

Forestry intervention appraisal and evaluation framework

Natasha Perry

Arboriculture and Forestry Advisory Group (AFAG)

Wednesday 2 April 2008

Presentation overview

- About BOMEL
- Forestry research background and objectives
- Scene setting – RIDDOR data analysis
- Project findings set against objectives
- Project recommendations
- Other BOMEL work in arboriculture
- Questions / comments

About BOMEL

- Established in 1986
- BOMEL help its public and private sector clients manage risk by developing a deeper understanding of their stakeholders through targeted research and analysis
- BOMEL's consultancy services include:
 - Information and data analysis
 - Stakeholder consultation
 - Stakeholder risk profiling
 - Intervention evaluation

About BOMEL

- BOMEL offer clients integrated teams of social scientists, health and safety experts and engineers
- BOMEL have a framework agreement to provide HSE with ongoing Technical Support in areas including:
 - Agriculture (incl. forestry and arboriculture)
 - Construction
 - Waste
 - Falls from height
 - Workplace transport

Forestry research background

- BOMEL has undertaken extensive research work for HSE in the agriculture sector.
- The nature of forestry work, the level of risk involved, and the complex management infrastructure, results in it needing a unique approach in order to ensure interventions are effective and long lasting.
- BOMEL was therefore commissioned to develop an evidence base which would help to inform the design and evaluation of forestry interventions.

Forestry research objectives

- Objective 1 - To identify the key influences on the health and safety of different worker groups in forestry.
- Objective 2 - To find practical ways of reducing risk in forestry.
- Objective 3 - To develop a method for measuring the impact of interventions aimed at improving health and safety in forestry.
- Objective 4 - To evaluate the impact of forestry Safety and Health Awareness Days (SHADs).

Scene setting - RIDDOR data analysis

- BOMEL initially interrogated the forestry accident data reported through HSE's RIDDOR system.
- Using the BOMEL 'RIDDOR Analysis Tool' we extracted forestry specific data (using forestry industry SIC codes) and analysed it separately from other agricultural accident data.
- Accidents reported through RIDDOR between 1996/97 and 2004/05 were analysed.

Top level forestry accident numbers reported between 1996/97 and 2004/05

- In total **1,575 accidents** were reported across this 9-year period within the 'forestry' industry classification.
- If we included accidents which involved a forestry related item (e.g. an accident classified as occurring within the 'agriculture' industry, but one which involved a chainsaw, log splitter or timber trailer etc.) then this increased the reported accident total to **3,109 accidents** across the same 9-year period.

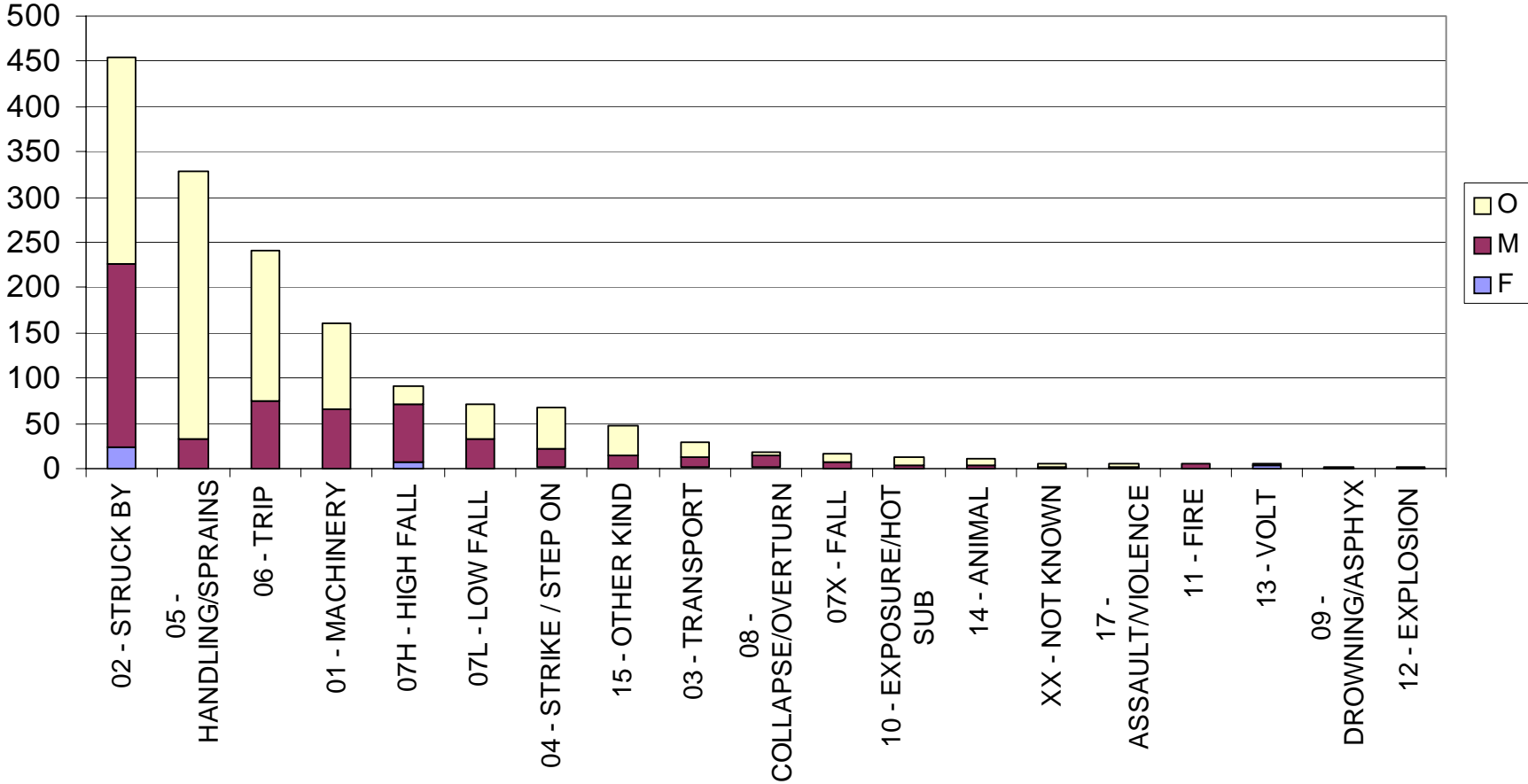
Comparing forestry accident numbers with other industries

