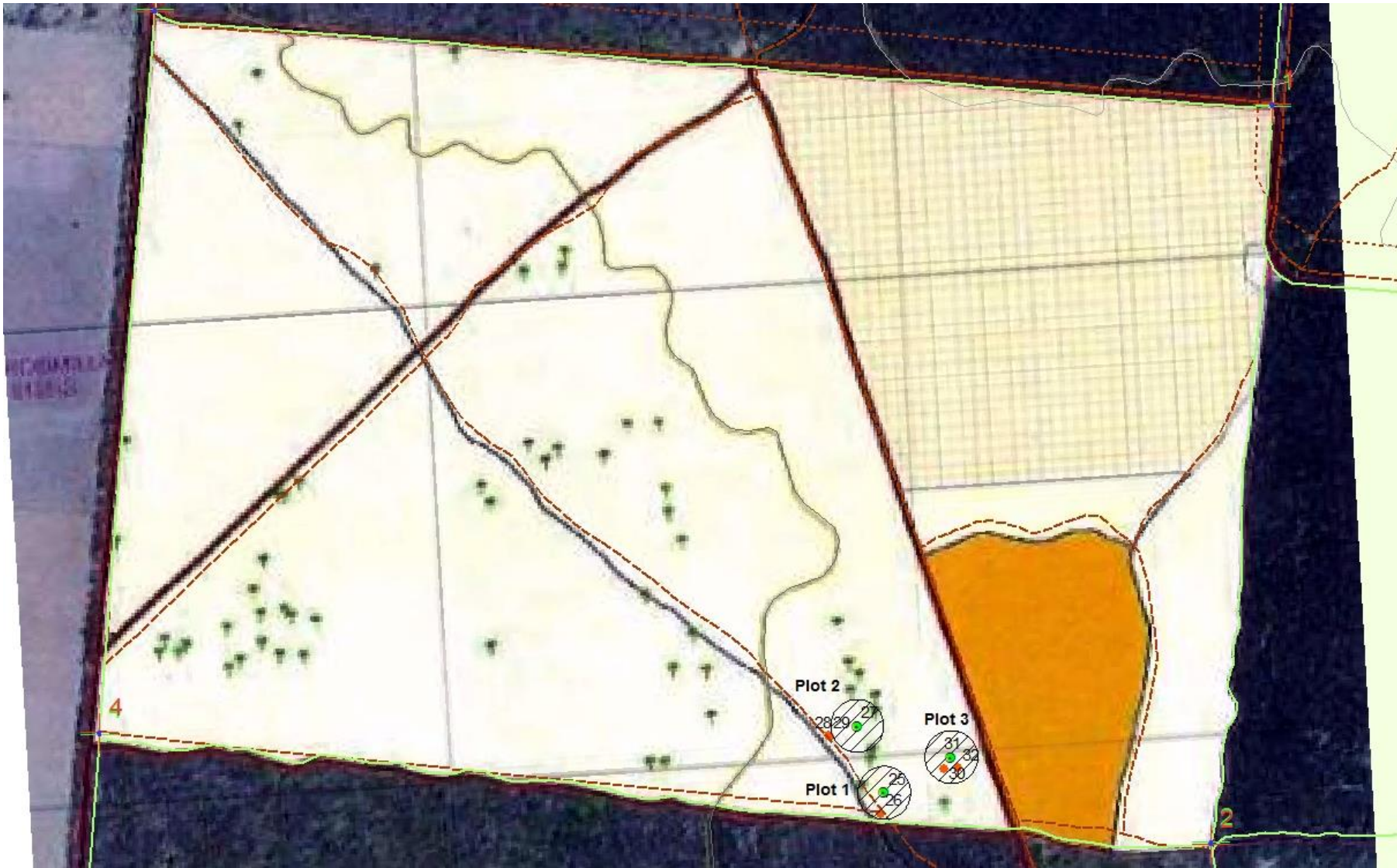


## AUDIT REPORT - BUCKINBONG STATE FOREST, COMPARTMENT 230

<b>Auditee:</b>	Forestry Corporation NSW
<b>Audit scope:</b>	Buckinbong State Forest, compartment 230 (see <b>Map 1</b> , below). The field audit took 1 day to complete.
<b>Region:</b>	South West Cypress Region
<b>Date/Audit timing:</b>	3 November 2015
<b>Lead EPA auditor:</b>	Peter Leziach
<b>Assisting EPA auditors:</b>	Mark Rowsell, Sandie Jones, Dinka Dekaris, Malcom Wubbels & David Cordell
<b>Justification of audit:</b>	Initial audit in South West Cypress IFOA focussing on EPA compliance priority area
<b>Audit objectives:</b>	<ol style="list-style-type: none"> <li>1. Determine compliance with South West Cypress IFOA conditions, EEC identification and exclusion, threatened species protection zones (Sand Hill Spider Orchid), cypress retention</li> <li>2. Determine compliance with relevant planning conditions that relate to EEC identification</li> <li>3. Communicate compliance and non-compliances to FCNSW.</li> <li>4. Outline requirements for any necessary follow-up action.</li> </ol>
<b>Summary of Operations</b>	<p>From the harvesting plan:</p> <p>“The planning area has a history of silvicultural treatment with reliable records going back to the 1950’s. The mature cypress stands within compartment 230 were established during regeneration events in the 1890’s. Subsequent regeneration following stand treatment in the early 1950’s was successful. Further treatment in the 1970’s included manual thinning and logging. Regeneration has benefited as a result of this disturbance, and the exclusion of grazing, although resulting in a variable forest with patchy stands. These forest conditions are now suitable for release harvest, with some areas of thinning. In 2009 a small wildfire occurred in the south eastern portion of the compartment destroying some of the standing cypress. Regeneration subsequent to this event requires treatment, which will result from a commercial operation through this area. The area of each silvicultural treatment must be mapped and recorded in the Post logging information section of this plan.”</p>



**Map 1: Locations of the plots undertaken in Buckinbong State Forest, compartment 230 during the EPA audit on 3rd November 2015. Each plot has a radius of 56m. At each of the locations, EPA officers assessed basal area, tree retention and tree mark-up requirements. Sampling was restricted to the harvested area of the compartment.**

## **1. Audit Findings - Overview**

A summary of EPAs findings are shown in the table below.

