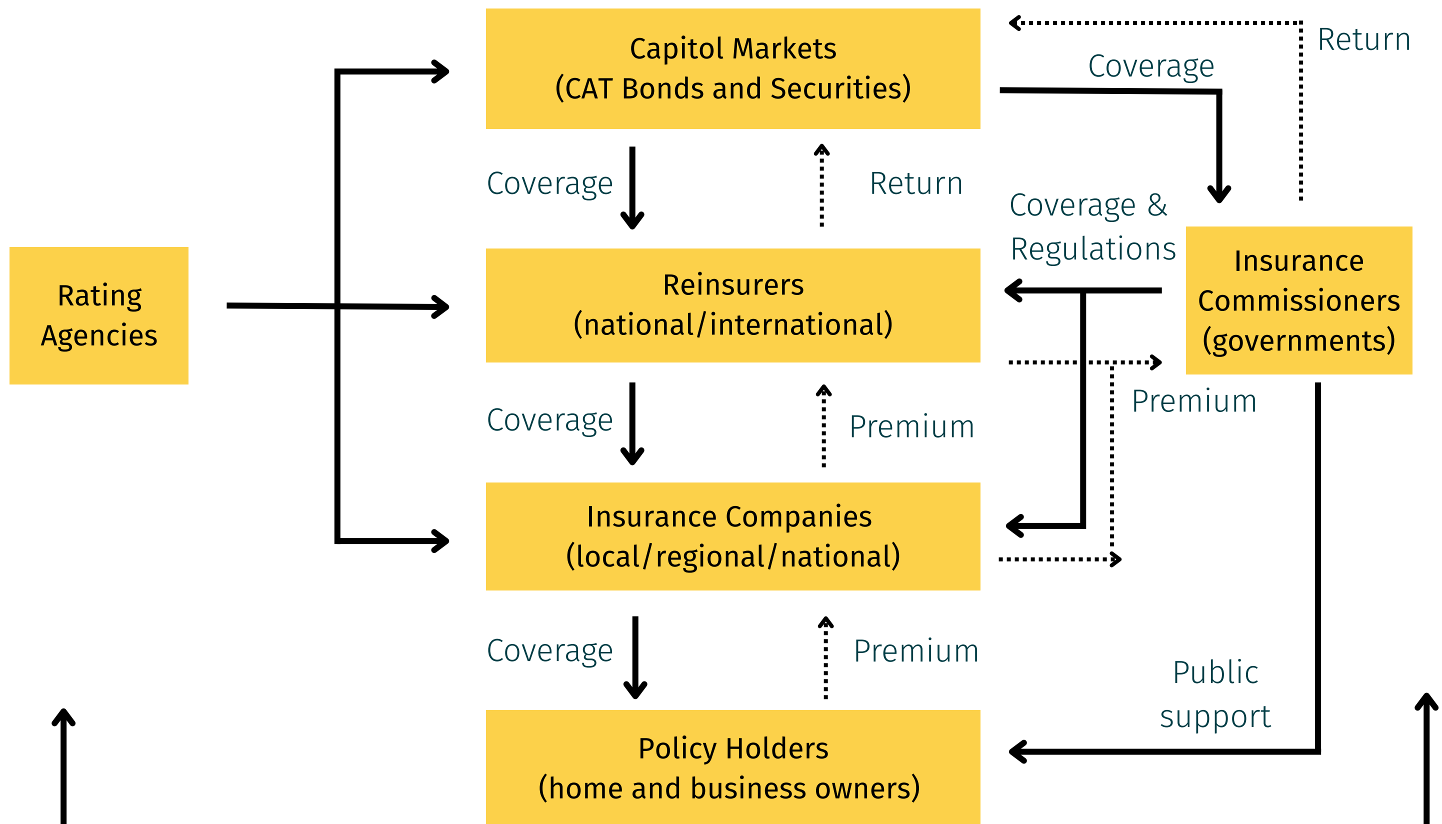
WASHINGTON RESOURCE CONSERVATION & DEVELOPMENT COUNCIL

“Ecosystem” of Wildfire Insurance

Wildfire Insurance

Relational map of wildfire insurance system

Overview of an insurance-reinsurance ecosystem[1]



Overview of entities and specific professional roles

- Insurance Agents and Brokers
- Risk Modeling and Technology Companies
- Underwriters
- Actuaries
- Legal and Consulting Firms
- Other Government Agencies
- Nonprofits
- Claims Adjusters and Claims Management Companies
- Disaster Recovery and Restoration Companies

[1] Goda, Katsuichiro & Wenzel, Friedemann & Daniell, James. (2015). Insurance and Reinsurance Models for Earthquake. 10.1007/978-3-642-35344-4_261. Figure 3, use permission granted.

