Department of Conservation
Te Papa Atawhai

Permission Decision Support Document

Application Details	
Decision Maker	Andy Roberts, Director, Operations, Eastern South Island
Applicant	University of Canterbury
Permission Number	54205-OTH
Permission Type	Notified lease

Context

Background

University of Canterbury has occupied a site, known as Birdlings Flat Field Station, at Kaitorete Spit Scientific Reserve since the 1970s. The activity conducted to date has been atmospheric and astronomical monitoring for scientific purposes, undertaken by the University's Physics Department and authorised by concession CA-16485-OTH. This concession had an original expiry date of 31 July 2016, with three further term extensions granted by the Department.

The first extension of the term was granted due to Canterbury University's ongoing occupation of the site being dependent on whether funding was received and a decision on whether funding would be granted was not expected for a few months. The extension was granted on the condition that before 31st December 2016, the University would either submit an application for a new lease/licence or notify the Department that it would withdraw from the site. A second extension of the concession was granted after the University indicated that it wished to use the site for a different research purpose. The extension was granted to allow the University time to put together an application for the new activity. The extension was granted on the condition that the University would, before 30st June 2017, complete a tidy up of the site, including removal of obsolete aerial set ups to the satisfaction of the Department and submit its application for the new activity at the site. A third and final extension was granted to cover the processing time of this application. This third extension will cease when a final decision is made on the application or on 31 December 2017, whichever occurs first.

The University's Spatial Engineering Research Centre (SERC), part of Canterbury University's College of Engineering, has now submitted this application for a 10-year lease of the currently fenced area at Kaitorete Spit Scientific Reserve for activities to support unmanned autonomous vehicle (UAV) research undertaken by SERC and its research partners.

Approximately 125 km^2 of segregated airspace was authorised by CAA in 2015 for UAV flight testing, including the airspace over Kaitorete Spit Scientific Reserve. The segregated airspace

allows SERC exclusive use of that airspace. The University has proposed to fly the UAVs at a range of heights, but always in compliance with its own and CAA regulations and rules.

Applied for Activity:

The University has applied for rights of exclusive occupation of the existing buildings onsite as well as the surrounding fenced area.

The proposed research is the development and testing of UAV technologies for the purpose of:

- Biodiversity and pest control sensing – specifically weed monitoring and control, and assisting with the monitoring and control of mammalian pests within the scientific reserve
- Marine ecology
- Rural fire monitoring
- Personal air transport
- Structure inspections

In addition, some research and development at the site would focus on larger UAVs for the purpose of furthering "autonomous flight technology for civilian use". This project is expected to span no more than 3 years.

In order to support the proposed research activities and operations, the University seeks permission to install additional infrastructure, upgrade the power supply, carry out UAV landings and use the access way as a runway for fixed-wing UAVs. While the University is applying for a lease of the wider fenced area known as the "concession area", the proposed activities (infrastructure and UAV landings) would take place within part of the concession area known as the "operational area" (see Map 1). Details of these proposed activities are as follows:

- UAV landings
  - Majority of UAVs being flown would be small multirotor UAVs. These units would be approximately 1 – 1.5m in diameter
  - There would be some testing of larger UAVs up to 10m in width, 6m in length and 1400kg in weight, as well as occasional fixed wing UAVs with maximum wingspans of 3m
  - A maximum total of 20 landings per day and 800 total per year
  - Of these landings, a maximum total of 24 landings per week (with no more than 6 in one day) would be undertaken by the larger UAVs, this aspect is expected to last no more than 3 years
  - No flights would occur during hours of darkness or on weekends or public holidays

Multirotor UAV

Fixed wing UAV

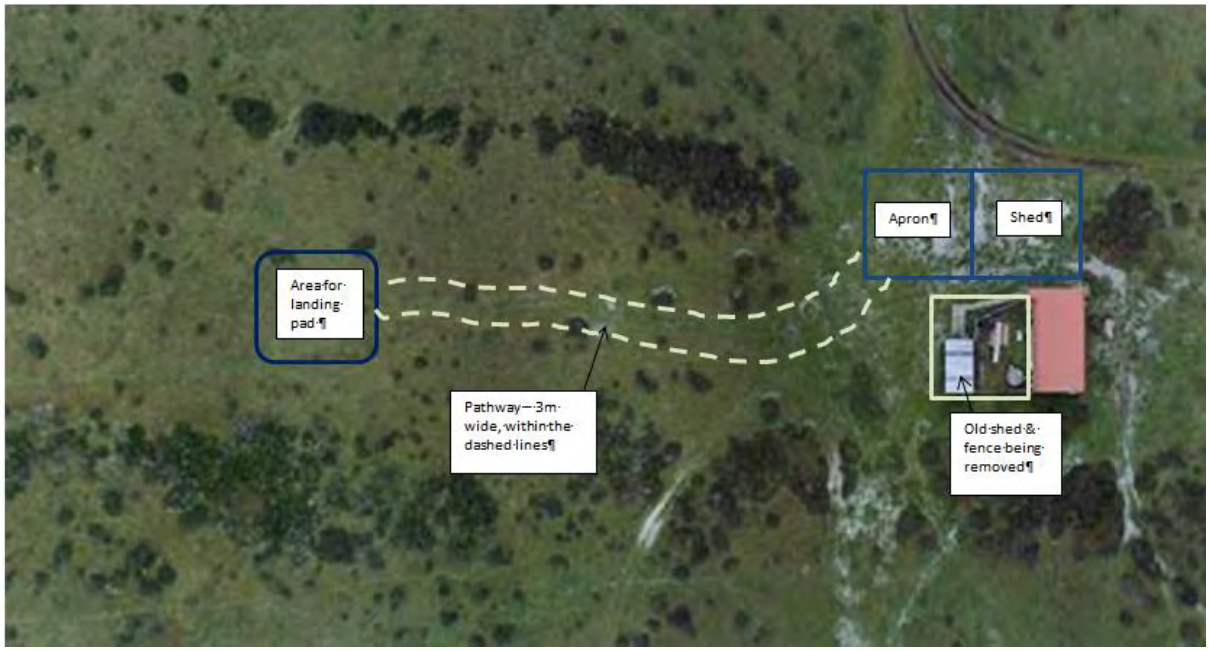
- Existing infrastructure
  - Main receiver building (112.5m^2) – to be used for storage of equipment, toilet facilities and as a workshop area
  - Transmitter building (43m2)
  - Fence around the perimeter of the proposed lease area

- Shed to house UAVs
  - Area of 15m x 16m, less than 6m in height
  - Steel framing and sheet metal siding, concrete base, secure roller door, painted in a DOC approved colour
  - Ramp in front of shed, made of Euromat or asphalt, not exceeding 15m x 15m
  - Constructed on an already modified area that consists of exotic grasses

Example of shed similar to that which is proposed

- Landing pad for UAVs
  - Used for take-off and landing of larger UAVs
  - Size of 15m x 15m
  - Temporary materials, such as Euromat, laid on ground
  - Located ~60m west of new shed in one of two proposed locations
  - Location to be selected in consultation with DOC

The figure below shows the proposed layout of the structures. The exact location would be determined in consultation with the district office.



Example of Euromat placed on grass

- Pathway between shed and landing pad
  - For transportation of larger UAVs between storage shed and landing pad
  - Golf cart would tow UAV along between shed and pad
  - ~60m long and 3m wide
  - Firm temporary surface laid over ground, such as GrassProtecta
  - Existing tracks would be used as far as practical

- Power supply upgrade
  - A power supply greater than is currently available would be required to charge the UAVs and conduct the research operations
  - Upgrade of mains electrical cable onto site to supply 3-phase at 415V with at least 150A and associated transformer unit

- This would involve the upgrade of the transformer and the burying of a new supply cable from the transformer to the new shed. The existing cable would remain in the ground so as to avoid disruption of native shrubby vegetation growing above it.
- The new cable is proposed to be buried alongside the access road over a distance of approx. 150m in trench at least 600mm deep and a maximum of 500mm wide
- The cable would be laid on a bed of gravel and then the site gravel/soil back-filled and compacted down. A digger (as small a unit as possible) would be used for the work
- The transformer unit would be sited next to the new shed, on a separate concrete pad (approximately 2x2.5m in length and width), with the block of concrete for the pad being delivered to site as several smaller pieces (not poured as a continuous slab of concrete)

Proposed location for placement of new power cable

- Runway
  - For "skid" landing of fixed wing UAVs
  - Use of vehicle access way within the proposed lease area

- Deconstruction of existing infrastructure
  - Removal of existing shipping container that was installed in the late 1980s
  - White shed and storage area

- Moveable trailer
  - Would be sited on the old white shed site
  - Would be on wheels and be temporary to the site (up to three years)
  - No native woody vegetation would be disturbed in the placement and use of the trailer
  - Would be used as the flight control centre unit

- New shipping container
  - Would be sited on the old white shed site
  - Would be used as secure lockup storage space for approximately three years

- Water storage
  - Installation of a water tank, capable of storing at least 30,000 litres of water, for firefighting purposes (as required by the RMA process)
  - Proposed to be sited within the carpark area, final location to be determined in consultation with DOC
  - No woody vegetation would be disturbed in the placement of the tanks

Other Associated Authorisations:

- One-off Aircraft Landing Permit (57785-AIR)
  This one-off permit was approved on 1 July 2017 and permits the applicant to undertake landings of small UAVs (multirotor up to 1m x 1m and fixed wing up to 2m in wingspan). The permit expires on 31 December 2017. Conditions proposed for the long-term application would require that this permit be surrendered if the long-term application is approved.

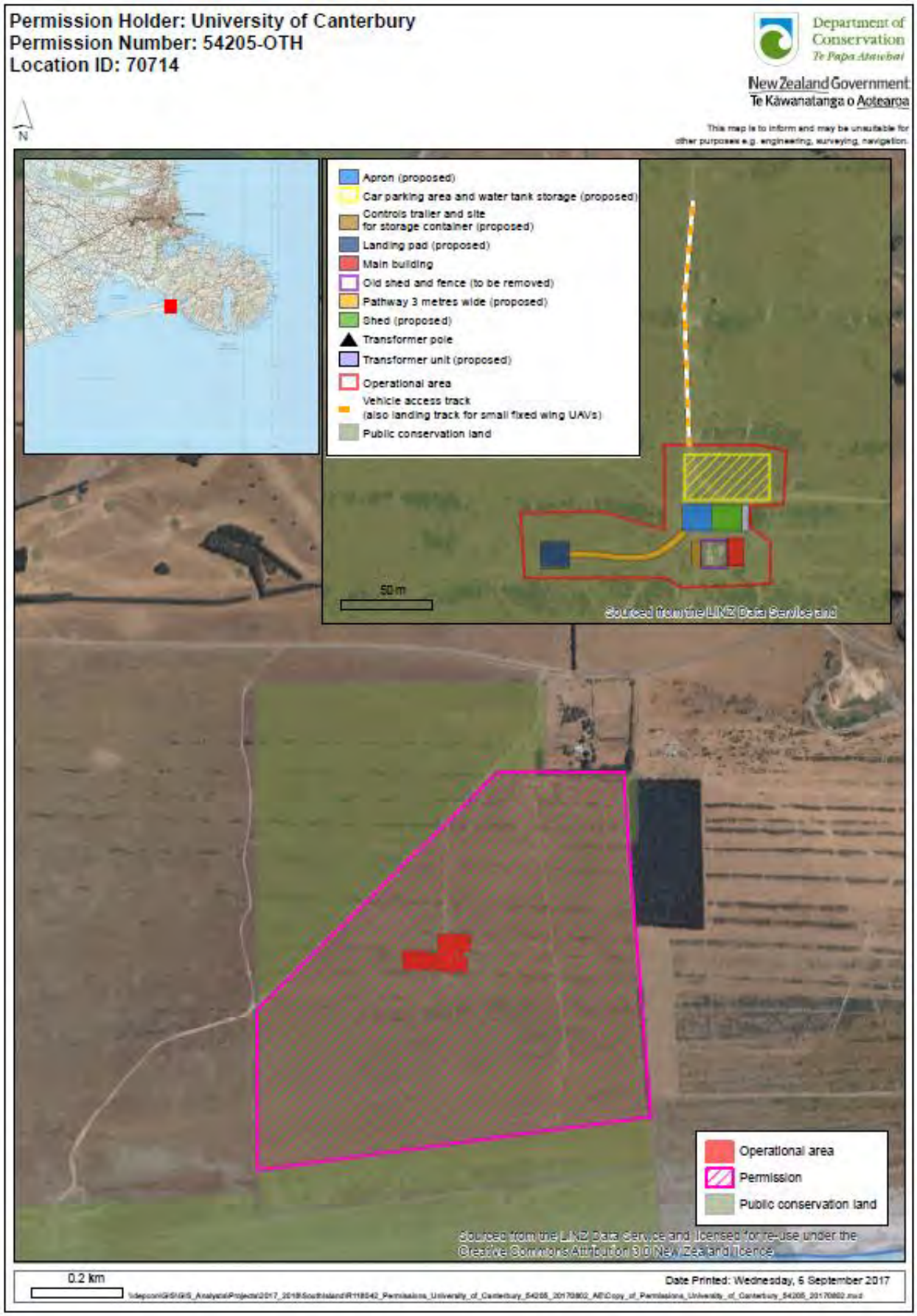
- Wildlife Act Permit (55396-FAU)
  This Wildlife Permit was approved on 4 May 2017 and permits the applicant to translocate lizards, found within the building area to be dismantled, to nearby vegetation. This application covers the de-construction stage only and expires on 31 December 2017. A further application is required in respect of the construction phase.

- Telecommunication Licence/Easement (45466-TEL)
  This concession is held by Orion New Zealand Limited for a telecommunication mast and power cable within the proposed lease area along with a right of way to access the equipment. Orion has a co-siting arrangement with the applicant under the soon to expire concession (CA-16485-OTH). Both Orion and the applicant have acknowledged that they are happy to continue with the co-siting arrangement under the new proposed concession (see acknowledgments from Orion DOC-3013157 and the applicant DOC-3129533).

