

Harvest and Haul Plan

Operational Area Identification

Type of Forestry Operation		Harvesting Operation	
State Forest	BULGA	Compartment/s	BUL041 & BUL043
Crown-timber Land	N/A	Local Landscape Area	COOLGI
Harvesting Zone	Selective	Regrowth Zone	Regrowth Zone
Plan Name / ID	HP_BULGA_41_43_2021 / 200001483		
Legal Conditions	<p>Native Forest Harvesting in accordance with Coastal Integrated Forestry Operations Approval conditions.</p> <p>To implement this plan, you must hold a current Contractor's Licence.</p> <p>Standard Operating Procedures apply.</p> <p>Survey expiry date for this plan is 10/5/2023</p>		
Certification	<p>Responsible Wood Certificate 604224 and ISO14001 Certificate 604225</p> <p>Timber products removed from the plan area are within the Defined Forest Area covered by the Australian Standard for Sustainable Forest Management (AS4708:2013) Certificate 604224</p>		
Prepared by	Paul Williams and Ashleigh Abercrombie		
Reviewed by			
Approved by – Planning Supervisor - FCNSW	Brent Bailey	Approval Date: 2/09/2022	
Abbreviations	<p>APLO = Aboriginal Partnerships Liaison Officer CH = Cultural Heritage CIFOA = Coastal Integrated Forestry Operations Approval Crew = Harvest Contractor/Forest Operators ESA = Environmentally Significant Area FMA = Fisheries Management Act FT = Forest Technician HC = Harvesting Coordinator HCVOG = High Conservation Value Old Growth HPOM = Harvest Plan Operational Map HS = Harvesting Supervisor NHA = Net Harvest Area OPM = Operational Planning Manager PA = Production Assistant PP = Private Property PS = Planning Supervisor PtS = Protection Supervisor RC = Roading Coordinator SOP = Standard Operating Procedure TRC = Tree Retention Clump WHC = Wildlife Habitat Clump OSA = Other Significant Area</p>		

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 1 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date: Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

1. Harvesting Operation Details

	Cpt 41	Cpt 43	Total
Gross Area (ha)	175.8	159.8	335.6
Base Net Area (BNA) (ha)	66.1	98.2	164.3
TRC area (ha)	3.31	4.91	8.22
NHA available for harvest	32.7	72.8	105.5
Yield (m3)	14	14	14
Slope (% 0-20 degrees)	64	42	53
Slope (% 20-25 degrees)	31	36	33
Slope (% 25-30 degrees)	5	22	14

All areas are in hectares

2. Expected Species and Yield

Species for harvest	Species Mix % (sawlog)
SBG	43%
TWD	32%
BBX	19%
Other	6%

Product Removal	Volume (m ³)
HQ Large Sawlog (Quota)	420
HQ Small Sawlog	230
Poles, Piles, Girders (PPG)	80
Veneer	40
Low Quality (Salvage)	720
Pulp/Firewood	-
Total	1,490

The Contractor must ensure timber removed is allocated to the correct compartment when entered into Electronic Delivery Docket.

3. Management Conditions

Boundary	Conditions
SMZ / FMZ	<p>FMZ 2: Special Management – Harvesting Exclusion – HCVOG and Rainforest</p> <p>FMZ 3A: Harvesting Exclusion – Rainforest and National Park Exclusion (adjacent Middle Ridge Rd)</p> <p>FMZ 3B: Visual Protection – areas adjoining Blue Knob Forest Road are to be treated as FMZ 4 for silvicultural purposes. <i>Not displayed on operational maps</i></p> <p>FMZ 4: General Management – available for harvest.</p> <p>FMZ 5: Plantation occurs in these compartments. These areas will be harvested under a separate Planation Plan (<i>HP_BULGA_41_Plantation_2021</i>)</p>
Research	There are no Permanent Growth Plots or research plots within the operational area.
National Park	Birawal Bulga National Park is to the north of Compartment 41. No harvesting is to occur in the NP buffer zones on the National Park side of Middle Ridge Road. Harvesting crew is to ensure that no logging debris falls into the NP.