Introduction

There are several types of businesses, organizations, and specific professional roles involved in the provision, support, and management of the wildfire insurance system. These entities and professional roles have various functions in the ecosystem of wildfire insurance, from assessing risk and providing and regulating coverage to offering mitigation services and managing claims. Each plays a critical role, constituting a comprehensive approach to handling the risks and impacts associated with wildfires. Multiple professional roles may be included within an insurance company, and services may be provided by external firms.

Insurance companies operate at various geographic scales:
International: Operate in multiple countries, providing global coverage and policies that cater to multinational clients.
National: Operate within a single country, offering a wide range of insurance products compliant with national regulations.
Local: Focused on specific states, regions or cities, often providing specialized policies tailored to local needs.

These scales allow insurers to cater to different markets and manage risks appropriately based on geographic factors. They navigate and comply with varying regulatory environments, typically across countries and states.

The number of insurance companies offering wildfire insurance in the U.S. has been shrinking, particularly in high-risk areas. Some companies offer specialty insurance and "surplus lines" of coverage, and in multiple states there are specific plans that offer wildfire insurance to consumers unable to find coverage in the private market (e.g. Washington FAIR Plan).

Overview of an insurance-reinsurance ecosystem

1. Capital Markets

Description: Capital markets provide alternative sources of risk financing through financial instruments such as catastrophe (CAT) bonds and insurance-linked securities (ILS), which transfer wildfire and other catastrophic risks to investors.

Function: Help insurance and reinsurance companies manage exposure to extreme wildfire losses by securitizing the risk and selling it to global investors. These instruments raise capital for potential disaster payouts while offering investors returns that are uncorrelated with traditional market risks. They add liquidity, diversify risk pools, and bolster the insurance industry's financial resilience.

Examples: Common instruments include CAT bonds, collateralized reinsurance, and industry loss warranties (ILWs). Firms involved include Swiss Re Capital Markets, GC Securities, Nephila Capital, and Icat Managers.

2. Rating Agencies

Description: Independent organizations that assess the financial strength and creditworthiness of insurance companies and other financial institutions.

Function: Support the stability of the insurance ecosystem by evaluating insurers' ability to meet policyholder obligations, particularly under stress from events like wildfires. Their ratings influence market trust, investor confidence, and regulatory oversight. A downgrade in rating can affect a company's reinsurance terms, investment appeal, and overall market participation.

Examples: Major rating agencies include A.M. Best (insurance-focused), Standard & Poor's (S&P), Moody's Investors Service, and Fitch Ratings.

3. Reinsurance Companies

Description: Provide insurance for insurance companies, helping them manage wildfire risk by typically covering large-scale losses.

Function: Protect primary insurers from instability or insolvency by assuming and dispersing a portion of the risk associated with significant and catastrophic events like wildfire.

Examples: Major players in the reinsurance industry include companies such as Munich Re, Swiss Re, and Hannover Re, among others.

4. Insurance Commissioners

Description: Public officials or agencies responsible for regulating the insurance industry within a state or jurisdiction.

Function: Oversee the licensing, financial solvency, market conduct, and consumer protections related to insurance companies. Commissioners ensure insurers are operating fairly and transparently, particularly in high-risk sectors like wildfire insurance. They may also help coordinate disaster response, implement reforms, and facilitate state-backed insurance options (e.g., FAIR Plans).

Examples: Washington State Office of the Insurance Commissioner (OIC), California Department of Insurance, and similar agencies in other states.

5. **Insurance Companies**
Description: Create wildfire insurance policies for homeowners, businesses, and other entities. Policies provide financial protection against specific risks in exchange for a premium

Function: Core functions include risk pooling, underwriting, claims management, and investment.
- Risk pooling - Collection of premiums from many customers to pool and spread-out financial risks.
- Underwriting - Evaluation and decision-making on which risks to insure, and at what price (premium).
- Claims management - Pay out of money to policyholders who experience covered losses.
- Investment - Investing collected premiums to earn income and ensure funds are available for claims.