Location

The activity has been applied for at the following location:

Conservation area	Description of location (if applicable)	Land status	District Office	Activity
Kaitorete Spit Scientific Reserve	Part NaPALIS ID 2796176. Rural section 40766. Lease area known as Birdlings Flat Field Station (see Concession Area Map 1)	Scientific Reserve	Mahaanui	Unmanned autonomous vehicle (UAV) landings, the removal of existing infrastructure, installation of new infrastructure, plus the ownership, occupation, maintenance and repair of new and existing infrastructure, for the purpose of undertaking UAV research and development.



Map 1: Proposed concession area

Statutory Analysis: Notified Concession under Part 3B of the Conservation Act 1987

Decision in Principle

S17S: Contents of application

To be complete (s17S(1)), an application for a concession must include:

- A description of the proposed activity;
- A description of the locations for the proposed activity;
- A description of the potential effects of the proposed activity and proposed action to avoid, remedy, or mitigate adverse effects;
- The proposed term and reasons for that term;
- Relevant information about the application (as requested in the application form).

Criteria for decision:

- Does the application include all the required information as per s17S?

  Yes, the applicant has submitted a complete application.

S17T: Process for complete application

The intention to grant a concession must be publicly notified it meets any of the following criteria:

- The concession type is a lease – this is for exclusive access to public conservation land;
- The term of the concession exceeds ten years;
- The effects of the activity mean it is appropriate to do so.

Criteria for decision:

- Is public notification required?

  Yes, a lease concession is being applied for.

S17U(1) and (2): Analysis of effects

Briefly discuss the positive and adverse effects of the proposed activity, drawing on information from:

- The application form, as provided by the Applicant;
- The contributions described in the context and check in meetings, and outlined in this document.

Any adverse effects identified that are not managed by a standard condition for the activity may require a site/activity specific special condition to either avoid, remedy, or mitigate the adverse effect. Include the condition proposed and a description of how it avoids, remedies, or mitigates the adverse effect, and list the condition in the Proposed Operating Conditions section of this document.

Note that only information relevant to the activity on public conservation land can be considered – if information about effects of the activity is included in the above sources that is outside of this scope, note why it is not a relevant consideration under the Conservation Act (for example, economic benefits to an area).

Criteria for decision:

- Is the activity consistent with s17U(1) and (2) of the Conservation Act?

  Some parts of the proposed activity are consistent with this section of the Act, while others could be considered to be inconsistent with s17U(1) and (2).

Discussion:
The applicant has, as part of their application, supplied an environmental impact assessment, along with:

- An independent ecological assessment of proposed land use changes compiled by Wildlands Consultants (DOC-3071826)
- An independent acoustic assessment of small multirotor drone use at Birdlings Flat compiled by Acoustic Engineering Services Limited (DOC-3077271)
- A cultural impact assessment produced by Mahaanui Kurataiao Limited (DOC-3097488)

These resources, along with the Department's own assessments, have been used to undertake the following analysis of potential effects and to provide input into the special conditions added to ensure that potential effects are suitably avoided, remedied, or mitigated, where possible.

Effects on landscape and vegetation

The applied for area comprises of parallel stony beach ridges, a naturally uncommon ecosystem type that the Wildlands report cites as being classified "endangered" at a national scale. The Canterbury Conservation Management Strategy lists Kaitorete Spit as a "priority ecosystem", described as places where conservation work will most effectively contribute to protecting the full range of ecosystems nationally and the threatened and at-risk species within them. Unique dryland shrubland covers most of the proposed concession area, with various indigenous shrubs, grasses and mosses present. The area around the existing and proposed buildings is significantly more modified, with the land being disturbed by previous activity. The current vegetation in this area consists mostly of introduced grasses and herbaceous species. The modified area, within which most of the proposed operations are proposed to occur, will be referred to as the "Operational Area" (see Map 1).

Both the Department and the Applicant have identified the potential for adverse effects to occur on the landscape and vegetation as a result of the proposed activity. These effects are identified and discussed as follows, with special conditions proposed where appropriate to manage potential adverse effects:

<u>Installation of new infrastructure</u>
Installation of the proposed infrastructure onsite could result in adverse effects occurring on the sites natural values. The most significant new structure proposed is the storage shed, which would have a total footprint (including both the shed itself and the 'ramp' out front) of 465m2. The applicant has consulted with Wildlands over the most appropriate location for the storage shed. The resulting applied for location is within the highly disturbed area where no native vegetation exists, therefore if the siting of the shed occurs at this location, no damage to native vegetation would occur.

- *A shed and ramp frontage may be constructed at the location specified on Map 1, with the shed having a footprint no larger than 15 metres x 16 metres and the ramp no larger than 15 metres x 15 metres.*

The applicant requires a 15 x 15 metre landing pad along with a pathway between the storage shed and the landing pad to facilitate the take-off and landing of larger UAVs. These are proposed to consist of plastic type matting placed on the ground. The applicant has outlined that the landing pad must be situated at least 60 metres from the buildings on site and therefore could not be placed within the highly disturbed area. A location for the landing pad has been identified, but would require the removal of a small number of native shrubs. The Wildlands report outlines that the removal of only a small number of native shrubs (e.g. less than 10) as result of placement of the proposed landing pad and pathway would have a negligible effect on the overall intactness and long-term viability of the native shrub land in the area. A special condition is recommended that would require the applicant to have a Department staff member onsite when placing the pathway, as an exact route has not yet been identified and placement in consultation with a Department staff member would help ensure minimal disruption to existing native shrubs. As such, given the inclusion of the special conditions outlined below, the landing pad and pathway are considered to not have a significant adverse effect on the native vegetation. Effects of this component of the applied for activity on lizards and invertebrates are discussed further below.

- *A 15 x 15 metre landing pad made of Euromat or similar material may be installed at the location specified on Map 1.*

- *A pathway, made of GrassProtecta or similar material and not exceeding more than 3 metres in width, may be placed between the landing pad and storage shed subject to Schedule 3 Clause* (*condition below referring to placement of the pathway in consultation with DOC*)

- *The Concessionaire shall arrange for the placement of the pathway to be undertaken with consultation from a DOC staff member who shall be onsite during placement of the pathway.*

The installation of the new underground power cable and transformer unit associated with the required power upgrade would require the excavation of a 500mm wide trench between the transformer pole and the main receiver building (existing building). The current power cable runs through an area where native shrubs have colonised. So to avoid the destruction of native vegetation, the applicant has proposed to lay the new power cable in a trench alongside the vehicle access way. They also propose to install the cabling inside a conduit tube, to avoid having to dig up and re-lay the cable again should future cabling changes be required.

- *A new underground power cable may be laid from the buildings to the transformer pole alongside the access track in the location shown on Map 1.*

- *A transformer unit may be installed on a 2 metre x 2.5 metre concrete pad, adjacent to the east side of the shed.*

- *The trench to install the cable may be a maximum of 500mm wide with removal and disturbance of native shrubs avoided during installation.*

- *All disturbed gravel / soil is to be back filled and compacted down.*

- *Only a small digger machine may be used for the work to minimise disturbance to the site.*

- *The Concessionaire must take photos of the completed cable installation and send to the DOC Mahaanui District Office rabrown@doc.govt.nz.*

- *The underground power cable shall be installed within a conduit tube so that changes to the power supply in the future can be carried out without needing to dig up and relay the cable.*

As part of the University's Christchurch City Council Resource Consent and firefighting plans, installation of a large water tank capable of storing 30,000 litres of water is required for firefighting purposes. The proposed location for the tank is within the space allocated as 'car parking area and water tank storage' on Map 1. This location is already highly modified and Wildlands noted placement within this area as reducing the ecological impact. The exact location of the tank within this area would be agreed with the Department.

The applicant also proposes to install a shipping container to be used as a secure lockup for equipment, as well as a moveable trailer which would act as the flight control centre. These would both be sited on the already highly disturbed old white shed site/storage site.

As per advice from the Mahaanui District Office, a number of general special conditions that relate to the construction/installation phase are recommended as follows:

- *Contractors working on-site should be monitored closely to ensure that they are not causing unnecessary disturbance to indigenous vegetation.*

- *The Concessionaire shall submit copies of all necessary building and resource consents to the DOC Mahaanui District Office rabrown@doc.govt.nz prior to construction commencing.*

- *Once all new structures are in place, a final layout plan with GPS placement points is to be sent to the DOC Mahaanui District Office rabrown@doc.govt.nz and permissionschrischurch@doc.govt.nz citing the concession number.*

- *During construction, a safety fence comprising of waratah fence standards with heavy duty orange plastic between, orange cones, danger tape and blaze paint may be used.*

- *Any external alterations or changes to any of the buildings or structures during the term of the concession must have prior written approval from the Grantor. These changes may be subject to the formal variation process.*

- *During building or placement of new infrastructure or installation works including underground cables, if any indigenous vegetation is destroyed then the equivalent number of same species should be planted. These should be sourced from the DOC Motukarakara Nursery unless otherwise approved by the Grantor. Planting shall occur in consultation with the Mahaanui District Office.*

- *During the construction/installation phase, an appropriately qualified environmental monitor, as agreed with Mahaanui District Office, must be used to ensure minimal environmental damage occurs and that all conditions of this Concession relating to environmental matters are met. A summary report of the environmental monitoring, including confirmation of required revegetation planting, shall be sent to rabrown@doc.govt.nz on completion of the construction/installation phase.*

Removal of old infrastructure

The applicant will be removing the obsolete buildings and equipment by 31 December 2017, specifically:

- The converted shipping container

- The fenced storage area and white shed. These are adjacent to the main building. The applicant intends to remove the fence and concrete paths and remove the white shed.

Consultation has taken place between the University, the Department, Wildlands Consultants and herpetologists. They have agreed that the preferred time for removal of the shed, fenced area and old shipping container will be Spring 2017, as the resident lizards are more active and will have higher chances of surviving translocation than in winter. A Wildlife Handling Permit (55396-FAU) has been obtained in respect of this.

- *The Concessionaire will remove the obsolete buildings by 31 December 2017, specifically the converted shipping container, fenced storage area and white shed.*

Vehicles

There is already an established vehicle access way from the proposed concession area boundary to the main building site. This access way and the building surround, where vehicles are proposed to be parked, is already in a highly modified state with no significant indigenous vegetation present. The Wildland's ecological assessment determined that if vehicles are restricted to this access way and proposed parking area, effects on indigenous vegetation would be less than minor. The applicant has proposed to limit vehicle access into the proposed lease area, controlling access though a booking system, as well as ensuring vehicles used during construction/installation of the proposed new infrastructure are as small as possible. Special conditions are recommended that would ensure damage to unmodified areas and indigenous vegetation from vehicles is avoided.

- *Any vehicles brought onto the Concession Area are only permitted on the access way or the designated parking area as shown on Map 1, except as outlined in Schedule 3 Clause* (*refer to condition that refers to usage of golf cart for towing large UAV*)

- *The Concessionaire shall limit the number of vehicles brought onto the site as much as practical.*

- *The Concessionaire shall ensure that where vehicles are required to be in the Concession Area, they are as small and as light as practical.*

The applicant is proposing to use a golf cart to tow the larger UAVs between the storage shed and landing pad. This would be along the laid pathway as mentioned above. If the golf cart is limited to this pathway, or areas that are otherwise approved for vehicles, then damage to the surrounding landscape and vegetation from use of the golf cart would be avoided.

- *The Concessionaire may use a golf cart to tow a UAV along the laid pathway between the storage shed and UAV landing pad. The golf cart may only be driven on the pathway and landing pad or on the assess road/vehicle parking area.*

Day-to-day use of site

The day-to-day operations of the concession area would see numerous people moving on and off and around the site during research operations. The applicant has proposed to limit day to day activities to the "Operational Area" – the highly disturbed and modified area within which most of the infrastructure exists (see Map 1). If use is restricted to this area as much as possible then potential adverse effects on the surrounding ecosystem through tramping by site users will be avoided. Special conditions are recommended to support this.

- *The Concessionaire must erect physical or visual barriers (e.g. waratahs and danger tape and/or road cones) to clearly delineate boundaries of the Operational Area to make clear to site users where the modified area boundary is.*

- *The Concessionaire shall ensure that use of the Concession Area outside of the Operational Area is limited as much as possible.*

- *If site users do have to leave the Operational Area then they must do so by foot, keeping to existing tracks were possible.*

- *No new tracks may be established outside of the Operational Area.*

The applicant has proposed to ensure that all users entering the site for the first time undergo a comprehensive site induction. Wildlands and the Department have also suggested that such an induction be implemented. The site induction would seek to ensure that site users are aware of the unique values present onsite and the actions they must undertake whilst onsite to avoid adversely affecting these values. The following special condition is recommended:

- *The Concessionaire shall implement an induction process which all personnel who enter the Concession Area for the first time shall undergo to ensure they are aware of the ecological significance of the site and are able to abide by the Fire Avoidance and Management Plan and the conditions of this Concession. The induction process will be kept updated and fit for purpose at all times.*

UAV landings

The applicant has applied for a maximum of 800 UAV landings per year. Within this total maximum, the applicant has proposed daily and weekly maximums. Potential effects of these proposed landings are discussed further below and also under the assessment of section 17 W. Should these landings be approved, the special conditions below would ensure that the applicant is restricted to the applied for maximums.

