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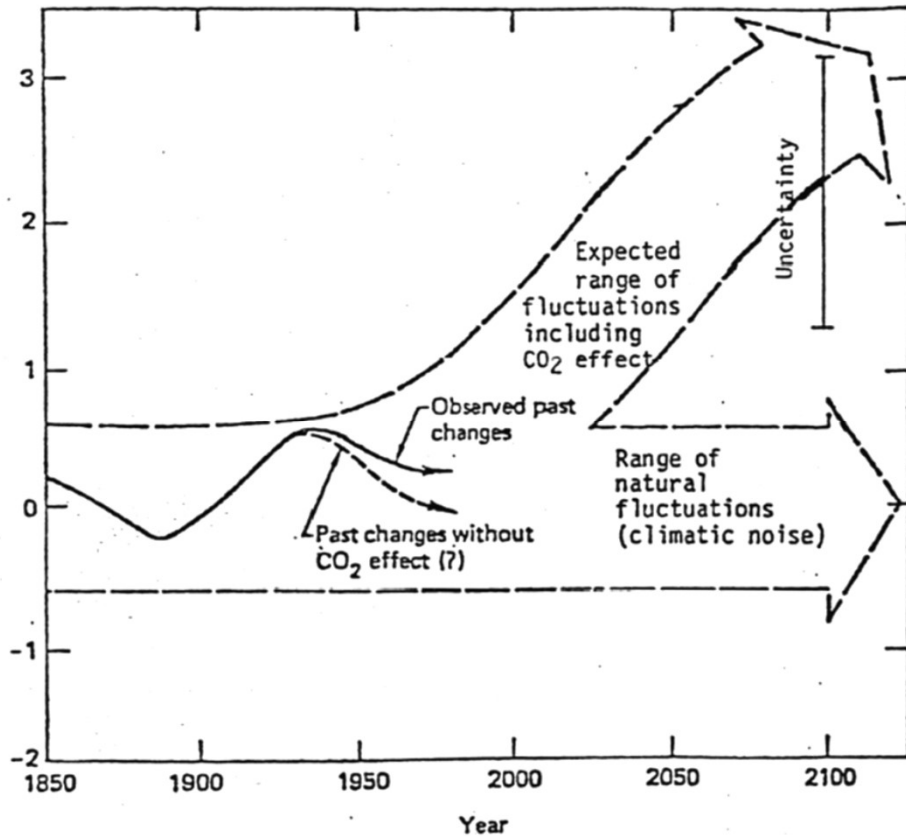
# Boiling the Ocean?

