

Wildfire Wise Wales Doeth am Dân Cymru

A Community Wildfire Risk Assessment Guide.

February 2024



Llethrau Lion Healthy Hillsides

Wildfire Wise Wales Doeth am Dân Cymru: A Community Risk Assessment

Executive Summary

The Healthy Hillides project is a collaborative approach to wildfire management, supported by the European Agricultural Fund for Rural Development through Welsh Government. Steered by four core partners; Natural Resources Wales; South Wales Fire & Rescue Service; Wildlife Trust for South & West Wales; and Rhondda Cynon Taf County Borough Council, the initiative champions a collaborative working for integrated wildfire management on a Landscape scale.

Working with key organisations, stakeholders, and communities, the Healthy Hillides project focuses on creating a proactive year-round solution to a seasonal wildfire problem through evidence building and demonstration trials within the South Wales Valleys. We have taken a co-productive approach to exploring the issues and making recommendations.

Healthy Hillides explores wildfire as an environmental, socio-economic, cultural, and incident response challenge. The project has looked at the many and varied environmental and social connections to wildfire. It is recognised that no one action can tackle the challenge of wildfire, to eradicate, minimise or reduce impact. A suite of actions across society are needed to ensure a resilient landscape, resilient communities, and resilient public services.

Prevention: To adapt and change behaviours which will create a wildfire wise culture across communities, public services, and land managers. This will act to reduce the behaviours which increase risks and build resilience to wildfire.

Response: Actions to reduce risk, tackle ignitions, fuels, and ways in which we manage the landscape, our interaction with the environment and tactical response to wildfire.

Education: Increase understanding of the wildfire cycle, how actions can reduce or increase risk. Raise awareness of the environmental and social connections to wildfire and the Welsh landscape. Build capabilities to adapt and to act preventatively to reduce wildfire, to build resilience in the environment and social, wellbeing and economic resilience in communities.

This Community Risk Assessment Guide is informed by the Wildfire Wise Community Approach Report. In this report a series of recommendations were made to tackle wildfire impacting communities. See the full paper for all the recommendations. This is a risk assessment written to inform communities, community leaders and support services, to raise awareness and understanding of wildfire risk and practical mitigation measures which can reduce risk and build community resilience to wildfire.

This report is informed by the Healthy Hillides Demonstration project, funded through the Welsh Government European Agricultural Fund for Rural Development fund. The project was delivered in a collaborative way talking to a range of stakeholders within communities and professional organisations. This report was written by Becky Davies, with input from the wider Healthy Hillides Project Team and information gathered from wider stakeholder discussions and input.

Wildfire Wise Wales Doeth am Dân Cymru: Crynodeb Gweithredol

Mae prosiect Llethrau Llon yn ddull cydweithredol o reoli tanau gwyllt, wedi'i gefnogi gan Gronfa Amaethyddol Ewrop ar gyfer Datblygu Gwledig trwy Lywodraeth Cymru. Wedi'i lywio gan bedwar partner craidd, sef Cyfoeth Naturiol Cymru, Gwasanaeth Tân ac Achub De Cymru, Ymddiriedolaeth Natur De a Gorllewin Cymru, a Chyngor Bwrdeistref Sirol Rhondda Cynon Taf, mae'r fenter yn hyrwyddo cydweithio ar gyfer rheoli tanau gwyllt mewn ffordd integredig ar raddfa'r dirwedd.

Gan weithio gyda sefydliadau, rhanddeiliaid, a chymunedau allweddol, mae prosiect Llethrau Llon yn canolbwyntio ar lunio datrysiaid rhagweithiol gydol y flwyddyn i broblem dymhorol tanau gwyllt trwy ddatblygu tystiolaeth a threialon arddangos yng Nghymoedd De Cymru. Rydym wedi mabwysiadu dull cydgynhyrchiol o archwilio'r materion a gwneud argymhellion.