- Accident rates for employees in 2004/05 were compared. Accident rates allow direct industry comparisons as they take into consideration the number of people working in an industry.
- HSE published statistics indicated that the forestry industry had a **fatal** accident rate of **30.8 injuries per 100,000 employees**.
- This was the **highest** fatal injury rate of all sectors.
- Agriculture was second with **7.0 injuries per 100,000 employees** followed by construction with **4.8 injuries per 100,000 employees**.
- Forestry also had the **highest major injury** rate.

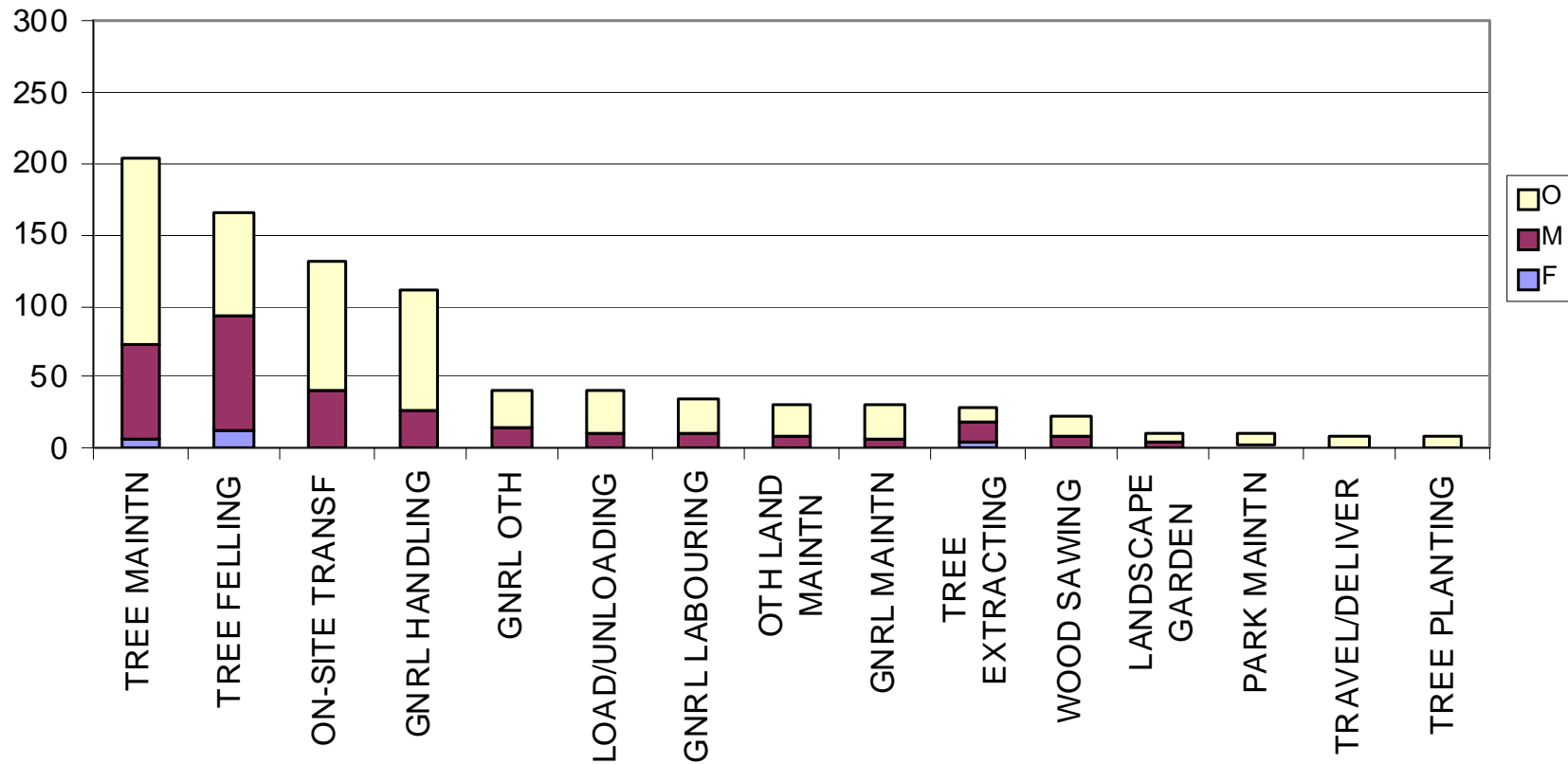
High risk areas identified using the RIDDOR data

