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ENVIRONMENTAL VARIABLES DETERMINING THE OCCURRENCE OF THE RED-LISTED *CARBONICOLA ANTHRACOPHILA* AND *C. MYRMECINA* IN BOREAL FORESTS

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Abstract

The global biodiversity loss is mainly due to human activities such as an intensification of forestry. Boreal forest ecosystems in Fennoscandia are characterized by disturbances such as forest fires, storms and floods. However, industrial forestry practices suppress forest fires and change the landscape, leading to a loss of habitats and associated species. Particularly lichen species with slow adaptation abilities and a strong substrate specificity face an extinction debt in boreal forests since their substrates are long-lived but no longer created. In this study the species-substrate relationship of two red-listed forest-fire dependent lichen species *Carbonicola anthracophila* and *C. myrmecina* is investigated as well as the environmental variables determining their occurrence. Three dead wood types (snags, stumps, logs) of *Picea abies* as well as "ordinary" and "resin-rich" *Pinus sylvestris* were sampled. 24 forest stands of four different forest types (8-19 years old, 20-64 years old, >65 years old, nature reserves and voluntary set-asides) were inventoried in boreal forests in Hälsingland, Sweden. To record the frequency of potential *Carbonicola* harbouring substrates a dead wood inventory was conducted using a 200 x 10 m sample plot in which all wooden objects were measured. Lichen occurrence probability was modelled based on the explanatory variables using a generalized linear mixed model with a logit link function. The number of suitable dead wood objects in a stand was modelled based on stand categories using a zero-inflated Poisson regression. Substrate characteristics were the most important variables in species occurrence and therefore confirm the strong substrate specificity of *Carbonicola anthracophila* and *C. myrmecina* towards resin rich, hard, charred, dead pine wood without bark. Both lichen species were found within all stand categories, which demonstrates that stand level characteristics such as forest age or management type are not per se important for lichen occurrence. However, under the current management regime, new dead wood of the quality demanded by the species will not be formed and the current occurrence is due to historical factors. Resin rich pine dead wood was found more often in nature reserves and voluntary set asides than in middle-aged stands. Due to the high substrate specificity of *Carbonicola* effective conservation measures should aim at (i) the preservation of suitable substrates currently existing in managed forests and (ii) the creation of suitable *Carbonicola* harbouring substrates in the future with a focus on protected areas. This could be achieved through an incorporation of a dead wood inventory in the national forest inventory in order to identify resin rich, fire-scarred pine dead wood, as well as harvesting and planting techniques which take old, fire-scarred pine dead wood into consideration and prescribed burning of protected forest stands with a fire frequency similar to those in undisturbed boreal forest ecosystems.

Keywords: *Hypocenomyce anthracophila, Hypocenomyce castaneocinerea*, lichens, forest fires, biodiversity, nature conservation management, forestry practices, prescribed burning, Sweden

Deutsche Zusammenfassung

Der globale Verlust an Biodiversität ist hauptsächlich menschlichen Aktivitäten wie beispielsweise der Intensivierung der Forstwirtschaft zuzuschreiben. Boreale Waldökosysteme in Fennoskandinavien sind von ökologisch wichtigen Störungen wie Waldbränden, Stürmen oder Überflutungen gekennzeichnet. Eine intensive Forstwirtschaft jedoch unterdrückt natürliche Waldbrände, trägt zur Homogenisierung der Waldlandschaft bei und führt somit zu einem Verlust an Waldhabitaten mit dazugehörigen Arten. Besonders waldbewohnende Flechtenarten mit langsamen Anpassungsdynamiken stehen heute vor einer so genannten Aussterbungsschuld, da ihre Substrate relativ langlebig sind, aber in der heutigen Forstpraxis nicht weiter geschaffen werden. Wissenschaftliche Studien konzentrieren sich daher auf die Eingliederung von Arterhaltungsmaßnahmen in die gängige Forstpraxis. Um wirkungsvolle Maßnahmen gegen den Biodiversitätsverlust in borealen Wäldern zu entwerfen, müssen die Habitat- und Substrats-Bedürfnisse von Arten geklärt werden. Diese Studie trägt zur Klärung der Substratspezifizität und Habitatansprüche für die zwei von Waldbränden abhängigen, potentiell gefährdeten Flechtenarten (Rote Liste: NT) *Carbonicola anthracophila* und *Carbonicola myrmecina* bei. Um Informationen über Umweltbedingungen zu erhalten, die das Vorkommen beider Flechtenarten bestimmen, wurden drei Totholztypen (stehendes Totholz, Baumstümpfe, liegendes Totholz) der Fichte *Picea abies* und „normales" sowie „harzreiches" Kiefernholz *Pinus sylvestris* untersucht. Die Kartierung fand in 24 Waldbeständen unterschiedlicher Kategorien (8-19 Jahre, 20-64 Jahre, über 65 Jahre, Naturschutzgebiete und freiwillig-stillgelegten Flächen) in einem borealen Nadelwald in der Provinz Hälsingland, Schweden, statt. Außerdem wurde sämtliches Totholz in repräsentativen Probeflächen kartiert, um Rückschlüsse auf die Verbreitung potentieller Substrate in bewirtschafteten borealen Nadelwäldern ziehen zu können. Die Auftretungswahrscheinlichkeit beider Flechten wurde basierend auf erklärenden Variablen mit Hilfe von GLMM (generalized linear mixed models) und einer Logit-Link-Funktion modelliert. Die Anzahl und Verbreitung potentieller *Carbonicola*- Substrate wurde, basierend auf unterschiedlichen Bestandskategorien, mit Hilfe einer zero-inflated Poisson Regression modelliert. Diese Studie identifiziert Substrateigenschaften als die wichtigsten Variablen, die das Flechtenvorkommen beeinflussen. Des Weiteren wurde die hohe Substratspezialisierung beider Flechtenarten auf hartes, harzreiches, rindenfreies, angekohltes Kieferntotholz bestätigt. Beide Flechtenarten wurden in allen Bestandskategorien gefunden, was bedeutet, dass der Einfluss des Waldmanagements auf das Artvorkommen direkt, nicht per se bestätigt werden kann. Die Verteilung potentieller Substrate (angekohltes, hartes Kieferntotholz) variierte jedoch in unterschiedlichen Bestandskategorien und war häufiger in Naturschutzgebieten und freiwillig-stillgelegten Flächen zu finden als im Vergleich zu Beständen mittleren Alters (20-64 Jahre). Aufgrund der hohen Substratspezifizität beider Arten sollten sich Erhaltungsmaßnahmen auf (i) den Erhalt vorhandener Substrate und (ii) die Erschaffung potentieller Substrate konzentrieren. Die Eingliederung einer Totholzinventur in die nationale Waldinventur, sowie vorsichtige, altes Kieferntotholz aussparende Waldbewirtschaftungsmethoden, und die Anwendung von wiederkehrenden, regelmäßigen Waldbränden, könnten dabei hilfreiche Methoden sein.

SVENSK SAMMANFATTNING

Boreala skogsekosystem i Fennoskandia med deras störningsregim av t.ex. skogsbränder är hotad av intensivt skogsbruk. Detta leder till en förlust av livsmiljöer och tillhörande arter. I boreala skogar står lavar på bränd ved inför en utdöendeskuld eftersom deras substrat är långlivade, men praktiskt taget inte alls nyskapas. Men habitat- och substratkrav av olika brandberoende arter är inte helt utredda. Denna studie är inriktad på habitat- och substratförhållandet hos två rödlistade skogsbrandsberoende lavar, *Carbonicola anthracophila* och *C. myrmecina*, och är den första studien som systematiskt undersöker vilka miljövariabler som bestämmer förekomsten av båda arterna. För att samla information om dessa variabler inventerades tre vedtyper (högstubbar, stubbar, lågor) av tre vedkvalitéer (*Picea abies*, "vanlig" och "hartsrik" *Pinus sylvestris*). 24 skogsbestånd av fyra olika skogskategorier (8-19 år, 20-64 år,>65 år, naturreservat och frivilliga avsättningar) inventerades i boreala skogar i Hälsingland, Sverige. För att undersöka förekomst av potentiella *Carbonicola*-substrat och för att belysa fördelningen av död ved inom olika skogstyper, gjordes en död-vedinventering i provytor med storleken 200 x 10 m. Lavförekomstens sannolikhet modellerades utifrån de förklarande variablerna med hjälp av en GLMM (generalized linear mixed model) med en logit link-funktion. Antalet lämpliga dödvedsobjekt modellerades utifrån beståndskategorier med ett zero-inflated Poisson regression. Studien identifierade substrategenskaper som den viktigaste variabeln för artförekomst, dvs. att *Carbonicola anthracophila* och *C. myrmecina* växer på hartsrik, hård, förkolnad död tallved utan bark. Båda lavararterna finns inom alla skogskategorier vilket visar att egenskaper såsom skogsålder eller skötsel inte i sig är viktiga för lavarnas förekomst. Fördelningen av död ved samt frekvensen av lämpliga substrat varierade mellan olika beståndskategorier, vilket innebär att beståndålder och skötselspraxis påverkar substrattillgängligheten. På grund av de höga substratskraven hos de två arterna bör effektiva naturvårdsåtgärder syfta till (i) bevarandet av lämpliga substrat och (ii) skapande det av lämpliga *Carbonicola*-substrat i framtiden. Detta skulle kunna göras genom en inkorporering av en död-vedinventering i den nationella skogsinventeringen i syfte att identifiera hartsrika, förkolnad död tallved, försiktig avverkning och försiktig markberedning vid plantering. Hyggesbränning bör utföras av utvalda skogsbestånd med hög återkommande eldfrekvens.

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1 INTRODUCTION

1.1 THE IMPORTANCE OF BIODIVERSITY

Biodiversity is defined as the genetic variation within species and the variety of species as well as ecosystems (CBD, 1992). It is essential for human well-being as it provides the basis for natural evolutionary selection and can maintain ecosystem services and ecosystem processes under altering conditions worldwide (Bengtsson *et al.*, 1997; Loreau *et al.*, 2001; Millenium Ecosystem Assessment, 2005; Hughes *et al.*, 2008; Cardinale *et al.*, 2012). Biodiversity and its benefits for society are seldom assigned a monetary value, but some studies try to express the benefits from certain ecosystem services in economic terms (Bengtsson *et al.*, 1997; TEEB, 2010). A study by Eliasch (2009) for example estimates that conserving forests globally avoids damages from climate change worth 3.7 trillion US$ per year, without including several co-benefits of forest ecosystems. Hence, besides numerous ethical reasons to preserve biodiversity there are also economic and evolutionary valuations that emphasize the importance of maintaining biodiversity in an uncertain future.

The ongoing loss of biodiversity today is mainly driven by human activities and expands beyond the natural background rate of extinction of species (CBD, 1992; Sala *et al.*, 2000; European Commission, 2011; Cardinale *et al.*, 2012). This statement is supported by a study by Barnosky *et al.* (2011), stating that an extinction of all species currently classified as 'Critically endangered' would eventually trigger a mass extinction with rates as high as only seen five times during the last 540 million years, the so called "big five" extinctions. Another review by Hooper *et al.* (2012) summarizes that biodiversity loss has significant effects on ecosystem processes that are as severe as climate change or other global pressures. The major threats to biodiversity in Europe remain land use change and the over-exploitation of natural resources, for example through intensification of agriculture and forestry (Östlund *et al.*, 1997; TEEB, 2010; Council of the European Union, 2011). Consequently, the EU adopted a strategy to halt the loss of biodiversity through according legislation to protect threatened species and habitats, for instance the EU's Habitats Directive with its Natura 2000 network. However, the EU's targets for 2010 have not been met and particularly the nature reserve network in Northern Europe was stated as unsatisfactory (Kuuluvainen, 2009; Council of the European Union, 2011). To meet those political goals, sufficient monitoring programs of species and biodiversity could be valuable (Jonsson *et al.*, 2005). Monitoring programs are essential in order to create the knowledge base for adequate programs of measures to meet the target of halting biodiversity loss until 2020 and aiming for long-term sustainability within the EU (Council of the European Union, 2011; European Commission, 2011). Sweden, as committed 1992 under the Convention of Biodiversity, also stated the preservation of biodiversity as one of 16 environmental goals that shall be reached until 2020 in accordance with existing EU law (Swedish Environmental Protection Agency, 2012).

Most of Europe's natural vegetation is forest and more than 56 % of Sweden's terrestrial land area is covered by productive forest land. More than half or Sweden's red-listed species

are only found in forest habitats (Gärdenfors, 2010; Swedish Forest Agency, 2013). Several factors affecting the occurrence of red-listed species in Sweden such as stand age and habitat structures are related to forest management (Berg *et al.*, 1994). Hence, preserving high biodiversity implies a strong focus on forest biodiversity in Sweden.

1.2 Boreal forests and forest fires

Boreal forests are a circumpolar biome covering about 27 % of the global forested area. They are the dominant forest type in Sweden, Norway, Finland, Karelia and the Kola Peninsula; Fennoscandia (Fig. 1) (Kasischke *et al.*, 1995; Essen *et al.*, 1997; Hansen *et al.*, 2010). The boreal region in Sweden extends from 56 °N to 69 °N (Engelmark & Hytteborn, 1999). 85 % of Sweden's boreal forests consist of coniferous trees with the prevalent Norway spruce *Picea abies* and Scots pine *Pinus sylvestris*, as well as e.g. birch *Betula* spp. as a deciduous tree (Essen *et al.*, 1997). Environmental variables defining the conditions in boreal forests are acidic podsolic soils, high seasonality and a short vegetation period (Sjörs, 1999).

Figure 1. Vegetation zones (dense lines) in Fennoscandia (Ahti et al.(1968) found in Essen et al. (1997))

Biodiversity in natural boreal forests is strongly dependent on heterogeneity in structure and processes on tree, stand and landscape level (Hansson, 1992; Essen *et al.*, 1997; Kuuluvainen, 2009). Dead wood in boreal forests is vital for biodiversity as it is a substrate and habitat for around 25 % of forest-dwelling species in Fennoscandia (Siitonen, 2001). Different disturbance regimes create dead wood and a structural variety ranging from small perturbations affecting single trees to stand-replacing dynamics (Engelmark & Hytteborn, 1999; Kuuluvainen, 2009). The natural variability approach of maintaining successional and disturbing processes in managed forests can be seen as one method of biodiversity preservation in boreal forests (Axelsson, 2001; Kuuluvainen, 2002; Kuuluvainen & Grenfell, 2012). Pathogen outbreaks, flooding, storms and fires hence are among the most common and essential natural dynamics in generating spatiotemporal variability (Kuuluvainen, 1994; Angelstam, 1998).

Forest fires have been described as the most important and most common natural disturbance regime in boreal forest ecosystems (Zackrisson, 1977; Wein & MacLean, 1983; Bonan & Shugart, 1989; Angelstam, 1998; Bergeron *et al.*, 1998; Engelmark & Hytteborn, 1999; Niklasson & Granström, 2000; Dahlberg, 2002). Forest fires are often categorized as a major disturbance with stand replacing impacts (Larsson, 2001; Kuuluvainen & Grenfell, 2012). However, especially in pine dominated forests a substantial proportion of trees persist fires, which induces an increased resin production (Perrakis & Agee, 2006). Dead wood with such properties has a slower decomposition (Whitney & Denyer, 1969) and can function as an important

habitat for species adapted to fire-scarred stumps and standing dead wood (Timdal, 1984; Kuuluvainen, 2002; Lommi *et al.*, 2010). Forest fires can also promote a shift in tree composition towards pine dominance. *Pinus sylvestris* is more fire-resistant than spruce due to its thick bark and higher tree crown and it is able to rejuvenate easier in post-fire site conditions (Kuuluvainen, 2002). Hence, an absence of recurring forest fires favours the dominance of *Picea abies* and can change dead wood characteristics. Accordingly, this has a large impact on the abundance of species dependent on post-fire-successional pine forests and their substrates (Timdal, 1984; Zackrisson & Wardle, 1996; Niklasson & Drakenberg, 2001).

1.3 Past and current forest management in Fennoscandia

Before the 1850s multi-storied old-growth forests with an age above 150 years and trees large in diameter dominated the boreal forest landscape (Östlund *et al.*, 1997; Linder & Östlund, 1998). Forest fires, creating structural diversity and habitats for fire-dependent species, occurred at a mean interval of 80 years (Zackrisson, 1977). In the late 1800s around a fifth of the forest landscape was shaped by forest fires (Östlund *et al.*, 1997). One influence on the fire regime can be credited to the slash-and-burn agriculture that was practiced at that time. Forests have mainly been used extensively for grazing, the production of charcoal for smelting and timber, which was used to support mining tunnels (Linder & Östlund, 1998; Axelsson, 2001). However, increased human activities have strongly transformed the forest structure in the preceding 150 years (Axelsson, 2001). Forestry has become the major land use in the boreal zone (Nilsson, 1997). Fire suppression lead to a reduced extent of forest fires and became a major forestry management goal (Essen *et al.*, 1997). The introduction of industrial forestry started in the 1950s and has altered the forest structure completely by large-scale clear-cutting and thinning as well as mechanical soil scarification (e.g. Hellberg *et al.*, 2004). This forest management has led to a fragmentation of old-growth forests, a dominance of younger even-aged forests, the absence of old large-diameter trees and a suppression of early successional stages with deciduous trees through plantations of coniferous trees (Essen *et al.*, 1997; Östlund *et al.*, 1997; Linder & Östlund, 1998; Axelsson, 2001). The remaining major disturbance in managed forests is the wood harvesting (Kuuluvainen, 2002). Hence, there has been a structural simplification leading to even-aged monoculture stands being the main characteristic of managed boreal forests today. The ongoing forest exploitation in Fennoscandia is considered a major threat to biodiversity of forest-dwelling species due to the loss of suitable substrates and habitat fragmentation (Berg *et al.*, 1994; Bengtsson *et al.*, 2000; Gärdenfors, 2010). Nevertheless, there has been a rising interest in the incorporation of biodiversity aspects and conservation goals in forestry management since the 1980s (Angelstam & Petterson, 1997; Angelstam, 1998). The pan-European BEAR project reflects the EU's focus on forest biodiversity. It assesses forest biodiversity based on an indicator system to be used throughout Europe from 1998 to 2000 under the coordination of the Swedish Environmental Protection Agency (Larsson, 2001).

The concept of woodland key habitats (WKH), which are irregular intact forest areas in productive forests in which endangered or care-demanding species have a high occurrence probability (Timonen *et al.*, 2010), was invented in Sweden in 1993 (Ericsson *et al.*, 2005). Intact forest areas are essential for the maintenance of biodiversity and populations of red-

listed species. An inventory of WKHs was conducted by the Swedish National Board of Forestry and indicator species for typical WKHs have been assigned (Swedish Forest Agency, 2000). Nowadays the focus lies on legally protected conservation areas and conservation measures in forest practices (The Royal Swedish Academy of Agriculture and Forestry, 2009; Lundström, 2013). The production of wood and the protection of biodiversity are equally prioritized in the Swedish Forestry Act (Swedish Forest Agency, 1993). In addition, regulations by the Forest Stewardship Council (FSC) and the Program for the Endorsement of Forest Certification (PEFC) emphasize the exclusion of woodland key habitats from forestry practices and recommend the burning of some percentage of forest areas (FSC Sweden, 2013).

Nevertheless, forest plantations with final clear-cutting and a reduction of dead wood through extraction of most of the timber remains the most common harvesting scheme (Siitonen, 2001; The Royal Swedish Academy of Agriculture and Forestry, 2009; Ranius & Roberge, 2011). This leads to a long-term habitat degradation and is threatening biodiversity as valuable habitats are being destroyed (Wallenius *et al.*, 2010).

1.4 Why study lichens?

Lichens comprise a considerable proportion of biodiversity, influence biodiversity of micro-and macro-habitats in boreal forests and are often used as indicators for biodiversity hotspots in forests (Essen *et al.*, 1997; Nordén *et al.*, 2007; Nash III, 2008). They are ubiquitous species growing in habitats aligning with their special traits. Lichens can be defined as symbiotic organisms constituting of a mycobiontal partner, a fungus, and a photosynthetic partner of green algae and/or cyanobacteria. They are classified as fungi, with the largest number of lichens in the phylum of ascomycetes. The term "lichen species" officially refers to the fungus associated with species of photobionts, which means that they are lichenized (Nash III, 2008; Svensson, 2013). The photoautotrophic partner provides carbon nutrition for the heterotrophic fungal partner (Nash III, 2008). The photobiont benefits from protection against light and extreme temperatures. Lichens almost always form perennial thalli and can disperse sexually via spores or through symbiotic propagules such as isidia, blastidia or soredia as well as through fragmentation. What distinguishes lichens from vascular plants is their poikilohydric character, the variation of thallus water content to their environment and their lack of roots, which makes them dependent on nutrient sources from the air (Nash III, 2008). They fulfil many ecosystem functions such as contributing substantially to biomass, being a base source of food within a larger food web, taking part in nutrient recycling, regulating soil moisture content, serving as fodder or nesting material and in combination with cyanobacteria as symbiotic partners they are also an important nitrogen input in forest ecosystems (Bonan & Shugart, 1989; Knops *et al.*, 1996, 2007; Brodo *et al.*, 2001; Nash III, 2008; Asplund *et al.*, 2010).

Lichens are used, along with other cryptogams, as indicator species in forest ecosystems to identify high nature value areas and to indicate the occurrence of rare red-listed species (Thor, 1998; Swedish Forest Agency, 2000). Due to their constitution and their susceptibility towards changing environmental conditions they can indicate forest continuity and special habitat requirements. Nevertheless, lichens are among the globally lesser known species groups compared to e.g. avifauna (Hawksworth & Rossman, 1997; Stankey & Shindler, 2006). Studies on lichen taxonomy, species-substrate relationships and the ecology of lichens are

needed (Berg *et al.*, 1994; Jonsson & Jonsell, 1999; Spribille *et al.*, 2008). One poorly studied group are wood-dependent lichens (Essen *et al.*, 1997). Especially the substrate and habitat requirements and availability of wood-dependent lichens and of e.g. fire-dependent species such as *Carbonicola anthracophila* (*Hypocenomyce anthracophila)* and *C. myrmecina (Hypocenomyce castaneocinerea)* remains a knowledge gap (Timdal, 1984; Aspegren, 2001). Some studies suggest a strong substrate relationship of both species towards burnt wood (Timdal, 1984; Bendiksby & Timdal, 2013). However, representative and systematic studies of the occurrence of those species in managed boreal forests are needed to determine their true correlation (Lõhmus & Lõhmus, 2009). Guisan & Zimmermann (2000) promote the prediction of habitat suitability for species through correlation of environmental variables determining their occurrence. With regard to the great extinction debt of species confined to boreal forests, closing this gap in order to adequately preserve biodiversity is an urgent matter (Hanski, 2000). Many lichen species have slow extinction dynamics and thus allow the opportunity of conservation measures concerning their habitat and substrate demands (Johansson *et al.*, 2013).

1.5 Objectives

The aim of this thesis is to identify variables determining the occurrence of the two forest-fire dependent lichen species *Carbonicola anthracophila* and *C. myrmecina* and to shed light on the frequency of specific substrates in modern boreal forests. Only with an adequate knowledge about the species' substrate demands and the effect of landscape characteristics on their occurrence a suitable conservation practice can be applied.

This study closes the existing knowledge gap for two forest-fire dependent lichen species and contributes to the knowledge of how forests and nature reserves can be managed to ensure long-term ecosystem sustainability and to secure a stable population of the two red-listed species in boreal forests in Sweden.

Research questions:

- Which environmental variables are determining the occurrence of *Carbonicola anthracophila* and *C. myrmecina*?
- Are there significant differences in the species' occurrence and suitable substrate occurrence between different forest stand categories?
- What are possible forest and nature management measures to ensure substrate availability and thus a stable population of these species?

2 MATERIAL AND METHODS

2.1 STUDY SITES

The study was performed in 24 forest stands in the province of Hälsingland (north of Delsbo 61.8 °N, 16.56 °E) in Northern Sweden in forests owned by the company Holmen Skog AB (Fig. 2). The study sites are located in the middle boreal vegetation zone with an oceanic climate influence (Sjörs, 1999). The average annual precipitation ranges between 500 - 800 mm. The lowest monthly mean temperature is – 4 °C (January) and the highest mean temperature ranges between 13 – 15 °C (July) (SMHI, 2014). The forest stands mainly consist of Scot's pine *Pinus sylvestris* and Norway spruce *Picea abies*, as well as some deciduous trees such as birches *Betul*a spp. and rarely aspen *Populus tremula* and willow *Salix caprea.*

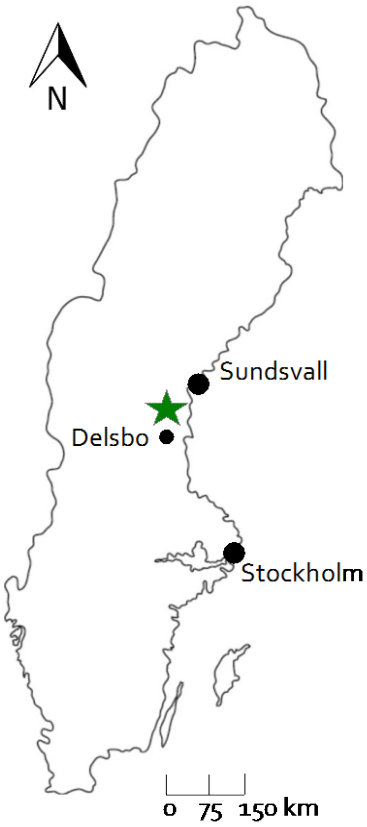

Figure 2. Overview map of Sweden; study area marked by a star.

2.2 STUDY SPECIES

Among lichen species confined to wood in Scandinavia (Spribille *et al.*, 2008) the following species were selected based on field experience. *Carbonicola anthracophila* and *C. myrmecina* are lignicolous, boreal-montane species, can be determined and distinguished in the field, are compared to other red-listed species still common and thus an excellent indicator species (Timdal, 1984; Angelstam, 1998; Swedish Forest Agency, 2000; Gärdenfors, 2010). Both species are red-listed in Sweden as Nearly threatened since 2005 due to the limited reformation and anticipated decline of substrate (Swedish Species Information Centre, 2011, 2013).

The species were formerly named *Hypocenomyce anthracophila* and *H. castaneocinerea* but due to results of a recent molecular phylogenetic study the genus *Hypocenomyce* was divided and a new family *Carbonicolaceae* including the genus *Carbonicola* was introduced (Bendiksby & Timdal, 2013). The name of the new genus already refers to the species' preferred substrate of burnt and charred wood (Bendiksby & Timdal, 2013).

Carbonicola anthracophila (Hypocenomyce anthracophila)

Physiognomic aspects were used to determine the species in the field. *Carbonicola anthracophila's* thalli are either scattered or overlapping; its upper side varies from brown-green to medium brown with a darker base. The margins are upturned, ranging from pale brown to white and fitted with greyish soralia (Timdal, 1984; Swedish Forest Agency, 2000). Apothecia

are uncommon, reddish brown and can be up to 0.8 mm in diameter. The young squamules are rarely proliferating and quite concave (Fig. 3).

Figure 3. *Carbonicola anthracophila* (Timdal, 2014b).

The species can be identified in the laboratory through the PD+ red reaction as fumarprotocetraric acid is present (Timdal, 1984; Foucard, 2001). The species occurs mainly on burnt coniferous wood and seldom on bark (Foucard, 2001) in boreal forests in Scandinavia (Timdal, 1984). In Great Britain it is referred to be growing on pine stumps in native pine forests (Smith *et al.*, 2009) and in North America on coniferous wood (Brodo *et al.*, 2001). It also occurs on burnt wood in Asia (Timdal, 2014a). It is found mostly in high montane regions typically on charred pine wood in Southern Europe and Germany (Nimis, 1993; Schiefelbein, 2007; Wirth *et al.*, 2013).

Carbonicola myrmecina (Hypocenomyce castaneocinerea)

Physiognomic aspects can be used in the field to distinguish *Carbonicola myrmecina* from *C. anthracophila*. This species' thalli usually overlap and its upper side appears glossy, it is more evenly dark brown or greenish brown with seldom upturned margins which are fitted with farinose grey soralia (Timdal, 1984; Swedish Forest Agency, 2000). The apothecia are rare, dark brown and smaller than of *C. anthracophila* with a diameter of up to 0.5 mm. The young squamules are convex and generally proliferating (Timdal, 1984; Fig. 4). In the laboratory *C. myrmecina* can be distinguished from *C. anthracophila* since no fumarprotocetraric acids are present (PD-reaction).

Figure 4. *Carbonicola myrmecina* (Timdal, 2014b).

In Scandinavia this species solely grows on burnt pine wood and seldom on spruce (Timdal, 1984; Foucard, 2001). It also occurs in North America and rarely in Southern Europe (Nimis, 1993; Brodo *et al.*, 2001).

2.3 Data collection

In order to collect information on environmental variables determining the occurrence of the study species, three dead wood qualities were sampled in different forest types. To record the frequency of potential substrates within different forest stand categories, a dead wood inventory was conducted using a representative sample plot design. The inventory took place during two weeks from 21 May 2014 until 3 June 2014.

The study stands were chosen from a database of stands owned and managed by Holmen Skog, which was compiled for another study in 2013. The stands were divided into three age and one management categories, and six stands from each category were then chosen by stratified random sampling. The approach of chronosequences were used in order to compensate for potential differences in time with spatial difference and to study the effect of forest composition and management (Walker *et al.*, 2010). The studied stand categories were:

- 8-19 years of age,
- 20-64 years of age,
- Older than 65 years,
- Nature reserves/voluntarily set-aside areas.

Further criteria for the stand selection were (i) no planted neophytic *Pinus contorta* should grow in the stands and (ii) the maximum distance from a road should be < 150 m in order to facilitate access to the stands. Stands that already have been inventoried in 2013 or recent clear-cuts were excluded. However, in some stands *Pinus contorta* did occur even though ac-

cording to Holmen Skog's data base they were excluded. Since it was the first generation of *Pinus contorta* the sampled dead wood pine objects were doubtless *Pinus sylvestris*.

The categories of inventoried coarse dead wood (diameter >10 cm) were divided into:

- *Pinus sylvestris* resin rich, hard wood with a silver grey hue and uneven surfaces (field experience indicate that these objects are >100 years old),
- *Pinus sylvestris* "ordinary" wood ,
- *Picea abies*.

Within each category the dead wood types stumps, snags and logs were sampled (Fig. 5).

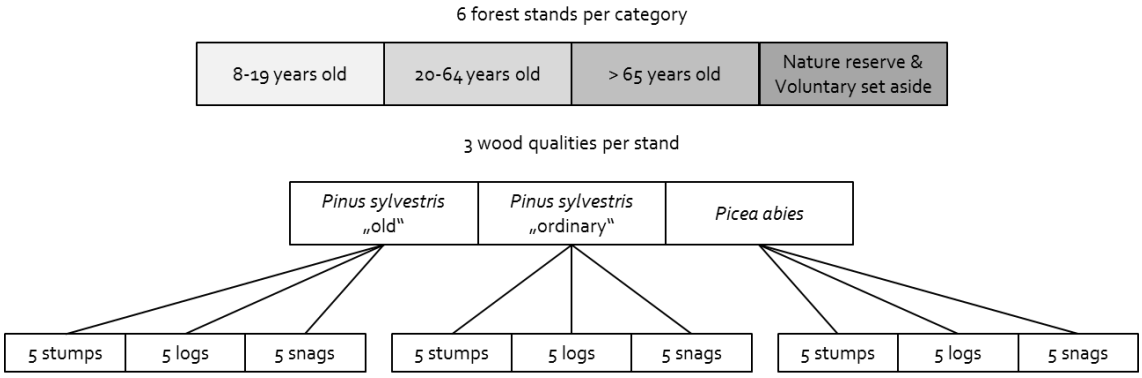

Figure 5. Overview of sampling design.

Requirements for inventoried objects were:

- Stumps: >10 cm in diameter, with a height <0.5 m,
- Logs : >10 cm in diameter,
- Standing dead trees ("snags") : >10 cm in diameter, with a height >0.5 m.

A 200 m long and 10 m wide sample plot, in which all suitable objects were inventoried, was placed at the longest possible distance through the stand, starting at least 25 m behind the forest stand edge in order to avoid edge effects from adjacent roads or stands (Fig. 6).

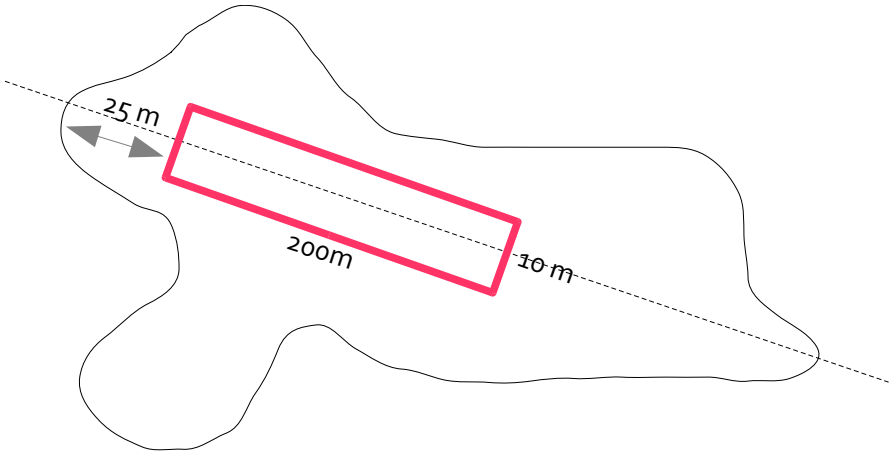

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Figure 6. Placement of 200 m x 10 m sampling plot within an exemplary forest stand along a transect connecting the points furthest away from each other (dotted line) and starting 25 m behind the stand border (solid black line).

All wood objects fulfilling the mentioned criteria above were inventoried and the environmental variables were measured (Tab. 1; see appendix for inventory data sheet). When

parts of an object were within the plot and parts outside, only the part inside was measured and inventoried. All parts of an object were inventoried, including e.g. attached branches to a log. After the transect inventory, other parts of the stands were searched for remaining objects in order to find at least five snags, logs and stumps of all wood quality categories in every stand. When not all objects could be found, the remaining amounts of objects were inventoried in another stand of the same category.

Table 1. Description of environmental variables

Environmental variables	Description	Unit
Wood quality	(1) resin rich, hard pine wood with silver grey hue and uneven surface (2) ordinary pine wood (3) spruce	-
Object category	(1) snag (2) stump (3) log	-
Estimated shadiness (Svensson, 2013)	(1) exposed (2) semi-shaded (3) never exposed	-
Length/height	One measurement for all object categories	cm
Diameter	For snags measured 150 cm above the ground, for logs measured at both ends, for stumps the upper surface measured without bark	cm
Occurrence of the two inventoried lichens	(1) yes (0) no	-
Presence of apothecia on inventoried lichens	(1) yes (0) no	-
Hardness of wood after Mäkinen et al. (2006)	(1) hard wood, knife penetrating only a few mm (2) knife penetrating 1-2 cm (3) knife penetrating 2-5 cm (4) knife penetrating > 5 cm (5) soft wood, substrate crumbles under pressure	-
Cover of bark	Estimated percentage of the object covered by bark	%
Presence of charred wood	(1) yes (0) no	-

Additionally, the surface area of each object was calculated assuming a cylindrical shape, without the bottom area of stumps and snags, since they do not represent a potential substrate for lichen species.

2.4 Statistical analysis

Lichen occurrence probability was modelled for both species separately based on the explanatory variables using a generalized linear mixed model with a logit link function (GLMM; Bolker et al. 2009). The logit link function was used due to the binomial distribution of the response variable (i.e. lichen presence/absence). Since the explanatory variables were recorded at different hierarchical levels, such as object characteristics (e.g. hardness of wood) and

stand characteristics (e.g. nature reserves), a mixed model with a random effect (stand identity) was selected. This model accounts for variation among stands and for the fact that objects within the same stand are not independent observations. Categories of environmental variables in which no lichens occurred were excluded from the analysis. Continuous variables were standardized and log-transformed to achieve an approximation to a normal distribution. A full model was fitted first and the variables were backwards stepwise selected. This is done through the incorporation of all parameters in a model and the stepwise elimination of insignificant parameters. To avoid biased choice of parameters, the models were built based on a theoretic information optimisation using AIC, where the final model, after testing different combinations of the explanatory variables, was the one with the lowest AIC. The AIC uses a penalized-likelihood reflecting the best model fit while accounting for the amount of parameters so the model with the lowest AIC has the "best" fit in regard to the number of parameters (Anderson *et al.*, 2000; Whittingham *et al.*, 2006). To model occurrence probability values ranging between 0 and 1, the model coefficient's log-transformation was back transformed using the inverse logit function (Guisan & Zimmermann, 2000).

The number of suitable dead wood objects in a stand was modelled based on stand categories using a zero-inflated Poisson regression. A zero-inflated data set has a distribution which does not fit a regular Poisson distribution due to the large amount of zeroes in the data (here: stands without any suitable objects). Hence, a special technique of accounting for zeroes needs to be applied and the source of the zeroes needs to be determined (Martin *et al.*, 2005; Zuur *et al.*, 2010). In this case the zeroes in the data set are caused due to the true absence of suitable substrates in certain stands and not owed to false observations and sampling errors (MacKenzie *et al.*, 2003). The statistics software R version 3.1.0 with the glmmADMB package was used for the data analysis and plot generation (Bolker *et al.*, 2012; R Development Core Team, 2014). The environmental variable presence of apothecia on lichen species was excluded from the analysis since they were never found on *Carbonicola myrmecina* and only found once on *C. anthracophila*.

3 RESULTS

In total 24 stands were inventoried, resulting in 1864 surveyed dead wood objects, of which 1416 objects were recorded within the sample plots (see appendix for complete data). *Carbonicola anthracophila* was found on 49 objects of which 21 were within the sample plots (Tab. 3). *C. myrmecina* was found on 51 objects, of which 19 objects were within the sample plots. All objects harbouring the species were classified as hard (knife penetrating only a few mm), charred, resin rich pine wood without bark (Tab.2). Hence, the species were never found on spruce or on objects without any charred wood or objects with any traces of bark. However, *Carbonicola anthracophila* occurred on only 22 % (n=49) and *C. myrmecina* occurred on 23 % (n=51) of all dead wood objects with suitable characteristics (n=219).

Table 2. Recorded species occurrence (total number in brackets) in different categories of environmental variables

Environmental variables	*Carbonicola anthracophila*	*Carbonicola myrmecina*
Hardness of wood		
hard, few mm	49 (49)	51 (51)
1-2 cm	0	0
2-5 cm	0	0
>5 cm	0	0
Crumbling wood	0	0
Wood category		
Resin rich pine	49 (49)	51 (51)
Ordinary pine	0	0
Spruce	0	0
Presence of charred wood		
Charred wood	49 (49)	51 (51)
No fire scars	0	0
Cover of bark		
No bark	49 (49)	51 (51)
Cover of bark (1-100 %)	0	0

Both species occurred most often on standing dead wood and stumps and were seldom found on logs (Tab.3).

Table 3. Occurrence of lichen species on different substrate types (snags, stumps, logs) in relation to total number of occurrence (*Carbonicola anthracophila*, n=49; *C. myrmecina*, n=51)

Substrate type	*Carbonicola anthracophila*	*Carbonicola myrmecina*
Snags	37 (49)	37 (51)
Stumps	10 (49)	10 (51)
Logs	2 (49)	4 (51)

The species were found most often in nature reserves and voluntary set-asides, but were recorded outside of the sample plot in all stand categories (Tab.4).

