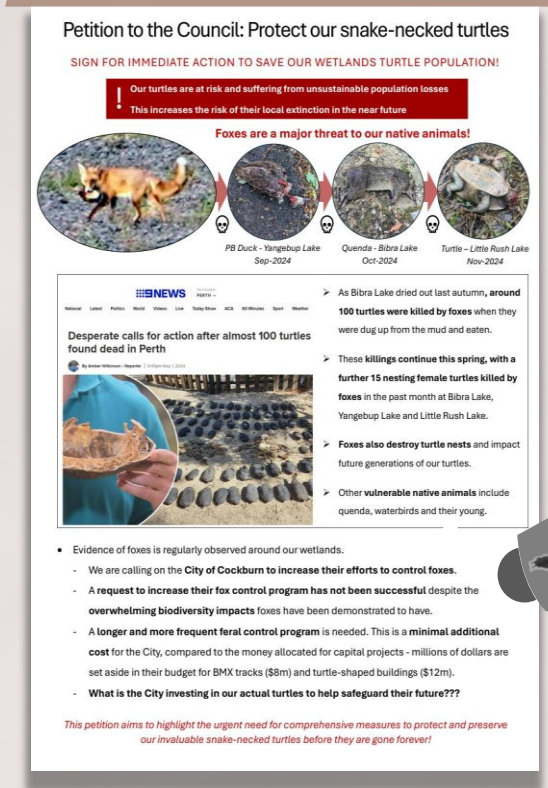
- Estimated this event alone removed **10-15% of the population.**
- Turtles take at least 12 years to reach reproductive age – **the population will take decades to naturally recover.**

- Prior to this event **turtle trackers have recorded ongoing turtle deaths** during each nesting season. These were due to several factors - but with **foxes being the main contributor.**
  - In October 2022 **six nesting females were killed in a single night by foxes.**
  - In addition, **foxes have destroyed multiple turtle nests** – eating eggs and killing hatchlings.
  - Since September 2023 we have now recorded a **total of 161 deceased adult turtles = significant impacts!**

Foxes kill about 300 million native animals every year across Australia and are having a huge impact on biodiversity!

Lake-bed survey Bibra Lake – 27 April 2024 | Recovered turtle carcasses Bibra Lake – 27 April 2024

14-May-2024
19:09:49


Petition to the Council: Protect our snake-necked turtles

SIGN FOR IMMEDIATE ACTION TO SAVE OUR WETLANDS TURTLE POPULATION!

Our turtles are at risk and suffering from unsustainable population losses
This increases the risk of their local extinction in the near future

Foxes are a major threat to our native animals!

PB Duck - Yangebup Lake Sep-2024 | Quenda - Bibra Lake Oct-2024 | Turtle – Little Rush Lake Nov-2024

9NEWS

Desperate calls for action after almost 100 turtles found dead in Perth

- As Bibra Lake dried out last autumn, **around 100 turtles were killed by foxes** when they were dug up from the mud and eaten.
- These **killings continue this spring, with a further 15 nesting female turtles killed by foxes** in the past month at Bibra Lake, Yangebup Lake and Little Rush Lake.
- **Foxes also destroy turtle nests** and impact future generations of our turtles.
- Other **vulnerable native animals** include quenda, waterbirds and their young.

- Evidence of foxes is regularly observed around our wetlands.
  - We are calling on the **City of Cockburn to increase their efforts to control foxes.**
  - A **request to increase their fox control program has not been successful** despite the **overwhelming biodiversity impacts** foxes have been demonstrated to have.
  - A **longer and more frequent feral control program** is needed. This is a **minimal additional cost** for the City, compared to the money allocated for capital projects - millions of dollars are set aside in their budget for BMX tracks ($8m) and turtle-shaped buildings ($12m).
  - **What is the City investing in our actual turtles to help safeguard their future???**

This petition aims to highlight the urgent need for comprehensive measures to protect and preserve our invaluable snake-necked turtles before they are gone forever!

