

Environmental Analysis on South Runway Tree Removal

Yokota Air Force Base

BACKGROUND

IAW UFC 3-260-01 a Mandatory Frangibility Zone must be maintained, to the extent possible, in the Clear Zone at the end of the runway. The MFZ is to be 500 feet wide, measured from the center of the runway, and 3,000 feet long, measured from the end of the runway. The purpose of the MFZ is to provide an aircraft safety area.

The MFZ historically has not been maintained at the south end of the runway at Yokota AB due to a misunderstanding over responsibilities for tree maintenance. As a result there is a stand of mature trees in the MFZ that must be removed (Fig. 1).

The proposed tree removal is to take place in a 15 acre mixed use area (Figs. 2 and 3), with approximately 90% composed of broadleaf deciduous forest ecosystem dominated by konara oak (*Quercus serrata*) and sawtooth oak (*Quercus acutissima*). The remainder of the area is composed of short, regularly mowed grass. Several sets of aircraft guidance lights are located in the grassy area. The area is divided east to west by a two lane, paved road.

SPECIAL CONCERNS

1. PROTECTED SPECIES

A biodiversity survey of the 15 acre region was performed in July 2008. The survey included inventories of plants, mammals, birds, amphibians, reptiles and insects. Six species (3 plant, 1 bird, 1 lizard and 1 insect) identified in the *Red List of Threatened Species of Japan or Important Wildlife for Protection in Tokyo* and protected at either a local or national level were identified in the course of the survey (Table 1).

Table 1: Species of Concern in Survey Area

Common Name	Genus and species	Rarity Level	
		Nat'l	Local
Hirohanokawarasaiko/Rose sp.	<i>Potentilla nipponica</i>	VU ¹	C ⁴
Kuchinashigusa/Broomrape sp.	<i>Monochasma shearerii</i>	--	A ²
Kinran/Golden orchid	<i>Cephalanthera falcata</i>	VU ¹	--
Hayabusa/Peregrine falcon	<i>Falco peregrines</i>	VU ¹	B ³
Tokage/ Japanese five-lined skink	<i>Eumeces latiscutatus</i>	--	C ⁴
Kobanekamikiri/Beetle sp.	<i>Psephactus remiger</i>	--	C ⁴

1: VU (Vulnerable): Species believed likely to be in danger of extinction in the near future if causal factors continue to operate.

2: A: Endangered in Tokyo: Species in danger of extinction in Tokyo area, survival unlikely if causal factors continue to operate.

3: B: Vulnerable in Tokyo: Species believed likely to be in danger of extinction in the near future in Tokyo if causal factors continue to operate.

4: C: Near Threatened in Tokyo: Species likely to move into Rank A or B in Tokyo area if causal factors continue to operate.

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2. CULTURAL RESOURCES

An earthen bunker created by the Japanese Imperial Army during WWII exists in the project area. The bunker covers an area of approximately 20m x 20m and berms are approximately 1m in height. This is one of only two bunkers remaining in the area from that era. The other bunker is located outside the fence line, in the GOJ buffer zone. Even if it is not designated as historical asset by Fussa City Board of Education they are interested on existence of this bunker.

ASSESSMENT OF ENVIRONMENTAL IMPACT

1. Air Installation Compatible Use Zone/Land Use:

This project action is planned IAW UFC 3-260-01 a Mandatory Frangibility Zone must be maintained, to the extent possible, in the Clear Zone at the end of the runway to eliminate the possibility of reducing airfield operational accident. Therefore, this action will provide positive effect on this issue.

2. Air Quality:

This approximately 1,000 tree removal work will generate emission from equipments and transportation operated by contractor. Since project period is limited minimal and transportation equipments are authorized by the government, exhaust gas emission is expected to provide very limited negative effect to environment.

3. Water Resources:

Since there is no source of surface water, pond, river in the project site, there is no negative effect on water resource expected.

4. Safety and Occupational Health:

This project action is planned IAW UFC 3-260-01 a Mandatory Frangibility Zone must be maintained, to the extent possible, in the Clear Zone at the end of the runway to eliminate the possibility of reducing airfield operational accident. Therefore, this action will provide positive effect on airfield safety. In addition, by eliminating trees in this area, bird-aircraft strike hazard condition may be improved.

