The Nature and Community-led Approach to Disaster Resilience

Toolkit

Arthur Rylah Institute for Environmental Research







Front cover photo: Tree Fern regenerating post 2019–20 bushfires (Marcia Riederer)

Edited by Nathan Ning

ISBN 978-1-76136-946-9 (pdf/online/MS word)

Lee, K¹.*, Lamont, A².*, van Eeden, L³., Whiteford, C.⁴ and Hames, F.³ (2024). The Nature and community-led approach to disaster resilience: Toolkit. Published Report. Department of Energy, Environment and Climate Action, Heidelberg, Victoria.

*denotes equal first authors

¹Arthur Rylah Institute, Department of Energy, Environment and Climate Action

²Nature Based Resilience

³RMIT University, School of Global Urban and Social Studies

⁴Zoos Victoria

© The State of Victoria Department of Energy, Environment and Climate Action October 2024.

Creative Commons

This work is licensed under a Creative Commons Attribution 4.0 International licence, visit the <u>Creative Commons website</u> (http://creativecommons.org/licenses/by/4.0/).

You are free to re-use the work under that licence, on the condition that you credit the State of Victoria as author. The licence does not apply to any images, photographs or branding, including the Victorian Coat of Arms, and the Victorian Government, the Department and the ARI logos.

Disclaimer

This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

Accessibility

To receive this document in an alternative format, phone the Customer Service Centre on 136 186, email customer.service@deeca.vic.gov.au, or contact National Relay Service on 133 677. Available at DEECA website (www.deeca.vic.gov.au).

NLCR Toolkit ii

Acknowledgment of Country

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices. We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal Communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.



here

Caring for Country, Healing Country, Walking Together and Advancing Treaty

For millennia, First Nations Peoples have embodied a way of being that encompasses Caring for Country, Healing Country and Walking Together.

Integral to the idea of Caring for Country is that nature needs people, and people need nature, and that people have a responsibility to manage country and that "if you look after Country, Country will look after you".

Many Indigenous and other cultures conceptualise humans and nature as forming a single balanced and symbiotic relationship, and view humans and nature as connected, not separate entities. This symbiotic relationship incorporates human and nature wellbeing, and many people see their wellbeing and identities deriving from their relationships with both humans and nature.

These ideas of reciprocity and symbiosis form the basis of a nature-led community resilience (NLCR) approach.

We still have much to learn from vast Indigenous Knowledges.

Q	You can find out more about the Victoria Government's Commitment to Self Determination here https://www.firstpeoplesrelations.vic.gov.au/governments-commitment-self-determination
Q	And a statement from the Victorian Government about Supporting Traditional Owners Care for Country, https://www.premier.vic.gov.au/supporting-traditional-owners-care-country

This toolkit is the result of a collaborative approach with the support of people in the organisations, networks and projects listed below in alphabetical order.

- Biodiversity Council
- City of Greater Bendigo
- Community Resilience Officers Network
- Conservation Volunteers Australia
- Creative Recovery Network
- Department of Education
- Department of Energy, Environment and Climate Action
- Dja Dja Wurrung Enterprises (DJANDAK)
- Emergency Recovery Victoria
- Fire to Flourish Project
- Foundation for Rural & Regional Renewal

- Future Proof Project
- Loddon Mallee Traditional Owner Flood Recovery Forum Working Group
- Natural Hazards Research Australia
- Nature Based Resilience
- North Central Catchment Management Authority (CMA)
- Regional Landcare Coordinators
- RMIT University, School of Global Urban and Social Studies
- Victorian Landcare
- Youth Advisory Council Victoria

iii NLCR Toolkit

Contents

Acknowledgment of Country	ii
Caring for Country, Healing Country, Walking Together and Advancing Treaty	ii
Section 1: Introduction1	
Purpose of this Toolkit	1
How this toolkit was developed and who it is for	
How to use this toolkit	
Section 2: What is nature-led community resilience?4	
The role of nature in healing	5
How did NLCR come about?	
A vision for NLCR	
Benefits of NLCR	7
Section 3: NLCR in disaster recovery and resilience8	
NLCR aligns with established recovery and resilience principles	۶
NLCR supports biodiversity recovery	
Using a trauma-informed approach in NLCR	
Section 4: Incorporating NLCR during the different phases of disasters13	4.5
How and when to go about incorporating NLCR	
Before: Ongoing work before disasters	
During: Response and relief during disasters	
After: Recovery after disasters in the short, medium and long term	
The new before	22
Section 5: Appendices23	
Appendix A: Templates to support your NLCR activities	
Step 1: Your list of NLCR activities in the different phases of disasters	23
Step 2: Your list of groups with a role in NLCR	
Step 3: Your NLCR roadmap	28
Step 4: Telling the stories – share your NLCR projects, research, and initiatives	
Appendix B: Illustrating NLCR activities and stakeholders in the different phases of disasters	
Before: Ongoing nature/community connection activities	
Before: Mitigation and adaptation – eliminating, reducing and minimising long-term effects of disasters and climate change on nature and communities	
Before: Emergency planning and preparedness – developing plans, capability and capacity to support community and nature response and recovery	35
During: Response and relief – combatting emergencies and impacts on people and nature	36
After: Early-, medium- and long-term recovery - context dependent - reconnecting people and nature	37
The new before: Ongoing and expanded nature/community connection activities and programs	39
Appendix C: Research and evaluation	41
NLCR benefits	41
Communities and community groups	41
Examples of healing through nature	41

NLCR activities and stories	42
Appendix D: NLCR and emergency management principles	43
Appendix E: Established disaster recovery and resilience frameworks and strategies that align with NLCR	45
Appendix F: Resource hub	48
The current home of nature-led community recovery in Victoria	48
NLCR activities including citizen science	48
Support for community-led disaster recovery	48
Some research and reports	48
Disaster recovery and resilience plans and strategies	49
Health and environment plans	49
Engagement frameworks	49

Purpose of this Toolkit

Nature-led community resilience (NLCR) means helping people and nature recover together and build resilience in disasters. This toolkit provides foundational principles and guidelines for implementing NLCR.

This toolkit has been developed to support anyone who has a role, or interest, in supporting communities in their disaster recovery and resilience. This may include community and environment/conservation groups, governments, non-governmental organisations (NGOs) and not-for-profit organisations (NFPs), Traditional Owner groups, schools, research organisations and funders (see examples in Appendix B).

The toolkit provides a framework for identifying opportunities to incorporate NLCR projects into phases of disasters including preparedness, recovery and resilience activities. It provides illustrative examples for building human-nature connection across these phases, rather than being a prescriptive process setting out how to implement specific projects, given the complexity and different contexts in which disasters occur.

It establishes a foundation to:

- understand what NLCR is, and how it supports disaster recovery and resilience
- recognise opportunities to enable NLCR activities
- identify and align common interests and objectives in recovery
- advocate for NLCR (e.g. to support inclusion in funding bids)
- access resources to facilitate a shared understanding and practice of NLCR (see the NLCR Story Library).

Future growth of NLCR could include a community of practice network, further evaluation, and peer-reviewed research. These activities and resources have been requested by stakeholders.

How this toolkit was developed and who it is for

The toolkit has been developed through listening and learning from others, via a series of discussions and workshops with people working across the recovery and resilience sector in biodiversity, emergency management, and community engagement and wellbeing and more. It builds on the Victorian Government's previous nature-led community recovery projects such as Victoria's Bushfire Biodiversity Response and Recovery Program.

The toolkit and supporting documents have been developed as part of the Victorian Government's Biodiversity Flood Recovery program. It documents what is already happening, what is working, and imagines what more might be done.

This toolkit assists local, state and national organisations to implement NLCR before, during, and after disasters. It supports responses to the impacts of disasters through the provision of targeted, meaningful and inclusive actions that support social, environmental, cultural and economic recovery in disaster-affected areas through short-, medium- and long-term actions. This toolkit is for any person, group or organisation that is seeking to meaningfully support disaster impacted communities and recovery for people and nature including:

- local communities (incl. geographical, cultural, environmental, and community groups as relevant)
- · emergency management organisations
- · conservation and environment agencies, organisations and practitioners
- environmental/disaster volunteer groups
- community based organisations / social service organisations
- government and government agencies: local, state, Commonwealth
- non-governmental organisations (NGO) and not-for-profit organisations (NFP)
- private sector organisations

- research organisations and universities
- **Traditional Owner groups**
- youth groups and schools.

This toolkit is supported by:

1. NLCR tools (see appendices)

A range of tools have been provided to support the development, design and implementation of NLCR activities. These include:

a. Templates to support NLCR activities

Templates to support building your own NLCR roadmap.

b. Practical examples showing groups undertaking NLCR actions in the different phases of disasters

Includes tables of NLCR activities and stakeholder roles across different phases of disasters, with linked examples for inspiration and more information.

c. NLCR research and evaluation overview

Provides a brief and high-level overview of some core research, reports, evaluations, and approaches.

d. NLCR and emergency management principles

Adapted from Australia's Emergency Management Arrangements.

Mapping NLCR to existing frameworks

Provides statements that can be adapted when applying for funding or advocating for NLCR.

NLCR resource hub

With links to some useful places to go to for more information.

2. NLCR Story Library

Brief stories of NLCR initiatives across different contexts, communities, activities, and outcomes. These stories were developed in collaboration with the stakeholders involved in developing the toolkit. They provide inspiration and examples when advocating for funding and planning for NLCR projects. Access the Nature-led Community Resilience Story Library on the ARI website.



How to use this toolkit

In any way that suits you in supporting communities and nature. You could read it cover-to-cover, dip into specific sections, reflect on some of the core ideas, and/or try out one or two ideas in your work or with communities and partners. Templates for building your own NLCR roadmap are provided in Appendix A.



Comparison of the property of the property

Please go to the NLCR page on the ARI website, the current home of nature-led community resilience in Victoria: https://www.ari.vic.gov.au/research/people-and-nature/nature-led-community-recovery

If you want to find out about getting involved or starting a NLCR project in your community, contact your local government authority or local environment group. For examples of groups and NLCR actions in the different phases of disasters, see Appendix B.

Definitions

Nature	The natural environment consists of land-based ecosystems such as grasslands and forests, aquatic ecosystems such as rivers and wetlands, and coastal and marine ecosystems such as mangroves and sea-grass meadows ¹ .
Resilience	Recovery and resilience are often used interchangeably when considering NLCR, depending on the context of the community, disaster event and where communities are on their recovery journey. Resilience is an overarching objective and the outcome of good preparedness, response, and recovery activities.
Recovery	Recovery is the process of coming to terms with the impacts of a disaster and managing the disruptions and changes caused, which can result, for some people, in a new way of living. Being 'recovered' is being able to lead a life that individuals and communities value living, even if it is different to the life they were leading before the disaster event ² .
Symbiotic relationship with nature	Our reciprocal and inextricable connection with the more-than-human world.
Knowledges	Multiple knowledge systems held by communities, practitioners, decision makers, and researchers ³ , including Indigenous and Western knowledge systems. Braiding strands of knowledges together can create something stronger and richer ⁴ .
Social capital	The connection, reciprocity and trust among people and groups ⁵ .
Mitigation	Climate change mitigation is about limiting the amount of climate change and its impacts ¹ .
Adaptation	Adaptation is about adjusting to life in a changing climate or preparing for future changes1.
The new before	Expanded ongoing actions to connect people with nature extend beyond recovery, supporting the resilience and wellbeing of people and their local environment in the long term.

Acronyms

For all organisation name acronyms, see the stakeholder list in Appendix B.

¹ Natural Environment Climate Change Adaptation Action Plan.pdf

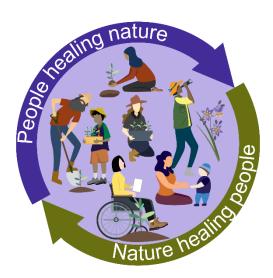
² AIDR Community Recovery Handbook

³ Millenium Assessment, Chapter 5: Using Multiple Knowledge Systems- Benefits and Challenges

⁴ In a Good Way: Braiding Indigenous and Western Knowledge Systems to Understand and Restore Freshwater Systems
5 Guide to Disaster Recovery Capitals (ReCap)

Section 2: What is nature-led community resilience?

Nature-led community resilience (NLCR) recognises the symbiotic and reciprocal relationship between people and nature. When people connect with and support nature's recovery, they are supported in their own recovery and hope for the future. NLCR involves people healing nature and nature healing people.



