# **Tree Strike Risk Calculation for**

Upper Lake 1101 Keswick 1101 Middletown 1102 Konocti 1102 Mariposa 2102 Bucks Creek 1101

Count Trees Strike Residual Kisk of Non-Hardened Circuits Count Trees within 6 ft of Conductor Assuming Generic OH

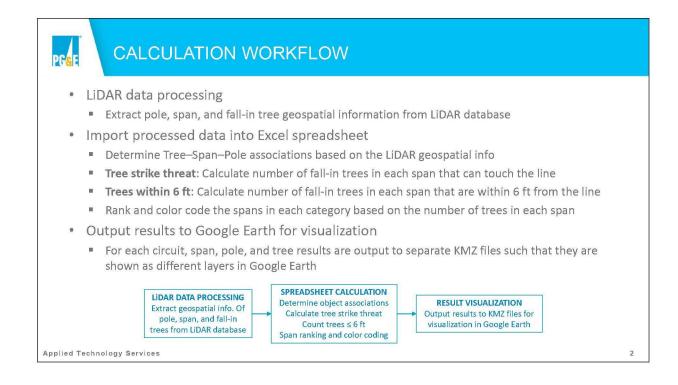
November 25, 2020

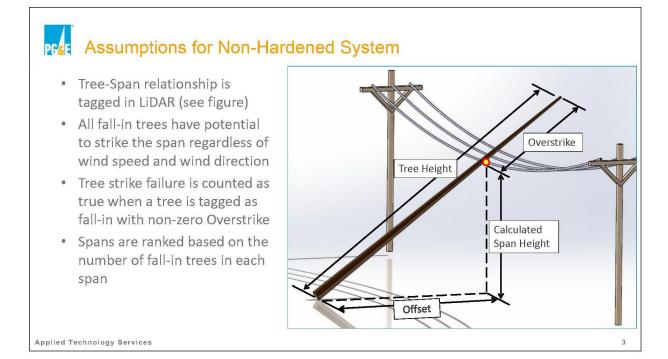
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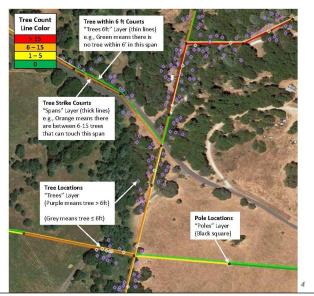
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# PFGE Definition of KMZ Layer Symbols and Line Colors

- Tree strike threat color coding
  - Thick red lines: Spans that have more than 15 fall-in trees that can touch the line
  - Thick orange lines: Spans that have 6 to 15 fall-in trees that can touch the line
  - Thick yellow lines: Spans that have 1 to 5 fall-in trees that can touch the line
  - Thick green lines: Spans that have zero fall-in tree that can touch the line
- Tree distance color coding
  - Thin red lines: Spans that have more than 15 fall-in trees within 6 ft of the line
  - Thin orange lines: Spans that have 6 to 15 fall-in trees within 6 ft of the line
  - Thin yellow lines: Spans that have 1 to 5 fall-in trees within 6 ft of the line
  - Thin green lines: Spans that have zero 15 fall-in tree within 6 ft of the line



