GOVERNMENT OF WESTERN AUSTRALIA

Department of **Local Government, Industry Regulation and Safety**

WorkSafe Western Australia Mines Safety

Safety Performance

in the Western Australian mineral industry

Incident and injury statistics 2023–24

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November 2025

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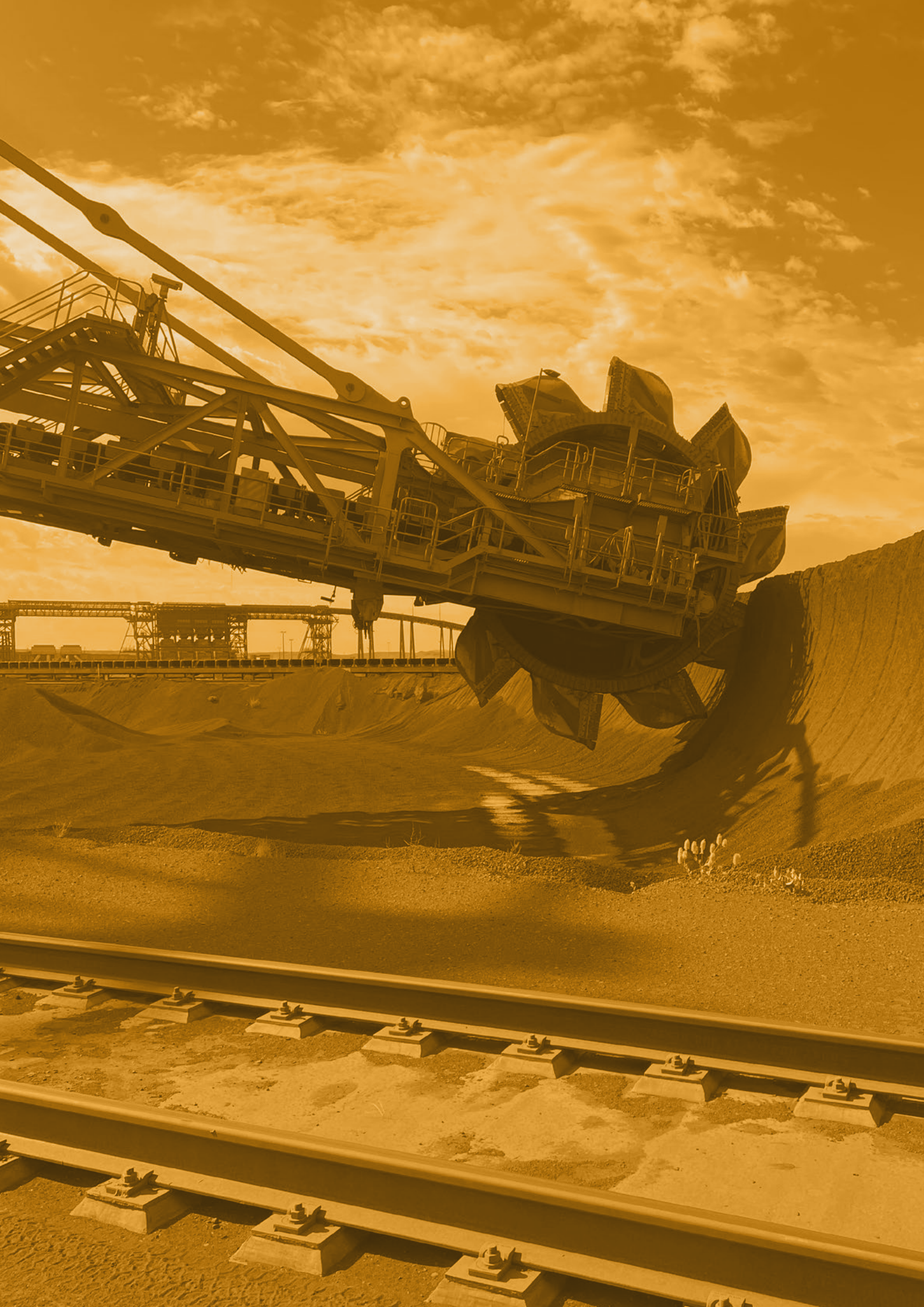


Introduction

As the mining and exploration safety regulator for Western Australia (WA), WorkSafe Mines Safety is committed to improving health and safety outcomes in the State's mining sector. Analysing reported incidents is a key part of WorkSafe Mine Safety's regulatory role, and it uses the findings to drive its activities to champion workplace health and safety in one of WA's largest industries.

For 2023-24, WA's mining sector reported one work-related fatality—a 21-year-old fitter machinist received fatal injuries when an unmanned 25-tonne mobile crane rolled down a slope and struck them during the construction of a paste plant. This is two fewer fatalities than the previous 12-month reporting period and the joint lowest annual figure of the past 10 years. However, even one work-related fatality is too many.

Lost-time injuries (LTIs)—work injuries resulting in at least one full day or shift off work any time after the day or shift when the injury occurred—and restricted -work injuries (RWIs)—work injuries (not LTI) that prevent a worker from performing their usual duties any time after the day or shift on which the injury occurred—can indicate incidents with life-threatening potential, particularly in the case of LTIs. Sadly, both LTIs and RWIs increased in raw numbers and frequency rates from 2022-23 to 2023-24.

During 2023-24, 591 mine workers suffered an LTI at a frequency rate of 2.126 LTIs per million hours worked. The LTI figures for 2022-23 were 536 and 2.036, respectively.

For 2023-24, 974 mine workers suffered an RWI at a frequency rate of 3.504 RWIs per million hours worked. The RWI figures for 2022-23 were 920 and 3.495, respectively, so the latter increase was only slight.

WorkSafe Mines Safety recognises the WA mining sector's efforts to improve health and safety outcomes. However, with LTIs and RWIs resulting in 17,876 lost days and 49,245 restricted days for 2023-24, all parties have room for improvement. These work-related injuries provide learning opportunities as we all strive to implement better controls and protect people.

Working together for safer workplaces

Teamwork makes the dream work. Under the *Work Health and Safety Act 2020* (WHS Act), consultation between persons conducting a business or undertaking (PCBUs), including mine operators, and workers is a legal requirement. It is more than a legislated obligation, it is good business practice.

Effective consultation is a two-way process where PCBUs and workers engage openly on health and safety matters. It involves genuine dialogue, with PCBUs considering workers' informed views before making decisions affecting workplaces.

Educating PCBUs about the importance of involving workers, such as health and safety representatives and safety committees, in the design and implementation of safe work systems remains one of WorkSafe Mines Safety's priorities. A united approach not only enhances safety protocols but also fosters a culture of shared responsibility in which employees feel valued and empowered.

Identifying psychosocial hazards and limiting their impacts

Another of WorkSafe Mines Safety's operational focuses is reducing workplace psychosocial hazards and the harm that exposure to them causes workers. These dangers are factors in the design, management or social interactions of work that can cause physical or mental suffering. They stem from job design and management processes, inherent risks, work environments and social dynamics.

The Department of Local Government, Industry Regulation and Safety, of which WorkSafe is a constituent group, is the lead agency on the Mental Awareness, Respect and Safety (MARS) Program, which the WA Government established in December 2021 to address serious issues in the State's mining sector.

MARS is a collaborative and coordinated interagency program that brings together industry representatives, government officials, academic researchers and service providers to improve mental health, safety and well-being in WA mining and exploration by creating mentally healthy workplaces, building a culture of safety and respect, and preparing for workplace safety in future mining.

Staying safe and looking ahead

Cooperation and collaboration underpin our collective efforts to make WA the world's safest mining jurisdiction. On behalf of everyone at WorkSafe, I encourage PCBUs to join forces with workers and the agency to manage health and safety risks.

WorkSafe acknowledges this report focuses on reactive data and is not intended to capture positive safety incident data that would typically be collected or monitored by PCBUs for use in workplaces.

Sally North
WorkSafe Commissioner

Explanatory notes

Scope

The statistics published in this annual compilation mainly relate to injuries in the 2023–24 financial year (1 July 2023 to 30 June 2024) resulting in time lost or restricted work in WA mining operations.

Injuries to all company and contractor employees who worked at mining operations are included.

The definition of 'mining operation' is stated in regulation 5B of the Work Health and Safety (Mines) Regulations 2022.

The definition includes mining company treatment plants, port facilities, railways and exploration operations but excludes operations carried out by port authorities.

Injuries that occurred in journey incidents not on mine sites (for example travelling to or from work) are not included.

The commencement of the WHS Act on 31 March 2022 significantly changed injury definitions and reporting requirements. This publication presents injury statistics using WHS definitions exclusively.

Work-related fatalities

Work days lost have not been allocated to work-related fatalities. Fatalities are reported separately in this publication and have not been included in other injury totals or rate calculations.

Illnesses

This publication makes no distinction between work-related illnesses and injuries. Both are referred to as injuries.

Collection of information

Injury details and hours worked are reported to WorkSafe by mining and exploration managers.

This report has been made using data for 2023–24 received by the 28 November 2024. It will not reflect any data received or changed after this date.

For mining and exploration operations in 2023–24, 523 mining combined operations and 435 exploration companies reported to the Safety Regulation System.

Of these, 44 mines and 70 exploration companies reported zero hours worked for the year.

Charts

For clarity, bar charts in this publication are restricted to 10 or fewer categories.

The term 'other' is used for a grouping of categories that each contain a smaller proportion of injuries than the smallest individual category shown on the chart.

Abbreviations and categories

Definitions of terms used in this report are presented in Appendix 1.

A complete list of abbreviations and categories used in the charts, as well as descriptions, can be found in Appendices 1, 2, 3, 4, and 5.

Rounding and percentages

Many values in this publication have been rounded. As such, percentages may not add up to exactly 100 per cent.

Statistical summary

Key statistics

Mining

269.7 million hours worked
1 work-related fatality

569 LTIs
2.1 LTIs per million hours worked (LTIFR)

942 restricted work injuries (RWIs)
3.5 RWIs per million hours worked (RWIFR)

Hours worked

Injuries reported

Exploration

8.3 million hours worked
0 work-related fatalities

22 LTIs
2.6 LTIFR

32 RWIs
3.8 RWIFR

Hours worked

Injuries reported

Mining and exploration injuries

Part of body (top 5)

Hand	25%
Back	10%
Shoulder	9%
Ankle	8%
Knee	8%

Nature of injury (top 5)

Sprain or strain	47%
Fracture	17%
Laceration	8%
Crushing	7%
Exp to mental stress	5%

Location (top 5)

Treatment plant	26%
Administration	16%
Open pit prod/dev	16%
Workshop	13%
Surface general	12%

Type of injury (top 5)

Over/stren mov	25%
Slip/trip	11%
C/by between (not machine)	11%
Stepping/jumping	10%
S/by object	9%

Work-related fatalities

A 21-year-old fitter machinist was fatally injured during construction of a paste plant when they were struck by an unmanned 25-tonne mobile crane that rolled down a slope.

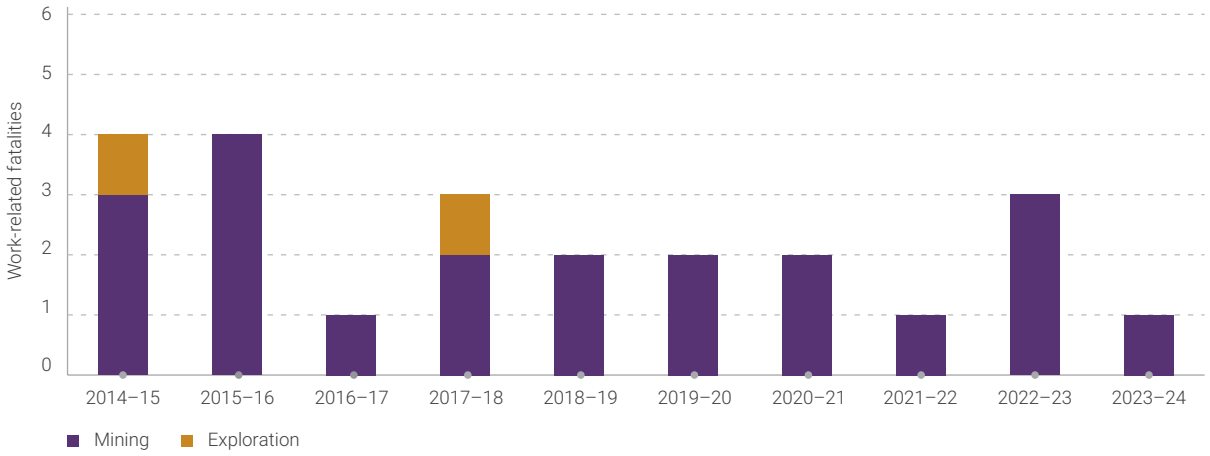


Figure 1.1 Work-related fatalities 2014–15 to 2023–24

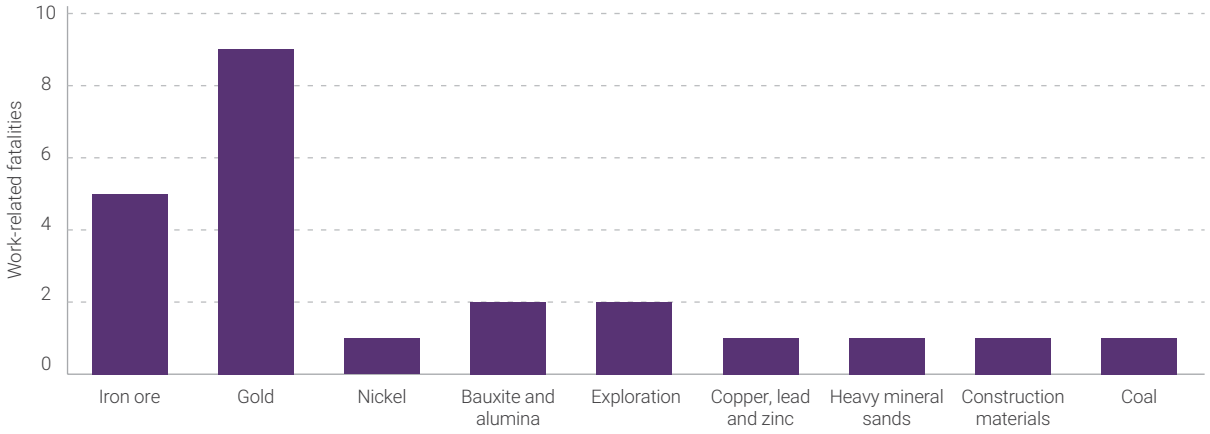


Figure 1.2 Work-related fatalities by commodity 2014–15 to 2023–24

Table 1.1 Fatal injury frequency rates by commodity 2014–15 to 2023–24

Commodity	Hours worked (millions)	Work-related fatalities	FIFR
Iron ore	1,048.4	5	0.005
Gold	510.3	9	0.018
Nickel	145.1	1	0.007
Bauxite and alumina	135.5	2	0.015
Tin, tantalum and lithium	75.7	0	0.000
Exploration	63.8	2	0.031
Copper, lead and zinc	40.0	1	0.025
Heavy mineral sands	39.5	1	0.025
Construction materials	15.6	1	0.064
Coal	15.2	1	0.066
Salt	14.2	0	0.000
Other	62.3	0	0.000
Total	**2,165.7**	**23**	**0.011**

