

# NSW Arbovirus Surveillance & Mosquito Monitoring 2020-2021

Weekly Update: Week ending 3 April 2021

(Report Number 21)



# Summary

## Arbovirus Detections

- **Sentinel Chickens:** There were no arbovirus detections in sentinel chickens.
- **Mosquito Isolates:** There were no Barmah Forest and Ross River virus detections in mosquito isolates in this reporting period.

## Mosquito Abundance

- **Inland:** HIGH at Forbes. LOW at Albury, Griffith, Leeton and Wagga Wagga.
- **Coast:** VERY HIGH at Yamba. HIGH at Ballina, Gosford, Kempsey, South West Rocks and Tweed. LOW at Narooma, Port Macquarie and Wyong.
- **Sydney:** MEDIUM at Parramatta, Penrith and Sydney Olympic Park. LOW at Bankstown, Blacktown, Georges River, Hills Shire and Liverpool.

## Environmental Conditions

- **Climate:** In the past week, there was no or little rainfall across most of NSW. Isolated areas in coastal and southern NSW received moderate rainfall. Rainfall is expected to be lower than usual across most of NSW in April and May. Temperatures are likely to be higher than usual across NSW in April and May.
- **Tides:** High tides over 1.8 metres are predicted to occur between 26 April - 1 May and between 24-30 May, which could trigger hatching of *Aedes vigilax*.

## Human Arboviral Disease Notifications

- **Ross River Virus:** 21 cases were notified in the week ending 20 March 2021.
- **Barmah Forest Virus:** 5 cases were notified in the week ending 20 March 2021.

## Comments and other findings of note

Edge Hill virus was detected at Clarence Valley (Yamba) on 29 March 2021. Mosquito data for Nothern Beaches site for the week ending 27 March 2021 was received late and is included in the current mosquito abundance table this week.

**Weekly reports are available at:**

[www.health.nsw.gov.au/environment/pests/vector/Pages/surveillance.aspx](http://www.health.nsw.gov.au/environment/pests/vector/Pages/surveillance.aspx)

**Please send questions or comments about this report to:**

Surveillance and Risk Unit, Environmental Health Branch, Health Protection NSW:

[hssg-ehbsurveillance@health.nsw.gov.au](mailto:hssg-ehbsurveillance@health.nsw.gov.au)

Testing and scientific services were provided by the Department of Medical Entomology, NSW Health Pathology (ICPMR) for mosquito surveillance, and the Arbovirus Emerging Diseases Unit, NSW Health Pathology (ICPMR) for sentinel chicken surveillance.

The arbovirus surveillance and mosquito monitoring results in this report remain the property of the NSW Ministry of Health and may not be used or disseminated to unauthorised persons or organisations without permission.

SHPN (HP NSW) 200547

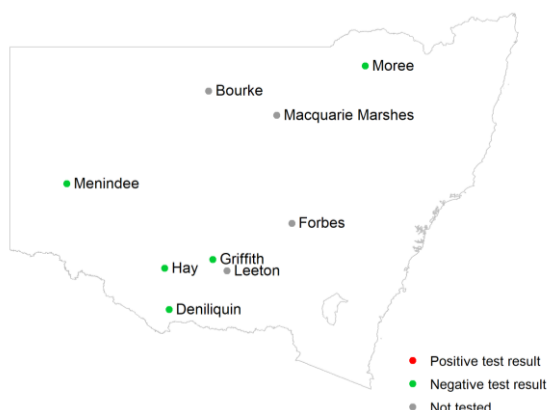
## Arbovirus Detections

This section details detections of Murray Valley encephalitis virus, Kunjin virus, Ross River virus and Barmah Forest virus in the NSW Arbovirus Surveillance and Mosquito Monitoring Program.

### Sentinel chickens

Chickens are bled for detection of antibodies directed against Murray Valley encephalitis virus and Kunjin virus, indicating exposure to these viruses. A test result is shown if it has been reported in the last two weeks.