Climate Change Reserving Working Party

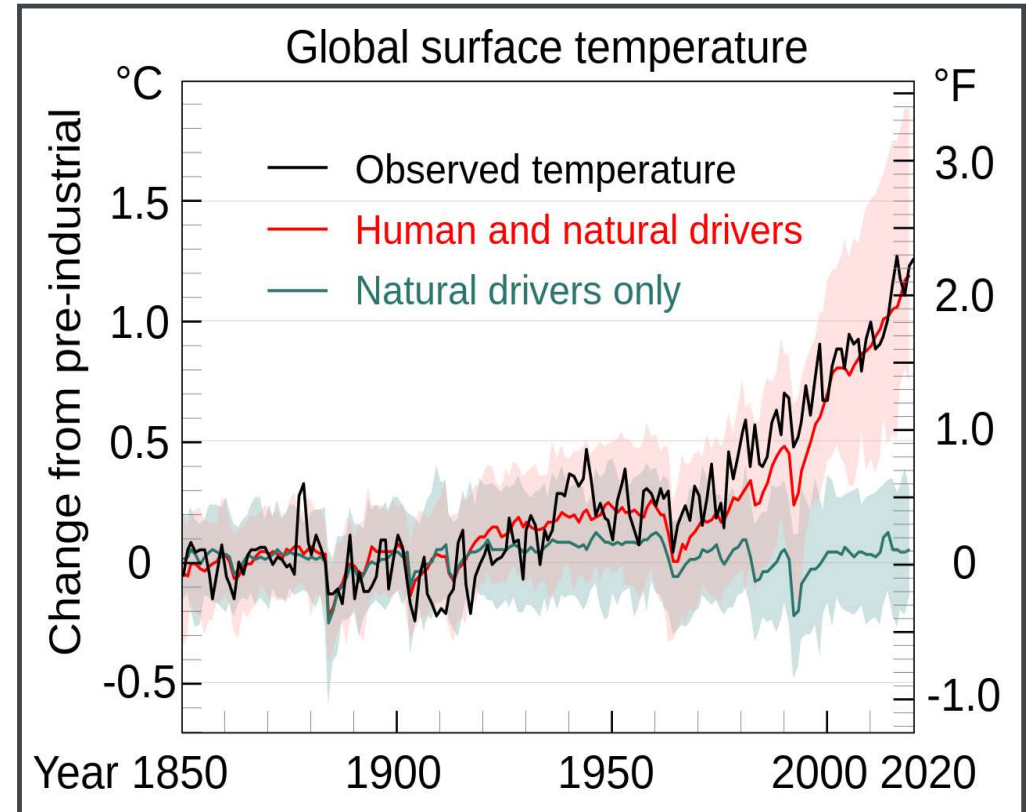
ALEX MARCUSON, JAMES ORR, STEVE PATFIELD, SARAH GRIMSHAW



# Predictions from 1982 v. measurements in 2020

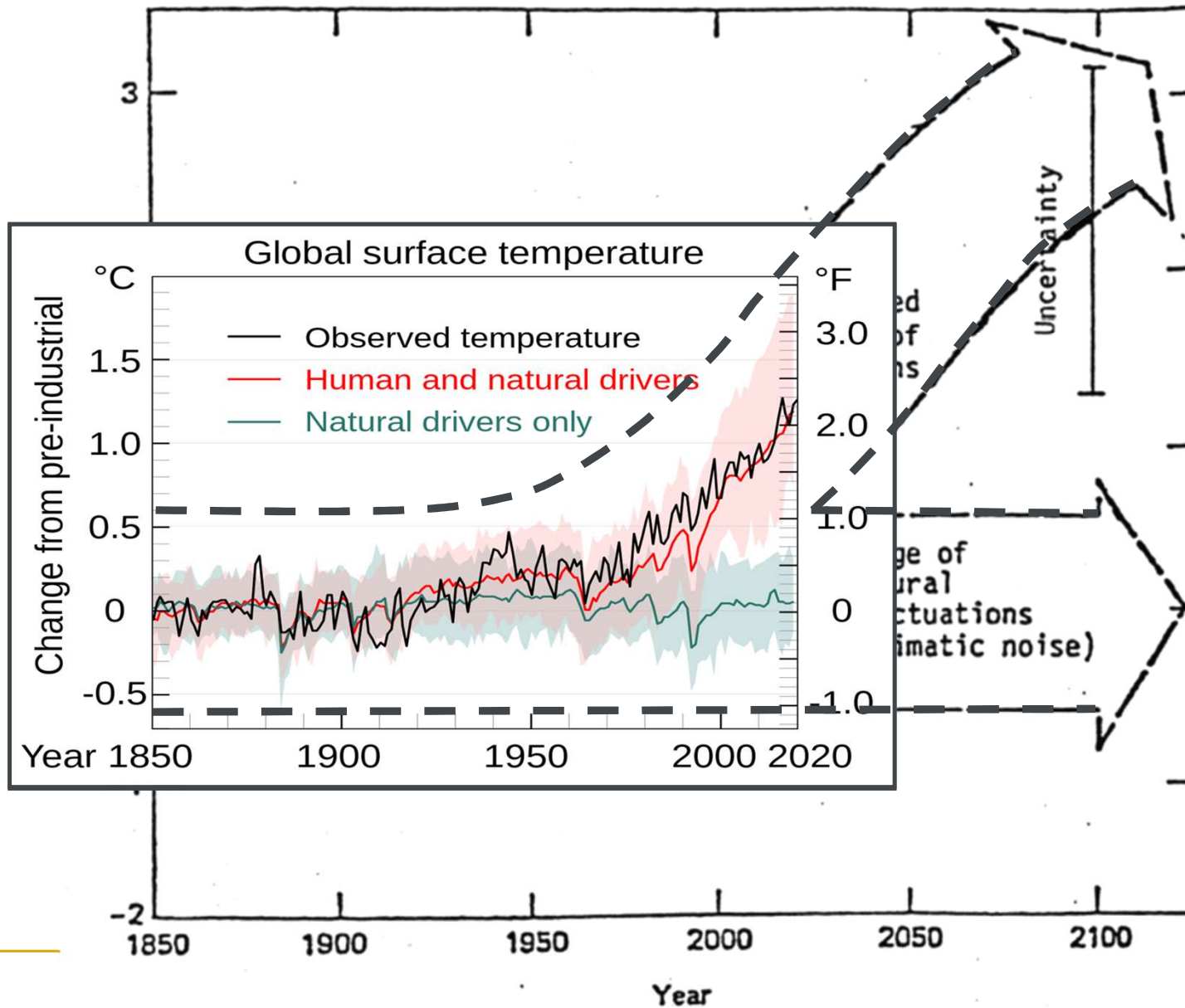


Source: Exxon CO<sub>2</sub> primer – 12 November 1982



Source: Wikipedia, Creative Commons, 14 December 2021





Sources:  
 Exxon CO<sub>2</sub> primer 12  
 November 1982  
 Wikipedia, Creative  
 Commons, 14 December  
 2021



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# Climate Change Reserving Working Party TOR

1. To carry out research into what reserving actuaries are doing in this area and identify and initiate further relevant research
2. To co-ordinate and liaise with other parts of the profession and other professional bodies both in the UK and internationally
3. To promote and disseminate good practice in this area



# Working Party members and speakers today

- Sarah Grimshaw, Talsen
- Alex Marcuson, Marcuson Consulting Ltd – co-chair
- Martin Massey, One Risk Consulting
- James Orr, Bank of England (PRA) – co-chair
- Lara Palmer, LCP
- Steve Patfield, Hiscox
- Daniel Purdy, WTW
- Nidhi Rathod, ICICI Lombard
- Nikhil Shah, Lloyd's
- Clifford Smith, QBE
- Meko Wong, Axis



# Agenda

Introduction

Alex Marcuson

Why we established this working party

James Orr

How will climate change affect reserves?

