



**Environmental Incident Reporting**  
**PF Olsen Group Scheme FSC RA-FM/COC-000190**  
**Ngai Tahu Forests FSC SGS-FM/COC-000763**

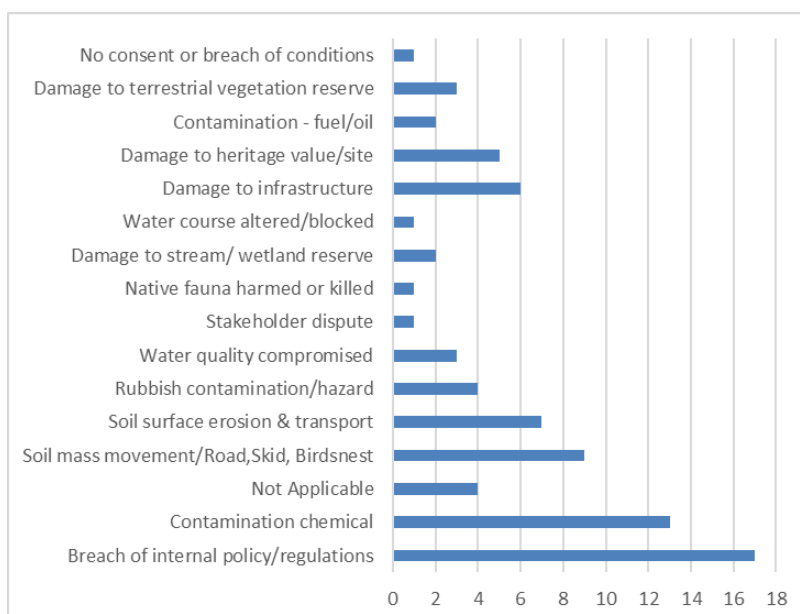
There were a total of 79 environmental incidents reported during 2016/17. The table below illustrates how this compares to previous years.

YE June 30	Total Incidents	External	Internal
2004/05	12		
2005/06	26		
2006/07	29		
2007/08	49		
2008/09	64	23	41
2009/10	80	19	61
2010/11	60	13	47
2011/12	54	3	51
2012/13	62	12	50
2013/14	47	7	40
2014/15	49	7	42
2015/16	45	7	38
2016/17	79	5	74

These incidents have been analysed on the basis of the primary operation and the category of incident by land type over which the incident occurred. These results cover all of PF Olsen Ltd operations, not just the FSC certified forests (FSC RA-FM/COC-000190 and SGS-FM/COC-000763) exclusively.

There has been fairly constant numbers of both internally and externally reported incidents over the last four years, however a spike in the current year (in particular, of internally reported incidents) likely reflects the change in the incident reporting system introduced during the year, with a transition to mobile tablet based software for field staff.

The chart here shows the number of incidents by category. Overall, breach of internal policy/regulations was the most



frequently reported incident category (17 incidents) with chemical contamination being the second most reported category. The externally reported incidents were spread evenly across three different categories- chemical contamination, soil surface erosion and transport, and breach of policy.

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Incident databases have now been in operation for thirteen years and datasets are beginning to enable time series comparisons. These are made in the tables and graphs below, focussing specifically on:

- **The category of incident**
- **The type of operation associated with an incident**
- **The land management category associated with the incident**

Sediment and erosion control lapses, chemical contamination and breach of policy/internal regulations were the 'big three' in 2017, accounting for almost 60% of the internally generated incident reports. All others were again more or less evenly distributed across a range of categories, from operational breaches with some degree of physical impact to those that were technical and involved no actual impact.

Of the operational categories, chemical contamination was the operation contributing most incident records, accounting for 13 of the 79 reports (16%). Diligent and accurate incident reporting is encouraged to assist in focussing upon ways to reduce and prevent such incidents occurring again.

**Incidents need to be evaluated to provide a means of learning and to highlight focus points for the achievement of minimised soil erosion, clean water and protected ecosystems within the productive forestry landscape.**





Matrix of number of incidents by category, operation in which incident occurred and land type impacted

