

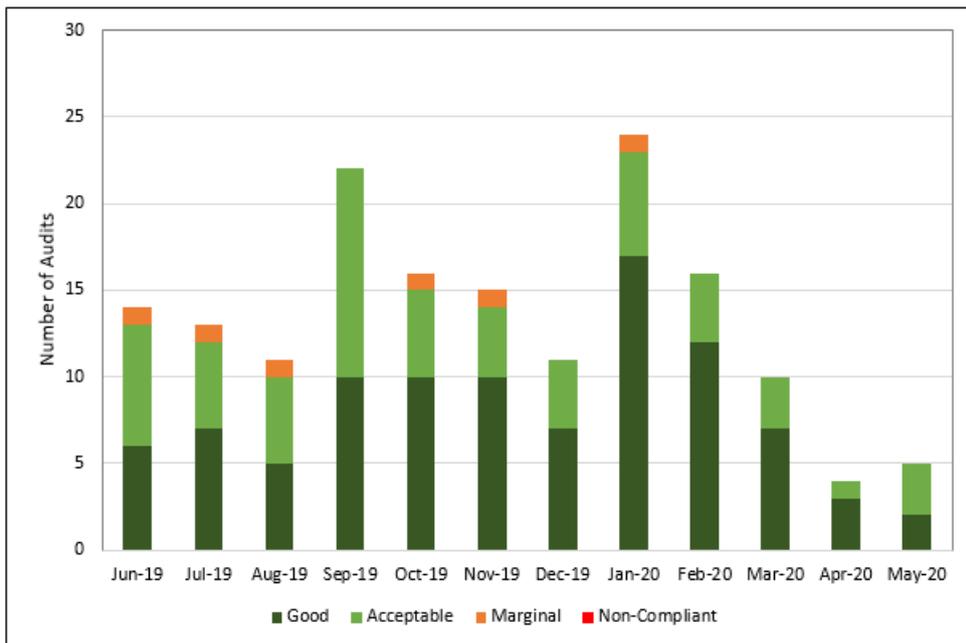
# Operational Monitoring

## PF Olsen Group Scheme FSC NC-FM/COC - 000190

During 2004/05, PF Olsen Ltd developed a monitoring system that captures supervisor audits of the key risk forestry operations of harvesting, engineering and mechanical land preparation. The system was introduced over stages starting with harvesting. Harvesting audits provide consistent month on month records while engineering and land preparation activities are mainly undertaken over the summer months. Land preparation audits only started in summer 2006. Audit results as a total and as a percentage for harvesting, engineering and land preparation follow.

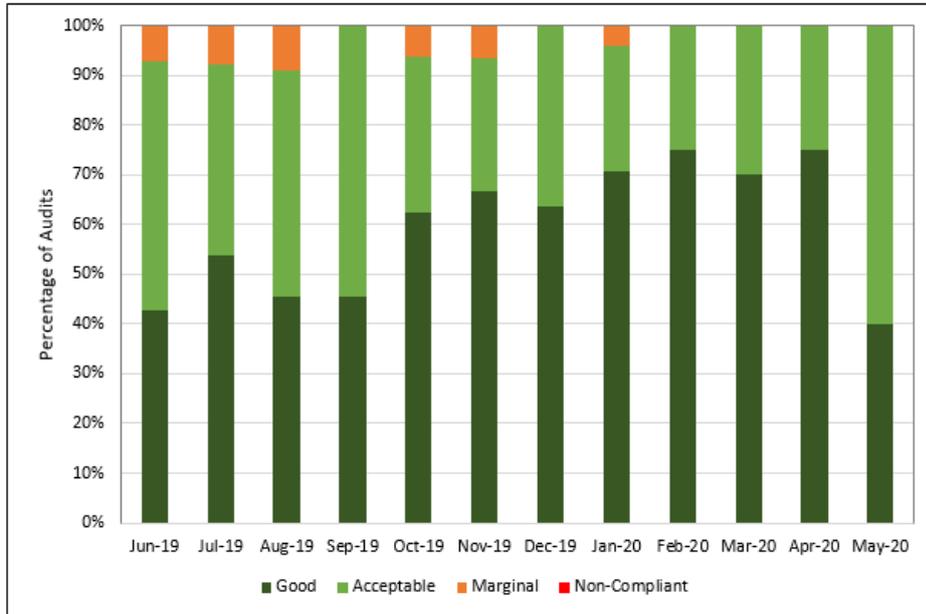
**Note:** due to the unexpected situation that developed from Covid-19, forestry operations in both FSC and non-FSC forests around New Zealand were impacted from as early on as January 2020. The virus initiated in China, slowing log market demand there, before making its way to New Zealand where the industry was further impacted by the complete shutdown of the country to stop the disease from spreading. This means that audit numbers across all operations decreased from January onwards, before increasing again in May / June with the easement of lockdown.