Mae Llethrau Llon yn archwilio tanau gwyllt fel her amgylcheddol, economaidd-gymdeithasol, diwylliannol ac o ran ymateb i ddigwyddiadau. Mae'r prosiect wedi edrych ar y cysylltiadau amgylcheddol a chymdeithasol niferus ac amrywiol â thanau gwyllt. Cydnabyddir na all un cam gweithredu fynd i'r afael â her tanau gwyllt, i'w hatal neu i leihau eu heffaith. Mae angen cyfres o gamau gweithredu ar draws cymdeithas i sicrhau tirwedd wydn, cymunedau gwydn a gwasanaethau cyhoeddus gwydn.

Atal: Addasu a newid ymddygiad a fydd yn creu diwylliant doeth am danau gwyllt ar draws cymunedau, gwasanaethau cyhoeddus a rheolwyr tir. Bydd hyn yn lleihau'r ymddygiadau sy'n cynyddu'r risgiau ac yn meithrin gwytnwch rhag tanau gwyllt.

Ymateb: Camau i leihau'r risg, mynd i'r afael â thaniadau, tanwydd a ffyrdd yr ydym yn rheoli'r dirwedd, ein hymwneud â'r amgylchedd ac ymateb yn dactegol i danau gwyllt.

Addysg: Cynyddu dealltwriaeth o'r cylch tanau gwyllt, sut y gall gweithredoedd leihau neu gynyddu'r risg. Codi ymwybyddiaeth o'r cysylltiadau amgylcheddol a chymdeithasol â thanau gwyllt a thirwedd Cymru. Meithrin galluedd i addasu ac i weithredu'n ataliol i leihau tanau gwyllt, i feithrin gwytnwch yn yr amgylchedd a gwydnwch mewn cymunedau o ran lles, cymdeithas a'r economi.

Mae'r Canllaw Asesu Risg Cymunedol hwn wedi'i lywio gan Adroddiad Dull Cymunedol Wildfire Wise. Yn yr adroddiad hwn gwnaed cyfres o argymhellion ar gyfer mynd i'r afael â thanau gwyllt sy'n effeithio ar gymunedau. Er mwyn darllen yr holl argymhellion gweler y papur llawn.

Mae hwn yn asesiad risg a ysgrifennwyd i hysbysu cymunedau, arweinwyr cymunedol a gwasanaethau cymorth, i godi ymwybyddiaeth a dealltwriaeth o risg tanau gwyllt a mesurau lliniaru ymarferol a all leihau risg a meithrin gwydnwch cymunedol i wrthsefyll tanau gwyllt.

Mae'r asesiad risg hwn yn cael ei gyfarwyddo gan brosiect Arddangos Llechweddau Llon, sy'n cael ei ariannu drwy Gronfa Amaethyddol Ewrop ar gyfer Datblygu Gwledig Llywodraeth Cymru. Cyflwynwyd y prosiect mewn ffordd gydweithredol gan siarad ag amrywiaeth o randdeiliaid o fewn cymunedau a sefydliadau proffesiynol. Ysgrifennwyd yr adroddiad hwn gan Becky Davies, gyda mewnbwn gan y Tîm Prosiect Llechweddau Llon ehangach a gwybodaeth a gasglwyd o drafodaethau a mewnbwn ehangach gan randdeiliaid.

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1. Introduction: The Healthy HillSides Wildfire Demonstration and Evidence Project.

The Healthy HillSides project is a collaborative approach to wildfire management on a landscape scale. Steered by four core partners; Natural Resources Wales; South Wales Fire and Rescue Service; Wildlife Trust for South and West Wales; and Rhondda Cynon Taf County Borough Council, the initiative champions a collaborative working. The project is supported by the European Agricultural Fund for Rural Development through Welsh Government.

Working with key organisations, stakeholders, and communities, the Healthy HillSides project focuses on creating a proactive year-round solution to a seasonal wildfire problem through evidence building and demonstration trials within the South Wales Valleys. We have taken a co-productive approach to exploring the issues and making recommendations.

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In presenting the findings of the project, a series of recommendations have been made. In response to the recommendations around community resilience we provide this guide to risk assessment of wildfire within the Rural Urban Interface (RUI).

2. What is Wildfire?

Wildfire is an uncontrolled, rapidly spreading fire that can consume vegetation; woodlands, forests, grasslands, gardens, buildings or structures. Wildfires can cause significant damage to the environment, wildlife, property, and pose serious risks to human safety. They are often fuelled by dry conditions, strong winds, and high temperatures, making them difficult to contain and extinguish.