- *For the purposes of this Concession, a 'Landing' is defined as one take-off or one landing of a UAV. A return flight involves two 'Landings'. Hovering near ground level (within ground effect) is also considered a 'Landing'.*

- *This Concession allows a maximum of 20 UAV Landings (equivalent to 10 return flights) per day and a maximum total of 800 Landings per year.*

- *Of the Landings permitted in Schedule 3 Clause* (*refer to condition above that outlines numbers of permitted landings), *a maximum of 6 Landings per day and 24 Landings per week may be undertaken by large multirotor UAVs (greater than 1 x 1 metre and up to 10 metres x 6 metres).*

The applicant proposes to have small multirotor UAVs take off and land only within the Operational Area to ensure that disturbance to flora and fauna from the launching/landing process of UAVs is avoided. The larger UAVs (up to 10 metres x 6 metres and 1400kg) that the applicant proposes to test on the site could have a significantly greater effect on the surrounding flora and fauna during take-off and landing compared with the smaller UAVs. The applicant proposes to restrict take-offs and landings of these larger UAVs to a dedicated landing pad (as described earlier in this report). The downwash produced by these UAVs during take-off and

landing (up to 120km/h at 1.5 metres off the ground and up to 40km/h at 2.5 metres off the ground) could cause damage to the surrounding flora and fauna. The applicant, however, states that the downwash produced is not foreseen to be an issue outside of the landing pad and that the pad is sized in such a way as to protect the UAV from dust/grass/debris which, in turn, also protects the surrounding vegetation from the UAV. The Wildlands report identifies UAV downwash as having a less than minor effect on vegetation.

- *Landing of small multirotor UAVs (up to 1 x 1 metre) may only occur within the Operational Area or on the landing pad.*

- *Landing of large multirotor UAVs (greater than 1 x 1 metre and up to 10 metres x 6 metres) may only occur on the landing pad.*

The applicant is proposing to use the formed vehicle access way for the landing of fixed wing UAVs. These UAVs do not require a runway to take off, as they are launched by hand, so only the landing part of the flight is proposed to occur on the access way. Given the small size of the UAVs (maximum of 3 metre wingspan) and the already modified nature of the access way, use of the access way for fixed wing UAV landings is not considered to adversely affect the natural values of the site.

- *Only the vehicle access way may be used for the landing of fixed wing UAVs (with wingspans of up to 3 metres).*

<u>Noise</u>
Noise produced from UAV flights is a potential adverse effect. The noise produced could be disruptive to other users of the reserve (outside of the concession area) and to wildlife within concession area and the wider reserve. The applicant has commissioned an independent assessment of the noise on the site made by UAVs that would typically be used by the applicant. Acoustic Engineering Service Limited assessed the sound produced by a UAV (with four 15 inch propellers and a weight of 4kg) at the boundary of the proposed lease area and compared the noise levels to Christchurch District Plan noise standards. For the UAV type that was used in the assessment, noise levels were found to be within the standards. The applicant has identified that they would not undertake UAV flights during hours of darkness, on weekends or on public holidays. This would help to minimise any disturbance that could occur. A special condition to reinforce this intention is recommended.

- *UAV Landings may not occur during hours of darkness, on weekends or on public holidays.*

It is noted that the applicant has also applied for the use of larger UAVs (up to 10 metres x 6 metres and 1400kg) and that the noise measurements taken by the acoustic engineers are not representative of these larger UAVs. The acoustic engineer's assessment is that while the measurements taken were expected to be broadly representative of the noise levels generated from UAVs at the site, additional measurements should be taken for larger UAVs, or those that have significantly different characteristics. The applicant states that such large UAV units are still in development and therefore accurate noise measurements for these UAVs are not readily available and are hard to predict. Some measurements from similar research units have been supplied as part of the application. These measurements indicate that noise levels would be relatively high during take-off and landing of the large UAVs. Such noise levels could have an adverse effect on wildlife and other users of Kaitorete Spit Scientific Reserve.

While other users of Kaitorete Scientific Reserve would be outside of the lease area and therefore at least 150 metres from the landing pad, wildlife within the lease area could be subjected to even

higher noise levels. No data has been provided on close proximity noise levels expected from the larger UAVs. In addition, the cumulative effect of regular UAV noise on wildlife, particularly birds that may be nesting the in the lease area, is not known (see 'Effects on Birds' section further below).

Taking into consideration the lack of data around noise levels produced by the larger UAVs, the indication that such noise levels would exceed Christchurch District Plan noise standards and the lack of information around how this could affect wildlife, a specific choice will be presented to decision maker at the end of this report as to whether, if approving the application in principle, the landings of larger UAVs (up to 10 metres x 6 metres and 1400kg) should be approved or declined.

Should any UAV landings be approved, the following standard special condition relating to aircraft is recommended for inclusion.

- *During the term of the concession, where Grantor believes that the effects of aircraft noise should be further reduced, the Grantor may, by notice, require the concessionaire to either undertake measures to minimise the effects of noise on conservation values or become accredited to a recognised noise abatement and disputes resolution programme. If such notice is given by the Grantor, the concessionaire must:*

- *if required to undertake measures to minimise the effects of noise on conservation values within 3 months from receiving the notice undertake those measures to the satisfaction of the Grantor until the Final Expiry Date.*

- *if required to become accredited to a recognised noise abatement and disputes resolution programme within 3 months from receiving the notice provide proof to the Grantor that such accreditation has been completed and must keep their participation in that programme or training current until the Final Expiry Date.*

  The Grantor may, at any time, issue a subsequent notice(s) requiring the Concessionaire to implement the other option.

Effects on birds

Various native bird species are present on Kaitorete Spit, including a number of Nationally Threatened and At Risk species. The Wildlands report states that while various bird species were seen or heard within the proposed lease area during a site visit in May 2017, it was not the right time of year to detect some of the Nationally Threatened and At Risk species that are known to inhabit Kaitorete Spit. The report does note that the shrubland-grassland habitat that covers most of the proposed lease area is unlikely to hold sizable populations of threatened birds, but that the banded dotterel and New Zealand pipit may nest on or use the short grass on the vehicle track and around the buildings. To ensure that no birds are disturbed during the construction and installation of any approved infrastructure, the following special condition requiring the undertaking of a bird survey to check for presence of birds is recommended:

- *If construction works are to occur between the months of August and December, the Concessionaire shall engage a suitably qualified person to conduct a bird survey within 2 weeks of any construction or installation works occurring in the Concession Area. Survey results are to be sent to DOC Mahaanui District Office rabrown@doc.govt.nz. Should any nesting sites be recorded then operations are to be altered accordingly, as directed by the Mahaanui Operations Manager, to avoid any nesting sites.*

The applicant has acknowledged that the area is used by a number of bird species, including as a breeding habitat for threatened species such as the banded dotterel, and has therefore proposed a number of actions to address the possibility of bird disturbance. These include, undertaking a bird survey of the area, limiting researcher access to the wider concession area, educating site users of the need to watch out for and avoid disturbing birds and not allowing dogs onto the site. Special conditions to support these actions are included in other parts of this assessment, along with the following special condition:

- *The Concessionaire shall ensure that no dogs are brought onto the Concession Area.*

Wildlands recommend that the amount of shingle brought onto the site during the construction phase be limited as much as possible, as shingle areas may attract banded dotterel nesting. The applicant has, in its application, identified that it will limit the amount of gravel that needs to be brought onto the site by choosing appropriate building design.

- *The Concessionaire shall limit the amount of shingle brought onto the site to only that which is required and limit shingle onsite storage time as much as practical.*

Wildlands' report states that the take-off/landing component of UAV flights is not expected to have a significant effect on bird species (although it did not address the issue of noise disturbance to birds). However, UAV flights over the proposed lease area could affect birds on the ground below as well as birds in the air. Low flying UAVs would give the impression of a hawk, or other bird of prey, which may generate and exceed natural levels of alarm responses in birds nesting or roosting on the ground. It is noted in the Wildlands report that there is no information available on the effects of UAVs on New Zealand bird species and it is not known how or if each bird species present on Kaitorete Spit would respond to any disturbance caused by up to 800 UAV landings per year in the area. If the effects become known and birds are disturbed, this disturbance could potentially be an offence under the Wildlife Act 1953, and therefore the University would need to apply for a Wildlife Act authorisation in respect of that.

Bird strike is also a potential adverse effect for the many Nationally Threatened and At Risk species that are present within the wider Kaitorete Spit area. 800 UAV landings per year would be a substantial increase in airspace activity and could significantly adversely affect the Kaitorete Spit birdlife if bird strike became common. It is not known how common bird strike may be. To address this potential adverse effect, Wildlands states that the applicant should develop a comprehensive bird management and monitoring plan that provides clear operational guidelines for UAV use and a monitoring strategy to ensure that UAV activities do not adversely affect bird species. It goes on to state that if any potential effects are observed then mitigation options should be evaluated at that time by a suitably qualified and experienced ecologist. It is noted that any bird disturbance needs to be avoided unless a Wildlife Permit is granted. It is proposed that a bird management and monitoring plan be required as per the following special conditions:

- *The Concessionaire shall prepare and comply with an Avifauna Management and Monitoring Plan (AMMP) which includes UAV operational guidelines. The AMMP shall:*
    - *Be prepared by a UAV expert in collaboration with a suitably qualified ecologist and DOC Mahaanui District staff.*
    - *Include clear UAV operational guidelines to ensure that UAV's do not adversely affect birds within the Concession Area.*
    - *Describe how to monitor bird behavioural responses to UAV's, particularly for Threatened and At Risk species.*

- *Provide a system for reporting bird strikes or near misses to DOC Mahaanui District so that they can be reviewed and, if need be, guidelines and operations changed as a result.*
- *Be submitted for DOC approval 10 days prior to the commencement of the Concession Activity by sending to DOC Mahaanui District Office rabrown@doc.govt.nz*
- *Be regularly updated to include up-to-date information on effects of UAVs on birds (particularly in regard to larger UAVs)*

- *If any changes are made to the AMMP, the Concessionaire shall notify DOC Mahaanui District Office rabrown@doc.govt.nz so that the AMMP can be reviewed.*

Standard conditions would enable the Department to suspend the concession if any approved activity was, in the Department's opinion, having an adverse effect on the natural, historic or cultural values of the concession area. Further special conditions are recommended in respect of potential effects on birds:

- *The Department may require the Concessionaire to cease some or part of the activity as a result of the reporting and monitoring of potential effects on birds, until measures are taken to appropriately mitigate those effects. The Department will not be liable for any associated costs as a result of a reduction in activity.*

- *The Concessionaire shall immediately cease the operation of the UAVs if there is any indication of wildlife disturbance.*

The potential effects of noise and bird strike by the large UAV's are currently unknown. The Decision Maker may consider that as the effects are unknown, it is not possible to adequately avoid, mitigate or remedy the effects, and on that basis, could decline the use of large UAV's.

Under Section 17U(2) of the Conservation Act the Minister may decline any application if it is considered that the information available is insufficient or inadequate to enable the effects of any activity to be assessed. It must be noted that even if there is insufficient information available, the ability to decline is discretionary, therefore it also may be granted if the decision maker considers there is good reason to do so.

It is of relevance to note that standard conditions provide for the ability to revoke all or part of a concession at any point should effects later become known that were not known at the point the concession was approved. However, this clause is usually activated when effects become known after a concession was approved that could not have been reasonably foreseen prior to approval. In this case, we are aware that there is a need for testing the large UAV's for effects such as noise, and impact on birds, and therefore it is not recommended to rely upon this as a way of managing effects.

Options are set out later within the report in respect of this. If the decision is made to decline permission for the use of the large UAV's due to unknown effects, the applicant could still apply to vary the concession in the future. Once the applicant has assessed potential effects, it could apply to vary the concession to include the large UAV's, and at that point provide an updated Environmental Impact Assessment. Given the above considerations, this would be the recommended option to proceed with.

Effects on lizards & invertebrates

Numerous native lizard and invertebrate species are present in the proposed lease area, with the area providing habitat for two At Risk and one Nationally Threatened lizard species as well as a number of At Risk and Nationally Threatened moth species.

The wider area of the proposed lease is described by Wildlands as an excellent example of the typical shrubland-grassland component of Kaitorete Spit, an important habitat for native lizards and invertebrates. In order for the construction and site operation activities to have a less than minor effect on lizard and invertebrate populations within the proposed lease area, Wildlands recommends that where possible, all construction is restricted to the already highly disturbed building area, including storage of material and vehicle parking.

It is noted that the landing pad and pathway cannot be placed in an area that is already highly modified and that a small number of native shrubs would need to be cleared for placement of the pad. Wildlands states that construction of the landing pad and access to it will remove some natural vegetation and therefore habitat for the indigenous invertebrates in that area. This can and must be minimised to fit the criterion of 'less than minor effects'.

Other recommendations from Wildlands were that ongoing control and monitoring of exotic weeds should be maintained, no new formed roads or tracks are made in the lease area and that a fire plan is developed that minimises any additional fire risk posed by the prosed new activities. Special conditions outlined in other sections of this report address these recommendations.

Lizard habitat in the Operational Area consists mainly of manmade structures (buildings and stacked materials). The lizard habitat in this area is described in the Wildlands report as being small and not essential to the perseverance of lizard populations in the wider area. Many lizards have, however, been found to inhabit the building area, which would be disturbed during the proposed site construction phase. The applicant has been granted a Wildlife Permit (55396-FAU) that will allow it to translocate any lizards found in the structures during the deconstruction phase to surrounding vegetation. Adherence to conditions of the Wildlife Permit would address the risk of lizard mortality and injury during the deconstruction of the shed and material storage area. A further Wildlife Permit will be required by the applicant in respect of the construction phase.

- *The Concessionaire must adhere to all conditions contained within the Wildlife Act Permit (55396-FAU), and must not commence earthworks until the relevant pre-works conditions contained within have been complied with.*

- *The Concessionaire will require a Wildlife Permit for the construction phase of this Concession. The Wildlife Permit must be in place prior to the Concessionaire entering the construction phase.*

There is potential for UAV activity to have an adverse effect on lizards and invertebrates. Noise disturbance may occur, however the magnitude of such an effect is unknown. Wildlands has identified that UAVs flying directly over emerged (basking or foraging) skinks are likely to be perceived as aerial predators and induce a flight response, i.e. cause animals to seek cover. However, once smaller UAVs reach heights of above 60 metres, they are not expected to have any adverse effects.