Steve Patfield

An introduction to climate change litigation

James Orr

Survey of current climate change reserving practice

Sarah Grimshaw

Questions for the Chief Actuary

Steve Patfield

Discussion and Q&A

All







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# Why we established this working party

James Orr

# Our motivation and pitch to you

- You're busy, dealing with the present:
  - regular reporting, SAOs, actuarial standards, new reporting standards
  - wildfires, Covid, floods, Ukraine-Russia, hurricanes, inflation, earthquakes, asbestos, cyber,...
- Climate change is systemic in nature:
  - with potential impacts that are far-reaching, complex and expected to increase over time
  - those impacts are uncertain...and probably not a priority this year
  - but you might still need to comment in your year-end opinion, and almost certainly will in years to come
- The impact of climate change will be reflected in your claims data:
  - but not all climate change claims are clearly labelled as such and attribution is a new science
  - other parts of your business (e.g. Risk, U/W, Cat modelling) are already thinking about climate change
  - you can talk to your colleagues, to deepen your understanding and identify key questions
  - actions now (e.g. pre-competitive research, data strategy) will have a higher value in the future







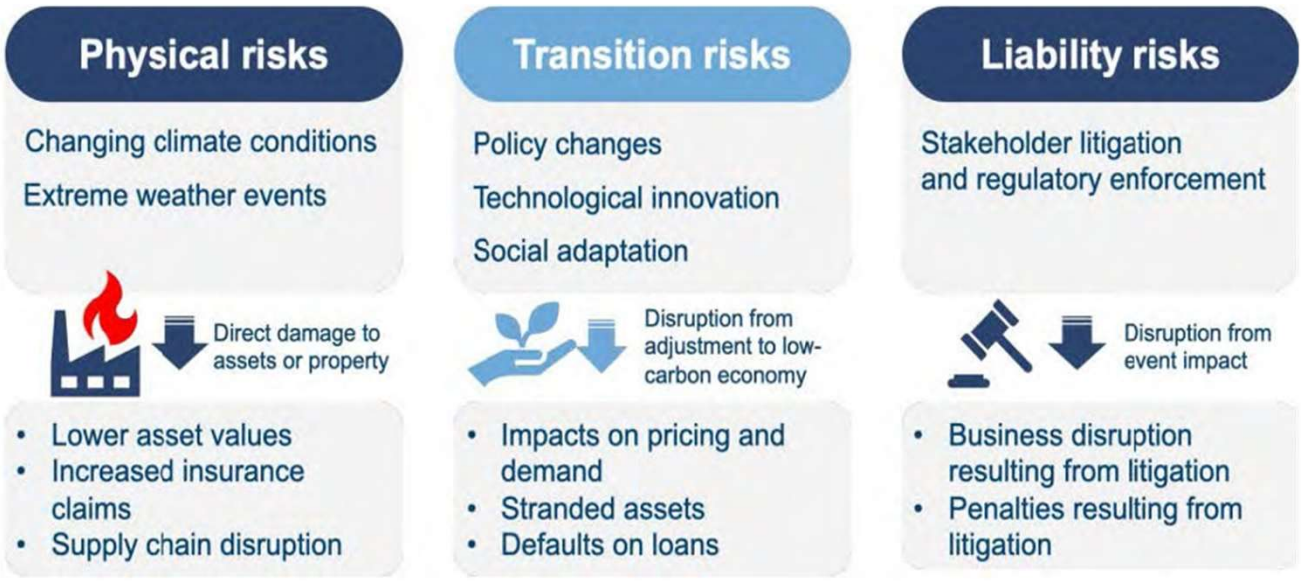
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# How will climate change affect reserves?