Disasters can impact people in many and varied ways including physically, financially, and psychosocially (e.g., fear, loss of human life and property). The impact on nature following disasters can also cause trauma to people through a sense of loss of their familiar natural environment and surroundings, and agency and control in how they connect with it. The change in local nature is wide-reaching, because it can affect everyone in a community; this also means that its recovery could have similarly wide-reaching benefits.

During and after disasters, NLCR assists community recovery and supports the recovery of the natural environment. It promotes community connection and harnesses strong community sentiment, local insight and expertise. NLCR also galvanises efforts to support nature, and longer-term shifts supporting actions caring for nature.



For example, by providing environmental volunteering opportunities for locals in flood-affected areas, or volun-tourism opportunities for others, NLCR supports people's recovery, while delivering on-ground recovery support for wildlife, habitats, ecosystems, and local economies.

In the long term, these ongoing actions to connect people with nature extend beyond recovery, supporting the ongoing resilience and wellbeing of people and their local environment. You'll see the term *the new before* to represent this phase in the toolkit and supporting documents.

Communities with connection, direction and purpose recover more readily than others. You can read more about this recovery and resilience in different communities in the NLCR Story Library.

The role of nature in healing

The role of nature in healing is increasingly backed up by evidence and practice. As more and more people in Australia are impacted directly or indirectly by the escalating disaster landscape, we look for new ways to cope with climate change and its impact on people and our environment.

Evidence and insights from Australia and around the world highlight the critical role of nature in supporting spiritual, emotional, physical and psychosocial recovery after disasters.

> "When I saw the bush grow back and become green again, it gave me hope and I felt better"

(Alex G, Friends of Kalorama Park)

More information about the role of nature in healing:



Therapeutic Horticulture uses "gardens and garden-based activities to promote physical, mental and social health, as well as the health of the planet" "for people of all ages, backgrounds and abilities" (Therapeutic Horticulture Australia, 2024)

Victorian Memorandum for Health and Nature recognises "that a thriving natural environment not only conserves biological diversity but also sustains the health and wellbeing of people and communities"



The Beyond Bushfires study found that people who reported feeling connected to the natural environment had better outcomes on a wide range of psychosocial measures (Gibbs et al. 2016).

See the Research and Evaluation overview in Appendix C, for more of the evidence for the role of nature in recovery.

Take a look at DJANDAKs story of Wanyarra Dum in the Nature-led Community Resilience Story Library.

How did NLCR come about?

While nature's role in supporting people experiencing trauma, including after disasters, has been recognised and mobilised for many years, the idea of NLCR was more formally considered and initially piloted by the Victorian Government following the 2009 Black Saturday bushfires. The momentum for NLCR, and associated learnings, has continued to build since then. For example, NLCR was included in recovery actions following the 2019–20 bushfires, where it was also incorporated into grant programs, and then again as part of the Victorian Government's flood recovery program. Consequently, it has yielded insights from different types of disasters and geographic contexts.

These fires and floods resulted in human tragedy and significantly changed landscapes and impacted ecosystems, habitats, and plant and animal species.

"For some, having a small project to re-plant and rejuvenate a devastated area was their own form of therapy that helped to lift their spirits and bring life back to their

lives" (North East CMA, Bushfire Biodiversity Recovery Grants Program)



Victoria's Bushfire Biodiversity Response and Recovery Plan 2020 included Nature-led community recovery actions that delivered community events held for fire-affected communities across the state, featuring presentations and tours by expert bushfire and biodiversity scientists.

Additional actions supported participation of approximately 1,357 volunteers providing over 5,500 hours, and empowered 10 Traditional Owner groups in fire-affected areas to heal Country through self-determination.



Barred Galaxias parade at Playspace opening, Marysville

The community saw hope and strength in supporting nature's recovery from the bushfires.

"The fish are back and so are we!"

In 2009, when environmental teams visited wildfire-affected areas around Marysville to assess impacts to habitat and wildlife, and monitor regeneration, it sparked community interest. The community were offered the opportunity to learn about the impacted species, participate in recovery efforts, and connect with one another. Some people chose to help plant trees to support habitat recovery, and some joined in setting and checking fish larval drift nets to help identify critical spawning sites. Some of these events closely involved local Aboriginal Traditional Owners. They delivered presentations and talked with people about responsibilities for 'Country', and the concept that we look after Country, and Country looks after us.



You can find more details on this story at:

Watery places: Stories of environmental and community renewal Engaging the community in native fish recovery following bushfire

A vision for NLCR

With more frequent, extreme and compounding disasters impacting Australians and the environment, people are looking for new and innovative ways to support disaster recovery and resilience activities.

Nature-led community resilience has an important role to play in this, with a vision for NLCR programs and initiatives to be:

- included in disaster recovery and resilience programs to support impacted communities through connection to and care for regenerating nature
- · valued, well-planned and adequately resourced
- based on Indigenous and local leadership and Knowledges
- aligned with well-established best practice principles of disaster recovery and resilience, including being community-led (see Appendix D for a list)
- readily included in community and environmental recovery programs.

When recovering from- and facing future disasters, resilient communities and organisations will be ready to include NLCR practices. People will know what to do, when to do it, how to do it, how to access resources, and how to build effective ongoing collaborations and partnerships across different stakeholder groups.



When community recovery intersects with nature recovery you can build nature-led community resilience.

Benefits of NLCR

Activities that enable more effective and sustainable disaster recovery for humans and nature are increasingly being sought by disaster managers, environmental organisations, and community groups. Nature-led community resilience projects provide a critical pathway in supporting the recovery and resilience of both human communities and natural ecosystems following disasters.



Complements existing recovery actions

- NLCR is efficient because it supports recovery across all five recovery pillars (social, environmental, cultural, economic and built), sometimes through the same activity, so can be included in existing community and environmental programs.
- NLCR is scalable: it can be locally place-based or form part of an extensive regional or state-based program and can be implemented by any group or entity.
- NLCR is flexible and can be implemented across different hazards, different places, and different communities.



Evidence-based and best practice informed

- NLCR supports delivery of best practice emergency management: it is based on a framework of recognised and adopted principles, policies and strategies for community engagement and resilience in disasters. It delivers on expected outcomes in state and national arrangements.
- ✓ NLCR is driven by needs assessments and informed by recovery plans for communities and environments, and species. It supports an environmentally-led approach to the global recovery principle 'build back better' or 'build better before'.
- NLCR is evidence-based, drawing from scientific literature. Knowledges and practice, to support shortmedium- and long-term recovery and resilience building over months and years.



Co-designed and empowering: Communities at the centre

- NLCR adopts community-led approaches, to ensure they are at the centre of their own recovery and can prioritise the things that are important to them. NLCR can help resolve existing conflicts within communities around nature assets through knowledge sharing and shared objectives.
- √ NLCR builds capacity and social capital. The capacity of communities and local community groups is enhanced with knowledge, experience, resources and training to make a genuine difference. Community leaders are mentored and supported. New and lasting advocacy for nature can emerge as new nature adopters are inspired.



An opportunity for lasting change

- NLCR can generate a shift in community mindset, expectations, and behaviour. It can have an enduring impact over time, on people and nature's disaster resilience and relationship to the natural environment.
- NLCR helps us prepare for the future: climate change is driving more frequent, extreme, cascading and compounding disasters, triggering environmental crises impacting people and nature in more complex and challenging ways. NLCR projects will increasingly be needed. As we continue to embed these activities, we are building resilience into our systems and frameworks and will be better prepared for what comes next.

Section 3: NLCR in disaster recovery and resilience

NLCR uses globally recognised disaster recovery and resilience principles and traumainformed practices, alongside local biodiversity recovery needs. NLCR is a missing piece of the puzzle in how communities and nature build resilience across the phases of disasters.

NLCR aligns with established recovery and resilience principles

Disasters are complex in the way they impact both people and nature. Expectations on those with a role in supporting nature and communities in disasters are high and growing, and NLCR provides an efficient way to meet these expectations.

Recovery and resilience are often interchangeable when considering NLCR, depending on the context of the community, disaster event and where communities are on their recovery journey. Resilience is an overarching objective and the outcome of good preparedness, response, and recovery activities.

By drawing on widely-adopted principles of community and environmental disaster recovery and resilience (see Appendices D and E for more details), NLCR provides an evidence-based and best practice-informed approach. This can give confidence to those with a role or passion for supporting people and nature before, during and after disasters, to effectively coordinate and deliver projects benefitting people and the environment.

NLCR aligns with the following global and local disaster recovery and resilience frameworks.

International

Sendai Framework for Disaster Risk Reduction

National

National Strategy for Disaster Resilience

National Risk Reduction Framework

Second National Action Plan to implement the National Disaster Risk Reduction Framework

National Principles for Disaster Recovery

Profiling Australia's Vulnerability

State

State Emergency Management Plan

State Emergency Relief and Recovery Plans

Emergency Risks in Victoria

Victoria's Emergency Recovery Plan

Resilient Recovery Strategy (Victoria)

Recovery Outcomes (Victoria)

Strategy for Aboriginal Community-led Recovery

Community Resilience Framework (Victoria)

Adaptation- and biodiversity-specific

Natural Environment Adaptation Action Plan (Victoria)

Protecting Victoria's Biodiversity – Biodiversity 2037



Appendix E provides more information on how NLCR supports their objectives and principles.

NLCR supports biodiversity recovery

Disasters can have devastating impacts on nature, impacting biodiversity, threatened species, ecosystems and critical habitats. Healthy environments and ecosystems are essential to supporting human health and wellbeing. Supporting and prioritising nature in disasters is therefore critical to supporting community recovery. Additional opportunities for virtual volunteering allow people to mobilise, and provide them with access to support with online citizen science.

The table below provides examples of citizen science as an approach to support nature-led community biodiversity recovery activities. These can all be delivered in ways that promote the elements of psychological safety (see the table in the following section). NLCR biodiversity recovery can also be supported through activities added to community events and engagement, connection with relevant experts to build capacity and new ways of seeing, regular and one-off communications and story sharing, and grants.

Examples in the NLCR Story Library include on-ground activities such as:

- · citizen science
- restoring landscapes
- new forms of landscape management
- habitat monitoring
- walk-and-talks
- hands-on and educational workshops
- community events
- digital photo boards
- multi-stakeholder forums.

The following table provides examples of the impacts of disasters on the natural environment and how NLCR can support recovery of nature.

Natural environment feature	Environmental impact from disasters	Example NLCR activities, supported through citizen science
Air	Pollution – particulates, chemical, biological, dust, smoke	Impact may be visible or invisible. Monitoring can provide a way of understanding these impacts, building agency, safety and new ways of seeing the unseen.
		Citizen science opportunities such as: community pollution monitoring and reporting in Bendigo and Inner Melbourne
Water – surface, ground, marine, catchments, storage and reserves	Quality – contamination, pollution, oxygenation levels Quantity – flow rates and patterns, storage levels Storm surge Introduced pest plants and animals For a story highlighting the cultural importance of water, see DJANDAKs story of Wanyarra Dum in the NLCR Story Library.	Water is important for survival, psychological wellbeing, the economy, recreation and culture. There may also be different community values relevant to management. NLCR can support new ways of understanding and appreciating waterways. Citizen science opportunities such as: River Watch, Marine Watch, WaterWatch, iNaturalist, FrogID, Citizen science surveys
Land and soil – landscapes, geospatial	Erosion, deposition, contamination, pollution, acidification, compaction, structural changes Landscape destruction Cultural heritage site impacts; see Aboriginal Culture and Healing Stories of Bushfire Recovery	A visible reminder of disaster impacts with widespread effects on communities. It can be a similarly powerful and widespread symbol of recovery and rejuvenation. Groups and networks such as: Landcare, Conservation Volunteers Australia, 'Friends of' groups

Natural environment feature	Environmental impact from disasters	Example NLCR activities, supported through citizen science
	This is captured across many examples in the NLCR Story Library.	Citizen science opportunities such as: LandWatch, Citizen science surveys, Watchout Warrior, GardenSafe
Plants and animals – threatened species, wildlife, biodiversity	Loss of, or significant reductions in, populations of threatened species, loss of diversity, habitat and ecosystem alteration and destruction, increased predation, competition and damage by invasive animals, competition from invasive plants, disease, disruption of reproduction For an example of the rallying power of local species, see the Marysville Galaxiids story: "The fish are back and so are we!"	Stories of local species are important rallying points for communities, and connecting with their recovery can bring hope for their joint future. Example activities include riparian replanting, wildlife gardening, building possum boxes, koala monitoring. Citizen science opportunities such as: Birdlife, iNaturalist, Citizen science surveys, Atlas of Living Australia, WhaleFace, FrogID, The Great Biosecurity Quest

For more examples of citizen science projects and platforms across Victoria, see the Arthur Rylah Institute's Citizen Science fact sheet.