- Using the **BOMEL RIDDOR Analysis Tool**, the following forestry accident variables were also analysed:
 - Kind of forestry accident occurring
 - Occupation of injured worker
 - Work process (activity being undertaken at the time of the accident)
 - Agent (or object / equipment involved in accident)
 - Age of injured worker
 - Region in which forestry work being conducted

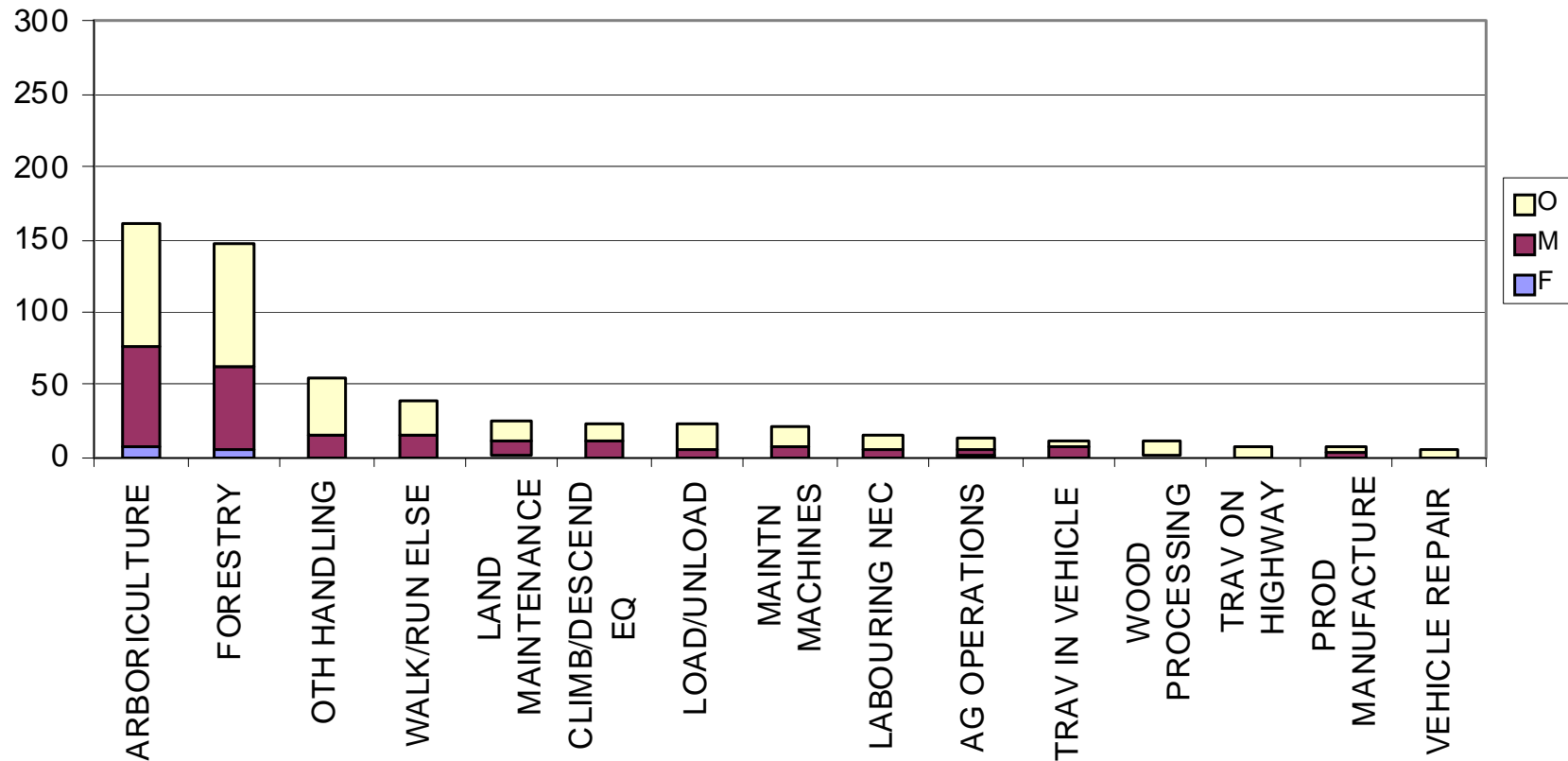
Accidents reported in forestry SICs between 1996/97 and 2004/05 by accident kind