Steve Patfield

# Where are reserves going to feel the impact from climate change?

The Climate Change Taxonomy is now established :

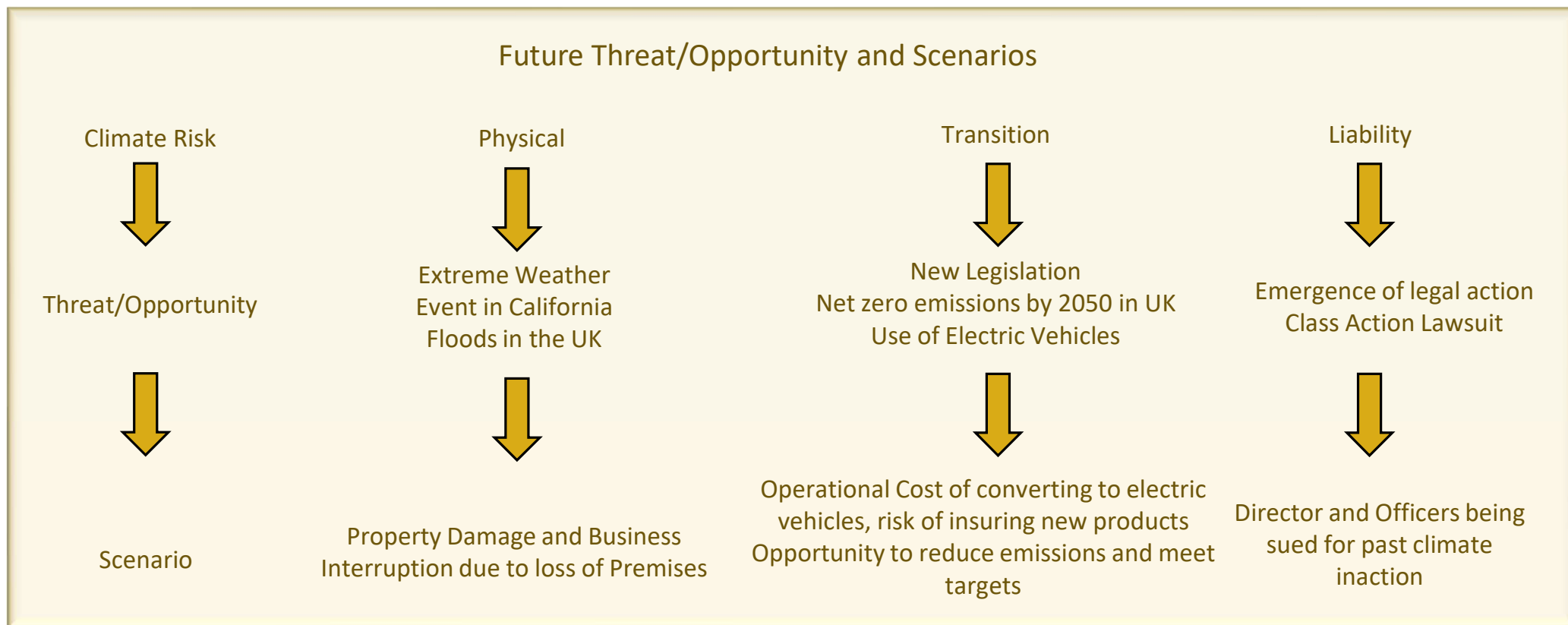


- Leverage risk management approaches to inform understanding for reserving :**
- Design governance for assessment (scope, roles)
  - Risk identification and stakeholder mapping
  - Assess materiality through scenario analysis
  - Resilience and risk mitigation plans
  - Risk appetite and targets
  - Disclosures

## How do I know what I am seeing is climate change related ?

Use basic scenario work to consider how a climate change impact would be felt in your portfolio

## Basic design of climate scenarios







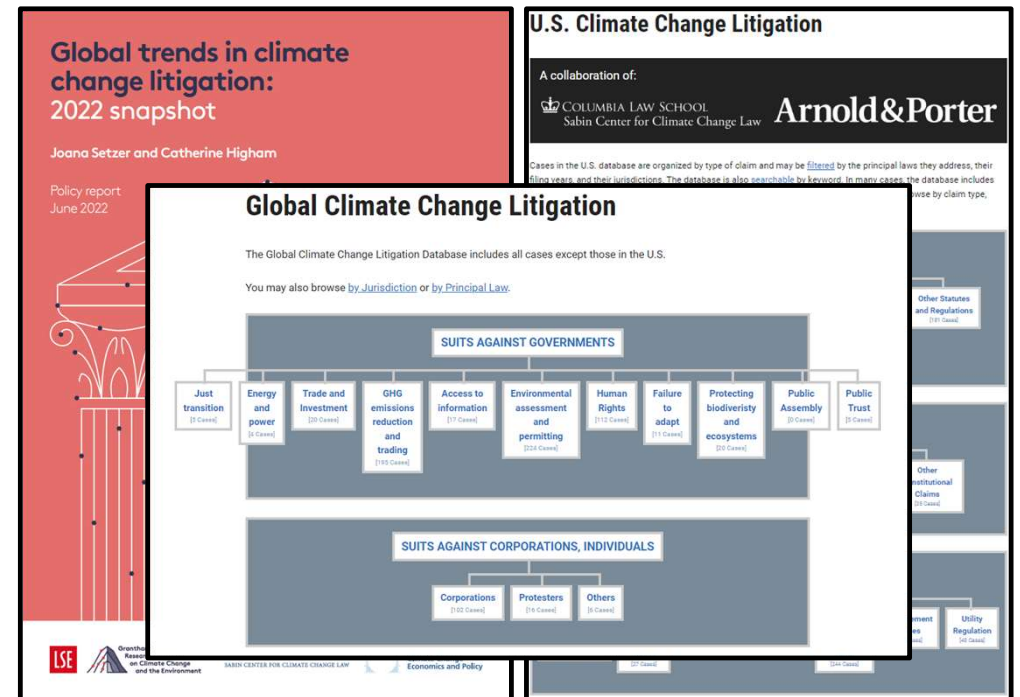
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# An introduction to climate change litigation