For more examples of NLCR activities beyond citizen science, see Appendix B.

For more information about ecosystem, biodiversity and threatened species impacts from emergencies, see the State Emergency Management Plan and the Community Recovery Handbook.

As with programs which support people in disasters, emergency management arrangements for mitigation, preparedness, response and recovery also exist to support nature in disasters.

NLCR supports natural environment disaster recovery plans by raising the awareness of communities of biodiversity impacts, needs and recovery plans. NLCR also supports Victoria's Biodiversity Plan vision: that the natural environment is valued, healthy and actively cared for, with the community connecting with- and caring for- nature.

For private landholders, an unexpected benefit was the overwhelming sense of achievement they gained through these rehabilitation projects. Landholders often commented that the delivery of these projects assisted with their own personal recovery. (East Gippsland CMA)

Q	Victoria's Bushfire Biodiversity Response and Recovery Plan 2020 – following the 2019–20 Victorian bushfires
Q	Protecting Victoria's Environment – Biodiversity 2037
Q	Environmental volunteering plan

Using a trauma-informed approach in NLCR

NLCR is informed by, and enables, the basic elements of psychosocial support in disasters that have been drawn from research on risk and resilience, field experience and expert agreement.6 NLCR aims to genuinely and meaningfully engage local communities in nature connection and support human recovery.

The five elements of psychological safety are:



Generating a sense of physical safety



Promoting calm



Enabling connection with others and the environment



Supporting agency through self and collective efficacy



Instilling hope

The following table illustrates how these five elements inform and are enabled by NLCR activities.

Element Promoted in NLCR activities

Enabled by NLCR activities

Safety



- Promotes integrating activities into existing community-led events, including nature walks, music and dance festivals, and farmers and craft markets, that people can opt-into if they are interested
- Creates safe places for people to interact and contribute
- · Provides information about safety in disasteraffected areas

See 'Strengthening locals' connections to native flora in the Kinglake Ranges' in the NLCR Story Library

- Communities can feel unsafe in their surrounding natural environment after disasters, especially if they perceive nature to have been the 'cause' of the disaster. NLCR can rebuild community confidence in their natural environment through re-connection, information and understanding after a disaster
- Enables working in places affected by disasters and rebuilding feelings of safety where there is no imminent threat

Calm



- Provides access to information and resources that can promote a sense of calm
- Engages people in actions that help to relieve or reduce stressors and anxiety (for the short or long term)

See 'Foundation for Rural & Regional Renewal (FRRR) and Berri Barmera Landcare's The Environmental Connection' in the NLCR Story

- Social connections and connection with nature promotes calm
- Reassurance through knowledge sharing and demonstration about nature recovery promotes calm

Connection



- Creates opportunities for shared community experiences and information sharing at community events
- Supports group projects and gatherings
- NLCR provides opportunities for people to connect
- Helps people connect with their placebased local natural environment

⁶ Five Essential Elements of Immediate and Mid-Term Mass Trauma Intervention: Empirical Evidence

See 'Sarsfield Snaps' and 'Helping communities see nature's recovery' in the NLCR Story Library

- Connection to information about the local environment and species and their recovery trajectories
- Connection to nature experts
- Connection to Indigenous People and Knowledge

Agency



- Co-design community-led projects are identified, defined, and implemented for and by the community
- · Communities co-define the stories to be shared
- Collective projects build collective agency and the sense of doing things together
- Through accessing grants to support their NLCR projects, people have agency with respect to the resources they have to help rebuild and replenish, restoring dignity and efficacy among communities

See 'Victorian Landcare-led recovery following the fires' in the NLCR Story Library

 NLCR equips communities with skills, knowledge and know-how to support their local environment (e.g. waterways), and build social capital and community leadership

Hope



 Creates opportunities to build new memories together through creative meaning-making activities

See 'Sharing stories of nature recovery' in the NLCR Story Library

- Demonstrates nature's rejuvenation and resilience
- Encourages people to spend time in nature and observe its regeneration
- Supports people to return to their lives, and a life valued, including with respect to their relationship with their surrounding natural environment

"A tipping point"

Following the catastrophic 2019–20 bushfires, scientists, government and communities participated in a forum in East Gippsland, spending a day presenting and sharing stories of nature recovery with others in a fire-affected landscape. The aim was to support fire-impacted communities to learn about how nature was responding to the bushfires, and to lead citizen science projects that would benefit local plants, wildlife and habitats. Local stories are powerful in recovery, showing communities overcoming adversity. One community presenter held a tree as she spoke and focused on their desire to shift from



observer to steward; another shared rich insights lifted from 40 years of diaries. These provide examples of the wealth and diversity of knowledge in the community, and the recognition of the value of local expertise and interest. Even though nature recovery may be slow and incomplete, it can still build a sense of hope and connection with others.

In one memorable story, Sarsfield resident Hilary Stripp took listeners along on the journey of the devastation following the fires, describing the unfamiliar new landscape, the small signs that things were changing, and nature recovering.

"A tipping point, the green hoods come back everywhere and the delight is so rich and so deep because I know what it was, because of what it means to me and this is where it is like trauma and grief, like that point where you start to feel goodness again, when you start to love life again and it means so much because of where you've been, because of how deep and dark it was, and the people who kept pace alongside you who truly saw how bad it got." (Hillary Stripp, Sarsfield resident, 2021)."



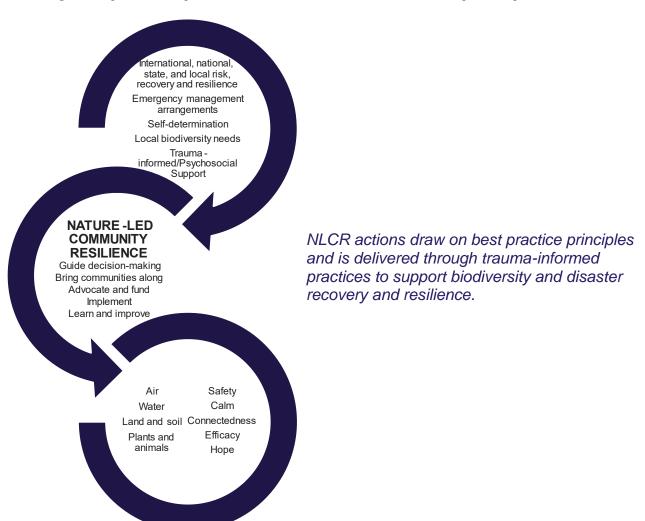
The 'Sharing Stories of Nature Recovery' forum <u>recordings of each session are available on YouTube</u>.

Section 4: Incorporating NLCR during the different phases of disasters

NLCR can be considered in all phases of disasters, not just recovery. It recognises that communities can be in different phases for different disasters at the same time. The phases are not linear, but cyclical and overlapping, and so require early connections between organisations alongside continuous communication and engagement between stakeholders and with communities.

There are many opportunities to incorporate NLCR and these can be categorised broadly as:

- Guiding decisions and actions: By Including NLCR in plans for community and environment recovery, and associated capability and capacity.
- **Bringing communities along:** Through NLCR-informed communication and engagement with stakeholders and communities.
- Advocacy and funding: Through support, grants and financing for NLCR activities and personnel.
- Taking action: By coordinating and implementing NLCR activities as and when they are appropriate.
- Learning: Through monitoring and evaluation for NLCR activities and sharing learnings across sectors.



Across the phases of disasters there are key activities you can undertake. Set out in the following roadmap are general stages of action. These actions look different in the before, during, and after phases of a disaster.

Q

This section provides information relevant to different stakeholders. See Appendix A for templates to support you in building your own NLCR roadmap.

Before



During



After

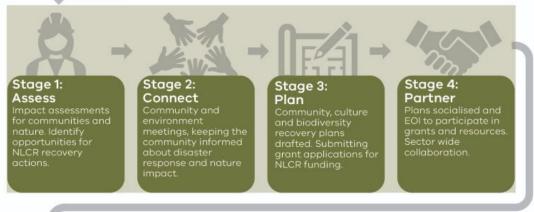




Figure 1. Key activities to undertake across the phases of disasters.

How and when to go about incorporating NLCR

These sections outline in more detail the actions that can apply across the phases of disasters. The tables outline the associated coordination, questions and tools to support planning NLCR actions. You will also find stories in each phase to provide further illustration.

Before: Ongoing work before disasters

Good disaster recovery and stronger resilience are directly influenced by the investment in planning and preparedness. NLCR activities in disaster preparedness support communities to build strong social capital and connections with each other and nature. NLCR can support them in connecting and knowing how to care for their local environments, and in understanding the mitigation, adaptation, preparedness and recovery plans in their area, and thereby help them to appreciate how nature heals, and know how they might support that healing.

NLCR actions	Coordination	Questions to support planning	Tools
Identify opportunities for NLCR: Include explicit community/nature connection and biodiversity needs in emergency management plans and arrangements: regional, municipal, state. (e.g. recovery chapters in Regional Emergency Management Plans and Municipal Emergency Management Plans). Be prepared: Create your own NLCR roadmap for personalised actions across the phases. Engage communities to bring them along: Inform the community about climate change, disasters, mitigation/adaptation, and NLCR activities. Advocate for support and funding: Identify, prepare and advocate for NLCR funding opportunities, including preparedness, mitigation, and connection. Implement NLCR activities and learning: Ongoing promotion, support, and evaluation for NLCR activities, including preparing for disaster/climate change impacts on NLCR activities and organisations. Use metrics and stories to support future funding and advocacy.	Establish and strengthen partnerships across relevant organisations in your area. These could span community, conservation and disaster volunteer groups, government and agencies, NGOs and NFPs, funding organisations, private sector, research organisations, Traditional Owner groups, and youth groups and schools. Consider those outside the usual suspects such as agronomists and business development networks. For more information, see the Foundation for Rural & Regional Renewal and Berri Barmera Landcare case study in the NLCR Story Library. If working rapidly or from scratch, consider how to build networks of networks: who are the people or groups who know who's who?	 (Where) is community/nature connection in plans? Where are you already doing NLCR? What are the existing NLCR stories to tell? How might you include NLCR in your current projects, communications and engagement, monitoring and evaluation, and funding grants/applications? How can you begin planning for NLCR in future disasters? Preparedness plans? Recovery plans? Who are the key stakeholders who may be involved in NLCR? Where do you have authority to act and influence on decision-making to support NLCR activities as business-as-usual? What can you do right now? 	Use templates in Appendix A to identify your NLCR opportunities and create your own NLCR roadmap. Make a start; take action. Take a look at the accompanying documents: The NLCR Story Library can provide inspiration for NLCR activities in your local area and examples to communicate NLCR with others. Appendix C – The Research and Evaluation overview). Appendix F – Resources to learn more about NLCR opportunities and challenges for your communities. Appendix B – some examples of organisations that could be involved and when, and opportunities for including NLCR in policy, planning, funding, and in on-ground actions.
A F		OD Tabilit	

Examples of different NLCR activities in the Story Library help you imagine what this might look like. These stories cover hands-on and knowledge building workshops, community action restoring and stabilising changing landscapes, and new community spaces supported by traditional ways of managing Country.



Relevant examples from the NLCR Story Library include:

- DJANDAK leading Connecting with Country in Bendigo: Djaara ways of knowing, caring and connecting with Country. This is an example of healing people and nature at Waanyarra Dum (frog ponds) through connecting, adapting, and preparing, so it is now a place that can support recovery following disasters.
- Managing for dry times in Hovell's Creek: Another example of workshops supporting local residents and landholders, highlighting how they can be adapted across types of disasters. It demonstrates ongoing adaptation and resourcing, building on prior activities and supporting further funding.
- River Warriors: Highlights NLCR activities before disasters, supporting climate adaptation actions in areas traditionally impacted by floods. Communities are involved in their local waterways, stabilising banks and restoring vegetation.

During: Response and relief during disasters

NLCR response and relief efforts during and immediately after disasters should primarily focus on community engagement about what work is being done to support nature in the response phase. Communications should be considered and regular, sharing impacts and consequences and reassurance (where appropriate).