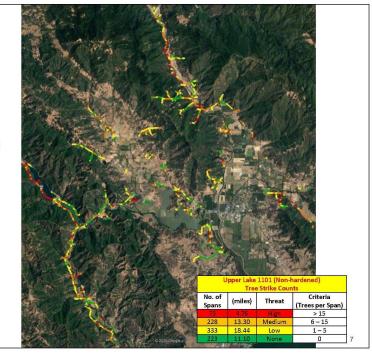
			Keswick 1101										
								Trees Touching	Linear Span	Tree Strike Residual F			
GSE	RESULTS 1/2						Level Non-	Non-Hardened (No. of spans)	Length (miles)	Weight Factor	Non Harder		
						High (15+ trees)	h (15+ trees)	17	1.04	1	0.01		
		Medium (5-15 trees)	um (5-15 trees)	133	6.04	0.75	0.07						
<ul> <li>Tree strike threat calculation</li> <li>Tree counts that can touch the non-hardened line</li> </ul>							w (1-5 trees)	459	19.36	0.50	0.18		
							None	650	24.84	0	0.00		
		Total:	Total: 1	,259	51.28		0.27						
<ul> <li>Residual risk calculation</li> </ul>							Konocti 1102						
	N CC	·	Threat		Touching	Linear Span	Tree Strike Residual I						
$= \frac{No. of Spans in Threat Level}{Total Spans} \times Weight Factor$							Level Non-F	Non-Hardened (No. of spans)	Length (miles)	Weight Factor	Nor Harde		
1 otai spuns						High (15+ trees)	h (15+ trees)	540	28.01	1	0.20		
						Medium (5-15 trees)	um (5-15 trees)	629	30.78	0.75	0.18		
Upper Lake 1101							w (1-5 trees)	775	36.46	0.50	0.15		
		Trees Touching Linear Span			Tree Strike Residual Risk		None	647	29.90	0	0.00		
	Threat Level	Non-Hardened	Length	Weight	Non-	Total:	Total: 2	,591	125.15		0.54		
		(No. of spans)	(miles)	Factor	Hardened			Maripo	sa 2102				
	High (15+ trees)         75           Medium (5-15 trees)         228           Low (1-5 trees)         333	4.76		0.087	Threat	Theres	Trees Touching	Linear Span	Tree Strike Residual F				
		228	13.30	0.75	0.199	Level	Level Non-F	Non-Hardened (No. of spans)	Length (miles)	Weight Factor	Non Harde		
	None	223	11.10	0	0.000	High (15+ trees)	h (15+ trees)	110	7.99	1	0.02		
	Total:	859	47.61	6	0.480	Medium (5-15 trees)	um (S-15 trees) 1	,063	61.44	0.75	0.17		
						Low (1-5 trees)	w (1-5 trees) 2	,382	123.21	0.50	0.26		
						None	None 1	,032	52.18	0	0.00		
						Total:	Total: 4	,587	244.82		0.45		

	Bucks Creek 1101						
	Threat Level	Trees Touching Non-Hardened (No. of spans)	Linear Span Length (miles)	Tree Strike Residual R			
PESE RESULTS 2/2				Weight Factor	Non- Harder		
	High (15+ trees)	13	0.74	1	0.078		
	Medium (5-15 trees)	51	2.35	0.75	0.22		
<ul> <li>Tree strike threat calculation</li> </ul>	Low (1-5 trees)	60	2.36	0.50	0.18		
Tree counts that can touch the non-hardened line	None	43	1.78	0	0.00		
	Total:	167	7.23	6	0.48		
<ul> <li>Residual risk calculation</li> </ul>	Middletown 1102						
No. of Spans in Threat Level	Threat Level	Trees Touching Non-Hardened	Linear Span Length	Tree Strike Weight	Residual I Non		
$=\frac{No. of Spans in Threat Level}{Total Spans} \times Weight Factor$	Level	(No. of spans)	(miles)	Factor	Harde		
	High (15+ trees)	4	0.34	1	0.00		
	Medium (5-15 trees)	47	2.61	0.75	0.04		
	Low (1-5 trees)	325	14.39	0.50	0.19		
	None	471	19.61	0	0.00		
	Total:	847	36.95		0.23		
		Middleto	own 1103				
	Threat	Trees Touching Non-Hardened (No. of spans)	Linear Span Length (miles)	Tree Strike Residual R			
	Level			Weight Factor	Non Harde		
	High (15+ trees)	15	1.44	1	0.04		
	Medium (5-15 trees)	60	4.33	0.75	0.13		
	Low (1-5 trees)	115	7.11	0.50	0.17		
	None	141	8.54	0	0.00		
	Total:	331	21.43		0.35		
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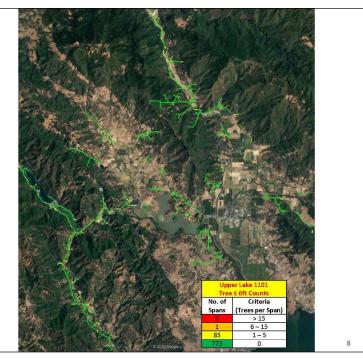
# PGE Upper Lake 1101

• \* - Spans.kmz

- Based on 2019 LiDAR
- Trees that can touch the line
  - 75 spans have more than 15 trees in each span that can strike
  - 228 spans have 6 15 trees in each span that can strike
  - 333 spans have 1 5 trees in each span that can strike
  - 223 spans have zero tree in each span that can strike

