



BELLINGER RIVER TURTLE DEATHS

Public Information Session
Monday 30 November 2015
held at Bellingen Uniting Church Hall

This document is a record of the Public Information Session held in Bellingen to provide information to the local community on the multi-agency response to the mortality of Bellingier River Snapping Turtles in February-November 2015.

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A session coordinated by:

Bellingen Shire
COUNCIL



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Bellinger River Snapping Turtles

Record of Public Information Session #2 - 30 November 2015

A public information session was held at 5:30pm on Monday 30th November 2015 in Bellingen Uniting Church Hall to update the community on the multi-agency response to the mortality of the Bellinger River Snapping Turtle (*Myuchelys georgesi*). It was attended by 32 people in total including those from the agencies involved.

Note: This document was compiled from comprehensive notes taken on the night by several attendees and does not attempt to provide a full verbatim record of the session.

MEETING OBJECTIVES

1. Acknowledge the level of community attachment to the Bellinger River and concern for the health of the river ecosystem.
2. Provide objective information to the public on the serious situation, the actions taken so far, the current findings and the plans for species recovery.
3. Provide an opportunity for public feedback about response so far and input into the role of the public in future management.

AGENDA

Laura Slade (National Parks and Wildlife Service - NPWS) Facilitator and background
Karrie Rose (Australian Registry of Wildlife Health) - Diagnostic investigation and surveys
Gerry McGilvray (Office of Environment & Heritage) - Recent surveys and species recovery
Melissa Walker (Dept. Primary Industries - DPI) Biosecurity and surveillance
Carmen Muldoon (Bellingen Shire Council) - River health project and public river use
Ricky Spencer (University of Western Sydney) - General turtle health and Turtle SAT project
Gerry McGilvray & Karrie Rose - What the community can do
Q&A for expert panel - questions about information

Speakers:

Laura Slade – NPWS Community and Stakeholder Engagement Team

Introduction and session rules

Background of event

- On 18 February 2015, NPWS staff received the first reports of sick turtles found between Thora and Bellingen Bridge,
- Turtles presented as emaciated, with inflamed eyes/ eyelids and blindness.
- On 27 February OEH set up a Local Control Centre (LCC) located at Bellingen Shire Council, and operational teams were established to survey affected turtle populations and pick up those sick/dead turtles. This then progressed to an Incident Management Team (IMT) and moved to the SES premises. The IMT was active until the 23rd March, after which it was downgraded to a multi-agency taskforce.
- It was found to be the Bellinger River Snapping Turtle (BRST) (*Myuchelys georgesi*) that was affected. These turtles are found only in the Bellinger River catchment (and possibly Kalang River).

The disease quickly spread upstream and over 400 turtles were found to be affected.

- A Public Information Session was held in Bellinger on 23rd March with speakers from each of the response agencies. At that time we did not know what was causing this mortality event to happen.
- A number of healthy animals were taken into captivity and located at the University of Western Sydney
- In August 2015, and after extensive efforts from numerous diagnostic experts working to hone in on the cause of the mortalities, the scientific team at Elizabeth Macarthur Agricultural Institute (EMAI) led by Dr Peter Kirkland, detected a new virus that is believed to be associated with the mortality of the Bellinger River Snapping Turtles. This was a significant breakthrough.
- The turtles have been in hibernation over winter so there have been no reported cases of sick or dead turtles for a number of months.
- Coming into spring there were surveys done on the river.

Dr Karrie Rose - Australian Registry of Wildlife Health

Diagnostic investigation

- Multi-organisation approach to diagnosis
- February 18th first report was received, on the 20th February, the first sick animals were received for testing
- A number of tests were done concurrently, that is, we didn't wait for the results of one test before moving on to the next.
- Variety of tests conducted included viral, bacterial, and fungal culture, assessment of internal and external parasites, and diagnostic testing for specific infectious agents
- Looked for infectious pathogens of reptiles, aquatic species and agents known to cause eye lesions
- EPA looked at water quality and did pesticide tests
- At the first public meeting, we didn't know what the cause was
- An additional round of viral cultures using additional culture medium and incubation at a range of temperatures identified a new virus
- Confident it is the causal agent for the disease in the Bellinger River Snapping Turtles
- Viral genome has been sequenced:
 - Similar to reptile/fish virus (not closely related to any mammalian virus)
- In November, the surveillance team collected fish, invertebrates, reptiles, anything they could catch and swabbed them to test for the presence of the new virus
- Can the virus persist in water to be transferred or is it contact to contact in animals? We still don't know.