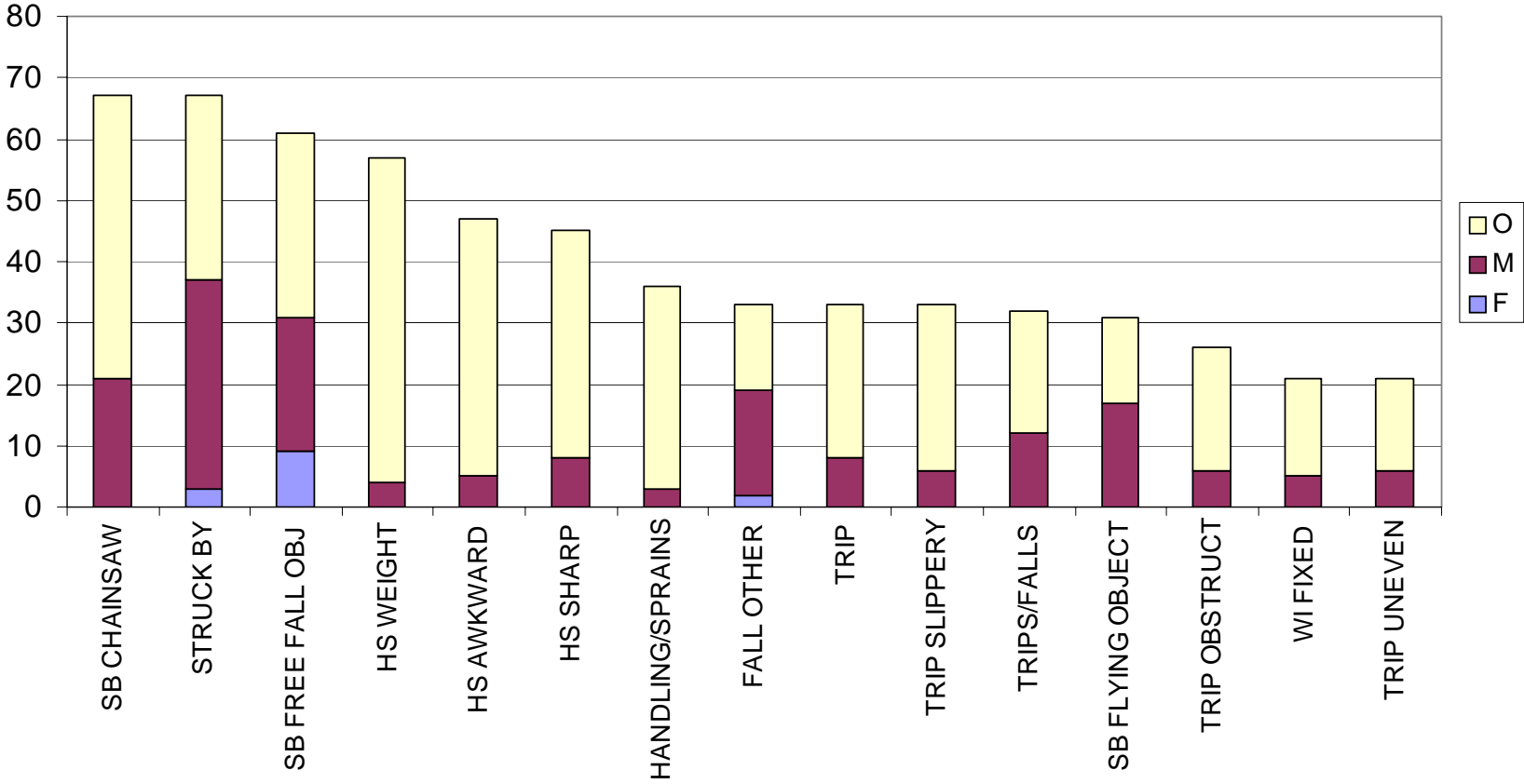
Accidents reported in forestry SICs between 1996/97 and 2000/01 by work process