<b>IFOA condition</b>	<b>Non-compliant</b>	<b>Compliant</b>	<b>Not Determined</b>	<b>Not applicable</b>
<b>148A</b>	0	1	0	0
<b>198</b>	2	1	0	0
<b>200</b>	0	0	0	1
<b>207</b>	0	1	0	0
<b>221</b>	0	1	0	0
<b>222</b>	0	1	0	0
<b>224</b>	0	0	0	1
<b>225</b>	0	0	0	1
<b>230</b>	0	1	0	0
<b>231</b>	1	86	0	0
<b>184</b>	0	1	0	0
<b>185</b>	0	1	0	0
<b>187</b>	0	1	0	0
<b>189</b>	0	0	0	1
<b>190</b>	0	1	0	0
<b>191</b>	0	1	0	0
<b>Schedule 5, Condition 21A</b>	1	0	0	0
<b>Schedule 5, Condition 22</b>	0	1	0	0
<b>162</b>	1	0	0	0
<b>163, 165, 166, 168, 169, 170, 171, 179</b>	0	8	0	0
<b>TOTAL</b>	<b>5</b>	<b>103</b>	<b>0</b>	<b>1</b>

## 2. Audit Recommendations

Condition No.	Number of non-compliances	Action Details	Non-compliance Code*	Target/Action Date
198	2	<b>Retention of large white cypress trees</b> FCNSW should contact the EPA to discuss the appropriate method of implementation of condition 198.	Orange	Immediately
<b>Schedule 5, Condition 21A</b>	1	<b>Targeted surveys for <i>Caladenia arenaria</i></b> An action plan must be implemented by FCNSW to ensure surveys are planned and executed according to the IFOA requirements. These requirements are not open to interpretation.	Orange	31 May 2016

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## **ATTACHMENT 1: DRAFT AUDIT FINDINGS (FIELD COMPONENT)**

<b>Ground habitat protection (Division 3, Part 3.1 of IFOA)</b>		
<b>Condition No. and detail</b>	<b>Compliant? Yes/No/Not determined/Not Applicable</b>	<b>Number of non- compliances</b>
<p><b>148A. Ground habitat protection</b></p> <p>(1) Forests NSW must endeavour to protect the ground habitat of native animals from the impact of forestry operations to the extent that the nature of those operations allows and to the extent that it is practicable to do so.</p> <p>(2) In this clause, “ground habitat” includes understorey vegetation, groundcover vegetation, thick leaf litter and fallen timber.</p>	Yes	0
<b>Comment and Evidence</b>		
<p>The EPA found FCNSW were compliant with the above condition.</p> <p>EPA officers inspected the ground cover in the logged areas surveyed and found it to be largely unaffected by harvesting machinery or snagging (see photo below).</p>		

### **Photos: Ground habitat Protection**



**Photo 1: snig track inside logged area of cpt 230, showing minimal disturbance to ground cover (EPA photo #83).**



Tree retention (Division 2, Part 3.4 of the IFOA)		
Condition No. and detail	Compliant? Yes/No/Not determined/Not Applicable	Number of non- compliances
<p><b>198. Retention of large white cypress trees</b></p> <p>(1) Forests NSW must ensure that, at the completion of any logging operation in which white cypress trees are felled, <b>at least six large white cypress trees remain</b>, within the net mapped operation area, <b>in each hectare of land surrounding a stump of any white cypress tree that is felled in the operation concerned</b>. (emphasis added)</p> <p>(2) Only living trees may be selected for the purpose of subclause (1). If possible, the trees selected for retention are each to have a dbhob of more than 550 mm. If there are not enough trees having such a dbhob, surrounding the tree that is or is proposed to be felled and within the net mapped operation area, then trees are to be selected from the cohort of healthy, mature trees with the next largest diameters at breast height over bark to make up the shortfall.</p>	No	2
<p><b>200. Retention of bull oak</b></p> <p>(1) Forests NSW must ensure that, at the completion of any logging operation in which bull oak trees are felled, at least four bull oak trees remain, within the net mapped operation area, in each hectare of land surrounding a stump of any bull oak tree that is felled in the operation.</p> <p>(2) Trees must be selected, for the purpose of subclause (1), from among the larger bull oak trees that are within the net mapped operation area in the hectare of land surrounding the bull oak tree that is to be felled. Only living trees may be selected.</p> <p><b>Note:</b> "bull oak" means trees of the species <i>Allocasuarina luehmannii</i>.</p>	Not applicable	0
<p><b>207. Retention of dead trees</b></p> <p>(1) This clause does not apply to a salvage logging operation following a wildfire carried out in accordance with Division 3.</p> <p>(2) A dead, dry standing tree (of whatever species) must not be felled in a logging operation.</p>	Yes	0
Comment and Evidence		
<p>The EPA found FCNSW did not comply with Condition 198(2) in two out of three areas surveyed. FCNSW have complied with Condition 207. Condition 200 was not applicable. These findings are based on a measurement of 86 trees and 155 stumps (<b>total sample size = 241</b>) across three 1ha plots within the net logging area (a total survey area of 3ha). Detailed findings and plot co-ordinates are shown in <b>Tables 1, 2 and 3</b> and <b>Figures 1 - 3</b> in <b>Attachment 4</b>. Based on the data gathered during the audit, the EPA found:</p> <ul style="list-style-type: none"> <li>- Plot 1: One tree retained from the largest size class and 4 trees retained from the second largest size class, with most of the removed trees smaller than the retained trees. Plot 1 is therefore compliant;</li> <li>- Plot 2: Only 3 trees retained from the two largest size classes, with 5 trees removed from the second largest size class. Plot 2 is <b>not compliant</b>;</li> <li>- Plot 3: only 2 trees retained in the second largest size class (with none &gt;55cm dbhob), with 7 trees removed from the same size class. Retained trees were all significantly smaller than removed trees. Plot 3 is <b>not compliant</b>.</li> </ul>		

EPA officers did not observe any bull oak trees / stumps, hence condition 200 did not apply. EPA officers observed no felled dead trees in the areas assessed. Therefore, FCNSW have complied with condition 207.