Other special conditions outlined earlier in this report, reinforcing actions that the applicant has proposed, would help to minimise disturbance to lizards and invertebrates. Such as ensuring no dogs are brought onsite, vehicles are not taken off the formed access track, walking out of the

Operational Area is limited as much as possible and site users are inducted on the special values of the site and how to behave whilst on site.

Effects on cultural & historic values

A Cultural Impact Assessment (CIA) has been supplied by Mahaanui Kurataiao Limited. The CIA assesses the potential effects / impacts of the proposed activities on cultural values and has been used as the basis for the Departments assessment of cultural effects. The report sets out that the proposal does have the potential to have cultural and environmental impacts on the values at Kaitorete Spit.

The CIA identified the following:

- Potential interference of UAV's with taonga species
- Risk of fire in the operation of the UAVs
- Potential loss of Taonga species due to construction
- Potential destruction of unrecorded (Wahi Taonga) archaeological sites of Maori origin and Taonga Tuturu due to construction related earthworks
- Pest species
- Potential for use of the facility to develop technologies that can be used as weapons platforms

A number of mitigation measures proposed in the CIA to address the identified issues are summarised below. The recommendations and mitigation measures proposed in the Ecological Assessment were also supported.

- Interference by drones
  The CIA lists a number of mitigation measures to minimise interaction and potential interference with taonga species. These recommended measures will be covered in the Avifauna Management and Monitoring Plan, the requirement for which is proposed as a special condition, which would have to be prepared and approved by DOC before commencement of the activity.

- Fire Risk
  The CIA recommends that fire mitigation measures are employed at the site. This will be achieved through the preparation and implementation of a Fire Management Plan which is proposed by the applicant and would be required as per a proposed special condition.

- Construction Effects
  The CIA recommends that native vegetation loss is avoided and that lizards are translocated prior to construction. This would be achieved through the special condition requiring an Environmental Monitor to oversee that minimal environmental damage occurs well as the requirement to replace the equivalent number of native plants lost. The impact on the lizards will be covered through the conditions of a separate Wildlife Permit. There is also a proposed special condition requiring the cultural monitoring of all project earthworks by a mandated Wairewa Runanga and Te Taumutu Runganga cultural monitor.

- Archaeology
  The CIA recognises that the proposed infrastructure within the Operational Area is minimal, however seeks to protect disturbance of archaeological sites of Maori origin. While there are no known archaeological sites within the Operational Area there are

sites within the vicinity. Given this, a special condition is proposed which requires the adoption of a mana whenua endorsed Accidental Discovery Protocol.

- Weed and Pest Control
  The CIA suggests ongoing weed and pest control take place. The University currently engages a contractor to undertake weed control and they would continue to do this as per a proposed special condition. Pest control in and around the proposed Concession Area would also take place as per a proposed special condition.

The following special conditions are suggested to address issues raised in the CIA:

- *Prior to any activities taking place, the Concessionaire is to provide evidence to the Mahaanui Operations Manager of a Mana Whenua endorsed Accidental Discovery Protocol (ADP) which is to be followed in the event that archaeological sites or other features with heritage values are found during any approved earth disturbance work on the Land. The ADP shall be emailed to rabrown@doc.govt.nz prior to any activity commencing.*

- *The Concessionaire shall arrange to have onsite cultural monitoring of all earthworks occurring on the Land by a mandated Wairewa Rūnanga and Te Taumutu Rūnanga cultural monitor.*

- *Should any Koiwi (human bones) or artefacts (taonga) be found, the Concessionaire must cease activity immediately and the Accidental Discovery Protocol should be followed.*

The following standard special conditions are also recommended for inclusion:

- *The Concessionaire is requested to consult the relevant Papatipu Runanga if they wish to use Ngāi Tahu cultural information. If the Concessionaire wishes to use the Tōpuni or statutory acknowledgement information contained in schedules 14-108 of the Ngāi Tahu Claims Settlement Act 1998, or any Department produced interpretative material in respect to Ngāi Tahu cultural information, they are requested to notify the relevant Papatipu Rūnanga, as a matter of courtesy.*

- *The Concessionaire must, as far as practicable, attend any workshops held by the Department for the purpose of providing information to concessionaires, which is to include the Ngāi Tahu values associated with Tōpuni areas.*

- *The Concessionaire must ensure any persons employed by the Concessionaire are requested to recognise and provide for Ngāi Tahu values in the conduct of their activities.*

Visual effects

The proposed large storage shed is a substantial size and therefore may cause an adverse visual effect on the landscape. To minimise this, a special condition is proposed that would require the applicant to have the buildings coloured to blend in with the surrounding landscape. The colour should be of minimal contrast to the local environment and be of low reflectivity.

- *The Concessionaire will ensure the colour of the infrastructure onsite is of minimal contrast to the local environment and is of low reflectivity.*

- *The Concessionaire will consult with the DOC Mahaanui District Office to finalise the orientation, dimensions, materials and colour to be used in new construction or installation works.*

The main building that currently exists on the site is proposed to be used by the applicant to support research operations. The building currently has a red coloured roof that stands out from the surroundings. It is acknowledged that the roof is presently in a good state and does not need repainting, however it is recommended that when the roof does require repainting or replacing, a more neutral colour be used so as to blend in more effectively with the landscape.

- *When the roof of the main receiver building is repainted or replaced, it shall be coloured neutrally to fit in with the surroundings. The colour used is to be to be agreed in consultation with Mahaanui District Office.*

Fire risk

Wildlands state that a fire resulting from a UAV crashing could have a major adverse effect on significant indigenous vegetation and habitats within the concession area. The recommendation is to implement a suitable fire mitigation plan. Special conditions will be added to ensure that a robust Plan is in place prior to any activity taking place. In addition, a 30,000 litre capacity water tank will be added on site. DOC's standard approach to responding to any fire on Kaitorete Spit is automatic deployment of two helicopters with monsoon buckets and whilst this is not a requirement to be included within the Fire Avoidance Management Plan, it is of relevance to note.

- *Prior to the Concession Activity taking place, the Concessionaire is to prepare and have approved by the DOC Mahaanui District Operations Manager an onsite Fire Avoidance and Management Plan (FAMP) associated with the approved activities on the site. The approved plan must be sent to rabrown@doc.govt.nz prior to any activity taking place.*

- *The FAMP shall include but not be limited to the following requirements:*
  - *Call 111 in the event of a fire.*
  - *Electrical fire extinguishers are to be stored on site.*
  - *Shovels are to be stored on site.*
  - *The Concessionaire is to track all drones and if one crashes attend the site and if on fire put into place appropriate procedures (as per the FAMP) immediately.*
  - *All personnel entering the Concession Area are to have read the FAMP and know what to do in the event of a fire.*
  - *The Concessionaire is to engineer drones to minimise fire risk.*
  - *All Lipo batteries in any UAV flown from the Concession Area are to have fire retardant covers or boxes for their batteries.*
  - *Fixed wing UAV launches are to be avoided during hot windy days in summer when fire risk is extremely high.*

- *The Concessionaire shall conduct all activities on site in accordance with the FAMP and notify DOC Mahaanui District Office of any changes made to the FAMP so that the FAMP can be reviewed.*

- *Fire liability insurance must be held by the Concessionaire.*

- *The lighting of fires or smoking is not permitted anywhere in the Concession Area.*

In addition, the following standard special conditions relating to UAVs are recommended:

- *The Concessionaire shall ensure that fire extinguishers in good working order are onsite at all times, and that site users are trained in the use of a fire extinguisher.*

- *The Concessionaire is not authorised to operate the UAVs in areas that have a Fire Risk of High or above as published on the National Rural Fire Authority website http://fireweather.nrfa.org.nz*

Pest plants & animals

Both the applicant and the Department have identified the introduction of weeds to the proposed lease area as being a potential adverse effect. The introduction and spreading of weeds poses a threat to the unique ecosystem that exists within the proposed lease site. Weed introductions to the site could occur during day-to-day usage of the site but in particular during the infrastructure construction stage, when external materials would be brought onto the site. The following special conditions are recommended:

- *The Concessionaire must as far as practical ensure that all vehicles, gravel and other materials being brought into the Concession Area are free from weed propagules. Gravel should be locally sourced.*

- *The Concessionaire must contact the DOC Mahaanui District Weed Ranger as well as the DOC approved Weed Contractor before any new gravel is brought onto the site. The Weed Contractor can monitor any weeds introduced by the gravel and deal to them appropriately. It is not expected that the Weed Contractor would deal with any Californian thistle or Horehound as these already exist within the site.*

The applicant has proposed to have ongoing woody weed control undertaken throughout the proposed lease area. This would ensure that any weeds that do establish on the site are killed and the spreading of weeds is controlled.

- *The Concessionaire must, during the term of the Concession pay for and manage Contracted Weed Control by a DOC approved contractor within the Concession Area for sweet briar and karo plants.*

- *The Concessionaire shall ensure that the approved contractor:*
    - *Develops an annual weed control and management plan (including maps) in consultation with the Mahaanui District Office Weed Ranger*
    - *Uses the Cut and Paint Kill method*
    - *Is alerted if any new gravel is brought onto site so that it can be monitored for weed development*

The applicant proposes to continue the mammalian pest trapping network that currently exists within the applied for area, as well as extending the trapping network to cover a greater area. The new trapping lines would be partially on the adjacent Kaitorete Spit Conservation Area Marginal Strip. The total area that the applicant proposes to maintain is shown on Map 2 below. Trapping lines are proposed to be maintained by a contractor.

- *The Concessionaire is to pay for and manage contracted pest management control by a DOC approved contractor using the existing trap lines within the Concession Area, as well as new trap lines proposed by the Concessionaire outside the lease area, as identified on Map 2.*

- *The Concessionaire will ensure that the approved contractor checks the traps monthly and during the months of spring 3 times per week.*

- *The "Walk the Line" approach should be used to check the traps.*

- *The Concessionaire will ensure that the Contractor uses the "Walk the Line" trap Phone App when checking the traps.*

Map 2: Predator trapping lines (shown in bold red) that the applicant proposes to manage as part of the concession

Wildlands notes that effects of the proposed predator control programme on lizards are unknown and should not necessarily be assumed to be positive. This is because the predator control is undertaken over a relatively small scale and does not target all pest species that prey on lizards, such as rodents. Increasing rodent abundance may be occurring – and therefore predation rates of lizards – in a process known as mesopredator release.

The applicant has proposed to maintain the existing boundary fence line to a stock proof standard, ensuring stock do not enter the lease area.

- *The Concessionaire is responsible for ensuring that gates and fences around the Concession Area are maintained to a stock proof standard and that all gates have appropriate locks on them. The Concessionaire must liaise with the neighboring farmers if any stock issues arise.*

Cost recovery

There are a number of special conditions recommended that would require the applicant to have a DOC staff member present onsite at certain times. A condition will be added to allow for the Department to cost recover from the applicant for the time spent and vehicle use as a result of these site visits.

- *The Grantor may recover from the Concessionaire on a cost-recovery basis for the reasonable costs of and associated with any site visits as required by this Concession or to*

confirm the Concessionaire's compliance with the Concession Conditions. The rates will be charged at the Department's standard charge-out rates for staff time and the mileage rates for vehicle use.

Positive effects of proposed activity

The applicant has described a number of potential conservation management applications for remote sensing technologies that are proposed to be developed at the site. These technologies could be applied to conservation management on public conservation land in general, as well as specifically to Kaitorete Spit Scientific Reserve in some cases. The applicant states that remote-sensing technologies could help in monitoring:

- Trap networks
- Sea level rise effects
- Endangered bird species distribution and nesting sites
- Weed monitoring and control
- Impact of UAV activities on ground nesting and dwelling native birds
- Maori archaeological sites
- Illegal off-road vehicle damage
- Assist in the monitoring and control of mammalian pests within the Scientific Reserve and wider areas of Kaitorete Spit.

It is noted however that effects, whether negative or in this case positive, can only be taken into account as part of this assessment if they occur on public conservation land.

Wildlands, in its ecological assessment, identified that UAVs have the potential to be used to study threatened species in a manner that may be less intrusive than ground based techniques.

While the applicant intends to develop such technologies for commercial use, the applicant sees benefit to the Department from the development of UAV technologies applicable to conservation management. Specifically, the applicant has explained that research projects will be identified and managed as part of DOC initiated scientific research, and could include:

- Weed monitoring and control. Building upon present research monitoring techniques will be further developed that assist in the identification of woody weeds species precontrol and monitoring the success of control using UAV delivered imagery. This would be a long term monitoring project and would benefit the reserve by developing better / faster / easier methods of monitoring weed infestations.

- Assist in the monitoring and control of mammalian pests within the scientific reserve and wider areas of Kaitorete Spit. The applicant will assist DOC in developing motion and monitoring techniques, including UV light camera technologies. This technology will greatly assist the reserve and the wider government 'Predator Free 2050' aim and its directives to eradicate possums, rats and stoats.

There is an opportunity for the Department to benefit from the proposed UAV technology by working with the applicant on agreed research projects. It is noted that the applicant has proposed that the intention of the applicant to collaborate with the Department on conservation related research projects be captured in a Memorandum of Understanding.

The type of research proposed to be undertaken at the site has been discussed by the applicant in their application. The Department is interested in being kept updated on what this research is and how it relates to the informing of conservation management. By being kept informed it also allows discussion to take place on how any conservation work being undertaken by the

Department can be supported or enhanced by any of the research outcomes. Therefore, the following special condition is recommended for inclusion:

- *The Concessionaire must keep the Department informed of what UAV technologies and methods are being developed onsite, including an explanation of how they inform conservation management, and must consult with and advise the Department if requested to do so, to enable the Department to apply such technologies and methods to its work as a conservation manager. The Concessionaire must, as part of compliance with this condition:*

    - *Submit an annual report, prior to the anniversary date of the commencement of this concession, to the Operations Manager, Mahaanui District Office. The annual report must state all research activities that have taken place under this Concession over the previous year and describe how that research can inform conservation management.*

    - *Hold an annual workshop for the Department's staff and contractors, at which it demonstrates how UAV technologies and methods developed under this Concession may be used in practice by the Department in its role in undertaking conservation management.*

    - *The Concessionaire acknowledges that the Department may, at the Grantors discretion, share the information provided by the Concessionaire under this Clause with other parties, including the Canterbury Aoraki Conservation Board, and as required under the Official Information Act 1982.*

N.B. It is noted that this special condition has been amended as a result of the decision in principle on this application, whereby the decision maker outlined that results of the proposed research should be provided to the Conservation Board. The final sub clause above has been added to the special condition. See 'Post Decision in Principle Comments' later in this document for further discussion on this.