#### Test results for sentinel chickens in the week ending 3 April 2021



#### Positive test results in the 2020-2021 surveillance season

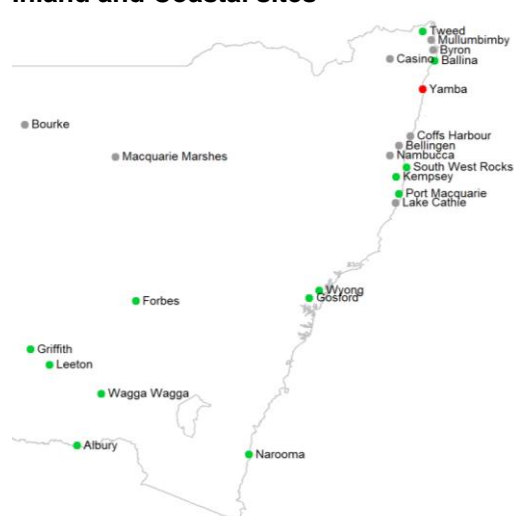
Date of sample collection	Location	Positive test results
There have been no detections in sentinel chickens in the 2020-2021 surveillance season		

### Mosquito isolates

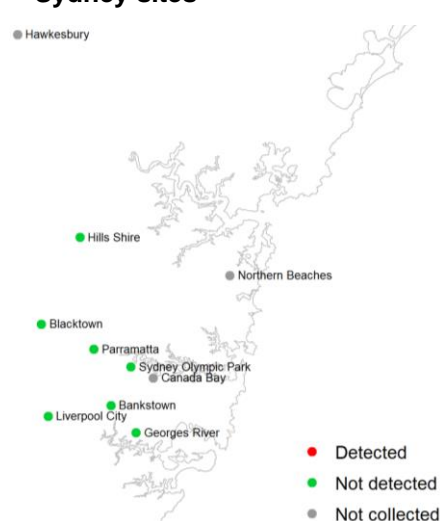
Whole grinds of mosquitoes are tested for arbovirus nucleic acids (including Ross River virus and Barmah Forest virus). There were no detections of Barmah Forest and Ross River virus in this reporting week.

#### Test results for mosquito trapping sites in the week ending 3 April 2021

##### Inland and Coastal sites



##### Sydney sites



#### Ross River and Barmah Forest viruses detected in the past three weeks

Date of sample collection	Location	Virus
17 March 2021	Clarence Valley (Yamba)	Ross River virus

## Mosquito Abundance

This section details counts of mosquitoes in the NSW Arbovirus Surveillance and Mosquito Monitoring Program. Each location represents the count average for all trapping sites at that location for specimens collected in the current reporting week.

*Culex annulirostris* and *Aedes vigilax* are vectors of interest for Ross River virus and Barmah Forest virus.

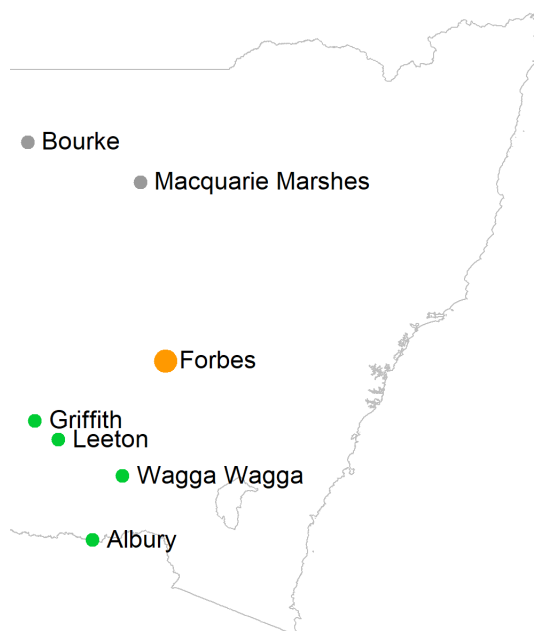
### Mosquito counts in the week ending 3 April 2021