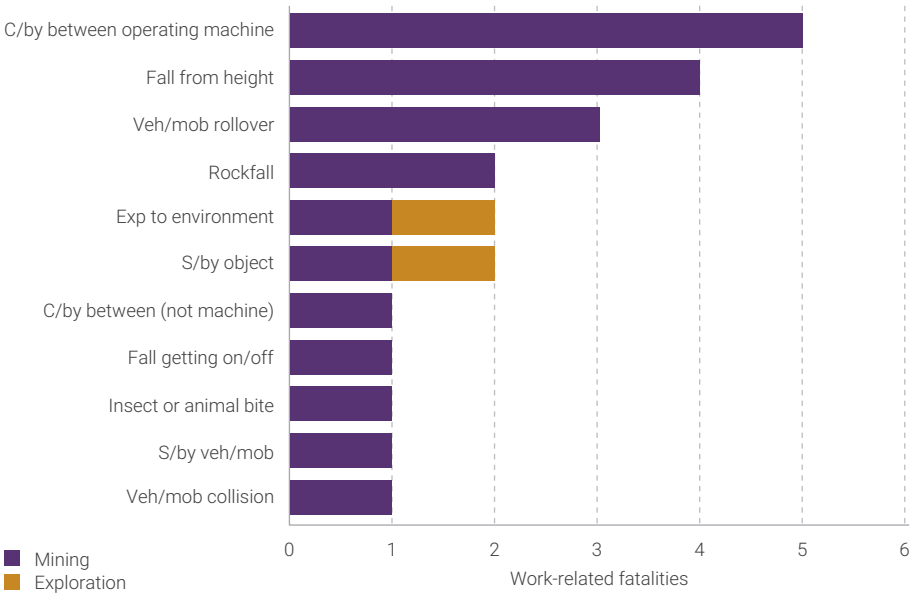


Figure 1.3 Work-related fatalities by type of incident 2014–15 to 2023–24

Note: A complete list of abbreviations and categories used in the charts, as well as descriptions, can be found in Appendices 1, 2, 3, 4 and 5

Injury descriptions

Examples of injuries with serious consequences in 2023–24

Spark lands on flammable liquid leading to fire, arc flash and burn injury

Boilermakers were working in the workshop modifying steelwork. During oxy-cutting and grinding a spark landed on a nearby plastic container that was carrying flammable liquid which caused it to ignite. Upon noticing this, two boilermakers rushed to put the fire out. One of the boilermakers patted the fire down with their glove which ignited the flammable liquid further and caused an arc flash into their face, leading to facial burns.

Multiple injuries following fall from engine

During maintenance activities, a technician was ascending out of the right-hand side engine of a 793F dump truck and had their right-hand holding on to the front engine bonnet as they lifted themself out. In the process the engine bonnet unlocked and hit them with the extra weight of the open turbo hatches. The worker fell backwards and hit their head on the edge of the rear open engine bonnet resulting in discomfort to their head, right knee and right forearm.

Digger operator jolting injury

The worker was operating a digger on a rough contour when the bucket of their digger clipped and impacted the ground causing a jolt/jar event. The worker noted pain in their back.

Maintainer loses thumb whilst performing maintenance

A maintainer was conducting maintenance on an MD drill track frame which required the removal of the track frame. Whilst attempting to remove the pin on the equalizer bar their thumb was crushed between the track frame and the tooling resulting in an amputation of their left thumb.

Turn while manual handling injures knee

A mechanical technician, removing rollers from a conveyor, turned to pass a roller to another colleague, twisting their left knee. The technician stated that they heard a pop, their knee gave way and they felt a sharp intense pain in the affected area. At first they were not able to move their leg due to their knee having locked up, after a few minutes they regained movement with reduced strength.

Worker struck by chain

A trades assistant was working on a haul truck frame on top of the chassis. The worker was lifting chains using the overhead crane after removing a hoist pump. The chain became snagged and released suddenly hitting the worker on the left side of the face.

Worker receives cryogenic burn to fingers

A mechanic was working in a facilities maintenance building. The worker had knocked a refrigerant valve with their knee whilst unloading the reclaim unit, resulting in refrigerant fluid making contact with their right hand and four fingers. With their opposite hand they turned the refrigerant valve off, resulting in minor burns to their left four fingertips and thumb.

Slip down steps results in leg injury

Worker was walking down the steps of a generator trailer and slipped down the last step, everting their left ankle and inverting their left knee.

Back injured after slip involving two-man lift

A fitter was performing a two-man lift to place a screamer pump onto the back of a truck, when the other individual slipped and dropped their weight of the pump. The worker was in a stooped position causing a jerking motion through their lower back as they took the full weight of the pump. They initially felt pain and a tingling sensation in their lower back, but did not report it until the next morning.

Leg injury operating elevating work platform from basket

A fitter was operating an elevating work platform from the basket, entering the workshop through the access gates. The elevated work platform contacted the spoon drain at the junction point with an estimated depth of 100 mm causing the basket to bounce and the operator to injure their right leg.

Dozer operator jarring injury

The operator was driving an autonomous DT6447 dozer moving approximately 100 metres. The worker noticed that the seat on the truck was ‘bottoming out’ feeling like it was ‘hitting the floor’. The worker immediately noticed a dull ache in their left posterior lower flank radiating into the glute and down the leg.

Hand caught in chain slings

A belt splicer and their crew were lifting a conveyor belt winder when they noticed the chain slings (hook) were not connected correctly. The load was lowered to fix the chain slings, and whilst the worker was rigging the chains the mobile crane operator commenced lifting the load, pinning the worker’s left hand between the chain slings and side of the belt winder. The worker yelled to the mobile crane operator to stop and the load was brought back down, releasing their hand.

Worker knocked unconscious by snapped equipment

A boilermaker was in a work crew conducting a rebuild of a primary crusher. The crew were tasked with removing the pinion coupling of the drive motor using a strong back, pull rods and hydraulic ram. The boilermaker was tasked with heating up the coupling whilst two other people used the hydraulic ram and strong-back to pull the coupling away from the flange. The boilermaker was standing on the left side of the coupling. As the crew applied pressure to the strong-back one of the pull rods snapped causing the strong-back to spin and hit the boilermaker in the face. They were knocked unconscious and received facial injuries.

Twisted knee after slip on wet cable

Employee was working to move a length of 95 mm high voltage cable that had been lowered to the ground from being hung on the backs. There was some water on the ground in the area and the cable was wet. As they lifted one part of the cable, the employee has inadvertently stepped onto the cable where it was partially submerged, and their foot has slipped off the wet surface of the cable. The employee fell forward and felt their right knee twist as they fell down.

Water from high pressure hose causes leg injury

Driller assistant was struck by water from a high pressure hose, as the co-worker operating the hose was not aware that the driller assistant was near the vehicle. The driller assistant received a laceration to the leg.

Shoulder injury after trip in car park

Worker was walking back to his vehicle to retrieve their swipe card before getting on the bus going back to camp. As they were walking through the car park, they tripped over a back-stop falling and landing on their shoulder.

Loss of consciousness following fall from vehicle

Operator was descending the ladder on the rear of the vehicle when they slipped, lost grip of the handrail and fell backwards down the ladder approximately 1.5 metres to ground. The operator was observed to have lost consciousness for less than one minute after impact with the ground by a bystander. An emergency was called, the operator received initial treatment for a head abrasion, potential concussion and transported to hospital for further diagnosis.

Worker suffers chemical burns

Lime burns to lower legs when water containing lime entered operator's gumboots whilst assisting to unblock sump pump in process plant.

Broken fingers after putting hand in active fan area

During pre-start the oil was checked, and noted that the oil cap was incorrectly fitted to the engine. The oil cap was seen on the floor next to the engine on the access platform of the drill rig with oil spilling. The driller directed the assistant to collect and replace the oil cap. The assistant entered the engine area whilst the rig was still running. They completed the job and upon egress from the work area, they stabilised themself by holding onto the guard of the fan. Due to a break in the fibre glass shrouding around the guarding, the assistant's fingers entered the active fan area resulting in contact with their fingers and the fan. The assistant suffered several lacerations and broken bones to their pinkie and ring finger.

Foot crushed by conveyor frame

The worker was performing maintenance to conveyer idler structure when the unbolted stringer (part of the conveyer frame structure) has fallen approximately 500 mm onto the worker's left foot causing a crush injury.

Grader operator suffers neck jarring

Operator was in the process of turning the grader they were operating around to the right, when the blade dug into the ground due to it being too low. This resulted in the operator's body shifting hard to the left, which in turn caused the operator to unintentionally push the controller down. This pushed the blade of the vehicle even further into the ground. The operator reported feeling a hard shake, specifically in their neck.

Labourer falls from windrow

Labourer was removing delineation from a heavy vehicle windrow when it released suddenly causing them to fall backwards to the ground.

Laceration following contact with drill rod

Driller's assistant was asked to wash foam product off a drill rod with a pressure washer. They have instead used their right hand to wipe the foam, coming in contact with a 5 cm metal burr. The contact has resulted in a laceration to their right hand. The driller's assistant was not wearing gloves at the time of incident.

Lost time and restricted work injuries

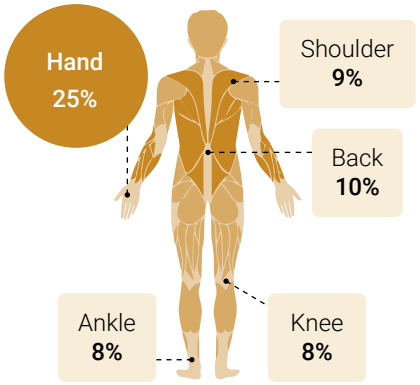
Injuries by severity

1,565 injuries

591 LTIs

974 RWIs

Part of body



Type of injury

Over/stren mov	**25.1%**
Slip/trip	**11.0%**
C/by between (not machine)	**10.9%**
Stepping/jumping	**10.2%**
S/by object	**9.2%**

The **591** LTIs mentioned above were made up of **569** in mining and **22** in exploration.

The **974** RWIs were made up of **942** in mining and **32** in exploration.

Table 2.1 Injury frequency rates during 2023–24

Commodity	Hours worked (millions)	Number of LTIs	Number of RWIs	LTIFR	RWIFR	LTIFR + RWIFR
Iron ore	125.7	322	411	2.6	3.3	5.8
Gold	63.8	61	255	1.0	4.0	5.0
Tin, tantalum and lithium	22.9	11	50	0.5	2.2	2.7
Nickel	20.9	63	92	3.0	4.4	7.4
Bauxite and alumina	14.0	62	73	4.4	5.2	9.6
Exploration	8.3	22	32	2.6	3.8	6.5
Heavy mineral sands	5.8	6	17	1.0	2.9	4.0
Copper, lead and zinc	3.0	3	14	1.0	4.7	5.7
Salt	2.2	6	3	2.8	1.4	4.1
Construction materials	1.8	8	0	4.5	0.0	4.5
Coal	1.8	8	2	4.5	1.1	5.6
Rare earths	1.7	4	9	2.4	5.4	7.8
Other	6.2	15	16	2.4	2.6	5.0
Total	**278.0**	**591**	**974**	**2.1**	**3.5**	**5.6**

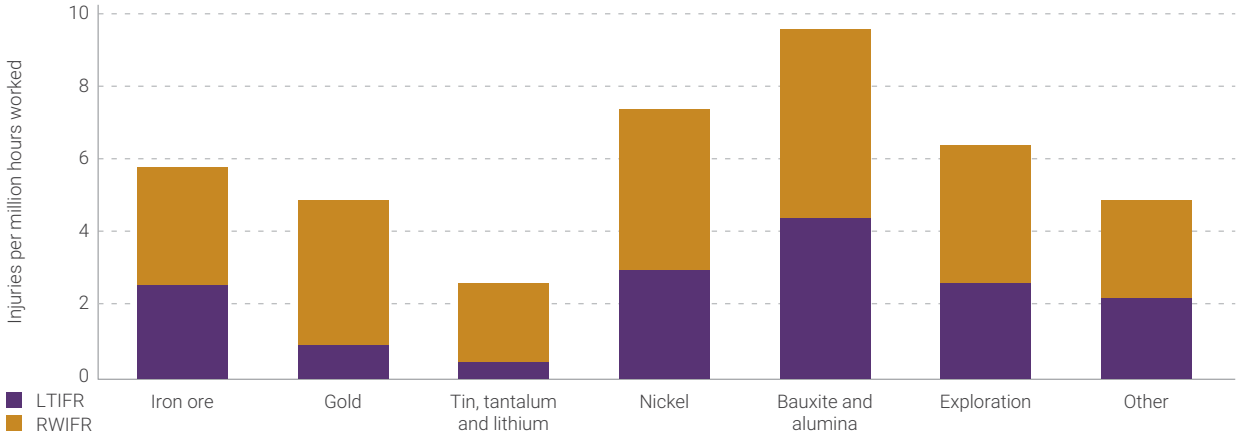


Figure 2.1 Lost time and restricted work injury frequency rates for the 5 largest commodities plus exploration