Increasing public awareness

We have engaged the media via various channels

Walliabup Wildlife Warriors

For our latest community updates

Click the links to read more

Radio interviews

6PR - Foxes decimate turtle population in the Beeliar Wetlands

6PR - Calls for the state to intervene as turtles face local extinction

News articles

Fremantle Herald – Deadly fox toll

yahoo! news - Iconic species ravaged by invasive predator: 'Heads ripped off'

Fremantle Herald - City set to ramp up fox campaign

Read more local news → Perth Now: Savage turtle attacks at Yellagonga Regional Park

Southwestern snake-necked turtles

Foxes aren't the only problem...

Whilst foxes represent the most immediate threat to our local turtle populations, other issues also require urgent action.

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1 Road deaths

Turtles migrate overland to seek nesting sites, for breeding and to search for new waterbodies in summer as lakes dry. Many journeys are unsuccessful.

The **Beeliar wetlands chain suffers from poor interconnectivity.**

Lakes are hemmed in by urban developments & **intersected by high-speed arterial roads** - such as North Lake Road and Beeliar Drive and **busy access roads** - including Hope Road and Osprey Drive.

Historically, turtles could move freely between wetlands. Roads, buildings, walls, fences, drains and train lines now impede their ancestral migration routes.

In 2018, eleven turtles were killed by cars in just a single night at Bibra Lake – [ABC News – Nesting turtles crushed by cars]

In 2024/25, a total of nine turtles have been killed by vehicle strike whilst attempting to move across Osprey Dr. between Little Rush and Yangebup lakes for seasonal migrations

On 13 August 2025, seven turtles were killed by cars on Beeliar Dr. whilst trying to cross from Yangebup to Kogolup Lake

Southwestern snake-necked turtles

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Road deaths

Photo: Pamela Orr

Volunteers have assisted many turtles to safely cross roads.

Timings of turtle migrations are difficult to predict - we cannot be there 24/7 to help safeguard their journeys.

Countless turtles suffer critical injuries or are killed each year on our roads after being hit by vehicles.

Since 2023, 32 dead turtles (7% of total logged deaths) have been found on local roads by our volunteers.

Unsuccessful migrations will impact the:

1. **population demographic** if nesting females become road victims.
2. **population genetic diversity** if inter-wetland migrations are unsuccessful.

A recent study by Murdoch University on turtle cadavers collected by volunteers at Bibra Lake uncovered a high inbreeding coefficient which threatens the viability of the local population.

Jack Inglebrecht – PhD, Harry Butler Institute

Maintaining gene flow between wetlands is critical for healthy, resilient turtle populations.

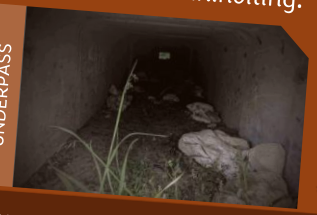
What else can be done?

Lowering speed limits on roads next to wetlands is a tangible and immediate step which can be taken until other long-term mitigation strategies are implemented.

There needs to be a focus on ecologically-centred road designs and the development of fit-for-purpose wildlife crossings.

Underpasses are often installed as a "quick fix" but are not always the most effective solution – requiring careful design and placement.

Current tunnels at Osprey Dr. & North Lake Rd. are unmaintained, in poor locations for turtles and appear dark and uninviting.



Higher risk of predation for fauna transiting through underpasses – foxes frequently utilise these and could ambush at entry points.

Overpasses are more appealing – directly replicating natural habitat and are open to natural light, with reduced traffic sound impacts.

Read how Banff's wildlife overpasses have been a conservation success.

Required actions!

- **Reduced speed limits** on roads adjoining wetlands.
- **Protected migration corridors** at known road hotspots.
- **Increased driver awareness** to prevent traffic casualties.

Southwestern snake-necked turtles

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2 Habitat loss and degradation

Turtle habitat has significantly reduced and become fragmented. Habitat quality has declined with increasing urban encroachment.

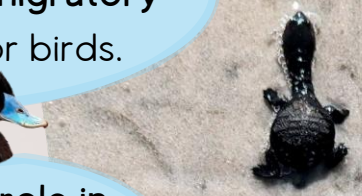
Wetlands are the beating heart of biodiversity in and around Perth. They provide **sanctuary for many plant and animal species** and are **migratory stopovers** and **vital breeding grounds** for birds.