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 2 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date:
		Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

	Note – mapped boundary NE of Dump 1 must be marked in the field by FT as per the mapped location. The crew must ensure access roads to the National Park are not impeded by forestry activities and the roads condition is maintained.
Cultural Heritage	<p>Surveys have been conducted and there are no sites identified within these compartments.</p> <p>If any potential heritage sites are identified they should be recorded on FCMapApp, and the APLO (Wauchope) notified immediately. A 100m interim buffer must be observed pending further investigation.</p>
Koala Emergency Response	<p>If a sick or injured Koala is located during the progression of timber harvest operations the FT/ HC and FCNSW must follow the procedures outlined within the “<i>FCNSW Koala Emergency Response and Koala search Guide for machine Operators</i>”</p> <p><i>Refer Plan Portal module documents for copy of document</i></p>
Haulage	<p>Route:</p> <p>Haulage loaded and unloaded will travel west from either Blue Knob Road or Double Link Road to Knodingbul Road, south to Dingo Tops Forest Road, Big Run Road, Wherrol Flat Road, and to Bulga Road.</p> <p>Trucks exiting Double Link Road onto Blue Knob Road can turnaround at a turnaround point on Blue Knob Road which is marked in the field.</p> <p>At the time of planning the use of Knodingbul Road (south of intersection with Dingo Tops Road) is not permitted, due to a landslip located on Council maintained section however, if MNC Council assessment over landslip on Knodingbul Rd (under their administration) finds that traverse by timber haul trucks is permitted, the HC must inform the Sales and Distribution Manager - Production North. The following conditions of use also apply to use of Knodingbul Rd once Council approval received.</p> <p>Haulage may also travel north on Knodingbul Road to Oxley Highway.</p> <p>School Bus Routes: The school bus travels and has pickup / drop off stops along <u>Big Run Road from Mt Pleasant Road Intersection to Wherrol Flat Road Intersection between 7.50 – 8.10am and 4.05 to 4.30pm,</u> Monday to Friday during school term, access is not to occur during these times.</p> <p>The school bus travels and has a pickup / drop off stop at intersection of Nowendoc and Knodingbul roads, between 7:45am-8:15 am and 4:10pm-4:40 pm Monday to Friday during school term access is not to occur during these times.</p> <p>Several school buses travel Nowendoc Road, Wherrol Flat Road and Bulga roads.</p> <p><i>North Haul Pty Ltd is responsible for consultation with the school bus provider (Wingham Buslines, ph: 02 6553 4310) prior to the commencement of haulage to determine any appropriate protocols</i></p> <p>Dust & Mud: Truck drivers are to minimise dust and noise when traversing past residential properties on Big Run Road and or Knodingbul Road. If dust control is required, the HC must coordinate with the RC to employ dust mitigation measures as appropriate.</p> <p>Load Limits: Bridge load limits on Dingo Creek on Wherrol Flat Road. Loaded trucks are permitted to use Ashlea bridge under a temporary permit (1st September 2022 to 31st January 2023) under the following conditions:</p> <ul style="list-style-type: none"> • Drivers must travel at 10km / hour or less while on the bridge • Drivers must travel in the centre of the bridge, on the wheel paths. <p>Operating Hours: There are a several residential properties close to Big Run Road and southern part of Knodingbul. When hauling close to residential properties, operating hours will be limited to between 5:30am & 8pm Monday-Friday, and 8am and 12pm on</p>

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 3 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date:
		Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