**Photos of the largest stumps and plot location 1:**



**Photo 3: stump 58cm diameter. (EPA photo # 74).**



**Photo 2: stump 56cm diameter (EPA photo #87).**



**Photo 5: stump 54cm diameter (EPA photo # 86).**



**Photo 4: Stump at the centre of plot 1, marked with a blue pole (EPA photo # 76).**



Tree mark-up (Division 4, Part 3.4 of the IFOA)		
Condition No. and detail	Compliant? Yes/No/Not determined/Not Applicable	Number of non- compliances
<p><b>221. Rules for marking trees in logging operations</b></p> <p>(1) White cypress trees must be marked, in accordance with this Division– in any logging operation in which white cypress trees that have a dbhob of 300 mm or more are to be felled.</p> <p>(2) Whether an operation is of a type described in subclause (1) is to be determined by reference to the site specific operational plan for the operation.</p>	Yes	0
<p><b>222. Trees may be marked for retention or removal</b></p> <p>(1) A requirement of clause 221 to mark white cypress trees may be satisfied either:</p> <p>(a) by marking trees that are selected for felling (“marked for removal”), or</p> <p>(b) by marking trees that are selected for retention to meet such of the requirements of clauses 198, as may be relevant to the operation (“marked for retention”). More than one approach may be used in the same operation.</p> <p>(2) When marking white cypress trees for retention (for the purpose of clause 198) at any stage of an operation, only those trees that have a dbhob of 300 mm or more need to be marked.</p> <p>(3) If marking is required under this Division, trees must be physically marked in the field, whether by using paint or some other physical mark. Marking for removal and marking for retention must be done in different and readily distinguishable ways.</p>	Yes	0
<p><b>224. Marking glider sap feed trees for retention</b></p> <p>(1) This clause applies to any logging operations to which clause 221 applies.</p> <p>(2) A glider sap feed tree must be marked for retention if the tree is a cypress or bull oak tree or any other tree that may be impacted by roadwork.</p>	Not applicable	0
<p><b>225. Marking raptor nest trees for retention</b></p> <p>A tree that must not be felled under clause 204 (trees that contain raptor nests must not be felled) must be marked for retention at any stage of a logging in which trees are being marked for retention for the purpose of clause 198.</p>	Not applicable	0
Comment and Evidence		
The EPA found that FCNSW have complied with the above conditions, where applicable.		

Photos: Tree mark-up



**Photo 6: Marked retained tree in plot 1 (EPA photo #71).**



**Photo 7: marked trees in plot 2 (EPA photo # 81).**

Tree Protection (Division 5, Part 3.4 of the IFOA)		
Condition No. and detail	Compliant? Yes/No/Not determined/Not Applicable	Number of non- compliances
<p><b>230. Protection of retained trees generally</b></p> <p>(1) Damage to trees that must not be felled under, or are retained for the purposes of, this Part in a logging operation must be avoided or minimised to the greatest extent practicable in carrying out that operation or any other forestry operation (whether carried out at the same or subsequent time).</p>	Yes	0
<p><b>231. Specific measures to protect retained trees</b></p> <p>(1) In this clause, "protected tree" means a tree that must not be felled under, or that is retained for the purposes of, this Part. However, in the case of any tree in use by a koala at the time of the operation is a tree which must not be felled under clause 205, the tree is a protected tree only for the duration of the logging operation referred to in that clause.</p> <p>(3) Directional felling is to be used so as to reduce the potential for damage to protected trees.</p> <p>(4) Routes of new roads and for the extraction of timber are to be planned so as to reduce the potential for damage to protected trees.</p> <p>(5) Such trees must not be used as bumper trees when snigging.</p> <p>(6) Logging debris must be prevented, to the greatest extent practicable, from accumulating within 5 metres of any protected tree during a logging operation. If logging debris does accumulate, then it must be flattened to a height of less than one metre or removed before any post-harvest burning is carried out. However, in flattening or removing the logging debris, disturbance to the ground surface and the understorey must be avoided to the greatest extent practicable.</p> <p>(7) In carrying out a logging operation, disturbance to the ground surface and understorey within 5 metres of any protected tree must be avoided or minimised to the greatest extent practicable.</p>	No	1
Comment and Evidence		
<p>The EPA found that FCNSW have not complied with all of the above conditions.</p> <p>EPA officers found one instance of a retained tree damaged by logging operations (see photo 2, below). The tree had been used as a bumper and had missing bark along the bole. In all other respects, the harvesting operations in Buckinbong State Forest complied with the above conditions regarding protection of retained trees.</p>		



Photos: Protection of retained trees



**Photo 8: A marked, retained tree with damage to the bark following harvesting (EPA photo #78). This was the single instance of non-compliance regarding protection of retained trees in Buckinbong State Forest.**



**Photo 9: harvested area near plot 3 (centre stump marked with blue pole) showing a snig track and minimal ground disturbance, with no debris around retained trees or damage to retained trees (EPA photo #83).**



Compartment mark-up (Division 2, Part 3.3 of IFOA)		
Condition No. and detail	Compliant? Yes/No/Not determined/Not Applicable	Number of non- compliances
<p><b>184. “Compartment mark-up survey” for nests, roosts, dens, scats etc.</b></p> <p>(2) A forestry operation to which this clause applies must not be undertaken on any part of the compartment or other tract of land unless:</p> <ul style="list-style-type: none"> <li>(a) that part, and any area within about 200 metres of that part (including land outside the compartment or other tract of land, if accessible), have first been surveyed in accordance with the requirements of this clause and clauses 185, and</li> <li>(b) any necessary notations (as a result of the survey) have been made on a copy of the site specific operational plan in accordance with clauses 185 (3) and (4), and 187 (2).</li> </ul> <p>(3) The survey must be carried out in a part of the compartment or tract as close as practicable to the commencement of the operation concerned in the compartment or other tract of land, or in stages as the operation progresses through the compartment or tract.</p>	Yes	0
<p><b>185. Search for nests, dens, roosts, plants etc.</b></p> <p>(1) The survey required by clause 184 must include a thorough search for the following:</p> <ul style="list-style-type: none"> <li>(a) nests and roosts of birds of the species referred to in clause 246,</li> <li>(a1) a patch of trees that are habitat for Painted honey eaters, as described in clause 246A,</li> <li>(a2) trees that are habitat for White browed treecreepers, as described in clause 246B,</li> <li>(a3) trees that are habitat for hollow dependent threatened species, as described in clause 170,</li> <li>(b) flying-fox camps, as described in clause 249 (2),</li> <li>(c) dens (whether permanent or maternal) and latrine sites of the spotted-tailed quoll,</li> <li>(d) any individuals of a species of plant referred to in clause 149 or 258,</li> <li>(e) evidence of Box Gum Woodland EEC, Inland Grey Box Woodland EEC or Sandhill Pine Woodland EEC,</li> <li>(f) glider sap feed trees within the meaning of clause 203,</li> <li>(g) trees containing raptor nests,</li> <li>(h) nests (other than mud nests) of any species of bird that is protected fauna,</li> <li>(i) evidence of species of concern within the meaning of clause 144,</li> <li>(j) endangered ecological communities (in addition to Box Gum Woodland, Inland Grey Box Woodland and Sandhill Pine EEC).</li> </ul> <p>(2) The survey required by clause 184 must also include a thorough search for the following:</p> <ul style="list-style-type: none"> <li>(a) shrubs and trees of <i>Allocasuarina</i> spp or <i>Casuarina</i> spp. for evidence that glossy black-cockatoos have been feeding on them,</li> <li>(b) stands of <i>Allocasuarina</i> or <i>Casuarina</i> spp.,</li> <li>(c) stands of <i>Grevillea</i> spp. and stands of <i>Eremophila</i> spp. (other than <i>E. mitchelli</i>).</li> </ul> <p>(3) If any of the features or other things referred to in subclause (1) or subclause (2) are found, they must be marked in the field, where it is practicable to do so. A copy of the site specific operational plan for the forestry operation is also to be annotated to indicate the presence and location of the feature or other thing, if not already referred to in the plan.</p>	Yes	0