5. Hazardous Materials/Waste:

During the tree removal project, POL will be consumed only for contractor's equipments and transportation vehicles. No hazardous material will be stored after the tree removal project. Therefore, no significant environmental concern expected.

6. Biological Resources:

As mentioned above, there are six species of wildlife which are protected by Ministry of Environment or Tokyo Metropolitan Government in the project site. Specific information of these protected species and concerns are:

Potentilla nipponica – The *Potentilla* was found in the mowed portion of area 2. It is a perennial herbaceous plant that is typically found in sunny, grassy areas. Periodic mowing is beneficial to preserving the plant's desired microhabitat. The tree removal should have no impact on this species, as long as the plant is not damaged during the operation itself. During the tree removal, the habitat of this grass should be clearly marked for identification.

Monochasma sheareri – *M. sheareri* is a biennial herbaceous plant. Five specimens were identified in the edge zone between the trees and the mowed area. This species is typically found on sunny forest floors and in grasslands. Tree removal from the immediate environment of these specimens may be detrimental. Resulting grass encroachment will create additional resource competition and crowding. Relocation of this grass species may provide opportunity to survive at the newly selected location.

Cephalanthera falcata – Approximately 50 *C. falcata* were identified in 9 locations throughout the site (Fig. 2). All were located in sparsely vegetated forested areas. The species is a perennial herb that currently benefits from forest floor clearing which takes place in the fall when the plant is dormant. Tree removal poses a significant risk for these specimens as it will eliminate their preferred habitat. This species does not grow in grassy mowed areas. Specimens found within areas that will not experience tree removal should not be affected as long as they are not damaged during the relocation operation itself.

Falco peregrines – One peregrine falcon was observed in transit through areas 1 and 2. (Figure 3 & 4) The species does not appear to be using the area for hunting and the area is unsuitable for nesting for this species. The falcons should not be significantly affected by the tree removal.

Eumeces latiscutatus – The area under consideration is an ideal habitat for this small lizard species. Three adults and one juvenile were found in the area, indicating that a breeding population may be present on the site. Tree removal will reduce the size of the suitable habitat for the species, but will not eliminate it, as an approximately 125 foot patch of trees along the south fence of area 2 (Figure 3 & 4) will remain and additional potential habitat is available to the south and west of the area. Individuals should be able to disperse to the surrounding habitat after the trees are removed.

Psephactus remiger – The one individual identified during the survey was flying through the area. There is no indication that there is a significant population of this species in the area. Any specimens present will be able to disperse to the remaining trees in the south of area 2 or to the west of the site.

7. Cultural Resources:

Care should be taken during tree removal not to disturb the bunker more than is necessary to comply with the MFZ requirements.

8. Geology and Soils:

Large scale of earth moving work is not expected by this tree removal project. Therefore, no environmental impact expected. Since the area is rather flat surface, no erosion issue is expected.

9. Socioeconomic:

This project doesn't impact any socioeconomics.

10. Other:

CONSULTATION WITH LOCAL COMMUNITY

Two off-base organizations were consulted with on this subject issue.

- 1) Bureau of North Kanto Defense (NKD), Ministry of Defense was consulted by Base Community Planner and NKD did not mention any objection from their standpoint.
- 2) Board of Education (BOE), the regulating entity for historical/cultural issues in Japan, at Fussa city was also consulted by Natural Resources Management Unit, 374 CES. BOE stressed a special interest on the earthen bunker, existing within the project area. BOE would like to have a chance to visit the bunker and do measurement for their historical record.

Mitigation

Tree cutting operations should take place between November and February when the plant species listed above are dormant. If heavy equipment is to be utilized outside of the mowed section the soil should be dry enough not to be significantly disturbed.

C. falcata specimens in areas where trees are to be removed and possibly *M. sheareri* specimens in the edge zone should be transplanted prior to tree removal operations. Because *Cephalanthera* and *M. sheareri* rely upon a symbiotic relationship with mycorrhizal fungi for proper root function, transplantation success is limited. The best chance of success will be to replant in areas where existing specimens are already thriving. One large patch of *C. falcata* is located in the 125 foot corridor next to the south fenceline in area 2 (Figure 3 & 4) that will remain unchanged. The transplanted *C. falcata* should be relocated adjacent to these specimens. Unfortunately there are no other specimens of *M. sheareri* in the area. The transplanted specimens should be transplanted to what will become the new edge zone once the trees are removed.