James Orr

# Climate change litigation

- Why are we looking at this?
  - the third channel in the Climate Change Taxonomy, with particular relevance to general insurance
- Two key questions arise:
  - evaluating the potential exposures in your back-book
  - ensuring that you are not adding systemic climate change risk through your ongoing and future underwriting
- The climate change litigation landscape is complex and extensive
  - May 2022, LSE’s “*Global trends in climate litigation*” had identified 2,002 cases worldwide
  - 1,426 active cases in the US, 576 in the rest of the world, at least 88 filed in the Global South between 2004 and 2022
  - more than doubled since 2015; ¼ filed between 2020 and 2022
  - 75 “*framework*” cases challenging governments’ overall responses e.g. Urgenda case against the Dutch Government
  - More against “*Carbon Majors*” and other fossil fuel companies e.g. Saúl Luciano Lliuya (Peruvian farmer) against RWE
  - a rising number of cases with a strategic ambition



# Climate change litigation

## Some basic principles

- Loss & Damage
- Some impacts are already locked-in
- Attribution science – a growing field
- Claims linked to cumulative emissions
- The “*Just Transition*”

## Business Class Comparisons

- Directors & Officers
  - most exposed to claims against those running firms
  - investors, bondholders, customers or third parties
  - failure to mitigate, adapt and/or disclose
- Professional Indemnity
  - targeting professional advisors
  - Architects & Engineer  
e.g. Houston, Texas flooded condominiums
- General (US) and Public (UK) Liability







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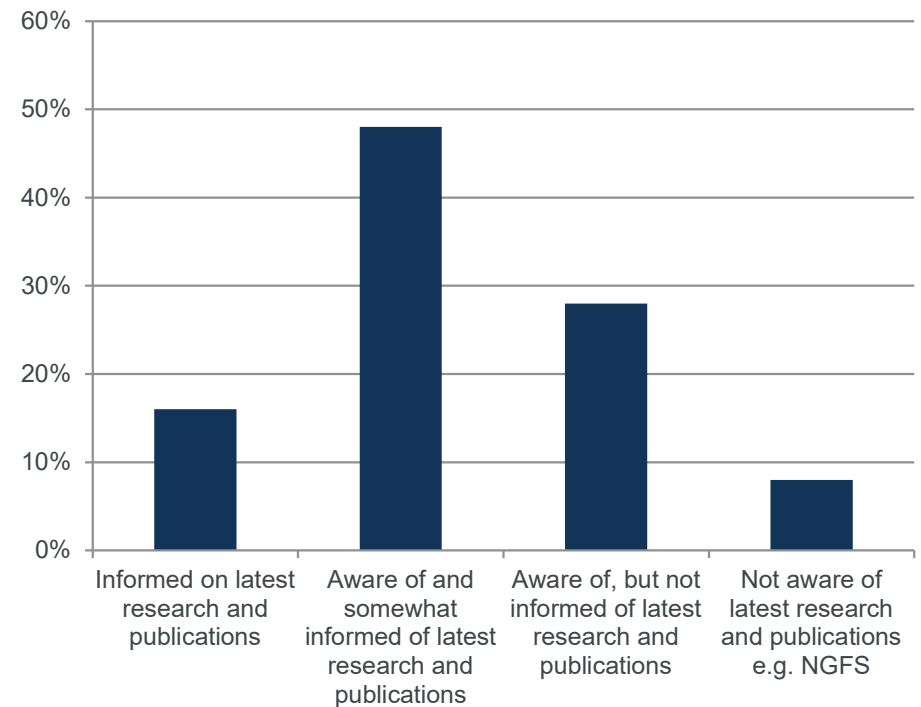
# Survey of current climate change reserving practice