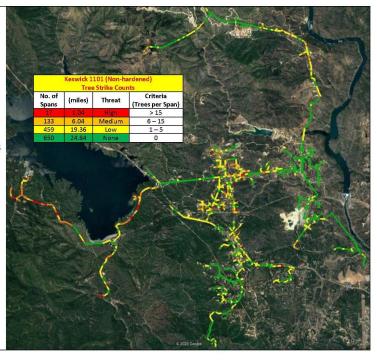


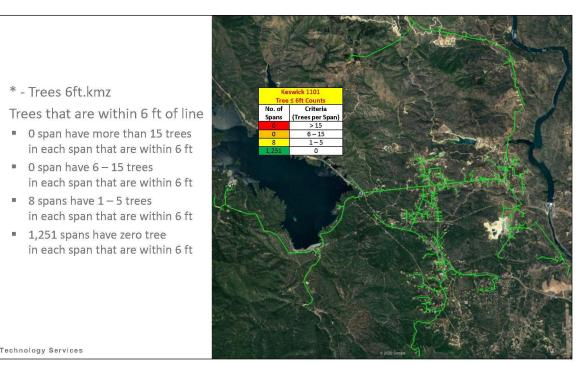
- \* Trees 6ft.kmz
- Trees that are within 6 ft of line
  - 0 span have more than 15 trees in each span that are within 6 ft
  - 1 span have 6 15 trees in each span that are within 6 ft
  - 85 spans have 1 5 trees in each span that are within 6 ft
  - 773 spans have zero tree in each span that are within 6 ft



### Pres Keswick 1101

- \* Spans.kmz
- Based on 2019 LiDAR
- Trees that can touch the line
  - 17 spans have more than 15 trees in each span that can strike
  - 133 spans have 6 15 trees in each span that can strike
  - 459 spans have 1 5 trees in each span that can strike
  - 650 spans have zero tree in each span that can strike





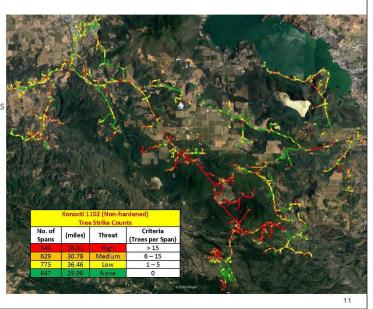
\* - Trees 6ft.kmz

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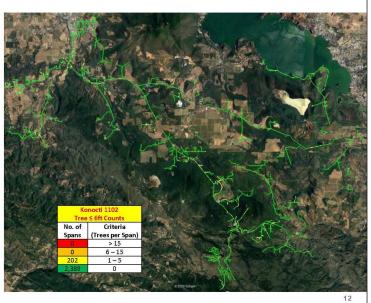
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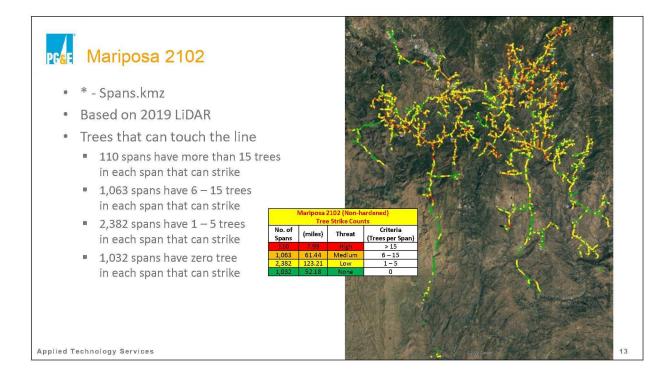
## Pres Konocti 1102

- \* Spans.kmz
- Based on 2019 LiDAR
- Trees that can touch the line
  - 540 spans have more than 15 trees in each span that can strike
  - 629 spans have 6 15 trees in each span that can strike
  - 775 spans have 1 5 trees in each span that can strike
  - 647 spans have zero tree in each span that can strike



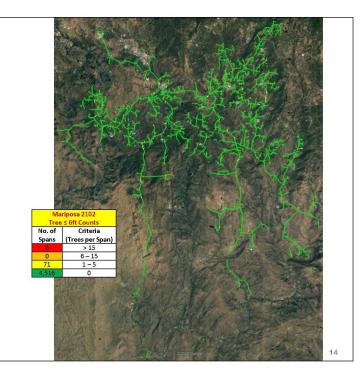
- \* Trees 6ft.kmz
- Trees that are within 6 ft of line
  - 0 span have more than 15 trees in each span that are within 6 ft
  - 0 span have 6 15 trees in each span that are within 6 ft
  - 202 spans have 1 5 trees in each span that are within 6 ft
  - 2,389 spans have zero tree in each span that are within 6 ft





