



NABSnet

Newsletter

#40 | 16 February 2023

2023 Masterclass 27-28 March

Hi everyone in NABSnet

Yes – ‘land of flooding plains’ – we’ve certainly been living that in the north – some areas having a great season and others inundated, but no doubt everyone has clients with significant challenges as a result of this big wet.

It is likely that a whole raft of livestock diseases will be experienced in the months to come. Some known and possibly some new to your area, especially with plant poisonings, arboviruses etc.

This is exactly the time that having the NABS SDI process available will allow you to get to the bottom of more outbreaks. Even if it seems like it is something routine - work it up and get it to me as an SDI – each one is a valuable contribution to building a picture and picking up that surprise case.

The SDI featured in this newsletter involves a number of horses with different owners in one geographical area that presented to the attending veterinarian with similar signs – a good example of the district-level overview that private practitioners can build – joining the dots.

The next Masterclass is SOON – Darwin 27-28 March (immediately before the ACV Conference). Great opportunity – details below - don’t miss out.

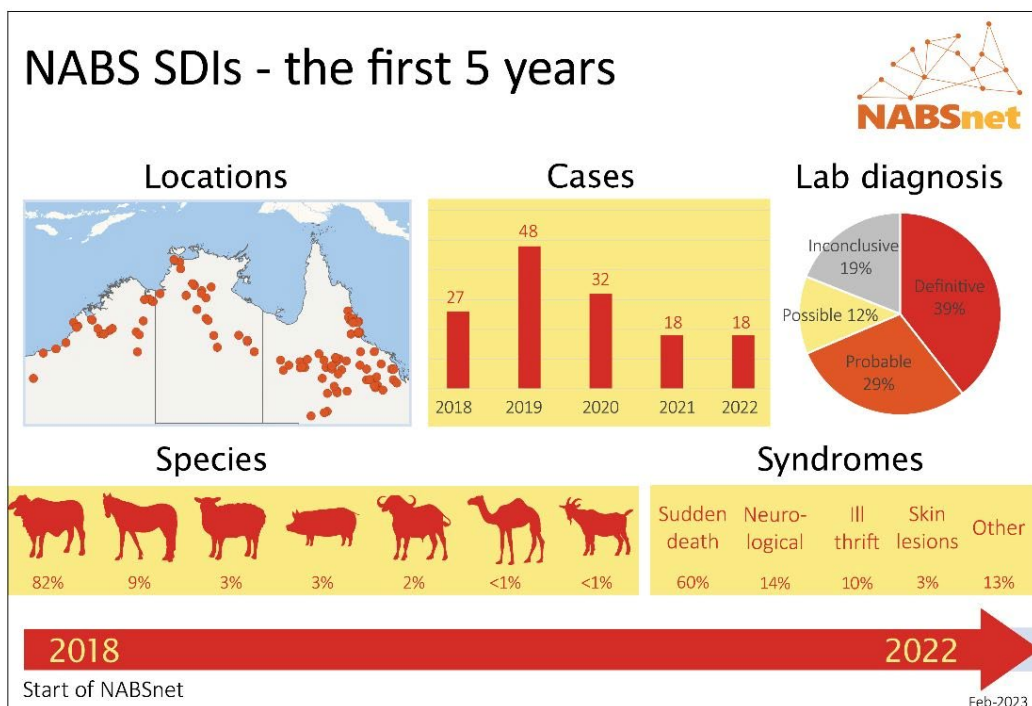
Cheers
Kev





Floodwaters over Great Northern Highway across Roebuck Plains Station

Photo credit: The_Wildlife_Angler

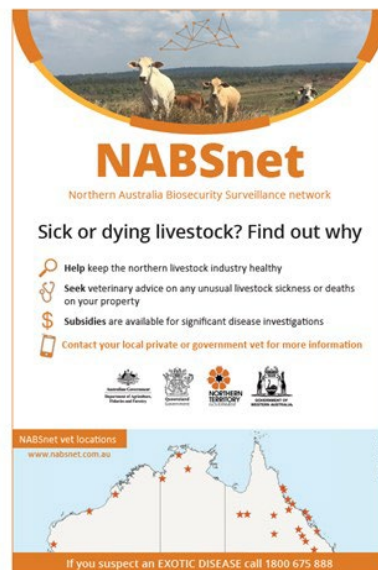


Encouraging producers to call

You don't have to think it's an EAD to do an SDI - any significant disease event (multiple animals, mortalities or syndromes such as nervous signs or respiratory) in livestock or feral animals - is a potential SDI. Do keep an eye out for these opportunities.

