Brittas Bay Invasive Species Mapping 2019

Report to Wicklow County Council

Prepared by ALANLAUDERCONSULTING www.alcnature.com
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Author: Alan Lauder (Owner/Principal)

An Roinn Cultúir, Oidhreachta agus Gaeltachta
Department of Culture, Heritage and the Gaeltacht

WICKLOW
ENDLESS OPPORTUNITIES

An invasive non-native species (INNS) mapping volunteer event was held on 02 November 2019. Following effort to recruit volunteers, Seven people attended along with 2 staff from ALC and one from Wicklow County Council. Three teams were set up and the groups carried out a search of all areas to look for and record the extent and stage of Sea Buckthorn and New Zealand Flax. Some small sections at the north and close to the south car park which were not covered were subsequently surveyed by ALC staff.

The methods were simple, as follows:

- Plot, in pen, the estimated boundary edge of all stands of Sea Buckthorn (of one of the three defined age classes) on the printed aerial maps provided
- For each section assign a code relating the stage of growth of the stand as follows:

B1 – Pioneer – New shoots, twig like, springing from the ground, generally no more than roughly knee height (<0.5m), appearing as small shrub.

B2 – Building – Substantial bushy structure. Vegetation is mature enough to produce orange berries but less than 2 metres in height (or generally below head height).

B3 – Established – Extensive thickets with canopy cover over 2 metres tall (generally above head height) and possibly exceeding 3 metres.

- Plot the location and extent of New Zealand Flax stands
- Discuss and agree among the group the location, extent and classification of all INNS encountered to ensure consensus to promote accuracy

Survey Results

Survey maps are included at Figure 1 - 3. These indicate the distribution of Sea Buckthorn and New Zealand Flax found.

The main issue encountered was the presence of large stands of Sea Buckthorn. New Zealand Flax, while present, was less significant and mainly confined to domestic gardens (distribution in gardens not mapped) and areas close to domestic gardens.

The table below compares the approximate extent of Sea Buckthorn in its three main stand types across the site.

Sea Buckthorn Stand Classification	Total Area (Hectares) (all on WCC lands)
B1 pioneer	0.985
B2 building	3.93
B3 established	5.63

Management Implications

The three stand types of Sea Buckthorn have potentially different requirements if seeking to remove them and to prevent regrowth. With options including, but not limited to – cutting/coppicing and eventual removal and excavation of roots (older, established growth), herbicide injection treatment and subsequent cutting (older, established growth), cut and stump herbicide treatment (building phase), repeated cutting or hand removal (pioneer stage) prior to berry production.

The costs associated may vary significantly depending on the approach taken and also the extent of removal. All approaches require significant labour and machinery costs.

New Zealand Flax is highly restricted and it is likely that these could be removed by digging out by hand.

Recommended actions

1. Sea Buckthorn control

The general principal should be applied in 4 steps over multiple years as phase 1 and review before implementing phase 2:

a. Prevent further spread and development by removal of all young growth (B1)
b. Establish a staged removal by phased cutting and stump treatment using approved herbicide (to be confirmed) of building stage growth (B2) and re-treatment
c. Diversify mature stands by coppicing
d. Remove mature stands gradually by root removal after phase 1.

The management approach in phase 1 should focus on steps 1 – 3 above:

I. Cut or pull all B1 growth in year 1, remove 33% of all B2 growth stage per year in years 1-3.
II. Repeat annually for 5 years with annual survey for re-growth and planning.
III. Coppice to ground level 10% of mature (B3) stands per annum (from year 3 onwards)

2. New Zealand Flax

Remove by digging out by hand all stands over 2 years (c. 50% per annum)

Conclusions

Sea Buckthorn is significantly more widespread than is apparent from readily available aerial imagery and there is a wider range of growth stages which will require management to effect removal from the site.

A strategy to tackle pioneer and building growth stages initially to prevent further damage to dune ecology while tackling established thickets in the longer term may be the most manageable approach to long term reduction in Sea Buckthorn cover.

New Zealand Flax should be targeted for digging out by hand on an immediate and subsequently “as required”, basis.