All *C. falcata*, *M. sheareri* and *P. nipponica* specimens should be protected by a physical barrier during the tree cutting operation to prevent soil compaction or root damage.

E. latiscutatus specimens will be brumating underground during the winter when the trees are cut. The use of heavy equipment in forested areas should be limited and restricted to times when the soil is dry to reduce the possibility of crushing brumation sites. Ideally wood piles would be created nearby to offer cover in spring when the lizards come out of brumation, but this does not appear to be possible given the restrictions placed by UFC 3-260-01.

Heavy equipment must be kept off of the historic bunker. If any artifacts are discovered during the course of the project all work must be halted in the immediate area of the bunker and the Natural and Cultural Resources Manager contacted for instructions before work may resume.

Coordinate with Wing Public Affairs and Fussa-city, BOE for BOE's site visit for the survey of historical Imperial Japanese earthen bunker for BOE's historical record.

Preventive maintenance procedure should be established to prevent future recurrence of this situation.

CONCLUSION

Mitigation specified in this document will be implemented before or during the project period. After the consideration, the action mentioned in the background above is not a major Federal action that will significantly harm the environment of a foreign nation that is not involved in the action. Therefore, IAW DODD 6050.7, para E.2.2.1.1, no further environmental review or study is required.


WADE J. BAWLINS, Lt Col, USAF
Commander
374th Civil Engineer Squadron

19 Apr 10
Date

FIGURES

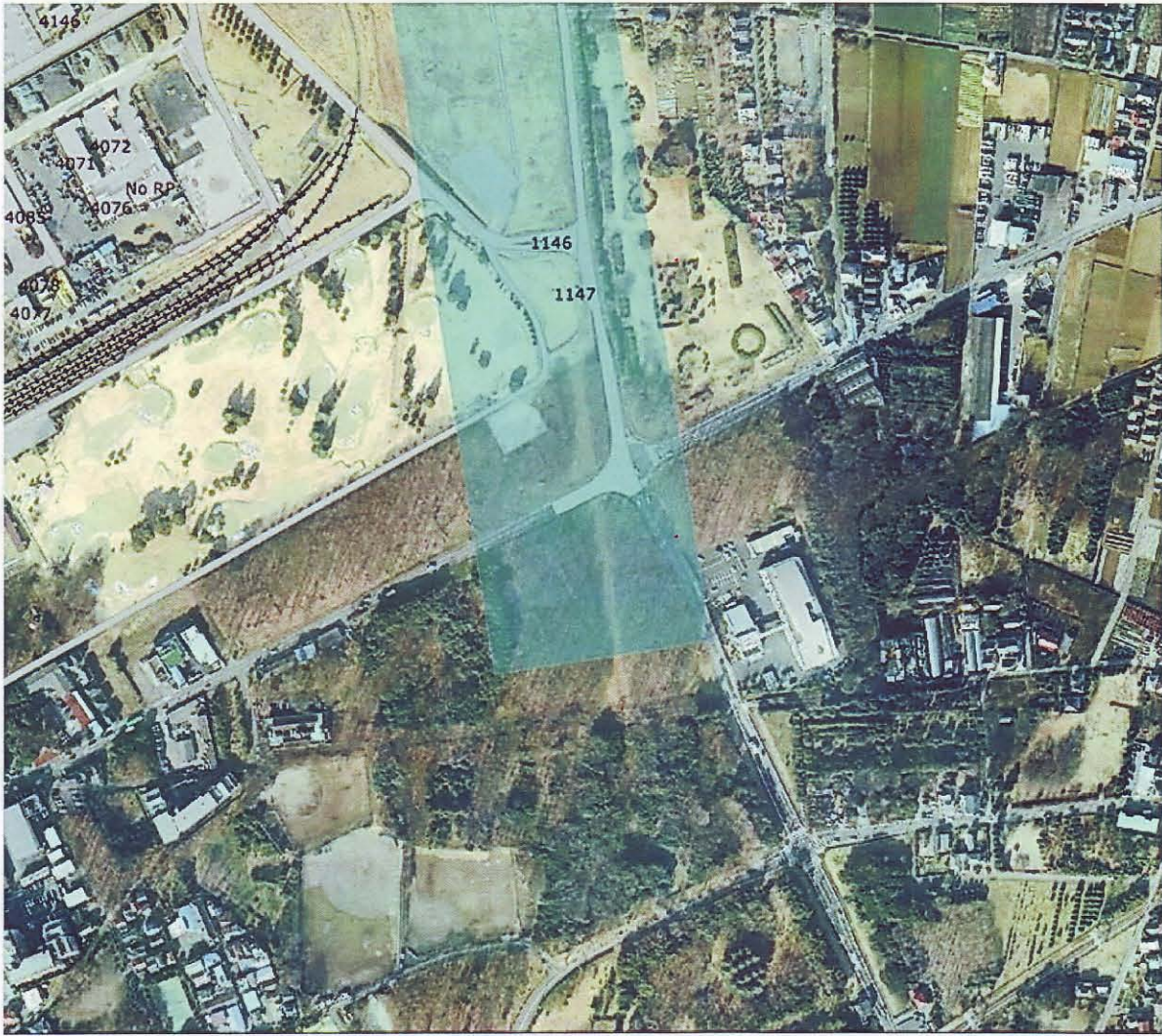
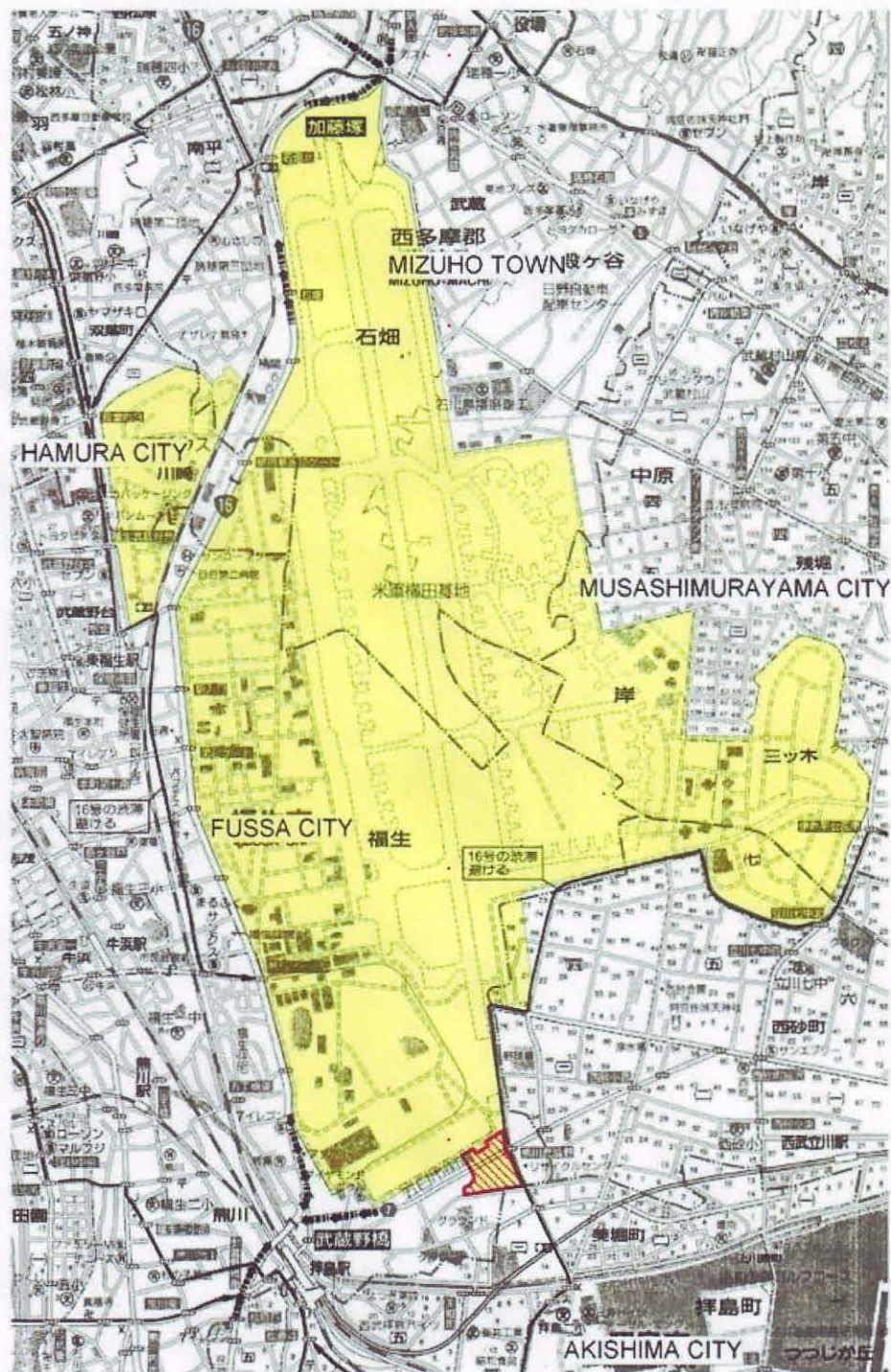


Figure 1 – Green shading represents mandatory frangibility area.