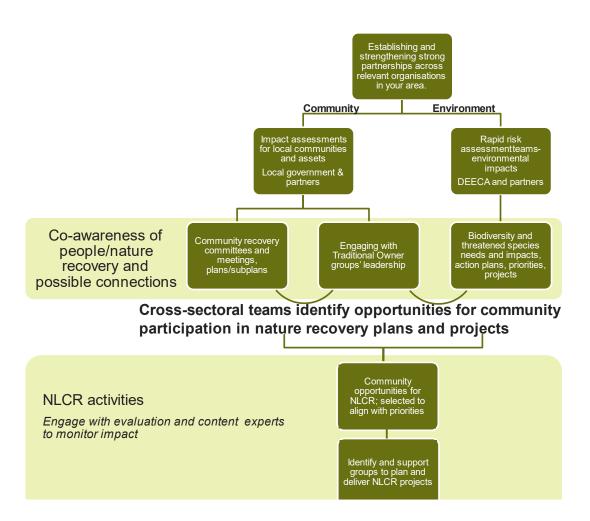
NLCR actions	Coordination	Questions to support planning	Tools
Communicate: Ensure ongoing community engagement about disaster response and nature impact through environment and emergency agencies. It is important to engage communities to bring them along as well. Provide strong messaging about the risks e.g. to stay away from the firegrounds and out of floodwaters. Implement NLCR activities: Some select volunteer opportunities to support nature if appropriate.	Look to environment and emergency agencies who are leading response and relief efforts, and communications. They are likely to be locally-based, within (and include members from) the impacted community.	 (How) are emergency response and relief efforts helping nature in the local area? What are the community touchpoints and concerns relevant to people/nature connection and messaging? 	The NLCR Story Library provides some examples of regular engagement with communities, once the danger has passed, e.g. Foundation for Rural & Regional Renewal and Berri Barmera Landcare's Nature connection walks and workshops boost individual and community wellbeing after flood.

After: Recovery after disasters in the short, medium and long term

Transition to recovery from response includes transitioning responsibility to the relevant agencies; local government for communities, and DEECA for nature. The responsibility for emergency management and disaster recovery (including allocation of funding and grants) in Victoria is undertaken by the relevant government agency and partnering organisations. In Victoria, this transition is guided by:

- local government, who has a key role in supporting community recovery.
- DEECA, who largely leads environmental recovery coordination, supported by environmental agencies
 delivering services on the ground. Catchment Management Authorities (CMAs) are a good point of contact
 with local governments, land managers and community groups. DEECA also has regional hubs with
 community and natural environment teams to support place-based recovery. These connections provide
 useful avenues for NLCR planning.
- national government for large disasters. They provide coordination, information and financial support. National disaster frameworks and principles should support embedding and adopting NLCR practices.
- the many organisations recognised in state emergency management arrangements, including those formally recognised as support agencies, or informally in local government arrangements and community plans.
- partners in government, NGOs, community groups, and the private sector and cross-sectoral teams and local community recovery committees (CRCs), who work together within a community-led recovery process to identify opportunities for NLCR.

Below is a high-level overview of environment and community recovery streams, and how to incorporate NLCR in the process.



A high-level overview of how to incorporate NLCR in the emergency management process.

There are many NLCR opportunities in early-, medium- and long-term recovery. Most immediately, it is important to communicate with communities to alleviate the feeling of nature as a threat, before finding a way to bring communities back to nature through including NLCR in recovery planning and recovery groups, engaging with communities, grant applications for NLCR activities, and implementing NLCR activities with local communities.

"...providing funding in a timely manner after the devastating bushfire impacts to individuals, groups and networks ... created a sense of support to these affected communities and a sense of hope and rebuilding after such a traumatic event. – (East Gippsland CMA)

NLCR actions	Coordination	Questions to support planning	Tools
Assess the impacts and build coawareness of community and environment: State and local government assessments of community and environmental impacts, risks and recovery needs. Active co-awareness of other assessments taking place. NLCR awareness in assessment processes through toolkit, ideas and assessors. Early communications to alleviate the feeling of nature as a threat.	 Rapid, primary and secondary impact assessments completed for social, cultural and environmental impacts as well as other recovery pillars – economic and built. DEECA and partners complete assessments of environmental impacts – air, land and water, and plant and wildlife damage/loss, including threatened species and ecosystems, national parks, cultural and heritage sites. Local governments, supported by partners, undertake initial and secondary impact assessments for local communities and individual and shared assets. 	 What is the context for community connection to nature in this disaster and in this place? What are the disaster impacts on the environment? What are the disaster impacts on the community? What are the opportunities for NLCR that meet both environment and community needs? What funding is available? Is it the right time for NLCR? Or is it still too early for communities with other priorities? 	NLCR toolkit sections: How NLCR promotes and is enabled by traumainformed principles. NLCR Supports Biodiversity Recovery.
 Connect within recovery pillars: Committees and meetings to review assessments and identify needs. Identify opportunities for (re)connecting community and environment needs and priorities; bring communities back to nature. Continue communications to alleviate the feeling of nature as a threat, considering 	 Community recovery meetings establish local and regional needs and priorities for people and nature – for the short, medium and long term. CRCs are established. DEECA and partners meet and consider biodiversity and threatened species impact assessments. Traditional Owner groups' leadership in connecting on recovery pillars. 	Have you engaged with Traditional Owner groups in your area? Are the communities (all the different segments and groups) actively and meaningfully involved in decision making and self-determination about what is important to them?	Use NLCR Toolkit for framing, ideas, and content.

NLCR actions	Coordination	Questions to support planning	Tools
ways to bring communities back to nature.		 Are marginalised groups included in decision making? Do you know who to connect with in environmental groups? Where will the expert environmental advice come from? 	
Plan for community and biodiversity recovery: NLCR included in recovery planning for community and biodiversity: local, regional, state. Identify opportunities to implement nature recovery projects that involve local communities. Government/agencies seek funding for projects.	 Community recovery plans are drafted to reflect community priorities in recovery, including nature-based priorities. DEECA and partners develop Biodiversity and Threatened Species Recovery Action Plans – with short, medium- and long-term priorities. DEECA and agencies plan and propose biodiversity recovery projects (e.g. Parks Victoria, CMAs). Cross-sectoral teams identify opportunities for community participation in nature recovery plans. 	 What are the outcomes and impact on the community? On nature? Is there a specific community or other group that is already involved in this work? Are there representatives for communities and the environment (and ideally, NLCR) in the room? Have we understood what is important and what should be measured for different stakeholders and communities? 	 Review your NLCR roadmap completed in the before phase. Use NLCR Toolkit for framing, ideas, and content.
 Partner with communities: Inform, identify, and prioritise NLCR activities that meet needs. Ongoing community engagement about what's being done and how to get involved; can work through social media. Support groups to plan and deliver NLCR Grant applications for NLCR activities, connecting with NLCR grant sources, writers and advocates. 	 CRCs and community groups are informed of opportunities for community participation in nature recovery programs. Communities identify nature projects that align with their community recovery plans and within their recovery priorities. Relevant agencies and existing and emerging community and environmental groups are identified and supported to plan and deliver NLCR projects. 	 Who will invest in your project? Where does the money come from? Who has overall decision-making authority? Are there always representatives for communities and the environment (and ideally, NLCR) in the room? Who are we missing? Which project(s) are of high value for nature and communities and likely to make a meaningful difference? 	 Appendix B provides places to start looking for funding and a range of examples to look at for more information. The NLCR Story Library also provides a range of NLCR activities across community, nature and disaster contexts.

NLCR actions	Coordination	Questions to support planning	Tools
		Where do our organisational priorities and funding timeframes overlap or complement other stakeholders?	
 Implement to deliver on NLCR projects: NLCR project plans delivered in the short, medium and long term. Recovery of existing NLCR activities and new targeted NLCR. Recovery of conservation group operations so they are available to continue to support NLCR projects. 	Place community needs at the centre of the project. Allow the community to facilitate their own recovery and outcomes. Local community, environmental disaster groups and organisations are likely to mobilise and establish initial activities. These groups may be directly impacted, which can affect service provision, at least temporarily. Some may emerge or suspend business-as-usual to provide surge capacity.	 What skills and experience do people need to participate? What safety, health and wellbeing elements need to be considered? What approvals, permits, permissions are required? What are the accessibility needs? How will people find out about it? 	 Appendix A provides templates to use. Appendix B provides a list of activities and examples to draw from.
 Evaluate and learn for continuous improvement, and share stories: Draw on existing evaluation tools. Monitor and evaluate nature/community connection activities and funding. Identify and share lessons. Storytelling and sharing. 	Research organisations and universities, conservation groups, NGOs working together to build the evidence base and coordinated approaches and tools to measure and share impact.	 How will you evaluate success? Is it a single or ongoing project? Is there a succession plan? How will we capture and share the stories and learnings? How can we build on others' insights? Who do we need to share this with to support including NLCR for business as usual in the future? How are we sharing with communities to build resilience for the new before? 	 Appendix A: Templates, and specifically Step 4: Telling your stories – Recording and sharing your NLCR projects, research, and initiatives Appendix C: Research and Evaluation Appendix F: Resources provides links to additional resources that can provide or be used as inspiration for monitoring and evaluation tools.

Examples of different NLCR activities in the NLCR Story Library help imagine what this might look like. These stories cover walk-and-talks, hands-on and knowledge building workshops, community engagement and events, creating and sharing stories through forums and digital photo boards, citizen science projects, new community spaces, habitat monitoring, and land management.

- Relevant examples from the NLCR Story Library include:
 - Nature connection walks and workshops boost individual and community wellbeing after flood: Local Landcare ran biodiversity
 workshops to build capacity, nature connection, and highlight recovery and healing through floods. This is an example of a local organisation adapting ongoing nature
 connection activities to support recovery, reconnection, and nature-led community resilience following floods.
 - The fish are back and so are we: Local communities rallied around local threated species being monitored and relocated following bushfire, which became a powerful symbol of joint recovery. Interest emerged from the community, and NLCR activities were developed to support education, and to allow for participation in recovery efforts and community events.
 - Sharing stories of nature recovery: A forum for government, scientists, community groups, and research organisations to share stories about disaster impacts and recovery. This NLCR example also featured examples of NLCR activities being undertaken.
 - The Sounds of Recovery: A citizen science and capacity building project that highlights a role for technical innovations in NLCR, and support for communities to see and understand their local environment in new ways.
 - Sarsfield Snaps: An online platform and photography project led by young people to support their recovery and their community. Their photos told the visual story of local recovery, provided new ways of seeing, and allowed them to reclaim agency with something that cannot be destroyed by disaster.
 - Students leading habitat monitoring after fires: School students created and installed information sheets to help communities see nature's recovery as they walk through fire-affected landscapes. A rare chance to see vegetation in a new way.
 - **'Friends of' groups co-recovery with rainforests and rivers:** Volunteers recovering from bushfire and COVID-19, working together to recreate wildlife corridors and restore environmental flows. Communities have been building connections, skills, and knowledge of recovery beyond their property.
 - Strengthening locals' connections to native flora in the Kinglake Ranges: One of many NLCR projects run in the Kinglake Ranges, highlighting a workshop to build awareness of native flora and how to care for it. Following bushfire, the majority of residents were new to the area.
 - Solving the Greater Glider housing crisis: Another example of the community rallying around their local species, and of technical innovations in NLCR. After the destruction of hollow-bearing trees, the community developed, tested, installed, and monitored nest tubes. This was combined with community engagement through forest visits, school trips and volunteering.
 - **Biodiversity bushfire recovery grants program**: A government funding program delivered in the months following bushfire, supporting local restoration projects. Highlights how soon in recovery NLCR can be included to process, restore, and memorialise events, when guided by community.

Knowing when to initiate NLCR activities should be guided by the local context and knowledge of the community and their recovery journeys; it will not be the same for everyone. We have learned that for some, this can be quite early in the recovery process.

"My initial perceptions of the program when it was announced was that it's too soon, people are still trying to put their lives back together to be thinking of biodiversity projects...A couple of the recipients said how therapeutic it was for them to have a project outside of rebuilding their farm and putting their businesses back together."

(North East CMA. A visit to the local area happened to provide an opportunity to connect with a couple of local residents who were recipients of the Biodiversity Bushfire Recovery Grants Program)

The new before

Eventually NLCR extends beyond recovery and becomes the 'new before', building resilience, expanding and delivering sought-after nature-community connection activities and volunteering opportunities, continued monitoring and evaluation, and publishing learnings.