There's a flyer available to alert producers to NABS SDIs – you might want to include it in correspondence with your clients.

[Get flyer here](#)



Masterclasses – November 2022 and March 2023

Masterclasses have been a feature of NABS networking right from the get go. They are not just conferences but a commitment to northern biosecurity by everyone – practitioners, government vet officers and pathologists - sharing skills for veterinary investigations of significant disease events – endemic and possibly EADs. The aim is to run a Masterclass each year, in February-March, so that everyone is primed for the dry season ahead.

Rear-view mirror: after nearly three years of COVID restriction on travel and keeping us to a virtual platform, everyone was thrilled to be back in a face-to-face workshop at the 2022 NABSnet Masterclass held 25-26 November. Hosted by Biosecurity Queensland (QDAF) at JCU in Townsville, it brought together 26 enthusiastic NABS private vets along with a similar number of government field and laboratory vets plus industry and James Cook Uni presenters. The two-day program was jam packed with info and activities including a hypothetical scenario PM workshop.



**NABS Masterclass, Townsville
November 2022**



Windscreen view: COMING UP - THE NEXT MASTERCLASS

NABSnet Masterclass 2023 - Darwin 27-28 March

When: The next Masterclass will be held in Darwin – back to early in the year – on **March 27-28th 2023** - Mon/Tues prior to the ACV Conference.

Where: **Novotel CBD Darwin**. 17mins drive to the airport, 4mins to Darwin Convention Centre - location of the ACV conference.

Who: Large and mixed animal veterinary practitioners in Northern Australia - the NABS network.

What's on: The 2-day 2023 Masterclass is a great opportunity to get together with like-minded peers, start interesting conversations for both endemic & EAD investigations, and get hands on with a workshop for practical on-site biosecurity.

Participation at the Masterclass, accommodation, food, and air travel will be subsidised by NABS for a veterinarian from each clinic.

[More info and to Register](#)

Pyrrrolizidine alkaloid poisoning in horses across a district in NW Qld

Over approximately six months in 2022, six mature (mostly older) horses and ponies located on different properties around a town in NW Qld became unwell, ataxic and deteriorated rapidly (over a few days). A number of horses had previously been reported with similar symptoms (but not seen by vets).

The majority of the cases were in the immediate township area or small holdings on the edge of town. One was a station horse. All horses had been in their paddocks for at least several years, some being supplemented with feed and others not. One had been put in a new paddock a week before being observed ill.

Most animals presented as dull and lethargic and within a few days progressed to neurological signs which led to recumbency and euthanasia. One horse had visibly jaundiced sclera and oral mucus membranes. Bloods were collected for serology and biochemistry from the cases and some paddock mates that appeared clinically normal.

Two post mortem examinations were performed (others were not performed either because the horse was not HeV vaccinated or the owner chose to euthanase it without examination).

Differential diagnoses considered initially:

- Hendra – especially given a low vaccination rate in the area
- Various Flaviviruses – Murray Valley Encephalitis, Kunjin, Japanese Encephalitis
- Plant poisonings



Case 1 - Ataxia



Case 5 - weight loss, lethargy, ataxia, jaundice

Test results from blood samples on all cases were negative for Hendra Virus (PCR).

Tests for other viruses were also negative (not all run on all cases) and included: African Horse Sickness, Alphavirus (Ross River virus), Australian Bat Lyssavirus, Equine Herpes Virus 1, Flavivirus (Japanese Encephalitis, Kunjin/West Nile, Murray Valley Encephalitis), Eastern Equine Encephalitis Virus, Venezuelan Encephalitis, Western Equine Encephalitis. One case was positive for JEV Flavivirus – but not high enough to be decisively diagnostic without paired samples or CSF.