Injuries by category

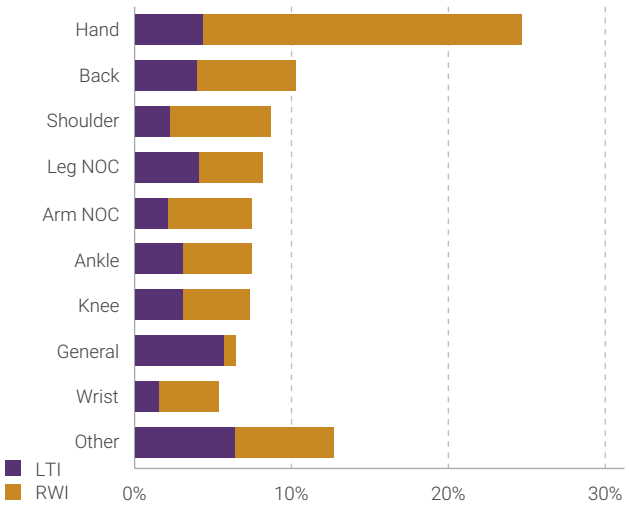


Figure 2.2 Injuries by part of body

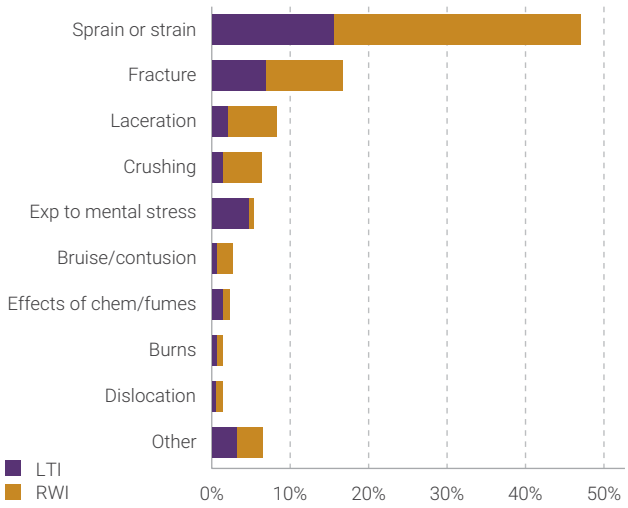


Figure 2.3 Injuries by nature of injury

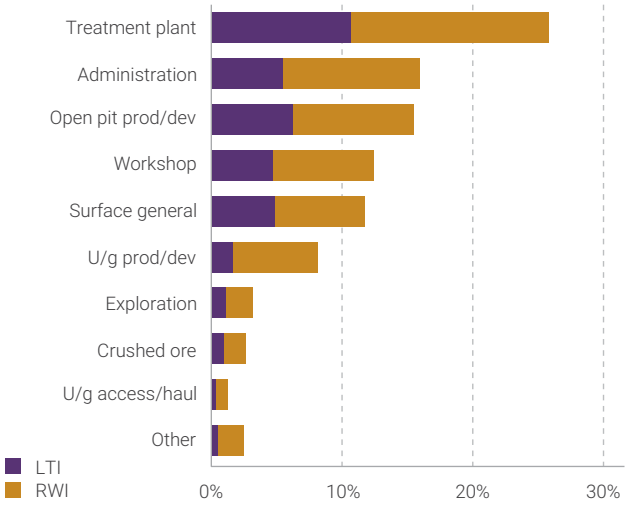


Figure 2.4 Injuries by location of incident

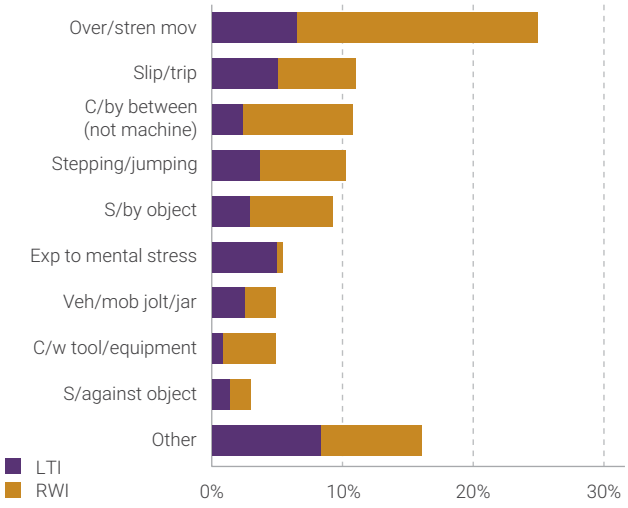


Figure 2.5 Injuries by type of incident

Table 2.2 Days lost and days restricted due to LTIs by commodity

Commodity	Hours worked (millions)	Number of LTIs	Days lost	Days restricted	Days lost		Days lost and restricted	
					Duration rate	Injury index	Duration rate	Injury index
Iron ore	125.7	322	10,478	7,880	32.5	83.3	57.0	146.0
Gold	63.8	61	1,784	1,420	29.2	28.0	52.5	50.2
Tin, tantalum and lithium	22.9	11	247	152	22.5	10.8	36.3	17.4
Nickel	20.9	63	1,615	1,871	25.6	77.4	55.3	167.0
Bauxite and alumina	14.0	62	1,446	1,328	23.3	103.0	44.7	197.5
Exploration	8.3	22	1,124	145	51.1	134.8	57.7	152.2
Heavy mineral sands	5.8	6	195	70	32.5	33.7	44.2	45.8
Copper, lead and zinc	3.0	3	68	89	22.7	22.7	52.3	52.4
Salt	2.2	6	228	74	38.0	105.0	50.3	139.1
Construction materials	1.8	8	136	107	17.0	76.7	30.4	137.1
Coal	1.8	8	180	245	22.5	101.7	53.1	240.1
Rare earths	1.7	4	9	186	2.3	5.4	48.8	116.9
Other	6.2	15	366	285	24.4	58.6	43.4	104.3
Total	**278.0**	**591**	**17,876**	**13,852**	**30.2**	**64.3**	**53.7**	**114.1**

LTIs can accumulate lost days *and* restricted days

Table 2.3 Days restricted due to RWIs by commodity

Commodity	Hours worked (millions)	Number of RWIs	Days restricted	Days restricted	
				Duration rate	Injury index
Iron ore	125.7	411	16,255	39.5	129.3
Gold	63.8	255	8,731	34.2	136.9
Tin, tantalum and lithium	22.9	50	1,541	30.8	67.4
Nickel	20.9	92	3,505	38.1	168.0
Bauxite and alumina	14.0	73	2,196	30.1	156.4
Exploration	8.3	32	975	30.5	116.9
Heavy mineral sands	5.8	17	773	45.5	133.6
Copper, lead and zinc	3.0	14	368	26.3	122.7
Salt	2.2	3	74	24.7	34.1
Construction materials	1.8	0	0	0.0	0.0
Coal	1.8	2	35	17.5	19.8
Rare earths	1.7	9	367	40.8	220.0
Other	6.2	16	573	35.8	91.8
Total	**278.0**	**974**	**35,393**	**36.3**	**127.3**

Table 2.4 Days lost due to carry over injuries by financial year

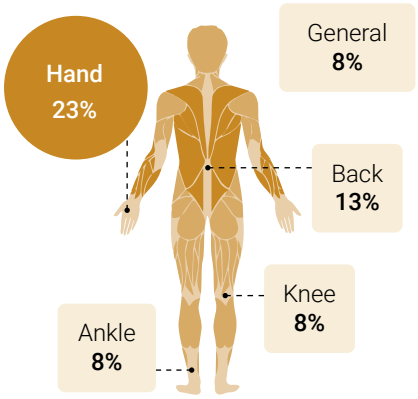
Commodity	Number of LTIs	Number of RWIs	Days lost	Days restricted
2022–23	163	248	13,256	31,734

This table includes lost and restricted days which occurred during 2023–24 from injuries in previous years.

2022–23 was the first full financial year which operated with the WHS Act, so this table does not include carry over injuries which occurred before 2022–23.

Iron ore

45% of the hours worked in the WA mineral industry were in iron ore



The LTIFR for Iron ore was 2.6, compared to 2.1 for the WA mineral industry.

The RWIFR for Iron ore was 3.3, compared to 3.5 for the WA mineral industry.

The LTIFR and RWIFR for Iron ore was 5.8, compared to 5.6 for the WA mineral industry.

Iron ore lost time and restricted work injuries during 2023–24

There were 125.7 million hours worked in iron ore during 2023–24.

In that time there were **322** LTIs and **411** RWIs.

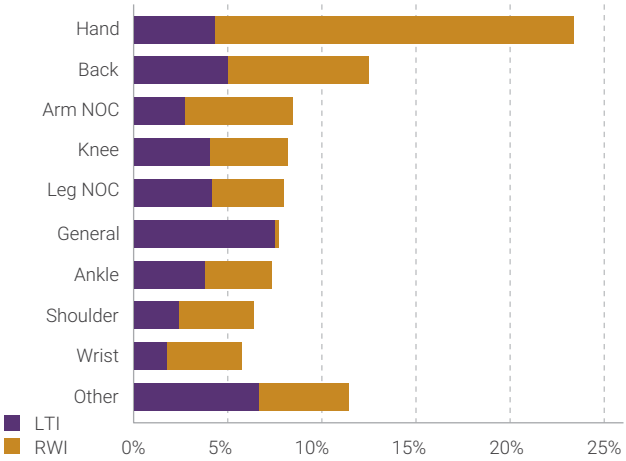


Figure 2.6 Iron ore injuries by part of body

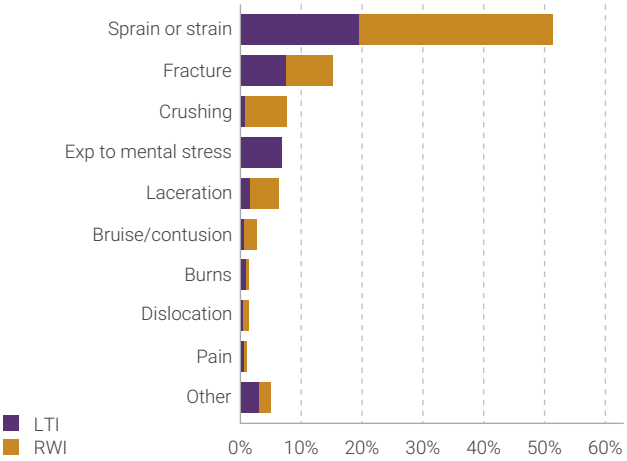


Figure 2.7 Iron ore injuries by nature of injury

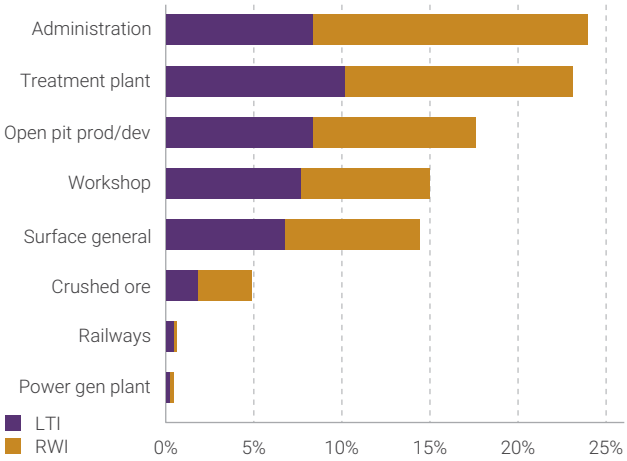


Figure 2.8 Iron ore injuries by location of incident

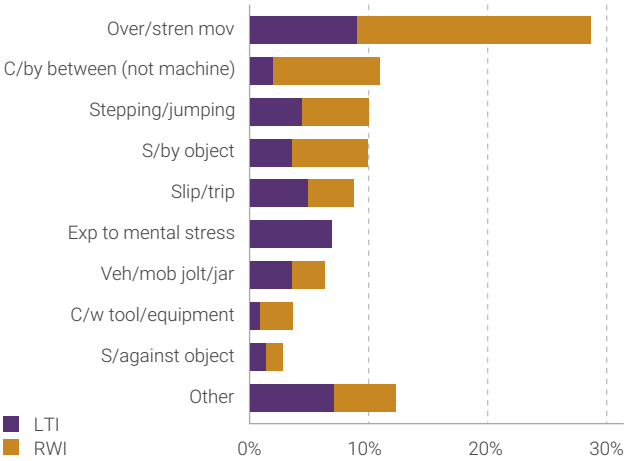
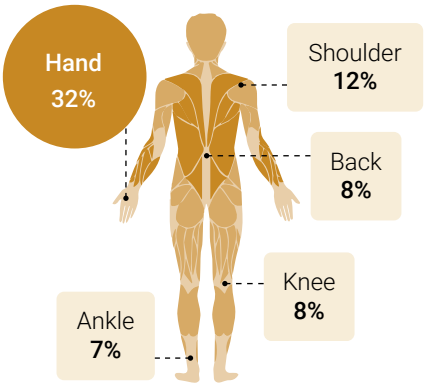


Figure 2.9 Iron ore injuries by type of incident

Gold

23% of the hours worked in the WA mineral industry were in gold



The LTIFR for Gold was 1.0, compared to 2.1 for the WA mineral industry.

The RWIFR for Gold was 4.0, compared to 3.5 for the WA mineral industry.

The LTIFR and RWIFR for Gold was 5.0, compared to 5.6 for the WA mineral industry.

Gold lost time and restricted work injuries during 2023–24

There were 63.8 million hours worked in gold during 2023–24.

In that time there were **61** LTIs and **255** RWIs.