NLCR actions	Coordination	Questions to support planning	Tools
 Stages Embedding: NLCR to be included and recognised in all relevant emergency management and recovery plans as business as usual. Established groups expand to include new stakeholders. Build broader awareness and participation. 	Everyone has a role to play and diverse community voices lead. Established coordination with cyclical programs that operate before, in relief/response (if appropriate) and across recovery stages, tailored to local context.	 What are the lessons learnt? What does this mean for existing NLCR knowledge and tools? How have we empowered others to advocate for their NLCR needs? What does this look like continuing across the phases of disasters? 	 Refining and building on the toolkit. Ongoing sharing of stories building the NLCR Story Library. Established evaluation frameworks build the evidence base.

Examples of different NLCR activities in the NLCR Story Library help imagine what this might look like. These stories talk about opportunities for communities with greater social capital supported through creating new spaces for communities to enjoy and connect across generations, and helping integrate sustainability practices into everyday life.



Relevant examples from the NLCR Story Library include:

Creating Nature Play Trails to Grow Resilience: A space to connect with nature and support programs for intergenerational connection.

Thank you for supporting nature-led community recovery. We hope you can plant the seeds and see them flourish as people and nature benefit from your work.

Section 5: Appendices

Appendix A: Templates to support your NLCR activities

The following is a process you can use right now to build awareness of existing NLCR and find opportunities to include NLCR as you come across them in the future. These steps can be done individually in your role or more broadly in your organisation and be as detailed as time and resources allow. If these are limited, or if you just want an idea of your NLCR context, you can work through them rapidly, focusing on what is of most use right now. You may identify opportunities in one or several areas.

Step 1: Your list of NLCR activities in the different phases of disasters

Before - Ongoing work before disasters

Good disaster recovery and resilience are directly influenced by the investment in planning and preparedness. NLCR activities support communities to build strong social capital and connections with each other and nature; connecting and knowing how to care for their local environments, understanding the mitigation, adaptation, preparedness and recovery plans in their area, understanding how nature heals, and knowing how they might support that healing.

ILCR tools	Questions to support planning	Your notes
The NLCR Story Library can provide inspiration for NLCR activities in your local area and examples to communicate NLCR with others. See Appendix C: The Research and Evaluation overview and Appendix F: Resource Hub to learn more about NLCR opportunities and challenges for your communities. See Appendix B for some examples of organisations that could be involved and when, and opportunities for including NLCR in policy, planning, funding, and onground.	 (Where) is community/nature connection in plans? Where are you already doing NLCR? What are the existing NLCR stories to tell? How might you include NLCR in your current projects, communications and engagement, monitoring and evaluation, and funding grants/applications? How can you begin planning for NLCR in future disasters? Preparedness plans? Recovery plans? Who are the key stakeholders who may be involved in NLCR? Where do you have authority to act and influence decision-making to support NLCR activities as business-as-usual? What can you do right now? 	Stages: Identifying, Engaging, Advocating, and Implementing

NLCR response and relief efforts during and immediately after disasters should primarily focus on community engagement about what is being done to protect nature during the disaster and the impacts of the disaster on nature. Communications should be considered and regular, sharing impacts, consequences, and reassurance (where appropriate).

NLCR tools	Questions to support planning	Your notes
The NLCR Story Library provides some examples of regular engagement with communities, once the danger has passed, e.g. FRRR and Berri Barmera Landcare's Nature connection walks and workshops boost individual and community wellbeing after flood.	 (How) are emergency response and relief efforts helping nature in the local area? What are the community touchpoints and concerns relevant to people/nature connection and messaging? 	Stages: Communicating and Implementing

After – Recovery after disasters in the short, medium and long term

Transition from response to recovery includes transitioning responsibility to the relevant agencies – this is local government for communities, and DEECA for nature. Recovery is supported by partners in government, Traditional Owner groups, NGOs, community groups, and the private sector. Cross-sectoral teams and local CRCs should work together within a community-led recovery process to identify opportunities for NLCR.

NLCR tools	Questions to support planning	Your notes
 NLCR toolkit sections: How NLCR promotes and is enabled by trauma-informed principles. NLCR Supports Biodiversity Recovery. 	 What is the context for community connection to nature in this disaster and in this place? What are the disaster impacts on the environment? What are the disaster impacts on the community? What are the opportunities for NLCR that meet both environment and community needs? What funding is available? Is it the right time for NLCR? Or is it still too early for communities with other priorities? 	Stages: Assessing
Use NLCR Toolkit for framing, ideas, and content.	 Have you engaged with <u>Traditional Owner groups</u> in your <u>area</u>? Are the communities (all the different segments and groups) actively and meaningfully involved in decision-making and self-determination about what is important to them? Are marginalised groups included in decision-making? Do you know who to connect with in environmental groups? 	Stages: Connecting

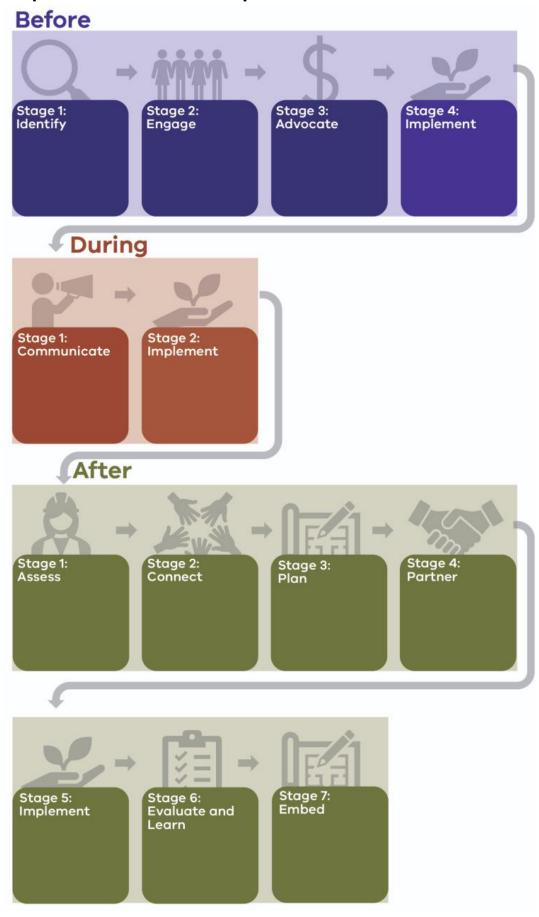
	Where will the expert environmental advice come from?	
Use NLCR Toolkit for framing, ideas, and content. Your NLCR roadmap (see Step 3 below).	 What are the outcomes and impact on the community? On nature? Is there a specific community or other group that is already involved in this work? Are there representatives for communities and the environment (and ideally, NLCR) in the room? Have we understood what is important and what should be measured for different stakeholders and communities? 	Stages: Planning
Appendix B provides places to start looking for funding and a range of examples to look at for more information. The NLCR Story Library also provides a range of NLCR activities across community, nature and disaster contexts.	 Who will invest in your project? Where does the money come from? Who has overall decision-making authority? Are there always representatives for communities and the environment (and ideally, NLCR) in the room? Who are we missing? Which project(s) are of high value for nature and communities and likely to make a meaningful difference? Where do our organisational priorities and funding timeframes overlap or complement other stakeholders? 	Stages: Partnering
Appendix A provides templates to use. Appendix B provides a list of activities and examples to draw from.	 What skills and experience do people need to participate? What safety, health and wellbeing elements need to be considered? What approvals, permits, permissions are required? What are the accessibility needs? How will people find out about it? 	Stages: Implementing
Appendix A (templates), and specifically Step 4: Telling your stories – Recording and sharing your NLCR projects, research, and initiatives. Appendix C: Research and Evaluation and Appendix F: Resources provide links to additional resources that can provide or be used as inspiration for monitoring and evaluation tools.	 How will you evaluate success? Is it a single or ongoing project? Is there a succession plan? How will we capture and share the stories and learnings? How can we build on others' insights? Who do we need to share this with to support including NLCR for business as usual in the future? How are we sharing with communities to build resilience for the new before? 	Stages: Evaluating and Learning

The new before			
Eventually NLCR extends beyond recovery and becomes the new before, building a cycle of resilience where there are more and more popular nature-community connection activities and volunteering, continued monitoring and evaluation, and publishing learnings.			
NLCR tools	Questions to support planning	Your notes	
Refining and building on the toolkit Ongoing sharing of stories building the NLCR Story Library Established evaluation frameworks build the evidence base	 What are the lessons learnt? What does this mean for existing NLCR knowledge and tools? How have we empowered others to advocate for their NLCR needs? What does this look like continuing across the phases of disasters? 	Stages: Embedding	

Step 2: Your list of groups with a role in NLCR

	Which groups can lead and support NLCR? Who are they?	What role could they take?	What are the opportunities to connect? Where are they trusted messengers?
Traditional Owner Groups			
Local communities			
Community-based organisations, agencies and groups			
Local and regional government			
State Government and agencies			
Commonwealth Government			
Conservation and environment organisations, agencies and groups			
Emergency volunteer organisations			
Non-Government Organisations (NGOs) and Not-for-Profits (NFPs)			
Youth groups and schools			
Emergency services and disaster volunteer agencies, organisations, and groups			
Research organisations			
Private sector			
Philanthropic funding organisations			

Step 3: Your NLCR roadmap



Step 4: Telling the stories – share your NLCR projects, research, and initiatives

Collecting this information will be useful for any of your funding applications, to advocate for your work internally and externally, to share with communities, and to tell the stories across Victoria. Here are some useful questions and a template to support you in telling the story of the impact of connecting peoples' and nature's recovery before, during and after disasters.

Tell us about it:

- What happened and why did you do it?
- What did you do?
- Where was it?
- Any funding, support, resources that helped? Or projects and ideas you built on?

Evaluate it:

- Who was involved? What do they think? (templates above and toolkit tables)
- Who attended? What did they say?
- What were the impacts (for communities and environment)
- Why does this matter?

Tell others about it!

Add Your Title Here

Tagline:

PROJECT AT A GLANCE:

Location: TBC
Disaster: TBC

Community groups: TBC
Funding/support: TBC
Delivered by: TBC

Phases of disaster: TBC

Insert photo or image of NLCR activity with caption

This supported our communities through (select all that apply)

Calm	Connection	Agency	Hope
<u></u>		†	
		P	~ `
		·	<u> </u>
Tell us about i	t! Add background infor	mation here.	

Add verbatim quote/s from organisers, funders

Add verbatim quote/s from attendees and communities

Diagram or key information showing impact: e.g. reach, participation or metrics

Appendix B: Illustrating NLCR activities and stakeholders in the different phases of disasters

Community-based organisations, agencies and groups

(existing and emergent)

Community hubs

Neighbourhood houses

Disability and accessibility groups

Multicultural groups

Community health services

Country Women's Association

Men's Shed

Rotary

Lions

Facebook groups

Township groups

Conservation and environment organisations, agencies and groups

Landcare

Friends of

Community-based natural resource

management

Conservation Volunteers Australia (CVA)

Australian Wildlife Conservancy

Australian Conservation Foundation

Bush Heritage Australia

Trust for Nature

Arid Recovery

Nature Glenelg Trust

Mt Rothwell

Tasmanian Land Conservancy

Nature Fix

Emergency services and disaster volunteer organisations, agencies and groups

State Emergency Service (SES) Country Fire Authority (CFA) Australian Red Cross
Disaster Relief Australia

BlazeAid Mud Army

Government - local/regional

Municipal Association of Victoria (MAV)

Local Government Victoria (LGV)

Regional Development Australia (RDA)

Regional Partnership Groups

Government - state

Department of Energy, Environment and

Climate Action (DEECA) – state and regional

Department of Health

Department of Families, Fairness and

Housing (DFFH)

Emergency Management Victoria (EMV)

Emergency Recovery Victoria (ERV)

Department of Justice and Community

Services (DJCS)

Department of Education

Government – Commonwealth

Department of Climate Change, Energy, the Environment and Water (DCCEEW)

National Emergency Management Agency (NEMA)

Australian Institute of Disaster Resilience (AIDR)

Government – Agencies

Royal Botanic Gardens Victoria Zoos Victoria Parks Victoria Commonwealth Scientific and Industrial Research Organisation (CSIRO) Catchment Management Authority (CMA)

Media

NGOs and NFPs

Biodiversity Council Phoenix Australia

Green Cross

World Wildlife Fund (WWF)

Philanthropic funding organisations

Foundation for Rural & Regional Renewal (FRRR)

Lord Mayor's Charitable Foundation (LMCF)

Private sector

Research organisations and universities

The University of Melbourne (e.g. Recovery

Capitals; ReCAPs)

RMIT University (e.g. Re-imagining environments for connection and

engagement; RECETAS)

Monash University (e.g. Fire to Flourish)

Arthur Rylah Institute (ARI, DEECA)

Natural Hazards Research Australia (NHRA) Co-operative Research Centres (CRCs)

Traditional Owner Groups

Registered Aboriginal Parties

Youth groups and schools

Youth Advisory Council Victoria (YacVic)

These tables illustrate what activities support incorporating NLCR before disasters, during response and relief, after disasters in early-, medium- and long-term recovery through to the new before. This highlights opportunities for recovery and for broader nature and community resilience if you are interested in further inspiration for NLCR to try in your communities or for a deeper dive.