Gerry McGilvray – OEH Ecosystems and Threatened Species Unit

Surveys

- An initial survey in October found no turtles. A total of 19 holes were then surveyed in the week 8th-13th November. This more intensive survey found a number of turtles via trapping and hand capture while snorkelling. Half found were Georges turtles (BRST), mostly

juveniles, but may be hybrids of *Emydura macquarii*. Virus and genetic test results are yet to be completed for samples taken from these animals.

Species recovery

- Research into identification and management of key threatening processes continues
- Captive breeding program and reintroduction (including removal of eggs for 'head-starting', where eggs externally incubated and hatchlings are reared to the point where they are no longer as vulnerable to predators.)
- Wild population is likely to be a very small population and will likely require intervention
- Ongoing review of new information including from recent surveys.

Insurance Population

- During the initial mortality event it became apparent that the BRST were at threat of extinction in the wild due the spread of the disease.
- The development of an Emergency Transfer Plan was initiated around the 10th March. This included planning for movement of up to 20 animals to quarantine facilities to form an insurance population. Complex planning and consultation process was undertaken considering biosecurity issues, facility set-up and negotiation of contract, transport, animal welfare etc. A team including Western Sydney University (WSU) staff, Wildlife Health Australia vet and other vets, OEH and NPWS staff went in 9th -12th April and 16th April. A team of 2 staff at OEH coordinated and delivered with partners, including NSW DPI, who ensured appropriate biosecurity protocols were in-place to ensure security of the population. A number of healthy animals were successfully transferred to facilities at WSU. These animals have tested negative for virus. These animals will likely be transferred to facilities at Taronga Zoo next year where they will be part of an ongoing captive breeding program.

Wild population

- Only a small number of adults and many juveniles found. Further surveys may discover more animals although it seems likely that recovery will require intervention due to low reproductive output of animals, low numbers of adults, age of maturity (estimate 10-12yrs), and high predation of eggs.
- Yet to determine whether these animals are hybrids or pure BRST, resistant to virus, any function of age in survivorship, etc.
- Monitoring of the wild population over time for research and management of threats and possible head-starting program.
- Time between discovering sick turtles and taking some into captivity - 18th Feb 2015 is when turtles were found sick, 7 weeks later healthy animals were taken from Brinerville (9th April).

Question: Why did it take so long to take some healthy animals out of the river? 7 weeks seems like a long time.

Ricky Spencer: There was no facility that could take them. No zoos wanted them. A facility had to be built that no drop of water could move in or out of. Now that facility is available, future responses to this type of event will be quicker.

Question: Was there something in the environment that contributed to this happening?

Ricky Spencer: We are looking at possible causes including environmental conditions in the catchment, but we don't want to speculate until we know more information.

Melissa Walker - Department Primary Industries

Biosecurity and surveillance

- Whilst the virus is not believed to affect humans but we still advise that you do not handle turtles.

Maintaining biosecurity measures for turtle health

- Confirmation of a virus in the mortalities reiterates the importance of maintaining the biosecurity measures in place for community members and agency staff involved in surveillance along Bellinger River.
- This includes recommendations to wash aquatic equipment used in the river, including kayaks and boats.
- Ensuring individuals and vehicles that access the river are cleaned appropriately before moving to any other area of the river, or into another catchment.
- Appropriate cleaning and drying will minimise the risk of the further spread and impact of the virus on the remaining turtle population and potential risk to other species in other catchments.

Hygiene measures for field teams

- Department field teams accessing the river for all surveys since February 2015 have been required to follow strict biosecurity measures to ensure that these activities have not presented further risk of spread of the virus to other areas.
- These measures will continue to be applied to field teams working in the river to ensure that they do not contribute to further spread of the virus to other areas or estuaries.
- Field hygiene is also important in a general sense, and is a common recommendation when working with wildlife (i.e. to use gloves and wash well afterwards).
- ***Reopening of Brinerville area of New England NP***
- When the mortality event first was detected in February, the NPWS proactively closed an area of the New England National Park, the Brinerville area, to minimise park patron access and to endeavour to minimise the risk of spread of the pathogen, which at that early time, was unknown, but believed to be transmissible.
- Over the past 9 months, we've confirmed that there is a virus associated with the turtle mortalities, and that the impact was across the entire population of the Bellinger River Snapping Turtle.
- As such, measures such as closing the park to access are no longer considered a requirement.
- Instead, measures similar to those in the Bellinger town area (and other public access points), will be implemented, i.e. appropriate signage and advice to ensure that those park patrons accessing the waterway understand what they can do to minimise the risk of their

activity further spreading the virus. Access to the Brinerville section of NENP will be by the same arrangements as prior to its closure.