South Wales has one of the highest numbers of wildfire incidents within the UK. Wales is 8 times more likely to have wildfire incidents than any other UK country¹. In South Wales this is primarily an antisocial behaviour problem, with wildfires being started deliberately

Under climate change predictions wildfire amongst other environmental hazards are set to become more prevalent, this will have significant direct and indirect impacts on landscape character. Nationally it is recognised that the impacts of climate change will increase the risk of wildfires, highlighting agriculture, forestry production and biodiversity being at increased risk from wildfire².

Firefighting incident response has evolved to tackle these challenging fires, requiring a different set of skills, equipment and strategy to tackle wildfires. Wildfire fighting uses a variety of different techniques in an incident, but also increasingly having wildfire prevention measures in place are important to support effective fire suppression, but also providing a safer environment for firefighters to put out wildfires. Building in preventative measures is something we have been doing within properties for decades, through smoke alarms, fire doors and fire safety. This is just as essential in the wider landscape where wildfire is a persistent and growing challenge.

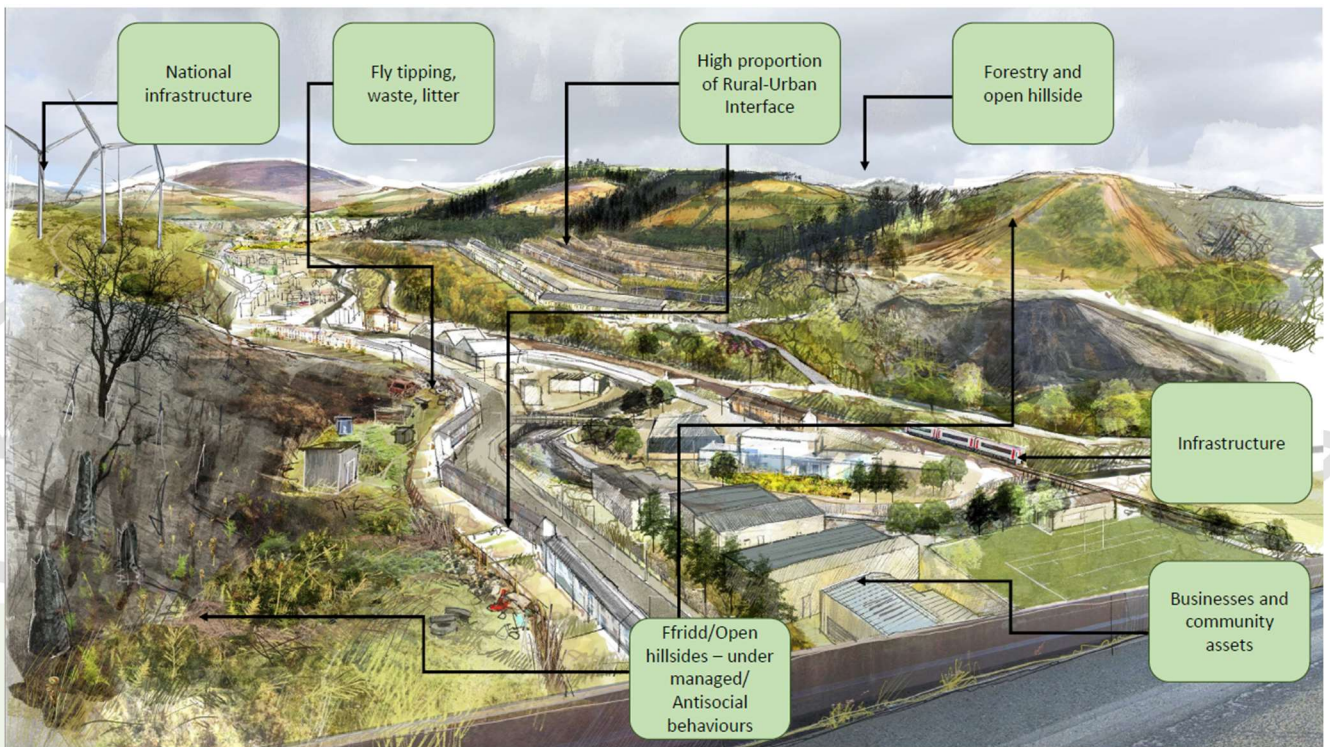
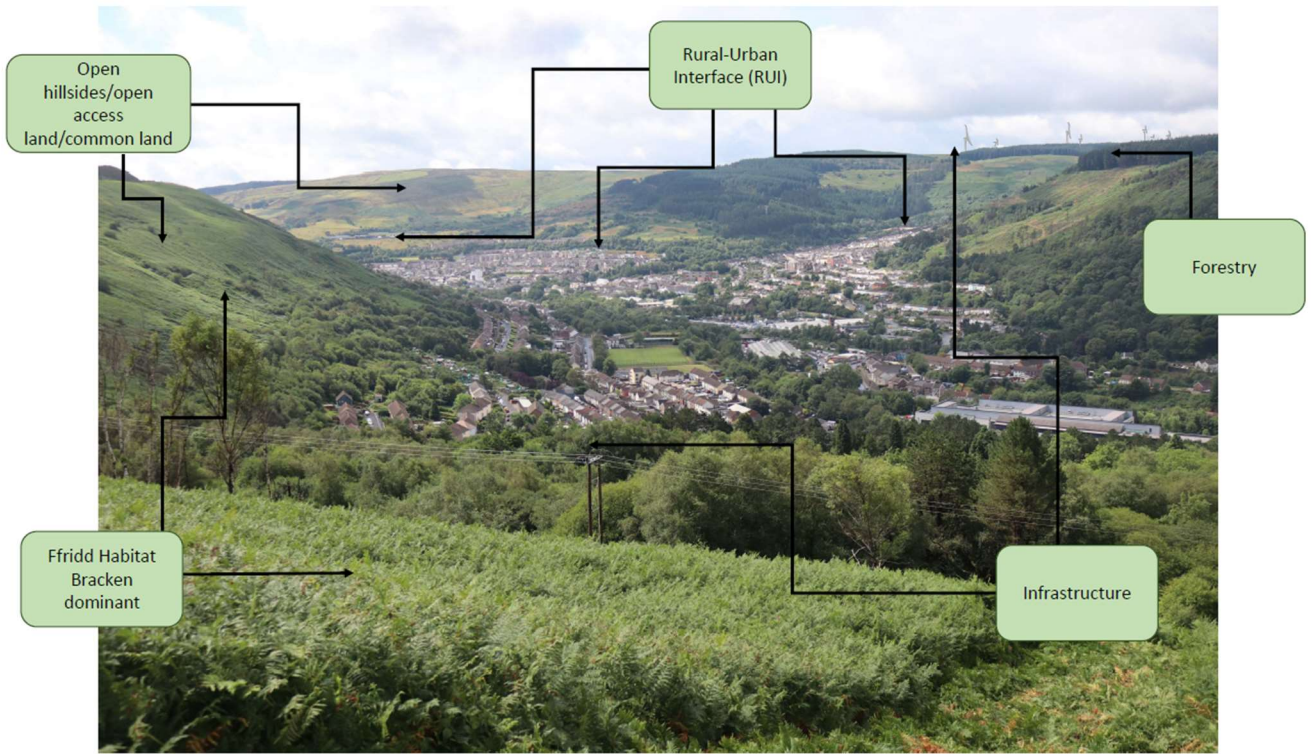
Individuals and community behaviour affects wildfire risk. Behaviours can increase wildfire spread and severity, resulting in damaging impacts on communities and the environment. When wildfire occurs, it diverts fire and rescue services reducing capacity for long periods. It is an important part of the wildfire management to ensure communities are making efforts to reduce their risk by protecting their own properties and communities and supporting firefighters.

2.1 The Wildfire Prone Landscape

The South Wales Valleys landscape has a distinct and challenging urban interface, with some of the most populous and urban areas being immediately adjacent to the ffridd hillsides, a landscape dominated by vegetation which are highly susceptible and adapted to fire. This close interaction of communities and high fuel loads, also known as the Rural - Urban Interface (RUI) increases the risk of wildfires and risk to people and property.