### Harvesting



Audit Date	No Audits
Jun-19	14
Jul-19	13
Aug-19	11
Sep-19	22
Oct-19	16
Nov-19	15
Dec-19	11
Jan-20	24
Feb-20	16
Mar-20	10
Apr-20	4
May-20	5

Harvesting monitoring audits 2019/20 - total

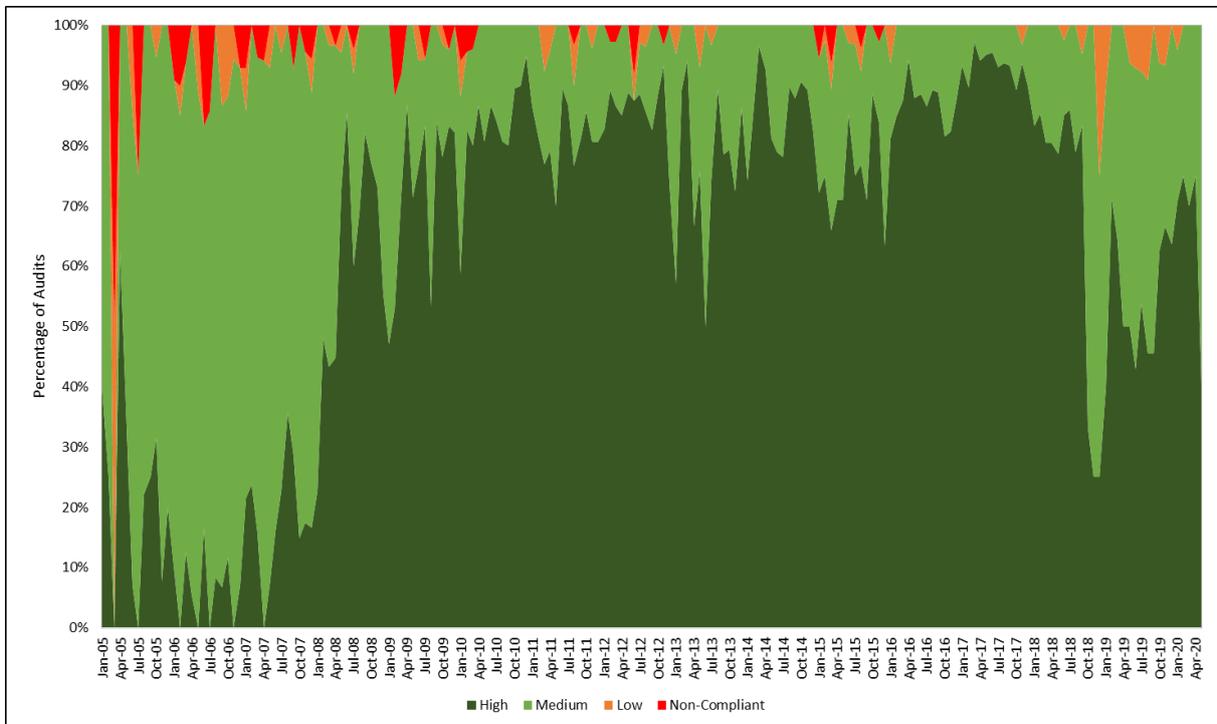


Audit Date	No Audits
Jun-19	14
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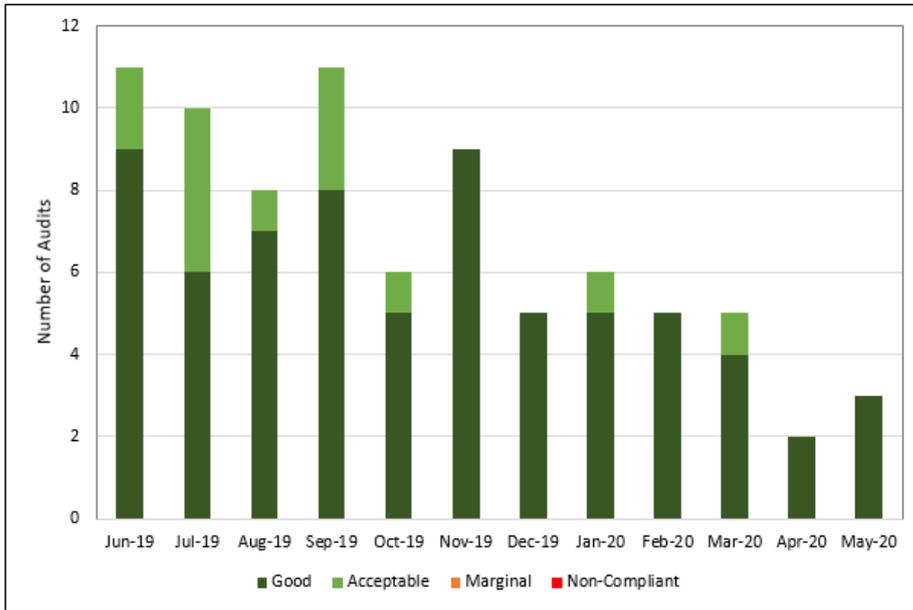
**Harvesting monitoring audits 2019/20 - as a percentage**

**Time series - Harvesting**

This time series of all harvesting audits since records began reveals the steady improvement of audit results in the face of an increasing production, and audit frequency. Adverse score weightings increased in 2012 for 'low' or 'non-compliance' performance in critical elements such as sediment and erosion control.