#### Key:

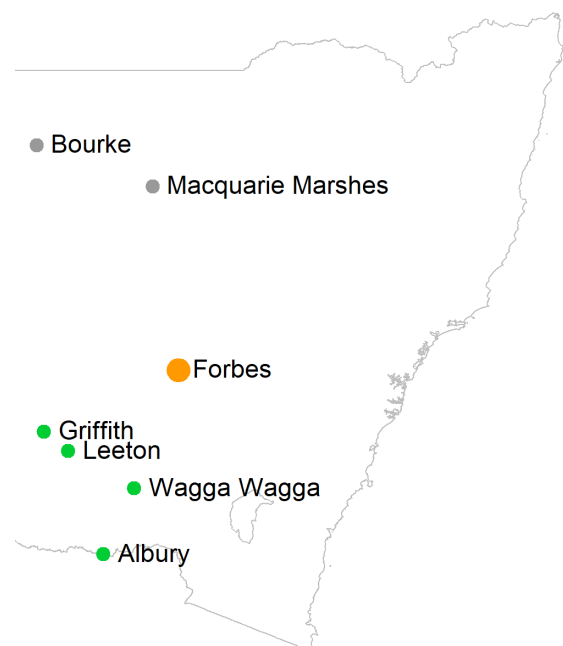
- No collection
- Low (<50)
- Medium (50-100)
- High (101-1,000)
- Very high (1,001-10,000)
- Extreme (>10,000)