Table 4. Occurrence of lichen species in different stand categories, sorted after lichen presence on object (found) in relation to the total amount of sampled dead wood objects (n= 1684) and whether it was found within the sample plot (in) or outside of the plot (out)

Stand category	*Carbonicola anthracophila*		*Carbonicola myrmecina*	
	Found (Total)	In I Out	Found (Total)	In I Out
8- 19 years	12 (712)	3 I 9	8 (712)	2 I 6
20-64 years	1 (329)	0 I 1	2 (329)	0 I 1
Above 65 years	10 (362)	0 I 10	14 (362)	2 I 12
Nature reserves & voluntary set-asides	26 (281)	18 I 8	27 (281)	15 I 12

3.1 Effects of variables on lichen occurrence probability

Substrate type was the most important variable for explaining the occurrence probabilities of both species in the full model (including all explanatory variables; Tab 4) and in the final model (with the lowest AIC; Tab 5). The occurrence probabilities were higher on snags than on stumps and logs. In the full model, also stand category had a significant influence on the occurrence probability of *C. myrmecina*, with a higher probability in nature reserves and voluntary set-asides (Tab.5).

Table 5. Model coefficients (± SE) and p-values for the full generalized linear mixed models for the occurrence probabilities of lichen species, testing for significance in difference of wood substrates (snag), shadiness (exposed), and stand category (8-19 years). The occurrence probability was tested against a default value in each environmental variable category (snags, exposed, 8-19 years). Significant p-values (< 0.05) are written in bold

	Carbonicola anthracophila		*Carbonicola myrmecina*	
	Estimates	p-value	Estimates	p-value
Substrate type				
Stumps	-0.993 (± 0.48)	**0.040**	-1.121 (± 0.49)	**0.022**
Logs	-2.869 (± 0.79)	**< 0.001**	-2.075 (± 0.616)	**< 0.001**
Exposition				
Semi-shaded	-0.081 (± 0.51)	0.875	-0.043 (± 0.50)	0.932
Never exposed	-0.009 (± 0.66)	0.988	-0.517 (± 0.64)	0.420
Stand category				
20 - 64 years	-1.219 (± 1.25)	0.330	+0.159 (± 1.02)	0.877
> 65 years	+0.423 (± 0.82)	0.604	+1.491 (± 0.78)	0.057
Nature reserves & voluntary set-asides	+1.019 (± 0.76)	0.178	+1.630 (± 0.72)	**0.023**
Surface area	+0.431 (± 0.24)	0.074	+0.351 (± 0.22)	0.119

However, the AIC-value was lower for models excluding stand category as an explanatory variable for both species. Thus, the minimum adequate model for species occurrence probability (i.e. the final model) was solely based on substrate type and available surface area of wooden objects with a random error factor (stand identity) accounting for variation among stands (Tab.6).

Table 6. Model coefficients (± SE) and p-values for reduced (final) generalized linear mixed model with random effects for the occurrence of lichen species, testing for significance in difference of wood substrate (snag) and influence of surface area. Significant p-values (< 0.05) are written in bold

	Carbonicola anthracophila		*Carbonicola myrmecina*	
	Estimates	p-value	Estimates	p-value
Substrate type				
Stumps	-0.995 (± 0.48)	**0.049**	-1.198 (± 0.51)	**0.022**
Logs	-2.997 (± 0.78)	**< 0.001**	-2.280 (± 0.63)	**< 0.001**
Surface area	+0.525 (± 0.24)	**0.027**	+0.440 (± 0.24)	0.061

Predictions with the final model showed that occurrence probabilities of both species were higher on snags and stumps compared to logs, increasing with an extending surface area. The occurrence probability of *Carbonicola anthracophila* was higher on snags and stumps, but lower on logs, than the occurrence probability of *C. myrmecina*. Logs were predicted to have the lowest occurrence probability for both study species (Fig.7).

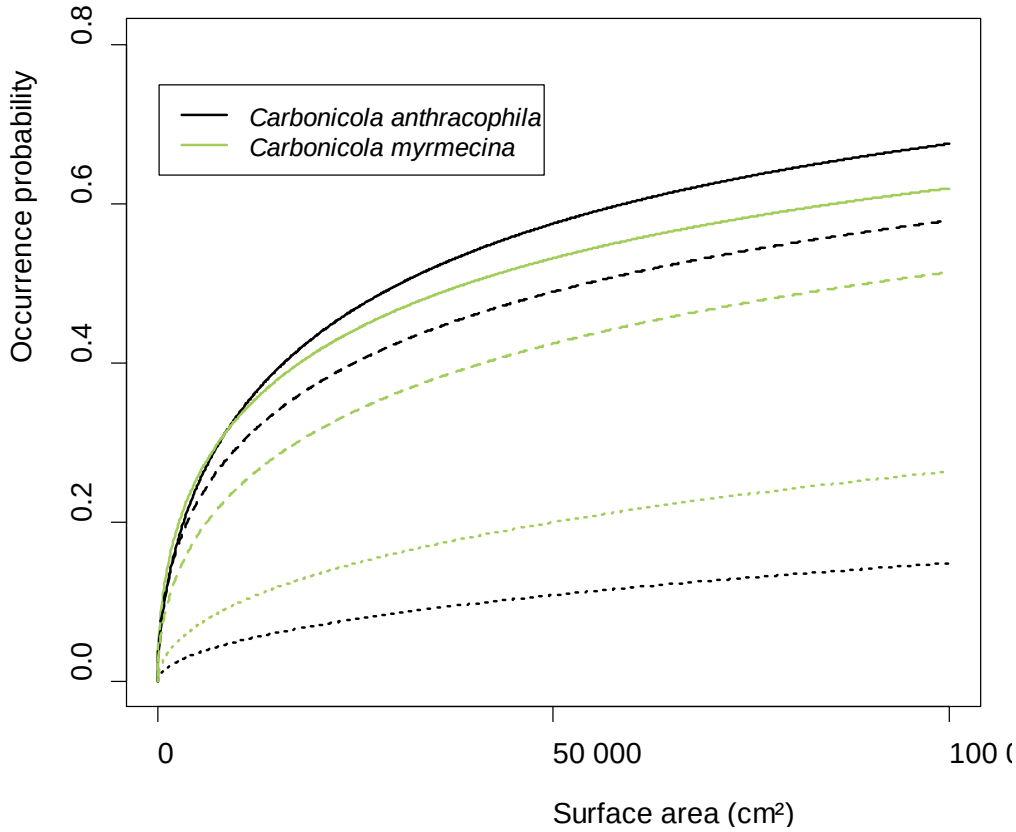

Figure 7. Predicted occurrence probability of *Carbonicola anthracophila* (black line) and *C. myrmecina* (green line) for different substrate types (snags= solid line, stumps= dashed line, logs= dotted line) in relation to surface area using the final model.

Across all analyses the variable shadiness, even when grouped into (1) sometimes exposed and (2) never exposed, had no significant influence on the occurrence of both species.

3.2 DISTRIBUTION OF DEAD WOOD OBJECTS

A total number of 1416 dead wood objects were recorded within the sample plots. Stumps formed the largest groups of objects, followed by logs while snags were most seldom recorded. Ordinary pine objects were found more often than spruce and resin rich pine wood (Tab. 7). Hence, resin rich pine objects resembled the smallest group with snags as rarest substrate type.

Table 7. Sampled dead wood objects within sample plots (n= 1416) categorized after substrate type (snags, stumps, logs) and wood quality (resin rich pine wood, ordinary pine wood, and spruce)

	Resin rich pine	Ordinary pine	Spruce	Total
Snags	91	104	88	283
Stumps	107	314	301	722
Logs	102	143	166	411
Total	300	561	555	1416

The distribution of dead wood of all wood qualities differed significantly in young managed forests (8-19 years) compared to other stand categories ($p < 0.05$). Snags were more common in old-growth forests as well as nature reserves and voluntary set-asides than in other stand categories. The highest number of stumps and logs, and dead wood in general were found in young-managed forests (Fig.8).

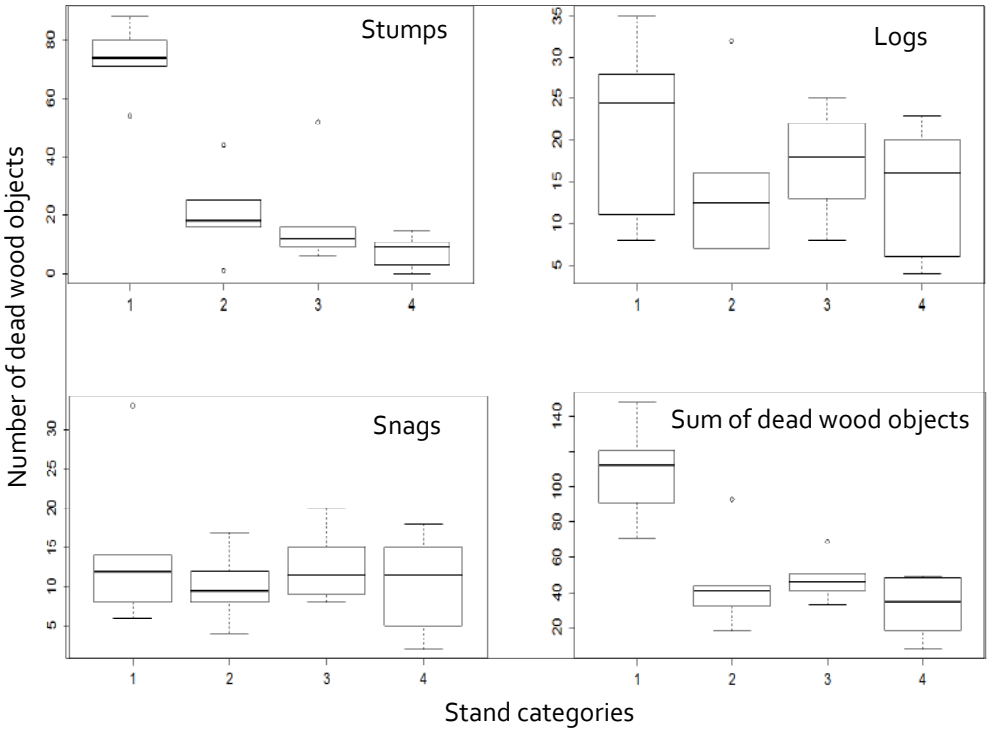

Figure 8. Sampled dead wood objects within sample plots categorized after substrate type (stumps, n=722; snags, n=283; logs, n=411; sum of all dead wood types, n=1416) and occurrence in different stand categories (1=8-19 years, 2=20-64 years, 3=>65 years, 4=nature reserves & voluntary set-asides) using a box-whisker plot with median (horizontal thick line), inter quartile range 25-27 % (grey boxes), and range (dotted vertical line).

The distribution of potential *Carbonicola* harbouring substrates (hard, charred, resin rich pine wood) in middle- aged forests (20-64 years) differed significantly from young managed forests (8- 19 years) as well as nature reserves and voluntary set-asides ($p < 0.05$). The substrates were found less frequently in middle-aged and old-growth stands than in young managed forests, nature reserve and voluntary set-asides (Fig. 9).

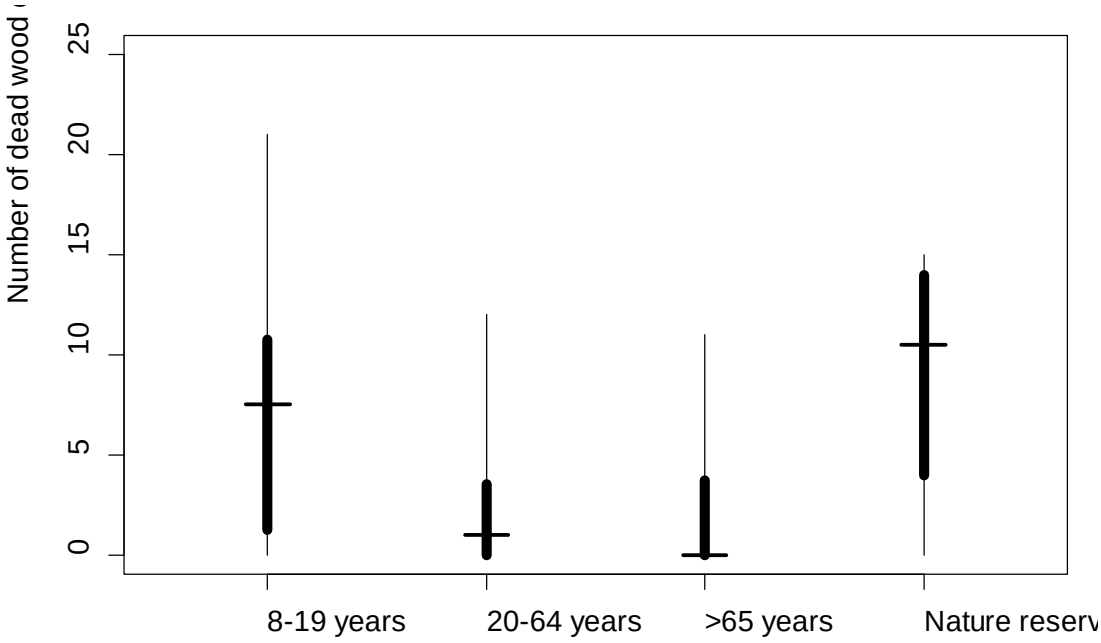

Figure 9. Distribution of hard, charred, resin rich pine dead wood objects within the sample plots (n= 217) in different forest stand categories (8-19 years, 20-64 years, above 65 years, nature reserves and voluntary set-aside areas) showing full range (vertical thin line), median (horizontal line) and inter quartile range 25-75% (vertical thick line).

However, the medium surface areas of suitable substrates differ significantly in old-growth forests (>65 years) from those in middle-aged forests (20-64 years) ($p< 0.05$). The substrates have a greater mean surface area in old-growth forest compared to medium aged stands and young aged stands (8-19 years) (Fig.10).

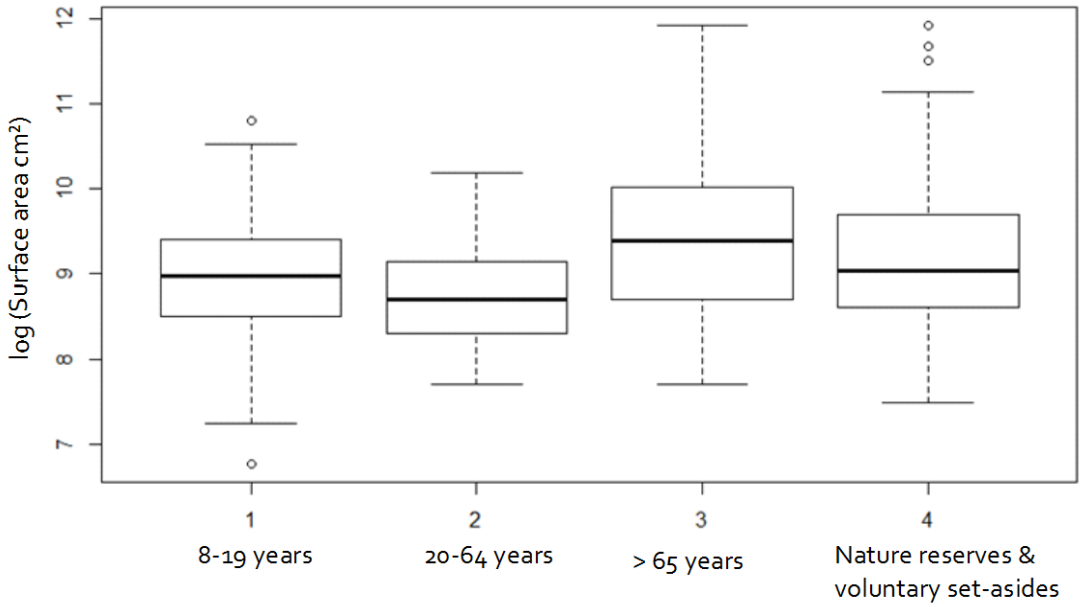

Figure 10. Surface area (log transformed, cm²) of hard, charred, resin rich pine dead wood without bark within the sample plots (n=217) in different stand categories (8-19 years, 20-64 years, above 65 years, nature reserves and voluntary set aside areas), using a box-whisker plot with median (horizontal thick line), inter quartile range 25-27 % (grey boxes), and range (dotted vertical line).

4 Discussion

This study examined the occurrence of *Carbonicola anthracophila* and *C. myrmecina* on three substrate types of three wood qualities in different types of forests in order to gain knowledge about their occurrence frequency and their substrate preference. The frequency of suitable substrates in different forest types was also investigated in this study. This knowledge can be used to furthermore give advice on how forests could be managed in the future to ensure a stable population of both species and in order to preserve forest biodiversity. The results confirm that *Carbonicola anthracophila* and *C. myrmecina* are rare and have a strong substrate specificity towards burnt wood as mentioned in several works before (e.g. Nimis, 1993; Brodo *et al.*, 2001; Smith *et al.*, 2009; Lõhmus & Kruustük, 2010; Bendiksby & Timdal, 2013; Wirth *et al.*, 2013). However, the present study is the first to systematically inventory three dead wood types and to confirm that both *Carbonicola* species solely occur on charred, resin rich, hard, pine dead wood without bark. They were found within all stand categories, which demonstrates that stand level characteristics such as forest age or management type (e.g. nature reserve) are not per se important for lichen occurrence. Most important were substrate characteristics (e.g. fire-scarred dead wood) as they were consistent throughout the different forest types.

4.1 Species-substrate relationship

Substrate characteristics were identified as the most important variables for lichen occurrence. Both study species showed a strong species-substrate relationship towards charred, resin rich, hard pine wood without bark. These environmental variables are determining lichen occurrence, since they were only found on objects with such characteristics. Both species have been reported to also rarely occur on spruce (Timdal, 1984) and according to Tufan *et al.* (2006) on *Acer sempervirens*. However, this undoubtedly only reflects a marginal part of the species population as in this inventory they were never found on other wood objects. Both lichen species had a higher occurrence probability on stumps and snags than on logs, which suggests that stumps and snags should be prioritized in conservation management. *Carbonicola anthracophila* was only found twice on a log and *C. myrmecina* was found on 4 logs. However, those logs showed characteristics that identified them as recently fallen, such as a missing cover of bryophytes and very hard wood, indicating an early decay stage (Mäkinen *et al.*, 2006). This again demonstrates the importance of snags and stumps for substrate management. Both lichen species have been described as fire-dependent (Essen *et al.*, 1997; FSC Sweden, 2013), which can be confirmed through their dependence on fire-scarred pine dead wood as proven with this study. With an increasing surface area of dead wood objects the occurrence probability is also increasing. Due to the high substrate specificity a focus on the frequency and distribution of suitable substrates in managed boreal forests is essential in order to ensure a stable population of *Carbonicola anthracophila* and *C. myrmecina*.

4.2 Occurrence of *Carbonicola anthracophila* and *C. myrmecina*

Due to the strong substrate specificity the species occurrence is mainly depending on the availability of suitable substrates instead of a certain management type as such. Nevertheless, both lichen species occurred more often in nature reserves and voluntary set-aside areas than in other stand categories. This fact can be credited to the distribution of suitable dead wood objects. Suitable substrates occurred in all stand categories but less in middle-aged and old-growth forests (20-64years and >65 years) compared to young managed forests (8-19 years) as well as nature reserves and voluntary set-asides. The middle-aged stands represent forests influenced by clear-cutting, soil scarification, plantation measures, as well as mechanical thinning. Hence, the lack of suitable substrates within heavily managed stand categories suggests an influence of management techniques on substrate availability. It is likely that the substrates were destroyed during intensive forestry procedures since they occur more often in nature reserves and voluntary set-asides. Another study by Lommi *et al.* (2010), in which both *Carbonicola* species were found more often in selectively logged and unmanaged stands than in highly managed stands, supports this hypothesis. It is surprising to find less suitable substrates in old-growth forests than in nature reserves, but this might be due to the fact that 2 out of 6 inventoried old-growth stands were spruce forests without any traces of former pine trees and that 2 of the remaining stands were mechanically thinned, which emphasizes the influence of forest practices on substrate availability. In general one could expect a higher substrate availability in old-growth forests compared to heavily managed stands (Lommi *et al.*, 2010). This is also supported by the fact that substrates found in old-growth forest stands had a higher mean surface area than those in middle-aged forest stands, which implies a higher lichen occurrence probability in old-growth forests than in middle-aged forest stands, even though in this study less suitable substrates were recorded within the category of old-growth forests (see Fig. 9). So even though most of the dead wood was found in young-managed stands, their quality is not sufficient for harbouring both *Carbonicola* species.

The high variation in frequency of suitable substrates within young managed forests (8-19 years) could be attributed to the fact that some forests stands were burned after clear-cutting (see appendix for stand description), resulting in a very high number of objects with fire-scars. Recently burned substrates however did not harbour any of the *Carbonicola* species which suggests long re-colonization time after burning (Hämäläinen *et al.*, 2014). Slow colonization rates have also been suggested for other lichen species (Johansson *et al.*, 2012). In general, resin rich dead pine wood was found most seldom compared to ordinary pine wood or spruce, which implicates the importance of focussing on the creation of suitable dead wood instead of creating dead wood in general (Spribille *et al.*, 2008). Nevertheless, the inventoried area North of Delsbo cannot be seen as representative for all boreal forests in Sweden and Fennoscandia, as this area is influenced by intensive forestry and thus not comparable to all other areas (Ekbom *et al.*, 2006).

4.3 Implications for forest and nature conservation management

The recent forest management practices with its homogenisation of forest landscapes has been identified as a major threat to forest biodiversity (Halpern & Spies, 1995; Kouki *et al.*, 2001). Especially the loss of old-growth forests with a decline in dead wood availability has been linked to the decline of species diversity confined to wood (Hansson, 1992; Berglund *et al.*, 2011). A strong substrate specificity, as demonstrated for *Carbonicola anthracophila* and *C. myrmecina,* can be seen as a susceptibility towards changes induced by forestry measures (Berglund *et al.*, 2011). However, species with strong substrate specificity may not require old-growth forests per se, but suitable dead wood with specific characteristics. Several studies focus on how to combine forest management and biodiversity conservation in general (e.g. Hansson & Angelstam, 1991; Bergeron & Harvey, 1997; Angelstam, 1998). The survival of vital populations is the aim of biodiversity maintenance (Angelstam, 1998), and in the case of *Carbonicola anthracophila* and *C. myrmecina*, as well as other species with a strong substrate relationship, implies the focus on suitable substrate availability.

Different approaches of biodiversity conservation are used in Sweden, focussing either on red-listed species, the maintenance of certain structures or an integration of natural processes in forestry (Brūmelis *et al.*, 2011). On a landscape level the preservation of woodland key habitats (WKHs), as encouraged by the FSC Council, is one management practice focussing on structure. WKHs often compromise higher amounts of dead wood than managed forest stands and therefore have a higher chance of harbouring both *Carbonicola* species (Siitonen, 2001; Hottola & Siitonen, 2008; FSC Sweden, 2013). The natural variability approach aims at incorporating natural disturbances such as fires as gap-creating and stand-replacing disturbances into forestry practices in order to maintain the natural biodiversity (Kuuluvainen, 2002). However, the group of red-listed forest-dwelling species have rather heterogeneous habitat and substrate demands compared to more generalized species and are thus difficult to target with one common approach (Tikkanen *et al.*, 2006). Thus, conservation approaches on a landscape level, aiming at the creation of deadwood in general, or the simple introduction of disturbances may not suffice for specialized species.

Many specialised red-listed species, such as *Carbonicola anthracophila* and *C. myrmecina*, seem not as threatened today as they will be in the future. The reason is that their substrate is long-lived and is still present in modern managed boreal forests. However, new suitable substrates are currently not created by forestry measures anymore and the suitable substrate availability will therefore decline over time causing a time-lagged extinction of associated species (Hanski, 2000; Jonsson *et al.*, 2005). These species are therefore displaying a so called extinction debt (Tilman *et al.*, 1994), which is common for sessile species with slow extinction dynamics (Johansson *et al.*, 2013). However, slow extinction dynamics give an opportunity to create new substrates that can be re-colonized before the old substrates decay and disappear. Effective conservation measures should therefore aim at (i) the preservation of suitable substrates currently existing in boreal forests and (ii) the creation of substrates suitable for *Carbonicola* in the future.

Preservation of suitable substrates

In order to adequately preserve suitable *Carbonicola* harbouring substrates in managed boreal forests, an inventory of suitable dead wood as well as careful logging and planting methods are advised. Fridman & Walheim (2000) suggest the incorporation of a dead wood inventory in the Swedish National forestry inventory in order to monitor the distribution and structure of dead wood, which could be useful when identifying potential *Carbonicola* harbouring substrates. A dead wood inventory could give an overview of the distribution of old, fire-scarred dead wood and this information could be taken into consideration through forest management practices. As indicated by this study, suitable substrates occur less frequently in heavily managed stands, implying an influence of management on substrate availability. A focus on fire-scarred, hard, resin rich pine snags and stumps as potential retained substrates after clear-cutting could be recommended since dead wood with such characteristics harboured both study species in this study. The exclusion of old, fire-scarred stumps from stump-harvesting for biomass, could also benefit *Carbonicola* occurrence. Current post-harvest techniques such as the burning of clear-cuts can however not be recommended, since both study species being sessile organisms die during this process, and re-colonization times of *Carbonicol*a are yet unknown (Hämäläinen *et al.*, 2014). A gentle way of soil preparation instead of complete soil scarification could also spare important potential pine dead wood. Thoughtful planning of harvester and forwarder tracks around valuable dead wood could increase their persistence in managed stands. The introduction of 'rätt metod - the right method', a forestry practice in which the extraction of timber is optimized through an organisation of driving paths on the clear-cut could also benefit many dead wood dependent species if their substrate demands are incorporated in the planning of 'rätt metod' as this method provides a better overview of dead wood objects (Skogforsk, 2013). The incorporation of preservation aims of old resin rich pine dead wood in current pre- and post-harvest methods could benefit the occurrence and decreased reduction of the population of *Carbonicola anthracophila* and *C. myrmecina*.

Creation of suitable substrates

To ensure a sustainable vital population for both *Carbonicola* species one goal should be the long-term management of suitable substrate availability, meaning the creation of substrates at rates that are at least as high as the current loss and decay of suitable substrates. The focus should be on creating biologically important dead wood types, implying for *Carbonicola anthracophila* and *C. myrmecina* a focus on slow growing, resin rich pine trees which have persisted several forest fires, in order to turn into suitable substrates when dying (Spribille *et al.*, 2008). Prescribed burning of forest areas as a substitution of naturally occurring forest fires is a common nature conservational tool in Fennoscandia (Angelstam, 1998; Bergeron *et al.*, 1998; Granström, 2001). The controlled use of fire influences the amount and structure of dead wood as well as the regeneration of pioneer species, which can have positive effects on forest biodiversity and especially rare fire-dependent species (Nguyen-Xuan *et al.*, 2000; Kouki *et al.*, 2001; Ruokolainen & Salo, 2006; Laarmann *et al.*, 2013). However, with the aim of creating suitable substrates for both *Carbonicola* species, it is important to ensure recurring forest fires at the same stand with a higher frequency than currently established, in order to induce

an increased resin production in persisting trees (Granström, 2001). Recurring forest fires will lead to persisting resin rich pine trees with fire scars, which will eventually die and feature suitable dead wood characteristics needed by both *Carbonicola* species. This is essential in order to create future substrates such as slow-growing pine trees which are burned several times as they are needed to fulfil the substrate demands of *Carbonicola*. The current technique of prescribed burning is therefore certainly not sufficient in creating suitable substrates for *Carbonicola* as the fire frequency is too low, but it could be adjusted in order to create resin rich pine snags in the future. Nevertheless, suitable forest stands that allow for recurring burning need to be identified first.

In order to adequately ensure vital populations of *Carbonicola anthracophila* and *C. myrmecina* and to halt the loss of forest biodiversity, further research is needed. A knowledge gap remains the frequency and circumstances of sexual as well as asexual regeneration of both *Carbonicola* species, as apothecia were seldom found and their dispersal might be limited. Further research with re-planting experiments of *Carbonicola* could be valuable in order to shed light on their dispersal regime, as they only occur on around 22% of potentially suitable substrates in this study. This knowledge is needed in order to adequately plan the distribution of suitable substrates on a landscape level. It would also be important to investigate the recolonization times for *Carbonicola* on freshly burned areas, as it was stated by Hämäläinen *et al.* (2014) that it supposedly takes more than 11 years. However, slow extinction and adaptation dynamics of *Carbonicola* allow for conservation measurements that are incorporated in today's forest management in order to create suitable substrates in the future.

4.4 Discussion of methods

Two tree species were selected for the inventory since other tree species seldom occur in boreal forests and were expected to harbour only a very small portion of the total population of the inventoried species (Essen *et al.*, 1997; Ekbom *et al.*, 2006; Svensson, 2013). Not all wood qualities were inventoried, e.g. small cut stumps, spruce stumps created in storms, dead branches on living trees and fine wood debris on the ground (1 – 10 cm in diameter). However, it was shown that these small substrates rarely harbour dead wood dependent species (Svensson *et al.*, 2013).

Spruce stumps, snags and logs are even without visible bark easily distinguished from resin rich pine dead wood since it is more decomposed (wood is usually not classified as hard (see Mäkinen *et al.*, 2006), and without a greyish hue. First of all, through digging at the stumps and close to the roots traces of bark could often be found (< 1% of total area). The distinction between spruce and pine dead wood without bark present was done according to other physiognomic features such as the presence of heart wood of *Pinus sylvestris* stumps and the history of substrate creation. Pine trees are known to survive forest fires more easily than spruce due to their thicker bark and higher tree top. Forest fires can induce an increased resin production in pine trees, which makes them less susceptible towards decomposition by fungi after death. Spruce trees however are more vulnerable to forest fires due to their low hanging branches and thin bark and therefore rarely survive forest fires. Hence, there is no induced

resin production in spruce wood after forest fires which could potentially slow their decomposition (Whitney & Denyer, 1969).

Nevertheless, revisions of the sampling design and data collection could be advised if the study was to be repeated. In order to decrease the variance among stands in the same stand category it could be advised to increase the sample size of inventoried stands. And the border definition between a stump (< 50 cm of height) and standing dead wood (> 50 cm of height) could also be revised, as for example done by Lõhmus & Lõhmus (2001) in their study, in order to account for standing dead wood attributes such as a difference in exposition and distance to the ground. It could also be interesting to account for management techniques, where traces of them have been found, in order to relate substrate availability and management methods.

5 Conclusion

This study focused on environmental variables determining the occurrence of two fire-dependent lichen species in boreal forests in Sweden and confirms a strong species-substrate relationship of *Carbonicola anthracophila* and *C. myrmecina* towards charred, resin rich pine dead wood without bark. Substrate characteristics were identified as the most important factors in lichen occurrence. Both species are more likely to occur on snags and stumps than on logs but were found within all stand categories. Therefore, the distribution of potential *Carbonicola* harbouring substrates is important for effective nature conservation management and not the management type of a forest per se. Nature reserves and voluntary set aside areas harboured more suitable substrates for *Carbonicola* than middle-aged forest stands, which implies a negative influence of intensive forest management practices on substrate availability. Effective conservation measures should therefore mainly aim at (i) the preservation of suitable substrates currently existing in boreal forests and (ii) the creation of suitable *Carbonicola* harbouring substrates in the future. This could be achieved through an incorporation of a dead wood inventory in the national forest inventory in order to identify resin rich, hard pine dead wood, as well as careful planning of harvesting and planting techniques and prescribed recurring forest fires with a high frequency. The re-introduction of natural disturbances such as forest fires in boreal forest ecosystems can therefore play an important role in ensuring forest biodiversity.

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7 Declaration of independence

I, Fiona Grossmann, hereby declare on my honour that my here presented master thesis has been independently prepared, solely with the support of the listed literature references, and that no information has been presented that has not officially been acknowledged. I declare that I have submitted the final digital text document to my supervisor Göran Thor and that the text and wording is entirely my own work. I am aware that the digital version will be checked for plagiarism with the help of an analysis software program.

8 Resources

Ahti, T., Hämet-Ahti, L. & Jalas, J. (1968). Vegetation zones and their sections in northwestern Europe. *Ann. Bot. Fennici* 5, 169–211.

Anderson, D. R., Burnham, K. P. & Thompson, W. L. (2000). Null hypothesis testing: problems, prevalence, and an alternative. *Journal of Wildlife Management* 64(4), 912–923.

Angelstam, P. K. (1998). Maintaining and restoring biodiversity in European boreal forests by developing natural disturbance regimes. *Journal of Vegetation Science* 9(4), 593–602.

Angelstam, P. K. & Petterson, B. (1997). Principles of present Swedish forest biodiversity management. *Ecological Bulletins* (46), 191–203.

Aspegren, S. (2001). Det brinner i skogen- vilka organismer gynnas och hur följer man upp mål med naturvårdsbränning? Uppsala: Skogsforsk.

Asplund, J., Larsson, P., Vatne, S. & Gauslaa, Y. (2010). Gastropod grazing shapes the vertical distribution of epiphytic lichens in forest canopies. *Journal of Ecology* 98(1), 218–225.

Axelsson, A.-L. (2001). *Forest landscape change in boreal Sweden 1850-2000- a multiscale approach*. Diss. SLU.

Barnosky, A. D., Matzke, N., Tomiya, S., Wogan, G. O. U., Swartz, B., Quental, T. B., Marshall, C., McGuire, J. L., Lindsey, E. L., Maguire, K. C., Mersey, B. & Ferrer, E. A. (2011). Has the Earth's sixth mass extinction already arrived? *Nature* 471, 51–57.

Bendiksby, M. & Timdal, E. (2013). Molecular phylogenetics and taxonomy of Hypocenomyce sensu lato (Ascomycota: Lecanoromycetes): Extreme polyphyly and morphological / ecological convergence. *Taxon* 62, 940–956.

Bengtsson, J., Jones, H. & Setälä, H. (1997). The value of biodiversity. *Trends in ecology & evolution* 12(9), 224–336.

Bengtsson, J., Nilsson, S. G., Franc, A. & Menozzi, P. (2000). Biodiversity, disturbances, ecosystem function and management of European forests. *Forest Ecology and Management* 132(1), 39–50.

Berg, Å., Ehnström, B., Gustafsson, L., Hallingbäck, T., Jonsell, M. & Weslien, J. (1994). Threatened plant, animal, and fungus species in Swedish forests: distribution and habitat associations. *Conservation Biology* 8(3), 718–731.

Bergeron, Y., Engelmark, O., Harvey, B., Morin, H. & Sirois, L. (1998). Key issues in disturbance dynamics in boreal forests - Introduction. *Journal of Vegetation Science* 9, 463–468.

Bergeron, Y. & Harvey, B. (1997). Basing silviculture on natural ecosystem dynamics: an approach applied to the southern boreal mixedwood forest of Quebec. *Forest Ecology and Management* 92(1-3), 235–242.

Berglund, H., Hottola, J., Penttilä, R. & Siitonen, J. (2011). Linking substrate and habitat requirements of wood-inhabiting fungi to their regional extinction vulnerability. *Ecography* 34(5), 864–875.

Bolker, B. M., Brooks, M. E., Clark, C. J., Geange, S. W., Poulsen, J. R., Stevens, M. H. H. & White, J.-S. S. (2009). Generalized linear mixed models: a practical guide for ecology and evolution. *Trends in ecology & evolution* 24(3), 127–135.

Bolker, B. M., Skaug, H., Magnusson, A. & Nielsen, A. (2012). *Getting started with the glmmADMB package* [online].

Bonan, G. B. & Shugart, H. H. (1989). Environmental factors and ecological processes in boreal forests. *Annual Review of Ecology and Systematics* 20, 1–28.

Brodo, I. M., Sharnoff, S. D. & Sharnoff, S. (2001). *Lichens of North America*. New Haven, London: Yale University Press.

Brūmelis, G., Jonsson, B. G., Kouki, J., Kuuluvainen, T. & Shorohova, E. (2011). Forest naturalness in Northern Europe: perspectives on processes , structures and species diversity. *Silva Fennica* 45(5), 807–821.

Cardinale, B. J., Duffy, J. E., Gonzalez, A., Hooper, D. U., Perrings, C., Venail, P., Narwani, A., Mace, G. M., Tilman, D., Wardle, D. A., Kinzig, A. P., Daily, G. C., Loreau, M., Grace, J. B., Larigauderie, A., Srivastava, D. S. & Naeem, S. (2012). Biodiversity loss and its impact on humanity. *Nature* 486, 59–67.

CBD (1992). *Convention on Biological Diversity* [online].

Council of the European Union (2011). *EU Biodiversity Strategy to 2020 - Council conclusions*- [online].

Dahlberg, A. (2002). Effects of fire on ectomycorrhizal fungi in Fennoscandian boreal forests. *Silva Fennica* 36(1), 69–80.

Ekbom, B., Schroeder, L. M. & Larsson, S. (2006). Stand specific occurrence of coarse woody debris in a managed boreal forest landscape in central Sweden. *Forest Ecology and Management* 221(1-3), 2–12.

Eliasch, J. (2009). *Climate Change: financing global forests*. London: Crown.

Engelmark, O. & Hytteborn, H. (1999). Coniferous forests. *Acta Phytogeographica Suecica* 84, 55–74.

Ericsson, T. S., Berglund, H. & Östlund, L. (2005). History and forest biodiversity of woodland key habitats in south boreal Sweden. *Biological Conservation* 122(2), 289–303.

Essen, P.-A., Ehnström, B., Ericson, L. & Sjöberg, K. (1997). Boreal Forests. *Ecological Bulletins* (46), 16–47.

European Commission (2011). *Our life insurance, our natural capital: an EU biodiversity strategy to 2020* [online].

Foucard, T. (2001). *Svenska skorplavar och svampar som växer på dem*. Stockholm: Strenströms Bokförlag AB/Interpublishing.

Fridman, J. & Walheim, M. (2000). Amount, structure, and dynamics of dead wood on managed forestland in Sweden. *Forest Ecology and Management* 131(1-3), 23–36.

FSC Sweden (2013). The contribution of FSC ® - certification to biodiversity in Swedish forests. [online],. Available from: http://se.fsc.org/rapporter.289.htm.

Gärdenfors, U. (2010). *The 2010 Red List of Swedish species*. *Red -listed species in Sweden in 2010* pp 285–300 SLU, Uppsala: ArtDatabanken.

Granström, A. (2001). Fire management for biodiversity in the European boreal forest. *Scandinavian Journal of Forest Research* 16, 62–69.

Guisan, A. & Zimmermann, N. E. (2000). Predictive habitat distribution models in ecology. *Ecological Modelling* 135(2-3), 147–186.

Halpern, C. B. & Spies, T. A. (1995). Plant species diversity in natural and managed forests of the Pacific Northwest. *Ecological Applications* 5(4), 913–934.

Hämäläinen, A., Kouki, J. & Lõhmus, P. (2014). The value of retained Scots pines and their dead wood legacies for lichen diversity in clear-cut forests: The effects of retention level and prescribed burning. *Forest Ecology and Management* 324, 89–100.

Hansen, M. C., Stehman, S. V & Potapov, P. V (2010). Quantification of global gross forest cover loss. *Proceedings of the National Academy of Sciences of the United States of America* 107(19), 8650–8655.

Hanski, I. (2000). Extinction debt and species credit in boreal forests: modelling the consequences of different approaches to biodiversity conservation. *Annales Zoologici Fennici* 37, 271–280.

Hansson, L. (1992). Ecology of boreal forests. *Trends in ecology & evolution* 7(9), 299–302.

Hansson, L. & Angelstam, P. K. (1991). Landscape ecology as a theoretical basis for nature conservation. *Landscape Ecology* 5(4), 191–201.

Hawksworth, D. L. & Rossman, A. Y. (1997). Where are all the undescribed fungi? *Phytopathology* 87(9), 888–891.