Before: Ongoing nature/community connection activities

NLCR opportunities	Who leads and supports these activities in this phase?	NLCR in action
There are many activities which	Government – local, state, Commonwealth	There are many examples of nature connection projects. Some of these include:
connect people and communities with nature on an ongoing basis.	Community groups	Programs
It is important to ensure there is ongoing promotion, support and evaluation for these activities.	Conservation groups Government agencies NGOs and NFPs Private sector Traditional Owner Groups These organisations also provide information and share knowledge about nature and biodiversity, which can be accessed by communities on an ongoing basis.	 Core state government program Victorians Value Nature: Victorians Value Nature, How Victorians can act for Nature DJANDAK (Dja Dja Wurrung Enterprises): Balak Kalik Manya (Walking Together) Nature Stewards Nature Blocks Nature Fix Events and engagement City of Greater Bendigo Pollinator Walk and Night Forest Walks Parks Victoria's Park Walks, e.g. birding, 'scoot and shoot', and seniors' and carers' walks Glenelg Hopkins CMA – Platycam, Bandicam Conservation Volunteers Australia – events
		RBG Birding Walk Citizen science
		 Australian Citizen Science Project Finder CSIRO Get involved Citizen Science Projects Atlas of Living Australia Citizen Science Projects e.g. FrogID, Birdlife, iNaturalist, Atlas of Living Australia, Water Watch, Frog Watch, Platypus Watch, Moth Tracker And see table: How NLCR supports biodiversity recovery
		Groups and networks
		 DEECA EVM Community of Practice Bendigo Community Gardens RBG Friends Groups Landcare Victoria: Strengthening Communities. Restoring Environments Find your local group Communications and resources:

NLCR opportunities	Who leads and supports these activities in this phase?	NLCR in action
		 Biodiversity Council – Easy Ways to Help Nature Biodiversity Council – get involved City of Greater Bendigo Wildlife friendly garden Biodiversity and Threatened Species ARI updates, news, and seminars
Grants and funding for nature/community connection projects	Government – local, state and Commonwealth grants Philanthropic funding organisations Community grants	 Check for current and upcoming grants and funding Victorian Government Grants and Programs Foundation for Rural & Regional Renewal Celebrating Bendigo's Diverse Communities Birds SA Conservation Research Fund Landcare Grants Landcare Australia Community Grants Department of Families Fairness and Housing Community Grants
Monitoring and evaluation of nature/community connection activities	Conservation groups Government – local, state NGOs and NFPs Research organisations and universities	Programs Victorians Value Nature How to measure connection with nature Foundations Survey Synthesis of activities and learnings Statewide survey summary Barriers and opportunities to volunteering for nature report Stories from our environmental volunteers RMIT University: RECETAS project

Before: Mitigation and adaptation – eliminating, reducing and minimising long-term effects of disasters and climate change on nature and communities

NLCR opportunities	Who leads and supports these activities in this phase?	NLCR in action
Community engagement about the impacts of climate change and disasters on local conservation and related activities. Community engagement about current disaster and climate change mitigation and adaptation activities in their area and opportunities to get involved or take individual action.	Community groups Conservation groups Government – local, state, Commonwealth Government agencies NGOs and NFPs Private sector Research organisations and universities Traditional Owner groups	 Plans and reporting Galk galk Dhelkunya Forest Gardening Factsheet City of Greater Bendigo Biodiversity Strategy and Action Plan 2023–2033 North Central CMA Climate Change Communications Plan DEECA Natural Environment Climate Change Adaptation Action Plan Zoos Victoria Environmental Sustainability Investment Prospectus 2019–2024 Projects Bogies and Beyond – GB CMA – Goulburn Broken CMA Projects to build community awareness about roles and responsibilities in disasters Landcare's climate mitigation and adaptation project Traditional Owner engagement Engaging Traditional Owners DEECA Traditional Owner and Aboriginal community engagement Groups and networks City of Greater Bendigo Climate Collaboration Barwon South West Climate Alliance

Before: Emergency planning and preparedness – developing plans, capability and capacity to support community and nature response and recovery

NLCR opportunities	Who leads and supports these activities in this phase?	NLCR in action
Expanded and intentional focus	Conservation groups	Example actions
on importance of community/nature connection in recovery chapters in MEMP and REMP – overlapping opportunities. NLCR supports achieving MEMP and REMP objectives e.g. prevent, mitigate, partner, collaborate, recovery.	Government – local Government agencies Municipal Emergency Management Planning Committee (MEMPC) Regional Emergency Management Planning Committee (REMPC)	 Presentations to MEMPC and REMPC by conservation groups on plans in the event of a disaster. Consider overlap across recovery pillars in MEMP and REMP recovery chapters and encourage collaboration across pillars and pillar groups, especially social, cultural and nature pillars. CMA's climate change adaptation and emergency management planning. Plans and reports City of Greater Bendigo Integrated MEMP Loddon Mallee REMP Loddon Mallee Region Environmental Scan Groups and networks Northern Victorian Emergency Management Cluster (NVEMC)
Expanded and intentional focus on importance of community/nature connection in Victoria's Emergency Management Arrangements.	Government – state (<i>EMV</i> , <i>ERV</i>)	Plans and frameworks State Emergency Management Plan (SEMP) Victorian Preparedness Framework The Victorian Emergency Management Capability Blueprint VPS Place-based Capability Framework DEECA Cultural Engagement Framework
Plan for impacts of disasters (and climate change) on ongoing nature/community connection activities. This may be about impact on the organisation delivering the activity or on the activity itself.	Community groups Conservation groups Traditional Owner groups	Landcare's crisis management, response and recovery program group putting plans in place to support local Landcare facilitators to manage activities during and after disasters.
Plan for and communicate how communities can support conservation activities during and after disasters including what grants might be available.	Community groups Conservation groups Local government Traditional Owner groups	 Example actions Use spontaneous volunteer registers so that people can pre-determine and plan their support for NLCR projects after a disaster. Newsletters to members of volunteer groups.

NLCR opportunities	Who leads and supports these activities in this phase?	NLCR in action
	Volunteering Victoria	Guides Spontaneous Volunteers Handbook (AIDR)
Include biodiversity and threatened species information and risks in MEMP and REMP and Environmental Scan reports	Conservation groups Government- local, state (DEECA) MEMPC REMPC	Plans and reports Loddon Mallee Region Environmental Scan
Ongoing nature/community connection funding and grant opportunities for disaster preparedness and resilience.	Government – local, state and Commonwealth grants Philanthropic funding organisations Community grants	Check for current and upcoming grants and funding Victorian Government Grants and Programs Foundation for Rural & Regional Renewal Landcare Grants, Landcare Australia Community Grants

During: Response and relief – combatting emergencies and impacts on people and nature

NLCR opportunities	Who leads and supports these activities in this phase?	NLCR in action
Ongoing community engagement about disaster response and nature impact through emergency agencies.	Conservation groups Government – local, state and Commonwealth Media Emergency services agencies All these agencies have information and knowledge to share with community	 Example actions Community briefings and public messaging includes reports on nature impact and protection activities. Rapid risk assessment team (RRAT) reports shared with broader stakeholder and community groups as appropriate. Local community and landholder input about their own observations during disaster. Traditional Owner engagement Engaging Traditional Owners DEECA Traditional Owner and Aboriginal community engagement
Strong messaging about staying out of flood waters and stay away from the firegrounds.	Emergency services agencies	Links to agency sites for more information SES, CFA, EMV
Volunteer opportunities to support nature.	Disaster volunteer groups – state	Groups and networks: Mud Army

NLCR opportunities	Who leads and supports these activities in this phase?	NLCR in action
		Volunteering Victoria

After: Early-, medium- and long-term recovery – context dependent – reconnecting people and nature

NLCR opportunities	Who leads and supports these activities in this phase?	NLCR in action
Early communications to alleviate the feeling of nature as a threat; finding a way to bring communities back to nature.	Government – local, state (DEECA) Government agencies Media Traditional Owner Groups	 Stories and communications Good news stories for media, community newsletters, online, e.g. <u>Bushfire recovery as a shared human-nature journey – Monash Lens</u> <u>Mallacoota Gun Club shooting for recovery</u> Communications packages developed to inform local communities what actions were happening under the Biodiversity Bushfire Response and Recovery projects Newsletters and updates LM Flood Recovery Community Newsletter DEECA and ARI Community Updates
Ongoing community engagement about nature impact, response and recovery activities.	Community groups Conservation groups Government – local, state and Commonwealth Government agencies Traditional Owner Groups	 Example actions Sharing information (as appropriate) from Biodiversity Response and Recovery Plans and Threatened Species Action Statements Briefing on nature recovery at all community recovery briefings Loddon Mallee Flood Recovery Community Newsletter DEECA updates to community Traditional Owner engagement Engaging Traditional Owners DEECA Traditional Owner and Aboriginal Community Engagement Projects, communications and resources CVA Bushfire Relief Initiative Landcare Fire Recovery resources
Identify opportunities to implement nature recovery projects that involve local communities.	Community groups Conservation groups Government – local, state (DEECA)	 Example actions Map biodiversity response and recovery plans and threatened species recovery plans (based on the RRAT plan) against community recovery plans. This could be RRAT led/supported.

NLCR opportunities	Who leads and supports these activities in this phase?	NLCR in action
	Government agencies	Guides
	Traditional Owner Groups	Far East Victoria Landcare East Gippsland Revegetation Ute Guide: Assisting landholders with their revegetation projects
		Groups and networks
		Friends of Mallacoota
Ongoing community engagement	Community groups	Example actions
about opportunities to get involved in nature response and recovery activities.	Conservation groups Government – local, state and Commonwealth Traditional Owner Groups	 Invite community to participate in citizen science projects e.g. FrogID, Birdlife, iNaturalist, CSIRO, Atlas of Living Australia (see table in NLCR Toolkit for more examples and how they can support biodiversity recovery) List NLCR opportunities and stories in community recovery newsletters NLCR 'stand' at all community recovery gatherings, meetings, markets
		Programs
		 Big Bushfire Bioblitz Future proof CVA Bushfire Restoration Volunteering CVA Recovery Rangers
		Events and engagement
		 Landcare community free workshops on soil treatment, fencing, identifying weeds Landcare free seeds for community members Citizen Science Bushfire Recovery Project Finder
		Communications and resources
		 LM Flood Recovery Community Newsletter Case Study: Recovery Rangers at Somerset
		Groups and networks
		Friends groups, e.g. Friends of Kalorama
Grant applications with support	Community groups	Check for current and upcoming grants and funding
from grant writing experts to support NLCR activities.	Conservation groups	Community Grants Hub – Drought fund
	Government – local, state and Commonwealth	 Nature-led Community Recovery Grants Aboriginal Culture and Healing Bushfire Recovery Grants
	Philanthropic funding organisations	Bushfire Recovery Local Community Projects Grants
	Traditional Owner Groups	Bushfire recovery grants for local government authorities and community service organisations
38	I	NLCR Toolkit