	<p>Saturdays. Haulage must not occur on Sunday's and Public Holidays. These are times and days agreed to between FCNSW and neighbors and must be respected at all times.</p> <p>HC to amend operating hours as required if complaints are received from neighbours.</p> <p>Speed Limit: Trucks are to adhere to a 40kmph speed limit at all times along Big Run Road from the intersection with Wherrol Flat Road to Henshaws Crossing on Dingo Tops Forest Road, and past homes on Knodingbul Road. Speed limits will be managed with geofence.</p> <p>A 60km/hr. maximum speed limit applies to log trucks on all other forest roads unless otherwise specified in the field.</p> <p>Knodingbul, Big Run and Dingo Tops Forest Roads provide access to National Park Dingo, Knorrit and Bulga State Forests for other road users. There is numerous radio 'black spots' along sections of these roads. Truck drivers must not rely on radio communication and to proceed with caution along these roads.</p> <p><i>Haulage contractor must apply SSP Appendix 1: Central Region Rural Roads Strategy Communication protocol when traversing all forest roads.</i></p>
Community	<p>Noise: Noise restrictions occur for haulage only.</p> <p>Notifications: Neighbours adjacent to Haul route have been notified at the of planning (July 2022). Nil other known notifications required at the time of planning.</p> <p>Traffic Control Plan: <i>Knodingbul Road, Blue Knob Road and French's Creek Forest Road</i> provide access to National Park and Bulga State Forest. It is the responsibility of the harvesting crew to provide and implement a traffic management plan that will ensure the safety of all road users whilst harvesting within 2 tree lengths of these roads. Gates to active dump sites must clearly identify radio channel to be used and are to be maintained at all times (crews' responsibility) when roads are closed due to tree felling within 2 tree lengths or log dump operations are active. Refer <i>Chapter 14 (Safety Requirements) of FCNSW CIFOA Harvesting Procedures</i></p> <p>Forest Permits: No events scheduled for these compartments at time of planning.</p> <p>HC to check link prior to commencement of harvesting. http://fcportal.fcnsw.local/Hardwood/TeamSite/stewardship/RecreationAndTourism/Li sts/Calendar/calendar.aspx</p>
Infrastructure	<p>No overhead or underground utilities are present within these compartments.</p> <p>Gravel/Quarries: Blue Knob Road Quarry will be used for this operation. Refer to RC for Quarry Management Plan if required.</p> <p>Fire Trails, Roads & Tracks: If mapped trails within this area are used for snigging or other harvesting activity, these trails must remain open and trafficable by 4WD vehicle after use. If the HC becomes aware of unstable trails that are not required to be used for snigging, they must be documented on FCMapApp and Harvesting Supervisor or Rooding Supervisor notified such that relevant approvals for works can be obtained. No works to commence prior to approval.</p>
Control lines for post operational burning	<p>Control lines to be constructed by the crew are indicatively mapped on HPOM, however final location will depend on snig tracks and areas harvested.</p> <p>The HC/PA must liaise with the Protection Coordinator during harvesting to more accurately plan where control lines are required.</p>

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 4 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date:
		Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

4. Harvesting Conditions

Silviculture Type	Harvesting Objectives and Stand Condition
<p>Selective Harvesting, – commercial dry mixed hardwood and Commercial moist mixed species adjacent to drainage lines</p>	<p>In the mixed dry hardwood stands containing area of 60/62 forest types (Grey Gum, Grey Ironbark and Red/White Mahogany) the objective is to harvest the merchantable component of the mature aged crop and retain the vigorous younger age class trees for a future cut.</p> <p>In stands dominated by commercial endpoint 47b Blue Gum (SBG) Tallowwood (TWD), and small areas of type 53 Brush Box (BBX) mainly along drainage lines, the objective is to harvest the merchantable component of the mature aged crop and provide conditions to encourage natural regeneration.</p> <p>BA is to be retained at or above an average of 10m²/ha (Regrowth Zone) to ensure compliance with CIFOA Silvicultural removal limits. No more than 25% of plots are permitted to be <6m²/ha, and at least 50% of plots >10m²/ha.</p> <p>FT may mark an initial patch with retained trees at sufficient BA retained rate to meet CIFOA Selective Harvesting removal limits.</p> <p>In subsequent patches, the Crew is responsible for selecting retained seed trees of preferred species and identifying and retaining growers. Crew is to avoid damage to retained growers. Crews to remove all merchantable stems not marked for retention and ensure mechanical disturbance creates a suitable seed bed for regeneration especially in areas of viney scrub associated with the mesic understorey.</p> <p>HC to instruct crew to retain patches of quality advanced regeneration and seed trees where they occur – and/or where they are mapped in FCMapApp by FTs.</p> <p>The Crew is responsible for retaining identified patches of advanced regeneration and any existing seed trees.</p>
<p>Non-merchantable Areas</p>	<p>Throughout this area there may be non-merchantable areas. These will be identified by the FT's and marked on the FCMapApp. HC is to liaise with FT's to identify those areas to be excluded from harvesting. Any further areas identified by the HC must also be recorded on the FCMapApp.</p>
<p>Regeneration Strategy</p>	<p>Retain advanced growth (growers) and create a seed bed via mechanical disturbance across the harvested area.</p> <p>HC must note areas where regeneration may not be adequate in order to inform post-harvest regeneration planning.</p> <p>A regeneration assessment must be conducted no more than 3 years after harvesting to determine the effectiveness of natural regeneration.</p>
<p>BA Monitoring</p>	<p>The HC MUST conduct Basal Area monitoring in areas treated with Selective Harvesting. Plots must be measured in accordance with Chapter 4 'Measuring Retained Basal Area' of the FCNSW CIFOA Harvesting Procedures.</p> <p>The Harvesting Supervisor MUST ensure BA plots are established and measured from the commencement of timber harvest operations, and regularly throughout.</p> <p>If BA measurements indicate that BA limits may be exceeded, operations MUST cease such that the available area can be adjusted and/or removal limits reviewed between the HC and Crew.</p> <p>The minimum average BA limits for the Regrowth zone is 10m²/ha.</p>