They act as sponges – playing a **crucial role in groundwater recharge and improve water quality** by naturally filtering water received through precipitation and via surface run-off.

Despite their **immense ecological value** and the **richness of their living landscape**, our **wetlands continue to disappear** at an alarming rate!

READ MORE

- Perth's urban wetland scrapped!
- Hertha Wetland – Turtles the Main problem
- Internationally significant wetland under threat
- Rare wetlands in Burswood will be destroyed



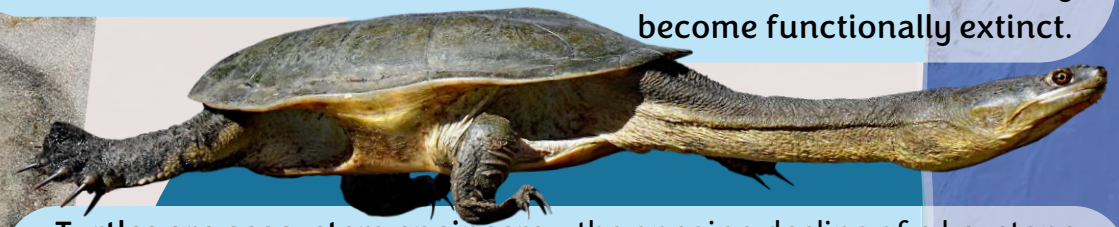
Turtle hatchling - Yangebup lake
Photo: Paul Markendale

The **Swan Coastal Plain** is a unique, ecologically diverse region stretching from Guilderton in the north to Yallingup in the south.

Over 70% of the original wetlands have vanished due to urbanisation since European settlement. Up to 90% have been lost in areas of Perth.

The **remaining wetlands are fragmented** – often existing as remote "islands", with turtles having difficulty moving between them.

Inbreeding is more common in small, isolated populations. **Turtles will become less able to survive** and – without intervention – **will eventually become functionally extinct.**



Turtles are ecosystem engineers – the ongoing decline of a keystone species has lasting detrimental impacts on wetland health & biodiversity.

Wetlands were historically seen as having little value – often used to dispose of wastes such as landfilling or wastewater treatment.

Legacies of these practises endure to this day, with wetlands such as Bibra Lake and Yangebup lake having areas classified under the *WA Contaminated Sites Act (2003)*.

These are listed in the state government's contaminated sites database

Southwestern snake-necked turtles

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Habitat loss and degradation

The natural strip of land around a lake's edge is called a wetland buffer zone. At least **50m of undisturbed land** is advised to **maintain ecological integrity**. for:

- **Sustaining ecological food webs** and the control of nuisance insects.
- **Protection of groundwater** and surface waters from nutrient pollution.
- **Provision of natural nesting areas** for turtles and habitat for many species.

A draft guideline for the determination of wetland buffer requirements (2005) has been developed but is still awaiting government approval to release for consultation.

The Town of Claremont has **established fenced exclusion zones** within the wetland buffer at Lake Claremont to **promote secure access and undisturbed nesting habitat** for turtles and waterbirds.

Wetlands often lack buffers – with detrimental effects. Bibra Lake Regional Playground has **no established buffer – suffering multiple issues.** This area is **high risk – with over 50% of all recorded turtle nest sites** at Bibra Lake in 2023 and 2024.

In buffers, **cleared areas – like lawns – expose nesting turtles to predatory birds** such as raven as well as **limiting availability of suitable nesting habitat.**

Nests in modified landscapes such as lawn areas and verges suffer from issues such as **vegetation regrowth** and **soil compaction – trapping hatchlings underground.**

Trapped hatchlings in heavily compacted ground, rescued by a volunteer – **all survived!**

Increased predators

Discarded food from picnics and BBQs **attract foxes and predatory birds which attack turtles,** as well as quenda who **destroy turtle nests.**

Raven gathering at the busy playground lakeside area to mob nesting turtles for eggs

Human disturbance

People on foreshore areas, **loud gatherings, overzealous observers** and **inquisitive dogs** often **result in turtles abandoning nesting attempts.**

Turtle fleeing to the safety of water after being disturbed whilst nesting

Unsuitable habitat

Footpaths, lawns and structures **reduce shelter & nest site availability.** Females may **pick inferior sites** or may **cross roads to seek better spots.**

Running the gauntlet – turtle crossing an exposed footpath to search for a nesting spot

Required actions!