NLCR opportunities	Who leads and supports these activities in this phase?	NLCR in action
		 Community-led Recovery Support Grants Landcare Led Bushfire Recovery Grants
NLCR included in local and regional community recovery planning.	Government – local, state (Emergency Recovery Victoria)	 Example actions Nature/community connection role and NLCR activities listed in community recovery plans Conservation, nature role on CRCs Plans and frameworks Emergency Recovery Victoria Recovery Framework Guides and Resources ERV Local Government Recovery Toolkit
NLCR included in state community and biodiversity recovery planning.	Government – state (Emergency Recovery Victoria, DEECA) Government agencies	 Recovery plans Inclusion of NLCR in Bushfire Biodiversity Response and Recovery Plan (2020) – nature-led community recovery theme East Gippsland 2019–20 Bushfire Recovery Plan Progress Report – Natural Environment Recovery Sub-plan; Objective 2: 'Work with community groups to assist the restoration of the natural value at a local and regional level'
Recovery of conservation group operations so they are available to continue to support NLCR projects.	Conservation groups Traditional Owner Groups	Funding opportunities as above
Monitoring and evaluation of NLCR funding and activities.	Conservation groups NGOs and NFPs Research organisations and universities Government – local, state, Commonwealth Government agencies	 Program and case evaluations, e.g.: Evaluation of the nature-based community recovery project (Federation University, Zoos Victoria and DEECA report) Nature-led community recovery: Recovery outcomes from a number of grant recipients in East Gippsland (ERV report) Experiences of members of Landcare and other environmentally-focussed community groups after the 2019–20 bushfires Engaging the community in native fish recovery following bushfire Guides and resources NLCR Research and evaluation overview (Appendix C); NLCR Story Library

The new before: Ongoing and expanded nature/community connection activities and programs
NLCR Toolkit
39

NLCR opportunities	Who leads and supports these activities in this phase?	NLCR in action
Same activities as previous 'Before' section listed above.	Same details as previous 'Before' section listed above	 Example actions Sustained community events (e.g. Run the Gap fun run) Experiences of post traumatic growth Enhanced community/nature connection Expanded membership of conservation and volunteer groups
Monitoring and evaluation.	Research organisations and universities	Example actions
	Conservation groups NGOs and NFPs Research organisations and universities	 Established monitoring and evaluation framework for events and at local, regional and state level. Data feeding into biodiversity plans and community volunteering plans and Victorians Value Nature program.
	Government – local, state, Commonwealth	Guides and resources
	Government auxiliary agencies	NLCR Story Library
		See further links to data and evidence in the NLCR Research and evaluation overview (Appendix C) and the Resources Hub
Publication of findings.		Example actions
		 People and nature publications Emergency management publications Reports and fact sheets shared widely
		Guides and resources
		NLCR Story Library
		See further links to data and evidence in the NLCR Research and evaluation overview (Appendix C) and the Resources Hub

Appendix C: Research and evaluation

This section provides a brief and high-level overview of some core NLCR research, reports, evaluations, and approaches in this emerging area. This is designed to provide brief snippets of content that can be adapted for NLCR project proposals, funding applications and the like, rather than a comprehensive account. Readers are referred to the underlying references and the NLCR Toolkit for more detailed information.

NLCR benefits

There is a lot of evidence that nature can be good for us. How much depends on many things like who you are, what kind of nature you're in, what you're doing and what's been happening in your life. It can also depend on where and how often we visit, what we do in nature and who we go with⁷. Connecting with nature supports individual⁸ and societal⁹ wellbeing and helps build resilience. Nature-led community resilience recognises this and builds it into disaster preparedness and recovery. There are some examples of this work internationally across a range of disasters¹⁰. The sheer importance of nature as reported by people recovering from disasters has taken some researchers by surprise¹¹, but it is now starting to be included in disaster recovery handbooks¹².

Recovering nature can have widespread benefits for communities because it is often dramatically transformed from disasters, and this change can be seen and experienced by everyone in the community⁵. NLCR is nature- and community-led, adhering to core disaster and biodiversity recovery principles. In bushfire-affected communities, having a strong attachment to nature is linked with higher resilience, growth following trauma, current and anticipated life satisfaction, lower distress, and being less likely to relocate⁵. These benefits occur across all levels of disaster exposure. NLCR continues recovering and supporting people healing from trauma over months and years⁵, highlighting why it is so important for long-term recovery.

Communities and community groups

Victorian communities are confident in their capacity to cope with challenges¹³, but disasters like floods can be particularly devastating for communities, and for nature. This can change how people feel about the environment, giving rise to grief or fear of the landscape¹⁴. NLCR centres trauma-informed principles¹⁵ and these are often already present to some degree in environmental groups such as Landcare¹⁶.

The most resilient communities are those with a connected community with social capital¹⁷ where lots of people are involved in different community groups (rather than being concentrated across a small number of people)¹⁸. Environmental groups have been shown to have broad and diverse memberships, and provide critical connections between landholders, government and agencies; people join to be social, to learn, to manage their property, and to care for nature¹¹. These groups can begin embedding NLCR through planning undertaken during preparedness.

Examples of healing through nature

⁷ If you want to read more about this research, there are many resources. Some you can start with include:

Living in cities, naturally (Science), Pathways linking biodiversity to human health (Environment International), Nature and Health (Annual Review of Public Health)

⁸ A review of the benefits of connecting with nature and its application as a wellbeing intervention

Nature contact, nature connectedness and associations with health, wellbeing and pro-environmental behaviours

⁹ Applying the pathways to nature connectedness at a societal scale

¹⁰ For an overview of key international research, see <u>The impact of nature-led recovery initiatives for individual and community</u> health post disaster: A systematic literature review

¹¹ The role of the natural environment in disaster recovery: "We live here because we love the bush"

¹² Recovery Capitals (ReCap); Guide to Disaster Recovery Capitals (ReCap)

¹³ Regional wellbeing survey results and reports – University of Canberra

¹⁴ Topophilia and topophobia in the post-earthquake landscape of Christchurch, New Zealand

¹⁵ Five Essential Elements of Immediate and Mid–Term Mass Trauma Intervention

¹⁶ The overwhelm of black and the joy of green: Experiences of members of Landcare and other environmentally-focused community groups after the 2019–20 bushfires

¹⁷ For example, see <u>Building Resilience: Social Capital in Post-Disaster Recovery</u>

¹⁸ The effect of group involvement on post-disaster mental health: A longitudinal multilevel analysis

Short-term volunteering post-disaster can be beneficial. While initially it may be challenging and stressful, continuing personal investment in nature's recovery can provide even greater benefits in the long term; through engaging with nature and features that support remembering, grieving, healing, learning¹⁹, pride and memorialising¹⁹. Regenerating nature is a powerful symbol of loss and grief, renewal and hope, community connection²⁰, and supporting production and livelihoods, providing catharsis through culture and sense of place²¹. This has been shown internationally across disasters and here in Victoria where there are examples of NLCR activities post-bushfire in places like Mallacoota and Tambo²², Marysville^{23,24}, Sarsfield²⁵ and more (for more examples, see the NLCR Story Library).

Reflecting on natural processes as part of Australia's ecology is another reported coping strategy⁵; this narrative of healing, for example following floods, has also been highlighted by Traditional Owners through their Flood Recovery Forum²⁶. Healing frameworks are one approach to Indigenous-informed disaster recovery, digging deep and bringing forward holistic, social, strengths-based processes that can support all communities²⁷. Such processes are important and complementary to NLCR.

NLCR activities and stories

There are lots of examples of NLCR happening across Victoria, some of which have been captured in the NLCR Story Library to show their breadth and diversity, including those led by the Victorian Government. Some include forums and activities dedicated to sharing stories; international research highlights their power in recovery to "provide connections and highlight features of community history in overcoming adversity" Still others include activities like recovery walks through nature, interpretive trails, community hubs protecting native species, artwork, creating places for solitary reflection and appreciating native wildlife, and citizen science projects to monitor recovery of local species for the community. Evaluation surveys and interviews highlight the benefits of these NLCR activities for boosting calm, hope, safety, connection with communities of like-minded people, connection with nature, and pathways to healing through reflection and learning. There are a range of questions people have used to assess the benefits of NLCR activities and it is important to build on these for shared learnings. There is also evidence that communities recognise the importance of these activities for tourism and economic development 16,17,20.

Use the lessons from these activities and their evaluations, alongside the additional NLCR Story Library and the information in this Toolkit to include NLCR in existing programs, plans and any new applications, and to share with others to help them to do the same.

42 NLCR Toolkit

-

¹⁹ Evaluating the contribution of nature-based solutions to recovery planning in Futaba County

²⁰ The role of the natural environment in disaster recovery: "We live here because we love the bush"; The impact of nature-led recovery initiatives for individual and community health post disaster: A systematic literature review

²¹ The impact of nature-led recovery initiatives for individual and community health post disaster: A systematic literature review

²² Emergency Recovery Victoria, 2023: Nature-led community recovery outcomes from a number of grant recipients in East Gippsland

²³ Watery places: Stories of Environmental and Community Renewal

²⁴ Engaging the community in native fish recovery following bushfire

²⁵ Porter, J. E., Barbagallo, M. S., Wright, W., Prokopiv, V., Dabkowski, E. and Ghasemirdekani, M. (2022) Nature-based recovery project: Evaluation 2022. Interim report. Federation University, Collaborative Evaluation and Research Group, Gippsland

²⁶ <u>Traditional Owner Flood Recovery Forum Report: Loddon Mallee Region</u>

²⁷ Indigenous-informed disaster recovery: Addressing collective trauma using a healing framework

²⁸ "You Always Have to Struggle, So You Don't Have to Struggle": Community Trauma Recovery After a Landslide, p.311

²⁹ Collaborative Evaluation Research Centre, 2024: Evaluation of the nature-based community recovery project

Appendix D: NLCR and emergency management principles₃₀

These principles provide guidance on how to approach NLCR, based on well-established emergency management and recovery principles.

Principle	Principle in action in NLCR
Traditional Owner Knowledge	Respecting and following the leadership of Indigenous people and ensuring cultural safety and data sovereignty to govern the collection, ownership, and use of data about their communities, people, land and resources.
Comprehensive	NLCR embraces all phases of prevention, preparedness, response, and recovery (PPRR) across all hazards. These phases of emergencies are not necessarily sequential.
Collaborative	Relationships between communities, government agencies and organisations, the emergency management sector, NGOs, conservation and environment organisations, private organisations, volunteer group etc. are based on integrity, trust and mutual respect. Activities and ways of working together reflect common goals and all stakeholders work with a unified effort.
Community-led	Local, place-based, community-centred, and community-led, meaningful activities, informed by local and specialist knowledge and advice, including Traditional Owner knowledge. Co-creation and collaborative planning wherever possible, acknowledging that this takes time, accommodating that necessary time, and being responsive to the adaptations and changes that may happen over time.
Coordinated	The bringing together of organisations and other resources to ensure nature-led response, relief and recovery is coordinated. It involves the systematic acquisition and application of resources (organisational, human and equipment). Activities of all stakeholders are synchronised and integrated. Information is shared to achieve a common purpose and impacts and needs are continuously assessed and responded to accordingly.
Flexible	In all phases of emergencies, situations are constantly changing. Decisions regarding viability of nature-led community resilience may require initiative, creativity and innovation to adapt to new and emerging challenges. NLCR plans need to be agile to change and adapt to these new circumstances.
Risk based	All those involved in NLCR use sound risk management principles and processes in prioritising, allocating and monitoring resources to manage the risks to people and nature from hazards, including trauma and psychosocial safety. Risk-based planning will anticipate the effect of efforts, the changing landscape and the changing consequences of NLCR activities.
Shared responsibility	Everyone understands their own responsibility in NLCR activities, and the responsibility of others. Communities and individuals understand the risk. This encourages all stakeholders to prevent, prepare for, and plan for emergencies impacting themselves and nature and how they will safely respond to and support people's and nature's recovery and resilience in disasters.

³⁰ Adapted from <u>Australia's Emergency Management Arrangements</u>

NLCR Toolkit 43

_

Principle	Principle in action in NLCR
Resilience	The ability of people and nature, including plant and animal species, ecosystems, environments, or humans (individual, community or society) exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of essential ecosystems, basic structures and functions through risk management (adapted from UNDRR 2017).
Communication	Information is crucial to decision making in NLCR. Those supporting NLCR activities need to support common information systems and are responsible for providing and sharing clear, targeted and tailored information to those who need it, and to those involved, to enable better decision making by all stakeholders.
Integrated	NLCR must be integrated across sectors, not progressed in silos, ensuring the engagement of the whole of governments, and all relevant organisations and agencies, the NGO and business sector and communities. The duality or reciprocity of benefits (i.e. of both people and nature) should be recognised when establishing projects, and when defining activity purposes and planning.
Continual improvement	All sectors continuously learn and innovate to improve practices and share lessons, data and knowledge so that future NLCR projects are improved, and the overall impact is optimised for success. Continuous monitoring, review and evaluation should examine the processes, timelines and outcomes of NLCR plans. Review informs decision-makers and stakeholders, and displays transparency and accountability. Review also enables facilitation of adaptive change processes and feedback loops.