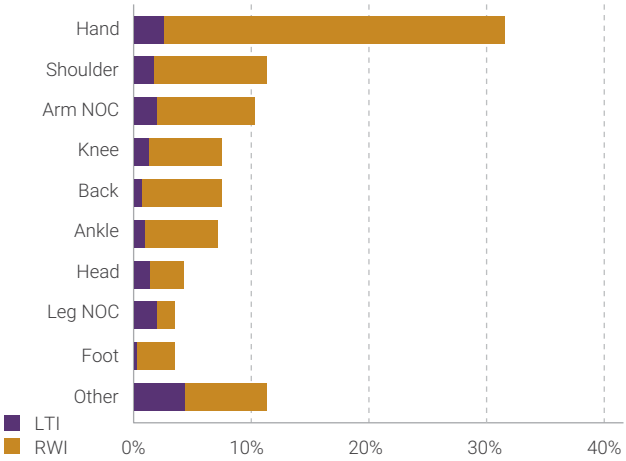


Figure 2.10 Gold injuries by part of body

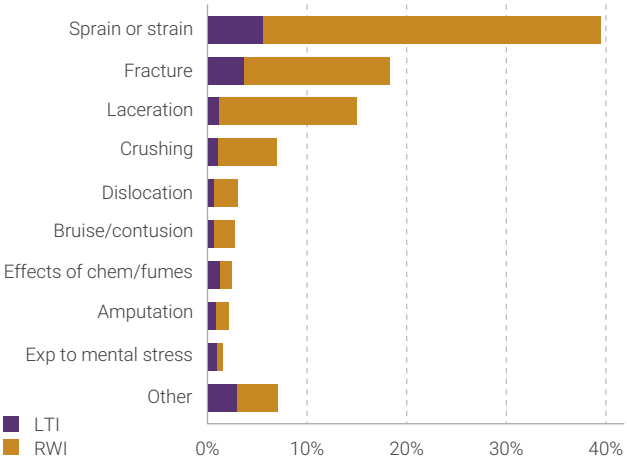


Figure 2.11 Gold injuries by nature of injury

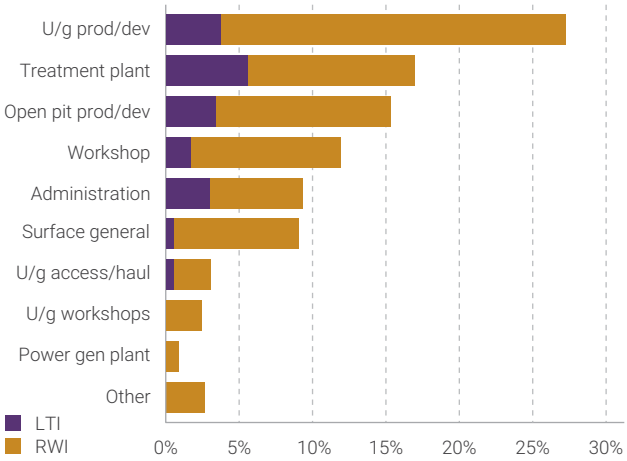


Figure 2.12 Gold injuries by location of incident

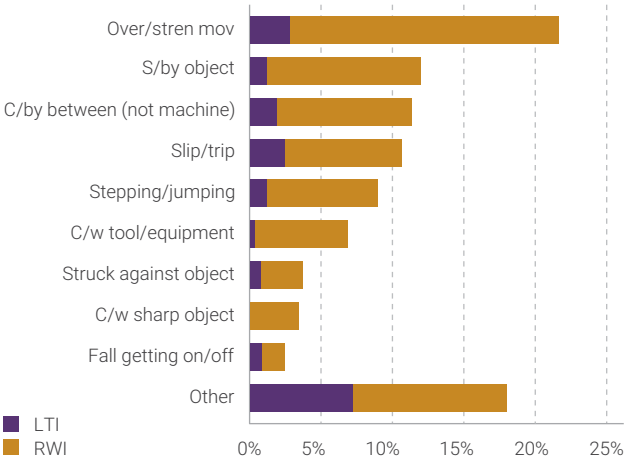
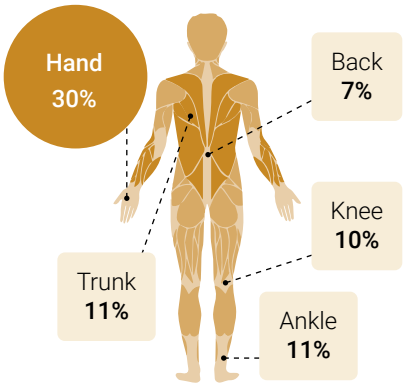


Figure 2.13 Gold injuries by type of incident

Tin, tantalum and lithium

8% of the hours worked in the WA mineral industry were in tin, tantalum and lithium



The LTIFR for tin, tantalum and lithium was 0.5, compared to 2.1 for the WA mineral industry.

The RWIFR for tin, tantalum and lithium was 2.2, compared to 3.5 for the WA mineral industry.

The LTIFR and RWIFR for tin, tantalum and lithium was 2.7, compared to 5.6 for the WA mineral industry.

Tin, tantalum and lithium lost time and restricted work injuries during 2023–24

There were 22.9 million hours worked in tin, tantalum and lithium during 2023–24.

In that time there were **11** LTIs and **50** RWIs.

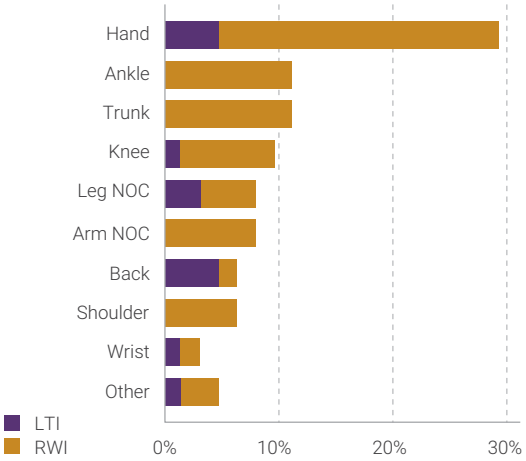


Figure 2.14 Tin, tantalum and lithium injuries by part of body

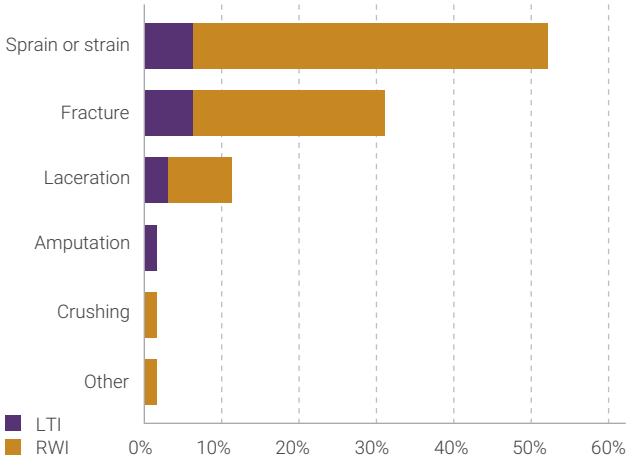


Figure 2.15 Tin, tantalum and lithium injuries by nature of injury

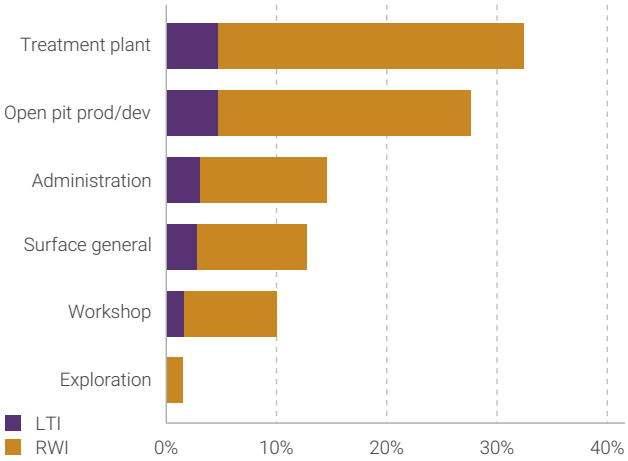


Figure 2.16 Tin, tantalum and lithium injuries by location of incident

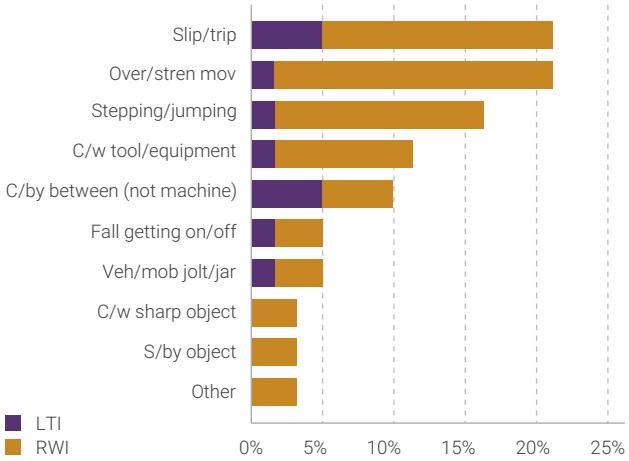
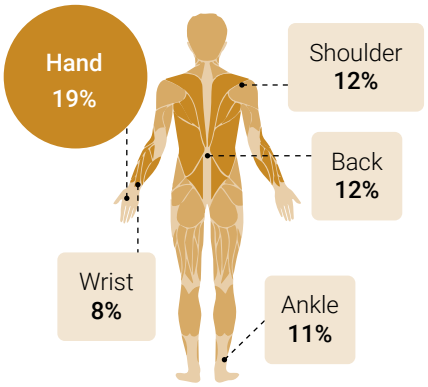


Figure 2.17 Tin, tantalum and lithium injuries by type of incident

Nickel

8% of the hours worked in the WA mineral industry were in nickel



The LTIFR for nickel was 3.0, compared to 2.1 for the WA mineral industry.

The RWIFR for nickel was 4.4, compared to 3.5 for the WA mineral industry.

The LTIFR and RWIFR for nickel was 7.4, compared to 5.6 for the WA mineral industry.

Nickel lost time and restricted work injuries during 2023–24

There were 20.9 million hours worked in nickel during 2023–24.

In that time there were **63** LTIs and **92** RWIs.

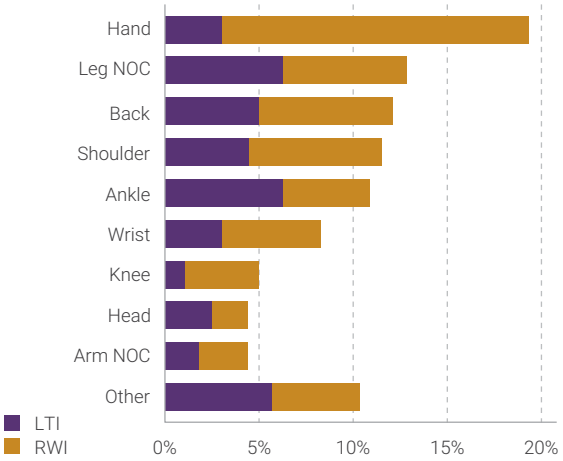


Figure 2.18 Nickel injuries by part of body

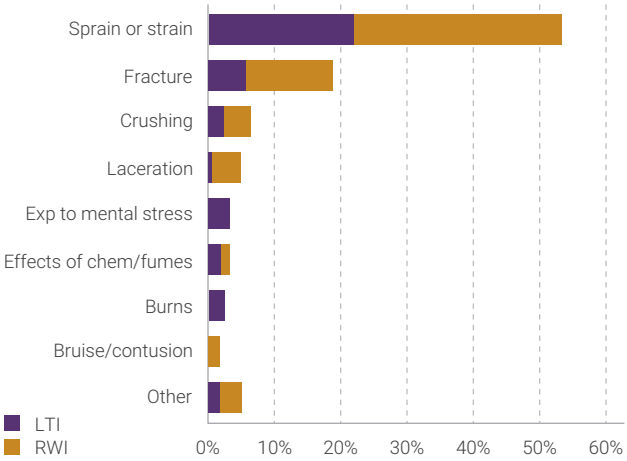


Figure 2.19 Nickel injuries by nature of injury

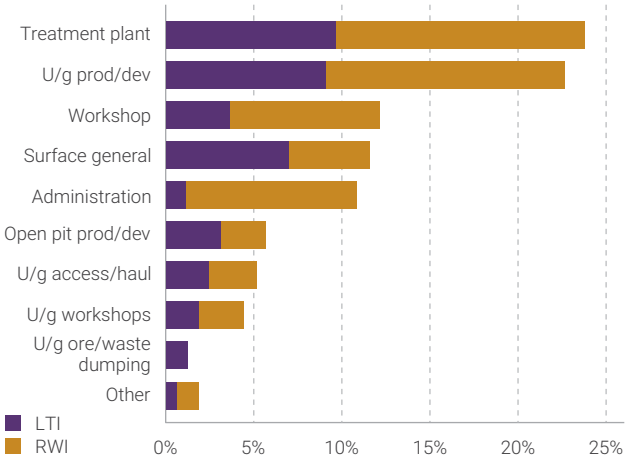


Figure 2.20 Nickel injuries by location of incident

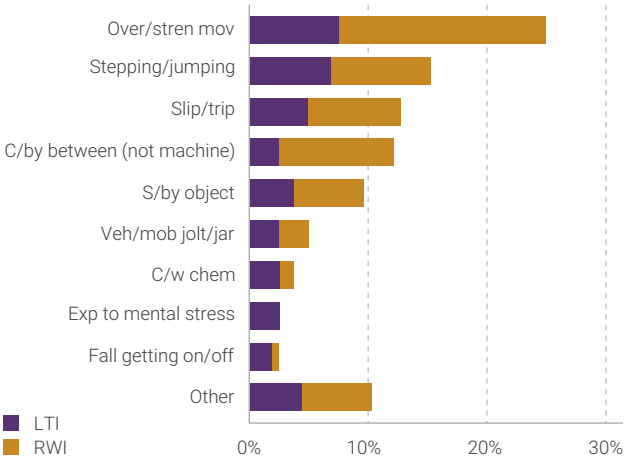
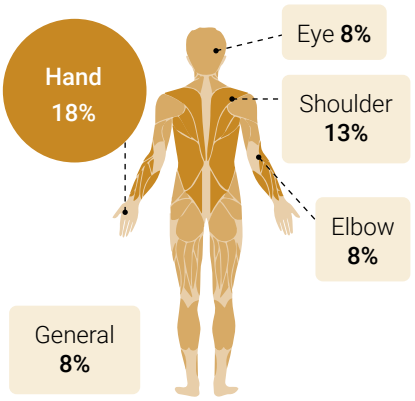


Figure 2.21 Nickel injuries by type of incident

Bauxite and alumina

5% of the hours worked in the WA mineral industry were in bauxite and alumina



The LTIFR for bauxite and alumina was 4.4, compared to 2.1 for the WA mineral industry.