Sarah Grimshaw

# Survey Overview

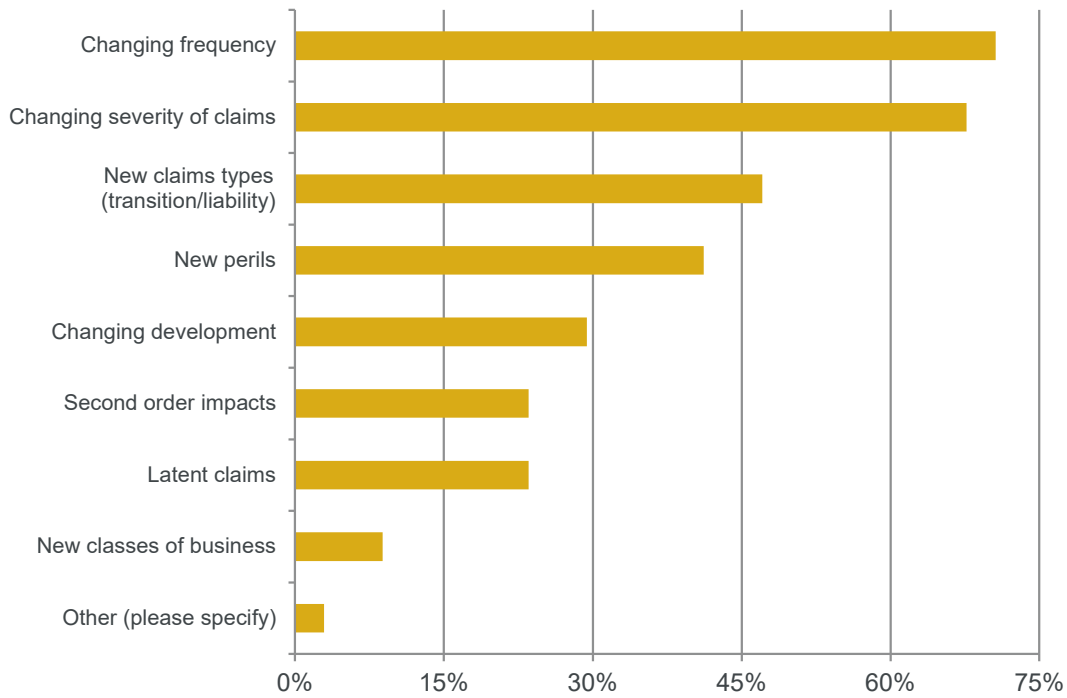
- Over 50 respondents
- 46% net reserves less than a billion, just over 33% with net reserves greater than a billion
  - rest did not work for insurer (consultant/regulators)
- Just over half from London Market and Reinsurance companies
  - 20% not insurance companies
  - rest from Commercial and Personal Lines
- Property, Casualty – Other, Reinsurance were the largest classes for respondents (by reserve size)
- Broad range of awareness of climate understanding

How would you evaluate your current understanding of climate issues?

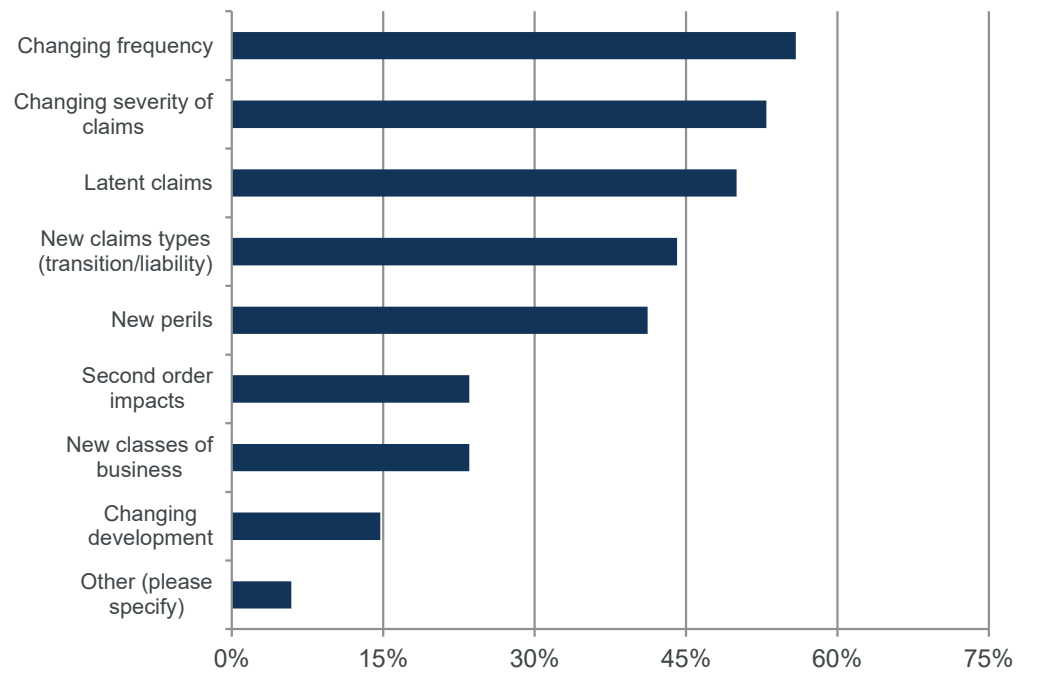


# Concerns

Top three reserving climate change concerns over next five years?