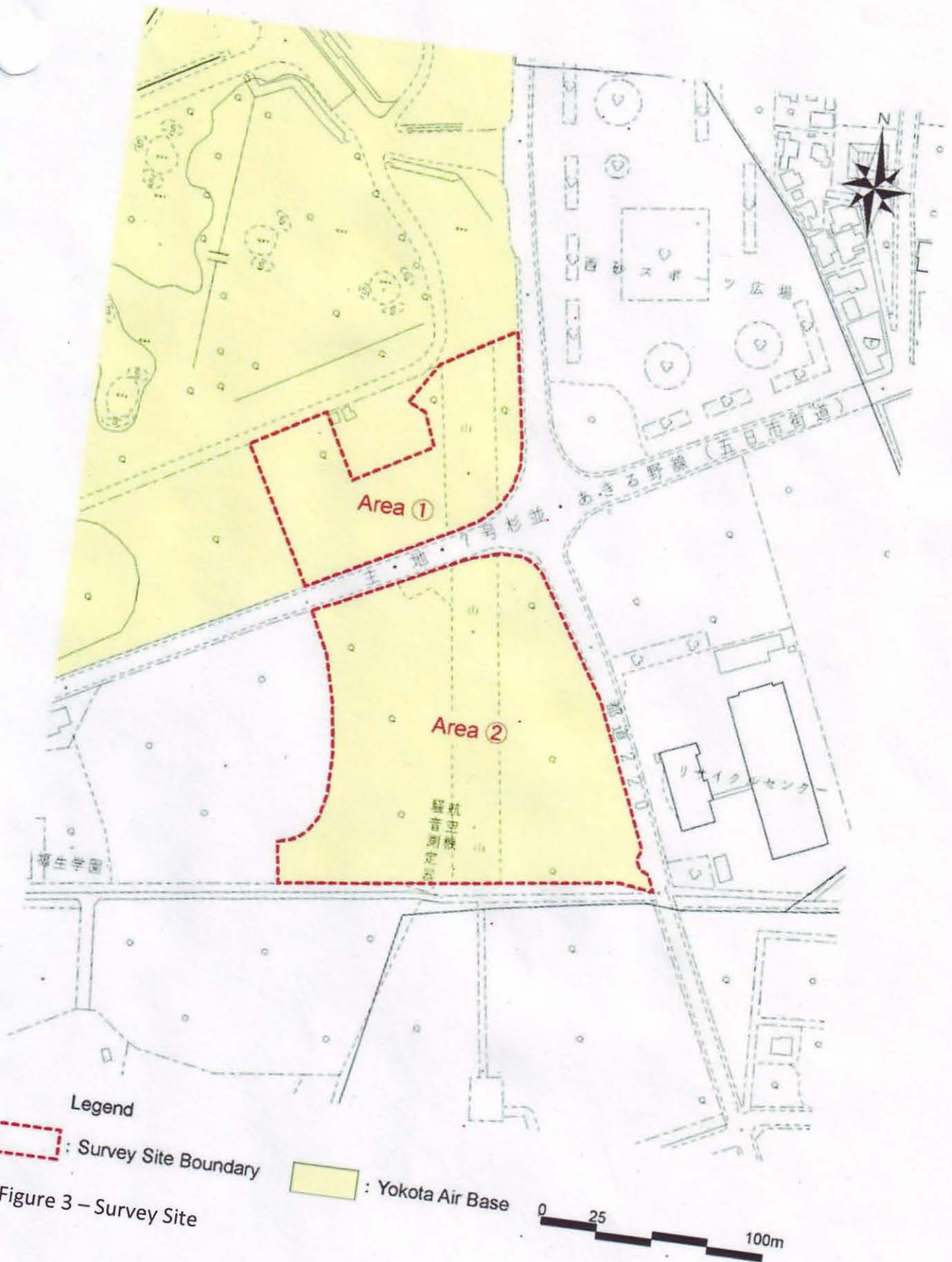
Legend

-  : Survey Area
-  : Yokota Air Base



0 250 1,000 1,500m

Figure 2 – Location of 2007 Biodiversity Survey site.