¹ [Forest Research 2011: Wildfire in Wales](#)

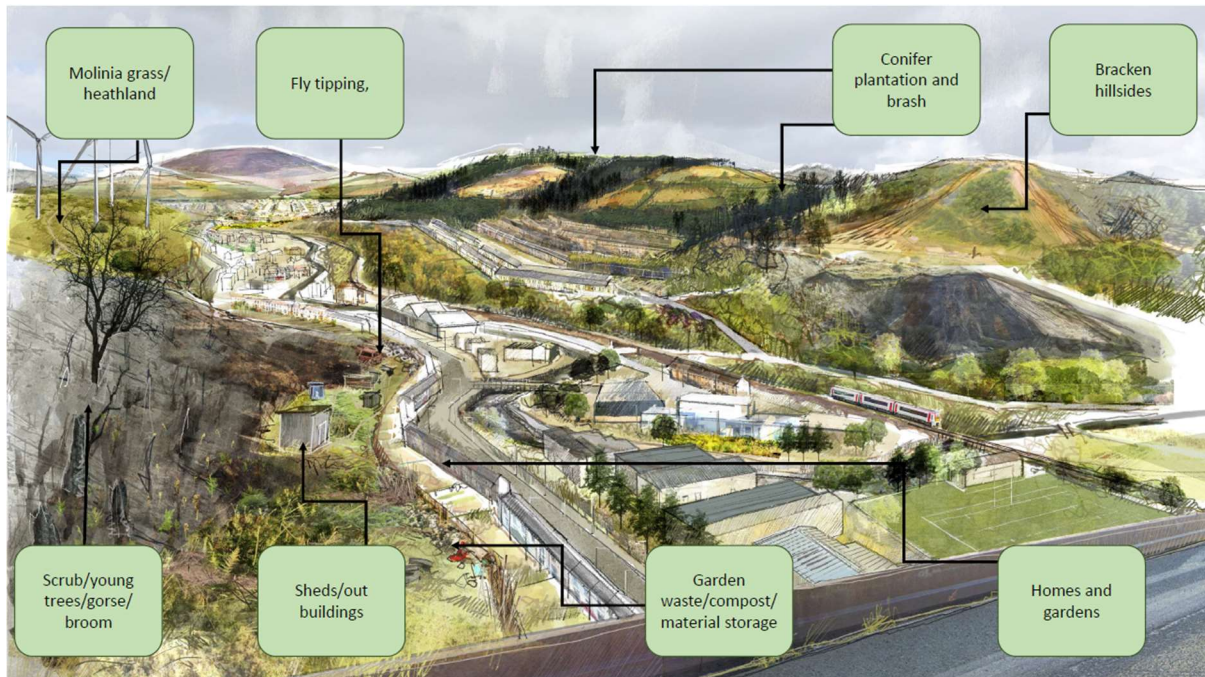
² Climate Change Committee (2021). Independent Assessment of UK Climate Risk. Available at www.ukclimaterisk.org



2.2 Wildfire Fuels

Fuel loading comes from both the modified natural environment, vegetation within the natural landscape which has been managed currently or in the past to create a modified landscape where species which create a higher fuel load and therefore fire risk within the

landscape. Changes in agricultural practices, such as reduced grazing or plantation management alter the fuel loads within the landscape.



Communities and individuals also contribute to fuels in the landscape, from our homes and businesses, to our garden fences and gardens to the antisocial aspects of the rural-urban interface with flytipping, litter and garden waste.



2.3 Primary vegetation fuels:

The amount of available fuel, such as trees, bracken, grass, and dead plant materials affects the likelihood and severity of fires. Denser vegetation leads to more intense fires that can

spread quickly and burn for longer. Some types of vegetation are more flammable than others. Fine, dry material such as grasses and twigs can catch fire and burn very easily.

There are some plants within the landscape are a particular problem in the Valleys landscape. Bracken, Molinia and Gorse/Broom are problem fuels in the South Wales valleys. These species are part of a healthy and resilient landscape known as ffridd and moorland habitats, but due to changes in management they have become dominant species and problem fuels.