Surveillance

- Usual mortality events to OEH Environment line 131555
- District vets throughout NSW have been informed of the disease symptoms.
- Broader surveillance to see if virus occurs elsewhere has resulted in a number of reports. These other turtle sicknesses across the state have been investigated and none have been found to be associated with this virus affecting the BRST.

Carmen Muldoon - Bellingen Shire Council - Sustainable Environment & Waste

Water quality monitoring program

Eco health - 16 sites tested for water quality 2011. Bellingen Shire Council (BSC) is working with UNE, LLS, OEH in river water sampling in Bellinger and Kalang catchments. Eight sites linked to 2011 data and on ground restoration works. Six sampling events over 12 months including during river 'fresh' events.

Public/Environmental Health perspective

- Standard public health protocol - due to the potential for washing of pathogens into waterways during rainfall it is not recommended to swim in them for a period of 72 hours after rainfall has ceased to be reasonably sure that any microbes have been flushed out.
- The results of tests undertaken show that the Bellinger River falls within normal ranges for water quality.
- Regular testing of the Bellingen town water supply shows the water is safe to drink.
- NSW Health does not recommend people drink water directly from farm dams, rivers or creeks.

Water quality testing program

- Bellingen Shire Council (BSC) has resolved to conduct water quality monitoring to inform the Council, community and various government and non-government agencies of the current water quality of Bellingen Shire's rivers and estuaries.
- The first round of Eco health monitoring was completed in 2011 and 16 sites were tested.
- Further funding is required to complete a full Eco health round two project. However, in the interim to when funding is open for application, Council is working in partnership with UNE, OEH and LLS on a new round of water sampling in the Bellinger and Kalang Rivers to enable us to capture some baseline data and to compare with Eco health round one data. This was decided in response to the BRST mortality event for the collection of up-to-date baseline and comparison water quality data.
- Eight sites selected to enable comparison with Eco health round one data. Some sites are directly linked to projects where on-ground works have been completed since the Eco health round one monitoring.
- Some of these sites are located within the BRST event 'hot-zone'

- There will be six sampling events completed in twelve months. Two of the six sampling events will be done in a 'fresh' i.e. first run-off e.g. after heavy rainfall event (not flooding)
- The sampling will measure -
 - Total Nitrogen
 - Total Phosphorus
 - Bioavailable Nitrate - Nitrate
 - Soluble reactive Phosphorus
 - Chlorophyll a
 - Total suspended solids
 - Turbidity.

Question: Dairy effluent disposal - results from investigations undertaken a few years ago have never been released by Council. When will the report be available on the issues?

Carmen Muldoon: I will look into this and get back to you.

Dr Ricky Spencer

- I have been working on Bellinger Turtle species since 2000.
- All Australian turtles are in decline (95% of turtle deaths by fox predation).
- Turtle SAT –citizen science turtle activity app
 - Can report road kills/nesting/basking/activity
 - Identify hot spots of potential nesting grounds. Please use website or app to record sightings.
- Researchers/ students will be here long term looking at turtles.

Question: Have river conditions (low & warm) contributed to turtle deaths?

Ricky Spencer: Too early to tell but investigating sustained warming and low river levels as contributing causes (since 2010-11).

This species has a restricted range and numbers and has low genetic diversity. An event like this may have happened before historically.

Question: Foxes and goannas are key predators; I suggest hitting foxes when reintroducing turtles.

Ricky Spencer: Level of predation rates on the Murray River Turtle, 85% nest predation is bearable but 95% is not. Can reduce foxes by 60% but level of predation remains high. Often it is one fox that is causing most of the damage, unless the baiting kills that fox, then we don't see any change in predation rate of nests.