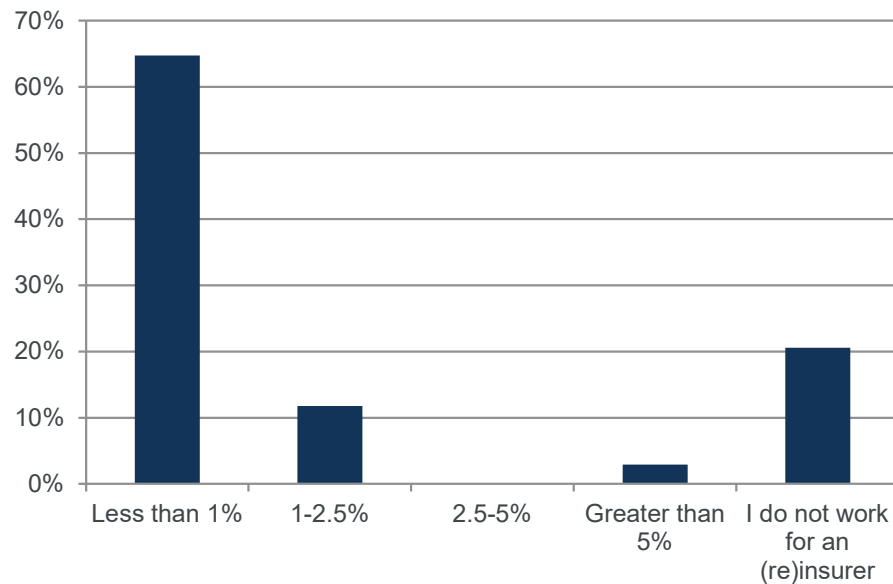


Top three reserving climate change concerns over next twenty years?



# Action taken to date

How big is your current climate change allowance as a percentage of net reserves?



## Most common actions currently taken within reserving:

- **41%** are “starting to consider through looking at potential scenarios and underwriting actions”
- **24%** are making expert judgement loadings – these include eg 10% loading for 2023, or adjustments to IELRs
- **18%** are making implicit allowances
- **12%** aren't yet making any allowance but are discussing through disclosures



# What next?

“Current (reserving) approaches are adequate, the difficulty is in making the assumption choices”

“Recent nat cat activity is highlighting the gaps in modelling of extreme weather events, ie secondary perils that do not have credible models”

“(We need) better capture of relevant data. Until we have a clear understanding of the types of data points, it is hard to formulate appropriate methods/tools”

“Since reserving is assessing the cost of claims which has occurred I do not see the role of climate change in reserving. It is an underwriting consideration”

“The market works with specified tests and target deadlines. Most do not articulate a plan until it becomes a requirement.”

“(We need) discussion and papers on approaches and any data or feedback loops on how the claims environment is evolving”

“(We need) information on litigation”







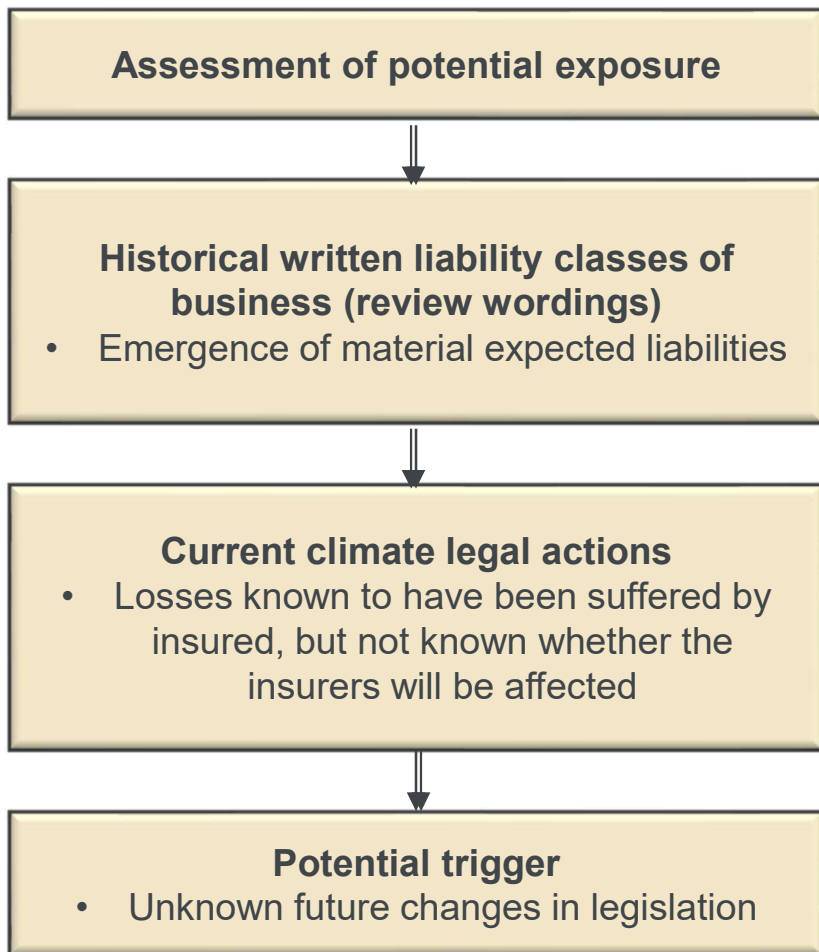
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# Questions for the Chief Actuary