- Bracken



- Molinia



- Gorse and Broom



3. Community Wildfire Risk Assessment

An objective of the Healthy Hillside project was to deliver a targeted community initiative designed to work with communities to reduce individual and localised wildfire risk, through awareness, education and engagement. The [Firewise USA](#) model and [Firewise UK](#) being trialled in Dorset, requires a dedicated resource to work with communities to encourage and embed an awareness and ownership of the risks from wildfire and their personal risk to wildfire within the urban interface. The Healthy Hillside project has explored applying the Firewise model in Wales, to empower communities to take responsibility and work together to reduce their risk from wildfire.

Through engagement and exploring the challenge it was clear that supporting communities, particularly those within the most at-risk areas was an important objective. However, this is an additional resource requirement to public services, which are already at capacity and greatly under-resourced. Ways to explore embedding additional messages into existing opportunities, working across different agencies and increasing general awareness is a more likely and achievable outcome under current circumstances.

Due to the landscape wildfire risks and social challenges in addition to a future adapting to climate change, a need for a more integrated consideration of both environmental and community resilience is required to reduce wildfire risk. This needs to become embedded in the community culture, for people living and working in key higher risk areas.

Within the Healthy Hillside project area, a greater need has also been identified for public services and public assets to be better aware, with preventative and proactive measures undertaken, rather than reactive management. This is for the most part representative for other areas in Wales.

The Healthy Hillside project has also identified the need for land managers and owners across a spectrum of land use to have a greater understanding and awareness of wildfire risk and incorporate wildfire risk management into the year-round management of the land. Training and practical actions are required to adapt to the existing and increasing wildfire risk.

There is also an identified need for people using the natural environment for access and recreation to be more aware and educated on wildfire risks, increasing ownership and responsibility within the natural environment. This extends to education and safe use of fire messaging through traditional and social medias.

We have made a series of recommendations, with two key recommendations which advocate that action is planned, undertaken and managed both strategically and on the ground to reduce community risk to wildfire. These recommendations are:

- Recommendation: Wildfire resilience is incorporated into strategic local and regional planning. Specific mitigation measures for local planning decisions should be required for public safety. Appropriate planning guidance should be developed to

guide planning authorities and developers in building wildfire resilience into future development in wildfire hotspots.

Wildfire is a persistent challenge in the rural-urban interface. Where there is poor land management, with high fuel loads, there is an increased risk of high frequency and severity wildfire. This needs to be considered in strategic planning, both locally and regionally. This is a planning consideration in many countries across the globe. Inclusion of wildfire mitigation and grounds maintenance through planning permissions and upgrading of infrastructure in priority places will ensure communities are better prepared for wildfire in the long term. This was highlighted as an important future wildfire resilience action through our community workshop discussions.

- **Recommendation:** Community service provisions should build in wildfire awareness in wildfire hotspots, risk assessments within communities can highlight key mitigation measures to reduce risks.

Wildfires in the South Wales Valleys are almost always deliberately started. Wildfire is a symptom of wider issues and the root causes are complex and embedded within communities. It was highlighted in community discussions the need for understanding and consideration root causes. Some of the exacerbating issues are linked to typical service management issues within communities. It was therefore raised that where there is high wildfire risk that this is considered in community services management e.g. waste management.

Wildfires can be associated with refuse fires and then the increased risk to properties where waste is stored close to properties. Reduced waste collections, the streamlining of waste management services, and the control over recycling centres have put pressure on local communities, particularly where there are lower incomes where there is no means of taking refuse to recycling centres. Appraising a site or community through a risk assessment would support linking services and identify mitigation measures.

4. What is risk management?

Risk management is a step-by-step process to control the likelihood of harm caused by the hazard of wildfire. The steps are:

1. Identify the hazards
2. Assess the risks
3. Control the risks
4. Record your findings
5. Review the controls

By following these steps the risks and measures to reduce the risks can be identified, implemented and reviewed. This is a simple process that can be adapted to scale and carried out simply by individual tenants or homeowners, land managers or community practitioners.