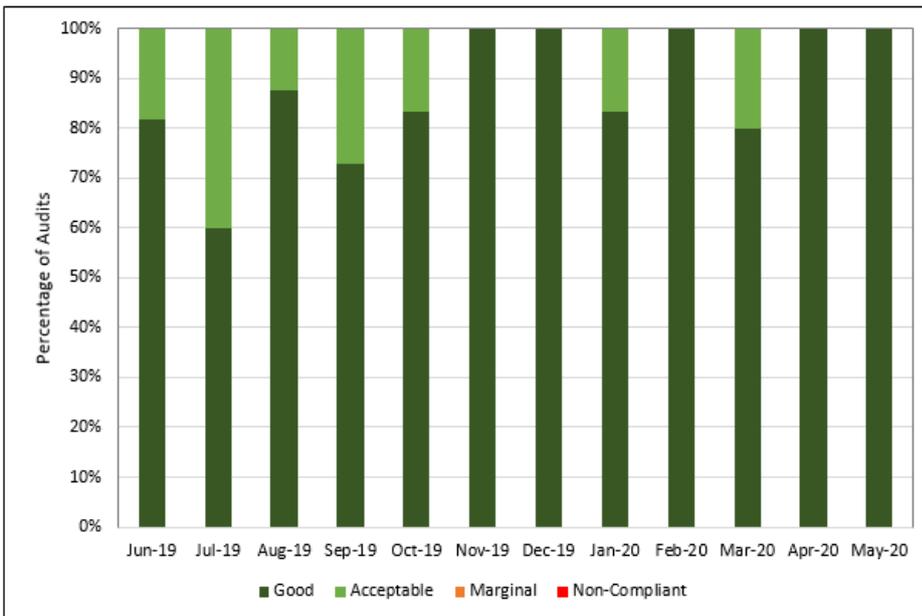


## Engineering



Audit Date	No Audits
Jun-19	11
Jul-19	10
Aug-19	8
Sep-19	11
Oct-19	6
Nov-19	9
Dec-19	5
Jan-20	6
Feb-20	5
Mar-20	5
Apr-20	2
May-20	3

**Engineering monitoring audits 2019/20 - total**

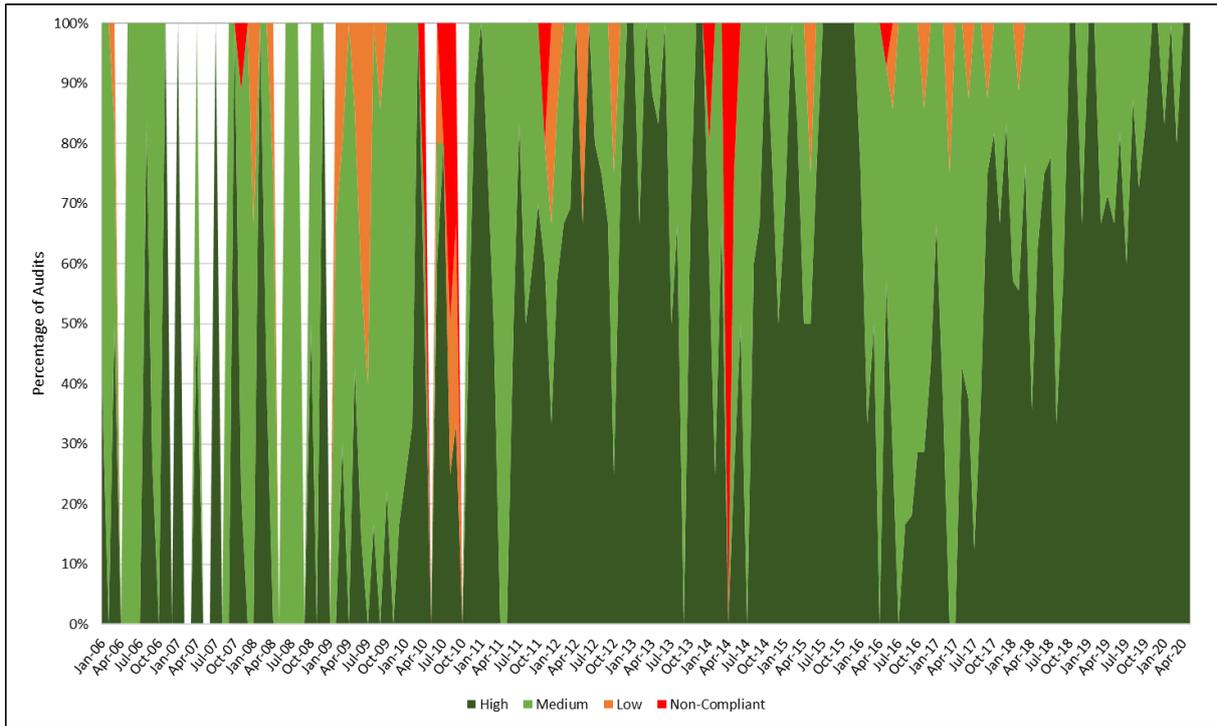


Audit Date	No Audits
Jun-19	11
Jul-19	10
Aug-19	8
Sep-19	11
Oct-19	6
Nov-19	9
Dec-19	5
Jan-20	6
Feb-20	5
Mar-20	5
Apr-20	2
May-20	3

**Engineering monitoring audits 2019/20 - as a percentage**

### Time series - Engineering

As with harvesting, this rolling time series reveals the improving performance concurrent with an increasing intensity of focus on engineering operational performance in challenging topographic and climatic conditions. Higher performance expectations have not thwarted improving ratios of marginal and non-compliant audit scores and the percentage of ‘good’ relative to ‘acceptable’ and total audits across the years is starting to rise while non-compliances are being steadily eliminated, an important objective.