Steve Patfield



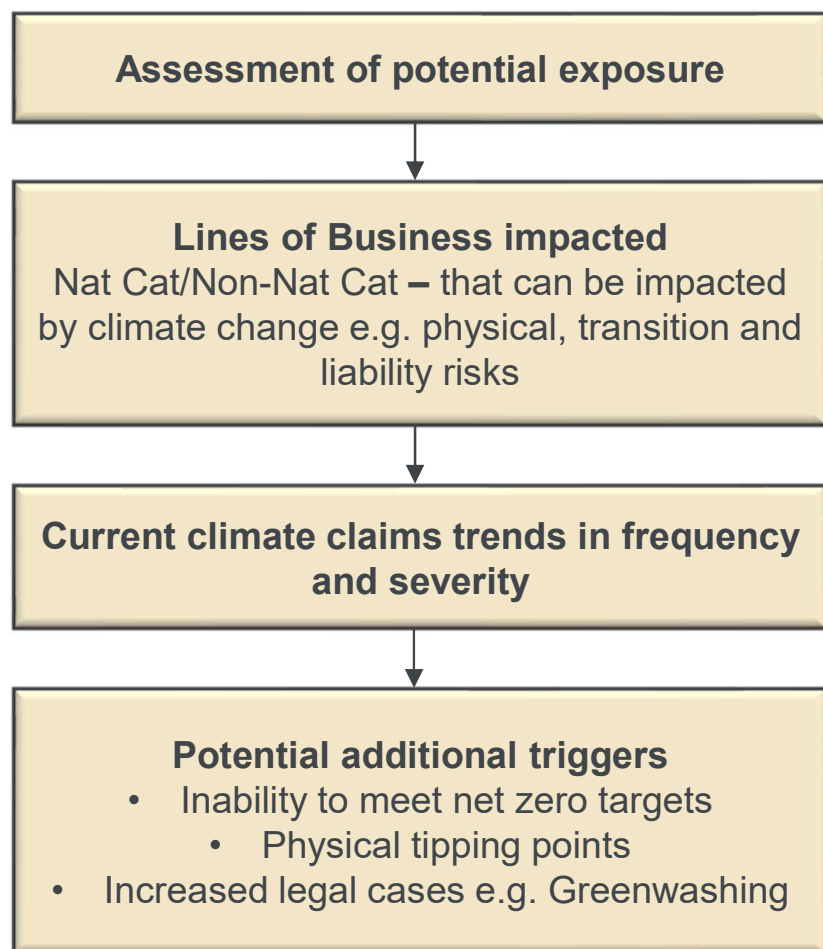
## Questions for a reserving actuary to ask – PAST WRITTEN BUSINESS (current reserves)



- ❖ What exposure does my company have in respect to past written liability business?
- ❖ What legal cases are already within our existing book of business? E.g. D&O, PI etc.
- ❖ Have we researched the current legal environment across jurisdictions where we have exposures?
- ❖ How are we able to “tag” current claims that are climate change related – attribution of climate change to the claim.
- ❖ What data should I be collecting to identify the exposure? (Number of policies, jurisdiction (US, ROW), industry, line of business, Legal cases/legal costs....)
- ❖ Should we reserve for legal expenses?
- ❖ Consider UW actions taken on future written business (risk selection, ESG scoring..) what does that mean for back book?



## Questions for a reserving actuary to ask – FUTURE WRITTEN BUSINESS (future reserves)



- ❖ Where is new exposure coming from on unearned/unwritten business? (aggregations, concentrations, perils...)
- ❖ How are we adjusting our business planning assumptions for CAT/Non-CAT?
- ❖ What tools and techniques should I develop to better understand future exposure? E.g. Stress and scenario testing, horizon scanning.
- ❖ What policies are long-term contracts that could be impacted by climate change?
- ❖ How are underwriters adapting their appetites?
- ❖ How are underwriters pricing in future climate change in their pricing strategy?
- ❖ What type of claims are going to be most impacted by physical, transition and liability risks across each line of business?
- ❖ What is the AFR opinion saying on the topic ?
- ❖ How are we stress testing the impact of climate change within our ORSA reporting processes?



## What to do now? – Engage with stakeholders

### Internal Stakeholders

- Claims
- Underwriting
- Risk Management
- ESG Group
- Board

### External Stakeholders

- Investors
- Regulators
- Auditors
- Accounting profession
- Rating agencies

- To do list:

- ✓ Identify potential climate exposures for past and future liabilities
  - ✓ Support internal climate governance working groups
  - ✓ Identify trends through stakeholder analysis
  - ✓ Support the design of climate scenarios over alternative time horizons to inform reserving
  - ✓ Consider communication of uncertainty in relation to climate change reserve risk and accounting disclosures
- .....get engaged !





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# Discussion and Q&A



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