Hellberg, E., Niklasson, M. & Granström, A. (2004). Influence of landscape structure on patterns of forest fires in boreal forest landscapes in Sweden. *Canadian Journal of Forest Research* 34, 332–338.

Hooper, D. U., Adair, E. C., Cardinale, B. J., Byrnes, J. E. K., Hungate, B. A., Matulich, K. L., Gonzalez, A., Duffy, J. E., Gamfeldt, L. & O'Connor, M. I. (2012). A global synthesis reveals biodiversity loss as a major driver of ecosystem change. *Nature* 486(7401), 105–108.

Hottola, J. & Siitonen, J. (2008). Significance of woodland key habitats for polypore diversity and red-listed species in boreal forests. *Biodiversity and Conservation* 17(11), 2559–2577.

Hughes, A. R., Inouye, B. D., Johnson, M. T. J., Underwood, N. & Vellend, M. (2008). Ecological consequences of genetic diversity. *Ecology Letters* 11(6), 609–623.

Johansson, V., Ranius, T. & Snäll, T. (2012). Epiphyte metapopulation dynamics are explained by species traits, connectivity, and patch dynamics. *Ecology* 93(2), 235–241.

Johansson, V., Ranius, T. & Snäll, T. (2013). Epiphyte metapopulation persistence after drastic habitat decline and low tree regeneration: time-lags and effects of conservation actions. *Journal of Applied Ecology* 50(2), 414–422.

Jonsson, B. G. & Jonsell, M. (1999). Exploring potential biodiversity indicators in boreal forests. *Biodiversity and Conservation* 8, 1417–1433.

Jonsson, B. G., Kruys, N. & Ranius, T. (2005). Ecology of species living on dead wood – lessons for dead wood management. *Silva Fennica* 39, 289–309.

Kasischke, E. S., Christensen, N. L. & Stocks, B. J. (1995). Fire, global warming, and the carbon balance of boreal forests. *Ecological Applications* 5(2), 437–451.

Knops, J. M. H., Nash III, T. H., Boucher, V. L. & Schlesinger, W. (2007). Mineral cycling and epiphytic lichens: Implications at the ecosystem level. *The Lichenologist* 23(03), 309–321.

Knops, J. M. H., Nash III, T. H. & Schlesinger, W. H. (1996). The influence of epiphytic lichens on the nutrient cycling of an oak woodland. *Ecological Monographs* 66(2), 159–179.

Kouki, J., Löfman, S., Martikainen, P., Rouvinen, S. & Uotila, A. (2001). Forest fragmentation in Fennoscandia: Linking habitat requirements of wood-associated threatened species to landscape and habitat changes. *Scandinavian Journal of Forest Research* 16(sup003), 27–37.

Kuuluvainen, T. (1994). Gap disturbance, ground microtopography, and the regeneration dynamics of boreal coniferous forests in Finland: a review. *Annales Zoologici Fennici* 31(1), 35–51.

Kuuluvainen, T. (2002). Natural variability of forests as a reference for restoring and managing biological diversity in boreal Fennoscandia. *Silva Fennica* 36(March), 97–125.

Kuuluvainen, T. (2009). Forest management and biodiversity conservation based on natural ecosystem dynamics in northern Europe: the complexity challenge. *Ambio* 38(6), 309–315.

Kuuluvainen, T. & Grenfell, R. (2012). Natural disturbance emulation in boreal forest ecosystem management — theories , strategies , and a comparison with conventional even-aged management. *Canadian Journal of Forest Research* 42, 1185–1203.

Laarmann, D., Korjus, H., Sims, A., Kangur, A. & Stanturf, J. a. (2013). Initial effects of restoring natural forest structures in Estonia. *Forest Ecology and Management* 304, 303–311 Elsevier B.V.

Larsson, T. B. (2001). Biodiversity evaluation tools for European forests. *Criteria and Indicators for Sustainable Forest Management at the Forest Management Unit Level*. pp 75–82. Finland, Joensuu: European Forest Institute.

Linder, P. & Östlund, L. (1998). Structural changes in three mid-boreal Swedish forest landscapes , 1885-1996. *Biological Conservation* 85, 9–19.

Lõhmus, P. & Kruustük, K. (2010). Lichens on burnt wood in Estonia: a preliminary assessment. *Folia Cryptog. Estonica, Fasc* 41, 37–41.

Lõhmus, P. & Lõhmus, A. (2001). Snags, and their lichen flora in old Estonian peatland forests. *Ann. Bot. Fennici* 38, 265–280.

Lõhmus, P. & Lõhmus, A. (2009). The importance of representative inventories for lichen conservation assessments: the case of Cladonia norvegica and C. parasitica. *The Lichenologist* 41(01), 61–67.

Lommi, S., Berglund, H., Kuusinen, M. & Kuuluvainen, T. (2010). Epiphytic lichen diversity in late-successional Pinus sylvestris forests along local and regional forest utilization gradients in eastern boreal Fennoscandia. *Forest Ecology and Management* 259(5), 883–892.

Loreau, M., Naeem, S., Inchausti, P., Bengtsson, J., Grime, J. P., Hector, A., Hooper, D. U., Huston, M. A., Raffaelli, D., Schmid, B., Tilman, D. & Wardle, D. A. (2001). Biodiversity

and ecosystem functioning: current knowledge and future challenges. *Science* 294(5543), 804–808.

Lundström, J. (2013). *Reserve selection in boreal forest: Focusing on young forest biodiversity potential*. Diss. SLU.

MacKenzie, D. I., Nichols, J. D., Hines, J. E., Knutson, M. G. & Franklin, A. B. (2003). Estimating site occupancy, colonization, and local extinction when a species is detected imperfectly. *Ecology* 84(8), 2200–2207.

Mäkinen, H., Hynynen, J., Siitonen, J. & Sievänen, R. (2006). Predicting the decomposition of Scots pine, Norway spruce, and birch stems in Finland. *Ecological Applications* 16(5), 1865–1879.

Martin, T. G., Wintle, B. A., Rhodes, J. R., Kuhnert, P. M., Field, S. A., Low-Choy, S. J., Tyre, A. J. & Possingham, H. P. (2005). Zero tolerance ecology: improving ecological inference by modelling the source of zero observations. *Ecology Letters* 8(11), 1235–1246.

Millenium Ecosystem Assessment (2005). *Ecosystems and human well-being: Biodiversity synthesis.* Washington, DC.

Nash III, T. H. (Ed.) (2008). *Lichen biology*. Second Edi. Cambridge: Cambridge University Press.

Nguyen-Xuan, T., Bergeron, Y., Simard, D., Fyles, J. W. & Paré, D. (2000). The importance of forest floor disturbance in the early regeneration patterns of the boreal forest of western and central Quebec: a wildfire versus logging comparison. *Canadian Journal of Forest Research* 1364(Payette 1992), 1353–1364.

Niklasson, M. & Drakenberg, B. (2001). A 600-year tree-ring fire history from Norra Kvills National Park, southern Sweden: implications for conservation strategies in the hemiboreal zone. *Biological Conservation* 101(1), 63–71.

Niklasson, M. & Granström, A. (2000). Numbers and sizes of fires: Long-term spatially explicit fire history in a Swedish boreal landscape. *Ecology* 81(6), 1484–1499.

Nilsson, S. G. (1997). Forests in the temperate-boreal transition: Natural and man-made features. *Ecological Bulletins* (46), 61–71.

Nimis, P. L. (1993). *The lichens of Italy*. Torino: Museo Regionale di Scienze Naturali.

Nordén, B., Paltto, H., Götmark, F. & Wallin, K. (2007). Indicators of biodiversity, what do they indicate? – Lessons for conservation of cryptogams in oak-rich forest. *Biological Conservation* 135(3), 369–379.

Östlund, L., Zackrisson, O. & Axelsson, A.-L. (1997). The history and transformation of a Scandinavian boreal forest landscape since the 19th century. *Canadian Journal of Forest Research* 27(8), 1198–1206.

Perrakis, D. D. B. & Agee, J. K. (2006). Seasonal fire effects on mixed-conifer forest structure and ponderosa pine resin properties. *Canadian Journal of Forest Research* 36, 238–254.

R Development Core Team (2014). R: a language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing.

Ranius, T. & Roberge, J.-M. (2011). Effects of intensified forestry on the landscape-scale extinction risk of dead wood dependent species. *Biodiversity and Conservation* 20(13), 2867–2882.

Ruokolainen, L. & Salo, K. (2006). The succession of boreal forest vegetation during ten years after slash-burning in Koli National Park , eastern Finland. *Ann. Bot. Fennici* 43, 363–378.

Sala, O. E., Chapin III, F., Armesto, J. J., Berlow, E., Bloomfield, J., Dirzo, R., Huber-Sanwald, E., Huenneke, L. F., Jackson, R. B., Kinzig, A. P., Leemans, R., Lodge, D. M., Mooney, H. A., Oesterheld, M., Poff, L. N., Sykes, M. T., Walker, B. H., Walker, M. & Wall, D. H. (2000). Global biodiversity scenarios for the year 2100. *Science* 287, 1770–1774.

Schiefelbein, U. (2007). Ökologie und Verbreitung von in Mecklenburg-Vorpommern neu- und wiedergefundenen lichenisierten und lichenicolen Pilzen. *Herzogia* 20, 77–86.

Siitonen, J. (2001). Forest management, coarse woody debris and saproxylic organisms: Fennoscandian boreal forests as an example. *Ecological Bulletins* 49, 11–41.

Sjörs, H. (1999). The background: geology, climate and zonation. *Acta Phytogeographica Suecica* 84, 5–14.

Skogforsk (2013). Rätt metod. *Vision. Kvartalstidning från Skogforsk om forskning för framtidens skogsbruk*. Uppsala: Skogsforsk.

Smith, C. W., Aptroot, A., Coppins, B. J., Fletcher, A., Gilbert, O. L., James, P. W. & Wolseley, P. A. (Eds.) (2009). *The lichens of Great Britain and Ireland*. London: British Lichen Society.

Spribille, T., Thor, G., Bunnell, F. L., Goward, T. & Björk, C. R. (2008). Lichens on dead wood: species-substrate relationships in the epiphytic lichen floras of the Pacific Northwest and Fennoscandia. *Ecography* 31(6), 741–750.

Stankey, G. H. & Shindler, B. (2006). Formation of social acceptability judgements and their implications for management of rare and little-known species. *Conservation Biology* 20(1), 28–37.

Svensson, M. (2013). *Occurrence patterns of dead wood and wood-dependent lichens in managed boreal forest landscapes*. Diss.

Svensson, M., Dahlberg, A., Ranius, T. & Thor, G. (2013). Dead branches on living trees constitute a large part of the dead wood in managed boreal forests, but are not important for wood-dependent lichens. *Journal of Vegetation Science* 1–10.

Swedish Environmental Protection Agency (2012). *Sweden's environmental objectives - An introduction*.

Swedish Forest Agency. *The Swedish Forestry Act*. [online] (1993). Available from: http://www.skogsstyrelsen.se/en/forestry/The-Forestry-Act/. [Accessed 2014-04-30].

Swedish Forest Agency (2000). *Signalarter. Indikatorer på skyddsvärd skog. Flora över kryptogamer*. p 160 Jönköping: Skogsstyrelsen förlag.

Swedish Forest Agency (2013). *Skogsstatistisk årsbok 2013 / Swedish Statistical Yearbook of Forestry*. Jönköping: Skogsstyrelsen förlag.

Swedish Meterological and Hydrological Institute. *Hälsingland's Climate*. [online] (2014). Available from: http://www.smhi.se/kunskapsbanken/meteorologi/halsinglands-klimat-1.4970. [Accessed 2014-06-16].

Swedish Species Information Centre. *Kolflarnlav - Hypocenomyce anthracophila*. [online] (2011). Available from: http://www.artfakta.se/GetSpecies.aspx?SearchType=Advanced. [Accessed 2014-03-18].

Swedish Species Information Centre. *Mörk kolflarnlav - Hypocenomyce castaneocinerea*. [online] (2013). Available from: http://www.artfakta.se/GetSpecies.aspx. [Accessed 2014-03-18].

TEEB (2010). *The economics of ecosystems and biodiversity: Mainstreaming the economics of nature: A synthesis of the approach, conclusions and recommendations of TEEB*.

The Royal Swedish Academy of Agriculture and Forestry (2009). *The Swedish Forestry Model* [online].

Thor, G. (1998). Red-listed lichens in Sweden: habitats, threats, protection, and indicator value in boreal coniferous forests. *Biodiversity and Conservation* 7, 59–72.

Tikkanen, O.-P., Martikainen, P., Hyvärinen, E., Junninen, K. & Kouki, J. (2006). Red-listed boreal forest species of Finland: associations with forest structure, tree species, and decaying wood. *Annales Zoologici Fennici* 43, 373–383.

Tilman, D., May, R. M., Lehman, C. L. & Nowak, M. A. (1994). Habitat destruction and the extinction debt. *Nature* 371, 65–66.

Timdal, E. (1984). The genus Hypocenomyce (Lecanorales, Lecideaceae), with special emphasis on the Norwegian and Swedish species. *Nordic Journal of Botany* 4(1), 83–108.

Timdal, E. *Einar Timdal's database of examined specimens*. [online] (2014a). Available from: http://nhm2.uio.no/lichens/sx/sx.php?v=1&sl=Hypocenomyce&ep=&ld=&pr=&lo=&lg=&ln=&es=&ty=&ch=&hb=&hn=.

Timdal, E. *Photos of Carbonicola species*. [online] (2014b) (The lichen photo gallery). Available from: http://nhm2.uio.no/lichens/genusphoto.php?gen=Carbonicola&width=180. [Accessed 2014-03-31].

Timonen, J., Siitonen, J., Gustafsson, L., Kotiaho, J. S., Stokland, J. N., Sverdrup-Thygeson, A. & Mönkkönen, M. (2010). Woodland key habitats in northern Europe: concepts, inventory and protection. *Scandinavian Journal of Forest Research* 25(4), 309–324.

Tufan, Ö., Sümbül, H. & Türk, A. Ö. (2006). The lichen flora of the Termessos National Park in Southwestern Turkey. *Mycotaxon* 94, 43–46.

Walker, L. R., Wardle, D. A., Bardgett, R. D. & Clarkson, B. D. (2010). The use of chronosequences in studies of ecological succession and soil development. *Journal of Ecology* 98(4), 725–736.

Wallenius, T., Niskanen, L., Virtanen, T., Hottola, J., Brūmelis, G., Angervuori, A., Julkunen, J. & Pihlström, M. (2010). Loss of habitats, naturalness and species diversity in Eurasian forest landscapes. *Ecological Indicators* 10(6), 1093–1101.

Wein, R. W. & MacLean, D. A. (1983). An overview of fire in northern ecosystems. In: Scientific Committee on Problems of the Environment (SCOPE) (Ed) *The Role of Fire in Northern Circumpolar Ecosystems*. pp 1–16. Chichester, New York, Brisbane, Toronto: John Wiley & Sons Ltd.

Whitney, R. D. & Denyer, W. B. G. (1969). Resin as a barrier to infection of white spruce by heartrotting fungi. *Forest Science* 15(3), 266–267.

Whittingham, M. J., Stephens, P. A., Bradbury, R. B. & Freckleton, R. P. (2006). Why do we still use stepwise modelling in ecology and behaviour? *The Journal of animal ecology* 75(5), 1182–1189.

Wirth, V., Hauck, M. & Schultz, M. (2013). *Die Flechten Deutschlands*. Stuttgart: Eugen Ulmer KG.

Zackrisson, O. (1977). Influence of forest fires on the North Swedish boreal forest. *Oikos* 29, 22–32.

Zackrisson, O. & Wardle, D. A. (1996). Ecological function of charcoal from wildfire in the boreal forest. *Oikos* 77, 10–19.

Zuur, A. F., Ieno, E. N. & Elphick, C. S. (2010). A protocol for data exploration to avoid common statistical problems. *Methods in Ecology and Evolution* 1(1), 3–14.

9 APPENDIX

INVENTORY DATA SHEET

Date: Stand ID: Starting point of transect: Sheet number:

Object number (stand/total)			
GPS	# N E	# N E	# N E
Tree species/category			
(1) snag (2) stump (3) log			
Shadiness: (1) exposed (2) semi-shaded (3) never exposed			
Hardness of wood: (1) Few mm (2) 1-2 cm (3) 2-5cm (4) >5 cm (5) crumbling			
Length/height [cm]			
Diameter [cm]			
Charred wood [1/0]			
Occurrence [1/0] (1) Hertelidea botryosa (2) Cladonia parasitica (3) C. anthracophila (4) C. myrmecina			
Presence of apothecia [1/0] (1) H. botryosa (2) Cladonia parasitica (3) C. anthracophila (4) C. myrmecina			
Cover of bark [%]			
Object within transect [1/0]			

STAND DESCRIPTIONS WITH PICTURES

Different stand categories (8-19 years, 20-64 years, above 65 years, nature reserves (NR) & voluntary set asides (FA))

Stand: 20-64 years, ID 4
Start: 62° 15' 36.7" 16° 04' 47.6"
End: 62° 15′ 42.83″ 16° 4′ 51.58″

Description:
35-40 years old *Pinus sylvestris* plantation with some *Pinus contorta* (first generation), spruce and some birches, partly swampy but otherwise dry.

Stand: > 65 years, ID 4
Start: 62° 15' 54.6" 16° 01' 36.9"
End: 62° 15' 58.9" 16° 01' 22.5"

Description:
Old-growth mixed pine and spruce forest around 100 years old along a mountain ridge with steep slopes, dominated by pine, barely birch. Newly created dead wood because of wind falls.

Stand: NR & FA, ID 1
Start: 62° 13' 43.9" 16° 06' 06.8"
End: 62° 13' 48.4" 16° 06' 17.2"

Description:
Nature reserve. In lower swampy areas spruces and some birches. In higher areas a nutrient poor, pine dominated forest with trees in all dimensions, rocks, self-thinning and open areas.

Stand: NR & FA, ID 4
Start: 62° 13' 03.9" 16° 07' 01.1"
End: 62° 13' 02.0" 16° 06' 49.6"

Description:
In lower, shaded areas spruce dominated with lots of pendulous lichens, further inside the reserve and in a higher area a pine dominated old growth forest ca. 100-140 years old, rarely some pines around 200 y.

Stand: 20- 64 years, ID 3
Start: 62° 13' 51.9" 16° 10' 41.6"
End: 62° 13' 56.2" 16° 10' 31.1"

Description:
Stand close to and partly within mire with old drainage canals to allow spruce to grow there. Beaver. Very shaded, not well growing spruce in the lower parts and better growing spruce higher up. Spruce plantation with old pine snags.

Stand: 8-19 years, ID 5
Start: 62° 10' 18.3" 16° 10' 40.2"
End: 62° 10' 15.6" 16° 10' 28.7"
Description:
Burned clear-cut where there was a former spruce and pine forest. Around 10 years old.

Stand: 8-19 y, ID 4
Start: 62° 09' 20.2" 16° 10' 16.6"
End: 62° 09' 17.1" 16° 10' 26.4"
Description:
Burnt clear-cut. Lots of boulders, difference in ground level. No picture due to pouring rain.

Stand: > 65 years, ID 5
Start: 62° 09' 09.3" 16° 15' 17.4"
End: 62° 09' 04.8" 16° 15' 27.1"

Description:
Pine forest around 100-240 y ears old within the self-thinning process, fire scars; lots of snags. Some parts where influenced by humans as some trees were taken away and with traces of mechanical thinning.

Stand: NR &FA, ID 0
Start: 62° 08' 07.2" 16° 19' 17.9"
End: 62° 19' 04.2" 16° 25' 27.8"

Description:
Old-growth spruce and pine forest that burned in the 1970s. Lots of lichen covered spruces, old-growth pine, 20m high old pine snags, indicator species of high biodiversity (e.g. *Fomitopsis rosea).*

Stand: NR & FA reserve, ID 0
Start: 62° 08' 30.5" 16° 22' 46.0"
End: 62° 08' 30.6" 16° 22' 30.0"

Description:
Old –growth spruce forest around 100-150 years old, swampy parts, very damp, lots of stumps covered in moss. There was even snow left. Fire scars only on very old snags.

Stand: > 65 years, ID 3

Start: 62° 05' 36.2" 16° 25' 39.3"
End: 62° 05' 41.3" 16° 25' 30.9"

Description:
Around 100 years old spruce forest, with already cut small spruces and birch- prepared for clear-cutting/logging. Wet with small streams and mires, no beaver, but *Sorbus* trees. High groundwater level visible through spring-like upcoming water.

Stand: > 65 years, ID 2

Start: 62° 04' 14.5" 16° 22' 22.0"
End: 62° 04' 20.8" 16° 22' 7.4"

Description:
Spruce forest around 100 years old with high proportion of birches and some old pine objects. Quite humid and shaded, mossy.

Stand: 20-64 years, ID 5

Start: 62° 04' 24.9" 16° 10' 44.0"
End: 62° 04' 25.8" 16° 10' 48.5"

Description:
Mixed, semi-shaded forest with spruce, *Pinus sylvestris* and *P. contorta* which was in some parts mechanically thinned, with small stream in the middle. 40-60 years old, semi-shaded with a shaded younger spruce part along the stream.

Stand: 8-19 years, ID 0
Start: 62° 17' 12.3" 16° 17' 32.5"
End: 62° 17' 16.4" 16° 07' 22.1"

Description:
Unburnt clear-cut around 20 years old. A lot of stumps were totally overgrown by grass. Lots of deciduous trees, bushes, birches and planted spruce.

Stand: > 65 years, ID 0
Start: 62° 14' 55.1" 16° 20' 16.1"
End: 62° 14' 48.7" 16° 20' 30.0"

Description:
Spruce plantation on a former field. Visible piles of rocks and boulders where farmers took out the rocks of their field. Old, decaying house close by. No old pine objects due to agricultural history. Some deciduous trees like *Salix*, aspen, birch. A lot of humanly produced spruce stumps after the first harvest.

Stand: 20- 64 years, ID 0
Start: 62° 14' 36.4" 16° 19' 45.8"
End: 62° 14' 38.4" 16° 19' 57.3"

Description:
Spruce plantation with some pine around 50-60 years old. Big tracks from forest machines.

Stand: NR & FA, ID 3

Start: 62° 13' 26.1" 16° 16' 35.7"
End: 62° 13' 31.4" 16° 16' 31.8"

Description:
Old-growth spruce forest with tall deciduous trees like aspen and *Salix*, *Prunus padus* and *Sorbus*. Without stumps, but a high groundwater table; nutrient rich soil conditions.

Stand: > 65 years, ID 1

Start: 62° 15' 32.7" 16° 27' 22.7"
End: 62° 15' 37.9" 16° 27' 16.9"

Description:
Mixed pine and spruce forest, dominated by pine with spruce in swampy areas, with some birches. Probably an old voluntary set-aside area.

Stand: 20-64 years, ID 2

Start: 62° 13' 58.9" 16° 26' 14.6"
End: 62° 13' 52.5" 16° 26' 10.9"

Description:
Spruce and pine forest around 50 years old with a lot of windfalls. There are some old pine stumps that were very decomposed and shaded.

Stand: 20-64 years, ID 0

Start: 62° 11' 53.0" 16° 24' 24.8"

End: 62° 11' 49.1" 16° 24' 14.1"

Description:

Very shaded and humid spruce forest around 40-50 years old without mechanical thinning (which made it difficult to walk). Perhaps seedlings; with some old pine dead wood objects from former forests that were all shaded.

Stand: 8-19 years, ID 2

Start: 62° 10' 38.0" 16° 28' 30.8"

End: 62° 10' 41.8" 16° 28! 41.2"

Description:

Unburnt clear cut around 15 years old with planted spruce and a lot of deciduous trees.

Stand: 8-19 years, ID 3

Start: 62° 04' 42.9" 16° 17' 38.3"

End: 62° 04' 39.1" 16° 17' 47.1"

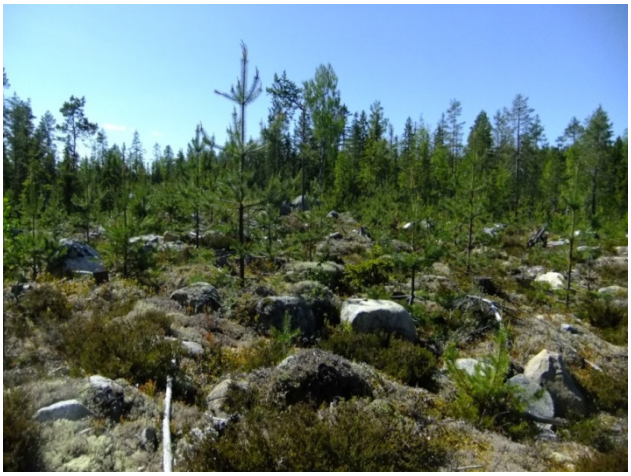
Description:

Unburnt clear-cut around 6 years old with small pine and spruce trees and lots of dead wood stumps from former forest: old growth pine-forest with younger spruces and fire scarred objects from even further times back.

Stand: 8-19 years, ID 1

Start: 62° 09' 26.0" 16° 25' 08.20"
End: 62° 09' 20.3" 16° 25' 29.8"

Description:
Unburnt clear-cut around 10 years old, (young pines were around 7 years) with silent witnesses of former forest: Old pine forest on mountain ridge and thus nutrient poor and quite dry and rocky, with lots of old fire scarred objects.



Stand: NR & FA, ID 2

Start: 62° 10' 23.1" 16° 24' 07.3"
End: 62° 10' 18.6" 16° 24' 00.0"

Description:
Mixed spruce and pine forest with many old pine wood objects, drier upper parts with rocks and lower swampy parts with lots of mosses.

DATA

Table 8. Collected data on dead wood types and lichen occurrence in Hälsingland with the parameters **obj** (total object number, 1-1684), **stand cat** (8-19 years, 20-65 years, >65 years, nature reserves & voluntary set-asides), **ID** (stand ID, 1-24), **GPS coordinates**, **w** (wood quality: 1 =resin rich pine, 2 =ordinary pine, 3=spruce), **S** (substrate type: 1=snag, 2=stump, 3=log), **Sha** (Shadiness: 1=exposed, 2=semi-shaded, 3=never exposed) **Hard** (Hardness of wood: 1= knife penetrates only a few mm, hard, 2=1-2cm, 3=2-5cm,4= >5cm, 5=wood is crumbling), **l/h** (length and height of an object), **d1**, **d2** (diameter measured in cm), **sp1** (occurrence of *Carbonicola anthracophila*: 1=yes, 0=no), **sp2** (occurrence of *Carbonicola myrmecina*: 1=yes, 0=no), **Apo sp1** (apothecia present on *C. anthracophila*: 1=yes, 0=no), **Apo sp2** (apothecia present on *C. myrmecina*: 1=yes, 0=no), **f** (charred wood present: 1=yes, 0=no) , **ba** (cover of bark in %), **tran** (object within sample plot: 1=yes, 0=no)

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1	20-64 y	4	62° 15' 36.6"	16° 04' 47.7"	1	3	2	2	650	18	9	0	0	0	0	0	0	1
2	20-64 y	4	62° 15' 36.8"	16° 04' 48.0"	1	2	2	3	36	29	0	0	0	0	0	0	0	1
3	20-64 y	4	62° 15' 37.4"	16° 04' 47.8"	1	1	2	4	54	33	0	0	0	0	0	1	0	1
4	20-64 y	4	62° 15' 36.4"	16° 04' 47.1"	1	3	1	2	350	18	11	0	0	0	0	1	0	1
5	20-64 y	4	62° 15' 37.4	16° 04' 47.3"	1	2	2	1	36	50	0	0	0	0	0	0	0	1
6	20-64 y	4	62° 15' 38.6"	16° 04' 47.7"	1	2	2	1	45	22	0	0	0	0	0	1	0	1
7	20-64 y	4	62° 15' 38.5"	16° 04' 47.5"	1	2	2	1	21	40	0	0	0	0	0	0	0	1
8	20-64 y	4	62° 15' 38.7"	16° 04' 47.2"	1	2	2	1	43	25	0	0	0	0	0	0	0	1
9	20-64 y	4	62° 15' 39.7"	16° 04' 48.0"	1	2	1	1	50	67	0	0	0	0	0	1	0	1
10	20-64 y	4	62° 15' 39.8"	16° 04' 48.1"	2	2	2	5	28	14	0	0	0	0	0	0	0	1
11	20-64 y	4	62° 15' 39.8"	16° 04' 48.2"	1	3	2	1	250	12	10	0	0	0	0	1	0	1
12	20-64 y	4	62° 15' 39.9"	16° 04' 48.1"	1	2	2	1	47	14	0	0	0	0	0	1	0	1
13	20-64 y	4	62° 15' 40.3"	16° 04' 48.2"	1	2	2	1	46	59	0	0	0	0	0	0	0	1
14	20-64 y	4	62° 15' 40.2"	16° 04' 48.1"	1	1	2	4	60	44	0	0	0	0	0	1	0	1
15	20-64 y	4	62° 15' 40.3"	16° 04' 48.5"	1	3	1	1	200	20	11	0	0	0	0	1	0	1
16	20-64 y	4	62° 15' 40.3"	16° 04' 48.5"	1	3	1	1	100	12	12	0	0	0	0	1	0	1
17	20-64 y	4	62° 15' 40.3"	16° 04' 48.1"	1	1	2	1	60	100	0	0	0	0	0	1	0	1
18	20-64 y	4	62° 15' 40.3"	16° 04' 48.4"	3	3	2	1	1000	10	2	0	0	0	0	0	100	1
19	20-64 y	4	62° 15' 40.8"	16° 04' 48.8"	1	2	1	1	49	35	0	0	0	0	0	1	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
20	20-64 y	4	62° 15' 40.8"	16° 04' 48.9"	1	2	2	5	40	35	0	0	0	0	0	0	0	1
21	20-64 y	4	62° 15' 41.6"	16° 04' 48.6"	3	3	1	1	500	10	2	0	0	0	0	0	100	1
22	20-64 y	4	62° 15' 41.3"	16° 04' 49.9"	1	2	1	1	49	30	0	0	0	0	0	1	0	1
23	20-64 y	4	62° 15' 41.6"	16° 04' 49.2"	1	3	1	1	100	25	20	0	0	0	0	1	0	1
24	20-64 y	4	62° 15' 41.7"	16° 04' 50.2"	1	1	1	1	30	20	0	0	0	0	0	1	0	1
25	20-64 y	4	62° 15' 41.8"	16° 04' 49.9"	2	2	1	5	21	23	0	0	0	0	0	0	0	1
26	20-64 y	4	62° 15' 42.3"	16° 04' 50.9"	1	2	2	1	46	50	0	0	0	0	0	1	0	1
27	20-64 y	4	62° 15' 40.7"	16° 04' 50.8"	1	3	2	1	150	41	29	0	0	0	0	1	0	1
28	20-64 y	4	62° 15' 40.7"	16° 04' 50.8"	2	2	1	2	50	35	0	0	0	0	0	0	0	1
29	20-64 y	4	62° 15' 40.8"	16° 04' 51.3"	2	2	3	5	25	13	0	0	0	0	0	0	0	1
30	20-64 y	4	62° 15' 42.8"	16° 04' 51.4"	2	3	2	4	100	10	10	0	0	0	0	0	0	1
31	20-64 y	4	62° 15' 42.6"	16° 04' 51.9"	1	2	2	1	43	33	0	0	0	0	0	1	0	1
32	20-64 y	4	62° 15' 42.8"	16° 04' 51.7"	2	3	2	1	150	10	10	0	0	0	0	0	0	1
33	20-64 y	4	62° 15' 37.2"	16° 04' 51.0"	3	1	3	1	200	10	7	0	0	0	0	0	10	0
34	20-64 y	4	62° 15' 37.2"	16° 04' 49.9"	1	1	2	1	114	50	0	0	0	0	0	1	0	0
35	20-64 y	4	62° 15' 38.1"	16° 04' 51.7"	3	1	1	1	500	14	0	0	0	0	0	0	90	0
36	20-64 y	4	62° 15' 38.1"	16° 04' 50.8"	3	1	2	1	500	17	0	0	0	0	0	0	100	0
37	20-64 y	4	62° 15' 38.1"	16° 04' 50.9"	3	3	2	2	138	15	13	0	0	0	0	0	0	0
38	20-64 y	4	62° 15' 39.1"	16° 04' 53.5"	2	3	1	1	177	13	11	0	0	0	0	0	0	0
39	20-64 y	4	62° 15' 39.1"	16° 04' 53.5"	2	3	1	3	200	22	14	0	0	0	0	0	0	0
40	20-64 y	4	62° 15' 39.1"	16° 04' 53.5"	2	3	1	2	230	20	15	0	0	0	0	0	0	0
41	20-64 y	4	62° 15' 40.4"	16° 04' 55.3"	2	2	1	1	30	23	0	0	0	0	0	0	25	0
42	20-64 y	4	62° 15' 40.8"	16° 04' 55.7"	3	3	1	1	200	16	8	0	0	0	0	0	30	0
43	20-64 y	4	62° 15' 41.1"	16° 04' 55.3"	3	3	2	1	250	10	2	0	0	0	0	0	10	0
44	20-64 y	4	62° 15' 41.1"	16° 04' 55.3"	3	1	2	1	80	10	0	0	0	0	0	0	90	0
45	20-64 y	4	62° 15' 41.9"	16° 04' 56.9"	2	1	1	1	66	16	0	0	0	0	0	0	0	0
46	20-64 y	4	62° 15' 42.6"	16° 04' 58.1"	3	1	1	1	81	21	0	0	0	0	0	0	40	0
47	20-64 y	4	62° 15' 43.1"	16° 04' 58.5"	3	2	2	1	25	20	0	0	0	0	0	0	80	0