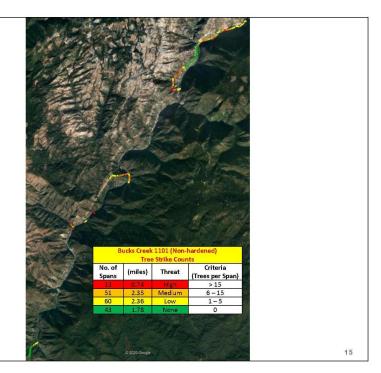


- Trees that are within 6 ft of line
  - 0 span have more than 15 trees in each span that are within 6 ft
  - 0 span have 6 15 trees in each span that are within 6 ft
  - 71 spans have 1-5 trees in each span that are within 6 ft
  - 4,516 spans have zero tree in each span that are within 6 ft

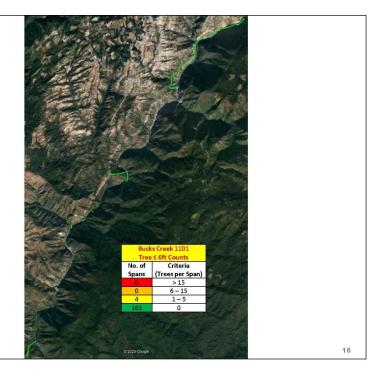


### Pres Bucks Creek 1101

- \* Spans.kmz
- Based on 2019 LiDAR
- Trees that can touch the line
  - 13 spans have more than 15 trees in each span that can strike
  - 51 spans have 6 15 trees in each span that can strike
  - 60 spans have 1 5 trees in each span that can strike
  - 43 spans have zero tree in each span that can strike

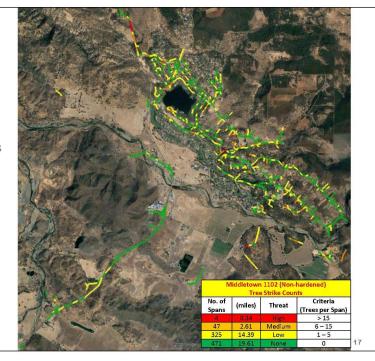


- \* Trees 6ft.kmz
- Trees that are within 6 ft of line
  - 0 span have more than 15 trees in each span that are within 6 ft
  - 0 span have 6 15 trees in each span that are within 6 ft
  - 4 spans have 1 5 trees in each span that are within 6 ft
  - 163 spans have zero tree in each span that are within 6 ft

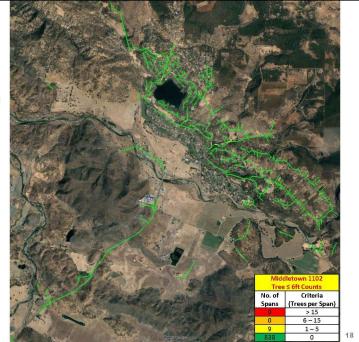


## Pres Middletown 1102

- \* Spans.kmz
- Based on 2019 LiDAR
- Trees that can touch the line
  - 4 spans have more than 15 trees in each span that can strike
  - 47 spans have 6 15 trees in each span that can strike
  - 325 spans have 1 5 trees in each span that can strike
  - 471 spans have zero tree in each span that can strike



- \* Trees 6ft.kmz
- Trees that are within 6 ft of line
  - 0 span have more than 15 trees in each span that are within 6 ft
    - 0 span have 6 15 trees in each span that are within 6 ft
    - 9 spans have 1 5 trees in each span that are within 6 ft
    - 838 spans have zero tree in each span that are within 6 ft



### Pres Middletown 1103

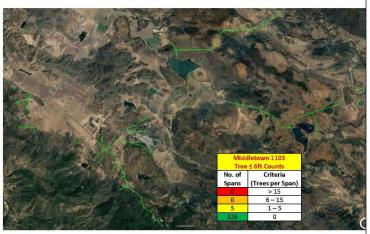
- \* Spans.kmz
- Based on 2019 LiDAR
- Trees that can touch the line
  - 15 spans have more than 15 trees in each span that can strike
  - 60 spans have 6 15 trees in each span that can strike
  - 115 spans have 1 5 trees in each span that can strike
  - 141 spans have zero tree in each span that can strike



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- \* Trees 6ft.kmz
- Trees that are within 6 ft of line
  - 0 span have more than 15 trees in each span that are within 6 ft
  - 0 span have 6 15 trees in each span that are within 6 ft
  - 5 spans have 1 5 trees in each span that are within 6 ft
  - 326 spans have zero tree in each span that are within 6 ft



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