The RWIFR for bauxite and alumina was 5.2, compared to 3.5 for the WA mineral industry.

The LTIFR and RWIFR for bauxite and alumina was 9.6, compared to 5.6 for the WA mineral industry.

Bauxite and alumina lost time and restricted work injuries during 2023–24

There were 14.0 million hours worked in bauxite and alumina during 2023–24.

In that time there were **62** LTIs and **73** RWIs.

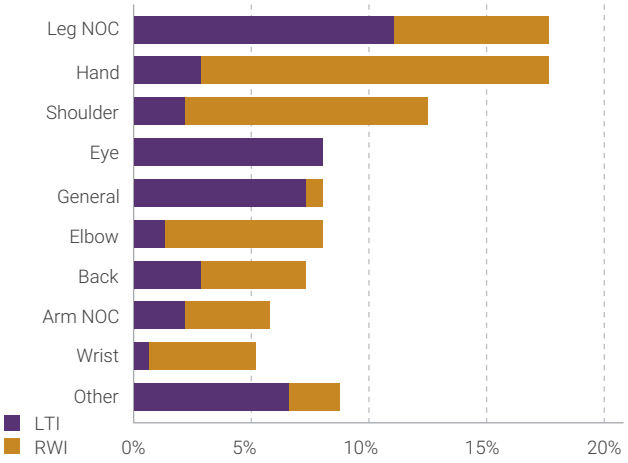


Figure 2.22 Bauxite and alumina injuries by part of body

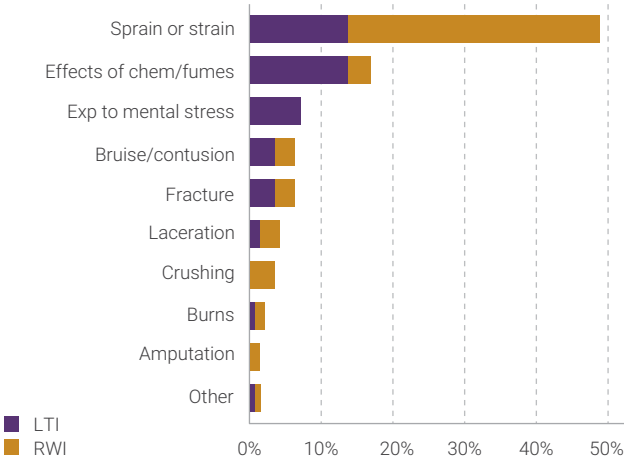


Figure 2.23 Bauxite and alumina injuries by nature of injury

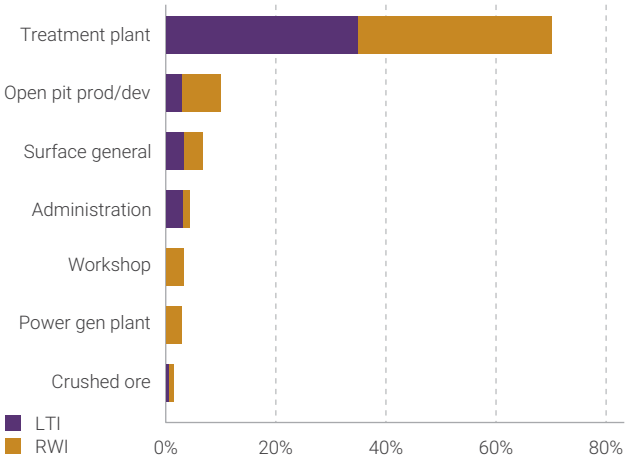


Figure 2.24 Bauxite and alumina injuries by location of incident

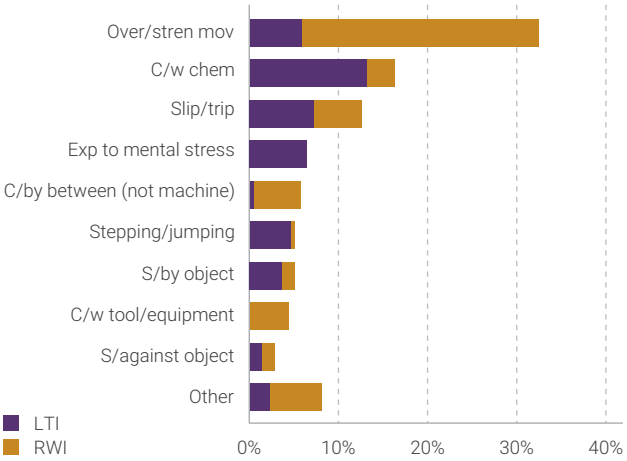
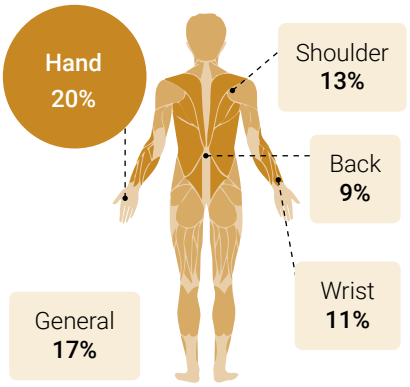


Figure 2.25 Bauxite and alumina injuries by type of incident

Exploration

3% of the hours worked in the WA mineral industry were in exploration



The LTIFR for exploration was 2.6, compared to 2.1 for the WA mineral industry.

The RWIFR for exploration was 3.8, compared to 3.5 for the WA mineral industry.

The LTIFR and RWIFR for exploration was 6.5, compared to 5.6 for the WA mineral industry.

Exploration lost time and restricted work injuries during 2023–24

There were 8.3 million hours worked in exploration during 2023–24.

In that time there were **22** LTIs and **32** RWIs.

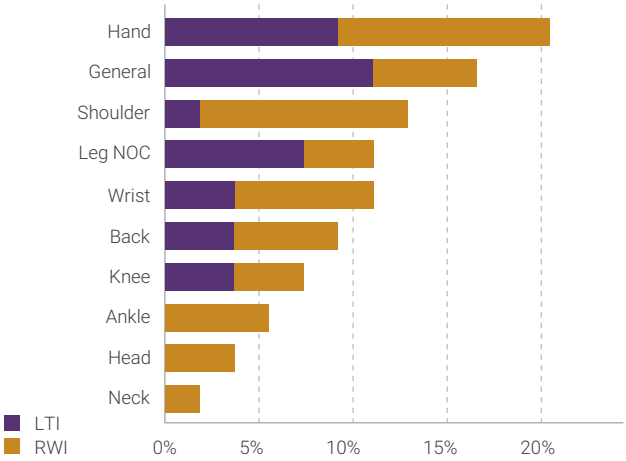


Figure 2.26 Exploration injuries by part of body

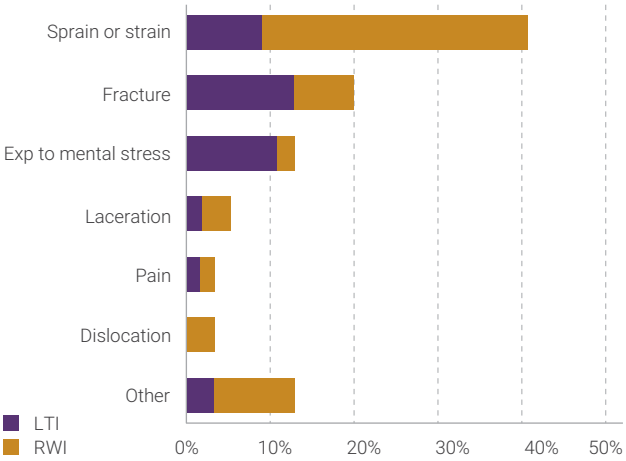


Figure 2.27 Exploration injuries by nature of injury

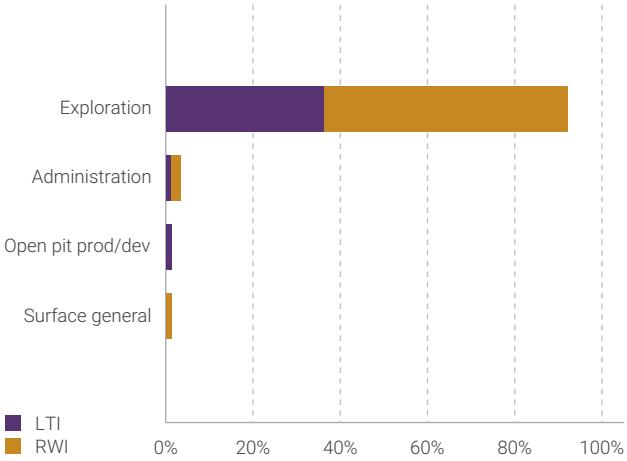


Figure 2.28 Exploration injuries by location of incident

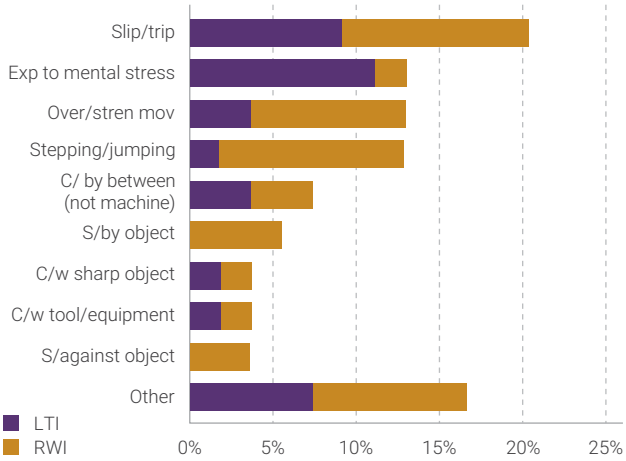
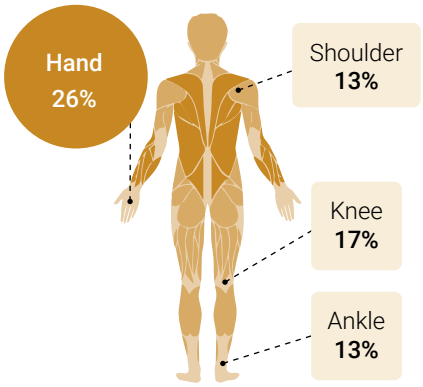


Figure 2.29 Exploration injuries by type of incident

Heavy mineral sands

2% of the hours worked in the WA mineral industry were in heavy mineral sands



The LTIFR for heavy mineral sands was 1.0, compared to 2.1 for the WA mineral industry.

The RWIFR for heavy mineral sands was 2.9, compared to 3.5 for the WA mineral industry.

The LTIFR and RWIFR for heavy mineral sands was 4.0, compared to 5.6 for the WA mineral industry.

Heavy mineral sands lost time and restricted work injuries during 2023–24

There were 5.8 million hours worked in heavy mineral sands during 2023–24.

In that time there were **6** LTIs and **17** RWIs.