Disruption activities to stop foxes, e.g. temporary fencing around known nesting sites, is very effective. We need to be able to ID nesting hotspots so we know where to put the fencing. Targeted fox management works but wide-scale doesn't.

Habitat modification may also help, this would mean creating more sandy areas that turtles can dig into to nest.

But 'head starting' will be first and most effective strategy to increase turtle population numbers in the wild.

As shown by the Murray River turtle research, we only need to reduce predation by 10% to make population sustainable.

Question: My observation is that fine silt on bank has been replaced by larger rocks over last 25 years making it harder for turtles to nest.

Ricky Spencer: Nest locations move with river hydrology changes. That is why identifying current nesting locations is important.

Question: Have females in captivity got eggs?

Ricky Spencer: No sign yet but they are constantly monitored. Their breeding cycle may have changed due to being in captivity. In captivity they have been kept at constant ideal conditions, so the turtles look very healthy, but they haven't been subject to those environmental triggers that prompt breeding, temperature and light changes. Our first priority was to keep these animals healthy in captivity before we focus on breeding.

See: Bellingen community FB site.

Gerry McGilvray and Karrie Rose - What you can do

- Ricky's Turtle SAT project is a good way to log your turtle observations, particularly any nesting sites found.
- The OEH Environment line, 131 555, is still the place to call if you find any sick or dead turtles in the Bellingen catchment.
- Fish may also be collected for analysis – only the gut is required, frozen in a snap lock bag with relevant details.

Question and answer session

Q: How long to does it take the virus to kill a turtle?

A: Lesions start to appear very quickly, death takes 5-10 days only. It is very acute.

Q: I've observed grief in the community about the death of turtles, and I'm particularly concerned with what the children think. I've felt that the community has been somewhat blamed for this happening, but I'd like to say that community are our biggest asset. I'd like to see more funding given to positive community education and consultation.

A: It was never the intention to blame the community. The agencies involved are grateful for the quick action of community members that identified that there was a problem and reported it. The community has an important role in helping us to recover the turtle population. We will take your comment on positive education on board for species recovery planning.

Q: What is happening in the river to investigate its health? How are you funding investigations?

A1: Crowdfunding is an option for University Western Sydney studies, a petition set up from a concerned person overseas received 80 000 signatures, so crowdfunding could be successful.

A2: The species has been nominated for listing as critically endangered. If the listing is successful it may provide opportunity to secure extra funding.

A3: The Turtle SAT program has been promoted to schools, November is turtle month and we are running a colouring competition. We have also had people talk to schools about the Turtle SAT program.

Statement from floor: OZGREEN have experience in implementing education programs and would be willing to partner.

A4: Thank you to community for raising alarm and driving agency and community response.

Q How are you ensuring that people follow the wash-down guidelines

Melissa- the wash-down procedures are guidelines only, and are not being formally regulated. We hope that community members will follow this advice to minimise the risk that their activity will contribute to further spread of the virus. As for transmission, if the kayaks are dry between uses then the risk is transference is lowered anyway.

Karrie- We don't yet know how it can survive. Some viruses can survive for 150 days in a rat poo, then if this rat poo rolls into water can survive another 150 days in water. We are assuming that this virus may be transferred by water, but we don't yet know.

Q: It keeps being said that around 400 turtles died, but we don't know if this is accurate. Would it raise more awareness if it was put out there that the number may have been in the 1000s?

A: 430 were found dead, we realise due to a flood event around the same time, that it may have been more. But now it is more important to focus on how many are left rather than what was lost.

Q: Have juveniles been tested for virus?

A: All turtles found during the surveys have been swabbed and blood tests taken, including juveniles, to determine exposure and status.

Q: How to communicate wash down to visitors? Could council provide wash down facilities? I don't think the locals are the issue here since the Bellinger River is the best river, they only kayak here and don't want to go elsewhere!

A: The prime fact sheet flyer was sent to local accommodation providers so they can inform visitors. This was in addition to being included in the October 2015 Council Newsletter to all ratepayers. Council will consider the wash down facilities suggestion and welcome any other suggestions.

Questions received in advance from Bellingen Environment Centre

1. Soil erosion in Never Never catchment in early February 2015.

The NSW Forestry Corporation were recently fined \$15,000 for erosion of over 100m³ of soil from land clearing into the Never Never catchment in early February 2015. The EPA have advised that they did not inform OEH or DPI of the erosion event or the results of their

investigations. How was this illegal erosion event being dealt with in the investigation of turtle deaths which were first recorded in late February 2015?