#### Inland sites

##### Total mosquito counts

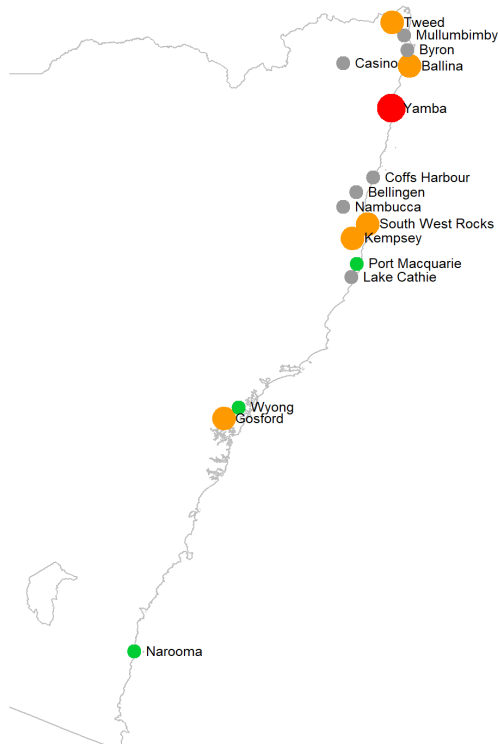


##### *Culex annulirostris* counts

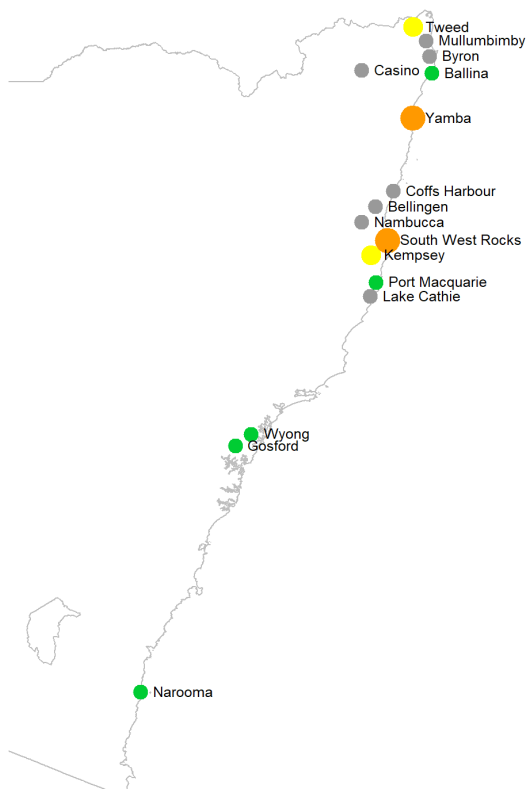


## Coastal sites

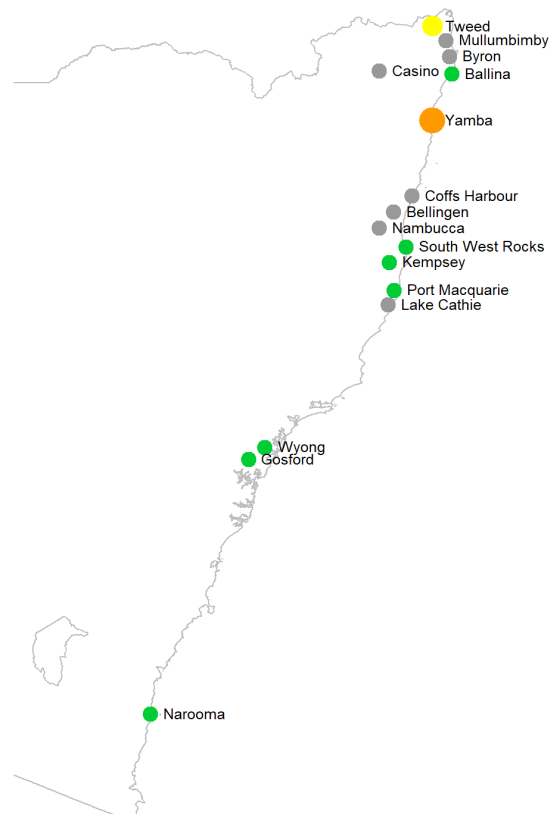
### Total mosquito counts



### *Culex annulirostris* counts



### *Aedes vigilax* counts



## Sydney sites

### Total mosquito counts



### Key:

- No collection
- Low (<50)
- Medium (50-100)
- High (101-1,000)
- Very high (1,001-10,000)
- Extreme (>10,000)

### *Culex annulirostris* counts



### *Aedes vigilax* counts



## Mosquito abundance data for 2020-21 season to date

### Key:

	No collection
	Low (<50)
	Medium (50-100)
	High (101-1,000)
	Very high (1,001-10,000)
	Extreme (>10,000)

Data in the below tables represent the average for all trapping sites at that location. “*Cx. annul*” refers to *Culex annulirostris* and “*Ae.vigilax*” refers to *Aedes vigilax*.

### Inland

		WEEK ENDING																													
		Nov-20				Dec-20				Jan-21					Feb-21				Mar-21				Apr-21				May-21				
Location	Mosquito	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29
Albury	<i>Cx. annul</i>																														
	Total																														
Bourke	<i>Cx. annul</i>																														
	Total																														
Forbes	<i>Cx. annul</i>																														
	Total																														
Griffith	<i>Cx. annul</i>																														
	Total																														
Leeton	<i>Cx. annul</i>																														
	Total																														
Macquarie Marshes	<i>Cx. annul</i>																														
	Total																														
Wagga Wagga	<i>Cx. annul</i>																														
	Total																														

## Coastal

		WEEK ENDING																													
		Nov-20				Dec-20				Jan-21					Feb-21				Mar-21				Apr-21				May-21				
Location	Mosquito	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29
Ballina	Cx. annul																														
	Ae. vigilax																														
	Total																														
Bellingen	Cx. annul																														
	Ae. vigilax																														
	Total																														
Byron	Cx. annul																														
	Ae. vigilax																														
	Total																														
Casino	Cx. annul																														
	Ae. vigilax																														
	Total																														
Coffs Harbour	Cx. annul																														
	Ae. vigilax																														
	Total																														
Gosford	Cx. annul																														
	Ae. vigilax																														
	Total																														
Kempsey	Cx. annul																														
	Ae. vigilax																														
	Total																														
Mullumbimby	Cx. annul																														
	Ae. vigilax																														
	Total																														
Port Macquarie	Cx. annul																														
	Ae. vigilax																														
	Total																														
Tweed	Cx. annul																														
	Ae. vigilax																														
	Total																														
Wyong	Cx. annul																														
	Ae. vigilax																														
	Total																														
Yamba	Cx. annul																														
	Ae. vigilax																														
	Total																														
Narooma	Cx. annul																														
	Ae. vigilax																														
	Total																														
South West Rocks	Cx. annul																														
	Ae. vigilax																														
	Total																														
Nambucca	Cx. annul																														
	Ae. vigilax																														
	Total																														