- **Establish wetland buffers** to enhance ecological function and address conflicts.
- **Restore habitat** to provide secure, natural nesting refuges away from disturbances.
- **Create safe migration corridors** between wetlands to improve ecological linkages.

Southwestern snake-necked turtles

3 Water Stress & Climate Change

Perth's growing population has placed an increased demand upon dwindling water resources in a warming climate with reducing rainfall.

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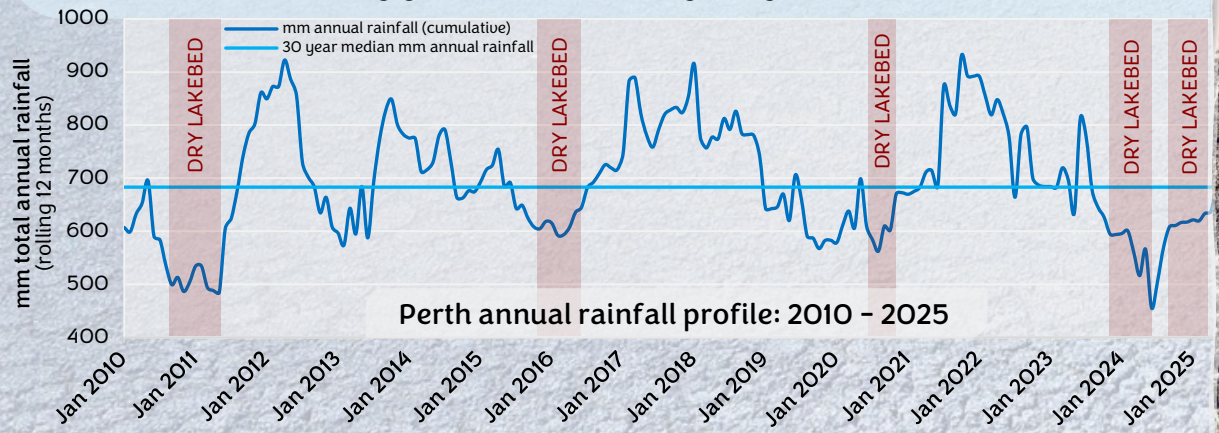
- The **dry summer of 2024 was not a one-off**, with a **similar story playing out in 2025**.
- Aerial images of Bibra Lake highlight **this having been an issue in 5 years since 2010**. Very dry lakebed conditions were also experienced in **2011**, **2016** and **2021** between March and June.
- **Changes in lake water** levels are dependent upon a combination of **fluctuations in groundwater** levels, **direct rainfall recharge**, **surface water run-off**, **drainage rates** & **evaporation rates**.

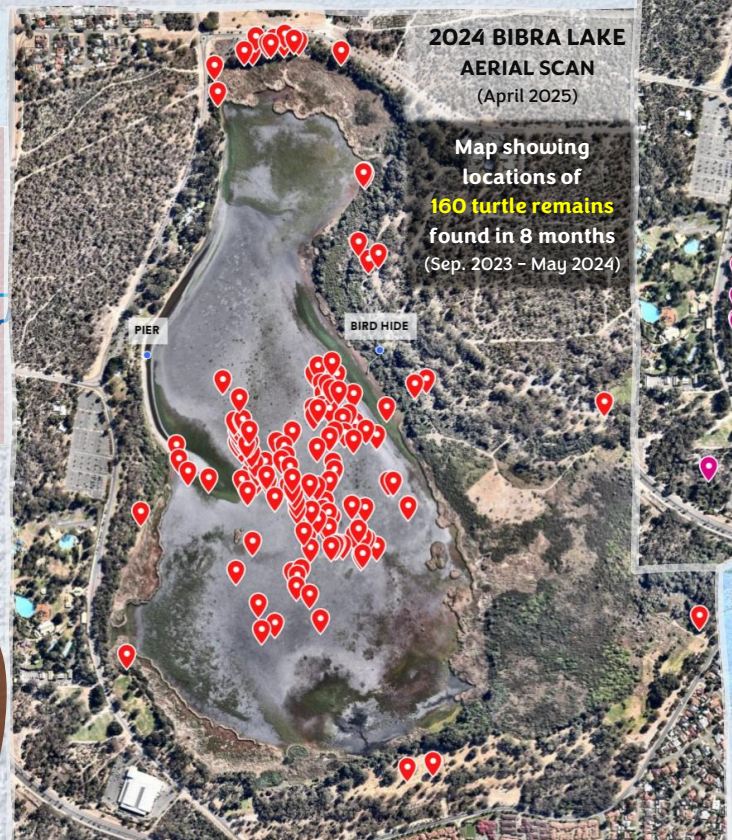
The impacts of reduced rainfall are cumulative, with elevated risk of a drying event in the following year, unless recharged by increased winter rainfall.