Biochemistry on all cases and two clinically normal paddock mates indicated liver dysfunction, with markedly elevated GGT (5-15 times normal upper range of 40 IU/L). One month later one of the paddock mates progressed to become a clinical case.

Post mortem gross observations of two horses revealed diffuse jaundice of the carcasses and abnormal livers – shrunken and 'nutmeg' patterning on cut surface.

Histopathology showed hepatopathy (chronic, diffuse, severe with marked fibrosis) and nephropathy, both consistent with pyrrolizidine alkaloid toxicity.



Case 5 - 'nutmeg' liver and jaundice



Case 6 - shrunken 'nutmeg' liver

The diagnosis of pyrrolizidine alkaloid toxicity cannot be definitively made in all of these cases but the majority fit the clinical presentation.

Unlike many toxic plant presentations these cases seem to primarily be horses that have lived in the same paddocks their whole lives, suggesting chronic exposure played a significant role. No cases were able to be linked to grazed plants known to contain pyrrolizidine alkaloids, possibly because of a relatively long delay between consumption and clinical disease.

There did, however, seem to be a significant increase in incidence over the previous 18 months. Environmental risk factors could have been poor seasons and reduced alternate fodder, or the severe flooding in 2019 leading to weed growth and spread.

Crotalaria dissitiflora is a common cause of pyrrolizidine alkaloid toxicity and has been identified in the area, so may have been the plant involved.

The disease investigation ruled out the important zoonotic disease differentials. Having a diagnosis has enabled client education on weed awareness and provided a guide for prognosis in other cases.

Tom Couston joins NABSnet

Introducing Tom Couston, Veterinary Officer FNQ with Biosecurity Queensland, who is the new government vet connect for the NABS network in Queensland. Tom graduated from JCU in 2016 and spent time in Victorian dairy practice and briefly with the South Australian department before heading north again. He's now pleased to be located back in FNQ at Cairns.

"I was sick of being cold and wet, so when the chance to change to hot and wet came up, that was the move for me".



Tom Couston (right) with Bill Tranter, Tablelands Vets (centre) and Dan Hogarth QDAF stock inspector (left) at an EAD awareness event in Malanda.

Six months in and Tom is focused around his disease surveillance role – talking with producers across western Queensland about FMD and LSD, and with indigenous rangers about African Swine Fever – working with sentinel herds for arbovirus surveillance – and keen to interact with the NABS network.

"My prime aim is to be of assistance to any private practitioners who are doing NABS disease investigations. Especially recent grads – I know the challenges of this work in practice – I've been there myself – what differentials to consider, what samples to take, how to do a good job in limited time?"

“I’m always available on the phone – sometimes can assist in the field.”

“The Masterclass in Townsville was a great place to meet people, and I’m visiting practices too”.

Tom’s aim is to have “more Queensland cases coming through NABS, more vets out on farm, and to support that in whatever way I can – never hesitate to contact me”. Thomas.Couston@daf.qld.gov.au 0499 946 757

So warm welcome to Tom. And thanks very much to Nina Kung who has been the NABS contact for a few months before Tom came on board.



Tom Couston and ranger Tony Cockburn spread the message

NAQS across the north – feral animals in the sights

Over the years Northern Australia Quarantine Strategy (NAQS) has developed an extensive animal disease surveillance program to complement and enhance existing national and state activities.