**Interpreting the results:**

*It should be noted that marginality and/or non-compliance in most cases does not mean there has been specific environmental damage. It does mean that standards have been judged to be at a level that could or would lead to damage or risk of damage if not addressed, or, that activities are not meeting Company internal policies or standards or are unlikely to meet external regulatory requirements.*

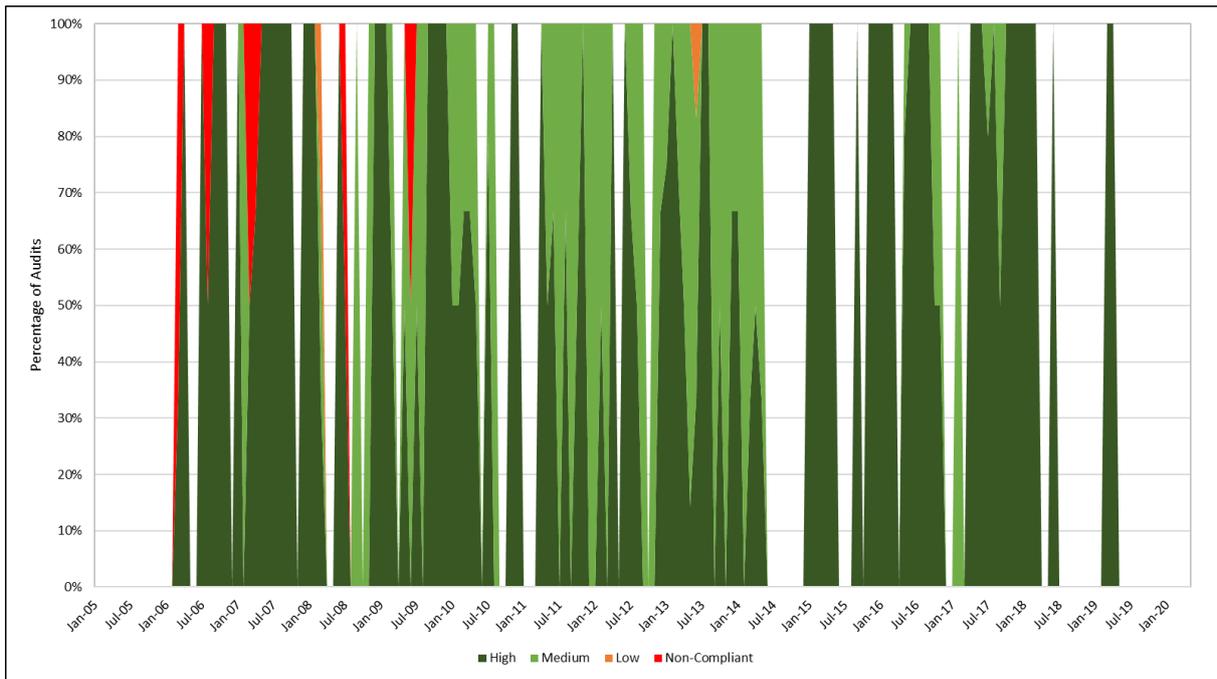
*For example, many non-compliances in past years involved failure to meet new Hazardous Substance standards for diesel tanks. These did not involve actual spills. Any non-compliance is automatically recorded as an ‘environmental incident’ as a matter of policy, irrespective of any actual adverse effect.*

**Mechanical Land Preparation**

No mechanical land preparation operations have occurred in FSC forests over the past 12 months. This is to be expected as the majority of the forests within the PF Olsen Group Scheme are mid-rotation forests, that have no need for the land prep operations associated with new or re-plantings.

**Time series – Mechanical Land Preparation**

In general, trends have continued to be satisfactory with no recent non-compliances. High and medium scores remain somewhat variable, a situation not helped by the relatively low number of operations, and hence audits, for this type of activity over time. The key focus remains on eliminating non-compliance and low scores.