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 5 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date: Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

	<p>To ensure strict compliance with Silvicultural limits the required BA plot frequency has been increased by 25% above the CIFOA requirement as per the table below:</p> <p>(Note – the MapApp BA measure tool includes this 25% increase in BA plot frequency)</p> <p>Table 1. The table below states the minimum number of sample points required for differently sized harvested areas.</p> <table border="1"> <thead> <tr> <th>Size of harvested area</th> <th>Minimum # of plot points required</th> </tr> </thead> <tbody> <tr> <td>0 – 30 ha</td> <td>25</td> </tr> <tr> <td>31 – 50 ha</td> <td>38</td> </tr> <tr> <td>51 – 100 ha</td> <td>50</td> </tr> <tr> <td>101 – 200ha</td> <td>63</td> </tr> </tbody> </table>	Size of harvested area	Minimum # of plot points required	0 – 30 ha	25	31 – 50 ha	38	51 – 100 ha	50	101 – 200ha	63
Size of harvested area	Minimum # of plot points required										
0 – 30 ha	25										
31 – 50 ha	38										
51 – 100 ha	50										
101 – 200ha	63										

5. Operational Responsibilities

Prescription	Condition/Responsibility
	<p>Mark-Up – the FT is responsible for marking up the forest ahead of harvesting operations consistent with the relevant chapters of the FCNSW CIFOA Harvesting Procedures (Coastal IFOA).</p> <p>Chapter 1: Management of ESA's; Chapter 2: Broad Area Habitat Search; Chapter 3: Tree Retention and Tree Retention Clumps; Chapter 5: FCMappApp for Mark Up; and Chapter 8: Drainage Feature Protection in CIFOA Native Forest Harvesting Operations (LiDAR Mapped Streams)</p>
Broad Area Habitat Search	<p>Compartment mark-up surveys must be conducted at least 100m in advance of operations. The survey must search for threatened and protected species features as described in Chapter 2 Broad Area Habitat Search of the FCNSW CIFOA Harvesting procedures document.</p> <p>Where Impenetrable Understorey has been identified, it is indicatively mapped and is shown on the FT copy of the HPOM. The FT must field check and map these areas during mark-up, and hand over unmarked areas to the HC</p>
Known or Potential Habitat	<p>The following subject species must be a focus during Broad Area Habitat Searches:</p> <p>Flora</p> <ul style="list-style-type: none"> Rainforest Cassia (<i>Senna acclinis</i>) Scrub Turpentine (<i>Rhodamnia rubescens</i>) Tylophora woollsii (<i>Tylophora woollsii</i>) <p>Fauna</p> <ul style="list-style-type: none"> Brown Treecreeper (<i>Climacteris picumnus</i>) Glossy Black-Cockatoo (<i>Calyptorhynchus lathami</i>) Nest /Feed Tree Greater Glider (<i>Petauroides volans</i>) Den /Feed Tree Koala (<i>Phascolarctos cinereus</i>) Masked Owl (<i>Tyto novaehollandiae</i>) Nest /Roost Sooty Owl (<i>Tyto tenebricosa</i>) Nest /Roost Spotted-tailed Quoll (<i>Dasyurus maculatus</i>) Yellow-bellied Glider (<i>Petaurus australis</i>) Den /Feed Tree <p>Habitat</p> <ul style="list-style-type: none"> Bat Subterranean Roost Bat Tree Roost