The applicant has identified other potential benefits of its proposed activity. However, these are not relevant considerations under the Conservation Act that the Minister can take into account. The irrelevant considerations identified by the applicant include possible benefits to other organisations and government agencies as well as associated wider economic benefits, and positive effects on land other than PCL.

<u>S17U(1)(d) Conservation Board Consultation</u>
The Canterbury Aoraki Conservation Board was consulted with in assessing this application. The Board was provided with copies of the application and supporting documents. The Board's response of 3 August 2017 states:

"Recommendation: The Canterbury Aoraki Conservation Board recommends that the application be declined on the basis that there was insufficient evidence that this new activity needs to take place in this sensitive and special location."

Comment: Section 17U(1)(d) directs the Minister to have regard to any information received in response under a request for advice under 17S. The Board's advice must therefore be considered, however, the decision maker is not compelled to follow that advice. The decision maker would need to state the reasons why the Board's advice is or is not followed, space for this is set out at the end of this report. It is noted that the Board's concern around location of the activity is also considered more fully below under the discussion around S17U(4) of the Conservation Act.

S17U(4): Location of activity

The Minister shall not grant any application for a concession to build a structure or facility, or to extend or add to an existing structure or facility, where he or she is satisfied that the activity—

(a) could reasonably be undertaken in another location that—

(i) is outside the conservation area to which the application relates; or

(ii) is in another conservation area or in another part of the conservation area to which the application relates, where the potential adverse effects would be significantly less; or

(b) could reasonably use an existing structure or facility or the existing structure or facility without the addition.

Discussion:

The applicant has outlined three main points as to why the applied-for location has been selected for the proposed facility:

1. The proposed site is within a ~125km^2 segregated airspace zone that was set up in 2015 with approval from the Civil Aviation Authority for the purpose of UAV flight testing. The airspace is administered by the applicant and allows other aircraft to be excluded from the area. The applicant states that, "*The only area in NZ that meets all the requirements for safely and legally testing prototype UAVs and associated technology is Kaitorete Spit and the Birdlings Flat Field Station, as it is located under the segregated air space*". The applicant states that while other areas under the segregated airspace were considered, it was advantageous to use the proposed site as there is already a secure workshop shed and electricity at the site to support the research activities. Surrounding areas on private land would require developing the needed infrastructure from scratch.

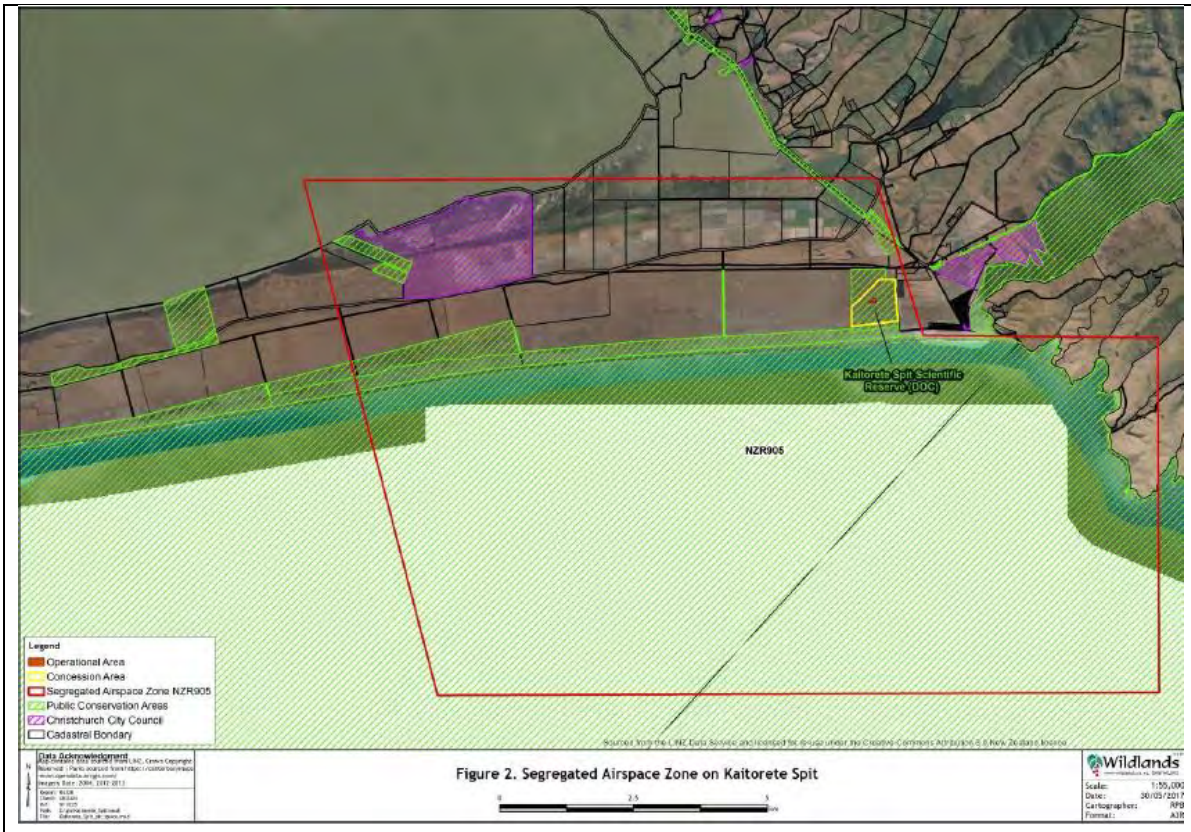
2. Granting of the applied for concession would save the disruption and environmental impacts of removing all the existing buildings and infrastructure from the site, as would otherwise occur under the soon to expire atmospheric research concession if the applicant vacates the site.

3. Having such unique and varied flora and fauna within the applied for area would be beneficial when it comes to developing UAV sensors for biodiversity and conservation applications.

In terms of the rationale for wanting to extend the existing infrastructure at the site, the applicant describes that a recent American research partnership has developed and the need for the new research shed and the electricity upgrade has been identified as part of that research relationship.

The decision maker is asked to consider whether the applied for activity (structures and UAV landings – not the actual flying of UAV's in the airspace) could reasonably be located outside of Kaitorete Spit Scientific Reserve. To assist with this decision, the following information is of relevance:

- The explanation that by using the segregated air space for reasons of safety is understandable, as the exclusion of aircraft from this area will allow UAV's to be flown safely. However, the segregated air space is a 125km^2 area, covering a large area that is not public conservation land as shown on Map 3 below supplied by Wildlands, therefore the activity could potentially be based on non-public conservation land. Also, the applicant could make an application to CAA for similar airspace classification elsewhere that covers non-public conservation land.



Map 3. Segregated airspace on Kaitorete Spit administered by the University.

- The applicant states that it is beneficial to the environment to use the existing buildings and infrastructure, saving the disruption to the environment caused by dismantling and removing the existing buildings. It is however noted that the proposed activity includes the installation of additional infrastructure and therefore arguably significantly more disruption to the environment. In addition, it is the Department that would set out the methods of removing the existing infrastructure along with methods to mitigate the impacts of removal (which may involve leaving infrastructure in place if that were appropriate).

- The applicant states that the proposed concession area and its surrounds make the site ideal for developing UAV sensors for biodiversity and conservation applications. However, this being the case, it could still be possible for the applicant to place the structures and landing sites on private land, and still fly over the public conservation land (subject to necessary permits).

- The relevant test set out at s17U(4) of the Conservation Act is 'can the activity reasonably be located outside of the conservation area to which the application relates'. If the decision maker forms the view that the activity could reasonably be undertaken outside of the conservation area, then the decision maker shall not approve the application. The decision maker is given options at the end of this report in regard to this.

S17U(6): Exclusive use

No lease may be granted unless exclusive possession is required for the protection of public safety or for the physical security or competent operation of the activity.

Discussion:

The applicant has stated that exclusive use of the applied for site is required for a secure and safe work area in which to carry out UAV research. It states that current Health and Safety regulations require it to be able to 'control' access to the area, particularly whilst test flights are underway. In addition, valuable equipment stored on site could not easily be replaced if damaged or stolen.

It is considered that should, given other considerations, the applied for activity be considered appropriate to be undertaken at the site, a lease type concession is appropriate for this activity. Security of the applicant's infrastructure and equipment and public safety in the wider area would be managed, as well as allowing the applicant to adhere to special conditions relating to restrictive site access.

S17U(3): Purpose for which the land is held

A concession shall not be granted if the proposed activity is contrary to the purpose for which the land is held.

Criteria for decision:

- Is the activity not contrary to the purpose for which the land is held?

  Could be considered to either be contrary or not contrary, see discussion below.

Discussion:

Scientific Reserves are held under the Reserves Act 1977 "for the purpose of protecting and preserving in perpetuity for scientific study, research, education, and the benefit of the country, ecological associations, plant or animal communities, types of soil, geomorphological phenomena, and like matters of special interest", as is outlined in Section 21(1) of the Act.

The above text of Section 21(1) lists various natural values that may be present within a scientific reserve. The preserving of these onsite natural values in perpetuity for scientific study, research and education is central to the purpose of the reserve. As the relevant reserve *Gazette* notice does not specify the particular natural values the reserve is being held to protect, it must be assumed that all natural values within the reserve have scientific value.

Although the parcel of land, Rural Section 40766, has not been classified under s16(1), section 16(6) applies. That section provides that Reserves which have not yet been classified as a specific type of reserve are to be controlled and managed for the purpose of their existing reservation, pending classification. It is clear from the original gazette notice that the land was set aside as a scientific reserve, and the notice refers to it being set apart for scientific purposes. Since the land has not been classified for any other purpose, the conclusion drawn is that it continues to be held for the original scientific purposes for which it was reserved.

On the basis that the land is managed in a way that protects and preserves the natural features, it is only acceptable to authorise activities on the reserve if doing so is consistent with protecting and preserving the reserve's natural features in perpetuity. It therefore must be considered whether the effects of the applied for activity are inconsistent with the protection and preservation of the reserve's natural features. If the effects are inconsistent with the preservation

and protection of the natural features present, the activity is likely to be contrary to the purpose of the reserve. However, if the activity will not result in adverse effects on the natural values present, the concession activity is unlikely to be inconsistent with the purpose for which the land is held.

The applicant has explained that there are various proposed categories of UAV research to include: biodiversity and pest control and monitoring, marine ecology, rural fire monitoring, personal air transport, structure inspections, and autonomous flight technology for civilian use. It could be considered that the first three categories of research are consistent with the purpose for which the land is held, however the latter three categories do not appear to have a direct link with the natural values of the reserve. On that basis, the Decision Maker is given options to consider around whether part of the activity is consistent with the purpose for which the land is held and part of the activity is not.

S17W: Relationship between concessions and conservation management strategies and plans

A concession shall not be granted unless the proposed activity is consistent with any established conservation management strategy, conservation management plan, and/or national park management plan.

Criteria for decision:

- Is the activity consistent with all relevant statutory planning documents?

  Could be considered to be consistent or partially inconsistent, see discussion below.

Discussion:

Conservation General Policy 2005

Policy 12(a) is relevant to this application, outlining that research and monitoring on public conservation lands and waters should be allowed where it:

- Informs conservation management or contributes to interpretation and education, or improves knowledge of natural processes;
- Its effects are consistent with the statutory purposes for which the place is held;
- Has no significant adverse effect on the enjoyment of the public; and
- Does not pose unacceptable risks to natural, historical and cultural heritage.

The proposed activity consists of research into development of UAV technologies, some of which would have conservation management applications. Such UAV technologies could inform conservation management through applications such as aerially monitoring trap networks, spraying weeds, surveying vegetation and bird nest distribution, along with other conservation applications.

Other technologies proposed for development at the site do not directly inform conservation management, such as use of the large prototype UAV for the development of autonomous flight technologies for civilian use. Such types of research could be considered to be inconsistent with Policy 12(a) of the Conservation General Policy. The decision maker will be presented with an option at the end of this report as to whether or not they consider that the parts of the proposed research activities that develop technologies other than those used to inform conservation management are inconsistent with the Conservation General Policy. If only research and development of UAV technologies that inform conservation management is approved, then the following special condition is recommended for approval:

- *The Concessionaire shall only undertake the Concession Activity for the purpose of research and development of UAV technologies that inform conservation management. If there is disagreement between the Concessionaire and Grantor as to whether or not research and development of a particular UAV technology informs conservation management, the Grantor's opinion shall prevail.*

The limiting of UAV research and development to conservation management related purposes would be a key component of any concession approval under the Conservation General Policy. As such, the following special condition is recommended so as to ensure that should the concession ever be assigned to a different holder, research for the purpose of informing conservation management remains the focus of the new holder's activity.

- *If the Concessionaire seeks to assign or transfer this concession, the Grantor may consider whether, or the extent to which, the research by the proposed new concessionaire will continue to inform conservation management. To assist the Grantor in making that assessment, the Concessionaire and the proposed new holder of the concession may be requested to provide details as to how the concession activity will continue to inform conservation management.*

The effects of the activity are in part consistent with the purpose for which the land is held, and could be considered to be in part inconsistent. This has been fully discussed under the analysis of s17U(3), and options set out for the decision maker at the end of this report.

The proposed activity is considered not to have any significant effects on the enjoyment of the public. The proposed structures and UAV landings would take place within the proposed concession area for which the applicant is applying for exclusive occupation (lease). Accordingly, the public would be excluded from the area where the proposed activities would take place.