Perth annual rainfall profile: 2010 – 2025

Partial drying of wetlands is natural, however prolonged drying is not and has many detrimental impacts.

- Greatly reduced rates of survival for emerging hatchlings
- Reduction in turtle vigour. Reproductive health may be compromised
- Very high risk of mass adult turtle deaths by fox predation
- Water quality issues through accumulation of nutrients and algal blooms
- Increased water-borne disease risk such as botulism



Southwestern snake-necked turtles

Water Stress & Climate Change

Bibra Lake – dead aestivating turtle in dry lakebed with fox diggings & footprints
Photo: April Sturm

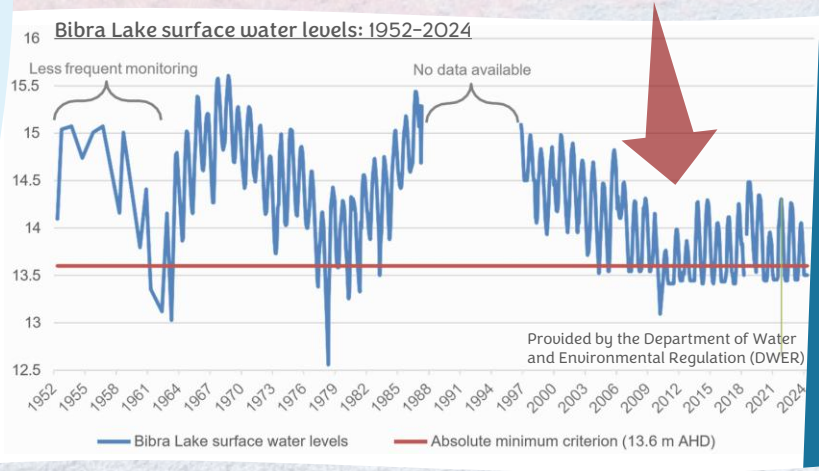
Declining rainfall and an increasing demand for freshwater continue to stress Perth's depleted groundwater supplies.

The WRI's Water Risk Atlas defines the Beeliar wetlands as **extremely high water stress** and **water depletion risks**.

Actions are needed to **protect groundwater** systems and **safeguard our local wetlands** by **using water sources more sustainably** and investing in **climate resilient solutions**.

At Bibra Lake **minimum surface water levels are enshrined in legislation** and are subject to conditions set in Ministerial Statement 688 – **to mitigate environmental impacts**.

- An **absolute minimum criterion of 13.6m AHD** has been set, with additional criteria stating that **the lake is not to dry out more than 2 in 3 years** and **preferably less than 1 in 3 years**.
- Monitoring at the DWER staff gauge has shown that, since 2009, **autumn minimum water levels have not met the 13.6m AHD requirement** of Ministerial Statement 688.



The South Jandakot Drainage Management Plan

- Prepared in 1990 to protect the Beeliar wetlands from the adverse impacts of urban stormwaters.
- Drainage water from suburbs around Thomsons and Kogolup lakes are diverted to Yangebup lake and discharged directly into the waterbody.
- The maximum water level in Yangebup lake is set at 16.5m AHD. When this level is reached, excess water is pumped to Cockburn Sound via Woodman Point Wastewater Treatment Plant.