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 6 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date:
		Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

	<p>Den Tree Nest</p> <p>In addition to this list, please refer to <i>Chapter 2</i> of the Harvesting SOP for other species to focus on during Broad Area Habitat Searches.</p>
Site Specific Biodiversity & Research Conditions	No Bell Minor associated dieback, Biosecurity matters, or regeneration risks identified within the operational area.
Species Management Plan	<p>Species Management Plan (SMP) for Myrtle Rust impacted species</p> <ul style="list-style-type: none"> • Surveys for <i>R. psidioides</i> (Native Guava) and <i>R. rubescens</i> (Scrub Turpentine) must be undertaken during Broad Area Habitat Searches. • Individuals and populations of <i>R. psidioides</i> and <i>R. rubescens</i> recorded during pre-operational surveys will be assessed using standardised DPIE methodology (SMP Appendix 2) and FCNSW data recording details (SMP Appendix 3) to record the health and myrtle rust status of individuals / populations at the site. • Protect large healthy and/or reproductive individuals and cohorts within a 20 m exclusion zone, existing exclusion or WHC/TRC (subject to existing WHC/TRC criteria). <p>Note 1: A large healthy individual is defined as having good canopy health, and:</p> <ul style="list-style-type: none"> • having a diameter at breast height greater than 5 cm for both species, or • greater than 5 metres in height for <i>R. psidioides</i>, or • greater than 15 metres in height for <i>R. rubescens</i>. <p>Note 2: Good canopy health refers to 75% or greater canopy density as indicated in the scoring detailed in appendix 2 and 3 of the SMP.</p> <p>Note 3: Ensure large healthy individuals have a 20-metre buffer (ESA 1) marked in the field and FCMapApp, even where it is captured by an existing exclusion. This is particularly important where the record is within 20m of an exclusion boundary and existing exclusion has a 'soft' boundary (i.e. ESA 2).</p> <p>All new records of <i>Rhodamnia rubescens</i> and <i>Rhodomyrtus psidioides</i> must be recorded in the FCMapApp (Bionet), along with the condition of the plants in relation to the impact of Myrtle Rust (see attached condition).</p>
Marking Retained Trees	<p>FT must select and mark trees to meet the following as per Chapter 3 'Tree Retention and Tree Retention Clumps' of the FCNSW CIFOA Harvesting Procedures.</p> <p>Hollow-bearing tree condition – 8 per ha must be retained where available in the selective zone</p> <p><u>Hollow-bearing tree</u></p> <p>A tree that is alive and has:</p> <ol style="list-style-type: none"> 1. visible hollows, holes or cavities that have likely formed because of decay, injury or other damage as the tree has aged; or 2. clearly inferred hollows as it is an older growth stage tree (in particular in a senescent tree) with one or more obvious deformities such as a burl, large protuberance or broken limb <p>Nectar feed tree condition – DOES NOT APPLY</p>

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 7 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date:
		Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