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
48	20-64 y	4	62° 15' 43.5"	16° 04' 59.0"	3	2	1	1	45	27	0	0	0	0	0	0	50	0
49	20-64 y	4	62° 15' 43.4"	16° 04' 59.5"	3	2	2	1	40	15	0	0	0	0	0	0	70	0
50	20-64 y	4	62° 15' 43.5"	16° 04' 59.6"	2	1	1	1	54	14	0	0	0	0	0	0	40	0
51	20-64 y	4	62° 15' 44.2"	16° 05' 00.0"	2	1	2	2	77	13	0	0	0	0	0	0	80	0
52	20-64 y	4	62° 15' 46.0"	16° 05' 01.1"	2	1	2	1	600	18	0	0	0	0	0	0	40	0
53	20-64 y	4	62° 15' 46.9"	16° 05' 00.3"	3	2	2	5	40	36	0	0	0	0	0	0	0	0
54	20-64 y	4	62° 15' 47.0"	16° 04' 59.6"	2	1	2	1	100	25	0	0	0	0	0	0	10	0
55	20-64 y	4	62° 15' 47.0"	16° 05' 00.7"	3	2	3	1	15	13	0	0	0	0	0	0	0	0
56	> 65 y	4	62° 15' 54.6"	16° 01' 36.9"	2	3	2	2	300	28	26	0	0	0	0	0	100	1
57	> 65 y	4	62° 15' 54.7"	16° 01' 36.9"	1	2	2	2	47	46	0	0	0	0	0	0	0	1
58	> 65 y	4	62° 15' 54.7"	16° 01' 36.7"	2	3	2	1	700	40	21	0	0	0	0	0	100	1
59	> 65 y	4	62° 15' 54.4"	16° 01' 36.5"	2	1	2	2	500	10	0	0	0	0	0	0	15	1
60	> 65 y	4	62° 15' 54.4"	16° 01' 36.5"	2	1	2	1	600	19	0	0	0	0	0	0	5	1
61	> 65 y	4	62° 15' 54.4"	16° 01' 36.4"	2	3	2	1	200	13	7	0	0	0	0	0	100	1
62	> 65 y	4	62° 15' 54.5"	16° 01' 36.2"	1	3	2	1	220	21	16	0	0	0	0	0	0	1
63	> 65 y	4	62° 15' 54.8"	16° 01' 35.9"	3	2	3	1	23	31	0	0	0	0	0	0	0	1
64	> 65 y	4	62° 15' 54.8"	16° 01' 36.1"	1	1	2	1	500	22	0	0	0	0	0	0	2	1
65	> 65 y	4	62° 15' 54.9"	16° 01' 36.2"	3	2	3	1	21	25	0	0	0	0	0	0	0	1
66	> 65 y	4	62° 15' 54.8"	16° 01' 36.5"	2	3	2	1	560	30	11	0	0	0	0	0	100	1
67	> 65 y	4	62° 15' 54.8"	16° 01' 36.1"	1	1	2	1	54	16	0	0	0	0	0	0	0	1
68	> 65 y	4	62° 15' 54.8"	16° 01' 36.1"	2	1	2	1	300	32	0	0	0	0	0	0	80	1
69	> 65 y	4	62° 15' 54.9"	16° 01' 36.0"	1	2	2	1	47	18	0	0	0	0	0	0	0	1
70	> 65 y	4	62° 15' 54.0"	16° 01' 36.0"	2	3	2	1	600	30	25	0	0	0	0	0	2	1
71	> 65 y	4	62° 15' 54.1"	16° 01' 35.3"	2	1	2	1	800	36	0	0	0	0	0	0	3	1
72	> 65 y	4	62° 15' 54.0"	16° 01' 35.4"	3	3	2	1	1200	20	14	0	0	0	0	0	100	1
73	> 65 y	4	62° 15' 54.4"	16° 01' 35.5"	2	2	2	4	50	12	0	0	0	0	0	0	0	1
74	> 65 y	4	62° 15' 54.3"	16° 01' 35.2"	2	3	2	1	600	14	4	0	0	0	0	0	1	1
75	> 65 y	4	62° 15' 55.2"	16° 01' 35.5"	1	1	3	1	60	18	0	0	0	0	0	0	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
76	> 65 y	4	62° 15' 55.2"	16° 01' 35.2"	1	1	2	1	74	25	0	0	0	0	0	0	0	1
77	> 65 y	4	62° 15' 55.9"	16° 01' 35,3"	1	2	2	1	49	20	0	0	0	0	0	0	0	1
78	> 65 y	4	62° 15' 55.9"	16° 01' 34.6"	1	2	2	1	44	24	0	0	0	0	0	0	0	1
79	> 65 y	4	62° 15' 56.1"	16° 01' 34.3"	3	1	2	1	700	20	0	0	0	0	0	0	30	1
80	> 65 y	4	62° 15' 56.1"	16° 01' 34.1"	2	3	2	1	800	27	6	0	0	0	0	0	40	1
81	> 65 y	4	62° 15' 56.1"	16° 01' 34.1"	1	2	2	2	46	66	0	0	0	0	0	0	0	1
82	> 65 y	4	62° 15' 56.1"	16° 01' 33.7"	3	3	2	1	700	15	6	0	0	0	0	0	100	1
83	> 65 y	4	62° 15' 56.6."	16° 01' 33.5"	1	3	2	3	650	29	0	0	0	0	0	0	0	1
84	> 65 y	4	62° 15' 56.4"	16° 01' 33.0"	1	3	2	3	560	24	20	0	0	0	0	0	0	1
85	> 65 y	4	62° 15' 56.5"	16° 01' 33.0"	1	3	1	3	450	28	0	0	0	0	0	0	0	1
86	> 65 y	4	62° 15' 56.6"	16° 01' 32.9"	1	3	2	3	900	22	5	0	0	0	0	0	0	1
87	> 65 y	4	62° 15' 57.2"	16° 01' 32.6"	1	2	3	1	37	34	0	0	0	0	0	0	0	1
88	> 65 y	4	62° 15' 57.4"	16° 01' 32.2"	2	3	2	1	510	14	4	0	0	0	0	0	70	1
89	> 65 y	4	62° 15' 57.7"	16° 01' 31.2"	3	3	2	1	100	10	2	0	0	0	0	0	100	1
90	> 65 y	4	62° 15' 57.7"	16° 01' 32.0"	3	2	2	2	48	26	0	0	0	0	0	0	0	1
91	> 65 y	4	62° 15' 58.2"	16° 01' 30.7"	3	1	2	1	250	13	0	0	0	0	0	0	5	1
92	> 65 y	4	62° 15' 58.0"	16° 01' 30.3"	3	2	2	1	33	15	0	0	0	0	0	0	0	1
93	> 65 y	4	62° 15' 58.3"	16° 01' 30.7"	1	3	2	1	1000	23	15	0	0	0	0	0	0	1
94	> 65 y	4	62° 15' 58.3"	16° 01' 29.8"	2	2	2	4	27	26	0	0	0	0	0	0	80	1
95	> 65 y	4	62° 15' 58.3"	16° 01' 29.8"	2	2	2	4	28	26	0	0	0	0	0	0	0	1
96	> 65 y	4	62° 15' 58.3"	16° 01' 28.8"	1	1	2	1	145	61	41	0	0	0	0	0	0	1
97	> 65 y	4	62° 15' 58.1"	16° 01' 28.6"	2	2	3	3	44	30	0	0	0	0	0	0	0	1
98	> 65 y	4	62° 15' 58.5"	16° 01' 27.7"	3	3	2	1	230	18	4	0	0	0	0	0	90	1
99	> 65 y	4	62° 15' 58.7"	16° 01' 27.3"	2	1	1	1	92	17	0	0	0	0	0	0	0	1
100	> 65 y	4	62° 15' 58.8"	16° 01' 27.4"	2	2	1	1	29	18	0	0	0	0	0	0	0	1
101	> 65 y	4	62° 15' 58.9"	16° 01' 26.5"	2	3	1	1	450	15	5	0	0	0	0	0	0	1
102	> 65 y	4	62° 15' 59.0"	16° 01' 25.5"	3	1	2	1	300	20	0	0	0	0	0	0	90	1
103	> 65 y	4	62° 15' 58.8"	16° 01' 25.6"	3	3	1	1	500	20	4	0	0	0	0	0	100	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
104	> 65 y	4	62° 15' 59.3"	16° 01' 25.7"	3	2	1	1	36	13	0	0	0	0	0	0	0	1
105	> 65 y	4	62° 15' 59.0"	16° 01' 25.1"	3	2	1	3	43	16	0	0	0	0	0	0	0	0
106	> 65 y	4	62° 15' 56.9"	16° 01' 21.2"	3	1	2	1	160	31	0	0	0	0	0	0	100	0
107	> 65 y	4	62° 15' 56.9"	16° 01' 21.2"	3	1	2	1	170	34	0	0	0	0	0	0	100	0
108	NR & FA	1	62° 13' 43.9"	16° 06' 06.8"	1	3	3	1	140	24	20	0	0	0	0	1	0	1
109	NR & FA	1	62° 13' 43.9"	16° 06' 06.9"	3	2	3	4	18	34	0	0	0	0	0	1	0	1
110	NR & FA	1	62° 13' 43.7"	16° 06' 07.1"	1	1	2	1	90	44	0	1	0	0	0	1	0	1
111	NR & FA	1	62° 13' 43.7"	16° 06' 07.4"	2	3	2	1	100	10	6	0	0	0	0	0	0	1
112	NR & FA	1	62° 13' 43. 7"	16° 06' 07.6"	1	1	2	1	60	19	0	0	0	0	0	0	0	1
113	NR & FA	1	62° 13' 43.9"	16° 06' 07.0"	2	1	3	1	1000	29	0	0	0	0	0	0	10	1
114	NR & FA	1	62° 13' 44.2"	16° 06' 08.2"	1	1	2	1	1250	30	0	0	0	0	0	1	5	1
115	NR & FA	1	62° 13' 44.2"	16° 06' 08.3"	1	2	3	1	45	12	0	0	0	0	0	0	0	1
116	NR & FA	1	62° 13' 44.4"	16° 06' 09.9"	1	3	3	1	200	24	15	0	0	0	0	0	0	1
117	NR & FA	1	62° 13' 44.4"	16° 06' 09.9"	1	3	3	1	150	15	14	0	0	0	0	0	0	1
118	NR & FA	1	62° 13' 44.4"	16° 06' 09.9"	1	1	3	1	73	12	0	1	1	0	0	1	0	1
119	NR & FA	1	62° 13' 44.4"	16° 06' 09.0"	1	2	3	1	36	27	0	0	0	0	0	1	0	1
120	NR & FA	1	62° 13' 44.4"	16° 06' 09.0"	1	2	3	1	48	33	0	0	0	0	0	1	0	1
121	NR & FA	1	62° 13' 44.0"	16° 06' 08.8"	3	3	2	2	350	17	10	0	0	0	0	0	40	1
122	NR & FA	1	62° 13' 44.0"	16° 06' 08.8"	1	3	3	1	150	36	30	0	0	0	0	1	0	1
123	NR & FA	1	62° 13' 44.2"	16° 06' 09.2"	3	3	2	3	200	17	15	0	0	0	0	0	7	1
124	NR & FA	1	62° 13' 44.2"	16° 06' 09.3"	3	3	2	2	250	20	18	0	0	0	0	0	50	1
125	NR & FA	1	62° 13' 44.4"	16° 06' 09.3"	3	3	2	1	250	30	23	0	0	0	0	0	80	1
126	NR & FA	1	62° 13' 44.4."	16° 06' 09.5"	3	2	2	1	20	30	0	0	0	0	0	0	80	1
127	NR & FA	1	62° 13' 44.4."	16° 06' 10.0"	3	3	2	1	100	21	16	0	0	0	0	0	20	1
128	NR & FA	1	62° 13' 44.4"	16° 06' 09.9"	3	2	2	1	20	23	0	0	0	0	0	0	95	1
129	NR & FA	1	62° 13' 44.6"	16° 06' 10.2"	1	1	1	1	150	28	0	1	1	0	0	1	0	1
130	NR & FA	1	62° 13' 44.6"	16° 06' 10.7"	1	3	2	1	130	15	8	0	0	0	0	0	0	1
131	NR & FA	1	62° 13' 44.6"	16° 06' 10.9"	1	2	3	1	49	45	0	0	1	0	0	1	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
132	NR & FA	1	62° 13' 44.6 "	16° 06' 11.0"	1	2	1	1	37	53	0	0	0	0	0	1	0	1
133	NR & FA	1	62° 13' 44.7"	16° 06' 10.9"	1	3	2	1	100	31	0	0	0	0	0	0	0	1
134	NR & FA	1	62° 13' 45.2"	16° 06' 11.9"	1	2	1	1	47	42	0	1	1	0	0	1	0	1
135	NR & FA	1	62° 13' 45.2"	16° 06' 12.0"	2	2	1	1	10	48	0	0	0	0	0	0	0	1
136	NR & FA	1	62° 13' 45.3"	16° 06' 12.3"	2	1	1	1	55	28	0	0	0	0	0	1	0	1
137	NR & FA	1	62° 13' 45.3"	16° 06' 12.3"	1	3	3	1	200	55	0	0	0	0	0	0	0	1
138	NR & FA	1	62° 13' 45.4"	16° 06' 12.2"	1	2	2	1	49	62	0	0	0	0	0	1	0	1
139	NR & FA	1	62° 13' 45.5"	16° 06' 12.8"	3	2	2	1	15	27	0	0	0	0	0	0	0	1
140	NR & FA	1	62° 13' 45.8"	16° 06' 13.1"	2	2	3	2	48	39	0	0	0	0	0	0	0	1
141	NR & FA	1	62° 13' 45.7"	16° 06' 12.8"	3	2	2	3	20	34	0	0	0	0	0	0	50	1
142	NR & FA	1	62° 13' 45.7"	16° 06' 13.0"	3	2	2	2	44	50	0	0	0	0	0	0	0	1
143	NR & FA	1	62° 13' 46.0"	16° 06' 13.7"	3	1	3	5	84	56	0	0	0	0	0	0	0	1
144	NR & FA	1	62° 13' 46.0"	16° 06' 13.7"	3	1	3	5	53	49	0	0	0	0	0	0	0	1
145	NR & FA	1	62° 13' 46.6 "	16° 06' 14.2"	2	3	2	2	100	14	11	0	0	0	0	0	100	1
146	NR & FA	1	62° 13' 46.6"	16° 06' 14.8"	1	3	2	1	1200	22	18	0	0	0	0	0	0	1
147	NR & FA	1	62° 13' 46.6"	16° 06' 15.4"	2	3	2	1	2000	45	3	0	0	0	0	0	100	1
148	NR & FA	1	62° 13' 46.6"	16° 06' 15.4"	1	3	2	1	180	30	11	0	0	0	0	0	0	1
149	NR & FA	1	62° 13' 47.2"	16° 06' 16.1"	1	1	2	1	60	28	0	0	1	0	0	1	0	1
150	NR & FA	1	62° 13' 46.7"	16° 06' 17.1"	1	1	1	1	320	65	0	1	1	0	0	1	0	1
151	NR & FA	1	62° 13' 47.2"	16° 06' 17.1"	1	3	1	1	300	40	30	0	0	0	0	0	0	1
152	NR & FA	1	62° 13' 47.2"	16° 06' 17.1"	2	3	2	1	1000	11	4	0	0	0	0	0	3	1
153	NR & FA	1	62° 13' 47.2"	16° 06' 17.1"	2	3	1	1	900	19	0	0	0	0	0	0	70	1
154	NR & FA	1	62° 13' 47.7"	16° 06' 17.0"	2	1	2	1	800	15	0	0	0	0	0	0	10	1
155	NR & FA	1	62° 13' 48.2"	16° 06' 17.1"	1	3	2	1	100	48	0	0	0	0	0	1	0	1
156	NR & FA	1	62° 13' 48.4"	16° 06' 17.1"	2	3	2	1	1400	27	4	0	0	0	0	0	0	1
157	NR & FA	1	62° 13' 48.4"	16° 06' 17.2"	3	3	2	1	800	25	17	0	0	0	0	0	0	1
158	NR & FA	1	62° 13' 48.4"	16° 06' 16.7"	1	1	1	1	72	43	0	0	1	0	0	1	0	0
159	NR & FA	1	62° 13' 48.6"	16° 06' 16.9"	3	2	1	2	500	12	0	0	0	0	0	0	30	0

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
160	NR & FA	1	62° 13' 48.8"	16° 06' 15.9"	1	1	2	1	180	35	0	1	1	0	0	1	0	0
161	NR & FA	1	62° 13' 48.9"	16° 06' 15.8"	2	1	1	1	1500	26	0	0	0	0	0	0	40	0
162	NR & FA	1	62° 13' 48.9"	16° 06' 15.8"	2	2	1	1	16	19	0	0	0	0	0	0	100	0
163	NR & FA	1	62° 13' 49.4"	16° 06' 16.1"	2	2	2	1	34	39	0	0	0	0	0	0	0	0
164	NR & FA	1	62° 13' 50.0"	16° 06' 16.0"	2	1	1	1	850	31	0	0	0	0	0	0	5	0
165	NR & FA	1	62° 13' 49.7"	16° 06' 14.6"	1	2	1	1	49	29	0	0	0	0	0	1	0	0
166	NR & FA	1	62° 13' 49.4"	16° 06' 13.6"	2	2	1	1	47	26	0	0	0	0	0	0	0	0
167	NR & FA	1	62° 13' 44.8"	16° 06' 07.0"	3	1	2	1	500	18	0	0	0	0	0	0	100	0
168	NR & FA	1	62° 13' 44.9"	16° 06' 05.4"	3	1	1	1	130	36	0	0	0	0	0	0	50	0
169	NR & FA	4	62° 13' 03.7"	16° 07' 00.7"	2	1	2	1	54	11	0	0	0	0	0	0	0	1
170	NR & FA	4	62° 13' 03.7"	16° 07' 00.4"	1	3	2	2	150	13	12	0	0	0	0	0	0	1
171	NR & FA	4	62° 13' 03.3"	16° 07' 00.5"	1	2	3	1	40	25	0	1	0	0	0	1	0	1
172	NR & FA	4	62° 13' 03.4"	16° 06' 59.3"	1	1	3	1	141	17	0	1	1	0	0	1	0	1
173	NR & FA	4	62° 13' 03.4"	16° 06' 59.3"	3	3	2	1	400	12	3	0	0	0	0	0	5	1
174	NR & FA	4	62° 13' 03.1"	16° 06' 59.4"	2	2	2	1	49	27	0	0	0	0	0	0	10	1
175	NR & FA	4	62° 13' 02.9"	16° 06' 58.9"	1	2	2	1	48	32	0	1	1	0	0	1	0	1
176	NR & FA	4	62° 13' 02.9"	16° 06' 59.6"	1	3	2	2	150	18	13	0	0	0	0	0	0	1
177	NR & FA	4	62° 13' 02.6"	16° 06' 59.1"	1	1	3	1	230	28	0	1	1	0	0	1	0	1
178	NR & FA	4	62° 13' 02.6"	16° 06' 59.1"	2	1	1	2	65	27	0	0	0	0	0	1	0	1
179	NR & FA	4	62° 13' 02.6"	16° 06' 59.6"	1	3	2	1	150	26	0	0	0	0	0	0	0	1
180	NR & FA	4	62° 13' 02.4"	16° 06' 58.8"	3	3	1	1	400	18	3	0	0	0	0	0	80	1
181	NR & FA	4	62° 13' 02.2"	16° 06' 58.7"	3	3	2	4	600	21	4	0	0	0	0	0	30	1
182	NR & FA	4	62° 13' 02.2"	16° 06' 58.7"	3	3	2	4	200	18	16	0	0	0	0	0	0	1
183	NR & FA	4	62° 13' 02.2"	16° 06' 58.7"	1	1	2	1	74	34	0	0	0	0	0	1	0	1
184	NR & FA	4	62° 13' 02.5"	16° 06' 58.7"	3	3	2	1	150	17	12	0	0	0	0	0	80	1
185	NR & FA	4	62° 13' 02.4"	16° 06' 58.7"	3	3	2	1	350	14	4	0	0	0	0	0	100	1
186	NR & FA	4	62° 13' 02.3"	16° 06' 57.9"	2	3	2	1	1000	15	2	0	0	0	0	0	100	1
187	NR & FA	4	62° 13' 02.2"	16° 06' 57.6"	3	1	2	1	1000	12	0	0	0	0	0	0	100	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
188	NR & FA	4	62° 13' 02.2"	16° 06' 57.7"	2	3	2	1	700	15	6	0	0	0	0	0	60	1
189	NR & FA	4	62° 13' 01.8"	16° 06' 57.8"	2	2	2	1	35	17	0	0	0	0	0	0	0	1
190	NR & FA	4	62° 13' 01.8"	16° 06' 57.7"	1	2	2	1	43	23	0	0	0	0	0	1	0	1
191	NR & FA	4	62° 13' 02.1"	16° 06' 57.2"	2	1	2	1	200	18	0	0	0	0	0	0	100	1
192	NR & FA	4	62° 13' 02.1"	16° 06' 56.2"	2	1	2	1	650	14	0	0	0	0	0	0	20	1
193	NR & FA	4	62° 13' 02.0"	16° 06' 56.4"	2	3	2	1	400	15	4	0	0	0	0	0	100	1
194	NR & FA	4	62° 13' 02.0"	16° 06' 56.5"	2	3	2	1	1300	25	2	0	0	0	0	0	95	1
195	NR & FA	4	62° 13' 02.1"	16° 06' 56.4"	2	2	2	3	32	11	0	0	0	0	0	0	0	1
196	NR & FA	4	62° 13' 02.3"	16° 06' 55.9"	2	3	2	1	400	18	4	0	0	0	0	0	100	1
197	NR & FA	4	62° 13' 02.2"	16° 06' 55.6"	2	3	2	1	400	20	5	0	0	0	0	0	100	1
198	NR & FA	4	62° 13' 02.2"	16° 06' 55.7"	2	3	2	1	300	12	11	0	0	0	0	0	0	1
199	NR & FA	4	62° 13' 02.3"	16° 06' 55.6"	1	1	2	1	110	40	0	0	0	0	0	1	0	1
200	NR & FA	4	62° 13' 02.1"	16° 06' 55.3"	2	1	2	1	800	17	0	0	0	0	0	0	2	1
201	NR & FA	4	62° 13' 02.1"	16° 06' 55.3"	2	2	2	1	47	27	0	0	0	0	0	0	0	1
202	NR & FA	4	62° 13' 02.3"	16° 06' 54.7"	1	1	1	1	86	20	0	1	1	0	0	1	0	1
203	NR & FA	4	62° 13' 02.7"	16° 06' 56.7"	2	2	2	2	27	21	0	0	0	0	0	1	0	1
204	NR & FA	4	62° 13' 02.2"	16° 06' 54.7"	1	3	1	1	78	13	12	0	0	0	0	1	0	1
205	NR & FA	4	62° 13' 02.4"	16° 06' 54.1"	2	1	1	1	700	13	0	0	0	0	0	0	15	1
206	NR & FA	4	62° 13' 02.4"	16° 06' 54.2"	1	3	2	1	150	32	23	0	0	0	0	1	0	1
207	NR & FA	4	62° 13' 02.7"	16° 06' 54.0"	2	1	1	2	94	20	0	0	0	0	0	0	70	1
208	NR & FA	4	62° 13' 02.4"	16° 06' 53.7"	1	2	1	1	45	44	0	0	0	0	0	1	0	1
209	NR & FA	4	62° 13' 02.5"	16° 06' 53.7"	1	1	1	1	110	19	0	1	1	0	0	1	0	1
210	NR & FA	4	62° 13' 02.7"	16° 06' 53.5"	2	1	2	1	74	34	0	0	0	0	0	0	2	1
211	NR & FA	4	62° 13' 02.4"	16° 06' 53.1"	1	2	2	1	43	23	0	0	0	0	0	1	0	1
212	NR & FA	4	62° 13' 02.4"	16° 06' 53.0"	2	1	2	2	112	13	0	0	0	0	0	0	95	1
213	NR & FA	4	62° 13' 02.4"	16° 06' 52.2."	2	3	2	1	180	22	16	0	0	0	0	0	0	1
214	NR & FA	4	62° 13' 02.3"	16° 06' 52.2"	1	1	2	1	150	25	0	1	0	0	0	1	0	1
215	NR & FA	4	62° 13' 02.4"	16° 06' 51.9"	2	2	2	2	47	18	0	0	0	0	0	0	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
216	NR & FA	4	62° 13' 02.1"	16° 06' 50.2"	1	1	1	1	92	26	0	0	0	0	0	1	0	1
217	NR & FA	4	62° 13' 02.3"	16° 06' 49.7"	2	3	2	1	550	19	3	0	0	0	0	0	100	1
218	NR & FA	4	62° 13' 03.2"	16° 06' 54.8"	3	1	2	1	700	14	0	0	0	0	0	0	0	0
219	NR & FA	4	62° 13' 03.7"	16° 06' 59.7"	3	1	2	1	400	11	0	0	0	0	0	0	95	0
220	NR & FA	4	62° 13' 03.7"	16° 06' 59.8"	3	1	2	1	500	13	0	0	0	0	0	0	100	0
221	NR & FA	4	62° 13' 04.3"	16° 07' 02.6"	3	1	2	1	270	10	0	0	0	0	0	0	100	0
222	NR & FA	4	62° 13' 02.1"	16° 07' 05.1"	3	2	2	5	30	18	0	0	0	0	0	0	0	0
223	NR & FA	4	62° 13' 01.8"	16° 07' 04.6"	3	2	3	4	37	20	0	0	0	0	0	0	0	0
224	NR & FA	4	62° 13' 01.6"	16° 07' 03.9"	3	2	3	4	30	18	0	0	0	0	0	0	0	0
225	NR & FA	4	62° 13' 01.3"	16° 07' 01.2"	3	2	3	3	47	31	0	0	0	0	0	0	0	0
226	NR & FA	4	62° 13' 01.3"	16° 07' 01.4"	3	2	3	1	49	10	0	0	0	0	0	0	0	0
227	20-64 y	3	62° 13' 52.3"	16° 10' 41.5"	3	2	2	1	39	23	0	0	0	0	0	0	0	1
228	20-64 y	3	62° 13' 52.3"	16° 10' 41.5"	2	2	2	4	45	48	0	0	0	0	0	0	10	1
229	20-64 y	3	62° 13' 52.3"	16° 10' 41.5"	1	2	3	2	43	30	0	0	0	0	0	0	0	1
230	20-64 y	3	62° 13' 52.5"	16° 10' 41.3"	1	2	3	1	39	18	0	0	0	0	0	1	0	1
231	20-64 y	3	62° 13' 52.7"	16° 10' 41.3"	3	2	3	1	29	12	0	0	0	0	0	0	0	1
232	20-64 y	3	62° 13' 52.8"	16° 10' 41.5"	3	2	3	1	28	14	0	0	0	0	0	0	0	1
233	20-64 y	3	62° 13' 52.7"	16° 10' 41.4"	3	2	3	4	40	17	0	0	0	0	0	0	0	1
234	20-64 y	3	62° 13' 52.7"	16° 10' 41.4"	3	2	3	4	42	15	0	0	0	0	0	0	0	1
235	20-64 y	3	62° 13' 53.2"	16° 10' 40.9"	1	3	2	1	92	18	16	0	0	0	0	0	0	1
236	20-64 y	3	62° 13' 53.1"	16° 10' 40.7"	1	3	2	1	110	15	16	0	0	0	0	1	0	1
237	20-64 y	3	62° 13' 53.0"	16° 10' 40.4"	2	3	3	1	200	17	9	0	0	0	0	0	0	1
238	20-64 y	3	62° 13' 52.8"	16° 10' 40.0"	3	2	3	1	39	23	0	0	0	0	0	0	0	1
239	20-64 y	3	62° 13' 52.7"	16° 10' 40.0"	3	2	3	1	45	23	0	0	0	0	0	0	0	1
240	20-64 y	3	62° 13' 52.6"	16° 10' 40.0"	3	2	3	4	36	15	0	0	0	0	0	0	0	1
241	20-64 y	3	62° 13' 52.8"	16° 10' 40.3"	3	1	2	4	50	17	0	0	0	0	0	0	0	1
242	20-64 y	3	62° 13' 52.9"	16° 10' 40.0"	3	1	2	1	53	31	0	0	0	0	0	0	0	1
243	20-64 y	3	62° 13' 52.6"	16° 10' 39.6"	1	2	2	1	43	15	0	0	0	0	0	0	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
244	20-64 y	3	62° 13' 52.8"	16° 10' 39.1"	1	1	3	2	62	33	0	0	0	0	0	0	5	1
245	20-64 y	3	62° 13' 52.7"	16° 10' 39.3"	3	2	3	1	28	19	0	0	0	0	0	0	0	1
246	20-64 y	3	62° 13' 52.9"	16° 10' 39.1"	3	1	2	4	50	20	0	0	0	0	0	0	0	1
247	20-64 y	3	62° 13' 52.8"	16° 10' 39.2"	3	2	2	1	44	17	0	0	0	0	0	0	0	1
248	20-64 y	3	62° 13' 52.9"	16° 10' 39.2"	3	1	3	2	56	16	0	0	0	0	0	0	0	1
249	20-64 y	3	62° 13' 52.8"	16° 10' 38.5"	3	2	2	1	47	13	0	0	0	0	0	0	0	1
250	20-64 y	3	62° 13' 52.8"	16° 10' 38.1"	3	2	3	2	45	25	0	0	0	0	0	0	0	1
251	20-64 y	3	62° 13' 53.2"	16° 10' 37.6"	3	2	2	2	22	16	0	0	0	0	0	0	0	1
252	20-64 y	3	62° 13' 53.3"	16° 10' 37.8"	3	1	2	1	54	24	0	0	0	0	0	0	0	1
253	20-64 y	3	62° 13' 53.3"	16° 10' 36.7"	3	2	2	3	47	23	0	0	0	0	0	0	80	1
254	20-64 y	3	62° 13' 53.5"	16° 10' 36.7"	3	1	3	1	52	27	0	0	0	0	0	0	40	1
255	20-64 y	3	62° 13' 54.2"	16° 10' 34.9"	3	2	3	2	34	23	0	0	0	0	0	0	0	1
256	20-64 y	3	62° 13' 55.0"	16° 10' 32.6"	2	1	2	1	69	26	0	0	0	0	0	0	10	1
257	20-64 y	3	62° 13' 55.1"	16° 10' 32.7"	2	3	2	1	90	13	12	0	0	0	0	0	0	1
258	20-64 y	3	62° 13' 55.1"	16° 10' 32.2"	2	2	3	1	40	31	0	0	0	0	0	0	95	1
259	20-64 y	3	62° 13' 55.3"	16° 10' 32.6"	1	2	2	1	34	28	0	0	0	0	0	0	0	1
260	20-64 y	3	62° 13' 55.3"	16° 10' 32.5"	1	3	2	1	115	13	11	0	0	0	0	0	0	1
261	20-64 y	3	62° 13' 55.1"	16° 10' 31.7"	1	1	2	1	97	43	0	0	0	0	0	0	0	1
262	20-64 y	3	62° 13' 55.4"	16° 10' 31.5"	2	2	2	1	29	44	0	0	0	0	0	0	0	1
263	20-64 y	3	62° 13' 55.5"	16° 10' 31.7"	2	1	1	1	60	38	0	0	0	0	0	0	20	1
264	20-64 y	3	62° 13' 55.7"	16° 10' 31.8"	2	1	2	1	58	42	0	0	0	0	0	0	10	1
265	20-64 y	3	62° 13' 55.6"	16° 10' 31.8"	3	3	2	1	200	13	4	0	0	0	0	0	10	1
266	20-64 y	3	62° 13' 56.0"	16° 10' 31.6"	1	1	1	1	65	24	0	0	0	0	0	0	0	1
267	20-64 y	3	62° 13' 56.2"	16° 10' 31.8"	2	2	2	2	40	32	0	0	0	0	0	0	30	1
268	20-64 y	3	62° 13' 56.3"	16° 10' 31.9"	1	2	2	1	49	46	0	0	0	0	0	0	0	1
269	20-64 y	3	62° 13' 56.3"	16° 10' 31.9"	2	2	2	1	33	29	0	0	0	0	0	0	2	1
270	20-64 y	3	62° 13' 56.6"	16° 10' 31.2"	2	3	2	1	120	15	13	0	0	0	0	0	0	1
271	20-64 y	3	62° 13' 56.3"	16° 10' 29.1"	2	3	1	1	270	14	2	0	0	0	0	0	90	0