Kaitorete Spit Scientific Reserve does not attract many visitors in general, however there may be recreational visits from the public to the wider area of Kaitorete Spit. The use of the airspace by UAV's could have an impact on the enjoyment of the public, however this aspect of the activity is not covered under this assessment. Use of airspace would be addressed during the RMA process and by CAA Aviation rules.

The policy relating to unacceptable risks to natural, historical and cultural heritage is covered throughout the body of this report under the assessment of effects.

Canterbury (Waitaha) Conservation Management Strategy 2016

Section 2.9 Coastal Land and Marine/Ki Tai Place

The Canterbury (Waitaha) Conservation Management Strategy (CMS) describes Kaitorete Spit as an outstanding natural feature and landscape, containing some of the most threatened environments in Canterbury, including remnants of coastal and lowland indigenous habitats and species. It goes on to describe aircraft access as being mainly for management purposes and states that illegal off-road vehicle use is damaging ecological and historic values within coastal dunes on Kaitorete Spit.

Outcomes:

Relevant Outcome statements within the CMS for Coastal Land and Marine/Ki Tai Place, within which Kaitorete Spit falls, are as follows:

Priority ecosystem units are recovering or are in a healthy functioning state, as a result of integrated programmes that include intensive plant and animal pest management. Further extinctions of threatened species have not occurred and populations are improving where intensive management is occurring either on or off public conservation lands and waters...

All public conservation lands and waters within the Coastal Land and Marine/Ki Tai Place are being protected, restored and often managed in conjunction with adjoining lands as the last remnants of the indigenous lowland coastal ecosystems of Canterbury...

Māori archaeological sites, in particular those on public conservation lands on Kaitorete Spit, are monitored and managed in conjunction with Ngāi Tahu, including site investigations in response to coastal erosion.

Public conservation lands in their entirety on and adjoining the Kaitorete Spit dunes have their landscape, indigenous biodiversity and historic values recognised by scientific reserve status.

With councils, Ngāi Tahu and other landowners, the whole Spit is managed in conjunction with Te Waihora as an Outstanding Natural Feature and Landscape.

University of Canterbury operates an atmospheric research station on public conservation land while minimising adverse effects on indigenous biodiversity and historic values.

Any vehicle use avoids wildlife disturbance, vulnerable ecosystems, historic sites and visitor conflict.

Comment
The activity applied for can be considered to support the recovery of the priority ecosystems in so far that some of the main purposes of the research are weed monitoring and control, plus the monitoring and control of mammalian species within the Reserve, and wider areas of Kaitorete Spit.

The location selected is already modified and the indigenous biodiversity and historic values would not be significantly impacted upon, where those impacts are known and conditions adhered to. Vehicle use is limited to existing vehicle tracks. The proposed activity does not directly impact on any of the other outcome statements.

Policies:
Relevant Policies for Coastal Land and Marine/Ki Tai Place, within which Kaitorete Spit falls, are as follows:

2.9.20 Should allow aircraft access within the public conservation lands only in accordance with Map 4 and Policies 3.6.1–3.6.9.

Of Policies 3.6.1–3.6.9, only Policies 3.6.1 and 3.6.2 are relevant to this application. See discussion around these in the *aircraft landing* section further below.

2.9.21 May allow a concession to University of Canterbury for the operation of an atmospheric research station on part of scientific reserve (conservation unit 2796176), with measures to protect the reserve's indigenous biodiversity and historic values."

This policy relates to the previous activity that was conducted by University of Canterbury's physics department at the applied for site. The applied for activity proposes a new use for the site, so while it is acknowledged that the applicant has previously used the site, this policy is not relevant to the new application.

Priority ecosystem

Map 5.9.2 identifies Kaitorete Spit Scientific Reserve as part of the Kaitorete Spit priority ecosystem unit (as outlined in Appendix 4 of the CMS). Reserves on Kaitorete Spit are also identified as being significant landforms, as per the significant geological features, landforms and landscapes in Canterbury (Waitaha) table (Appendix 9).

There are a number of relevant objectives for priority ecosystem units within Section 1.5.1 that outlines objectives for natural heritage within Canterbury (Waitaha) up until 2026.

> *1.5.1.1 The diversity of New Zealand's natural heritage is maintained and restored with priority given to:*
>
> *a) conserving a full range of New Zealand's ecosystems to a healthy functioning state, with an emphasis on the priority ecosystem units in Appendix 4.*
>
> *e) conserving significant geological features, landforms and landscapes, including those listed in Appendix 9, where they are on public conservation lands and waters.*

> *1.5.1.4 Advocate for the protection of priority natural heritage, such as: priority ecosystem units and threatened species; and significant geological features, landforms and landscapes at risk of permanent degradation selected from Appendix 9.*

Standard and special conditions are proposed that seek to manage potential adverse effects. Where potential adverse effects on birdlife as a result of the proposed UAV activity are unknown, it could be considered that the activity may potentially be detracting from the maintenance and restoration of natural heritage, and therefore inconsistent with Objective 1.5.1.1. Where there is an identified unknown effect of UAV activities, such as on bird life, an option has been presented to the decision maker as to whether they consider this a risk.

> *1.5.1.7 Contain or control pest plants and animals and wild animals, including those identified in Appendix 6, in priority ecosystem units through a targeted strategic and sustainable multi-threat management approach.*

As previously discussed, the applicant has proposed to facilitate the undertaking of pest plant and animal control throughout the applied for area. Suitable contractors would be engaged to undertake the ongoing pest plant and animal control; special conditions are recommended, which would ensure adherence with Objective 1.5.1.7.

Buildings and infrastructure (new and occupation of existing)

Policy 3.10.1 is applicable to the new infrastructure that the applicant proposes to install onsite, as well as the occupancy of the existing buildings.

> *3.10.1 Should apply the following criteria when considering applications to erect or retain structures or utilities, or for the adaptive reuse of existing structures on public conservation lands and waters:*
>
> *a) the purposes for which the lands and waters concerned are held;*
>
> *b) the outcomes and policies for the Place where the activity is proposed to occur;*

c) whether the structure could reasonably be located outside public conservation lands and waters;
d) whether the structure could reasonably be located in another location where fewer adverse effects would result from the activity;
e) whether the structure adversely affects conservation, including recreational, values;
f) whether the structure is readily available for public use;
g) whether the structure is consistent with the visitor management zone on Map 3 and as described in Appendix 12;
h) whether the activity promotes or enhances the retention of a historic structure;
i) whether the activity is an adaptive reuse of an existing structure:
j) whether the policies for private accommodation and related facilities should be applied (see Policies 3.11.1–3.11.7); and
k) whether any proposed road in a national park is provided for in the relevant national park management plan.

Point (a) within Policy 3.10.1 has been covered by the discussion around s17U(3) of the Conservation Act, the purpose for which the land is held, which is to preserve the onsite natural values in perpetuity for scientific study, research and education. The Outcomes and Policies of the Place stated in (b) have previously been discussed in connection with s17W of the Conservation Act. Whether the structure could be reasonably be located outside public conservation lands (d) has been discussed in reference to s17U(3) of the Conservation Act. Points a to d could be considered in part, to be inconsistent with the CMS, for the reasons previously set out within the body of this report. Options have been set out for the Decision Maker to consider, where appropriate.

In terms of (e), any potential adverse effects have been discussed in detail under s17U(1) and (2) within this report, and conditions have been applied to adequately avoid, mitigate, or remedy the effects of construction and structures. The structures will not be available for public use as exclusive use via a lease is sought (f), which is appropriate in the circumstances. Constructing structures to support the activity in a rural visitor management zone is not inconsistent with (g). Point (h) is irrelevant to this application. One of the reasons this location has been selected is that the land has been already modified in part, however most of the structures are new, so does not fully meet criteria (i). Points (j) and (k) are not relevant to this application.

<u>Aircraft landings</u>
The applicant is applying for aircraft landings as part of the application. These landings would be UAV landings associated with the research and test flights that are proposed to occur onsite.

The following Policy relates to aircraft use within Coastal Land and Marine/Ki Tai Place:

> *2.9.20 Should allow aircraft access within the public conservation lands only in accordance with Map 4 and Policies 3.6.1–3.6.9.*

The policies allow for aircraft access "only" in accordance with Policies 3.6.1-3.6.9, however only policies 3.6.1 and 3.6.2 are relevant to this application. Map 4 indicates that Kaitorete Spit Scientific Reserve is a 'red' aircraft zone. The CMS describes the red zone as areas where a concession application to land an aircraft would most likely be declined, however concessions may be granted in certain circumstances, as outlined in Policy 3.6.2 further below. Policy 3.6.1 outlines the criteria that should be applied when assessing concession applications for all aircraft landings.

3.6.1 Should apply (but not be limited to) the following criteria when assessing concession applications for all aircraft landings:

a) is consistent with the outcome and policies for the Place in which the activity is proposed to occur, and Table 13;
b) is consistent with the aircraft zoning provisions in this CMS and the aircraft access zones on Map 4;
c) is consistent with the purposes for which the lands and waters are held;
d) adverse effects on conservation values, including adverse effects on natural quiet, are avoided, remedied or mitigated;
e) adverse effects on other visitors (taking into account the size of the zone and the proximity of other ground users) are avoided, remedied or mitigated;
f) the need for monitoring the activity using global positioning systems and newer technologies;
g) landings near tracks, huts and car parks (unless otherwise specified in an outcome or policy for a Place) are avoided; and
h) the need to hold or comply with certification in a noise management scheme approved by the Department, in specified locations.

Point a. within Policy 3.6.1 refers to Part 2 of the CMS, with the only relevant policy being 2.9.20, which refers back to aircraft access being only in accordance with 3.6.1. An outcome statement for the Coastal Land and Marine/Ki Tai Place states that:

Visitor encounters with aircraft are rare.

"Rare" in the CMS, for aircraft activity, is defined in Table 13 in terms of the average percentage of time that visitors are likely to encounter aircraft as "1% or less". The CMS Table 13 approach is not fixed to daily, weekly or monthly timeframes, but is a spectrum of the relative extent of aircraft encounters from "Rare" to "Frequent". The applicant has applied for up to 20 landings per day, with a maximum of 800 per year. While there are no fixed figures as to what constitutes "Rare", the applied for number of landings would logically exceed "Rare" if we follow the framework in other categories of fly zones.

To give some guidance on intended aircraft frequencies for the Red Zone, Yellow Zone (a zone that may apply where there is a need to restrict aircraft use; either where visitors expect a low level of encounters with aircraft or where values of natural quiet predominate) landing limits provide some context. Policy 3.6.3 outlines that Yellow Zone aircraft concessions should be granted with a limit of two landings per concession per day at any one site, with a maximum of 20 per year. The number of landings applied for within the Red Zone are therefore substantially more than would be allowed for per concessionaire within the Yellow Zone. Management Planner advice received on this application concludes that the applied for aircraft landings are inconsistent with Policy 3.6.1(a).

Points b. c. d. and e. of Policy 3.6.1 are discussed and addressed in other sections of this report. No monitoring of landings would be initially be required, however standard conditions allow the Department to monitor if needed. No tracks, huts or carparks exist in the vicinity of the proposed landing sites (3.6.1.g). Noise is assessed in the effects section of this report, with discussion around the cumulative effect of noise from the number of landings applied for. The standard special condition relating to noise management and abatement would be included.

Policy 3.6.2 outlines that concessions should not be granted for aircraft landings in the Red Zone, except in specific circumstances:

3.6.2 Should not grant concessions for aircraft landings in the Red Zone except:

a) for the construction, operation and/or maintenance of equipment (e.g. meteorological, seismic) or utilities (e.g. communication systems, transmission lines) authorised by the Department; or

b) to support research or collection authorised by the Department.

Policy 3.6.2 of the CMS needs to be read in conjunction with Policy 12 (a) of the Conservation General Policy, which sets out that:

Research and monitoring on public conservation lands and waters should be allowed where it:

- *Informs conservation management or contributes to interpretation and education, or improves knowledge of natural processes;*
- *Its effects are consistent with the statutory purposes for which the land is held;*
- *Has no significant adverse effects on the enjoyment of the public; and*
- *Does not pose unacceptable risks to natural, historical, and cultural heritage.*

The Decision Maker is asked to consider whether the type of research proposed to be carried out as part of the activity applied for would satisfy the tests set out in Policy 12(a) of the Conservation General Policy above. If it is determined that the research proposed to be undertaken at the Scientific Reserve would otherwise be consistent with the Conservation General Policy, then the activity could be considered to be consistent with Policy 3.6.2(b) of the CMS.

As discussed earlier in this report, the proposed research falls under various categories, which can broadly be classed as either informing or not directly informing conservation management.

Informing conservation management:

- Biodiversity and pest control and monitoring
- Marine ecology
- Rural fire monitoring

Not directly informing conservation management:

- Personal air transport
- Structure inspections
- Autonomous flight technology for civilian use

N.B. As a result of the decision maker's Decision in Principle, structure inspections, and potentially personal air transport, are in fact considered by the decision maker to be informing of conservation management. See the 'Post Decision in Principle Comments' section of this report for further discussion on this.

Granting under this Policy 3.6.2 is not withstanding consistency with Policy 3.6.1 further above, against which all aircraft landing applications should be assessed. Therefore, visitor interaction rates as per Table 13, zoning provisions, and other considerations outlined within the policy apply. As discussed above, it could be considered that the activity applied for is inconsistent with Policy 3.6.1(a) and (b), and potentially (d) in so far as the effects of the large UAV's are not known.

While a "should" policy, as 3.6.1(a) is, does not fetter the Minister's discretion (a decision inconsistent with this can be made), the Minister is only to exercise this ability where there is evidence of a special case or exceptional circumstances.