Compartment mark-up (Division 2, Part 3.3 of IFOA)		
Condition No. and detail	Compliant? Yes/No/Not determined/Not Applicable	Number of non- compliances
<p><b>187. Search for landscape features</b></p> <p>(1) The survey required by clause 184 must also include a thorough search for any of the following landscape features that may be present in the compartment or other tract of land (in addition to those already identified in the site specific operational plan for the operation):</p> <ul style="list-style-type: none"> <li>(a) an area of rocky outcrops or cliffs,</li> <li>(b) an area of heath of more than 0.2 hectares,</li> <li>(c) a wetland,</li> <li>(d) an unmapped drainage line.</li> </ul>	Yes	0
<p><b>189. "Marking-up" of boundaries of certain environmentally significant areas and Wetlands</b></p> <p>(2) Forests NSW must ensure, as far as practicable, that a forestry operation to which this clause applies does not come within 50 metres of any part of a boundary of an area of land that is protected in relation to that operation (as described in subclause (4)) unless that part of the boundary has been first "marked up".</p> <p>(3) "Marking-up", for the purposes of this clause, may be done by physically marking trees or other features in the field, or by using the Geographic Information System and the Global Positioning System, or any other device that can accurately identify or locate the boundary (or relevant part of the boundary) of the area of land concerned in the field.</p>	Not applicable	0
<p><b>190. "Marking-up" required only if boundary adjoins net operational area</b></p> <p>(1) Despite clause 189, part of a boundary of an area of land that is protected in relation to a forestry operation under that clause is required to be "marked-up" only if that part adjoins the net operational area for the forestry operation.</p>	Yes	0
<p><b>191. "Marking-up" - boundary to be determined in field</b></p> <p>For the purposes of "marking-up" a boundary of an area, the location of the boundary of the area is to be determined in the field, if possible, by reference to the feature or other thing that constitutes or is protected by the area, such as a dam, area of heath and potential subterranean bat roost, rather than solely by reference to its location as shown on the operational map for the forestry operation (or the FMZ layer).</p>	Yes	0
Comment and Evidence		
<p>The EPA found FCNSW was compliant with all the conditions listed above.</p> <p>The EPA requested all records relating to compartment mark-up surveys from FCNSW. Upon reviewing the survey reports, EPA is satisfied that FCNSW have satisfied the search requirements detailed in conditions 184-187 above. EPA officers observed compartment mark-up during the field inspection (see photos below). There were no environmentally significant areas in compartment 230, Buckinbong State Forest, hence condition 189 did not apply.</p>		

Photos: Compartment mark-up



**Photo 11: compartment mark-up in cpt 230 Buckinbong State Forest (EPA photo reference 81).**



**Photo 10: compartment mark-up in cpt230 Buckinbong State Forest (EPA photo reference 79).**



## **ATTACHMENT 2: DRAFT AUDIT FINDINGS (DESKTOP COMPONENT)**

Schedule 5 IFOA – Targeted Surveys for Plants		
Condition No. and detail	Compliant? Yes/No/ Not determined/Not Applicable	Number of non- compliances
<p><b>21A. Timing and survey effort required for targeted surveys of <i>Caladenia arenaria</i></b></p> <p>(1) Targeted surveys for <i>Caladenia arenaria</i> must be only be conducted during the flowering period (1 September to 15 September of any given year) at a rate of 10km per 100 hectares.</p> <p>(2) This clause applies to logging operations in Buckingbong, Lonesome Pine, Mejum, Yarranjerry and Kentucky State Forests during the period between 30 August to 30 November of any given year.</p> <p>(3) If logging operations are undertaken in accordance with this clause Forests NSW must undertake a survey for <i>Caladenia arenaria</i> over all parts of the net mapped operational area where logging operations will take place prior to conducting the operation.</p>	No	1
<p><b>22. Report of targeted survey for plant species</b></p> <p>(1) For the purpose of clause 177 (2), the report of a targeted survey for a plant species is to contain the following information about the survey and its results:</p> <p>(a) the name of the State forest in which the survey was carried out or the location of the compartment or other tract of land for which the survey was carried out (by providing the grid co-ordinates of that location and by including the State forest name and the compartment number or numbers),</p> <p>(b) the date or dates on which the survey was conducted,</p> <p>(c) the name or names of the person or persons who carried out the survey in the field,</p> <p>(d) track log of GPS points indicating time and date stamp allowing GPS points to be re-surveyed and audited.</p> <p>(f) the target species of plant (that is, the species for which the survey was required under clause 177),</p> <p>(g) a list of all records of the target species of plant made or found during the survey and a summary of each record,</p> <p>(h) a list of all records made or found during the survey of any other threatened species and a summary of each record.</p>	Yes	0
Comment and Evidence		
<p>The EPA found FCNSW was not compliant with regard to all of the above conditions.</p> <p>A pre-harvest survey report provided by FCNSW identified <i>Caladenia arenaria</i> as one of the threatened plants requiring targeted surveys. The report states that 4.3km was surveyed in the correct period between 1 September to 15 September. The report further states that the survey was “restricted to areas (1 and 2) within the compartment where logs were planned to be retrieved off the ground during the Caladenia flowering season.” However, condition 21A(3) above requires that a survey be undertaken over all parts of the net logging area, at the rate of 10km for every 100ha of mapped logging area. In this instance, the distance surveyed was sufficient to cover 43ha. The net harvest area of</p>		



Schedule 5 IFOA – Targeted Surveys for Plants		
Condition No. and detail	Compliant? Yes/No/ Not determined/Not Applicable	Number of non- compliances
compartment 230 (as stated in the harvesting plan) was 294.8ha. FCNSW should have surveyed 29.4km within the net logging area in order to satisfy the condition relating to <i>C. arenaria</i> surveys. Another 25.1km needed to be surveyed prior to logging, to ensure compliance.		