Operation	Incident Type	Land Category											Grand Total	
		Archeological or historic site	Commercial production	Not Applicable	NZ forest accord reserve	Outside forest	Protected fauna reserve	Protected reserve	Remnant native vegetation	Riparian management zone	Wetland ecosystem	(blank)		
Cable Harvesting	Rubbish contamination/hazard		1										1	
	Soil mass movement and shallow landsliding		2										2	
	Damage to stream/ wetland reserve		1										1	
<b>Cable Harvesting Total</b>			4										4	
Chemical Application - Aerial	Not Applicable		1										1	
	Contamination - agricultural chemical		1			2							3	
<b>Chemical Application - Aerial Total</b>			2			2							4	
Clear fell ground	Contamination fuel/oil		1										1	
<b>Clear fell ground Total</b>			1										1	
Clear fell hill	Breach of internal policy/regulations		2	1									3	
	Damage to terrestrial vegetation reserve							1					1	
<b>Clear fell hill Total</b>			2	1				1					4	
Ground Based Harvesting	Damage to infrastructure		1									1	3	
	No consent or breach of conditions		1									1	1	
	Not Applicable											1	1	
	Regulation/Policy breach - legal rules or conditions		1										1	
	Damage to archaeological reserve		1										1	
<b>Ground Based Harvesting Total</b>			4					1				3	8	
Herbicide - aerial	Breach of internal policy/regulations												2	
	Contamination chemical		4	1								1	7	
	Damage to terrestrial vegetation reserve					1							1	
<b>Herbicide - aerial Total</b>			6	1		1						1	10	
Herbicide - hand	Breach of internal policy/regulations		1										1	
<b>Herbicide - hand Total</b>			1										1	
Management	Damage to infrastructure			1									1	
	Soil mass movement and shallow landsliding		1				1						2	
<b>Management Total</b>			1	1		1							3	
Not Applicable	Soil mass movement/Road_Skid, Birdsnest		2										2	
	Soil surface erosion & transport		2										2	
	Water quality compromised											1	1	
	Contamination - rubbish						1						1	
	Soil mass movement and shallow landsliding		1										1	
	Unknown			1									1	
	Damage to stream/ wetland reserve								1				1	
	Water course altered/blocked		1										1	
	Native vegetation damaged or disturbed											1	1	
	<b>Not Applicable Total</b>			6	1		1			1		2	11	
Planting	Damage to Archeological reserve	1											1	
	Rubbish contamination/hazard		1										1	
<b>Planting Total</b>		1											2	
Road / infrastructure construction	Breach of internal policy/regulations		1										1	
<b>Road / infrastructure construction Total</b>			1										1	
Roading	Damage to infrastructure											1	1	
	Soil mass movement and shallow landsliding		1										1	
	Soil surface erosion		2										2	
	Damage to heritage value/site	1	1										2	
<b>Roading Total</b>		1	4								1	6		
Site Preparation	Damage to archaeological reserve	1											1	
<b>Site Preparation Total</b>		1											1	
Transporting	Damage to infrastructure		1										1	
<b>Transporting Total</b>			1										1	
(blank)	Native fauna harmed or killed		1										1	
	Contamination - agricultural chemical		1	1			1						3	
	Water quality compromised		2										2	
	Regulation/Policy breach - internal rules		6	1									7	
	Stakeholder dispute					1							1	
	Contamination - rubbish											1	1	
	Soil mass movement and shallow landsliding		1										1	
	Soil surface erosion		3										3	
	Unknown		1										1	
	Regulation/Policy breach - legal rules or conditions										2		2	
	(blank)													
	<b>(blank) Total</b>			15	2		2				2		1	22
	<b>Grand Total</b>		3	50	6	1	7	1	1	1	2	4	4	79



The reduction in soil mass movement incidents that was achieved since the 2013 period suggests a past focus is still delivering results. Soil and water issues remain a priority given the results that arise from any adverse climatic conditions combined with any weakness in the installed control 'defences'.