This step-by-step guide aims to provide a basic overview of the risks and how to manage them. It should be noted that this is a generic guide and the risks, solutions and controls are many and varied and will depend on the specifics of the site being assessed. This is a guide and a way of considering wildfire risks and putting in controls which will reduce risks. It is recommended that advice is sought from the local fire service.

5. Step by Step Wildfire Risk Assessment

Step 1. Identify the Hazards

Consider yourself, people, animals, community and look around your land/external property/site and consider the hazards if a wildfire was to happen.

Wildfire hazards include (not exhaustive):

- **Direct Fire Threat:** The immediate danger of being caught in the path of a wildfire can lead to physical harm; burns, smoke inhalation, or risk to life.
- **Smoke Inhalation:** Smoke from wildfires contains harmful pollutants and can cause respiratory problems, especially for those with pre-existing conditions.
- **Evacuation Challenges:** Evacuating during a wildfire can be chaotic and dangerous, with the risk of accidents or getting trapped in traffic.
- **Property Damage:** Homes and infrastructure can be destroyed by wildfires, leading to financial losses and displacement.
- **Service/Infrastructure disruptions – Electricity disruption from damage to power lines. Water Supply Issues:** Fires can disrupt the local water supply. Communication disruption from damage to broadband and phone line infrastructure.
- **Long-Term Health Effects:** Exposure to wildfire smoke can have long-term health consequences, including respiratory problems and heart issues.
- **Psychological Impact:** The stress and trauma of dealing with wildfires and their aftermath can have lasting psychological effects.
- **Economic Impact:** Communities can suffer economically due to costs to repair and replace property, business interruption, loss of assets and infrastructure, access route disruption requiring diversions, reduced tourism, and increased firefighting and recovery costs impacting services.
- **Ecosystem Changes:** Wildfires can alter ecosystems, affecting wildlife habitats and water quality.

Step 2. Assess the risks

Now decide how likely it is to occur and how serious the impact could be. This is assessing the level of risk and you will need to consider: the **cause, likelihood, and impact**.

- **Cause** – The “spark” that can start a wildfire. South Wales has one of the highest numbers of wildfire incidents within the UK. Since 2010 there have been over 75000 wildfire incidents in South Wales. This is primarily an antisocial behaviour problem, with

wildfire being started deliberately. When considering the site you are assessing, think of potential causes of fire, here are some common potential ignitions (not exhaustive).

- Arson
 - Burning waste
 - Equipment and vehicle use
 - Fireworks and sky lanterns
 - Antisocial behaviours
 - Power generation, transmission, and distribution
 - Railway operation & maintenance
 - Recreation – barbeques (BBQ) & campfires
 - Smoking
 - Electric fences
 - Littering and fly tipping
 - Structural fires
- **Likelihood** – Due to the majority of wildfire being set deliberately or accidentally, the likelihood of wildfires starting can be persistent where there is a local history of wildfires. There are factors which can increase the chance of a wildfire occurring and/or make it worse. You might want to consider the following factors:
 - **Access** - Who has access to the surrounding land or the land in your management? Are there public rights of way, access tracks, permissive or informal paths, open access land?
 - **Rural-Urban Interface (RUI)** - Are you on the rural urban interface where there is open landscapes or high fuel loads directly onto properties?
 - **Anti-Social Behaviours** – is there a history of antisocial behaviour of any kind on the site or surrounding land? Is there a history of wildfire? Are there areas of fly tipping, waste or people gathering/camping?
 - **High fuel Loads** – Fuel is anything that can be burned and increases fire severity and cover. Fuel can be vegetation within the landscape (trees, bracken, gorse, tall grass), but also fencing, rubbish (litter, fly tipping, stored waste), composts/cut vegetation, Invasive non native species (particularly dead Japanese knotweed), flammable infrastructure or property (sheds, out houses).
 - **Weather** – fire risk increases in dry weather and high temperatures. This weather dries out vegetation and increases flammability. Strong winds can increase spread of fire and flame length, increasing fire intensity
 - **Climate** – under climate change predictions more frequent episodes of dry weather and drought are predicted. Prolonged periods of drought increase the likelihood of wildfire. Climate change also predicts warmer wetter winters and springs, this can increase growth of vegetation increasing fuel loads.
 - **Fire behaviour** – this is affected by the environment which influences the fire intensity, rate of spread and flame length. Fires tend to spread more quickly uphill due to increased heat and wind. Fires are more likely to take hold on south facing hills travelling uphill – therefore assets and communities on these hills are more likely to experience fires.