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
272	20-64 y	3	62° 13' 56.4"	16° 10' 29.4"	2	3	1	1	32	10	10	0	0	0	0	0	0	0
273	20-64 y	3	62° 13' 56.8"	16° 10' 30.0"	2	1	2	1	54	27	0	0	0	0	0	0	80	0
274	20-64 y	3	62° 13' 57.1"	16° 10' 30.8"	1	3	2	1	130	28	10	0	0	0	0	0	0	0
275	20-64 y	3	62° 13' 57.1"	16° 10' 30.9"	2	1	3	1	55	12	0	0	0	0	0	0	5	0
276	20-64 y	3	62° 13' 57.1"	16° 10' 31.2"	1	3	3	2	400	13	3	0	0	0	0	0	0	0
277	20-64 y	3	62° 13' 57.6"	16° 10' 30.4"	1	2	1	1	116	25	0	1	1	0	0	1	0	0
278	20-64 y	3	62° 13' 57.6"	16° 10' 30.4"	1	2	1	1	102	23	0	0	1	0	0	1	0	0
279	20-64 y	3	62° 13' 58.3"	16° 10' 33.5"	3	3	2	2	150	12	9	0	0	0	0	0	0	0
280	20-64 y	3	62° 13' 58.4"	16° 10' 35.7"	3	3	3	4	90	11	10	0	0	0	0	0	0	0
281	20-64 y	3	62° 13' 59.0"	16° 10' 37.2"	3	3	1	1	61	14	8	0	0	0	0	0	0	0
282	20-64 y	3	62° 13' 59.3"	16° 10' 37.8"	3	3	2	1	72	10	9	0	0	0	0	0	0	0
283	8-19 y	5	62° 10' 18.3"	16° 10' 42.2"	3	2	1	1	25	22	0	0	0	0	0	1	90	1
284	8-19 y	5	62° 10' 18.2"	16° 10' 40.4"	3	3	1	1	200	15	10	0	0	0	0	1	5	1
285	8-19 y	5	62° 10' 18.2"	16° 10' 40.6"	3	2	1	1	24	26	0	0	0	0	0	1	10	1
286	8-19 y	5	62° 10' 18.1"	16° 10' 40.9"	3	2	1	1	20	29	0	0	0	0	0	1	40	1
287	8-19 y	5	62° 10' 18.1"	16° 10' 40.9"	2	3	1	1	84	42	20	0	0	0	0	1	30	1
288	8-19 y	5	62° 10' 18.0"	16° 10' 40.5"	3	2	1	1	39	15	0	0	0	0	0	1	40	1
289	8-19 y	5	62° 10' 18.1"	16° 10' 40.5"	3	2	1	1	25	16	0	0	0	0	0	1	0	1
290	8-19 y	5	62° 10' 18.1"	16° 10' 40.4"	3	2	1	1	25	13	0	0	0	0	0	1	10	1
291	8-19 y	5	62° 10' 18.1"	16° 10' 39.9"	3	2	1	1	24	18	0	0	0	0	0	1	70	1
292	8-19 y	5	62° 10' 18.1"	16° 10' 39.9"	3	2	1	1	35	40	0	0	0	0	0	1	60	1
293	8-19 y	5	62° 10' 18.0"	16° 10' 39.8"	1	1	1	1	200	29	0	0	0	0	0	1	0	1
294	8-19 y	5	62° 10' 17.7"	16° 10' 40.0"	2	2	1	1	29	28	0	0	0	0	0	1	30	1
295	8-19 y	5	62° 10' 17.7"	16° 10' 40.0"	3	2	1	1	40	31	0	0	0	0	0	1	30	1
296	8-19 y	5	62° 10' 17.8"	16° 10' 39.9"	2	1	1	1	50	30	0	0	0	0	0	1	80	1
297	8-19 y	5	62° 10' 17.9"	16° 10' 39.6"	3	1	1	1	50	40	0	0	0	0	0	1	40	1
298	8-19 y	5	62° 10' 17.8"	16° 10' 38.7"	3	1	1	1	77	30	0	0	0	0	0	1	50	1
299	8-19 y	5	62° 10' 17.4"	16° 10' 39.3"	2	2	1	1	26	22	0	0	0	0	0	1	95	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
300	8-19 y	5	62° 10' 17.5"	16° 10'v39.2"	3	2	1	1	31	30	0	0	0	0	0	1	40	1
301	8-19 y	5	62° 10' 17.5"	16° 10' 39.0"	2	2	1	1	37	33	0	0	0	0	0	1	80	1
302	8-19 y	5	62° 10' 17.6"	16° 10' 38.9"	3	2	1	1	38	29	0	0	0	0	0	1	20	1
303	8-19 y	5	62° 10' 17.6"	16° 10' 38.9"	2	2	1	1	29	25	0	0	0	0	0	1	90	1
304	8-19 y	5	62° 10' 17.8"	16° 10' 38.5"	3	1	1	1	74	40	0	0	0	0	0	1	60	1
305	8-19 y	5	62° 10' 17.5"	16° 10' 38.5"	3	2	1	1	42	31	0	0	0	0	0	1	30	1
306	8-19 y	5	62° 10' 17.5"	16° 10' 38.5"	2	2	1	1	32	26	0	0	0	0	0	1	60	1
307	8-19 y	5	62° 10' 17.7"	16° 10' 38.2"	3	2	1	1	39	20	0	0	0	0	0	1	80	1
308	8-19 y	5	62° 10' 17.5"	16° 10' 38.2"	3	2	1	1	42	29	0	0	0	0	0	1	70	1
309	8-19 y	5	62° 10' 17.4"	16° 10' 38.2"	2	2	1	1	45	42	0	0	0	0	0	1	80	1
310	8-19 y	5	62° 10' 17.4"	16° 10' 38.1"	3	2	1	1	28	23	0	0	0	0	0	1	80	1
311	8-19 y	5	62° 10' 17.4"	16° 10' 38.1"	2	2	1	1	26	37	0	0	0	0	0	1	70	1
312	8-19 y	5	62° 10' 17.4"	16° 10' 38.3"	3	2	1	1	30	26	0	0	0	0	0	1	50	1
313	8-19 y	5	62° 10' 17.4"	16° 10' 38.0"	2	2	1	1	27	26	0	0	0	0	0	1	95	1
314	8-19 y	5	62° 10' 17.3"	16° 10' 38.0"	3	1	1	1	230	10	0	0	0	0	0	1	30	1
315	8-19 y	5	62° 10' 17.5"	16° 10' 37.9"	1	3	1	1	150	15	9	0	0	0	0	1	0	1
316	8-19 y	5	62° 10' 17.6"	16° 10' 37.8"	3	2	1	1	37	20	0	0	0	0	0	1	90	1
317	8-19 y	5	62° 10' 17.6"	16° 10' 37.7"	3	1	1	1	56	32	0	0	0	0	0	1	70	1
318	8-19 y	5	62° 10' 17.4"	16° 10' 37.8"	3	3	1	1	250	10	7	0	0	0	0	1	1	1
319	8-19 y	5	62° 10' 17.4"	16° 10' 38.0"	1	3	1	1	150	20	12	0	0	0	0	1	0	1
320	8-19 y	5	62° 10' 17.3"	16° 10' 37.8"	3	1	1	1	50	34	0	0	0	0	0	1	60	1
321	8-19 y	5	62° 10' 17.4"	16° 10' 37.6"	3	2	1	1	44	24	0	0	0	0	0	1	20	1
322	8-19 y	5	62° 10' 17.4"	16° 10' 37.6"	3	2	1	1	49	34	0	0	0	0	0	1	10	1
323	8-19 y	5	62° 10' 17.5"	16° 10' 37.4"	3	2	1	1	40	23	0	0	0	0	0	1	20	1
324	8-19 y	5	62° 10' 17.5"	16° 10' 37.3"	3	2	1	1	36	29	0	0	0	0	0	1	50	1
325	8-19 y	5	62° 10' 17.4"	16° 10' 37.3"	3	1	1	1	55	28	0	0	0	0	0	1	40	1
326	8-19 y	5	62° 10' 17.4"	16° 10' 37.3"	3	1	1	1	50	32	0	0	0	0	0	1	60	1
327	8-19 y	5	62° 10' 17.4"	16° 10' 37.1"	3	3	1	1	130	18	18	0	0	0	0	1	50	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
328	8-19 y	5	62° 10' 17.4"	16° 10' 37.0"	3	2	1	1	34	42	0	0	0	0	0	1	80	1
329	8-19 y	5	62° 10' 15.7"	16° 10' 28.8"	3	2	1	1	34	27	0	0	0	0	0	1	20	1
330	8-19 y	5	62° 10' 15.7"	16° 10' 28.8"	2	1	1	1	80	37	0	0	0	0	0	1	5	1
331	8-19 y	5	62° 10' 15.7"	16° 10' 28.7"	3	1	1	1	51	14	0	0	0	0	0	1	10	1
332	8-19 y	5	62° 10' 15.7"	16° 10' 28.6"	2	3	1	1	350	12	9	0	0	0	0	1	0	1
333	8-19 y	5	62° 10' 15.6"	16° 10' 28.8"	2	2	1	1	35	24	0	0	0	0	0	1	10	1
334	8-19 y	5	62° 10' 15.6"	16° 10' 29.0"	2	2	1	1	30	28	0	0	0	0	0	1	20	1
335	8-19 y	5	62° 10' 15.7"	16° 10' 28.8"	1	3	1	1	125	43	31	0	0	0	0	1	0	1
336	8-19 y	5	62° 10' 15.9"	16° 10' 28.7"	3	2	1	1	28	11	0	0	0	0	0	1	95	1
337	8-19 y	5	62° 10' 15.9"	16° 10' 29.1"	2	2	1	1	39	18	0	0	0	0	0	1	5	1
338	8-19 y	5	62° 10' 15.8"	16° 10' 29.2"	2	2	1	1	25	18	0	0	0	0	0	1	10	1
339	8-19 y	5	62° 10' 15.7"	16° 10' 29.3"	1	1	1	1	82	23	0	0	0	0	0	1	0	1
340	8-19 y	5	62° 10' 15.7"	16° 10' 29.3"	2	2	1	1	40	28	0	0	0	0	0	1	100	1
341	8-19 y	5	62° 10' 15.7"	16° 10' 29.3"	2	2	1	1	43	31	0	0	0	0	0	1	80	1
342	8-19 y	5	62° 10' 15.9"	16° 10' 29.1"	1	3	1	1	150	11	7	0	0	0	0	1	0	1
343	8-19 y	5	62° 10' 15.8"	16° 10' 29.2"	2	2	1	1	27	16	0	0	0	0	0	1	10	1
344	8-19 y	5	62° 10' 15.9"	16° 10' 29.0"	2	2	1	1	39	19	0	0	0	0	0	1	15	1
345	8-19 y	5	62° 10' 16.0"	16° 10' 29.1"	2	2	1	1	37	28	0	0	0	0	0	1	80	1
346	8-19 y	5	62° 10' 16.0"	16° 10' 29.2"	1	2	1	1	30	31	0	0	0	0	0	1	0	1
347	8-19 y	5	62° 10' 16.1"	16° 10' 29.3"	1	3	1	1	100	14	5	0	0	0	0	1	0	1
348	8-19 y	5	62° 10' 16.0"	16° 10' 29.3"	2	2	1	1	25	18	0	0	0	0	0	1	10	1
349	8-19 y	5	62° 10' 15.8"	16° 10' 29.8"	3	3	1	1	500	10	0	0	0	0	0	1	0	1
350	8-19 y	5	62° 10' 15.8"	16° 10' 30.0"	2	3	1	1	500	12	5	0	0	0	0	1	0	1
351	8-19 y	5	62° 10' 15.8"	16° 10' 30.1"	2	1	1	1	50	20	0	0	0	0	0	1	1	1
352	8-19 y	5	62° 10' 15.9"	16° 10' 30.1"	2	2	1	1	36	21	0	0	0	0	0	1	30	1
353	8-19 y	5	62° 10' 16.0"	16° 10' 30.0"	2	2	1	1	31	29	0	0	0	0	0	1	40	1
354	8-19 y	5	62° 10' 16.1"	16° 10' 29.9"	1	2	1	1	49	35	0	0	0	0	0	1	0	1
355	8-19 y	5	62° 10' 16.1"	16° 10' 29.9"	2	2	1	1	40	22	0	0	0	0	0	1	10	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
356	8-19 y	5	62° 10' 15.9"	16° 10' 30.2"	1	2	1	1	20	27	0	0	0	0	0	1	0	1
357	8-19 y	5	62° 10' 15.8"	16° 10' 30.1"	2	2	1	1	22	30	0	0	0	0	0	1	10	1
358	8-19 y	5	62° 10' 15.8"	16° 10' 30.3"	2	2	1	1	37	20	0	0	0	0	0	1	30	1
359	8-19 y	5	62° 10' 15.4"	16° 10' 30.3"	2	2	1	1	31	32	0	0	0	0	0	1	50	1
360	8-19 y	5	62° 10' 16.1"	16° 10' 30.6"	3	2	1	1	35	22	0	0	0	0	0	1	40	1
361	8-19 y	5	62° 10' 16.1"	16° 10' 30.6"	2	2	1	1	38	32	0	0	0	0	0	1	80	1
362	8-19 y	5	62° 10' 16.2"	16° 10' 30.5"	2	2	1	1	28	30	0	0	0	0	0	1	80	1
363	8-19 y	5	62° 10' 16.2"	16° 10' 30.8"	2	1	1	1	50	27	0	0	0	0	0	1	90	1
364	8-19 y	5	62° 10' 16.2"	16° 10' 30.8"	3	2	1	1	43	29	0	0	0	0	0	1	0	1
365	8-19 y	5	62° 10' 16.2"	16° 10' 31.1"	3	2	1	1	25	29	0	0	0	0	0	1	70	1
366	8-19 y	5	62° 10' 16.0"	16° 10' 30.9"	1	1	1	1	58	61	0	0	0	0	0	1	0	1
367	8-19 y	5	62° 10' 15.9"	16° 10' 30.9"	1	3	1	1	115	28	20	0	0	0	0	1	0	1
368	8-19 y	5	62° 10' 16.1"	16° 10' 31.2"	3	2	1	1	25	32	0	0	0	0	0	1	80	1
369	8-19 y	5	62° 10' 16.2"	16° 10' 31.5"	3	2	1	1	24	32	0	0	0	0	0	1	40	1
370	8-19 y	5	62° 10' 16.2"	16° 10' 31.5"	2	1	1	1	85	19	0	0	0	0	0	1	20	1
371	8-19 y	5	62° 10' 16.4"	16° 10' 31.6"	2	2	1	1	36	18	0	0	0	0	0	1	80	1
372	8-19 y	5	62° 10' 16.3"	16° 10' 31.6"	2	2	1	1	33	24	0	0	0	0	0	1	40	1
373	8-19 y	5	62° 10' 16.2"	16° 10' 31.6"	1	3	1	1	200	13	7	0	0	0	0	1	0	1
374	8-19 y	5	62° 10' 16.4"	16° 10' 31.9"	3	2	1	1	45	14	0	0	0	0	0	1	20	1
375	8-19 y	5	62° 10' 16.4"	16° 10' 32.1"	3	2	1	1	31	21	0	0	0	0	0	1	100	1
376	8-19 y	5	62° 10' 16.2"	16° 10' 32.1"	2	1	1	1	62	15	0	0	0	0	0	1	70	1
377	8-19 y	5	62° 10' 16.2"	16° 10' 32.2"	2	1	1	1	108	22	0	0	0	0	0	1	80	1
378	8-19 y	5	62° 10' 16.1"	16° 10' 32.4"	2	2	1	1	20	18	0	0	0	0	0	1	40	1
379	8-19 y	5	62° 10' 16.1"	16° 10' 32.4"	2	2	1	1	24	15	0	0	0	0	0	1	90	1
380	8-19 y	5	62° 10' 16.1"	16° 10' 32.8"	2	2	1	1	34	22	0	0	0	0	0	1	5	1
381	8-19 y	5	62° 10' 16.2"	16° 10' 32.7"	1	2	1	1	49	52	0	0	0	0	0	1	0	1
382	8-19 y	5	62° 10' 16.3"	16° 10' 32.8"	2	1	1	1	85	31	0	0	0	0	0	1	40	1
383	8-19 y	5	62° 10' 16.4"	16° 10' 32.8"	2	1	1	1	140	13	0	0	0	0	0	1	20	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
384	8-19 y	5	62° 10' 16.4"	16° 10' 32.6"	3	2	1	1	27	27	0	0	0	0	0	1	80	1
385	8-19 y	5	62° 10' 16.4"	16° 10' 32.6"	1	3	1	1	180	18	8	0	0	0	0	1	0	1
386	8-19 y	5	62° 10' 16.5"	16° 10' 32.6"	3	2	1	1	34	15	0	0	0	0	0	1	70	1
387	8-19 y	5	62° 10' 16.5"	16° 10' 32.5"	2	1	1	1	50	15	0	0	0	0	0	1	30	1
388	8-19 y	5	62° 10' 16.6"	16° 10' 33.0"	1	2	1	1	43	24	0	0	0	0	0	1	0	1
389	8-19 y	5	62° 10' 16.6"	16° 10' 32.9"	2	3	1	1	99	18	11	0	0	0	0	1	85	1
390	8-19 y	5	62° 10' 16.5"	16° 10' 33.1"	2	1	1	1	77	52	0	0	0	0	0	1	70	1
391	8-19 y	5	62° 10' 16.5"	16° 10' 33.1"	1	3	1	1	200	29	7	0	0	0	0	1	0	1
392	8-19 y	5	62° 10' 16.4"	16° 10' 33.0"	2	1	1	1	68	24	0	0	0	0	0	1	40	1
393	8-19 y	5	62° 10' 16.4"	16° 10' 33.1"	2	2	1	1	43	30	0	0	0	0	0	1	90	1
394	8-19 y	5	62° 10' 16.4"	16° 10' 33.1"	2	2	1	1	22	19	0	0	0	0	0	1	85	1
395	8-19 y	5	62° 10' 16.5"	16° 10' 33.3"	1	3	1	1	80	28	11	0	0	0	0	1	0	1
396	8-19 y	5	62° 10' 16.5"	16° 10' 33.5"	1	1	1	1	35	37	0	0	0	0	0	1	0	1
397	8-19 y	5	62° 10' 16.5"	16° 10' 33.5"	2	2	1	1	27	20	0	0	0	0	0	1	10	1
398	8-19 y	5	62° 10' 16.3"	16° 10' 33.6"	2	2	1	1	37	31	0	0	0	0	0	1	80	1
399	8-19 y	5	62° 10' 16.3"	16° 10' 33.6"	1	1	1	1	100	19	0	0	0	0	0	1	0	1
400	8-19 y	5	62° 10' 16.3"	16° 10' 33.9"	1	3	1	1	150	36	30	0	0	0	0	1	0	1
401	8-19 y	5	62° 10' 16.3"	16° 10' 33.9"	2	2	1	1	42	25	0	0	0	0	0	1	80	1
402	8-19 y	5	62° 10' 16.5"	16° 10' 33.7"	2	2	1	1	36	32	0	0	0	0	0	1	30	1
403	8-19 y	5	62° 10' 16.3"	16° 10' 34.1"	2	2	1	1	38	19	0	0	0	0	0	1	50	1
404	8-19 y	5	62° 10' 16.5"	16° 10' 34.3"	3	1	1	1	66	36	0	0	0	0	0	1	20	1
405	8-19 y	5	62° 10' 16.7"	16° 10' 34.2"	2	2	1	1	26	26	0	0	0	0	0	1	95	1
406	8-19 y	5	62° 10' 16.7"	16° 10' 34.3"	2	2	1	1	37	28	0	0	0	0	0	1	100	1
407	8-19 y	5	62° 10' 16.8"	16° 10' 34.6"	3	1	1	1	100	24	0	0	0	0	0	1	70	1
408	8-19 y	5	62° 10' 16.8"	16° 10' 34.6"	3	1	1	1	100	14	0	0	0	0	0	1	60	1
409	8-19 y	5	62° 10' 16.8"	16° 10' 34.7"	3	3	1	1	100	15	11	0	0	0	0	1	20	1
410	8-19 y	5	62° 10' 16.5"	16° 10' 34.9"	3	2	1	1	27	26	0	0	0	0	0	1	60	1
411	8-19 y	5	62° 10' 16.7"	16° 10' 35.1"	1	3	1	1	200	50	33	0	0	0	0	1	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
412	8-19 y	5	62° 10' 16.7"	16° 10' 35.3"	2	3	1	1	350	15	7	0	0	0	0	1	0	1
413	8-19 y	5	62° 10' 16.9"	16° 10' 35.3"	2	2	1	1	38	15	0	0	0	0	0	1	5	1
414	8-19 y	5	62° 10' 16.9"	16° 10' 35.2"	2	2	1	1	35	16	0	0	0	0	0	1	10	1
415	8-19 y	5	62° 10' 16.9"	16° 10' 35.3"	2	3	1	1	150	12	10	0	0	0	0	1	0	1
416	8-19 y	5	62° 10' 16.6"	16° 10' 35.6"	3	3	1	1	300	15	5	0	0	0	0	1	5	1
417	8-19 y	5	62° 10' 16.7"	16° 10' 35.9"	3	2	1	1	20	16	0	0	0	0	0	1	90	1
418	8-19 y	5	62° 10' 16.8"	16° 10' 36.0"	3	3	1	1	350	12	4	0	0	0	0	1	20	1
419	8-19 y	5	62° 10' 16.8"	16° 10' 36.0"	3	3	1	1	250	11	8	0	0	0	0	1	10	1
420	8-19 y	5	62° 10' 16.9"	16° 10' 26.0"	2	2	1	1	49	37	0	0	0	0	0	1	80	1
421	8-19 y	5	62° 10' 17.0"	16° 10' 36.0"	3	2	1	1	43	20	0	0	0	0	0	1	30	1
422	8-19 y	5	62° 10' 16.7"	16° 10' 36.0"	2	3	1	1	300	10	5	0	0	0	0	1	0	1
423	8-19 y	5	62° 10' 16.5"	16° 10' 36.2"	2	2	1	1	42	24	0	0	0	0	0	1	95	1
424	8-19 y	5	62° 10' 16.9"	16° 10' 36.2"	3	1	1	1	57	37	0	0	0	0	0	1	70	1
425	8-19 y	5	62° 10' 17.1"	16° 10' 36.0"	3	2	1	1	19	29	0	0	0	0	0	1	100	1
426	8-19 y	5	62° 10' 17.1"	16° 10' 36.0"	2	2	1	1	20	28	0	0	0	0	0	1	100	1
427	8-19 y	5	62° 10' 17.1"	16° 10' 36.0"	3	1	1	1	66	22	0	0	0	0	0	1	100	1
428	8-19 y	5	62° 10' 17.1"	16° 10' 36.0"	2	1	1	1	52	27	0	0	0	0	0	1	80	1
429	8-19 y	5	62° 10' 17.1"	16° 10' 36.3"	2	2	1	1	34	28	0	0	0	0	0	1	50	1
430	8-19 y	5	62° 10' 17.2"	16° 10' 36.2"	3	1	1	1	150	13	0	0	0	0	0	1	30	1
431	8-19 y	4	62° 09' 20.2"	16° 10' 16.6"	2	1	1	1	69	27	0	0	0	0	0	1	80	1
432	8-19 y	4	62° 09' 20.1"	16° 10' 16.4"	3	1	1	1	64	16	0	0	0	0	0	1	80	1
433	8-19 y	4	62° 09' 20.0"	16° 10' 16.2"	1	2	1	1	25	10	0	0	0	0	0	1	0	1
434	8-19 y	4	62° 09' 20.0"	16° 10' 16.4"	3	2	1	1	29	21	0	0	0	0	0	1	100	1
435	8-19 y	4	62° 09' 20.0"	16° 10' 16.5"	3	2	1	1	17	14	0	0	0	0	0	1	95	1
436	8-19 y	4	62° 09' 19.9"	16° 10' 16.6"	3	2	1	1	36	17	0	0	0	0	0	1	100	1
437	8-19 y	4	62° 09' 20.0"	16° 10' 16.6"	3	2	1	1	26	16	0	0	0	0	0	1	90	1
438	8-19 y	4	62° 09' 20.1"	16° 10' 16.7"	3	2	1	1	42	10	0	0	0	0	0	1	70	1
439	8-19 y	4	62° 09' 21.1"	16° 10' 16.7"	2	2	1	1	36	20	0	0	0	0	0	1	90	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
440	8-19 y	4	62° 09' 20.1"	16° 10' 16.8"	2	1	1	1	250	26	0	0	0	0	0	1	100	1
441	8-19 y	4	62° 09' 20.0"	16° 10' 16.8"	3	2	1	1	25	14	0	0	0	0	0	1	100	1
442	8-19 y	4	62° 09' 19.9"	16° 10' 16.8"	2	2	1	1	38	35	0	0	0	0	0	1	100	1
443	8-19 y	4	62° 09' 19.8"	16° 10' 16.7"	2	2	1	1	31	31	0	0	0	0	0	1	10	1
444	8-19 y	4	62° 09' 19.8"	16° 10' 17.2"	2	2	1	1	26	33	0	0	0	0	0	1	60	1
445	8-19 y	4	62° 09' 19.7"	16° 10' 17.0"	3	2	1	1	40	25	0	0	0	0	0	1	100	1
446	8-19 y	4	62° 09' 19.6"	16° 10' 16.5"	3	2	1	1	27	26	0	0	0	0	0	1	100	1
447	8-19 y	4	62° 09' 19.6"	16° 10' 16.7"	1	3	1	1	100	11	11	0	0	0	0	1	0	1
448	8-19 y	4	62° 09' 19.6"	16° 10' 16.7"	3	2	1	1	12	21	0	0	0	0	0	1	100	1
449	8-19 y	4	62° 09' 19.6"	16° 10' 16.8"	2	3	1	1	100	22	16	0	0	0	0	1	80	1
450	8-19 y	4	62° 09' 19.6"	16° 10' 17.1"	3	2	1	1	31	17	0	0	0	0	0	1	70	1
451	8-19 y	4	62° 09' 19.6"	16° 10' 17.0"	3	3	1	1	400	10	2	0	0	0	0	1	20	1
452	8-19 y	4	62° 09' 19.6"	16° 10' 17.1"	2	2	1	1	17	31	0	0	0	0	0	1	100	1
453	8-19 y	4	62° 09' 19.6"	16° 10' 17.2"	3	2	1	1	34	24	0	0	0	0	0	1	100	1
454	8-19 y	4	62° 09' 19.6"	16° 10' 17.5"	1	3	1	1	250	15	6	0	0	0	0	1	0	1
455	8-19 y	4	62° 09' 19.6"	16° 10' 17.2"	2	3	1	1	150	10	6	0	0	0	0	1	0	1
456	8-19 y	4	62° 09' 19.5"	16° 10' 17.2"	3	3	1	1	200	11	8	0	0	0	0	1	70	1
457	8-19 y	4	62° 09' 19.5"	16° 10' 17.1"	2	2	1	1	26	19	0	0	0	0	0	1	80	1
458	8-19 y	4	62° 09' 19.4"	16° 10' 17.4"	2	3	1	1	65	13	12	0	0	0	0	1	0	1
459	8-19 y	4	62° 09' 19.5"	16° 10' 17.5"	2	2	1	1	23	34	0	0	0	0	0	1	90	1
460	8-19 y	4	62° 09' 19.4"	16° 10' 17.7"	2	1	1	1	70	24	0	0	0	0	0	1	20	1
461	8-19 y	4	62° 09' 19.4"	16° 10' 17.7"	2	3	1	1	130	14	11	0	0	0	0	1	80	1
462	8-19 y	4	62° 09' 19.3"	16° 10' 17.3"	3	2	1	1	20	25	0	0	0	0	0	1	100	1
463	8-19 y	4	62° 09' 19.3"	16° 10' 17.5"	3	2	1	1	36	16	0	0	0	0	0	1	70	1
464	8-19 y	4	62° 09' 19.3"	16° 10' 17.7"	3	2	1	1	28	30	0	0	0	0	0	1	100	1
465	8-19 y	4	62° 09' 19.4"	16° 10' 17.8"	2	1	1	1	60	30	0	0	0	0	0	1	90	1
466	8-19 y	4	62° 09' 19.2"	16° 10' 17.8"	2	2	1	1	29	52	0	0	0	0	0	1	100	1
467	8-19 y	4	62° 09' 19.2"	16° 10' 17.9"	2	3	1	1	300	52	35	0	0	0	0	1	70	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
468	8-19 y	4	62° 09' 19.1"	16° 10' 17.6"	2	3	1	1	150	10	8	0	0	0	0	1	0	1
469	8-19 y	4	62° 09' 19.0"	16° 10' 17.8"	2	3	1	1	58	17	17	0	0	0	0	1	50	1
470	8-19 y	4	62° 09' 19.1"	16° 10' 18.2"	2	2	1	1	32	16	0	0	0	0	0	1	100	1
471	8-19 y	4	62° 09' 19.1"	16° 10' 18.3"	2	2	1	1	40	27	0	0	0	0	0	1	80	1
472	8-19 y	4	62° 09' 19.1"	16° 10' 18.4"	2	2	1	1	40	36	0	0	0	0	0	1	95	1
473	8-19 y	4	62° 09' 19.0"	16° 10' 18.5"	3	2	1	1	19	16	0	0	0	0	0	1	100	1
474	8-19 y	4	62° 09' 19.0"	16° 10' 18.5"	2	2	1	1	35	29	0	0	0	0	0	1	60	1
475	8-19 y	4	62° 09' 18.9"	16° 10' 18.3"	2	3	1	1	300	20	15	0	0	0	0	1	0	1
476	8-19 y	4	62° 09' 18.9"	16° 10' 18.7"	2	2	1	1	23	25	0	0	0	0	0	1	20	1
477	8-19 y	4	62° 09' 18.9"	16° 10' 18.8"	2	2	1	1	21	20	0	0	0	0	0	1	10	1
478	8-19 y	4	62° 09' 18.9"	16° 10' 19.0"	1	2	1	1	37	52	0	0	0	0	0	1	0	1
479	8-19 y	4	62° 09' 18.7"	16° 10' 18.7"	2	2	1	1	26	30	0	0	0	0	0	1	80	1
480	8-19 y	4	62° 09' 18.7"	16° 10' 19.0"	2	2	1	1	23	27	0	0	0	0	0	1	70	1
481	8-19 y	4	62° 09' 18.8"	16° 10' 19.1"	2	2	1	1	36	31	0	0	0	0	0	1	90	1
482	8-19 y	4	62° 09' 18.8"	16° 10' 19.3"	2	3	1	1	250	10	9	0	0	0	0	1	0	1
483	8-19 y	4	62° 09' 18.8"	16° 10' 19.4"	2	2	1	1	16	30	0	0	0	0	0	1	40	1
484	8-19 y	4	62° 09' 18.8"	16° 10' 19.4"	2	3	1	1	150	10	8	0	0	0	0	1	0	1
485	8-19 y	4	62° 09' 18.7"	16° 10' 19.3"	3	3	1	1	130	14	12	0	0	0	0	1	10	1
486	8-19 y	4	62° 09' 18.6"	16° 10' 19.3"	1	2	1	1	34	48	0	0	0	0	0	1	0	1
487	8-19 y	4	62° 09' 18.6"	16° 10' 19.3"	2	2	1	1	37	40	0	0	0	0	0	1	50	1
488	8-19 y	4	62° 09' 18.6"	16° 10' 19.3"	3	3	1	1	250	10	8	0	0	0	0	1	5	1
489	8-19 y	4	62° 09' 18.7"	16° 10' 19.6"	2	2	1	1	24	36	0	0	0	0	0	1	60	1
490	8-19 y	4	62° 09' 18.8"	16° 10' 19.7"	3	2	1	1	32	19	0	0	0	0	0	1	100	1
491	8-19 y	4	62° 09' 18.7"	16° 10' 19.9"	2	2	1	1	23	14	0	0	0	0	0	1	100	1
492	8-19 y	4	62° 09' 18.6"	16° 10' 19.9"	3	2	1	1	39	16	0	0	0	0	0	1	90	1
493	8-19 y	4	62° 09' 18.5"	16° 10' 19.9"	3	2	1	1	23	23	0	0	0	0	0	1	90	1
494	8-19 y	4	62° 09' 18.6"	16° 10' 20.0"	3	2	1	1	26	31	0	0	0	0	0	1	70	1
495	8-19 y	4	62° 09' 18.6"	16° 10' 20.1"	3	2	1	1	35	33	0	0	0	0	0	1	40	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
496	8-19 y	4	62° 09' 18.6"	16° 10' 20.2"	3	2	1	1	24	19	0	0	0	0	0	1	100	1
497	8-19 y	4	62° 09' 18.6"	16° 10' 20.3"	3	2	1	1	23	37	0	0	0	0	0	1	90	1
498	8-19 y	4	62° 09' 18.6"	16° 10' 20.4"	3	3	1	1	100	15	13	0	0	0	0	1	80	1
499	8-19 y	4	62° 09' 18.5"	16° 10' 20.3"	1	1	1	1	50	58	0	0	0	0	0	1	0	1
500	8-19 y	4	62° 09' 18.4"	16° 10' 20.2"	2	2	1	1	19	33	0	0	0	0	0	1	10	1
501	8-19 y	4	62° 09' 18.4"	16° 10' 20.6"	3	3	1	1	300	10	2	0	0	0	0	1	5	1
502	8-19 y	4	62° 09' 18.4"	16° 10' 20.7"	2	2	1	1	19	38	0	0	0	0	0	1	100	1
503	8-19 y	4	62° 09' 18.5"	16° 10' 20.8"	3	2	1	1	35	22	0	0	0	0	0	1	50	1
504	8-19 y	4	62° 09' 18.4"	16° 10' 20.8"	2	2	1	1	18	15	0	0	0	0	0	1	100	1
505	8-19 y	4	62° 09' 18.4"	16° 10' 20.8"	3	2	1	1	24	38	0	0	0	0	0	1	100	1
506	8-19 y	4	62° 09' 18.4"	16° 10' 21.0"	2	2	1	1	35	32	0	0	0	0	0	1	100	1
507	8-19 y	4	62° 09' 18.4"	16° 10' 21.0"	3	2	1	1	39	51	0	0	0	0	0	1	100	1
508	8-19 y	4	62° 09' 18.4"	16° 10' 21.4"	2	2	1	1	18	20	0	0	0	0	0	1	20	1
509	8-19 y	4	62° 09' 18.4"	16° 10' 21.4"	3	3	1	1	100	14	11	0	0	0	0	1	80	1
510	8-19 y	4	62° 09' 18.5"	16° 10' 21.7"	2	2	1	1	28	37	0	0	0	0	0	1	70	1
511	8-19 y	4	62° 09' 18.3"	16° 10' 21.8"	2	2	1	1	32	38	0	0	0	0	0	1	40	1
512	8-19 y	4	62° 09' 18.2"	16° 10' 22.1"	3	2	1	1	31	23	0	0	0	0	0	1	100	1
513	8-19 y	4	62° 09' 18.1"	16° 10' 22.0"	3	2	1	1	32	31	0	0	0	0	0	1	50	1
514	8-19 y	4	62° 09' 18.4"	16° 10' 22.3"	1	2	1	1	37	49	0	0	0	0	0	1	0	1
515	8-19 y	4	62° 09' 18.3"	16° 10' 22.3"	2	1	1	1	50	35	0	0	0	0	0	1	90	1
516	8-19 y	4	62° 09' 18.2"	16° 10' 22.6"	3	3	1	1	60	33	27	0	0	0	0	1	70	1
517	8-19 y	4	62° 09' 18.1"	16° 10' 22.6"	3	2	1	1	27	36	0	0	0	0	0	1	100	1
518	8-19 y	4	62° 09' 18.1"	16° 10' 22.6"	3	3	1	1	57	45	42	0	0	0	0	1	90	1
519	8-19 y	4	62° 09' 18.0"	16° 10' 22.9"	3	3	1	1	50	29	26	0	0	0	0	1	80	1
520	8-19 y	4	62° 09' 17.9"	16° 10' 22.9"	3	2	1	1	23	34	0	0	0	0	0	1	100	1
521	8-19 y	4	62° 09' 17.9"	16° 10' 23.0"	3	1	1	1	78	26	0	0	0	0	0	1	50	1
522	8-19 y	4	62° 09' 17.9"	16° 10' 23.2"	3	2	1	1	35	29	0	0	0	0	0	1	100	1
523	8-19 y	4	62° 09' 17.9"	16° 10' 23.3"	3	2	1	1	28	12	0	0	0	0	0	1	100	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
524	8-19 y	4	62° 09' 17.9"	16° 10' 23.3"	3	2	1	1	23	27	0	0	0	0	0	1	60	1
525	8-19 y	4	62° 09' 17.9"	16° 10' 23.4"	1	3	1	1	300	48	27	0	0	0	0	1	0	1
526	8-19 y	4	62° 09' 17.9"	16° 10' 23.5"	3	1	1	1	56	33	0	0	0	0	0	1	100	1
527	8-19 y	4	62° 09' 17.9"	16° 10' 23.7"	3	2	1	1	35	38	0	0	0	0	0	1	100	1
528	8-19 y	4	62° 09' 17.9"	16° 10' 23.8"	3	2	1	1	42	46	0	0	0	0	0	1	80	1
529	8-19 y	4	62° 09' 17.7"	16° 10' 23.3"	3	2	1	1	39	43	0	0	0	0	0	1	80	1
530	8-19 y	4	62° 09' 17.8"	16° 10' 23.9"	3	3	1	1	150	25	24	0	0	0	0	1	80	1
531	8-19 y	4	62° 09' 17.7"	16° 10' 24.1"	2	2	1	1	48	21	0	0	0	0	0	1	70	1
532	8-19 y	4	62° 09' 17.7"	16° 10' 24.2"	1	2	1	1	36	44	0	0	0	0	0	1	0	1
533	8-19 y	4	62° 09' 17.7"	16° 10' 24.2"	3	3	1	1	300	15	11	0	0	0	0	1	90	1
534	8-19 y	4	62° 09' 17.7"	16° 10' 24.2"	2	1	1	1	50	44	0	0	0	0	0	1	100	1
535	8-19 y	4	62° 09' 17.6"	16° 10' 24.3"	3	3	1	1	300	20	5	0	0	0	0	1	60	1
536	8-19 y	4	62° 09' 17.6"	16° 10' 24.7"	3	2	1	1	35	22	0	0	0	0	0	1	100	1
537	8-19 y	4	62° 09' 17.4"	16° 10' 24.8"	3	3	1	1	300	12	10	0	0	0	0	1	90	1
538	8-19 y	4	62° 09' 17.4"	16° 10' 24.8"	3	2	1	1	38	31	0	0	0	0	0	1	100	1
539	8-19 y	4	62° 09' 17.4"	16° 10' 24.9"	3	1	1	1	100	18	0	0	0	0	0	1	90	1
540	8-19 y	4	62° 09' 17.4"	16° 10' 25.0"	3	3	1	1	600	12	4	0	0	0	0	1	100	1
541	8-19 y	4	62° 09' 17.4"	16° 10' 25.0"	3	3	1	1	600	11	2	0	0	0	0	1	100	1
542	8-19 y	4	62° 09' 17.4"	16° 10' 25.0"	3	3	1	1	100	13	13	0	0	0	0	1	50	1
543	8-19 y	4	62° 09' 17.4"	16° 10' 25.0"	3	3	1	1	600	13	4	0	0	0	0	1	100	1
544	8-19 y	4	62° 09' 17.4"	16° 10' 25.0"	3	1	1	1	35	40	0	0	0	0	0	1	5	1
545	8-19 y	4	62° 09' 17.4"	16° 10' 25.1"	1	3	1	1	150	20	8	0	0	0	0	1	0	1
546	8-19 y	4	62° 09' 17.4"	16° 10' 25.1"	3	3	1	1	700	11	2	0	0	0	0	1	100	1
547	8-19 y	4	62° 09' 17.4"	16° 10' 25.2"	1	3	1	1	130	13	4	0	0	0	0	1	0	1
548	8-19 y	4	62° 09' 17.4"	16° 10' 25.4"	2	1	1	1	54	29	0	0	0	0	0	1	100	1
549	8-19 y	4	62° 09' 17.3"	16° 10' 25.4"	2	1	1	1	57	29	0	0	0	0	0	1	80	1
550	8-19 y	4	62° 09' 17.3"	16° 10' 25.6"	3	3	1	1	300	12	8	0	0	0	0	1	0	1
551	> 65 y	5	62° 09' 09.3"	16° 15' 17.6"	2	3	2	1	200	10	9	0	0	0	0	0	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
552	> 65 y	5	62° 09' 09.0"	16° 15' 17.7"	1	3	2	1	1000	43	31	0	0	0	0	0	0	1
553	> 65 y	5	62° 09' 08.9"	16° 15' 17.9"	1	1	1	1	170	40	0	0	1	0	0	1	0	1
554	> 65 y	5	62° 09' 08.7"	16° 15' 17.9"	2	3	1	2	350	14	12	0	0	0	0	0	0	1
555	> 65 y	5	62° 09' 08.5"	16° 15' 17.8"	1	3	2	1	180	25	9	0	0	0	0	1	0	1
556	> 65 y	5	62° 09' 08.5"	16° 15' 17.9"	1	3	2	1	100	27	26	0	0	0	0	1	0	1
557	> 65 y	5	62° 09' 08.4"	16° 15' 18.6"	2	3	2	3	400	13	10	0	0	0	0	0	0	1
558	> 65 y	5	62° 09' 08.3"	16° 15' 18.6"	2	3	2	1	400	12	3	0	0	0	0	0	0	1
559	> 65 y	5	62° 09' 08.7"	16° 15' 18.6"	2	1	1	1	600	11	0	0	0	0	0	0	0	1
560	> 65 y	5	62° 09' 08.6"	16° 15' 18.5"	2	1	2	1	1000	12	0	0	0	0	0	0	80	1
561	> 65 y	5	62° 09' 08.0"	16° 15' 19.1"	2	1	1	1	750	14	0	0	0	0	0	0	5	1
562	> 65 y	5	62° 09' 08.1"	16° 15' 19.5"	2	1	2	1	200	10	0	0	0	0	0	0	10	1
563	> 65 y	5	62° 09' 07.9"	16° 15' 19.7"	2	3	2	2	60	12	10	0	0	0	0	0	5	1
564	> 65 y	5	62° 09' 07.9"	16° 15' 19.9"	2	2	2	4	36	11	0	0	0	0	0	0	50	1
565	> 65 y	5	62° 09' 07.7"	16° 15' 20.5"	2	1	1	1	2200	34	0	0	0	0	0	0	90	1
566	> 65 y	5	62° 09' 07.6"	16° 15' 20.4"	2	3	2	1	200	10	7	0	0	0	0	0	0	1
567	> 65 y	5	62° 09' 07.3"	16° 15' 19.7"	2	1	2	1	1400	15	0	0	0	0	0	0	95	1
568	> 65 y	5	62° 09' 07.4"	16° 15' 19.7"	2	1	1	1	1400	17	0	0	0	0	0	0	100	1
569	> 65 y	5	62° 09' 07.5"	16° 15' 21.2"	2	1	2	1	1500	12	0	0	0	0	0	0	10	1
570	> 65 y	5	62° 09' 07.3"	16° 15' 20.9"	2	1	1	1	400	12	0	0	0	0	0	0	5	1
571	> 65 y	5	62° 09' 07.1"	16° 15' 20.5"	1	1	1	1	70	43	0	0	0	0	0	1	0	1
572	> 65 y	5	62° 09' 07.1"	16° 15' 21.5"	2	3	2	1	650	11	4	0	0	0	0	0	30	1
573	> 65 y	5	62° 09' 07.0"	16° 15' 21.4"	2	1	1	1	1300	17	0	0	0	0	0	0	20	1
574	> 65 y	5	62° 09' 07.1"	16° 15' 21.4"	1	1	1	1	60	30	0	0	0	0	0	0	0	1
575	> 65 y	5	62° 09' 07.0"	16° 15' 21.9"	2	2	1	1	16	13	0	0	0	0	0	0	100	1
576	> 65 y	5	62° 09' 06.8"	16° 15' 21.8"	2	3	1	1	600	12	5	0	0	0	0	0	30	1
577	> 65 y	5	62° 09' 06.7"	16° 15' 21.9"	2	3	1	1	250	10	3	0	0	0	0	0	5	1
578	> 65 y	5	62° 09' 06.6"	16° 15' 22.4"	2	3	1	4	700	11	2	0	0	0	0	0	80	1
579	> 65 y	5	62° 09' 06.4"	16° 15' 22.3"	2	2	1	1	24	11	0	0	0	0	0	0	100	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
580	> 65 y	5	62° 09' 06.5"	16° 15' 22.5"	2	3	1	1	1000	10	2	0	0	0	0	0	95	1
581	> 65 y	5	62° 09' 06.5"	16° 15' 22.5"	2	2	1	1	10	12	0	0	0	0	0	0	100	1
582	> 65 y	5	62° 09' 06.5"	16° 15' 21.4"	2	3	1	1	100	16	13	0	0	0	0	0	100	1
583	> 65 y	5	62° 09' 06.4"	16° 15' 21.9"	2	1	1	1	1300	16	0	0	0	0	0	0	100	1
584	> 65 y	5	62° 09' 06.4"	16° 15' 21.9"	2	1	1	1	1100	12	0	0	0	0	0	0	50	1
585	> 65 y	5	62° 09' 06.4"	16° 15' 22.2"	2	2	1	1	22	12	0	0	0	0	0	0	80	1
586	> 65 y	5	62° 09' 06.3"	16° 15' 22.0"	1	2	1	1	49	45	0	0	0	0	0	0	0	1
587	> 65 y	5	62° 09' 06.3"	16° 15' 24.1"	2	3	1	1	500	10	2	0	0	0	0	0	100	1
588	> 65 y	5	62° 09' 06.0"	16° 15' 24.3"	2	1	1	1	250	22	0	0	0	0	0	0	100	1
589	> 65 y	5	62° 09' 06.0"	16° 15' 24.5"	2	3	1	1	1200	22	4	0	0	0	0	0	15	1
590	> 65 y	5	62° 09' 06.0"	16° 15' 24.4"	1	3	2	1	120	23	18	0	0	0	0	0	0	1
591	> 65 y	5	62° 09' 05.9"	16° 15' 24.1"	1	3	2	1	150	30	27	0	0	0	0	0	0	1
592	> 65 y	5	62° 09' 06.1"	16° 15' 24.9"	2	3	2	1	400	11	6	0	0	0	0	0	30	1
593	> 65 y	5	62° 09' 06.0"	16° 15' 24.7"	2	2	2	1	44	11	0	0	0	0	0	0	50	1
594	> 65 y	5	62° 09' 05.9"	16° 15' 25.8"	1	1	1	1	70	50	0	0	0	0	0	0	0	1
595	> 65 y	5	62° 09' 05.9"	16° 15' 25.8"	1	3	2	1	1200	40	30	0	0	0	0	0	0	1
596	> 65 y	5	62° 09' 05.5"	16° 15' 26.2"	2	1	1	1	800	12	0	0	0	0	0	0	15	1
597	> 65 y	5	62° 09' 05.2"	16° 15' 26.0"	1	2	1	1	30	58	0	0	0	0	0	1	0	1
598	> 65 y	5	62° 09' 05.1"	16° 15' 26.0"	2	1	1	1	117	18	0	0	0	0	0	0	90	1
599	> 65 y	5	62° 09' 05.1"	16° 15' 26.3"	2	3	2	1	600	12	4	0	0	0	0	0	10	1
600	> 65 y	5	62° 09' 05.3"	16° 15' 26.5"	2	2	1	1	24	12	0	0	0	0	0	0	100	1
601	> 65 y	5	62° 09' 04.9"	16° 15' 27.0"	2	1	1	1	1100	13	0	0	0	0	0	0	10	1
602	> 65 y	5	62° 09' 05.0"	16° 15' 25.6"	1	1	2	1	64	18	0	0	1	0	0	1	0	0
603	> 65 y	5	62° 09' 05.3"	16° 15' 23.9"	1	2	1	1	45	26	0	0	0	0	0	0	5	0
604	> 65 y	5	62° 09' 06.3"	16° 15' 19.7"	1	2	1	1	34	37	0	0	0	0	0	1	0	0
605	> 65 y	5	62° 09' 07.0"	16° 15' 17.7"	1	2	1	1	30	31	0	0	0	0	0	0	10	0
606	> 65 y	5	62° 09' 06.9"	16° 15' 16.3"	1	1	1	1	230	27	0	1	1	1	0	1	0	0
607	NR & FA	0	62° 08' 07.3"	16° 19' 18.1"	1	3	1	2	150	18	13	0	0	0	0	0	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
608	NR & FA	0	62° 08' 06.9"	16° 19' 17.8"	2	2	2	5	25	25	0	0	0	0	0	0	50	1
609	NR & FA	0	62° 08' 07.1"	16° 19' 17.6"	2	3	2	3	700	30	17	0	0	0	0	0	0	1
610	NR & FA	0	62° 08' 06.8"	16° 19' 18.4"	1	3	1	1	1000	45	32	0	0	0	0	0	0	1
611	NR & FA	0	62° 08' 06.8"	16° 19' 18.9"	1	3	1	1	400	30	25	0	0	0	0	0	0	1
612	NR & FA	0	62° 08' 07.1"	16° 19' 18.6"	3	3	1	1	400	13	9	0	0	0	0	0	90	1
613	NR & FA	0	62° 08' 06.4"	16° 19' 19.6"	3	3	1	1	1500	26	4	0	0	0	0	0	100	1
614	NR & FA	0	62° 08' 06.5"	16° 19' 19.6"	3	3	1	1	1400	28	5	0	0	0	0	0	90	1
615	NR & FA	0	62° 08' 06.2"	16° 19' 19.3"	3	3	1	1	300	12	2	0	0	0	0	0	90	1
616	NR & FA	0	62° 08' 06.4"	16° 19' 19.9"	1	1	1	1	2000	29	0	0	0	0	0	0	0	1
617	NR & FA	0	62° 08' 06.3"	16° 19' 20.9"	1	3	2	1	200	20	16	0	0	0	0	0	0	1
618	NR & FA	0	62° 08' 06.2"	16° 19' 20.7"	1	3	1	1	250	40	26	0	0	0	0	0	0	1
619	NR & FA	0	62° 08' 06.1"	16° 19' 20.9"	2	3	1	1	200	15	10	0	0	0	0	0	0	1
620	NR & FA	0	62° 08' 06.1"	16° 19' 20.7"	1	1	1	1	1500	25	0	0	0	0	0	1	0	1
621	NR & FA	0	62° 08' 06.3"	16° 19' 22.0"	2	3	2	2	150	11	11	0	0	0	0	0	0	1
622	NR & FA	0	62° 08' 06.3"	16° 19' 22.8"	1	1	1	1	71	29	0	0	0	0	0	1	0	1
623	NR & FA	0	62° 08' 06.3"	16° 19' 22.0"	2	3	1	1	500	20	10	0	0	0	0	0	50	1
624	NR & FA	0	62° 08' 05.9"	16° 19' 22.7"	1	1	2	1	400	42	0	1	1	0	0	1	0	1
625	NR & FA	0	62° 08' 05.9"	16° 19' 23.2"	3	3	2	1	800	15	2	0	0	0	0	0	10	1
626	NR & FA	0	62° 08' 06.0"	16° 19' 23.3"	3	1	2	1	250	10	0	0	0	0	0	0	100	1
627	NR & FA	0	62° 08' 06.6"	16° 19' 23.7"	3	3	2	1	800	35	16	0	0	0	0	0	80	1
628	NR & FA	0	62° 08' 05.9"	16° 19' 24.4"	1	3	1	1	500	32	27	0	0	0	0	0	0	1
629	NR & FA	0	62° 08' 05.8"	16° 19' 25.2"	2	3	1	1	1000	25	15	0	0	0	0	0	0	1
630	NR & FA	0	62° 08' 05.4"	16° 19' 25.8"	1	3	1	1	250	29	18	0	0	0	0	0	0	1
631	NR & FA	0	62° 08' 04.1"	16° 19' 26.8"	1	3	1	1	800	27	25	1	1	0	0	1	0	1
632	NR & FA	0	62° 08' 04.2"	16° 19' 27.8"	1	2	1	1	37	49	0	0	0	0	0	0	0	1
633	NR & FA	0	62° 08' 04.5"	16° 19' 26.9"	2	1	2	2	1250	33	0	0	0	0	0	0	5	0
634	NR & FA	0	62° 08' 04.3"	16° 19' 28.4"	1	2	2	4	43	56	0	0	0	0	0	0	0	0
635	NR & FA	0	62° 08' 03.8"	16° 19' 27.8"	2	2	1	3	49	13	0	0	0	0	0	0	40	0