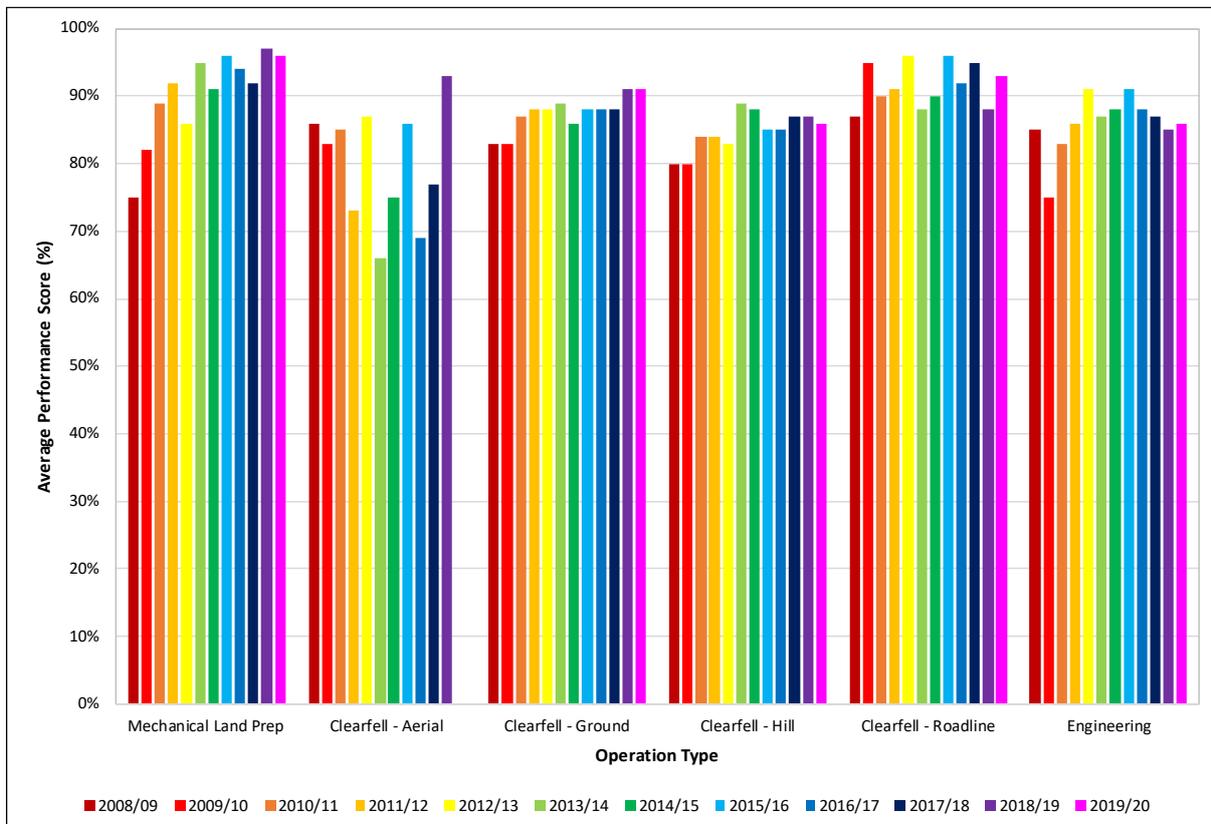
## Crew Performance

In 2008 the imperative to correctly represent both low performance and high performance was reinforced by the introduction of ‘crew scoring’ to ensure that environmental aspects are monitored amongst the numerous contractor crew performance elements that are monitored. The scoring was introduced to assist continuous performance improvement with crew management. This process, based on the consistent collection and retention of that data, was backdated to the start of audits through PF Olsen’s databases and continues today.

Each year there are crews who score 100% for performance and achieve zero corrective action requests (CARs). Likewise, crews can also be issued a CAR on every audit, which reduces their crew performance to zero.

Over time the crew’s average CAR Frequency has decreased from 10% in 2006/07 to 0.5% in 2018/19. In contrast, the crew’s average Performance Score has increased from 78% to 89% during the same period. Of note for both measurements is the trend towards improved average performance and also consistency as depicted by the narrowing spread of performance scores. These improvements have occurred in the face of tighter auditing and a general increase in performance expectations.

Year	CAR Frequency			Performance Score		
	Minimum	Average	Maximum	Minimum	Average	Maximum
2006/07	0%	10%	600%	50%	78%	100%
2007/08	0%	3%	50%	31%	78%	100%
2008/09	0%	3%	100%	0%	81%	100%
2009/10	0%	4%	50%	0%	81%	100%
2010/11	0%	2%	100%	0%	86%	100%
2011/12	0%	3%	100%	35%	87%	100%
2012/13	0%	2%	38%	43%	87%	100%
2013/14	0%	3%	100%	0%	87%	100%
2014/15	0%	1%	25%	55%	87%	100%
2015/16	0%	3%	100%	56%	89%	100%
2016/17	0%	4%	75%	18%	87%	100%
2017/18	0%	1%	23%	69%	88%	100%
2018/19	0%	1%	25%	48%	89%	100%
<b>2019/20</b>	<b>0%</b>	<b>0.5%</b>	<b>33%</b>	<b>0%</b>	<b>89%</b>	<b>100%</b>