Exceptional circumstances

Sections 17T(2) and 17W(1) of the Conservation Act require the granting of a concession to be consistent with statutory planning documents. However, the Minister must always keep an open mind when making decisions; his or her discretion cannot be fettered by prohibitions within those statutory documents. Where policies in statutory documents are phrased as 'should', the Minister can only make a decision that is inconsistent with such a policy where there are 'exceptional circumstances'. If the Decision Maker is satisfied that exceptional circumstances exist then the activity is considered to be consistent with the planning document. 'Exceptional circumstances' has been defined by the Supreme Court as 'well outside of the normal range of circumstances', that is, truly an exception rather than the rule, although they do not have to be unique.

If, in this case, exceptional circumstances do not exist, then part of the propose activity is considered to be inconsistent with Policies 2.9.20, 3.1.6(a) and (b) of the Canterbury CMS, and a decline of the inconsistent parts of the proposed activity is expected.

If exceptional circumstances are found to exist, and therefore consistency with Policies 2.9.20, 3.1.6(a) and (b), the decision maker may still wish to consider restricting the number of landings approved. The decision maker may consider that whilst landings should be granted, a lower frequency of landings should be applied. Options are given to the decision maker to, if approving landings in general, restrict the number of landings to either 2 per day and 20 per year in accordance with yellow zone daily landing limits for concessionaires or 2 per day and 732 per year (the yellow zone daily landing limit with no yearly restriction).

Additional authorisation outside of this concession

As an aside note, the Civil Aviation Authority Advisory notes, around the Part 101 Rules, set out that operators intending to fly a small UAV (less than 25kg) must avoid operating over persons who have not given consent and over property where the landowner has not given consent. There are some exemptions for this test, but it is not known whether the applicant meets those. These are considerations that the applicant will need to address, but which are outside of the scope of this concession assessment.

The flying of UAV's over public conservation land does not require a concession but does require authorisation. Whilst this concession application is addressing the activity of aircraft landings on the proposed lease area, there is a requirement for the applicant to obtain the authority of the Department to fly over conservation land that is outside of the lease area being applied for. A condition will be added:

- *The Concessionaire shall ensure that it obtains any consent, permission or approvals required under the Civil Aviation Rules including, but not limited to, Part 101.207(a)(1) and must comply with Civil Aviation law requirements applying to the Concession Activity.*

Additionally, the applicant will need to apply to the Department for a permit under the Marine Mammals Protection Act 1978 if they intend to fly the UAV's in any location where marine mammals could be present and they are:

- Flying below 150m above sea level, unless taking off or landing.
- When operating at less than 600m above sea level where the UAV may come closer than 150m horizontally from a point directly above a marine mammal.

A condition will be added:

- *The Concessionaire must apply for a permit under the Marine Mammals Protection Act should they anticipate that they will fly closer to a marine mammal than the distances set out in Regulation 18(h) of the Marine Mammals Protection Regulations.*

It is acknowledged that the applicant currently holds a one-off aircraft landing permit to undertake landings of small UAVs (multirotor up to 1m x 1m and fixed wing up to 2m in wingspan). The permit expires on 31 December 2017. As this one-off permit was intended to allow the applicant to operate while this long-term concession application was being processed, the following special condition is recommended that would require the applicant to surrender their one-off permit.

- *The Concessionaire may not hold this Concession and one-off aircraft landing permit 57785-AIR simultaneously, so must surrender concession 57785-AIR.*

Proposed Operating Conditions

Conditions

Description of proposed activity

Unmanned autonomous vehicle (UAV) landings, the removal of existing infrastructure, installation of new infrastructure, plus the ownership, occupation, maintenance and repair of new and existing infrastructure, for the purpose of undertaking UAV research and development.

Standard conditions applicable to the proposed activity:

All standard special conditions within Schedule 2 of the concession contract would apply.

Special conditions relevant to the proposed activity (if the application if approved in principle, there may be some change to the conditions below as a result of first determination decision making):

Landing pad and pathway

- *A shed and ramp frontage may be constructed at the location specified on Map 1, with the shed having a footprint no larger than 15 metres x 16 metres and the ramp no larger than 15 metres x 15 metres.*
- *A 15 x 15 metre landing pad made of Euromat or similar material may be installed at the location specified on Map 1.*
- *A pathway, made of GrassProtecta or similar material and not exceeding more than 3 metres in width, may be placed between the landing pad and storage shed subject to Schedule 3 Clause* (*condition below referring to placement of the pathway in consultation with DOC*)
- *The Concessionaire shall arrange for the placement of the pathway to be undertaken with consultation from a DOC staff member who shall be onsite during placement of the pathway.*

Power cable and transformer pole

- *A new underground power cable may be laid from the buildings to the transformer pole alongside the access track in the location shown on Map 1.*
- *A transformer unit may be installed on a 2 metre x 2.5 metre concrete pad, adjacent to the east side of the shed.*
- *The trench to install the cable may be a maximum of 500mm wide with removal and disturbance of native shrubs avoided during installation.*
- *All disturbed gravel / soil is to be back filled and compacted down.*
- *Only a small digger machine may be used for the work to minimise disturbance to the site.*
- *The Concessionaire must take photos of the completed cable installation and send to the DOC Mahaanui District Office* rabrown@doc.govt.nz.
- *The underground power cable shall be installed within a conduit tube so that changes to the power supply in the future can be carried out without needing to dig up and relay the cable.*

General construction/installation

- *The Concessionaire shall limit the amount of shingle brought onto the site to only that which is required and limit shingle onsite storage time as much as practical.*

- *The Concessionaire will consult with the DOC Mahaanui District Office to finalise the orientation, dimensions, materials and colour to be used in new construction or installation works.*

- *Contractors working on-site should be monitored closely to ensure that they are not causing unnecessary disturbance to indigenous vegetation.*

- *The Concessionaire shall submit copies of all necessary building and resource consents to the DOC Mahaanui District Office rabrown@doc.govt.nz prior to construction commencing.*

- *Once all new structures are in place, a final layout plan with GPS placement points is to be sent to the DOC Mahaanui District Office rabrown@doc.govt.nz and permissionschrischurch@doc.govt.nz citing the concession number.*

- *During construction, a safety fence comprising of waratah fence standards with heavy duty orange plastic between, orange cones, danger tape and blaze paint may be used.*

- *Any external alterations or changes to any of the buildings or structures during the term of the concession must have prior written approval from the Grantor. These changes may be subject to the formal variation process.*

- *During building or placement of new infrastructure or installation works including underground cables, if any indigenous vegetation is destroyed then the equivalent number of same species should be planted. These should be sourced from the DOC Motukarakara Nursery unless otherwise approved by the Grantor. Planting shall occur in consultation with the Mahaanui District Office.*

- *During the construction/installation phase, an appropriately qualified environmental monitor, as agreed with Mahaanui District Office, must be used to ensure minimal environmental damage occurs and that all conditions of this Concession relating to environmental matters are met. A summary report of the environmental monitoring, including confirmation of required revegetation planting, shall be sent to rabrown@doc.govt.nz on completion of the construction/installation phase.*

Removal of old infrastructure

- *The Concessionaire will remove the obsolete buildings by 31 December 2017, specifically the converted shipping container, fenced storage area and white shed.*

Use of vehicles

- *Any vehicles brought onto the Concession Area are only permitted on the access way or the designated parking area as shown on Map 1, except as outlined in Schedule 3 Clause* (*refer to condition that refers to usage of golf cart for towing large UAV*)

- *The Concessionaire shall limit the number of vehicles brought onto the site as much as practical.*

- *The Concessionaire shall ensure that where vehicles are required to be in the Concession Area, they are as small and as light as practical.*

- *The Concessionaire may use a golf cart to tow a UAV along the laid pathway between the storage shed and UAV landing pad. The golf cart may only be driven on the pathway and landing pad or on the assess road/vehicle parking area.*

Day to day use of site

- *The Concessionaire must erect physical or visual barriers (e.g. waratahs and danger tape and/or road cones) to clearly delineate boundaries of the Operational Area to make clear to site users where the modified area boundary is.*

- *The Concessionaire shall ensure that use of the Concession Area outside of the Operational Area is limited as much as possible.*

- *If site users do have to leave the Operational Area then they must do so by foot, keeping to existing tracks were possible.*

- *No new tracks may be established outside of the Operational Area.*

- *The Concessionaire shall implement an induction process which all personnel who enter the Concession Area for the first time shall undergo to ensure they are aware of the ecological significance of the site and are able to abide by the Fire Avoidance and Management Plan and the conditions of this Concession. The induction process will be kept updated and fit for purpose at all times.*

UAV landings

- *For the purposes of this Concession, a 'Landing' is defined as one take-off or one landing of a UAV. A return flight involves two 'Landings'. Hovering near ground level (within ground effect) is also considered a 'Landing'.*

- *This Concession allows a maximum of 20 UAV Landings (equivalent to 10 return flights) per day and a maximum total of 800 Landings per year.*

- *Of the Landings permitted in Schedule 3 Clause* (*refer to condition above that outlines numbers of permitted landings), *a maximum of 6 Landings per day and 24 Landings per week may be undertaken by large multirotor UAVs (greater than 1 x 1 metre and up to 10 metres x 6 metres).*

- *Landing of small multirotor UAVs (up to 1 x 1 metre) may only occur within the Operational Area or on the landing pad.*

- *Landing of large multirotor UAVs (greater than 1 x 1 metre and up to 10 metres x 6 metres) may only occur on the landing pad.*

- *Only the vehicle access way may be used for the landing of fixed wing UAVs (with wingspans of up to 3 metres).*

- *UAV Landings may not occur during hours of darkness, on weekends or on public holidays.*

Noise abatement

- *During the term of the concession, where Grantor believes that the effects of aircraft noise should be further reduced, the Grantor may, by notice, require the concessionaire to either undertake measures to minimise the effects of noise on conservation values or*

become accredited to a recognised noise abatement and disputes resolution programme. If such notice is given by the Grantor, the concessionaire must:

- *if required to undertake measures to minimise the effects of noise on conservation values within 3 months from receiving the notice undertake those measures to the satisfaction of the Grantor until the Final Expiry Date.*

- *if required to become accredited to a recognised noise abatement and disputes resolution programme within 3 months from receiving the notice provide proof to the Grantor that such accreditation has been completed and must keep their participation in that programme or training current until the Final Expiry Date.*

The Grantor may, at any time, issue a subsequent notice(s) requiring the Concessionaire to implement the other option.

Wildlife

- *If construction works are to occur between the months of August and December, the Concessionaire shall engage a suitably qualified person to conduct a bird survey within 2 weeks of any construction or installation works occurring in the Concession Area. Survey results are to be sent to DOC Mahaanui District Office rabrown@doc.govt.nz. Should any nesting sites be recorded then operations are to be altered accordingly, as directed by the Mahaanui Operations Manager, to avoid any nesting sites.*

- *The Concessionaire shall prepare and comply with an Avifauna Management and Monitoring Plan (AMMP) which includes UAV operational guidelines. The AMMP shall:*
  - *Be prepared by a UAV expert in collaboration with a suitably qualified ecologist and DOC Mahaanui District staff.*
  - *Include clear UAV operational guidelines to ensure that UAV's do not adversely affect birds within the Concession Area.*
  - *Describe how to monitor bird behavioural responses to UAV's, particularly for Threatened and At Risk species.*
  - *Provide a system for reporting bird strikes or near misses to DOC Mahaanui District so that they can be reviewed and, if need be, guidelines and operations changed as a result.*
  - *Be submitted for DOC approval 10 days prior to the commencement of the Concession Activity by sending to DOC Mahaanui District Office rabrown@doc.govt.nz*
  - *Be regularly updated to include up-to-date information on effects of UAVs on birds (particularly in regard to larger UAVs)*

- *If any changes are made to the AMMP, the Concessionaire shall notify DOC Mahaanui District Office rabrown@doc.govt.nz so that the AMMP can be reviewed.*

- *The Department may require the Concessionaire to cease some or part of the activity as a result of the reporting and monitoring of potential effects on birds, until measures are taken to appropriately mitigate those effects. The Department will not be liable for any associated costs as a result of a reduction in activity.*

- *The Concessionaire shall immediately cease the operation of the UAVs if there is any indication of wildlife disturbance.*

- *The Concessionaire must adhere to all conditions contained within the Wildlife Act Permit (55396-FAU), and must not commence earthworks until the relevant pre-works conditions contained within have been complied with.*

- *The Concessionaire will require a Wildlife Permit for the construction phase of this Concession. The Wildlife Permit must be in place prior to the Concessionaire entering the construction phase.*

Dogs

- *The Concessionaire shall ensure that no dogs are brought onto the Concession Area.*

Cultural heritage

- *Prior to any activities taking place, the Concessionaire is to provide evidence to the Mahaanui Operations Manager of a Mana Whenua endorsed Accidental Discovery Protocol (ADP) which is to be followed in the event that archaeological sites or other features with heritage values are found during any approved earth disturbance work on the Land. The ADP shall be emailed to rabrown@doc.govt.nz prior to any activity commencing.*

- *The Concessionaire shall arrange to have onsite cultural monitoring of all earthworks occurring on the Land by a mandated Wairewa Rūnanga and Te Taumutu Rūnanga cultural monitor.*

- *Should any Koiwi (human bones) or artefacts (taonga) be found, the Concessionaire must cease activity immediately and the Accidental Discovery Protocol should be followed.*

- *The Concessionaire is requested to consult the relevant Papatipu Runanga if they wish to use Ngāi Tahu cultural information. If the Concessionaire wishes to use the Tōpuni or statutory acknowledgement information contained in schedules 14-108 of the Ngāi Tahu Claims Settlement Act 1998, or any Department produced interpretative material in respect to Ngāi Tahu cultural information, they are requested to notify the relevant Papatipu Rūnanga, as a matter of courtesy.*

- *The Concessionaire must, as far as practicable, attend any workshops held by the Department for the purpose of providing information to concessionaires, which is to include the Ngāi Tahu values associated with Tōpuni areas.*

- *The Concessionaire must ensure any persons employed by the Concessionaire are requested to recognise and provide for Ngāi Tahu values in the conduct of their activities.*