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
636	NR & FA	0	62° 08' 03.9"	16° 19' 27.8"	2	1	1	1	300	12	0	0	0	0	0	0	5	0
637	NR & FA	0	62° 08' 03.7"	16° 19' 28.3"	1	2	2	1	46	47	0	0	0	0	0	1	0	0
638	NR & FA	0	62° 08' 03.8"	16° 19' 28.3"	2	1	2	1	700	15	0	0	0	0	0	0	95	0
639	NR & FA	0	62° 08' 03.6"	16° 19' 26.6"	1	2	2	1	47	72	0	0	0	0	0	0	0	0
640	NR & FA	0	62° 08' 03.5"	16° 19' 26.5"	2	1	2	1	170	10	0	0	0	0	0	0	0	0
641	NR & FA	0	62° 08' 03.4"	16° 19' 26.2"	2	2	1	1	45	11	0	0	0	0	0	0	40	0
642	NR & FA	0	62° 08' 03.2"	16° 19' 26.6"	2	1	2	1	250	10	0	0	0	0	0	0	100	0
643	NR & FA	0	62° 08' 03.2"	16° 19' 26.3"	3	3	2	1	2000	42	4	0	0	0	0	0	100	0
644	NR & FA	0	62° 08' 03.2"	16° 19' 26.3"	2	1	2	1	1500	22	0	0	0	0	0	0	85	0
645	NR & FA	0	62° 08' 03.4"	16° 19' 26.3"	1	2	3	1	37	18	0	0	0	0	0	1	0	0
646	NR & FA	0	62° 08' 03.7"	16° 19' 26.2"	2	2	3	2	34	11	0	0	0	0	0	0	0	0
647	NR & FA	0	62° 08' 04.0"	16° 19' 20.4"	1	2	2	1	49	44	0	0	0	0	0	1	0	0
648	NR & FA	0	62° 08' 04.5"	16° 19' 18.3"	3	1	2	1	400	10	0	0	0	0	0	0	100	0
649	NR & FA	0	62° 08' 05.1"	16° 19' 17.6"	3	2	2	1	46	23	0	0	0	0	0	0	100	0
650	NR & FA	0	62° 08' 05.2"	16° 19' 18.0"	3	2	1	1	44	13	0	0	0	0	0	0	95	0
651	NR & FA	0	62° 08' 05.3"	16° 19' 18.4"	3	1	2	1	340	10	0	0	0	0	0	0	0	0
652	NR & FA	0	62° 08' 05.2"	16° 19' 17.6"	3	2	1	1	24	10	0	0	0	0	0	0	95	0
653	NR & FA	0	62° 08' 05.3"	16° 19' 17.4"	2	3	1	2	170	14	13	0	0	0	0	0	0	0
654	NR & FA	0	62° 08' 05.9"	16° 19' 16.7"	2	2	1	1	31	17	0	0	0	0	0	0	90	0
655	NR & FA	0	62° 08' 06.8"	16° 19' 15.8"	3	1	2	1	500	13	0	0	0	0	0	0	100	0
656	NR & FA	0	62° 08' 07.0"	16° 19' 13.3"	3	2	2	1	13	11	0	0	0	0	0	0	80	0
657	NR & FA	0	62° 08' 06.7"	16° 19' 13.6"	3	1	2	1	400	10	0	0	0	0	0	0	100	0
658	NR & FA	0	62° 08' 06.5"	16° 19' 12.6"	3	2	2	1	47	13	0	0	0	0	0	0	95	0
659	NR& FA r	5	62° 08' 30.5"	16° 22' 46.0"	1	2	2	1	49	43	0	0	0	0	0	1	0	1
660	NR& FA r	5	62° 08' 30.9"	16° 22' 46.2"	1	1	2	1	53	12	0	0	0	0	0	0	0	1
661	NR& FA r	5	62° 08' 30.9"	16° 22' 46.1"	1	1	2	1	79	33	0	0	0	0	0	0	0	1
662	NR& FA r	5	62° 08' 30.7"	16° 22' 45.7"	2	3	3	2	250	16	11	0	0	0	0	0	0	1
663	NR& FA r	5	62° 08' 31.0"	16° 22' 45.5"	3	3	2	1	500	16	3	0	0	0	0	0	100	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
664	NR& FA r	5	62° 08' 30.9"	16° 22' 45.4"	2	1	1	1	240	10	0	0	0	0	0	0	0	1
665	NR& FA r	5	62° 08' 30.6"	16° 22' 45.1"	3	3	2	2	500	20	15	0	0	0	0	0	100	1
666	NR& FA r	5	62° 08' 30.6"	16° 22' 44.6"	2	1	2	1	600	10	0	0	0	0	0	0	10	1
667	NR& FA r	5	62° 08' 31.0"	16° 22' 45.0"	1	2	2	1	600	15	0	0	0	0	0	0	0	1
668	NR& FA r	5	62° 08' 30.9"	16° 22' 43.9"	1	2	2	1	43	26	0	0	0	0	0	0	0	1
669	NR& FA r	5	62° 08' 30.8"	16° 22' 44.1"	3	1	2	1	550	16	0	0	0	0	0	0	80	1
670	NR& FA r	5	62° 08' 30.9"	16° 22' 43.5"	1	1	3	1	750	18	0	0	0	0	0	0	0	1
671	NR& FA r	5	62° 08' 30.6"	16° 22' 42.9"	3	3	1	1	600	16	10	0	0	0	0	0	100	1
672	NR& FA r	5	62° 08' 30.6"	16° 22' 42.9"	3	2	1	2	47	18	0	0	0	0	0	0	80	1
673	NR& FA r	5	62° 08' 30.7"	16° 22' 42.8"	3	3	1	1	500	25	21	0	0	0	0	0	100	1
674	NR& FA r	5	62° 08' 30.7"	16° 22' 42.7"	3	1	1	1	128	31	0	0	0	0	0	0	100	1
675	NR& FA r	5	62° 08' 31.1"	16° 22' 41.7"	1	2	2	2	42	35	0	0	0	0	0	0	100	1
676	NR& FA r	5	62° 08' 30.7"	16° 22' 40.9"	2	1	2	1	65	10	0	0	0	0	0	0	0	1
677	NR& FA r	5	62° 08' 30.9"	16° 22' 41.1"	3	2	2	2	48	18	0	0	0	0	0	0	90	1
678	NR& FA r	5	62° 08' 30.9"	16° 22' 41.3"	3	3	2	1	100	14	11	0	0	0	0	0	95	1
679	NR& FA r	5	62° 08' 30.9"	16° 22' 41.3"	3	2	3	2	26	10	0	0	0	0	0	0	70	1
680	NR& FA r	5	62° 08' 30.9"	16° 22' 41.3"	3	3	2	1	100	11	10	0	0	0	0	0	100	1
681	NR& FA r	5	62° 08' 31.1"	16° 22' 38.9"	1	1	3	1	68	54	0	0	0	0	0	0	0	1
682	NR& FA r	5	62° 08' 31.0"	16° 22' 38.7"	1	3	3	2	250	35	30	0	0	0	0	0	0	1
683	NR& FA r	5	62° 08' 31.0"	16° 22' 38.7"	2	3	3	3	130	12	10	0	0	0	0	0	0	1
684	NR& FA r	5	62° 08' 31.4"	16° 22' 38.4"	1	1	2	1	64	18	0	0	0	0	0	0	0	1
685	NR& FA r	5	62° 08' 31.1"	16° 22' 27.9"	1	2	3	1	47	40	0	0	0	0	0	0	0	1
686	NR& FA r	5	62° 08' 30.9"	16° 22' 35.5"	3	2	1	5	44	24	0	0	0	0	0	0	10	1
687	NR& FA r	5	62° 08' 30.7"	16° 22' 37.0"	1	1	3	1	57	33	0	0	0	0	0	0	0	1
688	NR& FA r	5	62° 08' 30.8"	16° 22' 36.7"	3	1	2	1	2100	28	0	0	0	0	0	0	100	1
689	NR& FA r	5	62° 08' 31.0"	16° 22' 36.7"	1	1	3	1	88	41	0	0	0	0	0	0	0	1
690	NR& FA r	5	62° 08' 31.2"	16° 22' 36.8"	1	1	3	1	800	39	0	0	1	0	0	1	0	1
691	NR& FA r	5	62° 08' 30.7"	16° 22' 35.8"	1	3	2	1	280	43	0	1	1	0	0	1	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
692	NR& FA r	5	62° 08' 31.3"	16° 22' 35.3"	2	3	2	2	400	15	7	0	0	0	0	0	30	1
693	NR& FA r	5	62° 08' 30.8"	16° 22' 34.9"	2	1	1	1	700	20	0	0	0	0	0	0	20	1
694	NR& FA r	5	62° 08' 30.8"	16° 22' 35.0"	2	3	1	2	300	15	13	0	0	0	0	0	0	1
695	NR& FA r	5	62° 08' 31.2"	16° 22' 36.0"	1	1	3	1	97	36	0	1	1	0	0	1	0	0
696	NR& FA r	5	62° 08' 31.7"	16° 22' 35.3"	1	1	2	1	200	51	0	0	1	0	0	1	0	0
697	NR& FA r	5	62° 08' 30.6"	16° 22' 34.8"	1	1	3	1	250	31	0	0	0	0	0	1	0	1
698	NR& FA r	5	62° 08' 30.4"	16° 22' 34.5"	1	2	3	1	48	17	0	0	0	0	0	1	0	1
699	NR& FA r	5	62° 08' 30.2"	16° 22' 33.9"	3	1	2	1	1600	26	0	0	0	0	0	0	95	1
700	NR& FA r	5	62° 08' 30.2"	16° 22' 34.1"	3	1	2	1	800	11	0	0	0	0	0	0	100	1
701	NR& FA r	5	62° 08' 30.4"	16° 22' 34.0"	3	1	2	1	1200	21	0	0	0	0	0	0	100	1
702	NR& FA r	5	62° 08' 30.7"	16° 22' 33.8"	3	3	2	2	300	24	23	0	0	0	0	0	95	1
703	NR& FA r	5	62° 08' 30.4"	16° 22' 32.5"	1	1	3	1	900	53	0	1	0	0	0	1	0	1
704	NR& FA r	5	62° 08' 30.4"	16° 22' 32.0"	3	1	3	1	112	17	0	0	0	0	0	0	100	1
705	NR& FA r	5	62° 08' 30.1"	16° 22' 33.0"	1	1	2	1	150	16	0	1	1	0	0	1	0	0
706	NR& FA r	5	62° 08' 30.0"	16° 22' 33.0"	1	1	2	1	300	36	0	1	0	0	0	1	0	0
707	> 65 y	3	62° 05' 36.5"	16° 25' 39.7"	3	1	1	1	1000	15	0	0	0	0	0	0	90	1
708	> 65 y	3	62° 05' 36.3"	16° 25' 40.0"	3	1	2	1	79	18	0	0	0	0	0	0	60	1
709	> 65 y	3	62° 05' 36.4"	16° 25' 39.6"	2	3	2	1	800	30	10	0	0	0	0	0	0	1
710	> 65 y	3	62° 05' 36.5"	16° 25' 39.3"	2	1	1	1	2300	34	0	0	0	0	0	0	10	1
711	> 65 y	3	62° 05' 36.5"	16° 25' 39.3"	3	1	1	1	500	15	0	0	0	0	0	0	100	1
712	> 65 y	3	62° 05' 36.5"	16° 25' 29.3"	3	1	2	1	500	15	0	0	0	0	0	0	50	1
713	> 65 y	3	62° 05' 36.6"	16° 25' 39.1"	2	1	2	1	250	32	0	0	0	0	0	0	90	1
714	> 65 y	3	62° 05' 36.8"	16° 25' 37.8"	2	3	3	1	300	33	22	0	0	0	0	0	100	1
715	> 65 y	3	62° 05' 37.7"	16° 25' 36.2"	2	3	1	1	300	25	18	0	0	0	0	0	0	1
716	> 65 y	3	62° 05' 37.8"	16° 25' 36.6"	3	3	1	1	1500	35	10	0	0	0	0	0	95	1
717	> 65 y	3	62° 05' 37.8"	16° 25' 36.6"	3	3	2	1	1000	25	5	0	0	0	0	0	100	1
718	> 65 y	3	62° 05' 38.3"	16° 25' 27.4"	3	3	2	1	600	25	10	0	0	0	0	0	100	1
719	> 65 y	3	62° 05' 38.3"	16° 25' 37.2"	2	3	2	1	600	35	25	0	0	0	0	0	100	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
720	> 65 y	3	62° 05' 38.3"	16° 25' 37.2"	3	2	2	1	15	11	0	0	0	0	0	0	100	1
721	> 65 y	3	62° 05' 38.3"	16° 25' 37.1"	3	3	2	1	200	11	10	0	0	0	0	0	100	1
722	> 65 y	3	62° 05' 38.3"	16° 25' 37.1"	3	3	2	1	200	10	9	0	0	0	0	0	100	1
723	> 65 y	3	62° 05' 38.3"	16° 25' 37.1"	3	2	2	1	15	11	0	0	0	0	0	0	100	1
724	> 65 y	3	62° 05' 38.5"	16° 25' 36.7"	3	3	2	1	500	30	15	0	0	0	0	0	100	1
725	> 65 y	3	62° 05' 39.4"	16° 25' 37.7"	2	3	1	1	350	50	30	0	0	0	0	0	100	1
726	> 65 y	3	62° 05' 39.4"	16° 25' 37.6"	3	3	1	1	200	20	14	0	0	0	0	0	100	1
727	> 65 y	3	62° 05' 39.4"	16° 25' 37.6"	3	3	2	1	200	18	13	0	0	0	0	0	100	1
728	> 65 y	3	62° 05' 39.4"	16° 25' 37.6"	3	3	2	1	300	25	20	0	0	0	0	0	100	1
729	> 65 y	3	62° 05' 39.7"	16° 25' 37.8"	2	1	2	1	2000	22	0	0	0	0	0	0	40	1
730	> 65 y	3	62° 05' 40.1"	16° 25' 36.8"	2	3	3	1	400	13	8	0	0	0	0	0	100	1
731	> 65 y	3	62° 05' 40.1"	16° 25' 36.3"	3	3	3	1	400	20	12	0	0	0	0	0	40	1
732	> 65 y	3	62° 05' 40.1"	16° 25' 36.2"	3	2	3	1	17	10	0	0	0	0	0	0	100	1
733	> 65 y	3	62° 05' 40.3"	16° 25' 36.4"	3	3	3	1	250	15	9	0	0	0	0	0	100	1
734	> 65 y	3	62° 05' 40.6"	16° 25' 36.1"	3	3	2	1	300	28	20	0	0	0	0	0	5	1
735	> 65 y	3	62° 05' 40.7"	16° 25' 36.1"	3	2	2	1	25	25	0	0	0	0	0	0	80	1
736	> 65 y	3	62° 05' 40.7"	16° 25' 36.1"	3	3	2	1	100	21	18	0	0	0	0	0	0	1
737	> 65 y	3	62° 05' 40.7"	16° 25' 36.2"	3	1	2	1	76	22	0	0	0	0	0	0	90	1
738	> 65 y	3	62° 05' 40.8"	16° 25' 36.3"	3	3	2	1	1000	25	4	0	0	0	0	0	20	1
739	> 65 y	3	62° 05' 40.7"	16° 25' 34.0"	3	3	1	1	1500	30	5	0	0	0	0	0	90	1
740	> 65 y	3	62° 05' 40.9"	16° 25' 34.7"	3	1	2	1	86	28	0	0	0	0	0	0	40	1
741	> 65 y	3	62° 05' 40.9"	16° 25' 33.9"	2	3	2	1	150	13	10	0	0	0	0	0	0	1
742	> 65 y	3	62° 05' 40.7"	16° 25' 33.4"	3	3	2	1	1000	35	5	0	0	0	0	0	20	1
743	> 65 y	3	62° 05' 40.6"	16° 25' 33.4"	3	3	2	2	800	20	15	0	0	0	0	0	0	1
744	> 65 y	3	62° 05' 40.6"	16° 25' 33.2"	3	2	2	3	28	11	0	0	0	0	0	0	100	1
745	> 65 y	3	62° 05' 40.6"	16° 25' 33.2"	3	2	2	1	17	18	0	0	0	0	0	0	90	1
746	> 65 y	3	62° 05' 40.6"	16° 25' 33.2"	3	3	2	1	900	11	2	0	0	0	0	0	60	1
747	> 65 y	3	62° 05' 40.6"	16° 25' 33.1"	3	1	2	1	1600	17	0	0	0	0	0	0	10	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
748	> 65 y	3	62° 05' 40.6"	16° 25' 33.1"	3	1	2	1	1700	24	0	0	0	0	0	0	30	0
749	> 65 y	3	62° 05' 40.9"	16° 25' 32.3"	3	1	2	1	1100	15	0	0	0	0	0	0	10	0
750	> 65 y	3	62° 05' 41.1"	16° 25' 32.3"	3	1	2	1	900	15	0	0	0	0	0	0	10	0
751	> 65 y	3	62° 05' 41.2"	16° 25' 32.1"	3	1	2	1	130	11	0	0	0	0	0	0	0	0
752	> 65 y	3	62° 05' 40.9"	16° 25' 29.7"	3	2	3	1	33	15	0	0	0	0	0	0	0	0
753	> 65 y	3	62° 05' 41.0"	16° 25' 29.8"	3	2	3	5	30	18	0	0	0	0	0	0	0	0
754	> 65 y	3	62° 05' 40.6"	16° 25' 29.6"	2	1	2	1	2500	35	0	0	0	0	0	0	80	0
755	> 65 y	3	62° 05' 39.9"	16° 25' 30.0"	1	2	1	1	82	13	0	0	0	0	0	0	0	0
756	> 65 y	3	62° 05' 39.9"	16° 25' 31.4"	2	1	2	1	2400	35	0	0	0	0	0	0	15	0
757	> 65 y	3	62° 05' 40.1"	16° 25' 32.5"	3	2	2	1	29	26	0	0	0	0	0	0	95	0
758	> 65 y	3	62° 05' 39.3"	16° 25' 37.0"	2	1	3	3	23	30	0	0	0	0	0	0	5	0
759	> 65 y	3	62° 05' 39.4"	16° 25' 37.0"	3	2	2	1	20	10	0	0	0	0	0	0	100	0
760	> 65 y	3	62° 05' 38.2"	16° 25' 29.6"	2	2	2	1	31	33	0	0	0	0	0	0	0	0
761	> 65 y	3	62° 05' 38.5"	16° 25' 40.5"	1	2	3	1	44	36	0	0	0	0	0	0	0	0
762	> 65 y	3	62° 05' 38.6"	16° 25' 40.6"	2	2	2	1	35	23	0	0	0	0	0	0	0	0
763	> 65 y	3	62° 05' 38.5"	16° 25' 40.7"	2	2	2	1	21	15	0	0	0	0	0	0	0	0
764	> 65 y	3	62° 05' 37.4"	16° 25' 42.4"	2	2	2	1	18	13	0	0	0	0	0	0	10	0
765	20-64 y	5	62° 04' 24.9"	16° 10' 44.0"	2	1	1	2	64	15	0	0	0	0	0	0	100	1
766	20-64 y	5	62° 04' 25.1"	16° 10' 44.3"	2	2	2	1	49	20	0	0	0	0	0	0	100	1
767	20-64 y	5	62° 04' 25.4"	16° 10' 44.9"	1	2	2	2	31	16	0	0	0	0	0	0	0	1
768	20-64 y	5	62° 04' 25.4"	16° 10' 46.6"	2	3	1	1	160	15	13	0	0	0	0	0	95	1
769	20-64 y	5	62° 04' 25.4"	16° 10' 46.1"	2	3	1	1	300	14	8	0	0	0	0	0	20	1
770	20-64 y	5	62° 04' 25.2"	16° 10' 46.5"	3	3	2	1	1800	50	3	0	0	0	0	0	100	1
771	20-64 y	5	62° 04' 25.3"	16° 10' 47.2"	2	2	1	1	22	24	0	0	0	0	0	0	100	1
772	20-64 y	5	62° 04' 25.4"	16° 10' 47.1"	1	2	2	2	106	28	0	0	0	0	0	0	1	1
773	20-64 y	5	62° 04' 25.6"	16° 10' 48.6"	2	2	1	1	42	15	0	0	0	0	0	0	100	1
774	20-64 y	5	62° 04' 25.8"	16° 10' 49.5"	1	2	3	4	47	51	0	0	0	0	0	0	0	1
775	20-64 y	5	62° 04' 25.9"	16° 10' 49.6"	3	2	2	1	20	15	0	0	0	0	0	0	100	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
776	20-64 y	5	62° 04' 25.6"	16° 10' 49.8"	2	2	2	1	28	29	0	0	0	0	0	0	5	1
777	20-64 y	5	62° 04' 25.5"	16° 10' 49.8"	3	2	2	1	25	29	0	0	0	0	0	0	80	1
778	20-64 y	5	62° 04' 25.5."	16° 10' 49.9"	3	2	2	1	33	24	0	0	0	0	0	0	15	1
779	20-64 y	5	62° 04' 25.5"	16° 10' 49.9"	3	3	1	1	400	16	7	0	0	0	0	0	30	1
780	20-64 y	5	62° 04' 25.5"	16° 10' 50.1"	3	3	1	1	150	11	11	0	0	0	0	0	60	1
781	20-64 y	5	62° 04' 25.6"	16° 10' 50.2"	3	2	2	1	15	27	0	0	0	0	0	0	100	1
782	20-64 y	5	62° 04' 25.5"	16° 10' 49.9"	3	1	1	5	73	54	0	0	0	0	0	0	0	1
783	20-64 y	5	62° 04' 25.6"	16° 10' 49.9"	3	2	1	1	41	22	0	0	0	0	0	0	100	1
784	20-64 y	5	62° 04' 25.6"	16° 10' 49.9"	3	2	1	4	33	17	0	0	0	0	0	0	100	1
785	20-64 y	5	62° 04' 25.3"	16° 10' 50.6"	3	2	1	1	23	23	0	0	0	0	0	0	20	1
786	20-64 y	5	62° 04' 25.3"	16° 10' 50.5"	3	3	1	1	140	10	10	0	0	0	0	0	10	1
787	20-64 y	5	62° 04' 25.3"	16° 10' 50.6"	3	3	2	1	400	13	7	0	0	0	0	0	10	1
788	20-64 y	5	62° 04' 25.3"	16° 10' 50.6"	3	2	2	5	42	50	0	0	0	0	0	0	10	1
789	20-64 y	5	62° 04' 25.3"	16° 10' 51.5"	3	2	2	1	24	21	0	0	0	0	0	0	80	1
790	20-64 y	5	62° 04' 25.3"	16° 10' 51.6"	3	1	1	1	54	28	0	0	0	0	0	0	100	1
791	20-64 y	5	62° 04' 25.1"	16° 10' 52.5"	3	1	2	1	59	36	0	0	0	0	0	0	100	1
792	20-64 y	5	62° 04' 25.1"	16° 10' 52.4"	3	3	1	1	47	33	32	0	0	0	0	0	100	1
793	20-64 y	5	62° 04' 25.1"	16° 10' 51.0"	3	1	2	4	51	40	0	0	0	0	0	0	0	1
794	20-64 y	5	62° 04' 25.1"	16° 10' 50.9"	3	2	2	1	16	30	0	0	0	0	0	0	80	1
795	20-64 y	5	62° 04' 25.3"	16° 10' 51.1"	3	1	2	5	54	26	0	0	0	0	0	0	0	1
796	20-64 y	5	62° 04' 25.6"	16° 10' 51.8"	3	1	2	1	50	30	0	0	0	0	0	0	100	1
797	20-64 y	5	62° 04' 25.3"	16° 10' 51.5"	2	3	1	1	140	18	11	0	0	0	0	0	0	1
798	20-64 y	5	62° 04' 25.0"	16° 10' 52.5"	3	2	2	1	39	18	0	0	0	0	0	0	80	1
799	20-64 y	5	62° 04' 25.2"	16° 10' 52.5"	3	3	3	1	1000	21	2	0	0	0	0	0	100	1
800	20-64 y	5	62° 04' 25.3"	16° 10' 53.2"	3	1	3	4	68	60	0	0	0	0	0	0	0	1
801	20-64 y	5	62° 04' 25.9"	16° 10' 53.4"	3	2	3	5	47	15	0	0	0	0	0	0	0	1
802	20-64 y	5	62° 04' 26.2"	16° 10' 57.5"	3	3	3	1	1000	18	2	0	0	0	0	0	100	1
803	20-64 y	5	62° 04' 26.2"	16° 10' 57.7"	3	3	3	1	300	11	2	0	0	0	0	0	100	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
804	20-64 y	5	62° 04' 25.8"	16° 10' 58.6"	2	3	3	1	300	21	18	0	0	0	0	0	100	1
805	20-64 y	5	62° 04' 25.8"	16° 10' 58.8"	2	1	3	1	500	26	0	0	0	0	0	0	100	1
806	20-64 y	5	62° 04' 25.9"	16° 10' 58.8"	2	3	3	1	300	24	18	0	0	0	0	0	100	1
807	20-64 y	5	62° 04' 25.8"	16° 10' 58.7"	1	1	3	1	77	25	0	0	0	0	0	0	5	0
808	20-64 y	5	62° 04' 26.6"	16° 10' 58.8"	2	1	2	1	2200	30	0	0	0	0	0	0	100	0
809	20-64 y	5	62° 04' 25.1"	16° 10' 51.2"	1	2	2	1	38	43	0	0	0	0	0	0	0	0
810	20-64 y	5	62° 04' 25.2"	16° 10' 47.1"	2	1	1	1	69	24	0	0	0	0	0	0	100	0
811	20-64 y	5	62° 04' 25.2"	16° 10' 46.9"	2	2	1	1	18	26	0	0	0	0	0	0	100	0
812	20-64 y	5	62° 04' 25.8"	16° 10' 43.9"	2	1	1	1	150	11	0	0	0	0	0	0	80	0
813	> 65 y	2	62° 04' 14.9"	16° 22' 21.0"	3	2	3	2	33	10	0	0	0	0	0	0	0	1
814	> 65 y	2	62° 04' 14.9"	16° 22' 21.3"	1	2	2	1	38	10	0	0	0	0	0	0	0	1
815	> 65 y	2	62° 04' 15.2"	16° 22' 21.1"	1	3	2	1	250	27	13	0	0	0	0	1	0	0
816	> 65 y	2	62° 04' 15.2"	16° 22' 20.7"	1	1	2	1	62	21	0	0	0	0	0	1	0	1
817	> 65 y	2	62° 04' 15.5"	16° 22' 20.3"	3	3	1	1	500	20	4	0	0	0	0	0	100	1
818	> 65 y	2	62° 04' 15.7"	16° 22' 20.2"	1	1	1	1	73	66	0	0	0	0	0	0	0	1
819	> 65 y	2	62° 04' 15.6"	16° 22' 20.0"	1	1	3	1	60	41	0	0	0	0	0	1	0	0
820	> 65 y	2	62° 04' 15.6"	16° 22' 20.3"	1	3	3	1	70	15	8	0	0	0	0	1	0	1
821	> 65 y	2	62° 04' 15.6"	16° 22' 20.6"	1	2	2	1	43	34	0	0	0	0	0	1	0	1
822	> 65 y	2	62° 04' 15.7"	16° 22' 20.1"	1	2	2	1	49	65	0	0	0	0	0	1	0	1
823	> 65 y	2	62° 04' 15.8"	16° 22' 19.2"	3	1	2	1	170	10	0	0	0	0	0	0	100	1
824	> 65 y	2	62° 04' 15.9"	16° 22' 19.0"	1	3	2	1	100	46	25	0	0	0	0	1	0	1
825	> 65 y	2	62° 04' 16.4"	16° 22' 18.6"	3	3	1	1	300	14	2	0	0	0	0	0	90	1
826	> 65 y	2	62° 04' 16.4"	16° 22' 18.3"	1	3	2	1	200	50	45	0	0	0	0	1	0	1
827	> 65 y	2	62° 04' 16.8"	16° 22' 18.7"	1	2	2	1	28	50	0	0	0	0	0	0	0	1
828	> 65 y	2	62° 04' 17.1"	16° 22' 19.5"	1	2	2	1	40	24	0	0	0	0	0	0	0	0
829	> 65 y	2	62° 04' 16.6"	16° 22' 17.6"	1	2	2	1	40	36	0	0	0	0	0	0	0	1
830	> 65 y	2	62° 04' 16.6"	16° 22' 17.8"	1	1	2	1	52	38	0	0	0	0	0	0	0	1
831	> 65 y	2	62° 04' 17.1"	16° 22' 18.2"	2	2	2	1	34	21	0	0	0	0	0	0	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
832	> 65 y	2	62° 04' 17.1"	16° 22' 17.8"	1	1	1	1	56	12	0	0	0	0	0	1	0	1
833	> 65 y	2	62° 04' 17.4"	16° 22' 17.9"	1	2	1	1	26	27	0	0	0	0	0	0	0	1
834	> 65 y	2	62° 04' 17.4"	16° 22' 17.9"	1	1	2	1	56	26	0	0	0	0	0	0	0	1
835	> 65 y	2	62° 04' 17.3"	16° 22' 18.1"	1	3	3	1	120	21	5	0	0	0	0	0	0	1
836	> 65 y	2	62° 04' 17.7"	16° 22' 17.3"	3	3	3	1	300	25	10	0	0	0	0	0	100	1
837	> 65 y	2	62° 04' 17.9"	16° 22' 18.3"	1	1	2	1	500	42	0	0	0	0	0	0	0	0
838	> 65 y	2	62° 04' 17.8"	16° 22' 17.9"	3	1	2	1	500	25	0	0	0	0	0	0	100	1
839	> 65 y	2	62° 04' 17.9"	16° 22' 17.0"	1	1	2	1	89	10	0	0	0	0	0	0	0	1
840	> 65 y	2	62° 04' 18.0"	16° 22' 17.9"	1	3	3	1	150	11	5	0	0	0	0	0	0	1
841	> 65 y	2	62° 04' 17.8"	16° 22' 17.8"	3	3	3	1	300	20	2	0	0	0	0	0	50	1
842	> 65 y	2	62° 04' 17.8"	16° 22' 17.8"	1	1	2	1	130	22	0	0	0	0	0	1	0	1
843	> 65 y	2	62° 04' 18.0"	16° 22' 17.5"	1	3	3	1	200	30	26	0	0	0	0	1	0	1
844	> 65 y	2	62° 04' 18.5"	16° 22' 17.1"	3	3	2	1	400	17	6	0	0	0	0	0	100	1
845	> 65 y	2	62° 04' 18.5"	16° 22' 17.1"	2	3	1	1	400	23	18	0	0	0	0	0	90	1
846	> 65 y	2	62° 04' 19.0"	16° 22' 17.1"	1	1	2	1	1000	26	0	0	0	0	0	0	0	1
847	> 65 y	2	62° 04' 18.9"	16° 22' 17.6"	1	2	2	1	46	47	0	0	0	0	0	0	0	1
848	> 65 y	2	62° 04' 18.9"	16° 22' 18.1"	1	1	2	1	130	52	0	1	1	0	0	1	0	0
849	> 65 y	2	62° 04' 19.2"	16° 22' 16.7"	1	1	1	1	65	27	0	0	0	0	0	0	0	1
850	> 65 y	2	62° 04' 19.6"	16° 22' 17.2"	3	1	1	1	200	23	0	0	0	0	0	0	100	1
851	> 65 y	2	62° 04' 19.6"	16° 22' 17.2"	1	1	1	1	130	64	0	0	0	0	0	1	0	1
852	> 65 y	2	62° 04' 19.6"	16° 22' 17.4"	3	3	1	1	250	32	20	0	0	0	0	0	100	1
853	> 65 y	2	62° 04' 19.9"	16° 22' 17.4"	1	3	3	1	100	30	25	0	0	0	0	0	0	1
854	> 65 y	2	62° 04' 19.9"	16° 22' 17.8"	1	2	3	1	40	35	0	0	0	0	0	0	0	0
855	> 65 y	2	62° 04' 19.8"	16° 22' 17.9"	2	2	3	2	21	23	0	0	0	0	0	0	5	0
856	> 65 y	2	62° 04' 19.7"	16° 22' 17.8"	1	1	2	1	66	51	0	0	0	0	0	1	0	0
857	> 65 y	2	62° 04' 20.1"	16° 22' 16.9"	2	3	3	1	200	20	5	0	0	0	0	0	0	1
858	> 65 y	2	62° 04' 20.1"	16° 22' 17.3"	1	2	3	1	36	37	0	0	0	0	0	0	0	1
859	> 65 y	2	62° 04' 20.2"	16° 22' 16.9"	3	1	1	1	180	11	0	0	0	0	0	0	100	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
860	> 65 y	2	62° 04' 20.3"	16° 22' 16.8"	1	2	2	1	34	86	0	0	0	0	0	0	0	1
861	> 65 y	2	62° 04' 20.4"	16° 22' 16.7"	1	2	2	1	34	58	0	0	0	0	0	0	0	1
862	> 65 y	2	62° 04' 20.5"	16° 22' 16.8"	1	1	2	1	80	38	0	0	1	0	0	1	0	1
863	> 65 y	2	62° 04' 20.6"	16° 22' 16.6"	1	3	3	1	200	70	44	0	0	0	0	0	0	1
864	> 65 y	2	62° 04' 20.6"	16° 22' 16.0"	3	1	1	1	150	19	0	0	0	0	0	0	100	0
865	> 65 y	2	62° 04' 19.8"	16° 22' 15.7"	2	1	1	1	350	10	0	0	0	0	0	0	90	0
866	> 65 y	2	62° 04' 19.7"	16° 22' 16.0"	2	3	2	1	1200	30	2	0	0	0	0	0	100	0
867	> 65 y	2	62° 04' 19.9"	16° 22' 14.7"	3	2	1	1	39	26	0	0	0	0	0	0	100	0
868	> 65 y	2	62° 04' 19.9"	16° 22' 13.8"	2	3	2	1	1000	20	10	0	0	0	0	0	0	0
869	> 65 y	2	62° 04' 19.3"	16° 22' 11.5"	3	2	1	1	14	18	0	0	0	0	0	0	100	0
870	> 65 y	2	62° 04' 19.3"	16° 22' 08.2"	2	1	3	1	250	17	0	0	0	0	0	0	80	0
871	> 65 y	2	62° 04' 19.2"	16° 22' 08.5"	2	1	3	1	400	10	0	0	0	0	0	0	20	0
872	> 65 y	2	62° 04' 19.0"	16° 22' 08.2"	2	3	2	1	300	17	13	0	0	0	0	0	80	0
873	> 65 y	0	62° 14' 51.1"	16° 20' 16.2"	3	2	2	1	32	32	0	0	0	0	0	0	100	1
874	> 65 y	0	62° 14' 55.1"	16° 20' 15.8"	3	2	2	1	45	28	0	0	0	0	0	0	80	1
875	> 65 y	0	62° 14' 58.8"	16° 20' 15.7"	3	2	2	1	34	34	0	0	0	0	0	0	100	1
876	> 65 y	0	62° 14' 54.8"	16° 20' 15.8"	3	2	2	1	19	24	0	0	0	0	0	0	100	1
877	> 65 y	0	62° 14' 54.8"	16° 20' 15.0"	3	2	2	1	34	21	0	0	0	0	0	0	90	1
878	> 65 y	0	62° 14' 54.9"	16° 20' 15.7"	3	2	2	1	29	30	0	0	0	0	0	0	95	1
879	> 65 y	0	62° 14' 55.1"	16° 20' 15.7"	3	2	3	1	39	25	0	0	0	0	0	0	100	1
880	> 65 y	0	62° 14' 55.1"	16° 20' 15.6"	3	2	2	1	34	26	0	0	0	0	0	0	90	1
881	> 65 y	0	62° 14' 54.7"	16° 20' 15.6"	3	2	2	1	28	32	0	0	0	0	0	0	80	1
882	> 65 y	0	62° 14' 54.4"	16° 20' 15.5"	3	2	2	1	31	26	0	0	0	0	0	0	100	1
883	> 65 y	0	62° 14' 54.7"	16° 20' 15.4"	3	2	3	1	31	26	0	0	0	0	0	0	100	1
884	> 65 y	0	62° 14' 54.6"	16° 20' 15.5"	3	2	3	1	39	18	0	0	0	0	0	0	80	1
885	> 65 y	0	62° 14' 54.5"	16° 20' 15.2"	3	2	3	1	21	24	0	0	0	0	0	0	80	1
886	> 65 y	0	62° 14' 54.5"	16° 20' 14.8"	3	1	2	1	240	13	0	0	0	0	0	0	100	0
887	> 65 y	0	62° 14' 54.5"	16° 20' 14.8"	3	1	2	1	250	19	0	0	0	0	0	0	100	0