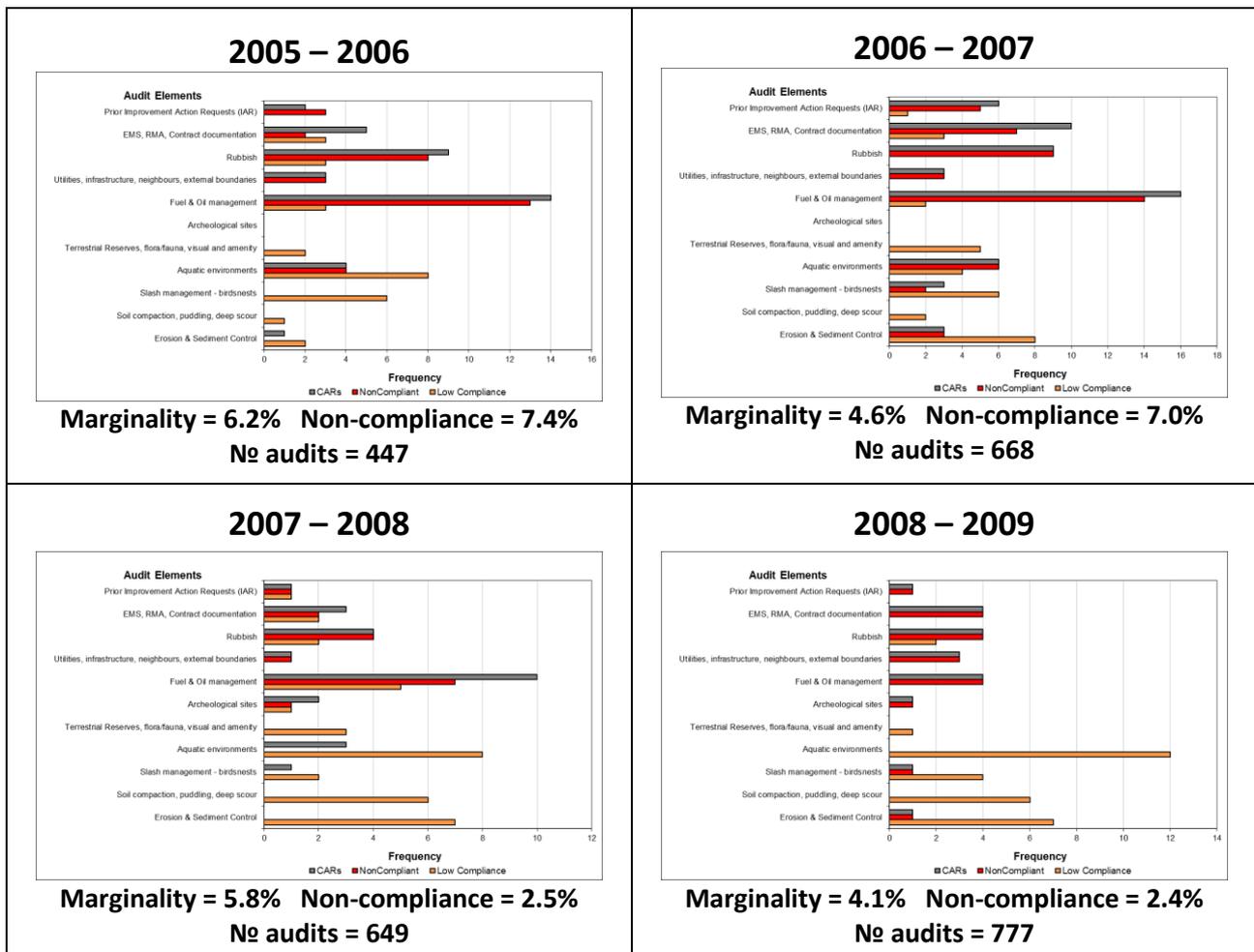


## Operational monitoring analysis

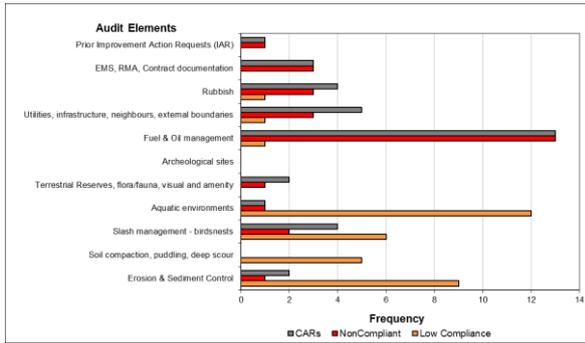
Audited elements are further analysed and presented in the graphs below. Results reveal issues to do with water, erosion control and slash management are the main sources of marginal rankings. Earlier non-compliance rankings and associated corrective action requests (CARs) which include non-compliance with policy were concentrated around fuel and oil management where crews are having to adjust to new regulations (but no actual environmental release has occurred) and rubbish. Contract documentation and failure to address prior corrective actions have both declined in significance. Low compliance scores are associated with more physical and operational issues that reflect the difficult, steep and broken topography that represents much of the harvesting area at present.

The analysis for the 2017/18 year when compared with the preceding years shows a general shift in the patterns from the earlier periods. Between 2005 and 2010 the total low compliance and non-compliance scores steadily declined to around 2% in absolute and relative (percentage based) terms in harvesting with sediment control/riparian management being the main source of marginal scores, and faults in documentation the main source of non-compliance. However, over the last 5 years the results have stabilised between one and three percent for both marginality and non-compliance, highlighting that human factors requires constant attention and training if frequencies are to be kept low or eliminated.

## Harvesting operational monitoring analysis

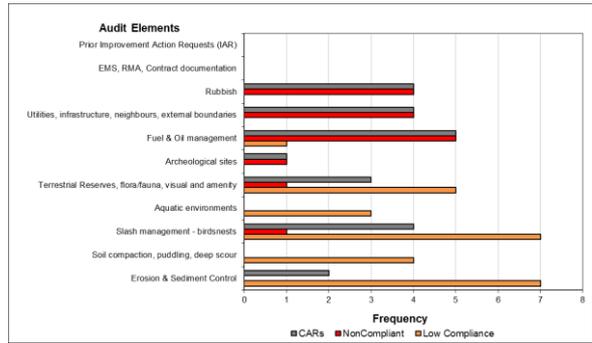


**2009 – 2010**



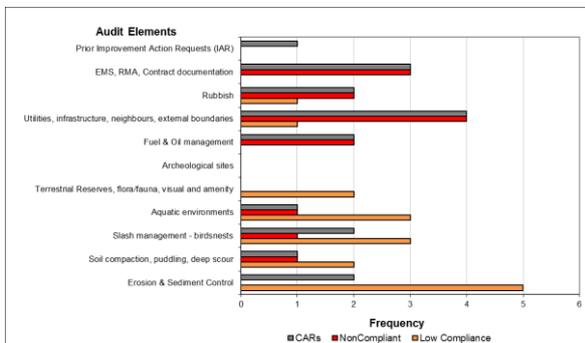
**Marginality = 3.6% Non-compliance = 2.9%**  
**№ audits = 952**