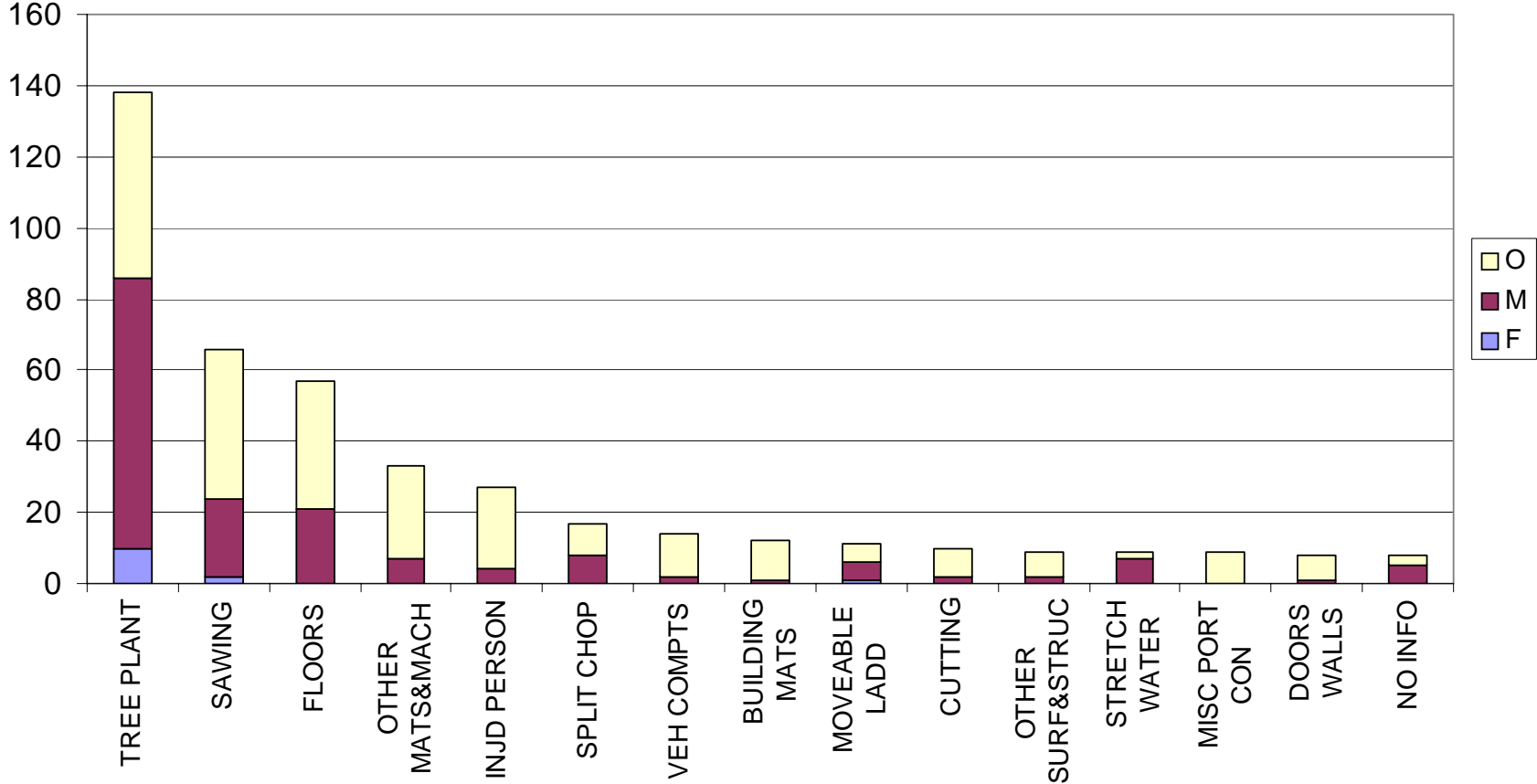
Accidents reported in forestry SICs between 2001/02 and 2004/05 by work process