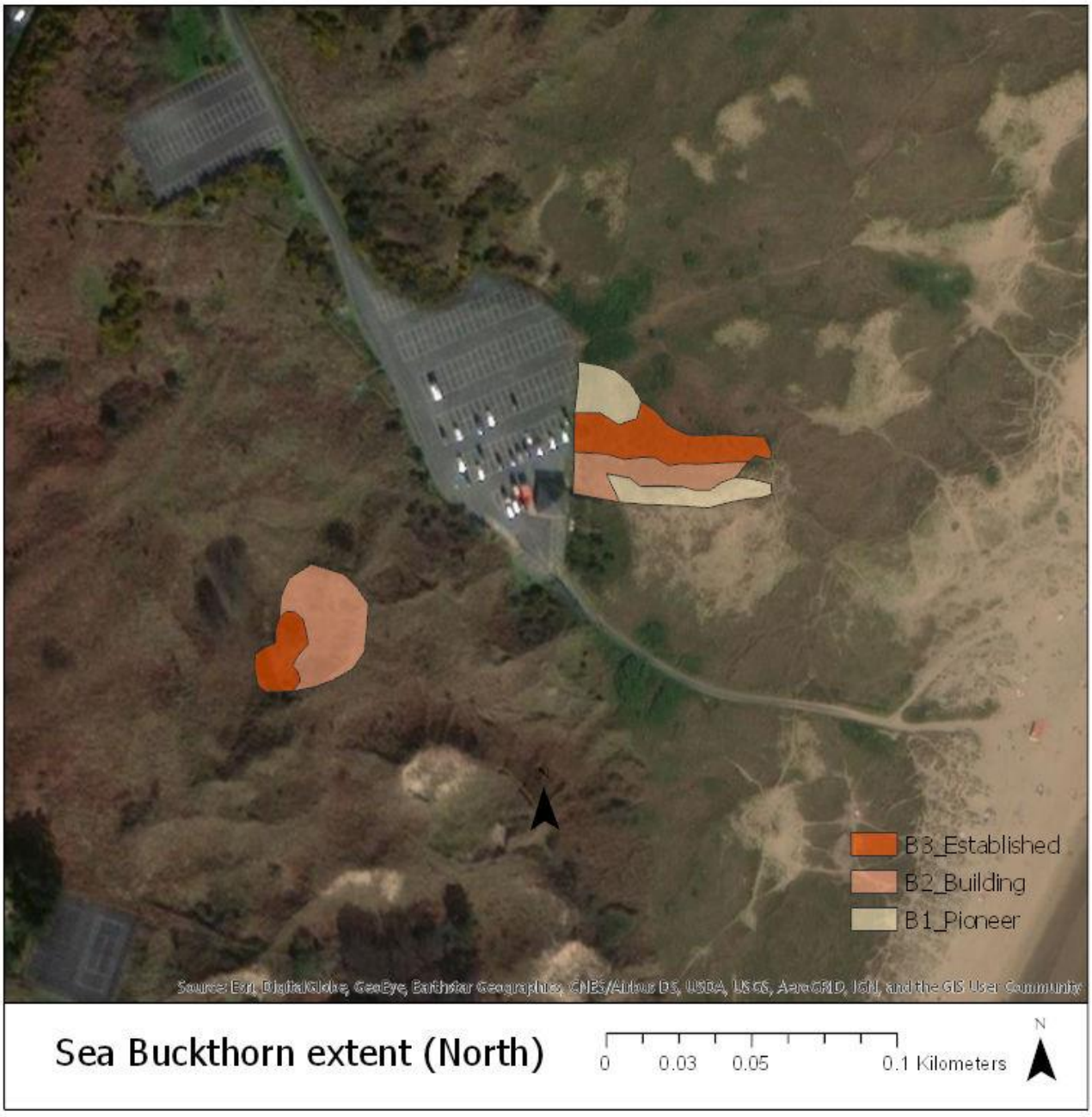

Figure 1


B3_Established
B2_Building
B1_Pioneer
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sea Buckthorn extent (South)
0
0.05
0.1
0.2 Kilometers
N