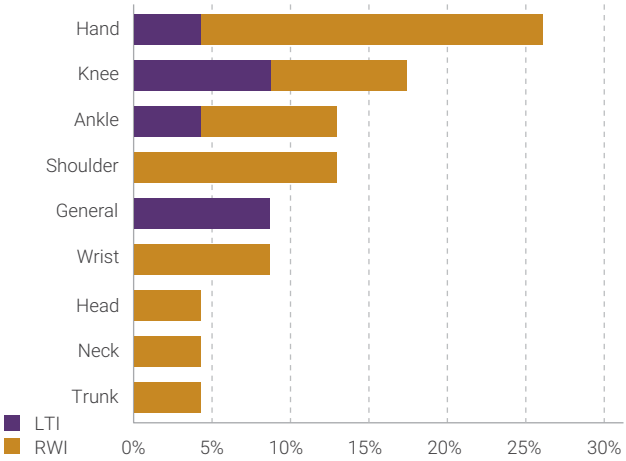


Figure 2.30 Heavy mineral sands injuries by part of body

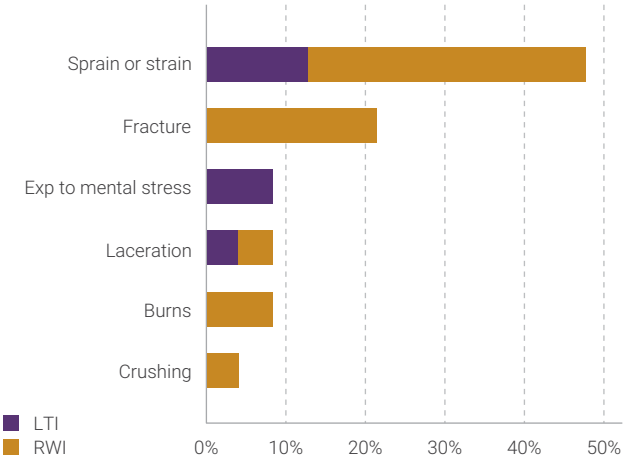


Figure 2.31 Heavy mineral sands injuries by nature of injury

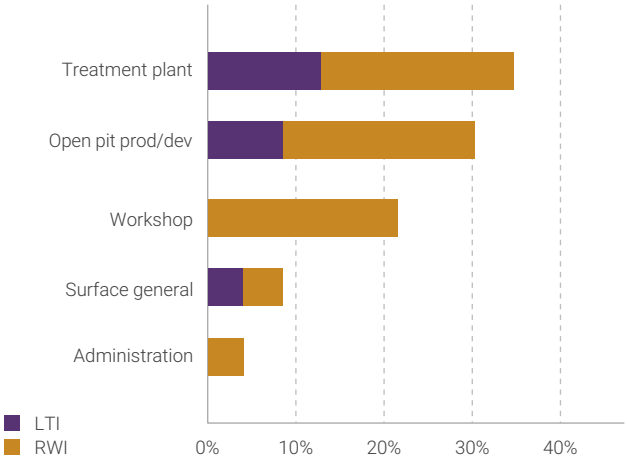


Figure 2.32 Heavy mineral sands injuries by location of incident

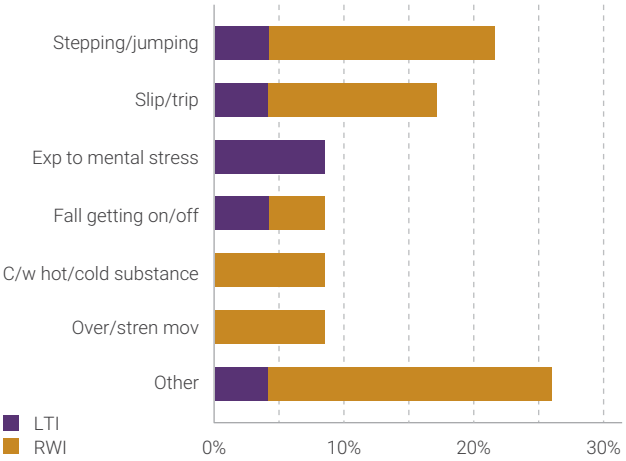
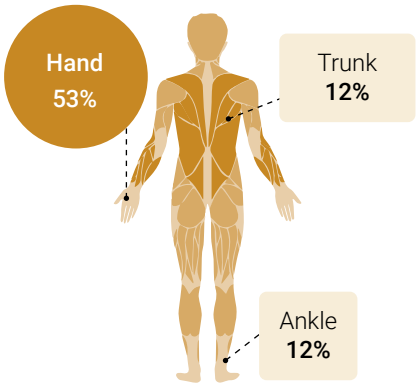


Figure 2.33 Heavy mineral sands injuries by type of incident

Copper, lead and zinc

1% of the hours worked in the WA mineral industry were in copper, lead and zinc



The LTIFR for copper, lead and zinc was 1.0, compared to 2.1 for the WA mineral industry.

The RWIFR for copper, lead and zinc was 4.7, compared to 3.5 for the WA mineral industry.

The LTIFR and RWIFR for copper, lead and zinc was 5.7, compared to 5.6 for the WA mineral industry.

Copper, lead and zinc lost time and restricted work injuries during 2023–24

There were 3.0 million hours worked in copper, lead and zinc during 2023–24.

In that time there were **3** LTIs and **14** RWIs.

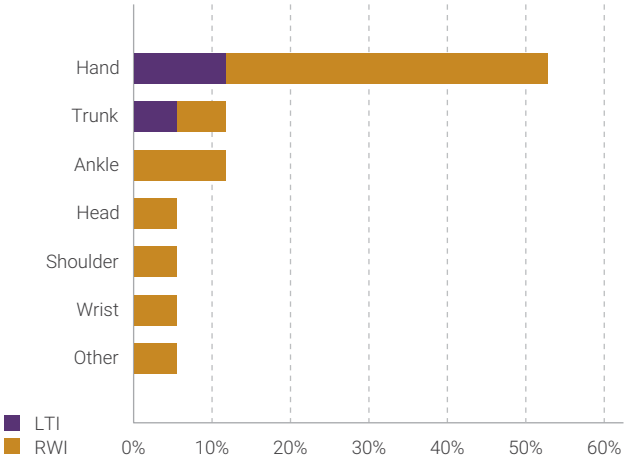


Figure 2.34 Copper, lead and zinc injuries by part of body

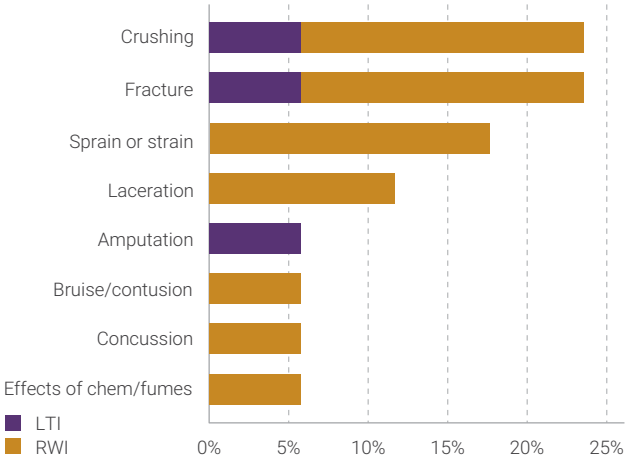


Figure 2.35 Copper, lead and zinc injuries by nature of injury

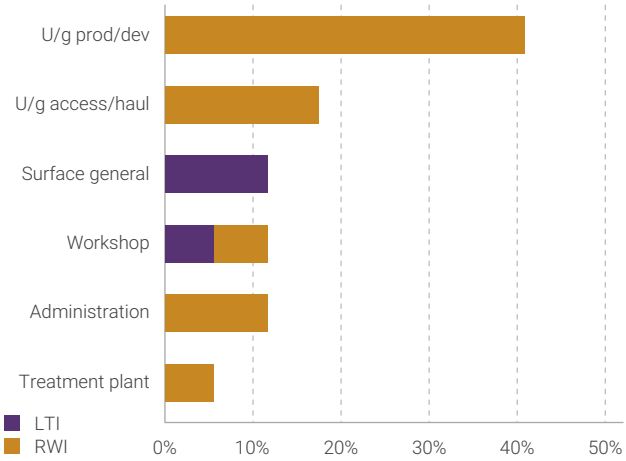


Figure 2.36 Copper, lead and zinc injuries by location of incident

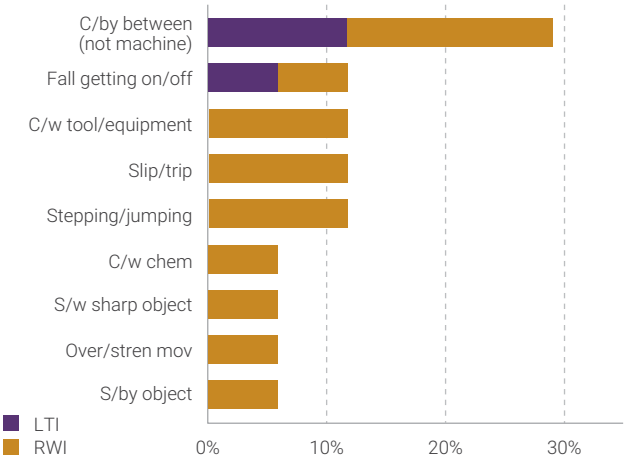
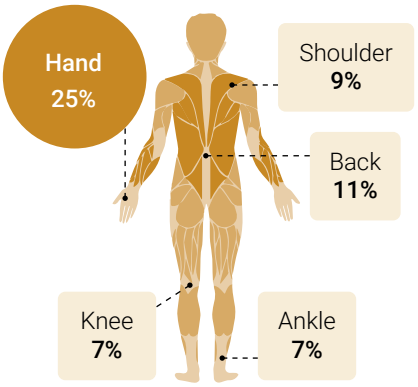


Figure 2.37 Copper, lead and zinc injuries by type of incident

Surface injuries

91% of the hours worked in the WA mineral industry were on the surface



The LTIFR for surface operations was 2.2, compared to 2.1 for the WA mineral industry.

The RWIFR for surface operations was 3.4, compared to 3.5 for the WA mineral industry.

The LTIFR and RWIFR for surface operations was 5.6, compared to 5.6 for the WA mineral industry.

Surface lost time and restricted work injuries during 2023–24

There were 252.0 million hours worked in surface during 2023–24.

In that time there were **553** LTIs and **853** RWIs.

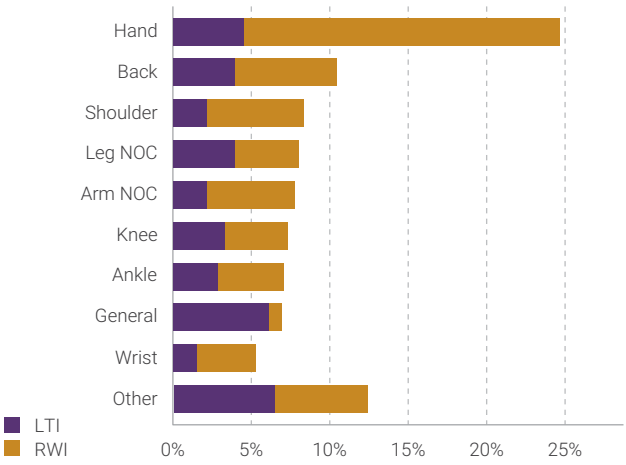


Figure 2.38 Surface injuries by part of body

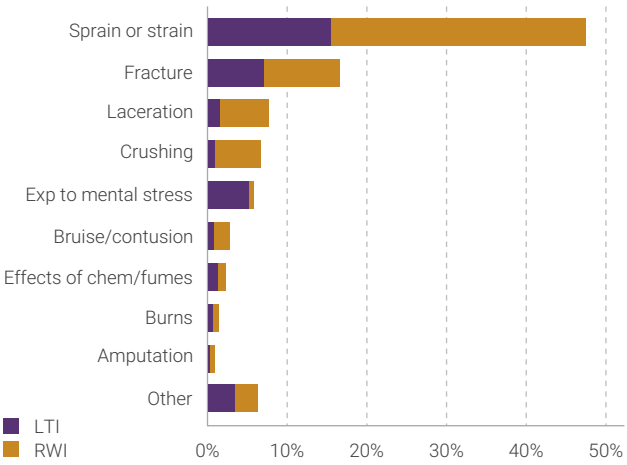


Figure 2.39 Surface injuries by nature of injury

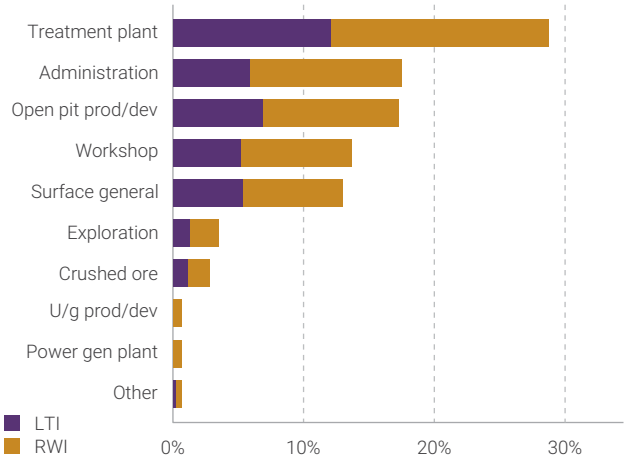


Figure 2.40 Surface injuries by location of incident

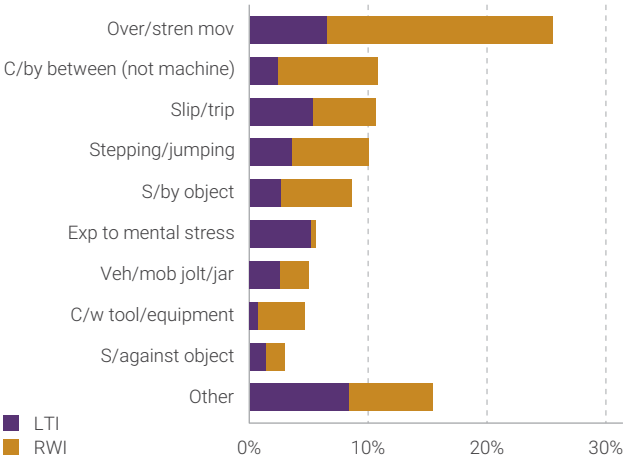
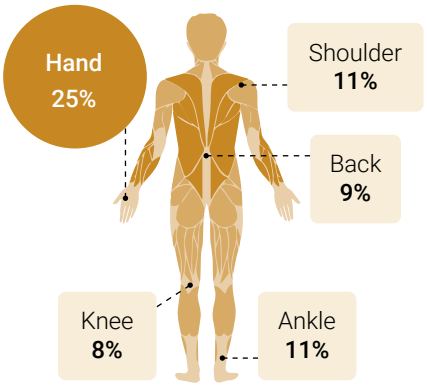


Figure 2.41 Surface injuries by type of incident

Underground injuries

9% of the hours worked in the WA mineral industry were in underground.



The LTIFR for underground operations was 1.5, compared to 2.1 for the WA mineral industry.

The RWIFR for underground operations was 4.7, compared to 3.5 for the WA mineral industry.

The LTIFR and RWIFR for underground operations was 6.1, compared to 5.6 for the WA mineral industry.

Underground lost time and restricted work injuries during 2023–24

There were 26.0 million hours worked in underground during 2023–24.

In that time there were **38** LTIs and **121** RWIs.