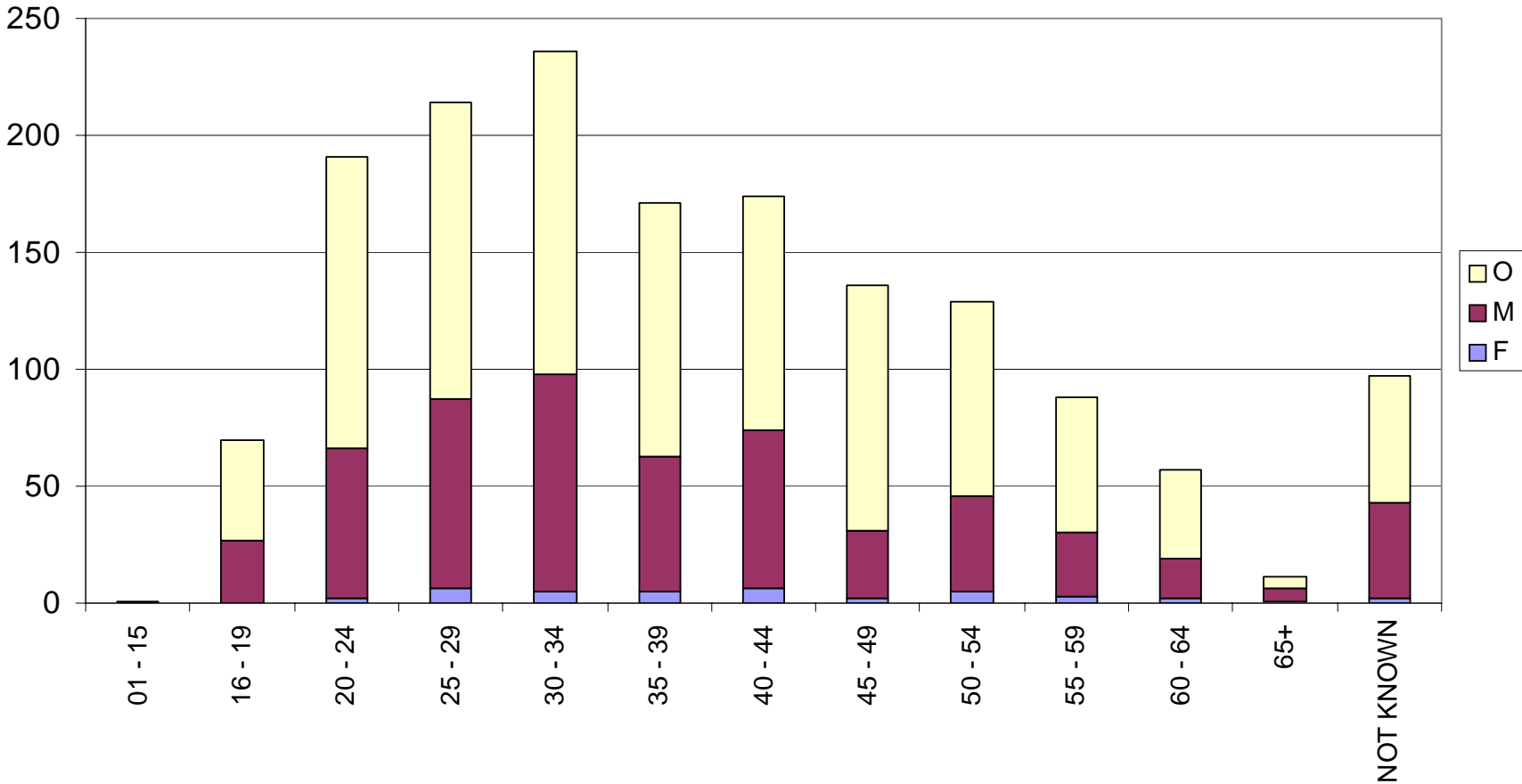
Accidents reported in forestry SICs between 1996/97 and 2000/01 by agent



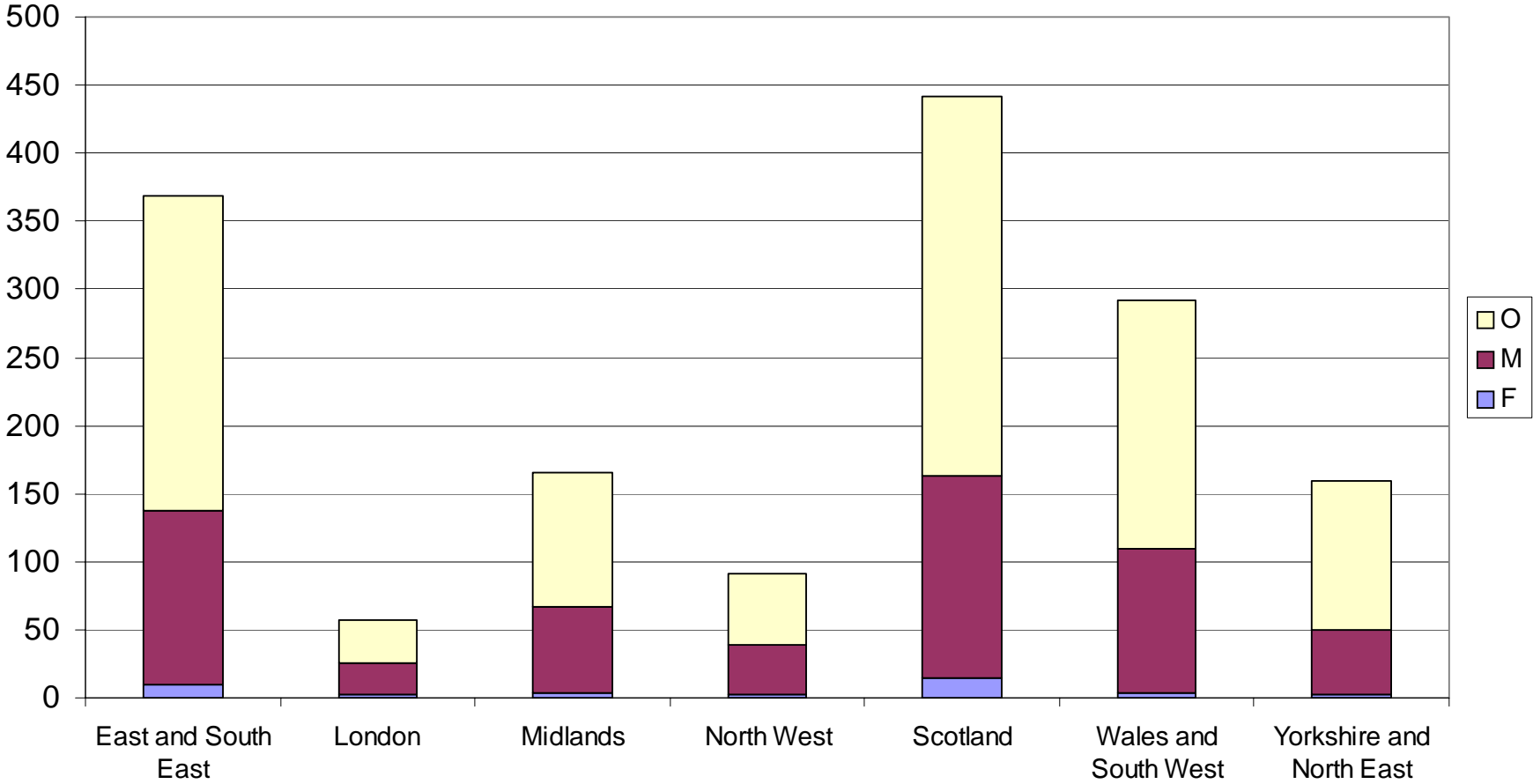
Accidents reported in forestry SICs between 2001/02 and 2004/05 by agent