## Sydney

		WEEK ENDING																													
		Nov-20				Dec-20				Jan-21					Feb-21				Mar-21				Apr-21				May-21				
Location	Mosquito	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29
Bankstown	Cx. annul																														
	Ae. vigilax																														
	Total																														
Blacktown	Cx. annul																														
	Ae. vigilax																														
	Total																														
Canada Bay	Cx. annul																														
	Ae. vigilax																														
	Total																														
Georges River	Cx. annul																														
	Ae. vigilax																														
	Total																														
Hawkesbury	Cx. annul																														
	Ae. vigilax																														
	Total																														
Hills Shire	Cx. annul																														
	Ae. vigilax																														
	Total																														
Liverpool City	Cx. annul																														
	Ae. vigilax																														
	Total																														
Northern Beaches	Cx. annul																														
	Ae. vigilax																														
	Total																														
Parramatta	Cx. annul																														
	Ae. vigilax																														
	Total																														
Penrith	Cx. annul																														
	Ae. vigilax																														
	Total																														
Sydney Olympic Park	Cx. annul																														
	Ae. vigilax																														
	Total																														

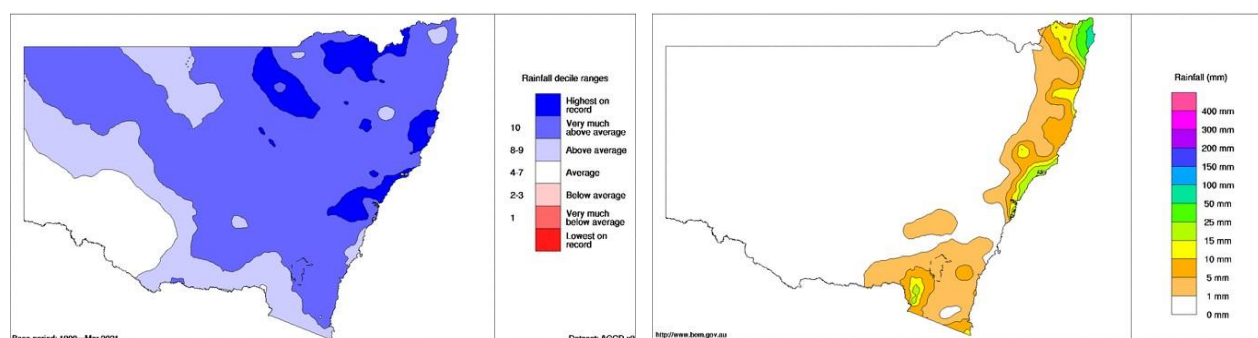
## Environmental Conditions

Mosquitoes require water to breed. Rainfall and tides (for the salt marsh mosquito) are important contributing factors for proliferation of mosquito numbers. Unseasonably warm weather can also contribute to higher mosquito numbers.

### Rainfall

In March, rainfall was average in southwestern NSW. Across the rest of NSW, rainfall was above average, with some areas experiencing the highest levels of rainfall on record (left). In the week ending 3 April 2021, there was no or little rainfall across most of NSW. Isolated areas in coastal and southern NSW received moderate rainfall (right).

Source: Australian Government, Bureau of Meteorology: <http://www.bom.gov.au/climate/maps/rainfall>



### Upcoming month's rainfall and temperature outlook

The Bureau of Meteorology's rainfall outlook map predicts lower than usual rainfall across NSW in April and May.

[www.bom.gov.au/climate/outlooks/#/rainfall/median/monthly/0](http://www.bom.gov.au/climate/outlooks/#/rainfall/median/monthly/0)

The Bureau of Meteorology's temperature outlook maps predict that maximum temperatures are likely to be higher than usual across most of NSW in April and in May. Minimum temperatures in April are likely to be above usual in coastal and southern NSW, and around usual across the rest of NSW. Minimum temperatures will be around usual across NSW in May.

[www.bom.gov.au/climate/outlooks/#/temperature/maximum/median/monthly/0](http://www.bom.gov.au/climate/outlooks/#/temperature/maximum/median/monthly/0)

[www.bom.gov.au/climate/outlooks/#/temperature/minimum/median/monthly/0](http://www.bom.gov.au/climate/outlooks/#/temperature/minimum/median/monthly/0)

### Tides

Tidal information is relevant for the prediction of the activity of the salt marsh mosquito, *Aedes vigilax*. Typically for NSW, high tides of over 1.8m, as measured at Sydney, can induce hatching of *Aedes vigilax* larvae. Predicted tide heights can provide some indication of when this is likely to occur.