A: One event of sedimentation will not affect food supply of turtles, even over 5 months.

A: To first incident response - The Never Never River was found to not be suitable turtle habitat. Even during the outbreak, no dying turtles were found up there.

Also the initial mortality hotspot was upstream of Never Never River confluence.

EPA did water quality testing for herbicide, pesticide and turbidity, this was within the first 2 weeks of the event. No issues were found.

2. Use of pesticides on State Forests

2.1 Was the recent widespread use of a range of pesticides on state forests in the catchment of the Bellinger River considered in the investigation into the turtle deaths?

A: As mentioned, water was tested by EPA. This included invertebrates sampling and testing. Nothing was found.

A: Turtle tissue was also tested for herbicide and pesticide early on, and nothing was found.

2.2 Was herbicide used by OEH in weed eradication on the Brinerville addition to the New England NP considered in the investigation into the turtle deaths?

A: NPWS use of herbicide is away from riparian zone and within specifications. NPWS buffer zone is 10m from water's edge and spraying is not undertaken before or during a potential known rainfall event.

Also the healthy turtles that we have in captivity were taken from this section of the river before the virus moved that far upstream.

3. Controls on land use

3.1 What controls on land use were imposed following the turtle deaths and what controls are still in place?

A: A risk assessment identified the access to the river by the Bellinger Shire Council as a potential risk, and mitigation measures were recommended including that water no longer be accessed from Bellinger River to undertake Council activities. This is still in place. Local land use/farming was not identified as a significant risk and no formal controls were put in place. Standard biosecurity hygiene practices (i.e. clean gear/equipment/leisure boats & gear) were encouraged for the local community through signage, media and Council mail-out of the Prime Fact Sheet.

3.2 What additional controls on land use are proposed?

A: No other active controls on land use are proposed.

4. Reports of use of wash-down water from the Clarence River.

4.1 Have the reports made in the media and reportedly to authorities of the use of wash-down water on roadbuilding projects in the Bellinger catchment and particularly adjacent to the Bellinger River been investigated by relevant authorities? Eg DPI Biosecurity / Council? / EPA water testing? Who was the EPA contact?

A: BSC / RMS road works are subject to standard environmental control conditions

- environmental controls - dust
- standard procurement- local companies
- locally supplied water?

4.2 If water from the Clarence catchment was used on these projects what potential disease carrying organisms could have been imported in the water?

A: The diagnostic team lead by Peter Kirkland are still researching how the virus is transmitted. Thank you for raising this issue - the possible correlation between transport of water and virus outbreak will be considered in the ongoing investigation.

Note that there is no indication of any other turtle disease in the Clarence River.

Action: Carmen (BSC) will follow up after the meeting to ascertain facts about water source and use on road works.

4.3 Was there an “accidental release” of this water into the Bellinger River as reported?

A: Carmen with has made initial contact with RMS about this, and will continue to follow it up.

From floor: I spoke to the site foreman at those road works at Gordonville. They were washing the large stones in plastic tanks with the water that they brought in before they could use them in the retaining wall for the road. One of the large tubs that they were using for washing was tipped over and some of that water flowed into the river. After that they ended up not washing the rocks at all. The foreman complained to me of the environmental controls that they had to use. This incident took place 200m upstream of the initial turtle sickness site.

Bellingen Environment Centre requested a preliminary follow up report about this from BSC within 2 weeks.

This was noted but also suggested that some delays in getting information may be inherent due to the upcoming holiday period.

General Discussion:

Q: General concern raised over changing forestry procedures and reduced riparian buffer zones.

A: This has been noted, but no one from Forestry Corp was in the room for comment. Also, this is outside the scope of tonight’s meeting.

Speaker from the floor, representing Nomad Operations & Events

Brought to the attention of the room the proposed revived Bellinger River Festival will become the Bellingen Turtle Festival. It would include a concert, 3 days camping and a variety of activities and performances and would be a family event. They propose to educate everyone on the plight of the turtles and use part of the ticket sales to go towards helping species recovery.

The event is proposed for April 2016.

Report prepared by Laura Slade, Community & Stakeholder Engagement Team, NPWS