**Plant and animal surveys before start of logging and road works (part 3.2 of IFOA)**

Condition No. and detail	Compliant? Yes/No/ Not determined/Not Applicable	Number of non- compliances
<p><b>162. Compliance with Part before commencement of operation</b></p> <p>(1) A forestry operation to which this Part applies must not be commenced in a compartment or other tract of land unless:</p> <ul style="list-style-type: none"> <li>(a) a search of records of animal and plant species has been carried out in relation to the compartment or other tract of land (but no more than 5 years before the operation commences in the compartment or tract), and a report of the results has been prepared, and</li> <li>(b) a traverse survey for the compartment or other tract of land has been carried out (no more than 5 years before the operation commences in the compartment or tract), and</li> <li>(c) each targeted plant survey required under Division 4 for the compartment or other tract of land has been carried out , and</li> <li>(d) a report of surveys carried out for the compartment or other tract of land has been prepared in accordance with Division 5.</li> </ul>	No	1
<p><b>163. Surveys to be undertaken by experts</b></p> <p>Forests NSW must ensure that each traverse survey and targeted plant survey under this Part is carried out by a person or persons having the necessary skills and expertise to do so.</p>	Yes	0
<p><b>165. Data compilation</b></p> <p>(1) Forests NSW must search the Atlas of NSW Wildlife and other databases of records held or maintained by Forests NSW, for the following records relevant to the compartment or other tract of land:</p> <ul style="list-style-type: none"> <li>(a) spotted-tailed quoll within the compartment and 5 kilometres around it,</li> <li>(b) flying-fox camps within the compartment and 2 kilometres around it,</li> <li>(c) animals and plants of other threatened species not referred to in paragraph (a) or (b) (and any proposed threatened species referred to in clause 144 (1) (d)) within the compartment or other tract of land and within 2 kilometres of it.</li> </ul>	Yes	0
<p><b>166. Report of data found</b></p> <p>(1) A traverse survey or targeted plant survey must not be carried out until Forests NSW has prepared a report that contains the following:</p> <ul style="list-style-type: none"> <li>(a) date of report and dates on which the search was carried out,</li> <li>(b) location of the compartment or other tract of land for which the search was carried out,</li> <li>(c) name of person or persons who carried out the search,</li> <li>(d) a list of all records found and a summary of each record.</li> </ul>	Yes	0

**Plant and animal surveys before start of logging and road works (part 3.2 of IFOA)**

Condition No. and detail	Compliant? Yes/No/ Not determined/Not Applicable	Number of non- compliances
<p><b>168. Planning traverse route</b></p> <p>(1) The route of the traverse survey for the compartment or other tract of land must:</p> <ul style="list-style-type: none"> <li>(a) cover at least the distance calculated at the rate of 1.2 kilometres per 100 hectares of the compartment or other tract of land, and</li> <li>(b) pass through the full range of forest types and environments known, at the time of planning the route, to be present in the compartment or other tract of land.</li> </ul> <p>(2) The route of the traverse survey must extend beyond the boundary of the compartment or other tract of land into any area within 100 metres of the boundary if that area:</p> <ul style="list-style-type: none"> <li>(a) is known to contain a forest type or a type of environment not present in the compartment or other tract of land itself, and</li> <li>(b) is located within State forest.</li> </ul>	Yes	0
<p><b>169. Mapping traverse route</b></p> <p>The route of the traverse survey for the compartment or other tract of land must be mapped at a scale of at least 1:50 000 before the traverse survey is commenced. The map must also indicate the forest types and types of environments known to be present (at the time of preparation of the map) within the compartment or tract and within 100 metres of the compartment or tract (if located within State forest).</p>	Yes	0
<p><b>170. Traverse survey – field methodology</b></p> <p>(1) The person or persons conducting the traverse survey must search for the following along the traverse route:</p> <ul style="list-style-type: none"> <li>(a) wetlands, areas of heath, areas of rocky outcrops or cliffs, dams and tanks,</li> <li>(b) nests and roosts of birds of the species referred to in clause 246,</li> <li>(b2) trees of any species that may be habitat for hollow dependent threatened species, namely: <ul style="list-style-type: none"> <li>(i) trees (living or dead) with evidence of use by a hollow dependent threatened species; or</li> <li>(ii) trees (living or dead) with a dbhob of 81centimetres or more.</li> </ul> </li> <li>(c) flying-fox camps (as described in clause 249 (2)),</li> <li>(d) dens (whether permanent or maternal) and latrine sites of the spotted-tailed quoll,</li> <li>(e) any individuals of a species of plant referred to in clause 149 or 258,</li> <li>(f) evidence of Box Gum Woodland EEC, Inland Grey Box Woodland EEC or Sandhill Pine EEC,</li> <li>(g) glider sap feed trees within the meaning of clause 203,</li> <li>(h) trees containing raptor nests,</li> <li>(i) evidence of Bush stone curlews,</li> <li>(j) Painted honey eater habitat, as described in clause 246A,</li> <li>(k) White browed treecreeper habitat, as described in clause 246B,</li> <li>(l) nests (other than mud nests) of any species of bird that is protected fauna,</li> <li>(m) evidence of species of concern within the meaning of clause 144;</li> <li>(n) endangered ecological communities (in addition to Box Gum Woodland, Sandhill Pine and Inland Grey Box Woodland EEC).</li> </ul> <p>(5) The traverse route must be searched for at least the amount of time calculated at the rate of 1 hour per 100 hectares of the compartment or</p>	Yes	0