Accidents reported in forestry SICs between 1996/97 and 2004/05 by age



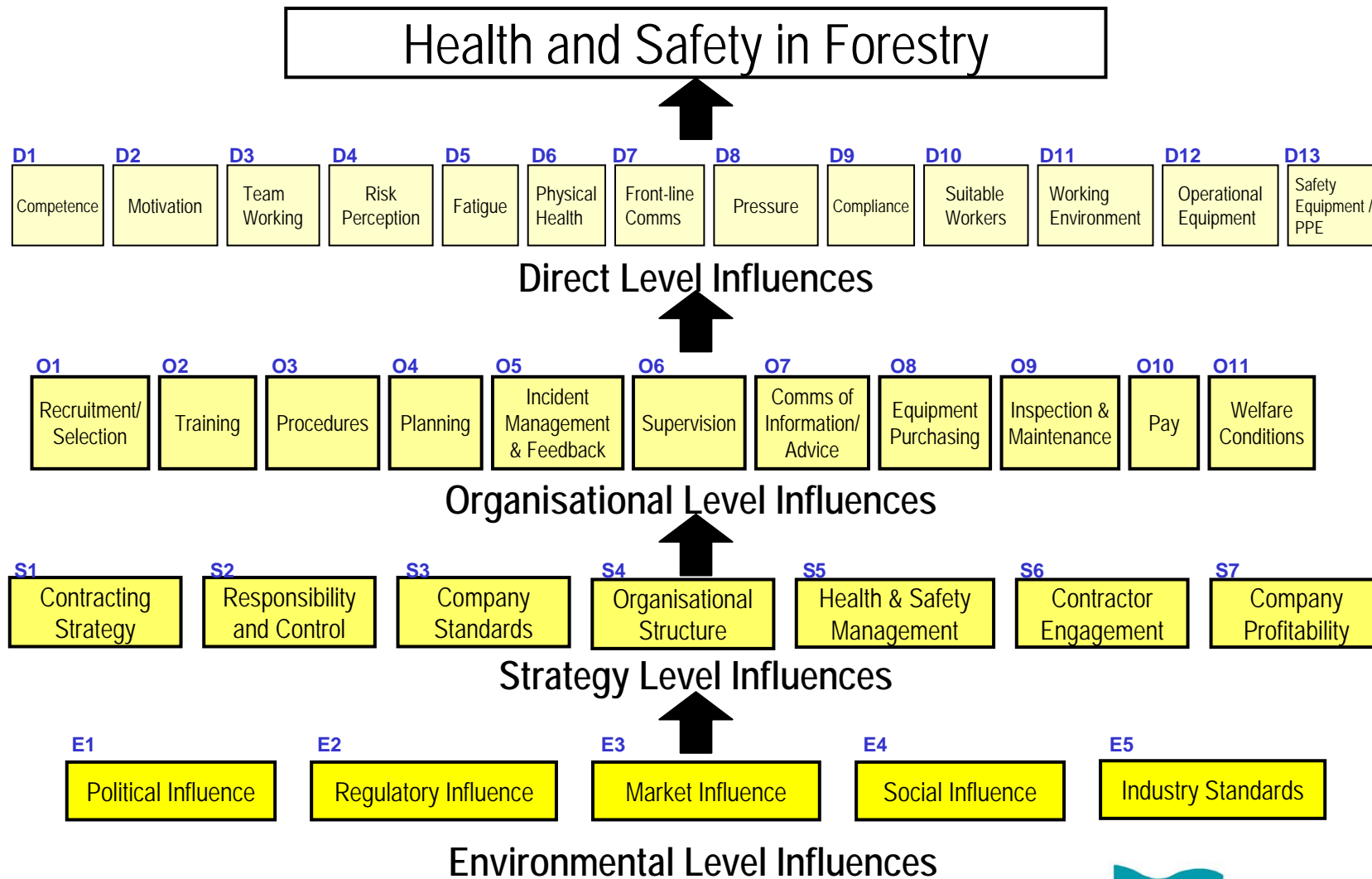
Accidents reported in forestry SICs between 1996/97 and 2004/05 by region



Objective 1 - To identify the key influences on the health and safety of different worker groups in forestry

- Four workshops were conducted with different forestry groups to identify different influences on health and safety and suggest practical risk improvement measures.
- The following four workshop groups were decided in consultation with HSE to reflect different tiers of the industry:
 - Forestry contractors and sub-contractors
 - Forestry work managers
 - Forestry association (members of UK Forest Products Association)
 - Forestry chainsaw operators

Forestry Influence Network



Objective 1 continued...