Colour of buildings

- *The Concessionaire will ensure the colour of the infrastructure onsite is of minimal contrast to the local environment and is of low reflectivity.*

- *When the roof of the main receiver building is repainted or replaced, it shall be coloured neutrally to fit in with the surroundings. The colour used is to be to be agreed in consultation with Mahaanui District Office.*

Fire

- *Prior to the Concession Activity taking place, the Concessionaire is to prepare and have approved by the DOC Mahaanui District Operations Manager an onsite Fire Avoidance and Management Plan (FAMP) associated with the approved activities on the site. The approved plan must be sent to rabrown@doc.govt.nz prior to any activity taking place.*

- *The FAMP shall include but not be limited to the following requirements:*
    - *Call 111 in the event of a fire.*
    - *Electrical fire extinguishers are to be stored on site.*
    - *Shovels are to be stored on site.*
    - *The Concessionaire is to track all drones and if one crashes attend the site and if on fire put into place appropriate procedures (as per the FAMP) immediately.*
    - *All personnel entering the Concession Area are to have read the FAMP and know what to do in the event of a fire.*
    - *The Concessionaire is to engineer drones to minimise fire risk.*
    - *All Lipo batteries in any UAV flown from the Concession Area are to have fire retardant covers or boxes for their batteries.*
    - *Fixed wing UAV launches are to be avoided during hot windy days in summer when fire risk is extremely high.*

- *The Concessionaire shall conduct all activities on site in accordance with the FAMP and notify DOC Mahaanui District Office of any changes made to the FAMP so that the FAMP can be reviewed.*

- *Fire liability insurance must be held by the Concessionaire.*

- *The lighting of fires or smoking is not permitted anywhere in the Concession Area.*

- *The Concessionaire shall ensure that fire extinguishers in good working order are onsite at all times, and that site users are trained in the use of a fire extinguisher.*

- *The Concessionaire is not authorised to operate the UAVs in areas that have a Fire Risk of High or above as published on the National Rural Fire Authority website http://fireweather.nrfa.org.nz*

Weeds

- *The Concessionaire must as far as practical ensure that all vehicles, gravel and other materials being brought into the Concession Area are free from weed propagules. Gravel should be locally sourced.*

- *The Concessionaire must contact the DOC Mahaanui District Weed Ranger as well as the DOC approved Weed Contractor before any new gravel is brought onto the site. The Weed Contractor can monitor any weeds introduced by the gravel and deal to them appropriately. It is not expected that the Weed Contractor would deal with any Californian thistle or Horehound as these already exist within the site.*

- *The Concessionaire must, during the term of the Concession pay for and manage Contracted Weed Control by a DOC approved contractor within the Concession Area for sweet briar and karo plants.*

- *The Concessionaire shall ensure that the approved contractor:*
    - *Develops an annual weed control and management plan (including maps) in consultation with the Mahaanui District Office Weed Ranger*
    - *Uses the Cut and Paint Kill method*
    - *Is alerted if any new gravel is brought onto site so that it can be monitored for weed development*

Pest control

- *The Concessionaire is to pay for and manage contracted pest management control by a DOC approved contractor using the existing trap lines within the Concession Area, as well as new trap lines proposed by the Concessionaire outside the lease area, as identified on Map 2.*

- *The Concessionaire will ensure that the approved contractor checks the traps monthly and during the months of spring 3 times per week.*

- *The "Walk the Line" approach should be used to check the traps.*

- *The Concessionaire will ensure that the Contractor uses the "Walk the Line" trap Phone App when checking the traps.*

Fences

- *The Concessionaire is responsible for ensuring that gates and fences around the Concession Area are maintained to a stock proof standard and that all gates have appropriate locks on them. The Concessionaire must liaise with the neighboring farmers if any stock issues arise.*

Cost recovery

- *The Grantor may recover from the Concessionaire on a cost-recovery basis for the reasonable costs of and associated with any site visits as required by this Concession or to confirm the Concessionaire's compliance with the Concession Conditions. The rates will be charged at the Department's standard charge-out rates for staff time and the mileage rates for vehicle use.*

Purpose of research

- *The Concessionaire shall only undertake the Concession Activity for the purpose of research and development of UAV technologies that inform conservation management. If there is disagreement between the Concessionaire and Grantor as to whether or not research and development of a particular UAV technology informs conservation management, the Grantor's opinion shall prevail.*

Assignment of concession

- *If the Concessionaire seeks to assign or transfer this concession, the Grantor may consider whether, or the extent to which, the research by the proposed new concessionaire will continue to inform conservation management. To assist the Grantor in making that assessment, the Concessionaire and the proposed new holder of the concession may be requested to provide details as to how the concession activity will continue to inform conservation management.*

Activity reporting

- *The Concessionaire must keep the Department informed of what UAV technologies and methods are being developed onsite, including an explanation of how they inform conservation management, and must consult with and advise the Department if requested to do so, to enable the Department to apply such technologies and methods to its work as a conservation manager. The Concessionaire must, as part of compliance with this condition:*

    - *Submit an annual report, prior to the anniversary date of the commencement of this concession, to the Operations Manager, Mahaanui District Office. The annual report must state all research activities that have taken place under this*

Concession over the previous year and describe how that research can inform conservation management.

- *Hold an annual workshop for the Department's staff and contractors, at which it demonstrates how UAV technologies and methods developed under this Concession may be used in practice by the Department in its role in undertaking conservation management.*

- *The Concessionaire acknowledges that the Department may, at the Grantors discretion, share the information provided by the Concessionaire under this Clause with other parties, including the Canterbury Aoraki Conservation Board, and as required under the Official Information Act 1982.*

Other authorisations

- *The Concessionaire shall ensure that it obtains any consent, permission or approvals required under the Civil Aviation Rules including, but not limited to, Part 101.207(a)(1) and must comply with Civil Aviation law requirements applying to the Concession Activity.*

- *The Concessionaire must apply for a permit under the Marine Mammals Protection Act should they anticipate that they will fly closer to a marine mammal than the distances set out in Regulation 18(h) of the Marine Mammals Protection Regulations.*

- *The Concessionaire may not hold this Concession and one-off aircraft landing permit 57785-AIR simultaneously, so must surrender concession 57785-AIR.*

Term

10 years

Fees

Removed for public notification

Decision Making

Notified Concession under Part 3b of the Conservation Act 1987

Decision in Principle

1. Deem this application to be complete in terms of s17S of the Conservation Act 1987:

   Agree / ~~Disagree~~

2. Agree that if this application is approved in principle then the intention to grant the concession will be publicly notified:

   Agree / ~~Disagree~~

3. Having regard to s49(1) of the Conservation Act 1987, agree that any intent to grant the permission would be of local or regional interest only, in which case the publication of public notice on this matter be limited to notice in The Press newspaper:

   Agree / ~~Disagree~~

4. s 17U (1) (d) – The Decision Maker has considered the advice provided by the Conservation Board. The decision maker has regard for the advice and;

   ~~Agrees~~ / Disagrees

   Rationale:
   The comments of the Board are noted. The potential effects of the activity on the reserve are minor, the potential gains of the research are significant. There are very strong conditions proposed. A key purpose of the scientific reserve is to allow for research. This proposal represents a significant opportunity to enhance conservation management of this reserve and of many others. The Department would ensure that the applicant presents reports back to the Conservation Board on the results of the research. The concern over the location of the activity is noted, however this site represents an accessible and high natural values site where natural values can be further enhanced by this research which is highly relevant.

The following further options are set out for the decision maker. While recommendations have not been made, analysis has been provided in the body of this report. The decision maker is asked to consider each item and provide their rationale for each decision. Each test set out in the legislation falls under one of the following categories, and the decision maker must follow the direction:

The Minister may … In this situation, the decision maker has discretion to approve or decline.

The Minister shall … In this situation, the decision maker must decide based on whether the test has been met; there is no discretion allowed.

5. s 17U (2) The Minister may decline an application if there is insufficient information available to them to assess the effects of the activity. The potential effects of the large UAV's are currently unknown.

   a. The use of small UAV's (1.5m diameter multi rotor units, or small fixed wing units with a 3 metre wing span, and < 25kg)

      Decision

      Approve / ~~Decline~~

   b. The use of large UAV's (a span of up to 10 metres and approx. 1400kg)

      Decision

      Approve / ~~Decline~~

   Rationale:
   Approved subject to the special conditions, if effects of the larger UAVs are too great then the applicant will need to undertake modifications to the activity.

6. s 17U (4) – The Minister shall not grant an application for a concession to build a structure or facility, or extend or add to an existing structure or facility, where the activity could reasonably be undertaken in another location outside of the conservation area to which the application relates.

   a. Approve the application in principle on the basis that the activity could not reasonably be undertaken outside of Kaitorete Spit Scientific Reserve.

   b. Decline the application on the basis that the activity could reasonably be undertaken outside of Kaitorete Spit Scientific Reserve.

      Decision

      a. Approve / ~~b. Decline~~

      Rationale:
      The research on use and benefits of UAV and associated technologies on conservation values cannot be reasonably undertaken on land that is outside of public conservation land. To carry out that research in an efficient and effective way it is more valid to conduct the landings on that site. The landings site is in a highly modified part of the reserve and the potential effects are minor and the potential benefits are significant.

7. s 17A – The Department shall administer and manage conservation areas in accordance with the Conservation General Policy.

    a. Approve in principle a lease of the applied for area for research purposes, where the purpose of research being carried out informs conservation management as per Policy 12 (a) of the Conservation General Policy.

    Decision

    ~~Approve~~ / Decline

    b. Approve in principle a lease of the applied for area for all research for purposes, not limited to purposes that inform conservation management.

    Decision

    Approve / ~~Decline~~

    Rationale:
    The items that inform conservation management are very important areas for research and further development. Of those identified as not informing conservation management, structure inspections are a conservation management need. It is also significant that personal transport is a significant issue for management of conservation lands. The Department of Conservation is a very significant user of helicopter transport to manage conservation land. Such research may have benefit to conservation management.

8. s 17W (1) – The Minister shall not grant a concession unless the granting is consistent with relevant strategies and plans.

    a. Approve in principle aircraft landings in the applied for Red Zone area on the basis that the landings support research or collection authorised by the Department and are therefore consistent with Policy 3.6.2 (b) of the Canterbury Conservation Management Strategy.

    b. Decline aircraft landings in the applied for Red Zone area on the basis that the landings are inconsistent with Policy 3.6.2 (b) of the Canterbury Conservation Management Strategy.

    Decision

    a. Approve / ~~b. Decline~~

c. If aircraft landings are approved in principle above in 5(a), the number of landings applied for are considered to be inconsistent with Policy 2.9.20 and Policies 3.6.1(a) and (b) of the Canterbury Conservation Management Strategy. As such, exceptional circumstances should be determined to exist if the landings are to be approved in principle. Aircraft landings are:

Decision

Approved / ~~Declined~~

Rationale and (if approved in principle) description of exceptional circumstances:
Use of UAV technology in conservation management is an emerging field of technology. Aircraft landing zones in the CMS were almost exclusively set around recreational visitor use on conservation lands. This is a very low-level visitor site – in fact visits are not encouraged at all. The recent local experience of the Port Hills fires has very strongly shown the value of UAV technology. This site is uniquely suited to UAV research, the research will benefit and emergence of this evolving new technology does present an exceptional circumstance.

d. If aircraft landings are approved in principle in 5(c) above, the maximum number of landings approved is 20 per day, up to 800 a year.

Decision

Approved / ~~Declined~~

e. If aircraft landings are approved in principle in 5(c) above, the maximum number of landings approved is 2 per day, up to 732 a year.

Decision

~~Approved~~ / Declined

f. If aircraft landings are approved in principle in 5(c) above, the maximum number of landings approved is 2 per day, up to 20 a year.

Decision

~~Approved~~ / Declined

Rationale:
The research proposal requires an adequate chance to test the technologies and methodologies for the application to conservation research and management.

Signed by **Andy Roberts, Director, Operations, Eastern South Island**
Pursuant to the delegation dated 9 September 2015

22 September 2017
Date

Post Decision in Principle Comments – Permissions Advisor

1. In the rationale in Decision 4 above, the Decision Maker has outlined that the Conservation Board would be provided with the results of research undertaken. As this information would already be required to be submitted to the Department within an annual report (as per a special condition), the Department could then supply this report to the Conservation Board. As such, the following special condition has been amended to include the final sub clause whereby the applicant acknowledges that provided information may be shared with other parties, including the Conservation Board. The applicant has confirmed that they are comfortable with this amendment.

    - *The Concessionaire must keep the Department informed of what UAV technologies and methods are being developed onsite, including an explanation of how they inform conservation management, and must consult with and advise the Department if requested to do so, to enable the Department to apply such technologies and methods to its work as a conservation manager. The Concessionaire must, as part of compliance with this condition:*

        - *Submit an annual report, prior to the anniversary date of the commencement of this concession, to the Operations Manager, Mahaanui District Office. The annual report must state all research activities that have taken place under this Concession over the previous year and describe how that research can inform conservation management.*

        - *Hold an annual workshop for the Department's staff and contractors, at which it demonstrates how UAV technologies and methods developed under this Concession may be used in practice by the Department in its role in undertaking conservation management.*

        - *The Concessionaire acknowledges that the Department may, at the Grantors discretion, share the information provided by the Concessionaire under this Clause with other parties, including the Canterbury Aoraki Conservation Board, and as required under the Official Information Act 1982.*

2. It is noted that the decision maker has provided further information, in the rationale for Decision 7 above, around what types of research are considered to be informing of conservation management. The proposed special condition that limits research and development of UAV technologies to those that inform conservation management, gives the Grantor, being the Minister for Conservation, the ultimate say around whether or not research and development of a particular UAV technology informs conservation management. The decision maker, being the delegated authority for the Minister of Conservation, therefore has the discretion around what constitutes informing conservation management. As such, it is noted that structure inspections, and potentially personal air transport, are considered by the decision maker to be informing of conservation management, differing to earlier discussion within the analysis section of this report.