Statement of Fire Management Intent – Ben Bennett Bushland Park

Sunshine Coast Regional Council

Background

Ben Bennett Bushland Park is an important forest reserve within the urban footprint of Caloundra. It is approximately 19.8 hectares in size, contains a diversity of habitat types and lies approximately 1 km west of Caloundra's GPO. Established in 1969 the Park was named after long serving local Councillor and active member of the community, Mr Ben Bennett. The park is bounded by Nicklin Way to the west, Queen St to the north, Caloundra High School to the east and Arthur St, Third Avenue and West Terrace to the South. Rapid urbanisation over the past 30 years or so has resulted in the isolation of this forest remnant.

Due to concerns with the risk of wildfire with the park, Council has initiated fire management activities in the form of fire breaks and trails and ecological/fuel hazard reduction burning. The potential wildfire risks in this locality arise from vectors such as lightning, arson, discarded cigarette butts both from park visitors and cars on adjacent roads (Nicklin Way and Queen St). This statement of intent has been prepared to guide fire management activities within this reserve. The implementation of these proposed fire management actions will be subject primarily to annual weather conditions, the availability and duration of suitable burning conditions and the availability of operational resources to implement priority hazard reduction burns across the landscape. In years when burning conditions are limited, areas of higher fire hazard may be given priority for prescribed burning activities.

Council's obligations in regards to fire management in environmental and bushland reserves are as follows:

- To ensure adequate protection of life and property assets of neighbouring properties and surrounding areas
- To protect and maintain biodiversity values

It is important to remember that both of these obligations may be achieved together through planned fire management. Maintaining a focus on one or the other may be detrimental, as a lack of burning for ecological reasons can lead to excessive fuel levels and too frequent burning can lead to net loss in biodiversity.

This Statement of Fire Management Intent has been produced to ensure a planned approach to the conservation of biodiversity and the protection of life and property.

Preferred Fire Regime

The reserve is a network of many small blocks due to existing fire trails and breaks which roughly follow the differing vegetation types. This multiple block compartmentalisation of the reserve allows for mosaic burning which creates varying post-fire habitats. The mosaic burning benefits the biodiversity in the reserve as well as providing for periodic fuel management activities. Mosaic burning has been identified as critical to maintaining biodiversity as several plant and animal species require different habitats for long term survival. Loss of species from an area is possible after a blanket fire regime has been applied. To limit the loss of fauna species, burn/lighting plans will incorporate escape routes. This involves a lighting plan that does not create a 'ring' of fire around all sides of the block. It is essential for biodiversity maintenance that the fire management actions vary in several features including intensity, season and extent of burn area.
Current information on optimal fire frequency for the vegetation types found in this park is as follows and varies for individual vegetation types. For coastal open forest and mixed Eucalypt forest the regime will be 7 to 25 years, while the wet and dry heath communities located at the southern end of the park require a 7-15 year period. Heathland burns should be conducted whilst peat contained in the humus or surface soil is moist or wet to avoid the incident of peat fires. Allocasuarina littoralis community fire regime depends on the type of understorey. Ideally for Ben Bennett Bushland Park a frequency of between 7 and 15 years will provide the maximum outcomes for biodiversity conservation. These recommendations come from the South East Queensland Fire and Biodiversity Consortium's "Fire management guidelines derived from ecological research". Fire regimes for each block can be found in Appendix 1

Site Characteristics

Access to site – The Park can be accessed by 5 official entry points. Three of these occur on Queen St, 2 of which consist of lockable gates utilising the FK245 Parks key, the gate adjacent to the school boundary is also accessible by the CSHS keys. The other entry on Queen St is the formal car park which allows access through removable bollards which also utilise the FK245 Parks key. The two entrances at the Southern end of the park, one at the end of West Terrace and the other on Arthur St also utilise the FK245 Parks key and are of the same lockable gate variety as the two on Queen St.
QFRS urban trucks are able to access the Park via the lockable gates (using the FK245 Parks Key) on Queen St. Access may also be gained to the open space area of the park via the removable bollards at the car park using the FK245 Parks key.

Area of Site - The vegetation of Ben Bennett Park encompasses around 19.8 ha of land. The park has been divided into 15 fire management blocks, with 5 of these being set aside for total fire exclusion as they are rainforest or vine forest vegetation types. The topography of the park increases the risk to neighbouring property. The fire rate of spread doubles for every 10º of up slope due to preheating of fine fuels before the flames reach the fuels.

Vegetation types- Ben Bennett Park contains multiple vegetation types varying from wet and dry heath to various Eucalypt forests, Allocasuarina woodland and rainforest. The wet and dry heaths can carry very high fuel loads and require periods of 7-15 years without fire; these vegetation types are located in the southern section of the park and are the ignition point of many small wild fire events. This can be a problem when the topography of the land is considered, as the southern end of the park is the lowest in altitude, meaning that wild fire started in these areas may burn all the way through the park including the rainforest areas which should have fire exclusion.

The main portion of the Eucalypt forest occurs on the eastern edge of the park roughly through to the centre and abuts the heaths of the southern end and the rainforest in the centre. The mosaic burn effect can be applied to the blocks encompassing this vegetation type as the blocks have existing fire trails and breaks surrounding them. The centre of the park contains some lowland rainforest and vine forest associations and should be totally excluded from all fire activities.

The Allocasuarina woodland located in block 18 is of importance as a food source for the Glossy Black Cockatoo. Fire management activities of this block must be cognisant of the amount of available food source of *Allocasuarina littoralis* seed for the cockatoos. Ideally, low intensity burning that minimises crown scorch is best suited to the Allocasuarina woodland as this minimises loss of mature, seed producing trees, whilst promoting recruitment of seedlings. Fire management of the Allocasuarina woodlands must be managed across the city landscape to ensure that suitable feeding areas exist for the Glossy Black Cockatoo.