- All four workshop groups rated and weighted the Influence Network factors to identify those that were key in influencing health and safety.
- Many of the key influencing factors were similar across all four forestry groups.
- At the **Direct level** of influence key factors included front-line communications, pressure, fatigue and safety competence.
- At the **Organisational level** the factors training, communication of information and advice and site safety co-ordination were seen as important.
- At the **Environmental level** the influence of the regulators were viewed as being critical by all four workshop groups.

Objective 2 - To find practical ways of reducing risk in forestry

- A workshop was held with the HSE forestry team that generated a total of **ten feasible forestry health and safety interventions**.
- Ten interventions were generated from the workshop, including:
 - promoting a six-month forestry chainsaw apprenticeship scheme;
 - raising the profile of the '*Managing Health and Safety in Forestry*' HSE document;
 - communicating accident investigations more widely;
 - inspection activity;
 - working with machine manufacturers and dealers towards sponsorship and greater involvement in training;
 - developing an occupational health model for forestry based on work completed in the construction sector.

Objective 2 continued...

- The workshop examined how each intervention could be implemented and then rated them in terms of their **ease of implementation** and **anticipated impact**.
- All ten interventions were then divided into those that:
 - could potentially be implemented immediately
 - required some more planning
 - required more consideration before progressing (to ensure maximum impact and value for money)
- Promoting a **six-month forestry chainsaw apprenticeship scheme** and **communicating accident investigations** more widely were judged to be two interventions that could be progressed immediately.

Objective 3 - To develop a method for measuring the impact of interventions aimed at improving health and safety in forestry

- The existing agricultural barometer of cultural change designed by BOMEL provided a sensitive measure of subtle changes in attitudes and behaviour, and ultimately culture, throughout the agriculture sector.
- This tool was therefore developed to create a unique **forestry barometer** to measure the impact of forestry interventions.
- The forestry barometer comprised the following five sections:
 - Section 1: Background information
 - Section 2: Industry safety culture
 - Section 3: Industry safety measures
 - Section 4: Intention to behave with due care for health and safety
 - Section 5: Intervention specific questions

Objective 4 - To evaluate the impact of forestry Safety and Health Awareness Days (SHADs)

- Three forestry SHADs held in June 2006 in the North of England, Scotland and Wales were evaluated using the newly developed forestry cultural barometer.
- A 'pre-/post-intervention control group' experimental design was used for the evaluation. This involved measuring health and safety attitudes and behaviours using the forestry barometer both before and after the forestry SHAD events took place.
- SHAD specific questions were also asked.

Objective 4 continued...

- Feedback about industry safety culture and safety measures was very positive both before and after the SHAD event.
- 90% (52 out of 58) of the attendees who took part in the evaluation said they felt the SHAD was useful.
- Reasons cited included that it provided an opportunity:
 - for discussion with both the HSE and fellow event attendees;
 - to learn new things;
 - just to focus on health and safety for one day.
- Attendees also felt that it raised awareness of health and safety issues by providing a general update.
- 64% (37 out of 58) of the SHAD attendees were now giving more thought to H&S at work
- 24% (14 out of 58) had already taken steps to improve H&S at work

Project recommendations for HSE

1. Utilise the forestry evidence base to inform future HSE forestry strategy
2. Disseminate and share the RIDDOR accident analyses
3. Utilise the forestry barometer to evaluate future forestry interventions
4. Focus on the forestry interventions suggested / generated in the study
5. Consider feedback given by forestry workers in relation to the forestry SHADs

BOMEL arboriculture work

- BOMEL have recently undertaken the initial work to evaluate a SHAD targeting the 'arboriculture client'.
- These arboriculture SHAD events are designed to improve health and safety in the arboriculture industry by ensuring that organisations only employ competent and safe contractors to do arboriculture work.
- Using the agriculture and forestry evaluation barometer as a template, BOMEL has designed a tool to evaluate the impact of these events.

BOMEL arboriculture work

- The SHAD under evaluation was held in Aston Clinton on February 26th 2008.
- BOMEL have so far conducted 90 telephone interviews; 48 with event attendees and 42 with similar organisations that did not attend (constituting the 'control group').
- We are currently waiting to hear if we will receive funding to conduct the post-event interviews.

Questions / comments?

Contact details

Natasha Perry

Principal Consultant

BOMEL Limited

natashaperry@bomelconsult.com

+ 44 (0)1753 216800