**2010 – 2011**



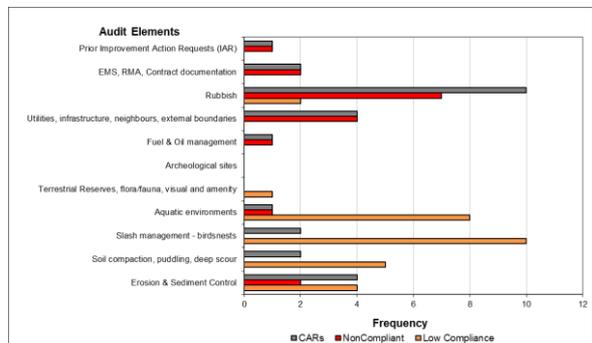
**Marginality = 1.8% Non-compliance = 1.5%**  
**№ audits = 1,123**

**2011 – 2012**



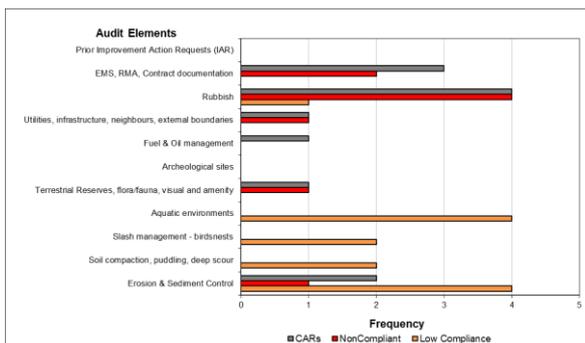
**Marginality = 1.6% Non-compliance = 1.4%**  
**№ audits = 1,028**

**2012 – 2013**



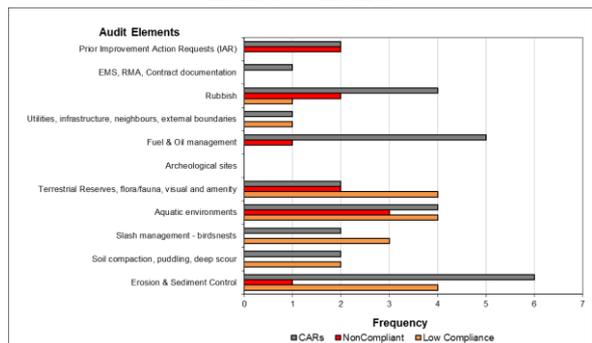
**Marginality = 2.5% Non-compliance = 1.8%**  
**№ audits = 875**

**2013 – 2014**



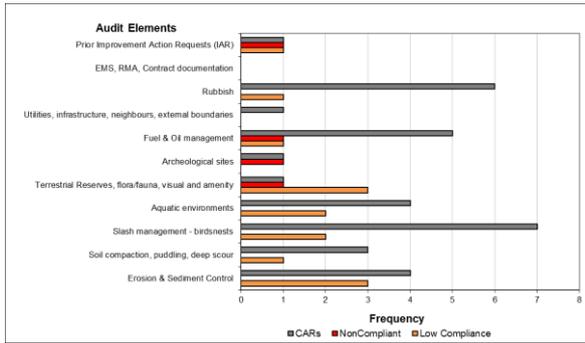
**Marginality = 1.2% Non-compliance = 0.9%**  
**№ audits = 1,005**

**2014 – 2015**



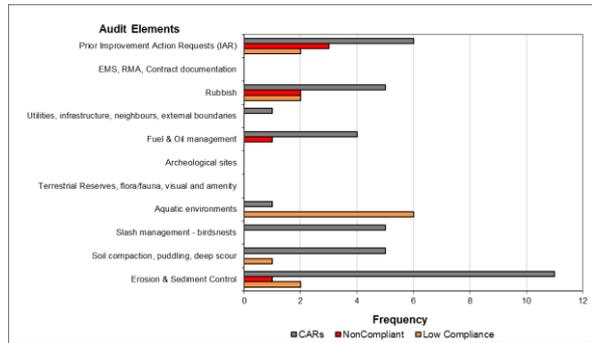
**Marginality = 1.8% Non-compliance = 0.9%**  
**№ audits = 955**

**2015 – 2016**



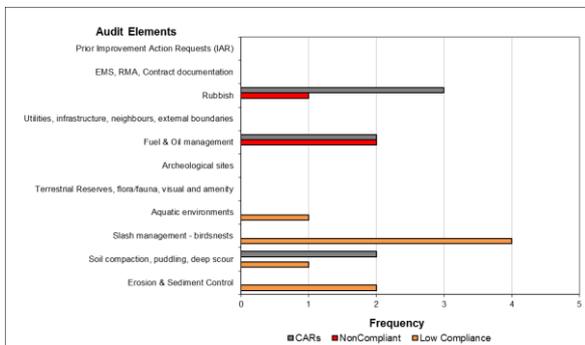
**Marginality = 1.5% Non-compliance = 0.4%**  
**No audits = 908**

**2016 – 2017**



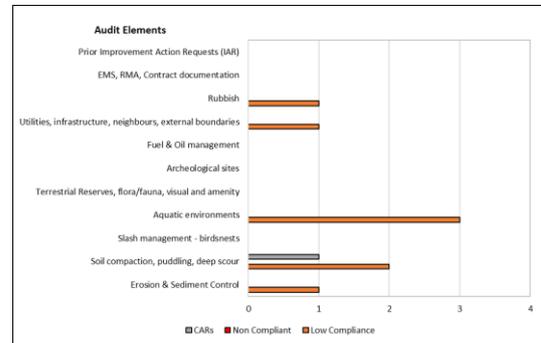
**Marginality = 1.4% Non-compliance = 0.8%**  
**No audits = 1,049**