**Plant and animal surveys before start of logging and road works (part 3.2 of IFOA)**

Condition No. and detail	Compliant? Yes/No/ Not determined/Not Applicable	Number of non- compliances
other tract of land. However, in the case of ancillary road construction, the traverse route (being the road or proposed road) must be searched for at least the amount of time calculated at the rate of 1 hour per 1.2 kilometres of the route.		
<p><b>171. Traverse survey report</b></p> <p>(1) Forests NSW must ensure that the following information concerning the traverse survey and its results is recorded:</p> <ul style="list-style-type: none"> <li>(a) location of the area in which the traverse survey was conducted,</li> <li>(b) date on which the traverse survey was conducted,</li> <li>(c) name of person or persons conducting the survey,</li> <li>(d) the traverse route (by marking it on a map),</li> <li>(e) length of the traverse route,</li> <li>(f) the time spent in the field conducting the traverse survey (but not including any time spent travelling to and from the location),</li> <li>(g) details of all features or other things referred to in clause 170 (1) that were found in the traverse survey,</li> <li>(h) details of any evidence of a threatened species (or an endangered population) of plant or animal (in addition to those included under paragraph (g)) that was found in the traverse survey.</li> </ul>	Yes	0
<p><b>179. Report of data and surveys for compartment</b></p> <p>(1) Forests NSW must prepare a report for the compartment or other tract of land that includes the following:</p> <ul style="list-style-type: none"> <li>(a) the report of the results of its search for records of animal and plant species prepared under clause 166,</li> <li>(b) the information relating to, and the results of, the traverse survey for the compartment or other tract of land recorded under clause 171, (c) each report of a targeted plant survey carried out for the compartment or other tract of land, prepared for the purpose of clause 177 (2),</li> <li>(d) all data sheets used in the field for the purpose of a traverse survey and any targeted plant survey,</li> <li>(e) a map of the compartment or other tract of land indicating the location of records of threatened species, flying-fox camps or endangered populations, and the location of evidence of any endangered ecological community, that is found or made during a survey for the compartment or tract under this Part.</li> </ul>	Yes	0
<b>Comment and Evidence</b>		
<p>The EPA found FCNSW was not compliant in all of the above conditions.</p> <p>FCNSW failed to satisfy a condition regarding targeted surveys for <i>Caladenia arenaria</i> prior to logging, in breach of condition 162 above. In all other conditions, FCNSW were compliant. FCNSW undertook over 8 hours of compartment traverse surveys and covered 15.6kms, which was in excess of the required amount of time and distance for compartment traverses (in 290ha the requirement was for 3km of surveys and 3 hours of survey time). FCNSW prepared a report of data and surveys containing all the required maps and information.</p>		



## Risk Assessment of Non-compliance

The significance of any non-compliances identified during the audit process are categorised. Following risk assessment of non-compliances, an escalating response relative to the seriousness of the non-compliance is determined to ensure the non-compliance is addressed by the enterprise.

The risk assessment of non-compliances involves assessment of the non-compliance against two criteria; the likelihood of environmental harm occurring and the level of environmental impact as a result of the non-compliance. After these assessments have been made, information is transferred into the risk analysis matrix below.

	Likelihood of Environmental Harm Occurring			
Level of Environmental Impact		Certain	Likely	Less Likely
	High	Code Red	Code Red	Code Orange
	Moderate	Code Red	Code Orange	Code Yellow
	Low	Code Orange	Code Yellow	Code Yellow

The assessment of the likelihood of environmental harm occurring and the level of environmental impact allows for the risk assessment of the non-compliance via a colour coding system. A red risk assessment for non-compliance denotes that the non-compliance is of considerable environmental significance and therefore must be dealt with as a matter of priority. An orange risk assessment for non-compliance is still a significant risk of harm to the environment however can be given a lower priority than a red risk assessment. A yellow risk assessment for non-compliance indicates that the non-compliance could receive a lower priority but must be addressed.

There are also a number of licence conditions that do not have a direct environmental significance, but are still important to the integrity of the regulatory system. These conditions relate to administrative, monitoring and reporting requirements. Non-compliance of these conditions is given a blue colour code.

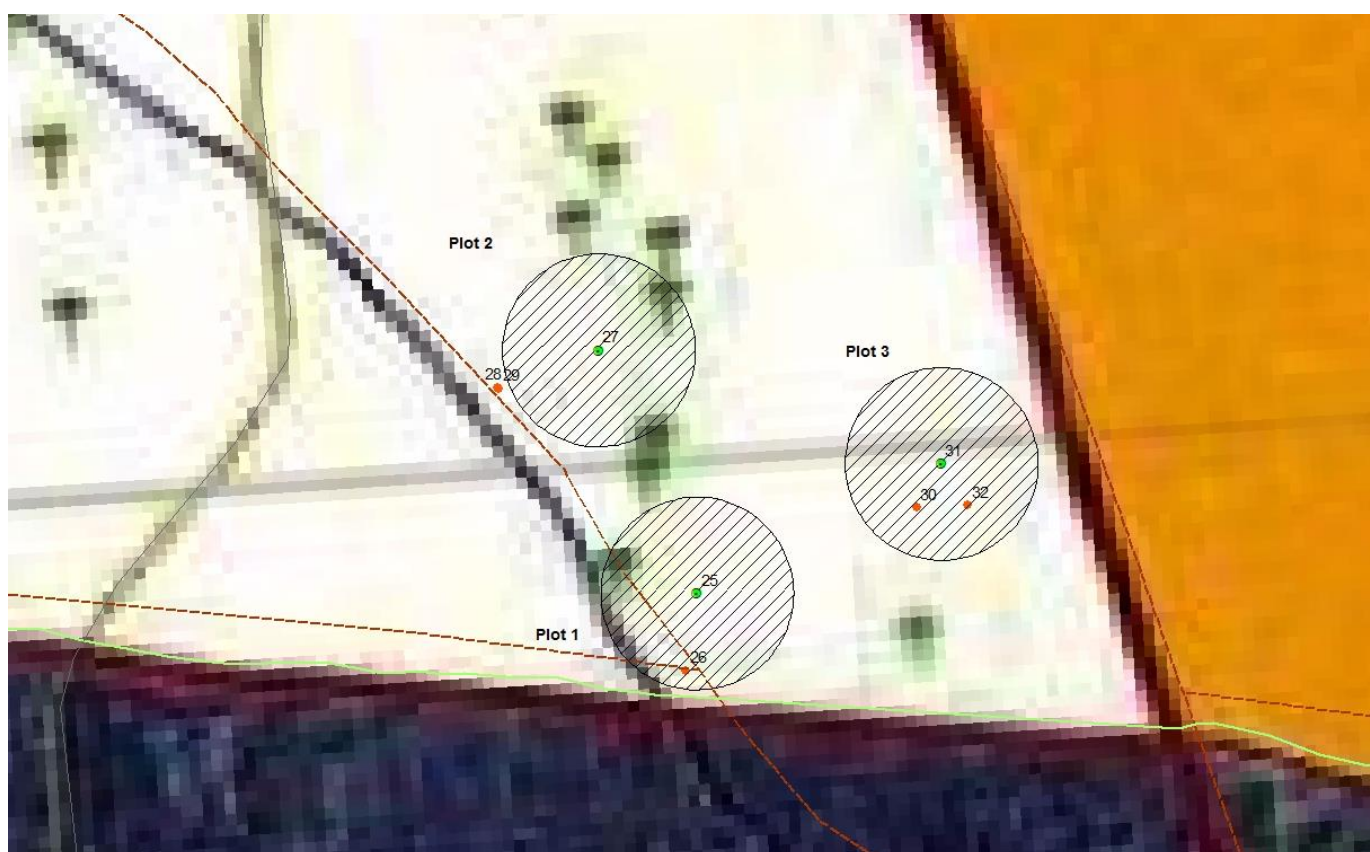
The colour code is used as the basis for deciding on the priority of remedial action required by the licensee and the timeframe within which the non-compliance needs to be addressed. This information is presented in the action program alongside the target/action date for the noncompliance to be addressed.