	<p>All Giant trees must be retained – 160 cm (BBT only) / 140 cm (all other species) at stump height (to be measured at 30cm on high side of stump).</p> <p><u>Diameter at stump height over bark (DSHOB):</u></p> <p>The diameter of a tree (including its bark) measured, using a diameter tape, at right angles to the axis off the tree at stump height (refer below).</p> <p><u>Stump Height:</u></p> <p>The point of a tree or a tree stump, measured at 30 centimetres above the ground (on the upslope of the tree, if the tree is on a slope) or, where the tree stump is less than 30 centimetres, the highest point of the tree stump. Measure at stump height regardless of buttressing or other deformities.</p> <p>Dead Standing Trees – All must be retained</p> <p>Sap feed trees – None detected during preoperational surveys. Retain any additional identified in the field.</p> <p>Glossy-black Cockatoo feed trees – None mapped within the operational area. Retain any identified in the field.</p> <p>Koala feed trees – Prescription 2 applies across the entire operational area (FT to mark for retention 5 KBT per ha of NHA).</p>
Tree Retention Clumps (Regrowth Zone)	FT must select and mark 5% of the BNA in each compartment on FCMapApp (see Harvesting Operation Details). Tree retention clumps are to be a minimum 0.1 ha and maximum 2 ha.
Identification of channel heads	FT will mark the location of channel heads in the field, and on FC MapApp; Refer to <i>Chapter 8 Drainage Feature Protection in CIFOA Native Forest Harvest Operations (LiDAR Mapped Streams)</i> .
Identification of potential track crossings	Crossings requiring survey and approval under Protocol 5 through native forest should be identified as far as practicable in front of harvesting; Refer to 'Chapter 1 - Management of ESA's'. Any snig crossings that require upgrade or construction (removal of trees > 20cm dbhob) through an ESA 1 or 2 will require a Protocol 5 approval - Planning Supervisor approval required. Refer to frog prescriptions and Key Fish Habitat prescriptions for further considerations.
Koala Browse Prescription 2 Area	Condition 65 of the CIFOA applies: The following KBT must be retained for the duration, and at the completion of this forestry operation: <ul style="list-style-type: none"> a) a minimum of 10 KBT/ha of NHA where KB Prescription 1 applies, b) a minimum of 5 KBT/ha of NHA where KB Prescription 2 applies, c) all KBT in areas where the minimum coverage of KBT in a) or b) above do not exist in NHA before harvesting.
<p>Operational Management: The HC and Harvesting Crew are responsible for the management of operations consistent with <i>Chapter 3 Tree Retention and Tree Retention Clumps</i> ' and <i>Chapter 6 MapApp RT – Simple User Guide for Harvesting</i> ' and <i>Chapter 8 Drainage Feature Protection in CIFOA Native Forest Harvest Operations (LiDAR Mapped Streams)</i>.</p>	
Protection of Retained Trees	<p>Trees marked or selected for retention must not be felled or damaged. Damaged trees must be replaced with a comparable tree. Where a comparable tree is not available, it must be replaced with a mature tree, with healthy crown. Damaged and replaced trees must be recorded in the FCMapApp.</p> <p>Harvesting debris should not accumulate within 5 m of retained trees. Where debris does accumulate the crew must remove or flatten to <1m high. Where</p>

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 8 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date:
		Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

	removal or flattening of debris will damage a retained tree, or deliver a worse outcome, this must be documented in the FCMapApp.
Koala Browse Prescription	A suitably qualified person must visually assess each tree immediately prior to being felled. Contractor must confirm searching has been done via FCMapAPP RT. Koala Browse Prescription 2 must be applied where evidence of Koala is detected during harvesting operations if no Koala prescription applies across that area already.
Dead Standing Tree Retention	Stags/dead standing trees must be retained where safe to do so.
Koala Exclusion Zone	If a koala is located in a tree, an exclusion zone with a radius of 25m or greater must be retained around the tree. HC must be contacted. The exclusion zone may be removed once the koala moves from that tree.
Coarse Woody Debris	The crew must not remove coarse woody debris if it contains a hollow. Firewood can be removed from these compartments. Firewood – produced as a result of tree crowns and offcuts from felled trees, as part of this integrated operation, is permitted to be removed from both compartments.
Accidentally Felled Trees	The crew must record each tree accidentally felled into an ESA in accordance with <i>Chapter 6 MapApp RT – simple user guide for harvesting’</i>
Dangerous Trees	The crew must record each dangerous tree or stag removed in accordance with <i>Chapter 6 MapApp RT – simple user guide for harvesting’</i>
Elite/Plus Trees	No elite trees have been identified within the operational area. All elite trees encountered in the field must be protected, whether marked (with a yellow band) or not.
Impenetrable Understorey	In areas mapped by the FT as Impenetrable Understorey, the required number of retained trees identified must be retained and recorded in the FCMapApp by the Crew.
Threatened Ecological Community (TEC)	All Native Forest operational areas have been assessed for TEC.
Stream breeding threatened frog (<i>Mixophyes balbus</i>)	Records occur in the operational area. Any NEW drainage feature crossing must not alter stream flow where there is a record within 200m upstream or downstream.
Aquatic Fish Habitat	No Aquatic Fish Habitat is mapped as occurring within these compartments
Key Fish Habitat	Key Fish Habitat is present along all class 3 and above streams within these compartments (not mapped) NOTE: All instream works in Key Fish Habitat including the construction or upgrade of a track drainage feature crossing (including temporary log crossings) that do not comply with Protocol 17: Fish Passage requires DPI Fisheries approval. Contact Planner if crossing construction or upgrade is required across Key Fish Habitat (class 3 streams and above).