**2017 – 2018**



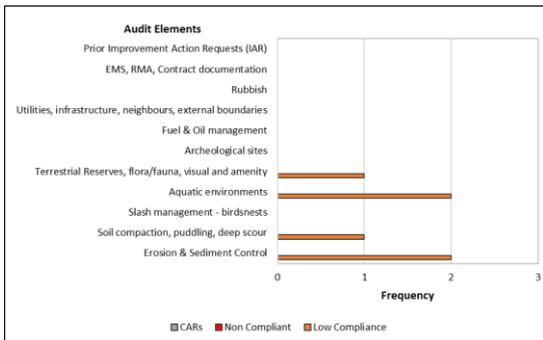
**Marginality = 0.8% Non-compliance = 0.3%**  
**No audits = 1,030**

**2018 – 2019**



**Marginality = 3.0% Non-compliance = 0.0%**  
**No audits = 200**

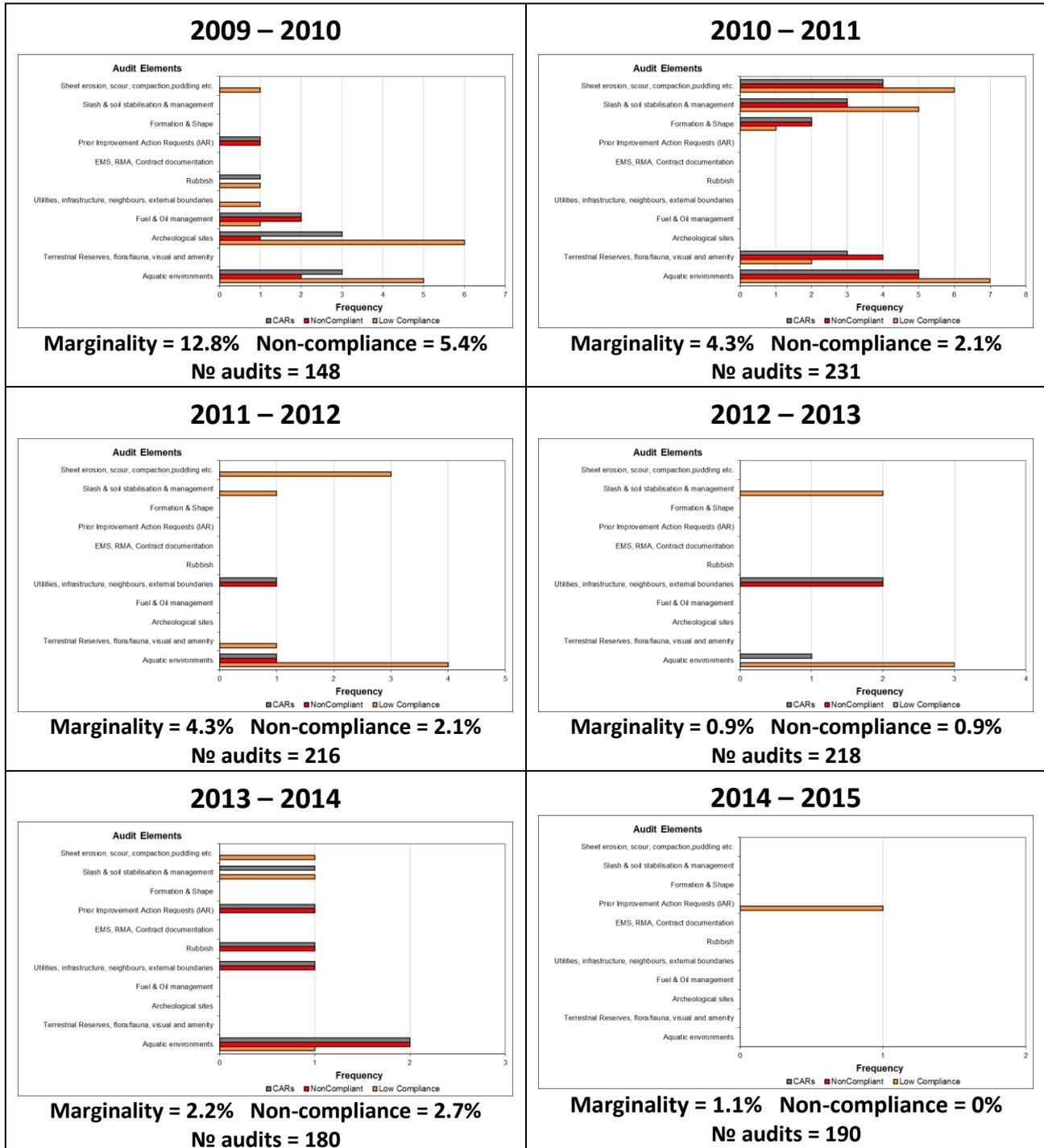
**2019 – 2020**



**Marginality = 4.0% Non-compliance = 0.0%**  
**No audits = 150**

## Engineering operational monitoring analysis

In engineering, marginality and non-compliance (mainly with engineering standards and consent standards) has been concentrated around issues of sediment and erosion control technique, control of earthworks sites in proximity to aquatic environments around headwater gullies and road formation stripping. Engineering suffered minor audit performance declines on the 2012-13 year, but part of this trend may well be due to harder auditing with more fully qualified engineering staff being employed. The scores are driven by much tighter interpretations being applied. There has been a significant focus on contractor and staff training and mentoring programmes to improve understanding of requirements and technique to achieve them.



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