While the risk assessment of non-compliances is used to prioritise actions to be taken, the EPA considers all non-compliances are important and licensees must ensure that all non-compliances are addressed as soon as possible.

## ATTACHMENT 3: DATA TABLES AND FIGURES

**Table 1: Locations of plots, stumps and trees recorded in Buckinbong State Forest during the audit undertaken on 4 November 2015 (see also the map included below this table).**

FID	Waypoint #	Latitude	Longitude	Easting	Northing	comment
25	772	-34.954071	146.451309	449903	6131913	Location of Plot 1
26	773	-34.954471	146.451205	449894	6131868	Stump, 58cm (photos 72, 73, 74)
27	774	-34.952767	146.450785	449854	6132057	Location of Plot 2
28	775	-34.952927	146.450124	449794	6132039	Damaged tree used as bumper (photos 77, 78)
29	776	-34.952933	146.450136	449795	6132038	Trees retained as part of an exclusion zone for a protected tree (photo 79)
30	777	-34.953698	146.452737	450033	6131955	Stump, 54cm (photo 86)
31	778	-34.953478	146.452914	450049	6131979	Location of Plot 3
32	779	-34.953705	146.453064	450063	6131954	Stump, 56cm (photo 87)



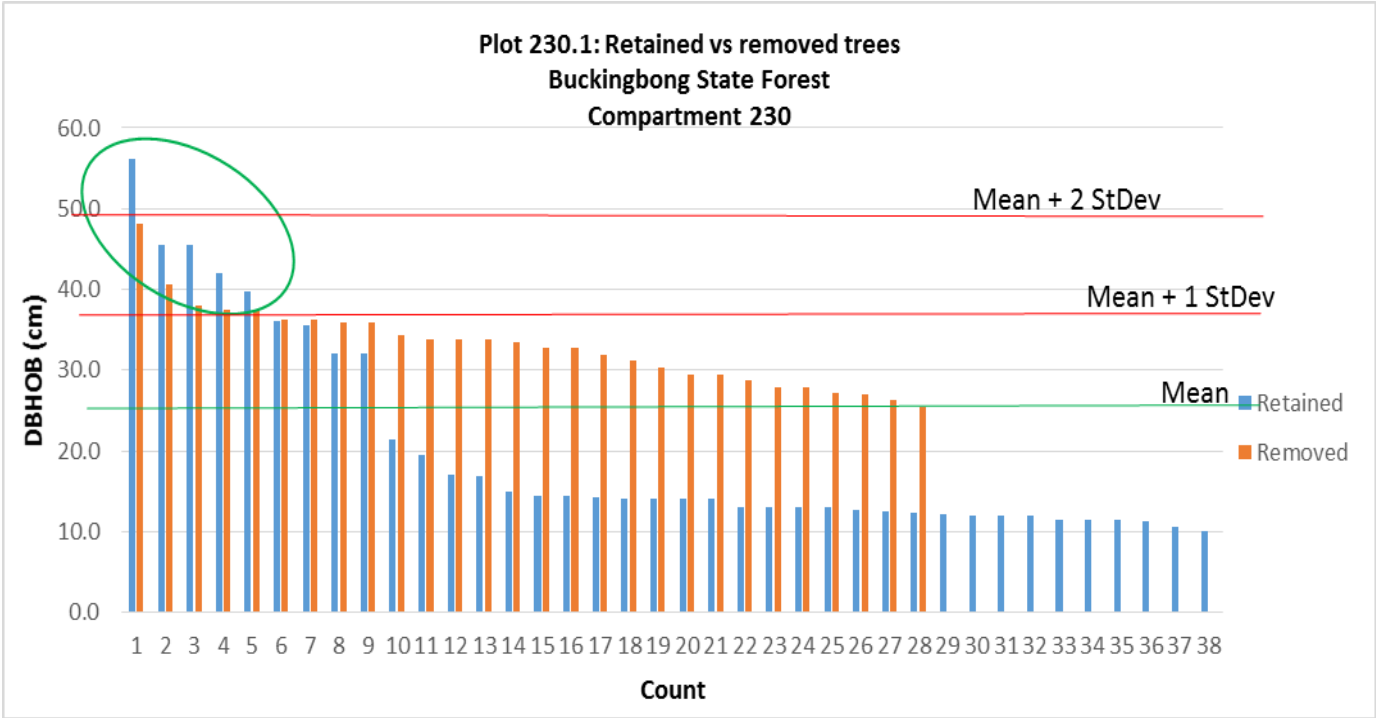
**Map 2: locations of waypoints listed in Table 1, above (refer to FID column for reference).**

**Table 2: plot data showing the number of trees/stumps measured in each of the plots during the audit in Buckinbong State Forest, compartment 230.**