#### Dates of predicted high tides of over 1.8 m at Sydney (Fort Denison) for the next month

- 26-30 April 2021
- 1 May 2021

Source: Australian Government, Bureau of Meteorology: <http://www.bom.gov.au/australia/tides/#/nsw-sydney-fort-denison>

Note: Measured tides at Sydney Port Jackson for the current week are available from the NSW Government, Manly Hydraulics Laboratory: <https://mhl.nsw.gov.au/Data-OceanTide>.

# Human Arboviral Disease Notifications

Under the *NSW Public Health Act 2010*, all arboviral infections are notifiable in NSW. The NSW Health Communicable Diseases Weekly Report (CDWR) ([www.health.nsw.gov.au/Infectious/reports/Pages/CDWR.aspx](http://www.health.nsw.gov.au/Infectious/reports/Pages/CDWR.aspx)) details cases by the week that they are received by NSW Public Health Units.

The data for Ross River virus and Barmah Forest virus from the CDWR for the latest reported 3 weeks are in the following table.

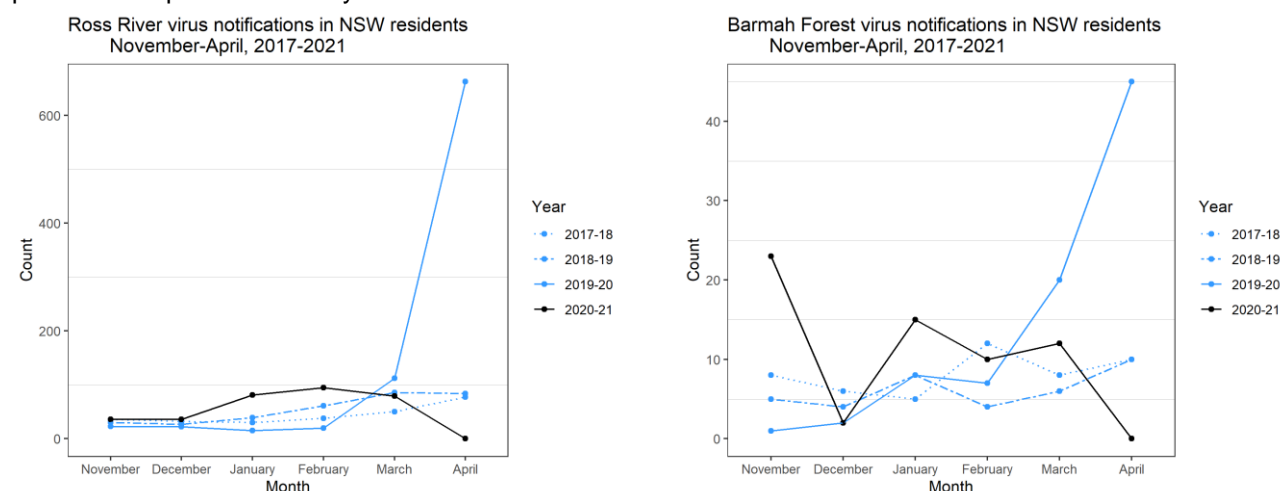
## Recent notifications of Ross River virus and Barmah Forest virus in humans (by date of case report received)

	Week		
	Latest week (14 - 20 Mar 2021)	1-week prior (7 - 13 Mar 2021)	2-weeks prior (28 Feb - 6 Mar 2021)
<b>Ross River virus</b>	21	23	16
<b>Barmah Forest virus</b>	5	2	1

Source: CDWR, Communicable Diseases Branch, Health Protection NSW, NSW Health  
Notifications are for NSW residents - infection may have been acquired outside NSW.

Monthly Ross River virus and Barmah Forest virus notifications, by month of disease onset (the earlier of patient-reported onset, specimen, or notification date), are available at the following NSW Health website: <https://www1.health.nsw.gov.au/IDD/pages/data.aspx>

The following figures show the monthly number of notifications of Ross River virus and Barmah Forest virus for the current NSW Arbovirus and Mosquito Monitoring season (November 2020 to April 2021), and the same period in the previous three years.



Source: NSW Health Notifiable Conditions Information Management System (NCIMS), Communicable Diseases Branch and Centre for Epidemiology and Evidence, NSW Health

Note: The data for the current month are the notifications to date (data extracted on 6 April 2021).