Examples: State Farm, Allstate, Safeco, PEMCO, Mutual of Enumclaw, Farmers Insurance.

6. **Policyholders**
Description: Individuals, homeowners, businesses, and organizations that purchase wildfire insurance coverage to protect themselves from financial losses due to wildfire damage.

Function: Serve as the primary customers in the insurance ecosystem. Policyholders pay premiums, submit claims in the event of a loss, and are often the focus of mitigation programs and education efforts. Their participation and risk profiles influence underwriting decisions, pricing, and insurer behavior.

Examples: Homeowners in wildfire-prone regions, small businesses in the wildland-urban interface (WUI), municipalities seeking coverage for public assets.

Overview of entities and specific professional roles

1. **Insurance agents and brokers**
Description: Acting as intermediaries for insurance companies, they sell wildfire insurance policies on behalf of insurance companies to consumers and businesses.

Function: Help clients find suitable insurance policies, provide advice, and assist with the application process.

Examples: Independent insurance agencies, captive agents representing one insurer, and brokers who work with multiple insurers.

2. Risk Modeling and Technology Companies

A. Risk Modeling Companies

Description: Risk modelers develop probabilistic wildfire risk models, hazard mapping, and exposure analysis.

Function: Develop sophisticated interdisciplinary models for wildfire risk, conduct hazard and risk assessments that support risk assessment firms, and insurance companies.

E*xamples:* Verisk, Cotality, and Redzone

B. Technology Companies

Description: Technology companies develop tools fire predictive modeling and data analytics and platforms to enhance wildfire risk assessment and insurance processes used by risk modelers, insurance companies, and mitigation companies.

Function: Provide data analytics, satellite imagery, predictive modeling, and AI-driven risk evaluation and assessment tools.

Examples: Zesty.ai, Cape Analytics, and various geospatial analytics companies.

3. Fire Protection and Mitigation Services

Description: Offer services aimed at reducing the risk and impact of wildfire on properties. Collaborate with policyholders and insurance companies to implement mitigation strategies.

Function: Provide wildfire mitigation services such as creating defensible space, clearing vegetation, and installing fire-resistant materials.

Examples: Local fire protection contractors, landscaping firms specializing in fire prevention, and companies offering fireproof and resistant building materials.

4. Legal and Consulting Firms

Description: Provide legal and advisory services related to wildfire insurance claims, compliance, and risk management.

Function: Assist with legal disputes, regulatory compliance, and strategic risk management planning for insurance companies and policyholders.

Examples: Law firms specializing in insurance claims and consulting firms offering strategic advice on risk management.

5. Other Government Agencies
Description: Federal, state, and local government bodies that contribute to wildfire risk reduction, data provision, regulatory enforcement, and public safety policies that impact insurance availability and pricing.

Function: Develop wildfire risk maps, enforce building codes, distribute mitigation funding, and manage emergency response and recovery. Their regulations and programs influence underwriting practices and community risk ratings.

Examples: U.S. Forest Service, Federal Emergency Management Agency (FEMA), state departments of natural resources (e.g., WA DNR), State Patrol/Fire Marshal, Washington Military Department - Emergency Management Division, state building code councils, Washington State Conservation Commission, local Conservation Districts and municipal planning/zoning authorities.

6. Nonprofits
Description: Mission-driven organizations that support wildfire risk reduction, community education, policy advocacy, and capacity building related to insurance and fire resilience.

Function: Facilitate partnerships between insurers, communities, and government, raise awareness of insurance-related wildfire risks, advocate for policy reforms, and implement mitigation programs. They often serve as a bridge between technical, regulatory, and public interests in the insurance ecosystem.

Examples: Fire Adapted Communities (FAC) Network, National Fire Protection Association (NFPA), Insurance Institute for Business & Home Safety (IBHS), Northwest Insurance Council, Washington Resource Conservation and Development Council & WAFAC Learning Network, and Okanogan County Long Term Recovery.

7. Claims Adjusters and Claims Management Companies
Description: Process and settle insurance claims. Some work for specific insurance companies, others are independent companies that work on behalf of many insurance companies or are public adjusters that work directly for policyholders.