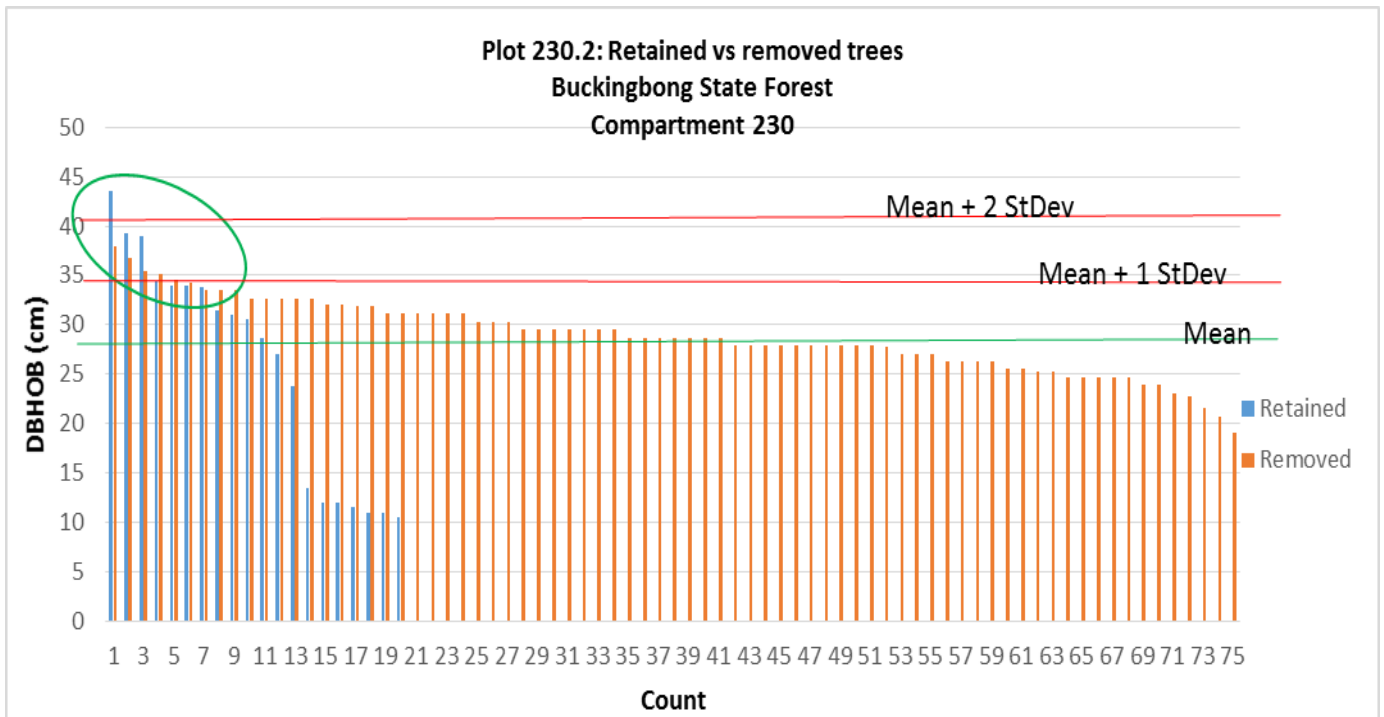
Plot number	Number of trees measured	Number of stumps measured	Total
1	38	28	66
2	20	75	95
3	28	52	80
TOTAL	86	155	241

**Table 3: comparison of the six largest trees versus six largest stumps (cm) in each of the plots audited.**

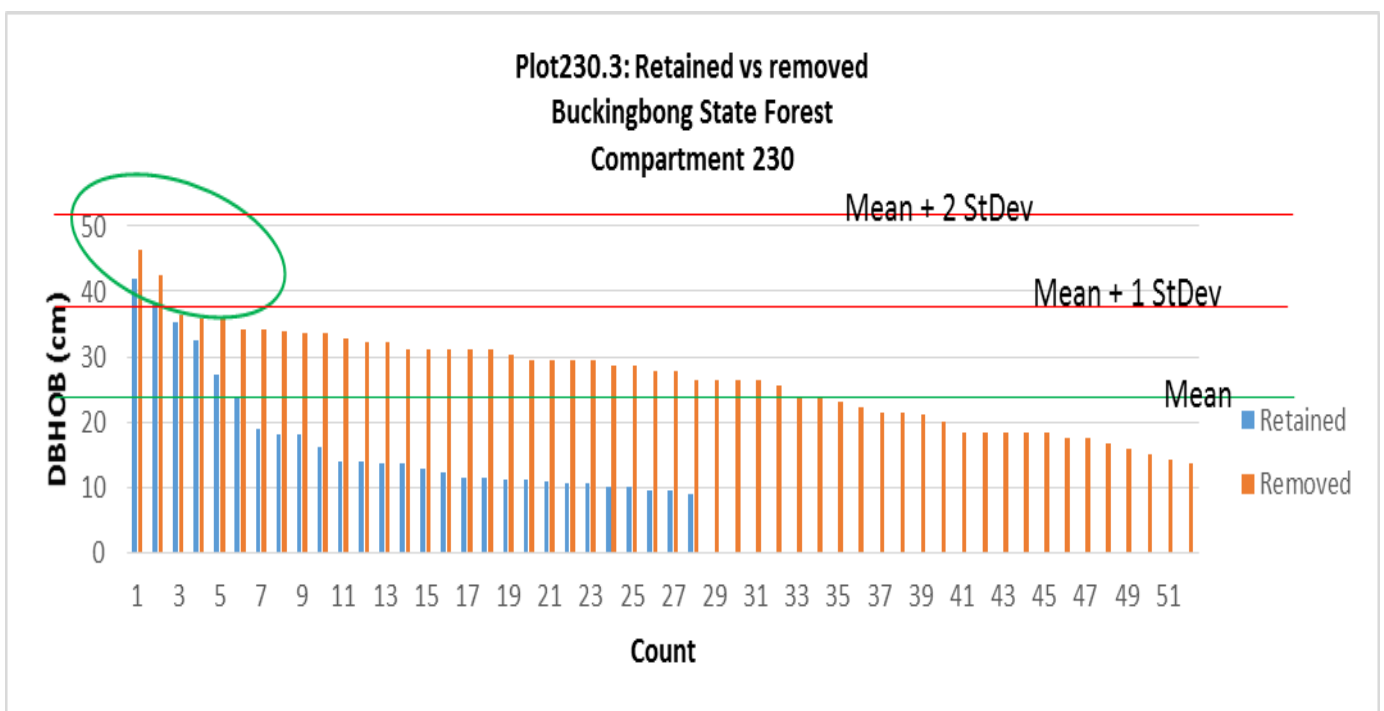
PLOT 1		PLOT 2		PLOT 3	
6 largest trees	6 largest stumps	6 largest trees	6 largest stumps	6 largest trees	6 largest stumps
56.1	48.2	43.5	38	42	46.5
45.5	40.6	39.3	36.7	38.4	42.4
45.5	38	39	35.5	35.2	36.3
42.0	37.5	34.4	35.1	32.5	35.9
39.8	37.5	34	34.6	27.2	35.9
36.0	36.3	34.0	34.3	23.7	34.3



**Figure 1: diameters at breast height over bark (DBHOB) of trees measured in plot 1 (blue) versus estimated DBHOB of removed trees (orange).**



**Figure 2: diameters at breast height over bark (DBHOB) of trees measured in plot 2 (blue) versus estimated DBHOB of removed trees (orange).**



**Figure 3: diameters at breast height over bark (DBHOB) of trees measured in plot 3 (blue) versus estimated DBHOB of removed trees (orange).**