6. Riparian Protection

Prescription
See <i>Chapter 1</i> and <i>Chapter 8</i> for instruction and guidance around marking of riparian zones. Table 6b below identify exclusion zone and ground protection zone widths for all streams. Streams in all cpts will be managed as per Table 6b.

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 9 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date:
		Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

Table 6b

Drainage Category	Riparian Exclusion Zone		GPZ	Marking Responsibility
	Minimum width (m)	ESA Category	Minimum width (m)	
<i>Drainage depression (mapped or unmapped)</i>	n/a	n/a	5	Crew /Visual assessment
<i>Unmapped drainage line</i>	5	<i>Category 1 ESA</i>	10	FT mark channel head location in MapApp, plus boundary above channel head, plus Riparian Exclusion Zone interface with NHA (tape or 2 bars)
<i>Class 1 classified drainage line</i>	5	<i>Category 1 ESA</i>	10	FT mark channel head location in MapApp, plus boundary above channel head, plus Riparian Exclusion Zone interface with NHA (tape or 2 bars)
<i>Class 1 classified drainage line within class 1 aquatic habitat</i> NOTE: none identified in these compartments	10	<i>Category 1 ESA</i>	10	FT mark channel head location in MapApp, plus boundary above channel head, plus Riparian Exclusion Zone interface with NHA (tape or 2 bars)
<i>Class 2 classified drainage line</i>	20	<i>Category 2 ESA</i>	0	FT mark Riparian Exclusion Zone (REZ) width for length of REZ interface with NHA (tape or 2 bars)
<i>Class 3 classified drainage line</i>	30	<i>Category 2 ESA</i>	0	FT mark Riparian Exclusion Zone (REZ) width for length of REZ interface with NHA (tape or 2 bars)
<i>Class 4 (and above) classified drainage line</i>	50	<i>Category 2 ESA</i>	0	FT mark Riparian Exclusion Zone (REZ) width for length of REZ interface with NHA (tape or 2 bars)

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

7. Ecologically Significant Areas & Other Sensitive Areas

The following ESA's should be identified and protected during the course of this operation.

FT are responsible for identifying and marking (as conditioned in table below) the following ESA's consistent with the requirements of FCNSW Harvesting Procedures, including *Chapter 1: Management of ESA's*. Where the boundary of an ESA is located with GPS the feature must be marked conservatively with a minimum 5m buffer to allow for GPS accuracy.

Harvesting Crews are responsible for protection of the following ESAs in line with requirements of FCNSW CIFOA Harvesting Procedures, namely *Chapter 1: Management of ESAs*. Harvesting Crews must maintain their spatial awareness when operating along marked boundaries and not operate where there is inconsistency between GPS and field marking.

Condition	Mapped Known Features	Boundary ID
ESA 1 (hard boundary)	Rainforest	FT to mark the mapped 5m buffer of the ESA with Tape or 2 bars
	Nest, Roost or den and associated EZ's <i>50m EZ on Glider Den Trees – 2 along Blue Knob Road</i>	FT to mark the mapped exclusion with Tape or 2 bars
	All dams must have an exclusion zone of 10m.	If located, FT to mark the exclusion with Tape or 2 bars
	Koala EZ (25m around individual if found – HC responsibility)	Record in MapApp and Tape
	Wildlife habitat clumps <= 2 hectares	FT to mark the mapped exclusion with Tape or 2 bars
	Tree retention clumps (5% BNA in the Regrowth Zone)	FT to mark the mapped exclusion with Tape or 2 bars
ESA 2 (soft boundary)	HCVOG	Marked (and mapped with 5m buffer)
	Ridge & headwater habitat (occurs coincident with mapped Rainforest cannot be observed on HPOM)	FT to mark the mapped exclusion with Tape or 2 bars
	Wildlife habitat clumps > = 2 hectares	FT to mark the mapped exclusion with Tape or 2 bars
	Land mapped as FMZ 2 or FMZ 3A that is not also ESA 1 NP boundary exclusion	FT to mark the mapped exclusion with Tape or 2 bars
	Slopes > 30° (indicative)	FT to mark the mapped exclusion with Tape or 2 bars