Figure 2

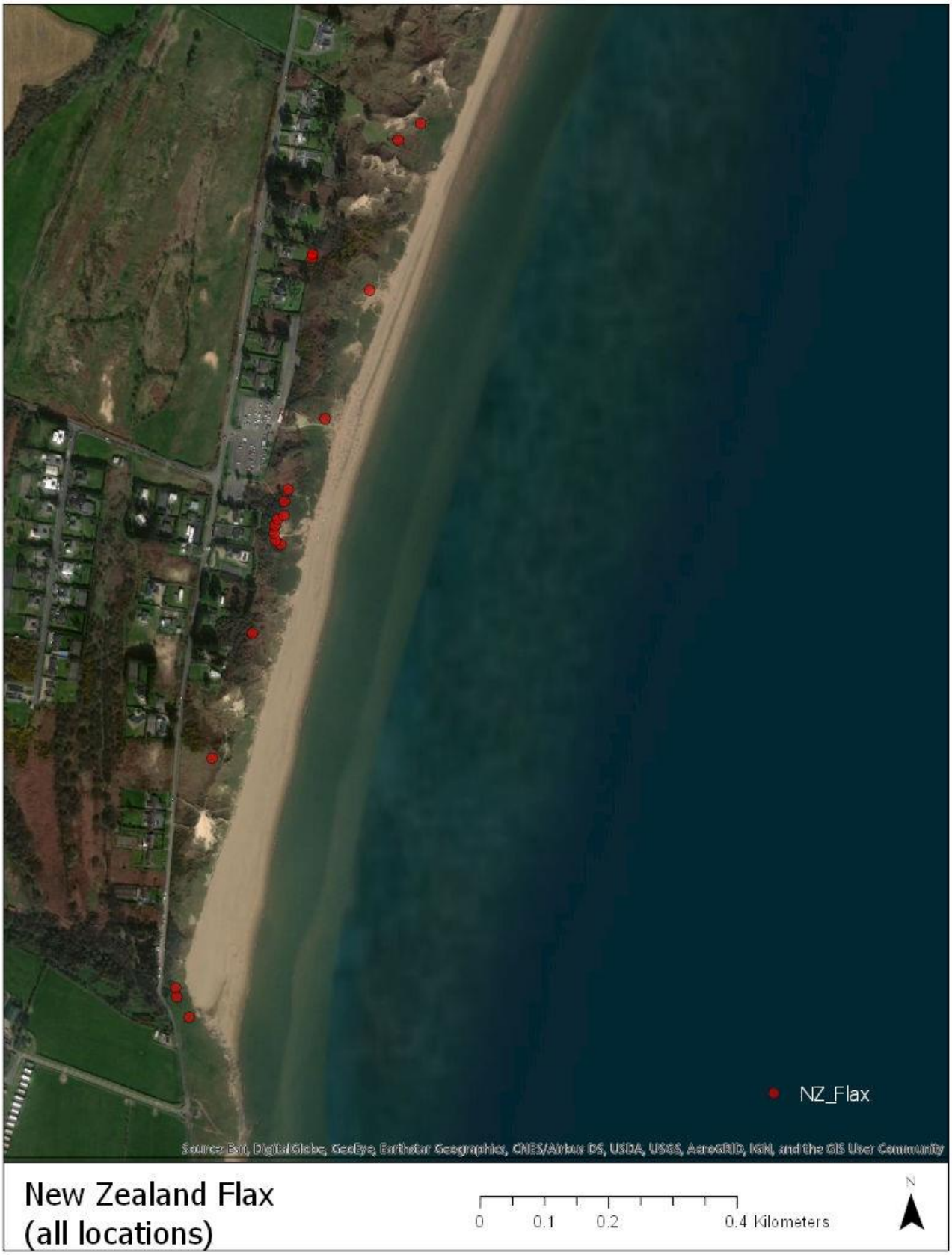
NZ_Flax
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
New Zealand Flax
(all locations)
0
0.1
0.2
0.4 Kilometers
N

Figure 3