Function: Investigate claims, assess, document, and determine the extent of damage, and facilitate the processing and settlement of insurance claims.

Examples: Cunningham Lindsey, Sedgwick, and other independent adjusting firms.

8. Disaster Recovery and Restoration Companies
Description: Work with insurance companies, claims adjusters, and policyholders to provide recovery and restoration services to communities and properties post-wildfire.

Function: Clean up debris, restore damaged structures, develop proactive disaster business planning, and assist with the overall recovery process.

Examples: SERVPRO, Belfor Property Restoration, First Onsite Property Restoration, Kustom US, Venturi Restoration, and other local disaster recovery firms.

9. Actuaries
Description: Analytical professionals who specialize in evaluating data to forecast wildfire-related losses, set insurance rates, and ensure the financial soundness of insurance products.

Function: Actuaries serve as the analytical backbone of insurance companies, bridging the gap between wildfire risk data and the financial decision-making of insurers. Their work influences pricing and eligibility decisions, reinsurance strategy, and long-term market stability.

- Analyze statistical data and risk models to determine the expected future costs associated with providing coverage for wildfires.
- Translate outputs from external risk assessment firms and technology companies into financial terms for the insurance business.
- Support underwriters and product managers by helping price policies and determining insurability.
- Work closely with or serve as a member of reinsurance teams to model exposure and catastrophe risk.
- Estimate the amount of money insurance companies need to set aside (reserves) to pay claims.

Examples: Typically employed by insurance companies, reinsurance firms, rating agencies, capital market firms (for CAT bonds), regulatory agencies (e.g., insurance commissioners), and consulting/risk modeling firms.

10. Underwriters
Description: Decision-making professionals who assess the wildfire-related risk of insuring homes, properties, or businesses and determine the terms and pricing of coverage based on that evaluation.

Function: Underwriters are the gatekeepers of risk selection in insurance companies. They apply wildfire risk data, modeling tools, and company guidelines to make informed decisions about which applicants to insure, under what conditions, and at what cost. Their work directly impacts customer access, company profitability, and the insurance market's responsiveness to changing wildfire threats.

- Evaluate insurance applications and property characteristics (e.g., construction materials, location in the WUI, defensible space) to assess wildfire exposure.

- Use wildfire risk models, aerial imagery, and geospatial data from third-party firms to inform coverage decisions.
- Apply company-specific underwriting guidelines and regulatory requirements to accept, modify, or decline policies.
- Collaborate with actuaries to ensure that pricing matches the level of wildfire risk.
- Communicate risk mitigation requirements (e.g., home hardening, vegetation management) to agents, brokers, and policyholders.
- Monitor and adjust underwriting practices in response to emerging wildfire science, regulations, and loss trends.
- Coordinate with claims and loss control teams to refine risk selection criteria based on past wildfire events.

E*xamples:* Employed by insurance companies, surplus lines carriers, and managing general agents (MGAs). Underwriters often work closely with actuaries and risk modelers to align pricing and risk selection strategies.

Actuaries vs. Underwriters vs. Agents – Relationship and Roles

Aspect	Actuaries	Underwriters	Agents/Brokers
Focus	Big-picture risk modeling, pricing strategy, long-term financial solvency.	Individual or group policy-level risk assessment and decision-making.	Sales and service of insurance policies to customers; relationship management.
Output	Build rating tables, predictive models, catastrophe loss projections, capital/reserve recommendations.	Use actuarial models and risk tools to decide whether to issue a policy and on what terms.	Help clients select policies, explain coverage, submit applications, and assist with claims.
Data	Information about policy portfolios, national/regional historical data, catastrophe modeling, probabilistic forecasting.	Detailed information about individual applicants and properties.	Customer information, property details, and underwriting guidelines.
Scope	Portfolio- or company-wide.	Individual policy level.	Customer-facing, one policy at a time or bundled policies per client.
Decision-making	Sets the framework that guides underwriting decisions and pricing.	Applies that framework to specific cases, possibly adjusting terms based on guidelines.	Does not approve policies but plays a key role in policy selection and communication.
Position in workflow	Earlier stage – define pricing, risk appetite, and product strategy.	Mid-stage – assess eligibility and finalize terms of insurance.	Frontline – initial contact and policy education for customers.