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
888	> 65 y	0	62° 14' 54.3"	16° 20' 15.4"	3	1	2	1	700	13	0	0	0	0	0	0	100	0
889	> 65 y	0	62° 14' 54.3"	16° 20' 15.4"	3	1	2	1	700	10	0	0	0	0	0	0	100	0
890	> 65 y	0	62° 14' 54.3"	16° 20' 16.2"	3	3	1	1	73	38	36	0	0	0	0	0	40	1
891	> 65 y	0	62° 14' 54.3"	16° 20' 16.1"	3	2	2	2	36	38	0	0	0	0	0	0	90	1
892	> 65 y	0	62° 14' 53.7"	16° 20' 15.8"	3	2	2	1	40	24	0	0	0	0	0	0	10	1
893	> 65 y	0	62° 14' 53.6"	16° 20' 15.9"	3	2	2	1	34	38	0	0	0	0	0	0	50	1
894	> 65 y	0	62° 14' 53.6"	16° 20' 15.8"	3	1	3	1	200	20	0	0	0	0	0	0	100	1
895	> 65 y	0	62° 14' 53.7"	16° 20' 16.1"	3	2	3	1	24	19	0	0	0	0	0	0	100	1
896	> 65 y	0	62° 14' 53.5"	16° 20' 16.2"	3	2	2	1	26	38	0	0	0	0	0	0	100	1
897	> 65 y	0	62° 14' 53.4"	16° 20' 16.1"	3	2	2	4	22	24	0	0	0	0	0	0	20	1
898	> 65 y	0	62° 14' 53.5"	16° 20' 16.4"	3	2	2	1	27	24	0	0	0	0	0	0	100	1
899	> 65 y	0	62° 14' 53.4"	16° 20' 15.7"	3	2	2	1	23	30	0	0	0	0	0	0	80	1
900	> 65 y	0	62° 14' 53.3"	16° 20' 15.5"	3	2	2	1	36	29	0	0	0	0	0	0	90	1
901	> 65 y	0	62° 14' 53.3"	16° 20' 15.5"	3	2	1	1	29	23	0	0	0	0	0	0	100	1
902	> 65 y	0	62° 14' 53.3"	16° 20' 15.5"	3	2	1	1	33	26	0	0	0	0	0	0	100	1
903	> 65 y	0	62° 14' 53.3"	16° 20' 15.5"	3	2	2	1	38	29	0	0	0	0	0	0	95	1
904	> 65 y	0	62° 14' 53.3"	16° 20' 15.6"	3	2	2	1	30	26	0	0	0	0	0	0	80	1
905	> 65 y	0	62° 14' 53.2"	16° 20' 15.3"	3	3	2	1	1000	20	10	0	0	0	0	0	100	1
906	> 65 y	0	62° 14' 52.9"	16° 20' 17.9"	3	1	2	1	250	20	0	0	0	0	0	0	80	1
907	> 65 y	0	62° 14' 52.9"	16° 20' 17.9"	3	1	2	1	230	15	0	0	0	0	0	0	50	1
908	> 65 y	0	62° 14' 52.7"	16° 20' 15.3"	3	2	2	1	26	33	0	0	0	0	0	0	100	1
909	> 65 y	0	62° 14' 52.7"	16° 20' 15.7"	3	2	2	1	32	24	0	0	0	0	0	0	95	1
910	> 65 y	0	62° 14' 52.8"	16° 20' 15.7"	3	2	2	1	36	34	0	0	0	0	0	0	80	1
911	> 65 y	0	62° 14' 52.7"	16° 20' 15.5"	3	3	1	2	36	18	17	0	0	0	0	0	0	1
912	> 65 y	0	62° 14' 52.5"	16° 20' 15.8"	3	1	3	1	300	20	0	0	0	0	0	0	100	1
913	> 65 y	0	62° 14' 52.4"	16° 20' 15.3"	3	2	2	1	19	23	0	0	0	0	0	0	50	1
914	> 65 y	0	62° 14' 52.4"	16° 20' 15.1"	3	2	2	1	37	28	0	0	0	0	0	0	100	1
915	> 65 y	0	62° 14' 52.3"	16° 20' 15.3"	3	2	2	1	39	28	0	0	0	0	0	0	60	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
916	> 65 y	0	62° 14' 52.3"	16° 20' 15.0"	3	2	3	1	44	28	0	0	0	0	0	0	50	1
917	> 65 y	0	62° 14' 52.3"	16° 20' 15.0"	3	2	2	1	31	28	0	0	0	0	0	0	100	1
918	> 65 y	0	62° 14' 52.2"	16° 20' 15.4"	3	2	2	1	30	24	0	0	0	0	0	0	30	1
919	> 65 y	0	62° 14' 52.0"	16° 20' 15.7"	2	1	2	1	170	18	0	0	0	0	0	0	10	1
920	> 65 y	0	62° 14' 52.0"	16° 20' 15.7"	2	1	2	1	270	18	0	0	0	0	0	0	5	1
921	> 65 y	0	62° 14' 51.5"	16° 20' 15.4"	2	3	1	1	500	25	2	0	0	0	0	0	100	1
922	> 65 y	0	62° 14' 51.6"	16° 20' 15.2"	3	2	2	1	34	26	0	0	0	0	0	0	100	1
923	> 65 y	0	62° 14' 51.7"	16° 20' 15.2"	3	2	2	1	33	20	0	0	0	0	0	0	70	1
924	> 65 y	0	62° 14' 51.7"	16° 20' 15.3"	3	2	2	1	22	17	0	0	0	0	0	0	20	1
925	> 65 y	0	62° 14' 51.8"	16° 20' 15.1"	3	2	2	1	46	40	0	0	0	0	0	0	80	1
926	> 65 y	0	62° 14' 51.8"	16° 20' 14.7"	3	2	2	1	26	25	0	0	0	0	0	0	90	1
927	> 65 y	0	62° 14' 51.7"	16° 20' 14.5"	3	2	2	1	40	19	0	0	0	0	0	0	70	1
928	> 65 y	0	62° 14' 51.7"	16° 20' 14.3"	2	1	3	1	650	17	0	0	0	0	0	0	10	1
929	> 65 y	0	62° 14' 51.7"	16° 20' 15.2"	3	3	3	1	500	10	2	0	0	0	0	0	5	1
930	> 65 y	0	62° 14' 51.7"	16° 20' 15.2"	3	2	3	1	41	19	0	0	0	0	0	0	50	1
931	> 65 y	0	62° 14' 51.7"	16° 20' 15.0"	3	1	2	1	50	31	0	0	0	0	0	0	100	1
932	> 65 y	0	62° 14' 51.6"	16° 20' 14.9"	2	1	2	1	650	15	0	0	0	0	0	0	45	1
933	> 65 y	0	62° 14' 51.1"	16° 20' 15.6"	2	3	2	1	140	16	16	0	0	0	0	0	0	1
934	> 65 y	0	62° 14' 51.2"	16° 20' 15.7"	3	2	2	1	37	29	0	0	0	0	0	0	100	1
935	> 65 y	0	62° 14' 51.2"	16° 20' 15.7"	3	2	2	1	22	21	0	0	0	0	0	0	100	1
936	> 65 y	0	62° 14' 51.3"	16° 20' 14.9"	3	2	1	1	45	30	0	0	0	0	0	0	100	1
937	> 65 y	0	62° 14' 51.2"	16° 20' 15.3"	3	2	3	1	40	26	0	0	0	0	0	0	90	1
938	> 65 y	0	62° 14' 51.0"	16° 20' 14.7"	3	2	3	1	20	17	0	0	0	0	0	0	100	1
939	> 65 y	0	62° 14' 50.9"	16° 20' 15.0"	3	3	2	1	1000	28	17	0	0	0	0	0	100	1
940	> 65 y	0	62° 14' 50.7"	16° 20' 15.2"	3	2	2	1	41	35	0	0	0	0	0	0	90	1
941	> 65 y	0	62° 14' 50.8"	16° 20' 15.1"	3	3	2	1	500	15	10	0	0	0	0	0	100	1
942	> 65 y	0	62° 14' 50.5"	16° 20' 15.2"	3	2	3	1	41	26	0	0	0	0	0	0	100	1
943	> 65 y	0	62° 14' 50.3"	16° 20' 15.6"	3	2	3	1	33	30	0	0	0	0	0	0	90	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
944	> 65 y	0	62° 14' 50.0"	16° 20' 15.3"	3	2	1	1	10	30	0	0	0	0	0	0	100	1
945	> 65 y	0	62° 14' 49.8"	16° 20' 15.3"	2	2	1	1	20	35	0	0	0	0	0	0	100	1
946	20-64 y	1	62° 14' 36.4"	16° 19' 46.0"	2	2	3	3	36	15	0	0	0	0	0	0	20	1
947	20-64 y	1	62° 14' 36.3"	16° 19' 46.0"	2	1	3	1	150	10	0	0	0	0	0	0	90	1
948	20-64 y	1	62° 14' 36.7"	16° 19' 47.7"	3	3	3	1	300	11	2	0	0	0	0	0	100	1
949	20-64 y	1	62° 14' 36.5"	16° 19' 48.0"	3	3	3	1	250	10	4	0	0	0	0	0	0	1
950	20-64 y	1	62° 14' 36.3"	16° 19' 48.3"	3	2	2	1	26	32	0	0	0	0	0	0	80	1
951	20-64 y	1	62° 14' 36.3"	16° 19' 48.4"	3	2	2	2	29	31	0	0	0	0	0	0	100	1
952	20-64 y	1	62° 14' 36.3"	16° 19' 48.6"	3	1	2	1	113	12	0	0	0	0	0	0	100	1
953	20-64 y	1	62° 14' 36.4"	16° 19' 48.9"	2	2	3	1	21	21	0	0	0	0	0	0	0	1
954	20-64 y	1	62° 14' 36.6"	16° 19' 48.9"	2	2	3	1	19	21	0	0	0	0	0	0	20	1
955	20-64 y	1	62° 14' 36.5"	16° 19' 49.2"	2	2	3	1	27	17	0	0	0	0	0	0	100	1
956	20-64 y	1	62° 14' 36.7"	16° 19' 49.5"	2	3	3	1	300	12	6	0	0	0	0	0	20	1
957	20-64 y	1	62° 14' 36.7"	16° 19' 49.7"	2	2	3	1	26	23	0	0	0	0	0	0	100	1
958	20-64 y	1	62° 14' 36.6"	16° 19' 49.1"	2	2	3	1	17	23	0	0	0	0	0	0	100	1
959	20-64 y	1	62° 14' 36.8"	16° 19' 29.9"	2	3	3	1	250	11	8	0	0	0	0	0	50	1
960	20-64 y	1	62° 14' 36.8"	16° 19' 49.9"	2	3	3	1	250	11	6	0	0	0	0	0	50	1
961	20-64 y	1	62° 14' 36.8"	16° 19' 49.9"	2	2	3	1	20	19	0	0	0	0	0	0	100	1
962	20-64 y	1	62° 14' 36.0"	16° 19' 50.1"	2	3	2	1	500	19	10	0	0	0	0	0	10	1
963	20-64 y	1	62° 14' 36.9"	16° 19' 50.5"	2	1	1	1	350	22	0	0	0	0	0	0	10	1
964	20-64 y	1	62° 14' 36.9"	16° 19' 50.6"	2	2	2	4	30	20	0	0	0	0	0	0	100	1
965	20-64 y	1	62° 14' 37.1"	16° 19' 51.4"	2	1	1	1	450	22	0	0	0	0	0	0	0	1
966	20-64 y	1	62° 14' 36.9"	16° 19' 51.9"	2	3	3	1	1000	20	2	0	0	0	0	0	100	1
967	20-64 y	1	62° 14' 36.9"	16° 19' 51.8"	2	2	3	1	20	19	0	0	0	0	0	0	10	1
968	20-64 y	1	62° 14' 36.9"	16° 19' 52.5"	2	3	3	1	1000	25	13	0	0	0	0	0	100	1
969	20-64 y	1	62° 14' 37.6"	16° 19' 52.7"	3	2	1	1	26	19	0	0	0	0	0	0	10	1
970	20-64 y	1	62° 14' 37.6"	16° 19' 53.4"	3	3	2	1	1200	34	4	0	0	0	0	0	100	1
971	20-64 y	1	62° 14' 37.3"	16° 19' 53.8"	3	3	2	1	400	12	4	0	0	0	0	0	10	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
972	20-64 y	1	62° 14' 37.4"	16° 19' 53.6"	2	2	3	1	19	28	0	0	0	0	0	0	100	1
973	20-64 y	1	62° 14' 37.4"	16° 19' 53.7"	3	3	2	1	700	26	0	0	0	0	0	0	100	1
974	20-64 y	1	62° 14' 37.6"	16° 19' 54.4"	2	1	2	1	1200	20	0	0	0	0	0	0	20	1
975	20-64 y	1	62° 14' 37.6"	16° 19' 54.3"	2	3	2	3	100	16	14	0	0	0	0	0	0	1
976	20-64 y	1	62° 14' 37.6"	16° 19' 54.2"	2	1	2	1	230	16	0	0	0	0	0	0	70	1
977	20-64 y	1	62° 14' 37.7"	16° 19' 54.8"	2	3	2	1	200	13	12	0	0	0	0	0	30	1
978	20-64 y	1	62° 14' 38.2"	16° 19' 54.9"	3	2	1	2	34	36	0	0	0	0	0	0	80	1
979	20-64 y	1	62° 14' 38.2"	16° 19' 55.7"	2	1	2	1	500	15	0	0	0	0	0	0	40	1
980	20-64 y	1	62° 14' 38.5"	16° 19' 55.7"	2	3	2	1	300	14	7	0	0	0	0	0	5	1
981	20-64 y	1	62° 14' 38.7"	16° 19' 56.1"	3	2	3	1	22	13	0	0	0	0	0	0	100	1
982	20-64 y	1	62° 14' 38.7"	16° 19' 56.2"	2	2	3	1	17	22	0	0	0	0	0	0	100	1
983	20-64 y	1	62° 14' 38.9"	16° 19' 55.8"	3	1	2	1	2500	37	0	0	0	0	0	0	100	1
984	20-64 y	1	62° 14' 39.0"	16° 19' 56.5"	3	3	2	1	1000	35	26	0	0	0	0	0	100	1
985	20-64 y	1	62° 14' 39.0"	16° 19' 56.8"	3	3	3	1	1000	30	22	0	0	0	0	0	100	1
986	20-64 y	1	62° 14' 39.0"	16° 19' 55.9"	3	1	2	1	2500	35	0	0	0	0	0	0	100	0
987	20-64 y	1	62° 14' 39.1"	16° 19' 56.4"	3	1	1	1	800	20	0	0	0	0	0	0	100	0
988	20-64 y	1	62° 14' 29.5"	16° 19' 55.8"	3	1	2	1	1500	23	0	0	0	0	0	0	95	0
989	> 65 y	1	62° 15' 33.5"	16° 27' 22.4"	2	2	3	4	11	24	0	0	0	0	0	0	0	1
990	> 65 y	1	62° 15' 33.5"	16° 27' 22.1"	2	2	3	1	15	14	0	0	0	0	0	0	0	1
991	> 65 y	1	62° 15' 33.5"	16° 27' 21.7"	2	2	2	5	21	27	0	0	0	0	0	0	20	1
992	> 65 y	1	62° 15' 33.5"	16° 27' 21.8"	3	1	1	1	500	10	0	0	0	0	0	0	10	1
993	> 65 y	1	62° 15' 33.6"	16° 27' 21.4"	2	3	1	1	150	11	10	0	0	0	0	0	5	1
994	> 65 y	1	62° 15' 33.8"	16° 27' 21.2"	2	2	1	1	15	24	0	0	0	0	0	0	10	1
995	> 65 y	1	62° 15' 33.7"	16° 27' 20.9"	2	3	1	1	250	10	2	0	0	0	0	0	95	1
996	> 65 y	1	62° 15' 33.8"	16° 27' 21.0"	3	1	1	1	1600	17	0	0	0	0	0	0	100	1
997	> 65 y	1	62° 15' 33.7"	16° 27' 21.2"	3	2	2	1	31	18	0	0	0	0	0	0	100	1
998	> 65 y	1	62° 15' 33.7"	16° 27' 21.0"	2	2	1	1	17	15	0	0	0	0	0	0	0	1
999	> 65 y	1	62° 15' 33.8"	16° 27' 21.1"	3	2	3	1	20	21	0	0	0	0	0	0	30	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1000	> 65 y	1	62° 15' 34.7"	16° 27' 19.7"	2	2	2	2	24	17	0	0	0	0	0	0	80	1
1001	> 65 y	1	62° 15' 34.4"	16° 27' 19.1"	2	3	2	1	1200	30	22	0	0	0	0	0	100	1
1002	> 65 y	1	62° 15' 34.4"	16° 27' 19.1"	2	1	2	1	170	11	0	0	0	0	0	0	10	1
1003	> 65 y	1	62° 15' 34.8"	16° 27' 19.4"	1	3	3	1	130	16	4	0	0	0	0	0	0	1
1004	> 65 y	1	62° 15' 34.7"	16° 27' 18.8"	2	2	2	5	12	27	0	0	0	0	0	0	0	1
1005	> 65 y	1	62° 15' 34.7"	16° 27' 18.8"	2	2	2	1	14	31	0	0	0	0	0	0	100	1
1006	> 65 y	1	62° 15' 34.7"	16° 27' 18.7"	2	3	1	1	350	11	5	0	0	0	0	0	0	1
1007	> 65 y	1	62° 15' 35.1"	16° 27' 18.6"	2	2	2	1	17	21	0	0	0	0	0	0	80	1
1008	> 65 y	1	62° 15' 35.3"	16° 27' 19.0"	2	3	2	1	200	10	6	0	0	0	0	0	70	1
1009	> 65 y	1	62° 15' 35.2"	16° 27' 17.6"	2	2	2	2	14	32	0	0	0	0	0	0	80	1
1010	> 65 y	1	62° 15' 35.4"	16° 27' 17.6"	2	3	2	1	250	13	2	0	0	0	0	0	100	1
1011	> 65 y	1	62° 15' 35.5"	16° 27' 17.3"	2	3	2	1	600	18	10	0	0	0	0	0	100	1
1012	> 65 y	1	62° 15' 35.6"	16° 27' 17.2"	2	3	2	1	400	11	2	0	0	0	0	0	100	1
1013	> 65 y	1	62° 15' 35.6"	16° 27' 17.1"	3	3	2	1	1500	20	2	0	0	0	0	0	100	1
1014	> 65 y	1	62° 15' 36.4"	16° 27' 17.9"	3	1	2	1	160	12	0	0	0	0	0	0	100	1
1015	> 65 y	1	62° 15' 36.4"	16° 27' 17.9"	3	3	2	1	200	12	9	0	0	0	0	0	100	1
1016	> 65 y	1	62° 15' 37.2"	16° 27' 17.2"	2	3	2	1	1000	21	10	0	0	0	0	0	100	1
1017	> 65 y	1	62° 15' 37.1"	16° 27' 17.4"	2	1	2	1	1500	18	0	0	0	0	0	0	100	1
1018	> 65 y	1	62° 15' 37.1"	16° 27' 17.5"	2	1	2	1	1100	20	0	0	0	0	0	0	95	1
1019	> 65 y	1	62° 15' 37.2"	16° 27' 17.2"	2	1	2	1	350	25	0	0	0	0	0	0	100	1
1020	> 65 y	1	62° 15' 37.3"	16° 27' 17.3"	2	1	2	1	350	26	0	0	0	0	0	0	100	1
1021	> 65 y	1	62° 15' 37.3"	16° 27' 17.3"	2	3	2	1	1000	24	20	0	0	0	0	0	100	1
1022	> 65 y	1	62° 15' 36.0"	16° 27' 25.1"	2	1	2	1	300	18	0	0	0	0	0	0	1	0
1023	> 65 y	1	62° 15' 35.8"	16° 27' 14.4"	2	1	1	1	800	18	0	0	0	0	0	0	60	0
1024	> 65 y	1	62° 15' 35.7"	16° 27' 15.6"	2	1	2	1	1200	25	0	0	0	0	0	0	20	0
1025	> 65 y	1	62° 15' 35.5"	16° 27' 16.3"	2	1	2	1	1200	14	0	0	0	0	0	0	30	0
1026	> 65 y	1	62° 15' 35.4"	16° 27' 16.6"	2	1	1	1	1400	12	0	0	0	0	0	0	10	0
1027	NR & FA	3	62° 13' 27.6"	16° 16' 34.6"	3	1	2	1	150	10	0	0	0	0	0	0	95	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1028	NR & FA	3	62° 13' 27.5"	16° 16' 34.3"	3	3	2	1	350	11	2	0	0	0	0	0	100	1
1029	NR & FA	3	62° 13' 28.7"	16° 16' 33.8"	3	3	2	1	700	40	28	0	0	0	0	0	0	1
1030	NR & FA	3	62° 13' 29.6"	16° 16' 32.7"	3	3	2	1	1000	20	2	0	0	0	0	0	100	1
1031	NR & FA	3	62° 13' 29.7"	16° 16' 32.4"	3	1	2	1	2000	28	0	0	0	0	0	0	100	1
1032	NR & FA	3	62° 13' 30.8"	16° 16' 31.5"	3	3	2	1	400	35	26	0	0	0	0	0	100	1
1033	NR & FA	3	62° 13' 31.4"	16° 16' 31.9"	3	3	2	1	1000	20	5	0	0	0	0	0	100	1
1034	NR & FA	3	62° 13' 31.6"	16° 16' 32.3"	3	3	1	1	250	27	18	0	0	0	0	0	100	1
1035	8-19 y	0	62° 17' 12.5"	16° 17' 32.8"	2	2	1	1	28	20	0	0	0	0	0	0	20	1
1036	8-19 y	0	62° 17' 12.5"	16° 17' 32.7"	2	2	1	1	32	25	0	0	0	0	0	0	10	1
1037	8-19 y	0	62° 17' 12.5"	16° 17' 32.3"	1	2	3	5	45	35	0	0	0	0	0	0	0	1
1038	8-19 y	0	62° 17' 12.5"	16° 17' 32.4"	2	2	1	1	25	21	0	0	0	0	0	0	100	1
1039	8-19 y	0	62° 17' 12.6"	16° 17' 32.5"	2	3	1	1	300	11	6	0	0	0	0	0	0	1
1040	8-19 y	0	62° 17' 12.6"	16° 17' 32.5"	2	2	2	1	37	18	0	0	0	0	0	0	80	1
1041	8-19 y	0	62° 17' 12.6"	16° 17' 32.2"	2	2	3	1	28	16	0	0	0	0	0	0	0	1
1042	8-19 y	0	62° 17' 12.5"	16° 17' 32.3"	2	2	1	1	32	31	0	0	0	0	0	0	20	1
1043	8-19 y	0	62° 17' 12.6"	16° 17' 32.1"	3	1	1	5	50	38	0	0	0	0	0	0	0	1
1044	8-19 y	0	62° 17' 12.6"	16° 17' 32.0"	2	1	2	1	68	13	0	0	0	0	0	0	0	1
1045	8-19 y	0	62° 17' 12.6"	16° 17' 32.0"	2	2	1	1	19	34	0	0	0	0	0	0	100	1
1046	8-19 y	0	62° 17' 12.4"	16° 17' 31.8"	3	3	2	1	100	12	10	0	0	0	0	0	0	1
1047	8-19 y	0	62° 17' 12.4"	16° 17' 31.8"	2	2	1	1	18	17	0	0	0	0	0	0	95	1
1048	8-19 y	0	62° 17' 12.8"	16° 17' 32.1"	2	2	2	1	34	20	0	0	0	0	0	0	30	1
1049	8-19 y	0	62° 17' 12.8"	16° 17' 32.0"	2	2	2	1	18	20	0	0	0	0	0	0	80	1
1050	8-19 y	0	62° 17' 12.8"	16° 17' 31.8"	2	2	2	1	29	24	0	0	0	0	0	0	0	1
1051	8-19 y	0	62° 17' 12.8"	16° 17' 31.6"	2	2	1	1	29	17	0	0	0	0	0	0	0	1
1052	8-19 y	0	62° 17' 13.0"	16° 17' 31.7"	2	2	1	4	19	12	0	0	0	0	0	0	5	1
1053	8-19 y	0	62° 17' 12.8"	16° 17' 31.4"	2	1	1	2	17	20	0	0	0	0	0	0	10	1
1054	8-19 y	0	62° 17' 13.0"	16° 17' 31.7"	2	2	1	1	21	23	0	0	0	0	0	0	0	1
1055	8-19 y	0	62° 17' 13.0"	16° 17' 31.3"	2	2	1	3	19	21	0	0	0	0	0	0	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1056	8-19 y	0	62° 17' 13.0"	16° 17' 31.3"	2	2	1	1	17	19	0	0	0	0	0	0	0	1
1057	8-19 y	0	62° 17' 13.0"	16° 17' 31.2"	2	2	1	1	21	17	0	0	0	0	0	0	20	1
1058	8-19 y	0	62° 17' 12.9"	16° 17' 31.3"	2	2	1	1	25	19	0	0	0	0	0	0	0	1
1059	8-19 y	0	62° 17' 13.2"	16° 17' 31.2"	2	2	1	1	29	14	0	0	0	0	0	0	0	1
1060	8-19 y	0	62° 17' 13.2"	16° 17' 31.8"	2	2	1	1	20	24	0	0	0	0	0	0	20	1
1061	8-19 y	0	62° 17' 13.4"	16° 17' 31.1"	2	2	1	1	18	21	0	0	0	0	0	0	20	1
1062	8-19 y	0	62° 17' 13.3"	16° 17' 30.8"	2	2	1	1	19	24	0	0	0	0	0	0	20	1
1063	8-19 y	0	62° 17' 13.2"	16° 17' 30.7"	2	2	1	4	30	22	0	0	0	0	0	0	50	1
1064	8-19 y	0	62° 17' 13.1"	16° 17' 30.5"	2	2	1	1	36	23	0	0	0	0	0	0	0	1
1065	8-19 y	0	62° 17' 13.3"	16° 17' 30.4"	2	3	2	1	36	23	18	0	0	0	0	0	0	1
1066	8-19 y	0	62° 17' 13.3"	16° 17' 30.4"	2	2	2	1	31	14	0	0	0	0	0	0	70	1
1067	8-19 y	0	62° 17' 13.3"	16° 17' 30.4"	2	2	1	1	10	20	0	0	0	0	0	0	90	1
1068	8-19 y	0	62° 17' 13.3"	16° 17' 30.2"	2	2	1	1	22	21	0	0	0	0	0	0	10	1
1069	8-19 y	0	62° 17' 13.4"	16° 17' 30.1"	2	2	1	1	37	14	0	0	0	0	0	0	0	1
1070	8-19 y	0	62° 17' 13.4"	16° 17' 30.3"	3	2	2	2	39	39	0	0	0	0	0	0	0	1
1071	8-19 y	0	62° 17' 13.4"	16° 17' 30.2"	2	3	1	1	100	12	7	0	0	0	0	0	0	1
1072	8-19 y	0	62° 17' 13.5"	16° 17' 30.2"	2	2	1	1	17	19	0	0	0	0	0	0	0	1
1073	8-19 y	0	62° 17' 13.7"	16° 17' 29.5"	2	2	2	1	25	26	0	0	0	0	0	0	0	1
1074	8-19 y	0	62° 17' 13.4"	16° 17' 29.6"	1	3	1	1	150	25	9	0	0	0	0	0	0	1
1075	8-19 y	0	62° 17' 13.5"	16° 17' 29.6"	2	2	1	1	23	23	0	0	0	0	0	0	0	1
1076	8-19 y	0	62° 17' 13.6"	16° 17' 28.7"	2	2	1	1	18	17	0	0	0	0	0	0	5	1
1077	8-19 y	0	62° 17' 13.8"	16° 17' 28.7"	2	1	1	1	200	22	0	0	0	0	0	0	80	1
1078	8-19 y	0	62° 17' 13.8"	16° 17' 28.7"	2	1	1	1	350	20	0	0	0	0	0	0	10	1
1079	8-19 y	0	62° 17' 13.8"	16° 17' 28.6"	3	3	1	1	500	25	10	0	0	0	0	0	0	1
1080	8-19 y	0	62° 17' 14.2"	16° 17' 28.5"	2	2	2	1	17	27	0	0	0	0	0	0	0	1
1081	8-19 y	0	62° 17' 14.2"	16° 17' 28.4"	3	3	1	1	200	11	10	0	0	0	0	0	10	1
1082	8-19 y	0	62° 17' 14.1"	16° 17' 28.3"	2	2	1	1	19	23	0	0	0	0	0	0	0	1
1083	8-19 y	0	62° 17' 14.1"	16° 17' 28.3"	2	2	1	1	18	19	0	0	0	0	0	0	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1084	8-19 y	0	62° 17' 14.0"	16° 17' 27.9"	2	2	2	2	10	14	0	0	0	0	0	0	0	1
1085	8-19 y	0	62° 17' 14.0"	16° 17' 27.7"	2	2	2	1	16	8	0	0	0	0	0	0	0	1
1086	8-19 y	0	62° 17' 14.3"	16° 17' 27.8"	3	1	1	1	60	50	0	0	0	0	0	0	5	1
1087	8-19 y	0	62° 17' 14.3"	16° 17' 27.7"	2	2	1	1	21	19	0	0	0	0	0	0	0	1
1088	8-19 y	0	62° 17' 14.4"	16° 17' 27.4"	2	2	2	1	19	27	0	0	0	0	0	0	0	1
1089	8-19 y	0	62° 17' 14.2"	16° 17' 27.4"	2	2	2	1	18	29	0	0	0	0	0	0	0	1
1090	8-19 y	0	62° 17' 14.1"	16° 17' 27.5"	2	2	2	1	15	14	0	0	0	0	0	0	0	1
1091	8-19 y	0	62° 17' 14.4"	16° 17' 27.4"	2	2	1	1	21	23	0	0	0	0	0	0	10	1
1092	8-19 y	0	62° 17' 14.4"	16° 17' 27.2"	2	2	2	1	16	15	0	0	0	0	0	0	0	1
1093	8-19 y	0	62° 17' 14.5"	16° 17' 26.2"	2	2	2	1	24	26	0	0	0	0	0	0	20	1
1094	8-19 y	0	62° 17' 14.5"	16° 17' 26.2"	2	1	1	1	50	24	0	0	0	0	0	0	0	1
1095	8-19 y	0	62° 17' 14.5"	16° 17' 26.0"	2	2	2	1	42	23	0	0	0	0	0	0	0	1
1096	8-19 y	0	62° 17' 14.4"	16° 17' 25.9"	2	2	2	1	27	19	0	0	0	0	0	0	40	1
1097	8-19 y	0	62° 17' 14.5"	16° 17' 25.9"	1	2	2	5	31	35	0	0	0	0	0	0	0	1
1098	8-19 y	0	62° 17' 14.6"	16° 17' 26.0"	2	2	2	1	25	24	0	0	0	0	0	0	0	1
1099	8-19 y	0	62° 17' 14.6"	16° 17' 25.9"	2	2	1	1	37	25	0	0	0	0	0	0	0	1
1100	8-19 y	0	62° 17' 14.7"	16° 17' 25.8"	2	2	2	1	17	18	0	0	0	0	0	0	10	1
1101	8-19 y	0	62° 17' 14.7"	16° 17' 25.9"	2	2	1	1	24	19	0	0	0	0	0	0	0	1
1102	8-19 y	0	62° 17' 14.7"	16° 17' 26.0"	3	2	1	1	19	16	0	0	0	0	0	0	20	1
1103	8-19 y	0	62° 17' 14.7"	16° 17' 26.0"	2	2	1	1	30	31	0	0	0	0	0	0	80	1
1104	8-19 y	0	62° 17' 14.7"	16° 17' 26.0"	3	2	1	1	24	14	0	0	0	0	0	0	20	1
1105	8-19 y	0	62° 17' 14.7"	16° 17' 25.8"	2	2	2	1	24	22	0	0	0	0	0	0	0	1
1106	8-19 y	0	62° 17' 14.7"	16° 17' 25.7"	2	2	1	1	27	15	0	0	0	0	0	0	0	1
1107	8-19 y	0	62° 17' 14.7"	16° 17' 25.7"	1	2	1	4	18	32	0	0	0	0	0	0	0	1
1108	8-19 y	0	62° 17' 14.7"	16° 17' 25.7"	2	2	1	1	23	23	0	0	0	0	0	0	90	1
1109	8-19 y	0	62° 17' 14.8"	16° 17' 25.7"	3	3	1	1	150	12	6	0	0	0	0	0	5	1
1110	8-19 y	0	62° 17' 14.6"	16° 17' 25.5"	2	2	1	1	29	25	0	0	0	0	0	0	80	1
1111	8-19 y	0	62° 17' 14.6"	16° 17' 25.5"	3	3	1	1	400	12	5	0	0	0	0	0	10	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1112	8-19 y	0	62° 17' 14.7"	16° 17' 25.7"	3	3	1	1	200	13	7	0	0	0	0	0	10	1
1113	8-19 y	0	62° 17' 14.7"	16° 17' 25.6"	3	3	1	1	130	10	7	0	0	0	0	0	5	1
1114	8-19 y	0	62° 17' 14.7"	16° 17' 25.5"	3	3	1	1	200	10	9	0	0	0	0	0	1	1
1115	8-19 y	0	62° 17' 14.7"	16° 17' 25.3"	3	2	2	5	32	37	0	0	0	0	0	0	0	1
1116	8-19 y	0	62° 17' 14.8"	16° 17' 25.4"	2	3	3	1	300	20	12	0	0	0	0	0	20	1
1117	8-19 y	0	62° 17' 14.9"	16° 17' 25.1"	2	2	3	1	22	15	0	0	0	0	0	0	70	1
1118	8-19 y	0	62° 17' 14.8"	16° 17' 24.9"	2	2	2	1	22	27	0	0	0	0	0	0	90	1
1119	8-19 y	0	62° 17' 14.8"	16° 17' 24.7"	1	1	2	1	66	15	0	0	0	0	0	0	0	1
1120	8-19 y	0	62° 17' 14.8"	16° 17' 24.5"	2	1	2	1	50	25	0	0	0	0	0	0	90	1
1121	8-19 y	0	62° 17' 14.8"	16° 17' 24.5"	2	3	1	1	350	23	20	0	0	0	0	0	40	1
1122	8-19 y	0	62° 17' 14.8"	16° 17' 24.5"	3	3	1	1	300	23	5	0	0	0	0	0	5	1
1123	8-19 y	0	62° 17' 14.9"	16° 17' 24.5"	2	2	3	1	41	37	0	0	0	0	0	0	0	1
1124	8-19 y	0	62° 17' 14.9"	16° 17' 24.4"	2	2	3	1	18	18	0	0	0	0	0	0	10	1
1125	8-19 y	0	62° 17' 14.9"	16° 17' 24.4"	3	3	2	1	300	15	8	0	0	0	0	0	5	1
1126	8-19 y	0	62° 17' 15.0"	16° 17' 24.3"	3	3	2	1	300	14	5	0	0	0	0	0	0	1
1127	8-19 y	0	62° 17' 15.0"	16° 17' 24.2"	2	2	2	1	26	28	0	0	0	0	0	0	80	1
1128	8-19 y	0	62° 17' 15.1"	16° 17' 24.1"	2	2	2	1	19	27	0	0	0	0	0	0	60	1
1129	8-19 y	0	62° 17' 15.1"	16° 17' 23.9"	3	2	2	1	16	12	0	0	0	0	0	0	30	1
1130	8-19 y	0	62° 17' 15.1"	16° 17' 24.1"	1	2	2	1	34	39	0	0	0	0	0	0	0	1
1131	8-19 y	0	62° 17' 15.0"	16° 17' 24.1"	2	2	1	3	32	18	0	0	0	0	0	0	10	1
1132	8-19 y	0	62° 17' 15.0"	16° 17' 24.1"	2	3	2	1	100	10	5	0	0	0	0	0	50	1
1133	8-19 y	0	62° 17' 15.0"	16° 17' 24.0"	2	3	2	1	40	29	27	0	0	0	0	0	100	1
1134	8-19 y	0	62° 17' 16.4"	16° 17' 23.9"	2	2	1	1	28	29	0	0	0	0	0	0	100	1
1135	8-19 y	0	62° 17' 15.1"	16° 17' 23.6"	1	1	3	5	59	50	0	0	0	0	0	0	0	1
1136	8-19 y	0	62° 17' 15.1"	16° 17' 23.6"	2	2	3	1	21	26	0	0	0	0	0	0	40	1
1137	8-19 y	0	62° 17' 15.3"	16° 17' 23.5"	1	2	3	1	37	14	0	0	0	0	0	0	0	1
1138	8-19 y	0	62° 17' 15.6"	16° 17' 23.8"	2	2	2	1	35	20	0	0	0	0	0	0	20	1
1139	8-19 y	0	62° 17' 15.6"	16° 17' 23.6"	2	1	1	1	58	20	0	0	0	0	0	0	10	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1140	8-19 y	0	62° 17' 15.6"	16° 17' 23.4"	2	2	1	1	16	23	0	0	0	0	0	0	50	1
1141	8-19 y	0	62° 17' 15.6"	16° 17' 22.8"	2	2	1	1	13	25	0	0	0	0	0	0	0	1
1142	8-19 y	0	62° 17' 15.6"	16° 17' 22.8"	2	3	1	1	200	13	10	0	0	0	0	0	0	1
1143	8-19 y	0	62° 17' 15.6"	16° 17' 22.7"	1	3	1	1	350	17	5	0	0	0	0	0	0	1
1144	8-19 y	0	62° 17' 15.6"	16° 17' 22.7"	1	3	1	1	600	23	5	0	0	0	0	0	0	0
1145	8-19 y	0	62° 17' 15.8"	16° 17' 23.0"	2	2	1	2	18	35	0	0	0	0	0	0	50	1
1146	8-19 y	0	62° 17' 15.0"	16° 17' 22.2"	3	3	2	1	400	20	10	0	0	0	0	0	10	1
1147	8-19 y	0	62° 17' 17.2"	16° 17' 25.0"	1	3	3	1	150	32	30	0	0	0	0	0	0	0
1148	8-19 y	0	62° 17' 16.9"	16° 17' 25.2"	1	3	3	1	300	20	15	0	0	0	0	0	0	0
1149	8-19 y	0	62° 17' 15.7"	16° 17' 27.1"	3	1	1	1	250	11	0	0	0	0	0	0	10	0
1150	8-19 y	0	62° 17' 15.7"	16° 17' 26.1"	3	1	1	1	140	10	0	0	0	0	0	0	80	0
1151	8-19 y	0	62° 17' 15.0"	16° 17' 31.8"	3	1	1	1	57	10	0	0	0	0	0	0	20	0
1152	8-19 y	0	62° 17' 15.1"	16° 17' 31.9"	1	1	1	1	80	33	0	0	0	0	0	0	0	0
1153	20-64 y	0	62° 11' 52.9"	16° 24' 24.8"	2	3	3	1	400	15	2	0	0	0	0	0	100	1
1154	20-64 y	0	62° 11' 52.6"	16° 24' 24.1"	1	1	3	4	50	17	0	0	0	0	0	0	0	1
1155	20-64 y	0	62° 11' 52.1"	16° 24' 24.2"	3	3	3	1	250	10	2	0	0	0	0	0	100	1
1156	20-64 y	0	62° 11' 51.6"	16° 24' 23.4"	1	2	3	1	33	17	0	0	0	0	0	0	0	1
1157	20-64 y	0	62° 11' 50.9"	16° 24' 21.7"	3	1	1	1	110	13	0	0	0	0	0	0	90	1
1158	20-64 y	0	62° 11' 50.9"	16° 24' 21.7"	3	3	2	1	900	13	2	0	0	0	0	0	95	1
1159	20-64 y	0	62° 11' 51.0"	16° 24' 21.9"	1	1	2	1	57	21	0	0	0	0	0	1	0	1
1160	20-64 y	0	62° 11' 51.0"	16° 24' 21.9"	3	1	2	1	650	15	0	0	0	0	0	0	80	1
1161	20-64 y	0	62° 11' 52.2"	16° 24' 21.1"	1	1	3	4	50	34	0	0	0	0	0	0	0	1
1162	20-64 y	0	62° 11' 49.8"	16° 24' 20.2"	1	1	3	1	63	24	0	0	0	0	0	1	0	1
1163	20-64 y	0	62° 11' 49.8"	16° 24' 19.7"	1	1	3	1	140	10	0	0	0	0	0	1	0	1
1164	20-64 y	0	62° 11' 50.0"	16° 24' 19.0"	1	1	3	1	63	30	0	0	0	0	0	1	0	1
1165	20-64 y	0	62° 11' 49.9"	16° 24' 18.1"	3	3	1	1	500	28	2	0	0	0	0	0	100	1
1166	20-64 y	0	62° 11' 49.8"	16° 24' 18.1"	3	3	1	1	700	25	15	0	0	0	0	0	100	1
1167	20-64 y	0	62° 11' 49.2"	16° 24' 17.4"	3	1	2	1	230	25	0	0	0	0	0	0	100	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1168	20-64 y	0	62° 11' 49.2"	16° 24' 17.3"	3	3	2	1	700	24	10	0	0	0	0	0	100	1
1169	20-64 y	0	62° 11' 49.2"	16° 24' 17.4"	3	3	2	1	200	21	19	0	0	0	0	0	100	1
1170	20-64 y	0	62° 11' 49.5"	16° 24' 16.7"	1	1	3	1	65	40	0	0	0	0	0	0	0	0
1171	20-64 y	0	62° 11' 49.3"	16° 24' 14.4"	1	1	2	1	53	27	0	0	0	0	0	0	0	1
1172	20-64 y	2	62° 13' 58.8"	16° 26' 14.5"	1	2	2	2	29	20	0	0	0	0	0	0	0	1
1173	20-64 y	2	62° 13' 58.8"	16° 26' 13.8"	3	1	1	1	300	10	0	0	0	0	0	0	100	1
1174	20-64 y	2	62° 13' 58.8"	16° 26' 13.9"	2	3	2	1	500	30	20	0	0	0	0	0	100	1
1175	20-64 y	2	62° 13' 58.9"	16° 26' 13.5"	2	2	1	1	21	34	0	0	0	0	0	0	100	1
1176	20-64 y	2	62° 13' 59.1"	16° 26' 12.7"	1	2	2	1	41	26	0	0	0	0	0	0	0	0
1177	20-64 y	2	62° 13' 58.6"	16° 26' 13.4"	3	3	2	1	350	10	2	0	0	0	0	0	100	1
1178	20-64 y	2	62° 13' 58.6"	16° 26' 13.4"	3	1	1	1	600	10	0	0	0	0	0	0	5	1
1179	20-64 y	2	62° 13' 58.6"	16° 26' 13.5"	3	3	2	1	500	10	2	0	0	0	0	0	100	1
1180	20-64 y	2	62° 13' 58.7"	16° 26' 13.3"	3	1	2	1	400	14	0	0	0	0	0	0	90	1
1181	20-64 y	2	62° 13' 58.7"	16° 26' 13.3"	3	3	2	1	700	12	2	0	0	0	0	0	100	1
1182	20-64 y	2	62° 13' 58.5"	16° 26' 13.4"	3	1	2	1	500	12	0	0	0	0	0	0	80	1
1183	20-64 y	2	62° 13' 58.4"	16° 26' 13.4"	2	1	2	1	800	20	0	0	0	0	0	0	100	1
1184	20-64 y	2	62° 13' 58.2"	16° 26' 13.5"	3	3	3	1	200	13	10	0	0	0	0	0	95	1
1185	20-64 y	2	62° 13' 58.1"	16° 26' 13.8"	1	2	3	1	25	30	0	0	0	0	0	0	0	1
1186	20-64 y	2	62° 13' 58.3"	16° 26' 12.8"	2	2	2	1	25	22	0	0	0	0	0	0	50	1
1187	20-64 y	2	62° 13' 58.2"	16° 26' 12.8"	3	3	1	1	1500	20	2	0	0	0	0	0	100	1
1188	20-64 y	2	62° 13' 58.2"	16° 26' 12.8"	3	3	1	1	1400	15	2	0	0	0	0	0	100	1
1189	20-64 y	2	62° 13' 58.1"	16° 26' 12.8"	3	3	2	1	500	15	7	0	0	0	0	0	100	1
1190	20-64 y	2	62° 13' 58.0"	16° 26' 12.8"	2	1	1	1	270	26	0	0	0	0	0	0	100	1
1191	20-64 y	2	62° 13' 58.0"	16° 26' 12.8"	2	3	2	1	700	26	10	0	0	0	0	0	100	1
1192	20-64 y	2	62° 13' 57.9"	16° 26' 12.9"	2	3	1	1	700	20	10	0	0	0	0	0	100	1
1193	20-64 y	2	62° 13' 57.9"	16° 26' 12.9"	3	3	1	1	600	15	2	0	0	0	0	0	100	1
1194	20-64 y	2	62° 13' 57.8"	16° 26' 12.9"	1	2	3	4	29	27	0	0	0	0	0	0	0	1
1195	20-64 y	2	62° 13' 57.9"	16° 26' 13.1"	3	2	1	3	18	14	0	0	0	0	0	0	5	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1196	20-64 y	2	62° 13' 57.8"	16° 26' 12.7"	1	1	3	5	50	22	0	0	0	0	0	0	0	1
1197	20-64 y	2	62° 13' 57.7"	16° 26' 12.6"	3	3	2	1	500	17	5	0	0	0	0	0	100	1
1198	20-64 y	2	62° 13' 57.6"	16° 26' 12.7"	3	3	2	1	600	12	4	0	0	0	0	0	100	1
1199	20-64 y	2	62° 13' 57.6"	16° 26' 12.7"	3	1	1	1	350	14	0	0	0	0	0	0	100	1
1200	20-64 y	2	62° 13' 57.6"	16° 26' 12.7"	3	1	1	1	350	14	0	0	0	0	0	0	100	1
1201	20-64 y	2	62° 13' 57.6"	16° 26' 12.7"	1	2	2	5	17	17	0	0	0	0	0	0	0	1
1202	20-64 y	2	62° 13' 57.5"	16° 26' 12.6"	1	2	3	5	24	18	0	0	0	0	0	0	0	1
1203	20-64 y	2	62° 13' 57.4"	16° 26' 13.2"	1	2	3	5	24	17	0	0	0	0	0	0	0	1
1204	20-64 y	2	62° 13' 57.3"	16° 26' 12.7"	3	2	2	1	25	16	0	0	0	0	0	0	100	1
1205	20-64 y	2	62° 13' 57.2"	16° 26' 13.0"	3	3	1	1	70	21	18	0	0	0	0	0	100	1
1206	20-64 y	2	62° 13' 57.2"	16° 26' 12.5"	1	2	3	1	28	25	0	0	0	0	0	0	0	1
1207	20-64 y	2	62° 13' 57.2"	16° 26' 12.5"	2	3	1	1	500	27	20	0	0	0	0	0	100	1
1208	20-64 y	2	62° 13' 56.7"	16° 26' 12.5"	3	3	1	1	100	23	20	0	0	0	0	0	100	1
1209	20-64 y	2	62° 13' 56.7"	16° 26' 12.1"	3	3	1	1	600	20	8	0	0	0	0	0	100	1
1210	20-64 y	2	62° 13' 56.5"	16° 26' 12.4"	1	3	2	1	40	10	7	0	0	0	0	0	0	1
1211	20-64 y	2	62° 13' 56.5"	16° 26' 12.0"	3	3	1	1	250	14	10	0	0	0	0	0	100	1
1212	20-64 y	2	62° 13' 56.6"	16° 26' 11.8"	3	3	1	1	600	29	15	0	0	0	0	0	100	1
1213	20-64 y	2	62° 13' 56.4"	16° 26' 12.0"	3	2	2	5	17	14	0	0	0	0	0	0	50	1
1214	20-64 y	2	62° 13' 56.3"	16° 26' 11.9"	3	2	2	1	22	10	0	0	0	0	0	0	100	1
1215	20-64 y	2	62° 13' 56.3"	16° 26' 11.9"	3	2	2	3	23	12	0	0	0	0	0	0	100	1
1216	20-64 y	2	62° 13' 56.1"	16° 26' 12.1"	2	3	1	1	150	43	40	0	0	0	0	0	100	1
1217	20-64 y	2	62° 13' 56.1"	16° 26' 11.6"	2	1	1	1	400	12	0	0	0	0	0	0	100	1
1218	20-64 y	2	62° 13' 56.2"	16° 26' 11.4"	1	1	2	1	50	20	0	0	0	0	0	0	0	0
1219	20-64 y	2	62° 13' 56.0"	16° 26' 11.9"	3	2	2	1	15	15	0	0	0	0	0	0	100	1
1220	20-64 y	2	62° 13' 56.0"	16° 26' 11.9"	3	3	2	1	600	24	10	0	0	0	0	0	100	1
1221	20-64 y	2	62° 13' 55.9"	16° 26' 12.0"	3	3	2	1	450	19	17	0	0	0	0	0	100	1
1222	20-64 y	2	62° 13' 56.0"	16° 26' 11.5"	3	3	2	1	1000	18	2	0	0	0	0	0	100	1
1223	20-64 y	2	62° 13' 56.0"	16° 26' 11.5"	3	3	2	1	1000	19	2	0	0	0	0	0	100	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1224	20-64 y	2	62° 13' 55.9"	16° 26' 11.1"	3	3	2	1	1000	20	2	0	0	0	0	0	100	1
1225	20-64 y	2	62° 13' 55.9"	16° 26' 11.1"	2	3	2	1	1000	28	2	0	0	0	0	0	100	1
1226	20-64 y	2	62° 13' 55.9"	16° 26' 10.9"	3	3	1	1	800	15	2	0	0	0	0	0	100	1
1227	20-64 y	2	62° 13' 55.9"	16° 26' 10.9"	3	2	2	1	10	14	0	0	0	0	0	0	100	1
1228	20-64 y	2	62° 13' 55.5"	16° 26' 11.9"	1	1	2	1	52	34	0	0	0	0	0	0	0	1
1229	20-64 y	2	62° 13' 55.7"	16° 26' 11.7"	3	2	2	1	21	16	0	0	0	0	0	0	100	1
1230	20-64 y	2	62° 13' 55.5"	16° 26' 12.0"	1	3	3	2	40	11	5	0	0	0	0	0	0	1
1231	20-64 y	2	62° 13' 55.5"	16° 26' 11.8"	3	2	2	1	15	15	0	0	0	0	0	0	10	1
1232	20-64 y	2	62° 13' 55.5"	16° 26' 11.2"	1	2	3	5	31	25	0	0	0	0	0	0	0	1
1233	20-64 y	2	62° 13' 55.4"	16° 26' 11.6"	1	2	3	1	24	13	0	0	0	0	0	0	0	1
1234	20-64 y	2	62° 13' 55.3"	16° 26' 11.6"	3	2	2	1	14	15	0	0	0	0	0	0	100	1
1235	20-64 y	2	62° 13' 55.3"	16° 26' 11.8"	1	2	3	1	16	17	0	0	0	0	0	0	0	0
1236	20-64 y	2	62° 13' 55.1"	16° 26' 11.7"	1	1	3	5	51	20	0	0	0	0	0	0	0	1
1237	20-64 y	2	62° 13' 54.9"	16° 26' 11.7"	1	2	2	1	27	11	0	0	0	0	0	0	0	1
1238	20-64 y	2	62° 13' 54.8"	16° 26' 12.4"	1	2	3	1	27	30	0	0	0	0	0	0	0	1
1239	20-64 y	2	62° 13' 54.6"	16° 26' 12.3"	1	1	3	1	50	31	0	0	0	0	0	0	0	1
1240	20-64 y	2	62° 13' 54.5"	16° 26' 12.3"	2	2	2	1	17	31	0	0	0	0	0	0	100	1
1241	20-64 y	2	62° 13' 54.3"	16° 26' 12.3"	1	1	3	5	50	27	0	0	0	0	0	0	0	1
1242	20-64 y	2	62° 13' 54.1"	16° 26' 11.9"	1	1	3	5	59	43	0	0	0	0	0	0	0	1
1243	20-64 y	2	62° 13' 54.0"	16° 26' 11.9"	3	3	1	1	250	13	7	0	0	0	0	0	100	1
1244	20-64 y	2	62° 13' 53.6"	16° 26' 11.7"	3	2	1	1	20	19	0	0	0	0	0	0	100	1
1245	20-64 y	2	62° 13' 53.5"	16° 26' 12.0"	3	2	1	1	24	32	0	0	0	0	0	0	100	1
1246	20-64 y	2	62° 13' 53.6"	16° 26' 12.0"	3	2	2	1	20	27	0	0	0	0	0	0	100	1
1247	20-64 y	2	62° 13' 53.7"	16° 26' 12.1"	3	2	2	1	23	22	0	0	0	0	0	0	1	1
1248	20-64 y	2	62° 13' 53.6"	16° 26' 11.3"	3	3	1	1	1000	19	2	0	0	0	0	0	100	1
1249	20-64 y	2	62° 13' 53.5"	16° 26' 11.4"	3	2	2	1	24	21	0	0	0	0	0	0	100	1
1250	20-64 y	2	62° 13' 53.4"	16° 26' 11.8"	3	2	1	1	18	18	0	0	0	0	0	0	0	1
1251	20-64 y	2	62° 13' 53.3"	16° 26' 12.1"	3	2	2	1	11	14	0	0	0	0	0	0	90	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1252	20-64 y	2	62° 13' 53.3"	16° 26' 12.2"	3	2	2	1	24	14	0	0	0	0	0	0	95	1
1253	20-64 y	2	62° 13' 53.3"	16° 26' 12.2"	3	2	1	1	21	21	0	0	0	0	0	0	80	1
1254	20-64 y	2	62° 13' 53.2"	16° 26' 12.2"	3	2	1	1	10	16	0	0	0	0	0	0	10	1
1255	20-64 y	2	62° 13' 53.3"	16° 26' 11.7"	3	2	1	1	21	17	0	0	0	0	0	0	90	1
1256	20-64 y	2	62° 13' 53.3"	16° 26' 11.7"	3	2	1	1	12	14	0	0	0	0	0	0	10	1
1257	20-64 y	2	62° 13' 53.4"	16° 26' 11.5"	3	2	1	1	18	34	0	0	0	0	0	0	100	1
1258	20-64 y	2	62° 13' 53.5"	16° 26' 12.3"	1	2	2	1	22	28	0	0	0	0	0	0	0	0
1259	20-64 y	2	62° 13' 53.2"	16° 26' 11.1"	2	2	1	1	25	10	0	0	0	0	0	0	50	1
1260	20-64 y	2	62° 13' 53.1"	16° 26' 11.4"	3	2	1	1	23	15	0	0	0	0	0	0	100	1
1261	20-64 y	2	62° 13' 53.0"	16° 26' 11.6"	3	2	1	1	34	24	0	0	0	0	0	0	80	1
1262	20-64 y	2	62° 13' 53.0"	16° 26' 11.7"	1	1	3	1	56	19	0	0	0	0	0	0	0	1
1263	20-64 y	2	62° 13' 53.2"	16° 26' 11.9"	3	2	2	1	32	23	0	0	0	0	0	0	100	1
1264	20-64 y	2	62° 13' 53.2"	16° 26' 12.3"	3	2	2	1	26	28	0	0	0	0	0	0	70	1
1265	20-64 y	2	62° 13' 53.3"	16° 26' 12.4"	3	2	2	1	16	14	0	0	0	0	0	0	100	1
1266	20-64 y	2	62° 13' 53.1"	16° 26' 11.7"	1	1	3	5	50	32	0	0	0	0	0	0	0	1
1267	20-64 y	2	62° 13' 53.1"	16° 26' 11.7"	2	2	2	1	18	24	0	0	0	0	0	0	90	1
1268	20-64 y	2	62° 13' 52.5"	16° 26' 11.2"	2	3	1	1	450	41	30	0	0	0	0	0	100	1
1269	20-64 y	2	62° 13' 52.8"	16° 26' 09.8"	2	1	1	1	900	12	0	0	0	0	0	0	90	0
1270	20-64 y	2	62° 13' 52.9"	16° 26' 13.3"	1	1	2	1	50	40	0	0	0	0	0	0	0	0
1271	20-64 y	2	62° 13' 53.4"	16° 26' 14.1"	1	1	3	5	51	37	0	0	0	0	0	0	0	0
1272	20-64 y	2	62° 13' 53.8"	16° 26' 14.0"	1	1	3	5	68	56	0	0	0	0	0	0	0	0
1273	20-64 y	2	62° 13' 53.8"	16° 26' 14.0"	1	1	3	5	50	38	0	0	0	0	0	0	0	0
1274	20-64 y	2	62° 13' 54.0"	16° 26' 14.4"	1	1	2	1	52	13	0	0	0	0	0	1	0	0
1275	20-64 y	2	62° 13' 54.0"	16° 26' 14.4"	1	1	2	1	50	15	0	0	0	0	0	0	0	0
1276	20-64 y	2	62° 13' 54.1"	16° 26' 14.4"	1	1	3	4	53	27	0	0	0	0	0	0	0	0
1277	20-64 y	2	62° 13' 54.1"	16° 26' 15.8"	1	1	2	1	55	21	0	0	0	0	0	0	0	0
1278	20-64 y	2	62° 13' 54.7"	16° 26' 15.8"	1	1	3	4	50	32	0	0	0	0	0	0	0	0
1279	20-64 y	2	62° 13' 54.8"	16° 26' 15.4"	1	1	3	2	51	33	0	0	0	0	0	0	0	0