Appendix E: Established disaster recovery and resilience frameworks and strategies that align with NLCR

Framework	NLCR contribution
International	(Note: Framework summary presented first in italics)
Sendai Framework for Disaster Risk Reduction	The substantial reduction of disaster risk and losses in lives, livelihoods and health, and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.
	Nature-based community resilience approaches align with the Sendai Framework's focus on incorporating ecosystem-based solutions into disaster risk reduction efforts, and include the need to establish recovery schemes and resilience strategies that provide psychosocial support and improve community mental health.
National	
National Strategy for Disaster Resilience	Disaster resilience is the collective responsibility of all sectors of society, including all levels of government, business, the non-government sector and individuals. If all these sectors work together with a united focus and a shared sense of responsibility to improve disaster resilience, they will be far more effective than the individual efforts of any one sector.
	NLCR supports the strategy's emphasis on shared responsibility and building resilience at the individual and community levels through actions such as ecosystem restoration, biodiversity conservation, and community engagement. A foundational principle of NLCR is its approach to knowledge and information sharing with communities about disaster risks and consequences to their local environment. Sharing knowledge enables a better understanding of responsibility and meaningful contribution to mitigation and recovery activities at a community level. People are more likely to take on responsibility when they understand what is going on in their natural environment.
National Risk Reduction Framework	All sectors of society understand and respond to social, environmental, technological and demographic changes which have the potential to prevent, create or exacerbate disaster risks.
	NLCR builds community understanding of disaster risk and risk reduction. By providing impacted communities with access to experts and information about risks, recovery and resilience of local natural environments, communities can lead actions to support their local natural environment risk mitigation, recovery and ultimately the current and future resilience of these natural environments. NLCR enables communities to identify, understand and take meaningful, informed and collaborative action in realising their own responsibility as shared custodians of their local natural environments.
Second National Action Plan to implement the National Disaster Risk Reduction Framework	Natural hazards such as flood and fire only lead to disaster if they intersect with an exposed or vulnerable society and exceed people's capacity to cope. NLCR aligns with Priority Action's 1 and 4 and most outcomes (1–4,9) and actions (1–5,9,11–12,19–20,22–24).
	This acknowledges the severe ecological impact of the 2019–20 bushfires, highlighting the urgent need for an approach that raises awareness of environmental consequences in Australian disasters and the need to address the often unexpected and underestimated stress and trauma people experience when witnessing the devastation of natural landscapes, waterways, air, and wildlife. NLCR provides a framework to address human and nature trauma collectively and concurrently, aligning with the National Action Plan to incorporate nature-based initiatives into disaster resilience. It reinforces community values and leadership capabilities by fostering community participation through volunteering and enhancing local understanding of disaster risks and resilience-building measures for nature. NLCR also encourages meaningful community contributions across all disaster phases. It integrates traditional knowledge and place-based, inclusive disaster resilience strategies.

Framework	NLCR contribution
National Principles for Disaster Recovery	An NLCR approach can provide the foundation to deliver on the National Recovery Principles by supporting a community-led approach that can adapt to different contexts and complexity, and build capacity in individuals, communities and organisations (see Appendix D).
Profiling Australia's Vulnerability	An NLCR approach can reduce vulnerabilities by building knowledge and relationships between disaster-impacted communities and their local natural environments, thereby increasing capacity to cope, ability to recover, ability to respond, ability to reduce potential consequences, ability to anticipate risks, and impacts and knowledge of risks faced.
State	
State Emergency Management Plan	A coordinated and comprehensive approach to emergency management at the state level, containing provisions for the mitigation of, response to and recovery from all forms of emergencies, and specifies the roles and responsibilities of agencies.
	One of the strongest features of NLCR is that it provides a framework that is applicable across many hazard types, supporting community resilience in a broad range of emergency risks and their associate consequences. Application of NLCR projects in floods, are equally applicable to bushfire and storm disasters. NLCR also creates opportunities for social and natural recovery pillars to be supported concurrently.
State Emergency Relief and Recovery Plans	NLCR supports globally recognised, best practice, community-led approaches to disaster recovery and resilience by equipping communities with traditional and new knowledge and wisdom in relation to their local natural environments. With this information, communities can understand how their recovery and resilience is inherently, and critically linked, to the recovery and resilience of the natural environment around them. They will be equipped with knowledge and agency to support their own local environments.
Emergency Risks in Victoria	18 emergency categories identified as having the greatest risk and consequences for Victoria over the next 5 years (approximately half directly involving the natural environment).
	The statewide risk of floods, storms, and bushfires is significant. For example, it is 'likely' that any of these disasters could occur in any one year with high impact (risk 10–63%; and 0.1-10% for worst-case-scenario). NLCR is an ideal framework for addressing areas with diverse risks and consequences (particularly environmental). Enabling communities to better understand risks and consequences of environmental hazards, as well as better own risks like bushfires and floods will enable them to better contribute and support recovery and resilience initiatives and, in the process, understand and manage their own wellbeing and resilience needs in relation to their local natural environment.
Victoria's Emergency Recovery Plan	NLCR can complement recovery plans by providing opportunities for community involvement, promoting physical, mental and social wellbeing through connection with nature, and restoring ecosystems that may have been damaged during disasters.
Resilient Recovery Strategy (Victoria)	Four strategic actions that promote a shared responsibility approach to emergency management and the importance of recovery planning: 1) Deliver people- and community-centred recovery; 2) Strengthen recovery through better emergency management planning; 3) Design a streamlined and flexible recovery system; 4) Support the recovery workforce.
	NLCR supports the four strategic actions that promote a shared responsibility approach to emergency management and recovery planning. The strategic actions include people- and community-centred recovery, bringing the community into recovery processes, and supporting those working

Framework	NLCR contribution	
	in recovery programs by providing a viable and meaningful nature-based recovery program and mobilising communities to support environmental recovery efforts.	
Recovery Outcomes (Victoria)	NLCR can deliver on the Victorian Government's recovery outcomes for safe, resilient and healthy communities where people, places and culture are connected, and government responses and services are people-centred, adaptable and sustainable to support thriving regions and a healthy environment.	
Strategy for	Aboriginal communities' recovery is most successful when they are central to decision-making and empowered to determine their own outcomes.	
Aboriginal Community-led Recovery	NLCR recognises the central role and leadership of Traditional Owners and Aboriginal Victorians, and aligns with supporting their efforts to plan and deliver recovery in their communities within this strategy. In providing an approach to realise culturally-responsive, Aboriginal community-led outcomes in recovery in coordination with government, councils and delivery partners, this strategy also aligns with NLCR.	
Community Resilience Framework	Resilience characteristics that emergency managers should aim to strengthen and encourage in communities: 1) Connected, inclusive and empowered; 2) Sustainable built and natural environment; 3) Reflective and aware; 4) Culturally rich and vibrant; 5) Safe and well; 6) Dynamic and diverse local economy; 7) Democratic and engaged.	
(Victoria)	NLCR principles are aligned with Victoria's Community Resilience Framework in promoting connection, sustainability, culture, safety and wellbeing and diversity in its approach.	
Community	An all-hazards risk assessment tool that aims to identify, mitigate and reduce risk within the community.	
Emergency Risk Assessment (CERA)	An NLCR approach can be used for different natural hazards and ensures that environmental risks and mitigations are central to community knowledge, wellbeing and resilience. For example, CERA Flood Guides inform NLCR approaches to connect communities with flood risks and mitigation knowledge and recovery and resilience activities. Communities will not only understand risks and mitigation activities, but also how they can better prepare their local community and environmental assets, and understand impacts and recovery and how they can play a role in that.	
Adaptation- and biodiversity-specific		
Natural Environment	Adaptive and flexible guidance for uncertain and changing contexts, recognising community leadership, traditional owner outcomes for climate resilience, and monitoring/assessing emerging threats.	
Adaptation Action Plan (Victoria)	Using an NLCR approach could provide insights to support learning and understanding the key priorities in the NEAPP through observable and experienced changes in environments, through the supports and comfort provided by nature (e.g. connection, wellbeing, reflection, social environment) and through being a space to support social learning.	
Protecting	Framework Vision: Victoria's biodiversity is healthy, valued and actively cared for.	

NLCR recognises the role of connecting with nature for the health and wellbeing of people and the environment, and in people taking action to protect nature. Therefore, it directly contributes to Victorians Value Nature so that the environment is healthy, valued and actively cared for.

NLCR Toolkit 47

Victoria's

Biodiversity – Biodiversity 2037

Appendix F: Resource hub

The current home of nature-led community recovery in Victoria

Nature-led community recovery (Arthur Rylah Institute)

NLCR activities including citizen science

• For details see Appendix B: Groups and practical examples showing NLCR actions in the different phases of disasters, including more information about organisations, funding and initiatives, and on-ground programs.

Support for community-led disaster recovery

Community Recovery Handbook: Australian Institute of Disaster Resilience

"This handbook aims to provide a comprehensive guide to community recovery in Australia. It is intended for
use by planners, managers and those involved in working with communities to design and deliver recovery
processes, services, programs and activities."

Supporting your community: Australian Red Cross

 "The Introduction to Psychosocial Support Community toolkit helps communities support one another during and after crisis."

Disaster Recovery Toolkit for Local Government: Emergency Management Victoria

 "Provides a range of tools, resources and literature to help local government and communities prepare for, respond to and recover from disasters."

Recovery Capitals (ReCap); Guide to Disaster Recovery Capitals (ReCap)

• "Supports wellbeing after disasters with evidence-based resources for people and organisations engaged in recovery." "The guide identifies seven areas of recovery – natural, social, financial, cultural, political, built and human – and emphasises the interconnectedness between these 'recovery capitals'. While the capitals align with NLCR and recovery principles, natural capital is the most explicit recognition of the role of nature in recovery. NLCR approach can directly address this as well as delivering on other capitals in many instances.

Creative Recovery Network

• "A not-for-profit organisation working to develop and embed the vital role of culture, creativity and the arts in Australia's disaster management systems."

The Disaster Mental Health Hub: Phoenix Australia

 "Information, resources and training programs that will help you to support the mental health needs of individuals and communities before, during and after a disaster."

HowWeSurvive

• "Long-term, independently funded initiative that aims to change the way community-centred disaster recovery efforts are enacted and understood."

Some research and reports

- A review of the benefits of connecting with nature and its application as a wellbeing intervention
- Applying the pathways to nature connectedness at a societal scale
- · Building Resilience: Social capital in post-disaster recovery
- Engaging the community in native fish recovery following bushfire
- Evaluating the contribution of nature-based solutions to recovery planning in Futaba County
- Five essential elements of immediate and mid--term mass trauma intervention
- Impacts of creative recovery: Summary report
- Indigenous-informed disaster recovery: Addressing collective trauma using a healing framework
- Nature contact, nature connectedness and associations with health, wellbeing and pro-environmental behaviours
- The effect of group involvement on post-disaster mental health: A longitudinal multilevel analysis

- The impact of nature-led recovery initiatives for individual and community health post disaster: A systematic literature review
- The overwhelm of black and the joy of green: Experiences of members of Landcare and other environmentally focussed community groups after the 2019–20 bushfires
- The role of the natural environment in disaster recovery: "We live here because we love the bush"
- Topophilia and topophobia in the post-earthquake landscape of Christchurch, New Zealand
- Traditional Owner flood recovery forum report: Loddon Mallee region
- Watery places: Stories of environmental and community renewal
- "You always have to struggle, so you don't have to struggle": Community trauma recovery after a landslide

Disaster recovery and resilience plans and strategies

• See Appendix E: Established disaster recovery and resilience frameworks and strategies that align with NLCR.

Health and environment plans

- Protecting Victoria's Environment- Biodiversity 2037
- Therapeutic Horticulture Australia
- Australia's Strategy for Nature 2019–2030
- Victorian Memorandum for Health and Nature
- Victorian Public Health and Wellbeing Plan 2023–2027

Engagement frameworks

- Victorian Public Engagement Framework 2021–2025
- Traditional Owner and Aboriginal Community Engagement Framework
- Engaging Traditional Owners