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 11 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date:
		Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

	Large Forest Owl Landscape EZ (coincident with mapped Rainforest)	FT to mark the mapped exclusion with Tape or 2 bars
	IHL 4 (<i>coincident with slopes > 30 degrees</i>) displayed as Slope EZ on HPOM	FT to mark the mapped exclusion with Tape or 2 bars
Features identified during broad area search / harvesting	Tree retention clumps and field identified ESA's will be marked on the FCMapApp. Harvesting contractors should synchronise their FCMapApp regularly. All field identified features must be protected according to the relevant ESA Category boundary type.	

8. Soil & Water

Issue	Assessment	Conditions
Inherent hazard level	2	Nil
Soil regolith types	R1	Nil
Dispersible Soils	No	Nil
Existing or potential Mass Movement hazard	Low	Nil
Historical or existing erosion	Yes, limited to sections of road network only	Road drainage structures must remain effective at all times. Drainage works should be implemented immediately following the completion of harvesting.
Seasonality Restrictions	No	Nil
Burning conditions	No	Nil
Log Dumps	Chapter 9 Log Dump Operation and Use	HC is responsible for authorising moving the location of a log dump.
Roading management during harvesting	Chapter 10 General Soil and Water Protection During Harvesting Operations, incl. Wet Weather Controls	HC is responsible for monitoring road and crossing drainage and stability during haulage.
Wet Weather and Rutting	Chapter 10 General Soil and Water	Crew is responsible for implementing automatic closures and following notified closures.

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 12 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date:
		Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

	Protection During Harvesting Operations, incl. Wet Weather Controls	HC is responsible for ensuring crew notified when notified closure is lifted.
Snigging	Chapter 12 Snigging and Snig Track Crossings	Crew is responsible for progressive drainage of snig tracks.
Track Crossings (snig or extraction tracks)	Chapter 12 Snigging and Snig Track Crossings	HC is responsible to ensure snig track crossings are approved prior to use and rehabilitated upon completion.

9. Snig Track Crossing Approvals

No snig track crossings are currently approved. Any crossings identified during the operation must be approved prior to use and managed in accordance with Chapter 12 of the FCNSW Coastal IFOA Harvesting Procedures document and recorded on the FCNSW MapApp.

10. Standard Operating Procedures:

The following chapters of the FCNSW Coastal IFOA Harvesting Procedures apply to this plan. FCNSW staff and the crew must hold a copy on site whilst operating and comply with the conditions set out in each chapter

Chapter Number	Title
1	Management of ESAs
2	Broad Area Habitat Search
3	Tree Retention & Tree retention Clumps
4	Measuring retained Basal Areas
5	FCMapApp for Markup
6	MapAppRT – Simple User Guide for Harvesting
7	Electronic Device Management (Harvesting Contractors)
8	Drainage feature Riparian Protection in Coastal native Forest Harvesting Operations (LIDAR Mapped Streams)
9	Log Dump Operation & Use
10	General Soil & Water Protection during Harvesting Operations, including Wet weather Control

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 13 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date:
		Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.

Chapter Number	Title
11	Site Specific Operating Conditions Relating to Mass Movement
12	Snigging & Snig Track Crossings
13	Tree Felling & Servicing of Logs & Products
14	Safety requirements
15	Temporary Road Closures at Harvesting Operations
16	Fire Precautions & Other Miscellaneous requirements for Harvesting Contractors

11. Other Appendices:

1	<i>Rhodomyrtus psidioides</i> Species ID Guide
2	<i>Rhodamnia rubescens</i> Species ID Guide
3	Koala Emergency Response and Koala search Guide for machine Operators

12. Plan Reading Questions:

- Question 1
- Question 2
- Question 3
- Question 4
- Question 5

Document title: HP_BULGA_41_43_2021_Harvest_Plan	Version No.: 1	Page: 14 of 14
Plan ID: 200001483	Owner: Operations Planning Manager	Approval date: Expiry date: 10/5/2023

Warning: a printed copy of this document may be uncontrolled. Please verify this is the latest version prior to use.