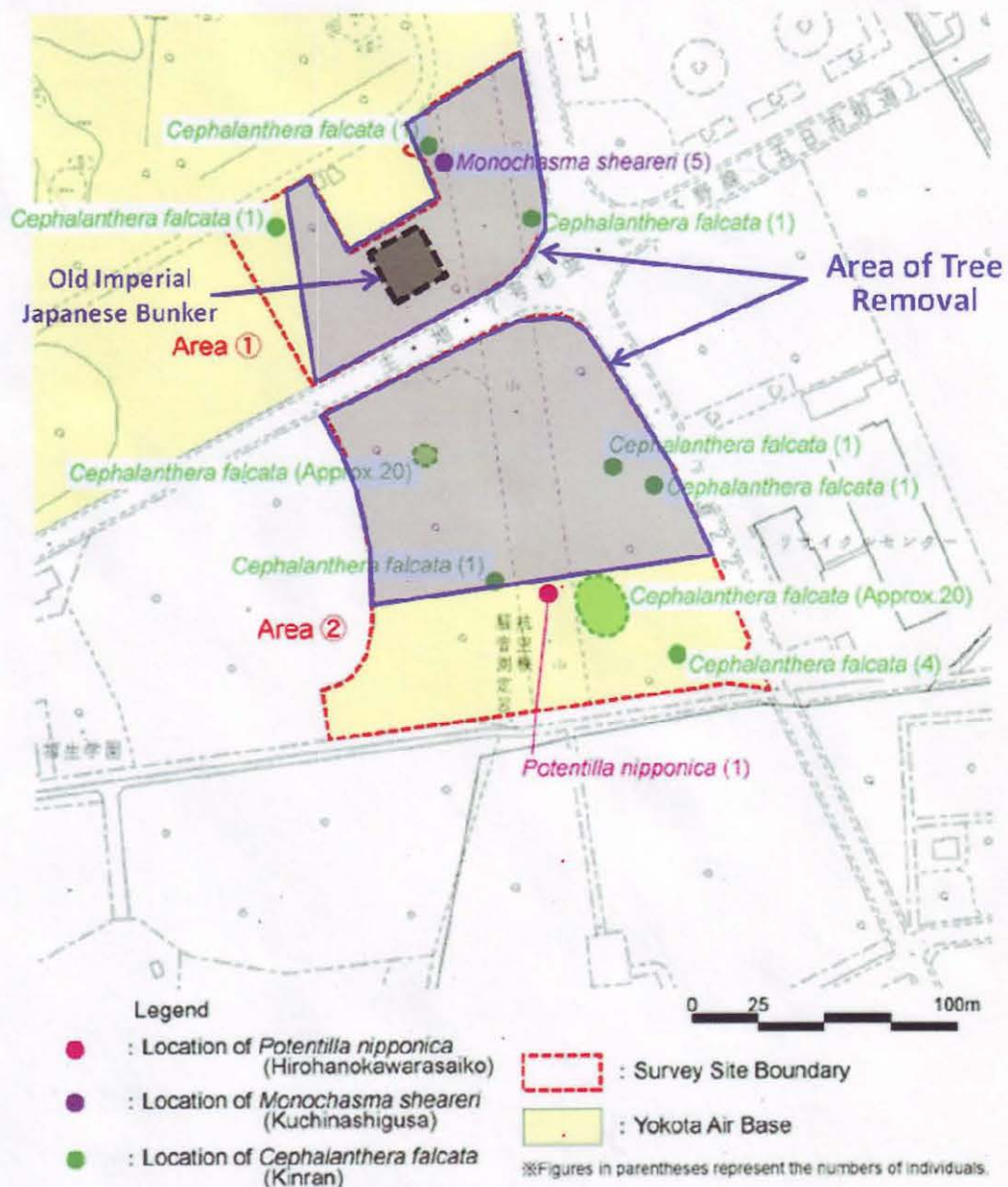


Figure 4 – Tree Removal Area and Protected Plant Locations