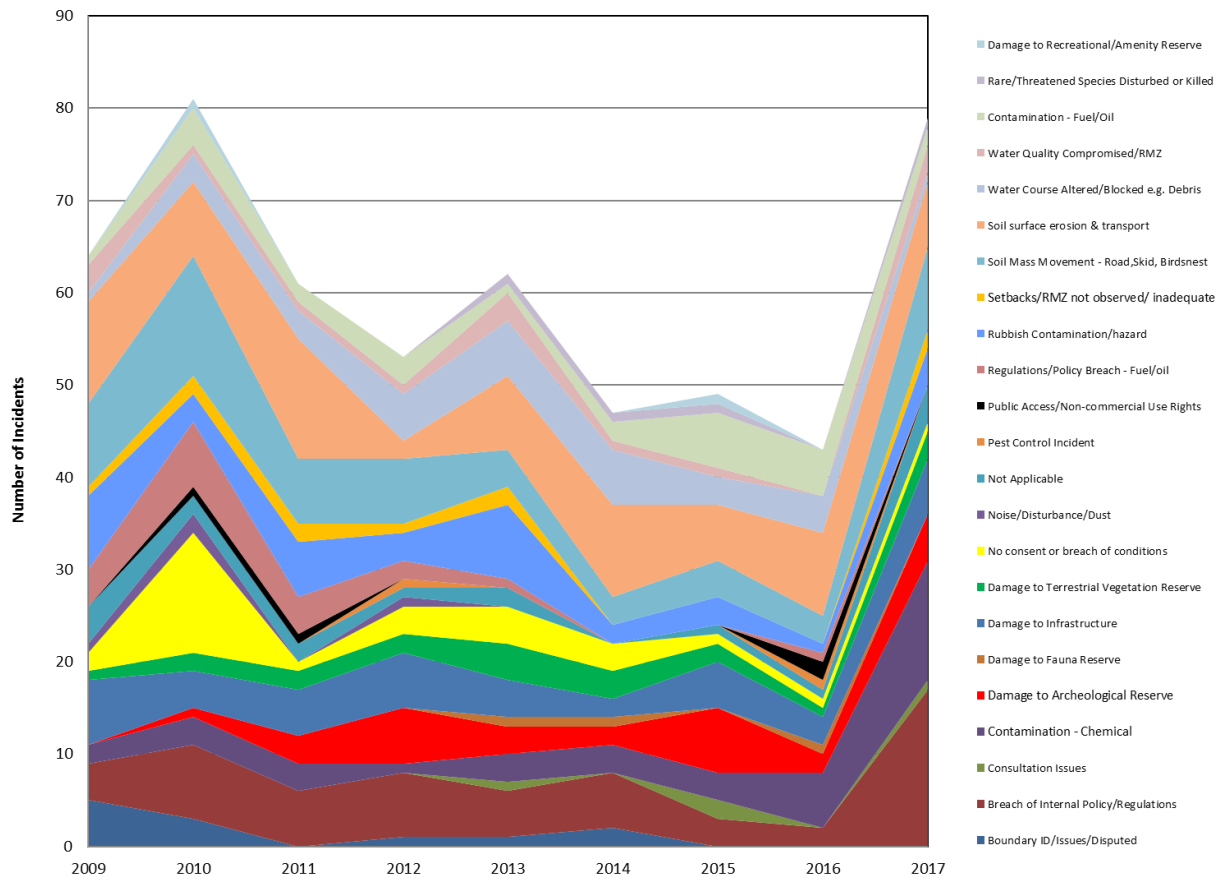
#### Dominant incident categorisations by year of occurrence

Category	2009	2010	2011	2012	2013	2014	2015	2016	2017
Boundary ID/Issues/Disputed	5	3	0	1	1	2			
Breach of Internal Policy/Regulations	4	8	6	7	5	6	3	2	17
Consultation Issues					1		2		1
Contamination - Chemical	2	3	3	1	3	3	3	6	13
Contamination - Fuel/Oil	1	4	2	3	1	2	6	5	2
Damage to Archeological Reserve		1	3	6	3	2	7	2	5
Damage to Fauna Reserve					1	1		1	
Damage to Infrastructure	7	4	5	6	4	2	5	3	6
Damage to Recreational/Amenity Reserve		1	0				1		
Damage to Terrestrial Vegetation Reserve	1	2	2	2	4	3	2	1	3
Fire Damage - Wildfire/Arson								1	
Fire Damage - Controlled Burn								1	
No consent or breach of conditions	2	13	1	3	4	3	1	1	1
Noise/Disturbance/Dust	1	2		1					
Not Applicable	4	2	2	1	2		1	1	4
Pest Control Incident				1				1	
Public Access/Non-commercial Use Rights		1	1					2	
Rare/Threatened Species Disturbed or Killed					1	1	1		1
Regulations/Policy Breach - Fuel/oil	4	7	4	2	1			1	
Rubbish Contamination/hazard	8	3	6	3	8	2	3	1	4
Setbacks/RMZ not observed/ inadequate	1	2	2	1	2				2
Soil Mass Movement - Road,Skid, Birdsnest	9	13	7	7	4	3	4	3	9
Soil surface erosion & transport	11	8	13	2	8	10	6	9	7
Water Course Altered/Blocked e.g. Debris	1	3	3	5	6	6	3	4	1
Water Quality Compromised/RMZ	3	1	1	1	3	1	1		3
	<b>64</b>	<b>81</b>	<b>61</b>	<b>53</b>	<b>62</b>	<b>47</b>	<b>49</b>	<b>45</b>	<b>79</b>



The graph below gives an indication of the way the total number of incidents, and incident types, have declined over the years. It is clear that some incident categories are being 'squeezed out' (e.g. soil surface erosion and transport).