Some areas of heath land (particularly block 6) are subject to succession to Melaleuca quinquenervia woodland, this is possibly due to incorrect fire regime, too frequent burning.

Fuel Loads and arrangement – The fuel loads in the park vary from block to block. The loads differ due to varying vegetation types, particularly in the heath communities. Areas of heath and those with Eucalypt with heath understorey have a greater elevated fuel load and therefore a greater potential for wildfire, as elevated fuels may carry the flames into the vegetation canopy. The more open Eucalypt forest blocks will generally have less elevated fuels but may contain more ground level fine fuels, creating very hot fires with less opportunity for the flames to reach the height of the canopy.

Vegetation/Residential interface – Ben Bennett Park is surrounded by roads, sporting ovals and concrete bike path. The proximity of this reserve to Caloundra State High School demands vigilance due to the potential risks to the infrastructure. The high school is situated on the Eastern side of the park, thus subjecting it to winds from the West, which can lead to extreme fire danger conditions when high temperatures, low humidity and low drought index are also present. There is an existing 6 meter fire trail within the park boundary adjacent to the school. This trail is constructed of road base and existing earth materials and is in condition where it may be accessed by either Council 4x4 mop up vehicles or by QFRS urban pumper in emergency situations. Other interface zones exist at the southern end of the park around the RSL Care nursing home and the Caloundra Memorial Bowls Club. Block 12 which surrounds these facilities is quite compact in size, does not have uphill slope to increase fire behaviour and incorporates adequate fire breaks suggesting a lower risk associated with wildfire.

Special Considerations

Fauna

Consideration must be given to the availability of seed producing mature *Allocasuarina littoralis*, as these are the main food source for Glossy Black Cockatoo (*Calyptorhynchus lathami*), one of the most rare species of parrot in Australia, and currently listed as vulnerable under Nature Conservation Regulations (Qld) 1994. As previously mentioned, low intensity burning in block 18 will minimise the effects to the mature Allocasuarina.

Litoria olonburensis, the Wallum Sedgefrog, is known to inhabit the pond and the heath blocks (blocks 4 and 5). These frogs are listed as vulnerable under the federal government's Environmental Protection Biodiversity Conservation Act.

Other species of frogs that inhabit the park are *Litoria freycineti*, the Wallum Rocket frog; *Crinia tinnula*, the Wallum froglet; *Adelotus brevis*, the Tusked frog. The more common *Litoria caerulea*, the Green Treefrog; *Litoria fallax*, the Eastern Sedgefrog; *Litoria nusata*, the Striped Rocketfrog are all found within Ben Bennett Bushland Park. To minimise impacts on frog species, prescribed burning should be undertaken whilst soil moisture is very high, thus providing possible escape from the heat of the fire.

Flora

Alyxia magnifolia is uncommon in South East Queensland but is relatively common within Ben Bennett Park. This population of prickly Alyxia's will be protected as the majority of it occurs in the rainforest sections of the park that will be excluded from prescribed burning activities. *Alyxia ruscifolia* is more common than *A. magnifolia* and also occurs relatively commonly in the rainforest blocks of Ben Bennett Botanical Park.

Gahnia clarkii is known to be the major food source for the Sword-grass Brown butterfly (*Tisiphone abeona rawsleyi*); this species of Gahnia can be found in blocks 12 and 11. Fire management of these blocks must be cognisant of breeding times for the Sword-grass Brown's so as not to impact upon this already uncommon species of butterfly.

Wild Fire Events

Queensland Fire and Rescue Service are the principal agency in the case of wildfire on any Council land. Council's Fire Management team will assist if called upon to do so by QFRS Fire Com North Coast via the correct chain of command.

Summary

Given that Council has a duty of care to protect life and property and to maintain the biodiversity values in Council managed natural areas across the city, in Ben Bennett Bushland Park it is proposed that a variety of fire management techniques will be incorporated into management of the reserve. These techniques will include but not be limited to mechanical and manual fuel reduction for fire break maintenance and upgrades and hazard reduction/ecological burn programs on an annual basis.
It is important to remember that hazard to people and property comes not only from direct contact with the flames of a fire. Smoke inhalation is a common problem with both fire fighters and the public who may be in the vicinity of a fire or in the direction that the smoke is heading. Radiant heat is the biggest hazard in bush fires; it can cause harmful and destructive effects some distance from the source of the heat.

In allocating resources for priority fire management across the city, Council determines its degree of intervention dependent on a range of criteria such as extent of interface zone, existing fire management access trails, vegetation type and fuel amount and structure, contiguous nature of vegetation i.e. ability to carry fire through the landscape, defendability of properties as determined by QFRS, access and water availability.

Appendix 1

Indicative Fire Management Blocks

Block 1 – (Open Eucalypt forest)
Block 2 – (Open Eucalypt forest)
Block 3 – (Open Eucalypt forest)
Block 4 – (Dry Heath)
Block 5 – (Wet Heath)
Block 6 – (Wet Heath with Mel. quin elements)
Block 7 – (Open Eucalypt forest)
Block 8 – (Closed Eucalypt forest)
Block 9 – (Open Eucalypt forest)
Block 10 – (Open Eucalypt forest)
Block 11 – (Closed Eucalypt forest with rainforest elements)
Block 13 – (Open Eucalypt forest/Casuarina woodland)
Block 14 – Rainforest
Block 15 – Rainforest
Block 16 – Rainforest
Block 17 – Rainforest
Block 18 – (Casuarina woodland)
Block 19 – (Open Eucalypt forest)
Block 20 – (Open Eucalypt forest)