Water Supplementation of Bibra Lake would represent an important first step in water conservation through the transfer of surplus water from Yangebup lake.

- **Arrest declining water levels in Bibra Lake** and help to **prevent the loss of ecological function** in dry summers.
- **Conserve valuable freshwater currently lost from our wetlands once Yangebup Lake reaches full capacity**.
- Promote more **equitable distribution and holistic management of water** across the Beeliar wetlands.

Required actions!

- Expedite proposed **water supplementation**. Initial discussions have stalled since 2024.
- Develop **integrated wetland conservation water strategies** and **management plans**.
- Create **climate change resilience plans** to decrease the risk of extreme event impacts.

Southwestern snake-necked turtles

It hasn't all been bad news...

There have been many success stories of local community and volunteer groups making a real difference through dedicated conservation actions!

Since 2023
Our local volunteers have collected important information and helped

protect 254 nests and guard their nesting females from harm

Helped to the lake shore or admitted to WA Wildlife rescue 461 hatchlings

log 720 predated nests to help inform turtle behaviours and conservation

7 TurtleSAT

Record sightings in TurtleSAT

The more we understand, the better equipped we are to find a way to live harmoniously with the natural environment.

There is power in the voice of the community!

You can see what ordinary people who care deeply about the environment have been able to achieve when they put their hearts and minds together!

How can you get involved?

1. Get active and contribute in conservation volunteer or citizen science programs.
2. Rewild your garden, reduce your water footprint and be fertiliser wise.
3. Protect wildlife by keeping cats at home, dogs on leash & use safe rodenticides.
4. Talk to MPs & local councillors about better policies and funding to support conservation groups.
5. Report local issues to Councils via SSS which impact our wildlife.
6. Join a free 'Walk and Talk' with citizen science turtle expert The Crazy Bushman.

Southwestern snake-necked turtles

Everyone needs to do more to prevent biodiversity decline

Walliabup Wildlife Warriors

Volunteer efforts alone cannot save our turtles – **we urgently need all levels of government and management bodies to act now**, before it is too late!

We need **meaningful commitments and actions** - there are legal and moral obligations for decision makers to value nature and protect wildlife.

Effectiveness of conservation actions needs to be assessed via **measurable outcomes**, instead of simplistic determinations based solely on money spent.

Climate change is frequently stated as the reason for a **conservation failure**. This deduction only serves to **mask underlying issues** which have been exacerbated.

Resilience is required at an ecological level. A genetically diverse turtle population in a healthy wetland ecosystem is better equipped to handle the effects of climate change.

Nature laws are failing biodiversity!

Australia's native wildlife is teetering on the brink. There have been systemic failures to protect and restore biodiversity .

Biodiversity Council — Legislation, policies and planning processes have enabled ongoing biodiversity losses

We are seeing the destruction of nature faster than we are seeing protections

Conservation Council of Western Australia ccwa Look forward

WA made laws to protect nature. Then it forgot something

The loss or depletion of our keystone turtle populations will have irreversible impacts on wetland biodiversity

A framework is needed to manage these complex, intertwined issues and generate a roadmap for success with tangible actions and progress.

BROAD SCALE FOX MANAGEMENT
- Expanded local programs
- Assess effectiveness of controls
- Collaboration across areas/regions

ENHANCE ECOLOGICAL LINKAGES
- Protected migration corridors
- Traffic Management Plans

TERRESTRIAL HABITAT RESTORATION
- Buffers & secure nesting areas
- Revegetate & rewild reserves

EFFECTIVE WATER MANAGEMENT
- Integrated management plans
- Water quality assessments

TURTLE CONSERVATION STRATEGY & PLAN
- Mitigation of adult mortalities
- Improve genetic diversity/flows
- Juvenile studies & headstarting

Turtle numbers will not bounce back without intervention. Safeguards are needed to create a safe environment for turtles to flourish.

CLIMATE CHANGE RESILIENCE PLANNING
- Develop blueprint for wetland ecological resilience
- Define and mitigate impacts on all turtle lifecycles

> ***If we take care of nature, nature will in turn take care of us.***
>
> Sir David Attenborough