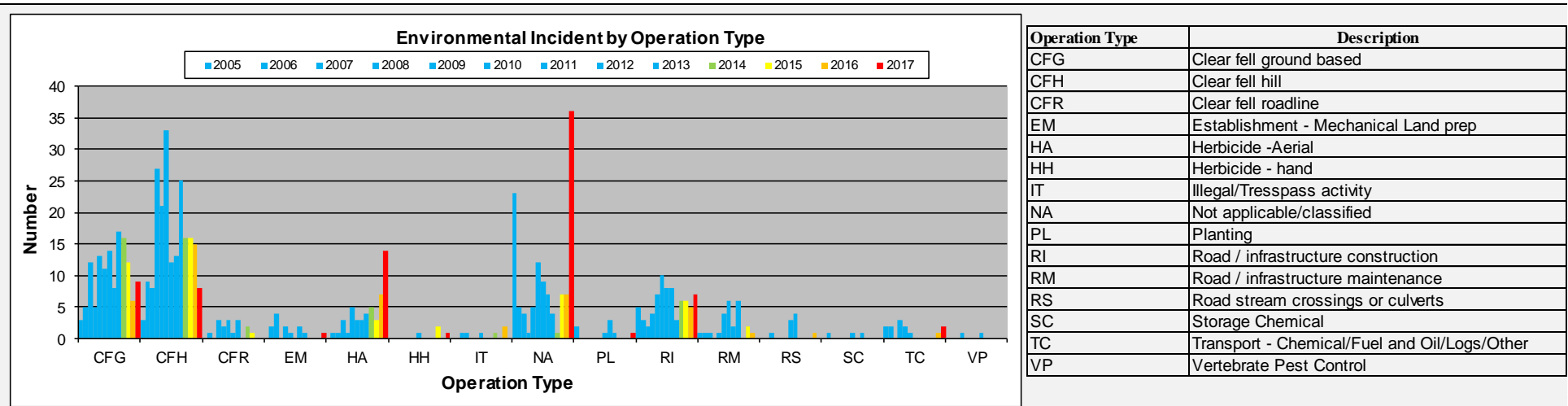
The significant increase in total incidents reported during 2016/17 may reflect the shift to mobile reporting by field staff and contractors via tablets. The largest increase proportionally during the period has been in the 'breach of policy/internal regulations' category. This has generated specific responses to training programmes both from a technical and 'work culture' perspective.





### The type of operation associated with an incident

Harvesting in general is the most commonly associated operation to the reported environmental incidents. It is continuously our largest and most extensive operation with the largest potential for adverse physical impacts.



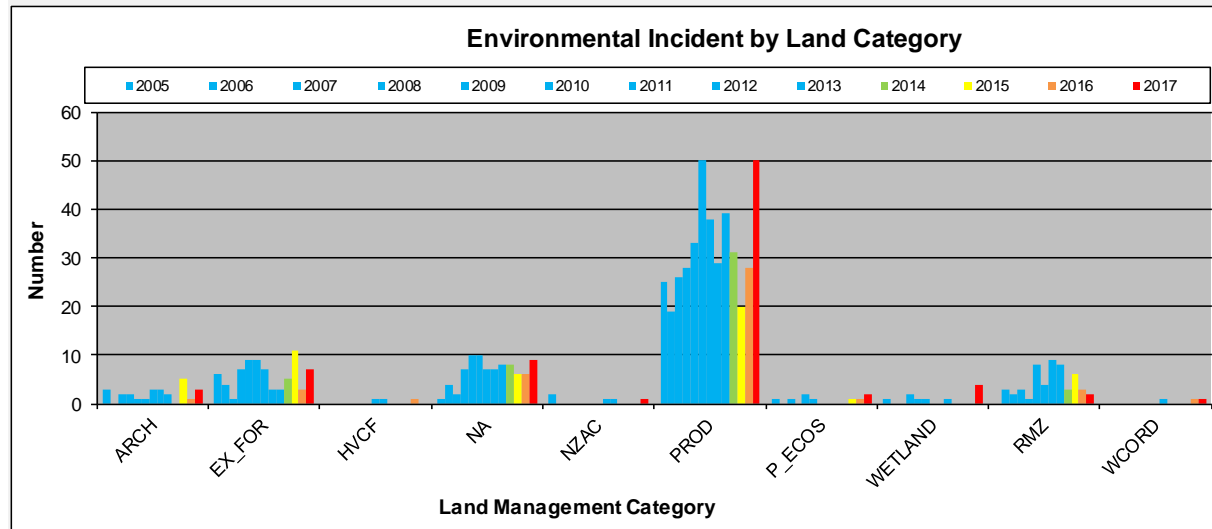
Operation Type	Description
CFG	Clear fell ground based
CFH	Clear fell hill
CFR	Clear fell roadline
EM	Establishment - Mechanical Land prep
HA	Herbicide -Aerial
HH	Herbicide - hand
IT	Illegal/Tresspass activity
NA	Not applicable/classified
PL	Planting
RI	Road / infrastructure construction
RM	Road / infrastructure maintenance
RS	Road stream crossings or culverts
SC	Storage Chemical
TC	Transport - Chemical/Fuel and Oil/Logs/Other
VP	Vertebrate Pest Control