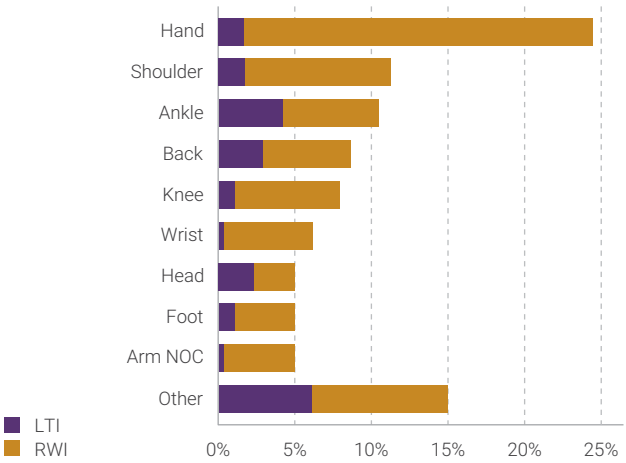


Figure 2.42 Underground injuries by part of body

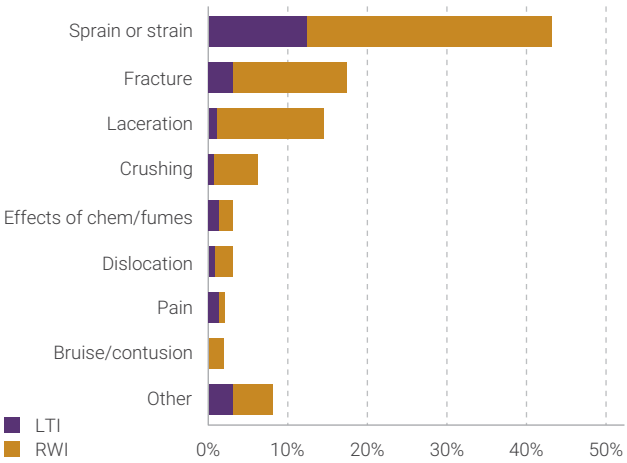


Figure 2.43 Underground injuries by nature of injury

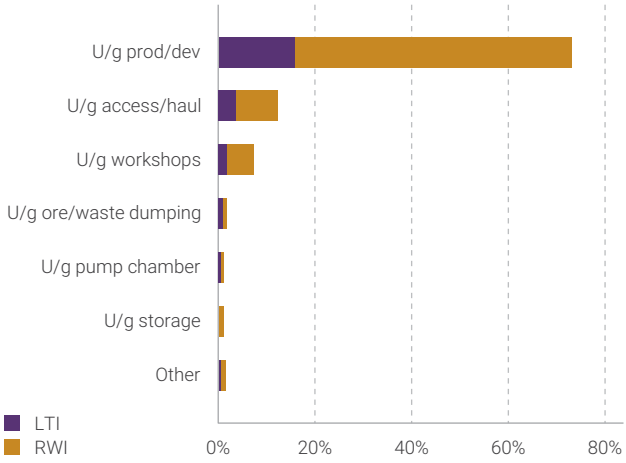


Figure 2.44 Underground injuries by location of incident

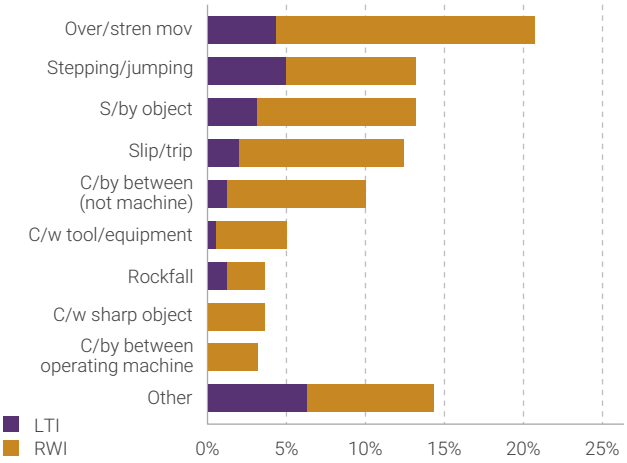


Figure 2.45 Underground injuries by type of incident

Appendices

APPENDIX **1**

Definitions used in this publication

- Days lost – Rostered days absent from work due to work injury.
- Days restricted – Rostered days working alternative duties or restricted hours due to work injury.
- Duration rate – Average number of days lost or days restricted per lost time injury or restricted work injury.
- Exploration – Exploration activities not under the control of a mine's Site Senior Executive.
- Frequency rate (FR) – Number of injuries per million hours worked. The terms LTIFR, RWIFR and FIFR are used to mean lost time injury, restricted work injury and fatal injury frequency rate respectively.
- Injury index – Number of days lost or days restricted per million hours worked.
- Lost time injury (LTI) – Work injury that results in an absence from work for at least one full day or shift any time after the day or shift on which the injury occurred.
- NOC – Not otherwise classified.
- Restricted work injury (RWI) – Work injury (not LTI) that results in the injured person being unable to fully perform his or her ordinary occupation (regular job) any time after the day or shift on which the injury occurred, for example where a person is on alternative or light duties or where hours are restricted.

The exact definition of an injury or illness can be found in the WHS Act s. 36.

Further descriptions and examples can be found at:
www.worksafe.wa.gov.au/serious-injury-or-illness

APPENDIX **2**

Terms used for part of body

- Ankle.
- Arm NOC – 'Arm not otherwise classified' - includes all parts of the arm remaining to report after any individual parts such as the elbow, shoulder, hand, or wrist have been specified.
- Back.
- Elbow.
- Eye – including eyebrows, eyelids, and eyelashes.
- Foot – including toes but does not include the ankle.
- General – includes injuries to circulatory, respiratory, digestive and nervous systems, such as exposure to mental stress, environmental heat, or fatigue.
- Hand – includes fingers and thumbs, but does not include the wrist.
- Head – does not include the eyes except where multiple parts of the head are affected.
- Knee.
- Leg NOC – 'Leg not otherwise classified' - includes all parts of the leg remaining to report after any individual parts such as the ankle, foot or knee have been specified.
- Multiple – used when multiple other categories would be equally appropriate.
- Neck.
- Shoulder.
- Trunk – does not include the back.
- Wrist.

APPENDIX **3**

Terms used for nature of injury

- Abrasion – superficial graze.
- Amputation.
- Blistering.
- Bruise/contusion.
- Burns.
- Concussion.
- Crushing.
- Dislocation.
- Effects of chem/fumes – effects of chemicals or fumes.
- Electric shock.
- Exp to heat – exposure to environmental heat.
- Exp to mental stress – stress-related conditions; includes post-traumatic stress and effects of workplace harassment.
- Eye irritation (not chemical).
- Fatigue.
- Foreign body (not chemical) – includes entry of something into the skin, eyes, nose, ear, mouth or other parts of the body, but does not include sharp objects such as metal splinters.
- Fracture.
- Hearing impairment.
- Heart attack.
- Infection.
- Jarring.
- Laceration.
- Loss of consciousness.
- Multiple – used where multiple categories are equally important.
- Musculoskeletal NOC – musculoskeletal not otherwise classified. Relates to the muscles and skeleton; includes muscles, bones, joints and tendons.
- Nausea.
- NOC – nature of injury not otherwise classified.
- Pain.
- Puncture.
- Shock.
- Sprain or strain – torn ligaments (sprain) or torn muscle or tendon (strain).
- Swelling.

APPENDIX **4**

Terms used for location of incident

Exploration:

- includes all injuries occurring while under the control of an exploration manager.

Underground locations:

- U/g access/haul – underground access, travelling or haulage ways, including roads, declines, shafts and airways.
- U/g ancillary – underground crib rooms and latrines.
- U/g crushing – underground crushing areas.
- U/g NOC – underground areas not otherwise classified.
- U/g ore/waste dumping – underground ore or waste dumping areas.
- U/g prod/dev – underground production or development areas.
- U/g pump chamber – underground pump chambers.
- U/g storage – underground storage areas, including fuel and explosive stores.
- U/g workshops – underground workshops.

Surface locations:

- Administration – includes offices and administration buildings plus crib rooms, showers and change rooms, car parks, pathways and gardens.
- Crushed ore – crushed ore areas, including stockpiles and train and ship loading areas.
- Open pit prod/dev – open pit production or development areas, including mine faces, bench areas, haul roads, ore and waste dumping areas and run of mine stockpiles.
- Power gen plant – power generation plant.
- Railways – excludes train loading areas.
- Surface general – such as access roads, park up areas, warehouses, fuel storage areas and laboratories.
- Treatment plant – also includes ore processing.
- Workshop – surface workshops.

APPENDIX **5**

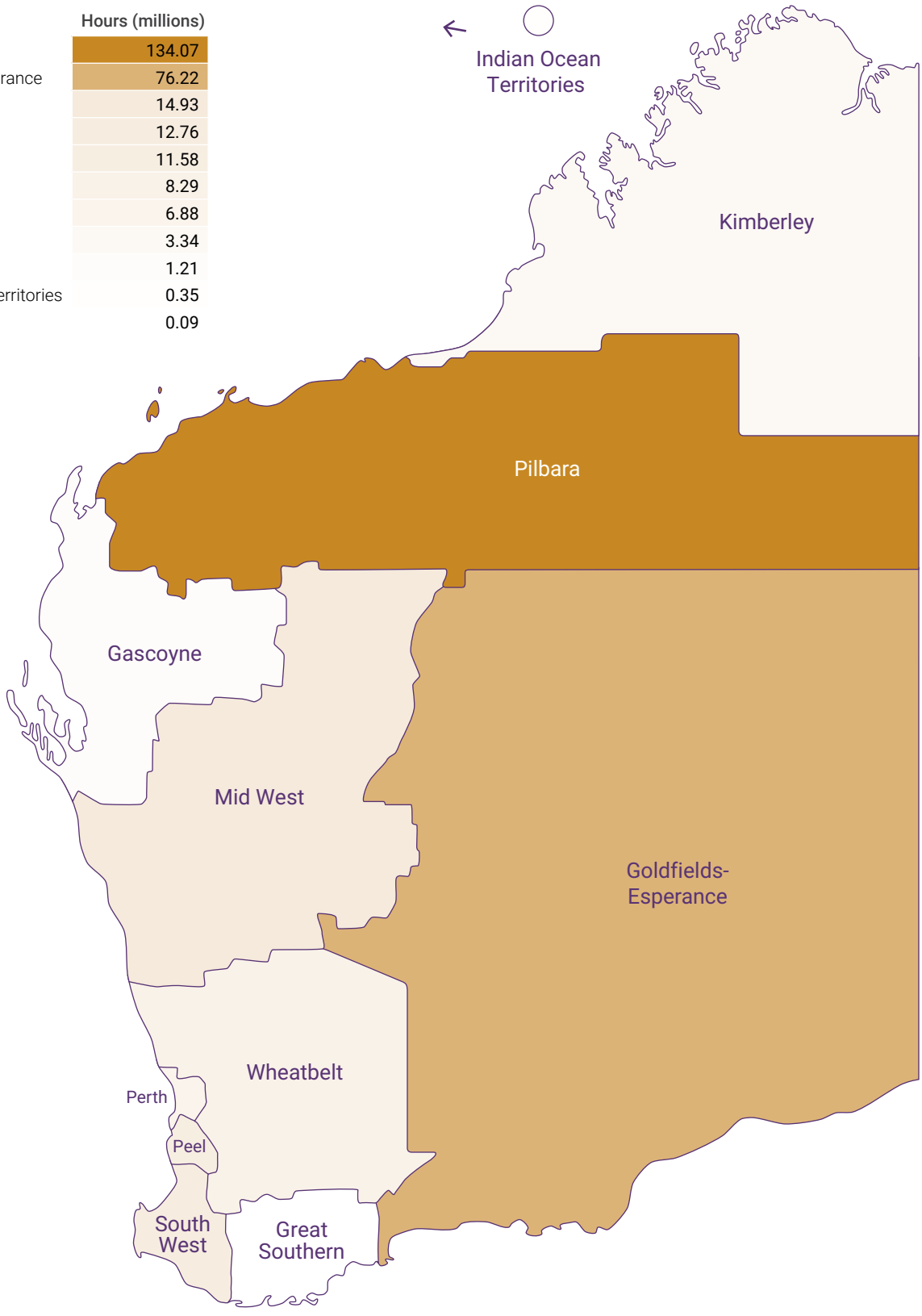
Terms used for type of incident

- C/by between (not machine) – caught by or between still or moving objects (e.g. finger caught between two pipes while attempting to move one of them) but does not include getting caught between parts of an operating machine.
- C/by between operating machine – caught by or between parts of an operating machine.
- C/w chem – inhalation, absorption or ingestion of chemicals or fumes; includes smoke, blast fumes, acids, caustic substances and industrial solvents.
- C/w foreign body – contact with foreign body; includes entry into the skin, eyes, nose, ears, mouth or other part of the body by an object, but does not include sharp objects such as metal splinters.
- C/w hot/cold substance – contact with hot or cold solid, liquid, gas or steam, molten metal or naked flame; usually resulting in burns.
- C/w sharp object – contact with sharp object (e.g. metal splinter) but does not include objects such as sharp tools or operating machines.
- C/w tool/equipment – contact with a handheld manual or power tool.
- Exp to environment – exposure to environmental heat or cold; usually related to heat stress.
- Exp to mental stress – stress-related conditions; includes post-traumatic stress and effects of workplace harassment.
- Explosion or implosion – includes gas ignition as well as compressed air explosions such as pressure vessel and tyre explosions.
- Fall from height – fall from height equal to or greater than 0.5 metres; includes falls from vehicles or mobile equipment but does not include falls while getting on or off the vehicle or mobile equipment.
- Fall getting on/off – falls getting on or off vehicles or mobile equipment but does not include falls stepping on uneven ground while disembarking from a vehicle or mobile equipment.
- Falls NOC – falls not otherwise classified.
- Insect or animal bite – bites or stings from insects, spiders, snakes and other animals.
- Over/stren mov – over-exertion or strenuous movements; usually associated with lifting, carrying, pulling, pushing and moving objects; also includes strenuous movements, repetitive movements with no specific event, and working in a confined area or while in an awkward posture.
- Rockfall – falls of rock usually from the face, walls and backs of underground excavations or from the face and walls of surface excavations.
- S/against object – struck against stationary or moving objects (e.g. hitting head on low structure while walking).
- S/by object – struck by falling, flying, sliding or moving objects but does not include rockfalls or being struck by persons, vehicles or mobile equipment.
- S/by person – struck by person.
- S/by veh/mob – struck by a vehicle or mobile equipment.
- Slip/trip – other falls not from height or while getting on or off vehicles or mobile equipment; includes falls on stairs, falls on slippery or uneven ground, falls over loose or fixed objects and falls while handling equipment.
- Stepping/jumping – stepping or jumping on object, loose rock, uneven surface or to a higher or lower level; includes stepping on uneven ground while disembarking from a vehicle or mobile equipment; usually results in a sprain or strain to the ankle or knee.
- Veh/mob collision – vehicle or mobile equipment collision; includes colliding with stationary objects or walls.
- Veh/mob jolt/jar – vehicle or mobile equipment jolting or jarring (e.g. jolting or jarring while driving over an uneven surface, sitting in a truck being loaded with large material, bogging a face, ripping with a bulldozer).
- Veh/mob rollover – vehicle or mobile equipment rollovers; includes partial rollovers.