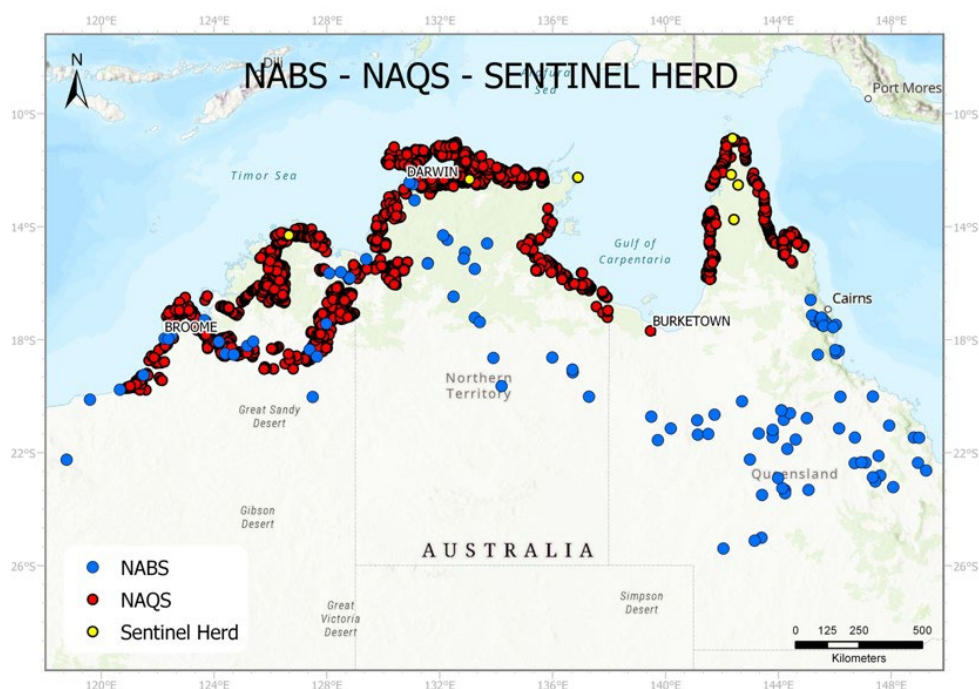
One component of targeted surveillance unique to NAQS is feral animal health surveys.

Mostly conducted by helicopter to cover the vast remote terrain, feral animals (mostly pigs) are shot and necropsied to check for any unusual pathology, then serum samples taken for routine targeted EAD testing, particularly African swine fever, classical swine fever, Aujeszky’s disease and surra. FMD is not tested for in all animals because of the significant trade impacts of a false positive, and the improved specificity of testing animals showing any relevant clinical signs.

Generally areas of around 20-30000 km² (half the size of Tasmania) are covered in each NAQS survey, with 50-100 samples collected over a few days. To gather more information about the extent of the Japanese encephalitis outbreak declared in February 2022, NAQS has conducted extra surveys in all jurisdictions across northern Australia, collecting tonsils from every pig sampled for JE virus PCR testing. The objective is to capture information from feral animals that would otherwise escape observation – and the fact that results

come back negative helps to support our overseas trade markets, particularly with increased scrutiny expected over FMD & LSD outbreaks nearby. And a significant side perk is travelling to the most spectacular and remote corners of this country and meeting the people that live there.

The map below shows the extent of NAQS' animal disease surveillance - by surveys, NABSnet SDIs and sentinel herd observations - in total a solid set of frontline data for Australia's northern biosecurity effort.



*All NAQS host animal observations (feral and managed livestock)
for five years 2018-2022*

Why NAQS in a nutshell The Northern Australia Quarantine Strategy (NAQS) was established within the Australian Government Department of Agriculture over 30 years ago, to address the unique biosecurity threats to northern Australia, where the stark differences to southern Australia include:

- the coastline that is remote and isolated with a very sparse human population
- limited access to many areas especially during the wet season
- neighbouring countries as close as 400km away and with varying animal health status and biosecurity capacity
- the pastoral beef industry, where many animals are observed only annually
- significant feral populations (pigs, buffalo, cattle, donkeys, camels, goats)
- monsoonal winds that can blow disease vectors across the ocean
- ocean currents that can wash shipping waste & debris ashore, potentially carrying exotic pests and diseases.



Key NABS SDI network contacts

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or visit www.nabsnet.com.au

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Newsletter sent on Kevin's behalf from the team at Harris Park Group

Let us know any topics you'd like to see covered here.