Description	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	TOTAL
Clear fell ground based	3	5	12	5	13	11	14	8	17	16	12	6	9	131
Clear fell hill	3	9	8	27	21	33	12	13	25	16	16	15	8	206
Clear fell roadline		1		3	2	3	1	3		2	1			16
Establishment - Mechanical Land prep		2	4		2	1		2	1				1	13
Herbicide -Aerial		1	1	3	1	5	3	3	4	5	3	7	14	50
Herbicide - hand							1				2		1	4
Illegal/Tresspass activity			1	1			1			1		2		6
Not applicable/classified	23	5	4	1	5	12	9	7	4	1	7	7	36	121
Planting	2						1	3	1				1	8
Road / infrastructure construction	5	3	2	4	7	10	8	8	3	6	6	5	7	74
Road / infrastructure maintenance	1	1	1		1	4	6	2	6		2	1		25
Road stream crossings or culverts			1				3	4				1		9
Storage Chemical		1					1		1					3
Transport - Chemical/Fuel and Oil/Logs/Other	2	2		3	2	1						1	2	13
Vertebrate Pest Control				1				1						2
<b>TOTAL</b>	<b>37</b>	<b>27</b>	<b>34</b>	<b>48</b>	<b>54</b>	<b>80</b>	<b>60</b>	<b>54</b>	<b>62</b>	<b>47</b>	<b>49</b>	<b>45</b>	<b>79</b>	<b>676</b>



### Land management category associated with the incident

Statistics for the 2016/17 year show a continued trend for incidents, where they do occur, being confined overwhelmingly (60%) to the plantation production land areas rather than in reserves and other ecologically or culturally significant areas.



Land	Description
ARCH	Archaeological or historic site
EX_FOR	Outside forest
HVCF	High Value Conservation Forest
NA	Not applicable
NZAC	NZ forest accord reserve
PROD	Commercial production
P_ECOS	Protected Terrestrial Ecosystem
WETLAND	Wetland ecosystem
RMZ	Riparian Management Zone
WCORD	Wildlife corridor

Description	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	TOTAL
Archaeological or historic site	3		2	2	1	1	3	3	2		5	1	3	26
Outside forest	6	4	1	7	9	9	7	3	3	5	11	3	7	75
High Value Conservation Forest							1	1				1		3
Not applicable	1	4	2	7	10	10	7	7	8	8	6	6	9	85
NZ forest accord reserve	2							1	1				1	5
Commercial production	25	19	26	28	33	50	38	29	39	31	20	28	50	416
Protected Terrestrial Ecosystem	1		1		2	1					1	1	2	9
Wetland ecosystem	1			2	1	1			1				4	10
Riparian Management Zone		3	2	3	1	8	4	9	8	3	6	3	2	52
Wildlife corridor								1				1	1	3
	39	30	34	49	57	80	60	54	62	47	49	45	79	685



## Environmental Incident Reporting

### PF Olsen West Coast Forests FSC SGS-FM/COC-000763

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Y.E. June	No. Incidents
2009/10	7
2010/11	5
2011/12	5
2012/13	1
2013/14	0
2014/15	6
2015/16	1
2016/17	1

PF Olsen took over the management of the West Coast forests in January 2009 and so environmental incident reporting has only been recorded through our systems since then.

From January 2009 to the end of June 2009, three environmental incidents were recorded in the West Coast estate. The table to the left shows the numbers of reports subsequently.

Only one incident has occurred within the last year, the result of a heavy rainfall event on shallow soils.

As more incidents are reported through the PF Olsen system, the data will provide more opportunities to analyse and report on trends in the types and frequency of environmental incidents in the West Coast forests.

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