APPENDIX 6

Hours worked by region 2023–24

Region	Hours (millions)
Pilbara	134.07
Goldfields-Esperance	76.22
Mid West	14.93
South West	12.76
Peel	11.58
Wheatbelt	8.29
Perth	6.88
Kimberley	3.34
Gascoyne	1.21
Indian Ocean Territories	0.35
Great Southern	0.09



APPENDIX 7

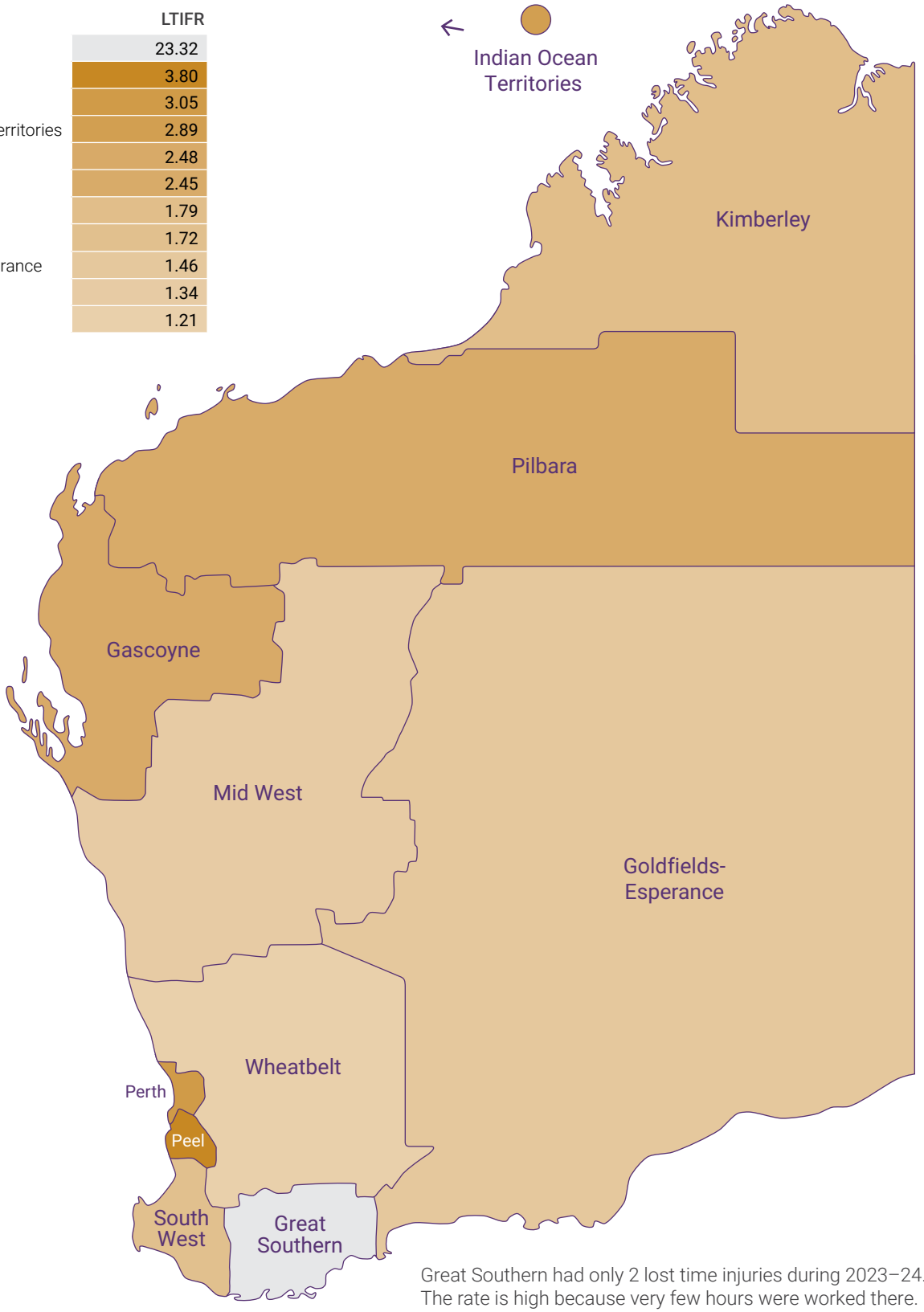
Work-related fatalities per million hours worked 2014–15 to 2023–24

Region	FIFR
Perth	0.037
Wheatbelt	0.029
South West	0.021
Mid West	0.015
Goldfields-Esperance	0.010
Pilbara	0.007
Gascoyne	0
Great Southern	0
Indian Ocean Territories	0
Kimberley	0
Peel	0

APPENDIX 8

Lost time injuries per million hours worked 2023–24

Region	LTIFR
Great Southern	23.32
Peel	3.80
Perth	3.05
Indian Ocean Territories	2.89
Gascoyne	2.48
Pilbara	2.45
Kimberley	1.79
South West	1.72
Goldfields-Esperance	1.46
Mid West	1.34
Wheatbelt	1.21

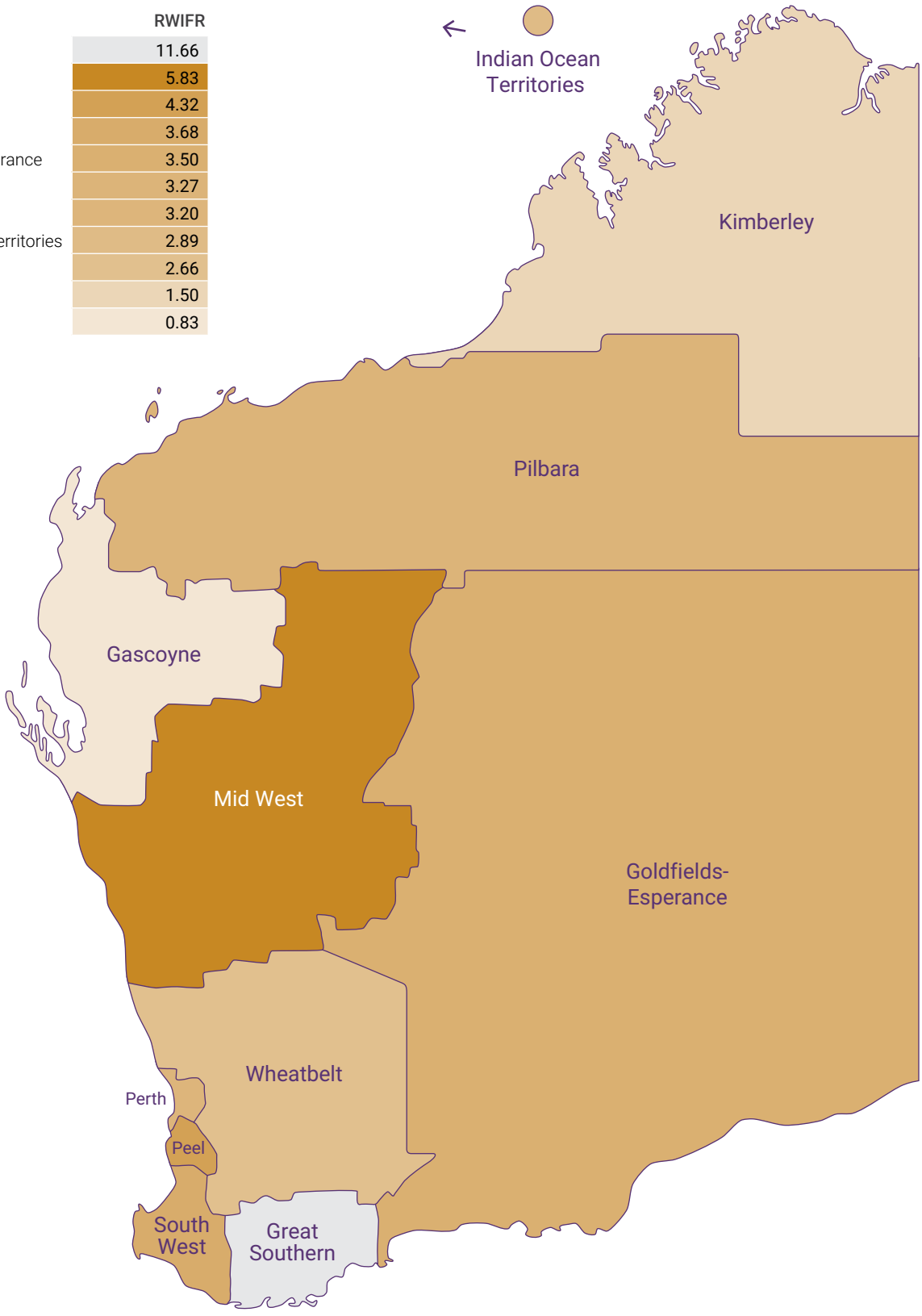


Great Southern had only 2 lost time injuries during 2023–24. The rate is high because very few hours were worked there. It has been coloured differently to indicate it is not using the same scale as the other regions.

APPENDIX 9

Restricted work injuries per million hours worked 2023–24

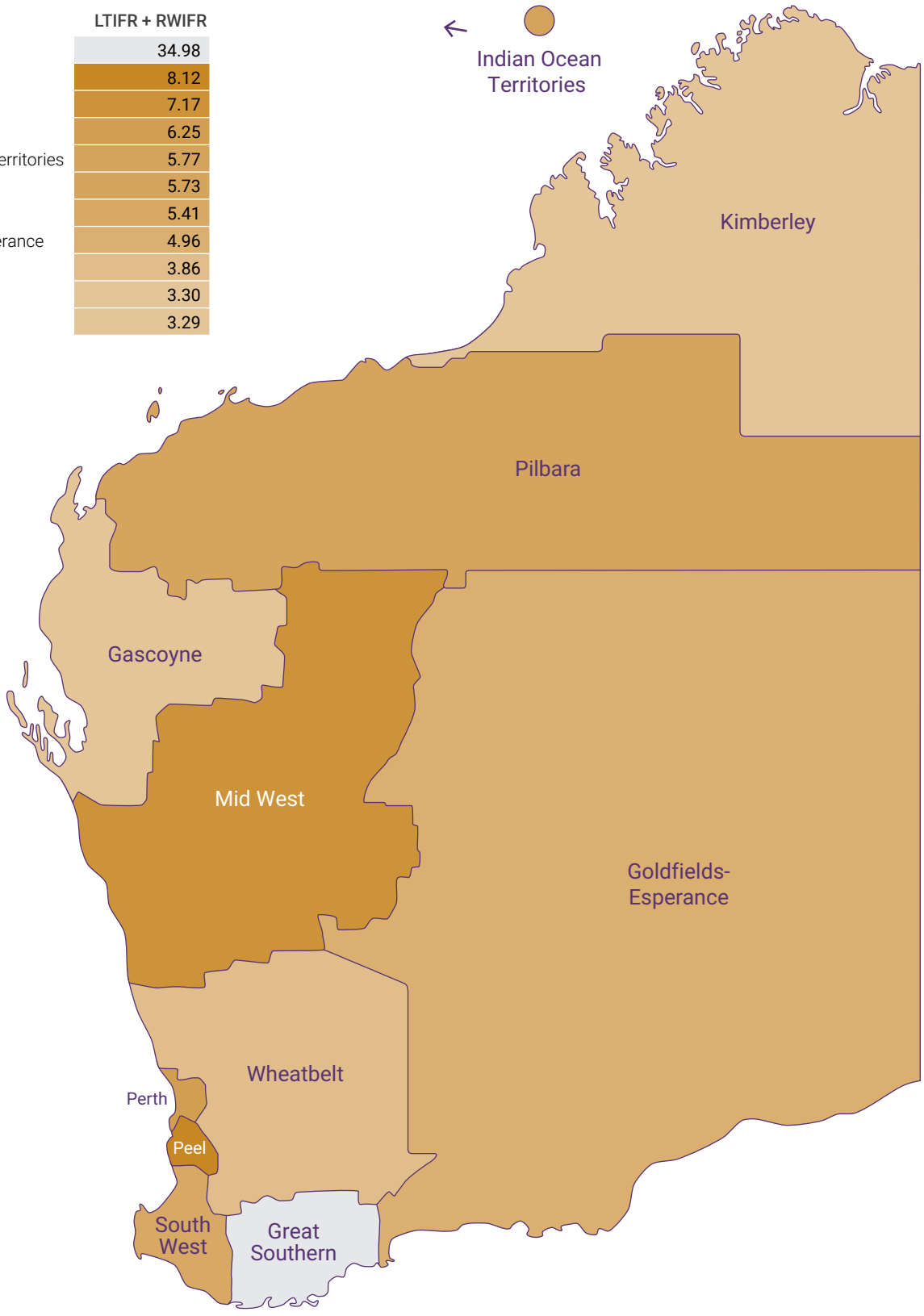
Region	RWIFR
Great Southern	11.66
Mid West	5.83
Peel	4.32
South West	3.68
Goldfields-Esperance	3.50
Pilbara	3.27
Perth	3.20
Indian Ocean Territories	2.89
Wheatbelt	2.66
Kimberley	1.50
Gascoyne	0.83



APPENDIX **10**

Lost time and restricted work injuries per million hours worked 2023–24

Region	LTIFR + RWIFR
Great Southern	34.98
Peel	8.12
Mid West	7.17
Perth	6.25
Indian Ocean Territories	5.77
Pilbara	5.73
South West	5.41
Goldfields-Esperance	4.96
Wheatbelt	3.86
Gascoyne	3.30
Kimberley	3.29



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