- **Impact** – who or what might be affected and how will this happen.
 - People – acute and chronic health impacts including burns; smoke inhalation; reduced air quality.
 - Property – damage to buildings, vehicles, and personal possessions.
 - Livelihoods – damage to buildings, vehicles; equipment; stock.
 - Livestock.
 - Nature & biodiversity.
 - Historical & cultural sites.
 - Infrastructure - Community services - healthcare, education; local government services.
 - Transport Infrastructure – road, rail, public rights of way.
 - Utilities Infrastructure - electricity grid, gas networks, water supply, sewage system, communications networks.

Step 3 - Control the Risks

Can you eliminate risks identified altogether? This is difficult with wildfire especially due to the nature of wildfire being started by people. So, how can you control the risks so that harm is unlikely, and the impact lessened?

- How do you control risks? Behavioural challenges? Physical interventions?
- What are you already doing to control the risks?
- What further actions you need to take to control the risks?
- Who needs to carry out the actions?
- When the actions are needed to be completed by.

Controls are very specific to the hazards and risks identified for the site. Controls can be physical and on the ground interventions or maybe ways of working, getting the right people/stakeholders around the table. Controls maybe simple and quickly delivered whilst others may require additional funding, assessment or strategic in nature. A combination of scale of controls is likely.

Some examples of controls:

- Responsible disposal of Behaviour change associated with waste disposal to reduce negative behaviours such as fly tipping and litter.
- Removal and safe storage of waste materials, flammable materials in or around gardens and properties.
- Responsible waste removal, storage of garden materials.
- Use of non flammable materials for boundaries, stone or brick built walls, metal or chain link fences, non flammable composite fencing – to replace plastic or wooden fencing.
- Vegetation management along fence lines within or external to gardens.
- Non flammable infrastructure along adjoining land – garden design and landscaping to create defensible spaces.
- redesigning or changes to management of your land to reduce fuel and/or exposure to causes. E.g. mowing firebreaks; livestock grazing.

- replacing materials, machinery or processes for management of community green space.
- establishing community groups and collaborative working.

Step 4. Record your findings

Ideally, you should record your findings, including:

- Who and what might be harmed or damaged by wildfire and how?
- What are you doing to control the risks?
- What you plan to do to further control the risks?

To help you, we have a Wildfire risk assessment template you can use in Appendix 1. This should drive local discussion, behaviour change, and build potential future planning or strategic direction to build resilience to wildfire. The assessment should influence day to day behaviours and support on the ground control of the risks.

Step 5. Review the controls

You must review the controls you have put in place to make sure they are working. You should also review them if:

- you think they may no longer be effective.
- there are changes that could lead to new risks you haven't considered before.
- new risks or hazards have been identified.
- you receive additional advice and/or support.

Update your risk assessment record with any changes you make.

N.B. Please note that the information in this guide is not exhaustive. You need to consider you own personal circumstances and adapt the risk assessment accordingly. Seeking advice from your local Fire and Rescue Service will support more effective risk assessment.

6. A Wildfire Resilient Environment

Individuals or communities can assess the risk around their properties, through simple assessments, looking at vegetation on neighbouring land and the additional fuels around their boundaries and property from their own actions or neighbours. Communities can take action to reduce their wildfire risk, by adopting wildfire wise behaviours and have a greater awareness of their personal and community risk.

Where there is public service ownership or management of land, wildfire risk should be considered by the appropriate public service. Property in private ownership should also be aware of and mitigate those risks. Development planning, social housing refurbishment and public services like waste collection should be wildfire aware and adapt to the pressures and challenges of high-risk communities.



We have identified actions people can undertake to reduce their personal and community risk within the Wildfire Prevention and Mitigation Strategy and we have identified and gathered learning about community engagement in the Wildfire Wise Community Approach. These guides should inform your wildfire risk assessment.