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1280	8-19 y	3	62° 04' 42.9"	16° 17' 37.5"	1	1	1	1	58	43	0	0	0	0	0	0	0	0
1281	8-19 y	3	62° 04' 42.7"	16° 17' 37.9"	3	2	1	1	37	28	0	0	0	0	0	0	5	1
1282	8-19 y	3	62° 04' 42.7"	16° 17' 38.0"	3	2	1	1	35	19	0	0	0	0	0	0	50	1
1283	8-19 y	3	62° 04' 42.6"	16° 17' 38.4"	2	2	1	1	16	47	0	0	0	0	0	0	80	1
1284	8-19 y	3	62° 04' 42.7"	16° 17' 38.5"	2	2	1	1	42	35	0	0	0	0	0	0	30	1
1285	8-19 y	3	62° 04' 42.6"	16° 17' 38.5"	3	2	1	1	34	10	0	0	0	0	0	0	95	1
1286	8-19 y	3	62° 04' 42.5"	16° 17' 38.5"	1	3	1	1	150	29	18	0	0	0	0	0	0	1
1287	8-19 y	3	62° 04' 42.5"	16° 17' 38.5"	2	2	1	1	25	36	0	0	0	0	0	0	100	1
1288	8-19 y	3	62° 04' 42.5"	16° 17' 38.5"	3	1	1	1	50	21	0	0	0	0	0	0	100	1
1289	8-19 y	3	62° 04' 42.5"	16° 17' 38.6"	3	2	1	1	25	23	0	0	0	0	0	0	5	1
1290	8-19 y	3	62° 04' 42.4"	16° 17' 38.9"	2	2	1	1	35	50	0	0	0	0	0	0	80	1
1291	8-19 y	3	62° 04' 42.4"	16° 17' 38.9"	3	2	1	1	27	24	0	0	0	0	0	0	80	1
1292	8-19 y	3	62° 04' 42.6"	16° 17' 39.1"	3	2	1	1	27	19	0	0	0	0	0	0	30	1
1293	8-19 y	3	62° 04' 42.8"	16° 17' 39.8"	2	2	1	1	23	44	0	0	0	0	0	0	80	1
1294	8-19 y	3	62° 04' 42.2"	16° 17' 39.7"	2	2	1	1	48	58	0	0	0	0	0	0	60	1
1295	8-19 y	3	62° 04' 42.2"	16° 17' 39.7"	3	2	1	1	34	15	0	0	0	0	0	0	100	1
1296	8-19 y	3	62° 04' 42.3"	16° 17' 39.2"	2	2	1	1	20	33	0	0	0	0	0	0	80	1
1297	8-19 y	3	62° 04' 42.3"	16° 17' 39.3"	2	2	1	1	24	42	0	0	0	0	0	0	80	1
1298	8-19 y	3	62° 04' 42.1"	16° 17' 39.0"	1	1	1	1	59	32	0	1	1	0	0	1	0	0
1299	8-19 y	3	62° 04' 41.9"	16° 17' 38.5"	2	1	1	1	550	32	0	0	0	0	0	0	30	0
1300	8-19 y	3	62° 04' 41.8"	16° 17' 39.4"	1	1	1	1	70	34	0	0	0	0	0	1	0	0
1301	8-19 y	3	62° 04' 41.8"	16° 17' 39.4"	1	3	1	1	78	20	18	0	0	0	0	1	0	0
1302	8-19 y	3	62° 04' 42.1"	16° 17' 39.8"	1	1	1	1	50	15	0	0	0	0	0	1	0	1
1303	8-19 y	3	62° 04' 42.1"	16° 17' 39.7"	1	2	1	2	10	26	0	0	0	0	0	0	0	1
1304	8-19 y	3	62° 04' 41.9"	16° 17' 39.9"	2	2	1	1	36	34	0	0	0	0	0	0	30	1
1305	8-19 y	3	62° 04' 41.7"	16° 17' 39.6"	1	2	1	1	20	18	0	0	0	0	0	1	0	1
1306	8-19 y	3	62° 04' 41.5"	16° 17' 39.5"	1	3	1	1	250	66	47	0	0	0	0	1	0	1
1307	8-19 y	3	62° 04' 41.6"	16° 17' 39.5"	1	3	1	1	50	13	8	0	0	0	0	1	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1308	8-19 y	3	62° 04' 41.4"	16° 17' 39.5"	1	3	1	1	180	37	23	0	0	0	0	1	0	1
1309	8-19 y	3	62° 04' 41.5"	16° 17' 39.7"	1	3	1	1	106	61	30	0	0	0	0	1	0	1
1310	8-19 y	3	62° 04' 41.6"	16° 17' 39.7"	2	2	1	1	33	30	0	0	0	0	0	0	95	1
1311	8-19 y	3	62° 04' 41.5"	16° 17' 40.0"	2	2	1	1	43	41	0	0	0	0	0	0	70	1
1312	8-19 y	3	62° 04' 41.2"	16° 17' 39.9"	1	1	2	1	83	42	0	1	0	0	0	1	0	1
1313	8-19 y	3	62° 04' 41.2"	16° 17' 40.0"	2	3	1	4	200	30	25	0	0	0	0	0	10	1
1314	8-19 y	3	62° 04' 41.2"	16° 17' 40.0"	1	3	3	1	61	13	10	0	0	0	0	1	1	1
1315	8-19 y	3	62° 04' 41.3"	16° 17' 40.3"	2	2	1	1	20	32	0	0	0	0	0	0	95	1
1316	8-19 y	3	62° 04' 41.2"	16° 17' 40.2"	1	2	1	1	35	64	0	0	0	0	0	1	0	1
1317	8-19 y	3	62° 04' 41.5"	16° 17' 40.6"	2	2	1	1	26´5	28	0	0	0	0	0	0	30	1
1318	8-19 y	3	62° 04' 41.6"	16° 17' 40.7"	2	2	1	1	30	47	0	0	0	0	0	0	95	1
1319	8-19 y	3	62° 04' 41.7"	16° 17' 40.6"	2	2	1	1	19	31	0	0	0	0	0	0	95	1
1320	8-19 y	3	62° 04' 42.0"	16° 17' 40.3"	1	3	1	1	150	27	25	0	0	0	0	0	0	1
1321	8-19 y	3	62° 04' 41.9"	16° 17' 40.2"	3	2	1	1	28	12	0	0	0	0	0	0	95	1
1322	8-19 y	3	62° 04' 41.8"	16° 17' 40.2"	3	2	1	1	25	19	0	0	0	0	0	0	95	1
1323	8-19 y	3	62° 04' 41.7"	16° 17' 40.3"	3	2	1	1	43	13	0	0	0	0	0	0	80	1
1324	8-19 y	3	62° 04' 41.6"	16° 17' 40.9"	1	3	1	1	70	24	23	0	0	0	0	0	0	1
1325	8-19 y	3	62° 04' 41.6"	16° 17' 41.0"	2	2	1	1	37	31	0	0	0	0	0	0	10	1
1326	8-19 y	3	62° 04' 41.4"	16° 17' 41.1"	3	2	1	1	26	23	0	0	0	0	0	0	50	1
1327	8-19 y	3	62° 04' 41.3"	16° 17' 41.2"	3	2	1	1	35	15	0	0	0	0	0	0	1	1
1328	8-19 y	3	62° 04' 41.3"	16° 17' 41.2"	2	2	1	1	23	33	0	0	0	0	0	0	85	1
1329	8-19 y	3	62° 04' 41.2"	16° 17' 41.0"	1	2	1	1	32	26	0	0	0	0	0	0	0	1
1330	8-19 y	3	62° 04' 41.2"	16° 17' 41.1"	2	2	1	1	31	43	0	0	0	0	0	0	20	1
1331	8-19 y	3	62° 04' 41.2"	16° 17' 40.9"	2	2	1	1	43	33	0	0	0	0	0	0	10	1
1332	8-19 y	3	62° 04' 41.3"	16° 17' 41.9"	1	1	1	1	93	40	0	0	0	0	0	1	0	0
1333	8-19 y	3	62° 04' 41.5"	16° 17' 42.6"	1	1	1	1	89	41	0	0	0	0	0	1	0	0
1334	8-19 y	3	62° 04' 41.5"	16° 17' 42.6"	1	1	1	1	74	38	0	1	0	0	0	1	0	0
1335	8-19 y	3	62° 04' 41.4"	16° 17' 44.0"	1	1	1	1	79	42	0	0	0	0	0	1	0	0

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1336	8-19 y	3	62° 04' 41.5"	16° 17' 43.9"	1	3	1	1	80	34	22	0	0	0	0	1	0	0
1337	8-19 y	3	62° 04' 41.1"	16° 17' 49.7"	1	3	1	1	40	35	22	0	0	0	0	1	0	0
1338	8-19 y	3	62° 04' 41.1"	16° 17' 49.7"	1	1	1	1	57	37	0	0	0	0	0	1	0	0
1339	8-19 y	3	62° 04' 41.4"	16° 17' 41.3"	2	1	1	1	1000	17	0	0	0	0	0	0	50	1
1340	8-19 y	3	62° 04' 41.5"	16° 17' 41.4"	2	1	1	1	1300	26	0	0	0	0	0	0	1	1
1341	8-19 y	3	62° 04' 41.2"	16° 17' 41.5"	3	2	1	1	21	24	0	0	0	0	0	0	40	1
1342	8-19 y	3	62° 04' 41.2"	16° 17' 41.4"	2	2	1	1	27	19	0	0	0	0	0	0	0	1
1343	8-19 y	3	62° 04' 41.2"	16° 17' 41.3"	3	2	1	1	22	20	0	0	0	0	0	0	80	1
1344	8-19 y	3	62° 04' 41.0"	16° 17' 41.3"	3	2	1	1	32	21	0	0	0	0	0	0	5	1
1345	8-19 y	3	62° 04' 41.3"	16° 17' 41.7"	3	2	1	1	27	27	0	0	0	0	0	0	100	1
1346	8-19 y	3	62° 04' 40.9"	16° 17' 41.4"	2	1	1	1	74	30	0	0	0	0	0	0	40	1
1347	8-19 y	3	62° 04' 40.9"	16° 17' 41.8"	3	2	1	1	25	19	0	0	0	0	0	0	60	1
1348	8-19 y	3	62° 04' 41.0"	16° 17' 42.1"	2	2	1	1	29	36	0	0	0	0	0	0	20	1
1349	8-19 y	3	62° 04' 41.1"	16° 17' 42.1"	1	1	1	1	73	32	0	0	0	0	0	1	0	1
1350	8-19 y	3	62° 04' 41.0"	16° 17' 42.3"	3	2	1	1	16	12	0	0	0	0	0	0	50	1
1351	8-19 y	3	62° 04' 41.0"	16° 17' 42.4"	3	2	1	1	19	15	0	0	0	0	0	0	100	1
1352	8-19 y	3	62° 04' 41.0"	16° 17' 42.5"	2	2	1	1	23	47	0	0	0	0	0	0	100	1
1353	8-19 y	3	62° 04' 40.9"	16° 17' 42.1"	3	2	1	1	26	13	0	0	0	0	0	0	95	1
1354	8-19 y	3	62° 04' 40.8"	16° 17' 42.1"	2	2	1	1	16	39	0	0	0	0	0	0	80	1
1355	8-19 y	3	62° 04' 40.7"	16° 17' 42.1"	3	2	1	1	18	17	0	0	0	0	0	0	70	1
1356	8-19 y	3	62° 04' 40.8"	16° 17' 41.8"	3	2	1	1	30	21	0	0	0	0	0	0	10	1
1357	8-19 y	3	62° 04' 40.7"	16° 17' 41.9"	3	2	1	1	25	16	0	0	0	0	0	0	100	1
1358	8-19 y	3	62° 04' 40.6"	16° 17' 41.9"	2	3	1	1	250	16	10	0	0	0	0	0	2	1
1359	8-19 y	3	62° 04' 40.8"	16° 17' 42.6"	3	2	1	1	27	13	0	0	0	0	0	0	95	1
1360	8-19 y	3	62° 04' 40.8"	16° 17' 43.0"	2	2	1	1	37	49	0	0	0	0	0	0	50	1
1361	8-19 y	3	62° 04' 40.7"	16° 17' 43.1"	2	2	1	1	27	36	0	0	0	0	0	0	50	1
1362	8-19 y	3	62° 04' 40.7"	16° 17' 43.3"	2	2	1	1	24	39	0	0	0	0	0	0	80	1
1363	8-19 y	3	62° 04' 40.6"	16° 17' 43.2"	2	2	1	1	40	37	0	0	0	0	0	0	40	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1364	8-19 y	3	62° 04' 40.5"	16° 17' 42.8"	3	2	1	1	39	14	0	0	0	0	0	0	100	1
1365	8-19 y	3	62° 04' 40.5"	16° 17' 42.9"	3	2	1	1	38	20	0	0	0	0	0	0	10	1
1366	8-19 y	3	62° 04' 40.5"	16° 17' 42.9"	2	2	1	1	32	75	0	0	0	0	0	0	30	1
1367	8-19 y	3	62° 04' 40.4"	16° 17' 43.1"	2	2	1	1	18	46	0	0	0	0	0	0	95	1
1368	8-19 y	3	62° 04' 40.4"	16° 17' 43.2"	3	2	1	1	28	27	0	0	0	0	0	0	95	1
1369	8-19 y	3	62° 04' 40.4"	16° 17' 43.3"	3	2	1	1	35	19	0	0	0	0	0	0	70	1
1370	8-19 y	3	62° 04' 40.3"	16° 17' 43.5"	2	2	1	1	31	50	0	0	0	0	0	0	100	1
1371	8-19 y	3	62° 04' 40.5"	16° 17' 44.3"	1	3	1	1	220	30	28	0	1	0	0	1	0	0
1372	8-19 y	3	62° 04' 40.4"	16° 17' 44.5"	1	1	1	1	70	34	0	1	0	0	0	1	0	0
1373	8-19 y	3	62° 04' 40.4"	16° 17' 44.9"	1	3	1	1	107	54	50	0	1	0	0	1	0	0
1374	8-19 y	3	62° 04' 40.3"	16° 17' 44.9"	1	2	1	1	49	27	0	0	0	0	0	1	0	0
1375	8-19 y	3	62° 04' 40.3"	16° 17' 44.8"	1	3	1	1	82	19	12	0	0	0	0	1	0	0
1376	8-19 y	3	62° 04' 40.0"	16° 17' 44.7"	3	2	1	1	25	18	0	0	0	0	0	0	30	1
1377	8-19 y	3	62° 04' 39.9"	16° 17' 44.6"	1	2	1	1	36	13	0	0	0	0	0	0	0	1
1378	8-19 y	3	62° 04' 39.8"	16° 17' 44.7"	3	2	1	1	24	13	0	0	0	0	0	0	20	1
1379	8-19 y	3	62° 04' 39.7"	16° 17' 44.8"	3	2	1	1	30	21	0	0	0	0	0	0	30	1
1380	8-19 y	3	62° 04' 39.6"	16° 17' 44.9"	3	3	1	1	200	24	18	0	0	0	0	0	5	1
1381	8-19 y	3	62° 04' 39.4"	16° 17' 44.8"	1	3	1	1	200	36	16	0	0	0	0	1	0	0
1382	8-19 y	3	62° 04' 39.3"	16° 17' 44.1"	1	1	1	1	71	31	0	0	0	0	0	1	0	0
1383	8-19 y	3	62° 04' 39.2"	16° 17' 44.2"	1	3	1	2	300	28	24	0	0	0	0	0	0	0
1384	8-19 y	3	62° 04' 39.5"	16° 17' 45.2"	3	2	1	1	30	21	0	0	0	0	0	0	90	1
1385	8-19 y	3	62° 04' 39.5"	16° 17' 45.2"	3	2	1	1	13	26	0	0	0	0	0	0	100	1
1386	8-19 y	3	62° 04' 40.0"	16° 17' 46.6"	1	1	1	1	79	42	0	0	0	0	0	1	0	0
1387	8-19 y	3	62° 04' 40.3"	16° 17' 47.0"	1	1	1	1	71	48	0	1	1	0	0	1	0	0
1388	8-19 y	3	62° 04' 39.7"	16° 17' 45.5"	2	2	1	1	26	41	0	0	0	0	0	0	100	1
1389	8-19 y	3	62° 04' 39.5"	16° 17' 45.7"	3	2	1	1	41	40	0	0	0	0	0	0	80	1
1390	8-19 y	3	62° 04' 39.4"	16° 17' 45.8"	2	3	1	1	1000	48	40	0	0	0	0	0	100	1
1391	8-19 y	3	62° 04' 39.4"	16° 17' 45.8"	3	2	1	1	33	35	0	0	0	0	0	0	5	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1392	8-19 y	3	62° 04' 39.2"	16° 17' 45.5"	3	2	1	1	31	38	0	0	0	0	0	0	60	1
1393	8-19 y	3	62° 04' 39.1"	16° 17' 46.1"	3	2	1	1	42	53	0	0	0	0	0	0	85	1
1394	8-19 y	3	62° 04' 38.9"	16° 17' 46.4"	2	2	1	1	37	89	0	0	0	0	0	0	100	1
1395	8-19 y	3	62° 04' 39.0"	16° 17' 46.4"	2	2	1	1	25	52	0	0	0	0	0	0	80	1
1396	8-19 y	3	62° 04' 39.1"	16° 17' 47.0"	1	1	1	1	117	25	0	1	1	0	0	1	0	1
1397	8-19 y	3	62° 04' 38.7"	16° 17' 46.7"	1	1	1	1	53	23	0	1	0	0	0	1	0	0
1398	8-19 y	3	62° 04' 38.6"	16° 17' 49.1"	1	2	1	1	38	21	0	0	0	0	0	0	0	0
1399	8-19 y	3	62° 04' 38.6"	16° 17' 49.4"	1	1	1	1	102	55	0	1	1	0	0	1	0	0
1400	8-19 y	3	62° 04' 38.5"	16° 17' 49.8"	1	1	1	1	69	44	0	1	1	0	0	1	0	0
1401	8-19 y	3	62° 04' 38.8"	16° 17' 50.6"	1	2	1	1	33	31	0	0	0	0	0	1	0	0
1402	8-19 y	3	62° 04' 39.0"	16° 17' 50.7"	1	1	1	1	84	37	0	0	0	0	0	1	0	0
1403	8-19 y	3	62° 04' 39.0"	16° 17' 50.5"	1	2	1	1	47	44	0	0	0	0	0	1	0	0
1404	8-19 y	3	62° 04' 39.1"	16° 17' 51.4"	1	2	1	1	45	39	0	0	0	0	0	1	0	0
1405	8-19 y	3	62° 04' 38.7"	16° 17' 51.7"	1	2	1	1	44	30	0	0	0	0	0	1	0	0
1406	8-19 y	3	62° 04' 38.6"	16° 17' 51.8"	1	1	1	1	73	54	0	1	0	0	0	1	0	0
1407	8-19 y	3	62° 04' 38.5"	16° 17' 51.9"	1	2	1	1	33	37	0	0	0	0	0	1	0	0
1408	8-19 y	3	62° 04' 39.0"	16° 17' 52.8"	1	1	1	1	86	40	0	0	0	0	0	1	0	0
1409	8-19 y	3	62° 04' 38.9"	16° 17' 52.9"	1	2	2	1	49	38	0	0	0	0	0	1	0	0
1410	8-19 y	3	62° 04' 39.2"	16° 17' 53.0"	1	2	1	1	45	45	0	1	0	0	0	1	0	0
1411	8-19 y	3	62° 04' 39.6"	16° 17' 52.7"	1	2	1	1	48	29	0	0	0	0	0	0	0	0
1412	8-19 y	2	62° 10' 38.1"	16° 28' 31.0"	3	2	1	1	14	16	0	0	0	0	0	0	90	1
1413	8-19 y	2	62° 10' 38.1"	16° 28' 31.0"	3	2	1	1	31	15	0	0	0	0	0	0	40	1
1414	8-19 y	2	62° 10' 38.1"	16° 28' 30.7"	3	2	1	1	20	11	0	0	0	0	0	0	50	1
1415	8-19 y	2	62° 10' 38.1"	16° 28' 30.6"	3	2	1	1	26	20	0	0	0	0	0	0	20	1
1416	8-19 y	2	62° 10' 38.3"	16° 28' 30.7"	3	2	1	1	33	28	0	0	0	0	0	0	20	1
1417	8-19 y	2	62° 10' 38.3"	16° 28' 30.9"	3	2	1	1	15	14	0	0	0	0	0	0	5	1
1418	8-19 y	2	62° 10' 38.3"	16° 28' 31.2"	3	2	1	1	24	23	0	0	0	0	0	0	40	1
1419	8-19 y	2	62° 10' 38.0"	16° 28' 31.4"	3	2	1	1	13	21	0	0	0	0	0	0	0	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1420	8-19 y	2	62° 10' 38.3"	16° 28' 30.9"	2	2	1	1	29	36	0	0	0	0	0	0	90	1
1421	8-19 y	2	62° 10' 38.3"	16° 28' 30.9"	2	2	1	1	43	20	0	0	0	0	0	0	30	1
1422	8-19 y	2	62° 10' 38.5"	16° 28' 31.0"	2	2	1	1	26	28	0	0	0	0	0	0	0	1
1423	8-19 y	2	62° 10' 38.5"	16° 28' 30.9"	1	1	1	1	57	14	0	0	0	0	0	0	0	1
1424	8-19 y	2	62° 10' 38.3"	16° 28' 30.8"	1	3	2	5	40	11	9	0	0	0	0	0	0	1
1425	8-19 y	2	62° 10' 38.3"	16° 28' 31.3"	1	3	1	1	100	14	13	0	0	0	0	0	0	1
1426	8-19 y	2	62° 10' 38.5"	16° 28' 31.3"	3	3	2	1	700	15	11	0	0	0	0	0	0	1
1427	8-19 y	2	62° 10' 38.5"	16° 28' 31.4"	3	2	2	1	23	19	0	0	0	0	0	0	10	1
1428	8-19 y	2	62° 10' 38.5"	16° 28' 31.6"	3	2	1	1	25	23	0	0	0	0	0	0	0	1
1429	8-19 y	2	62° 10' 38.5"	16° 28' 31.6"	3	2	1	1	17	28	0	0	0	0	0	0	5	1
1430	8-19 y	2	62° 10' 38.5"	16° 28' 31.5"	3	2	1	1	35	36	0	0	0	0	0	0	10	1
1431	8-19 y	2	62° 10' 38.7"	16° 28' 31.3"	1	3	2	1	57	18	11	0	0	0	0	0	0	1
1432	8-19 y	2	62° 10' 38.7"	16° 28' 31.9"	3	3	1	1	600	24	15	0	0	0	0	0	10	1
1433	8-19 y	2	62° 10' 38.8"	16° 28' 31.8"	3	1	1	1	54	12	0	0	0	0	0	0	10	1
1434	8-19 y	2	62° 10' 38.7"	16° 28' 32.0"	3	2	1	1	21	19	0	0	0	0	0	0	70	1
1435	8-19 y	2	62° 10' 38.7"	16° 28' 31.9"	3	3	1	1	270	12	10	0	0	0	0	0	5	1
1436	8-19 y	2	62° 10' 39.0"	16° 28' 32.0"	3	2	1	1	25	18	0	0	0	0	0	0	0	1
1437	8-19 y	2	62° 10' 39.0"	16° 28' 31.8"	3	1	1	1	250	24	0	0	0	0	0	0	40	1
1438	8-19 y	2	62° 10' 39.1"	16° 28' 31.9"	3	1	1	1	130	21	0	0	0	0	0	0	80	1
1439	8-19 y	2	62° 10' 38.9"	16° 28' 32.4"	3	3	1	1	120	15	12	0	0	0	0	0	0	1
1440	8-19 y	2	62° 10' 38.9"	16° 28' 32.6"	3	2	1	1	14	17	0	0	0	0	0	0	20	1
1441	8-19 y	2	62° 10' 39.0"	16° 28' 32.8"	3	2	1	1	19	29	0	0	0	0	0	0	20	1
1442	8-19 y	2	62° 10' 38.8"	16° 28' 32.9"	3	2	1	1	37	18	0	0	0	0	0	0	40	1
1443	8-19 y	2	62° 10' 38.8"	16° 28' 33.3"	3	2	1	1	29	31	0	0	0	0	0	0	100	1
1444	8-19 y	2	62° 10' 39.0"	16° 28' 33.1"	3	2	1	1	29	20	0	0	0	0	0	0	0	1
1445	8-19 y	2	62° 10' 39.0"	16° 28' 33.1"	3	2	1	1	34	18	0	0	0	0	0	0	20	1
1446	8-19 y	2	62° 10' 39.0"	16° 28' 33.0"	3	2	1	1	43	14	0	0	0	0	0	0	10	1
1447	8-19 y	2	62° 10' 39.1"	16° 28' 33.0"	3	2	1	1	39	27	0	0	0	0	0	0	20	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1448	8-19 y	2	62° 10' 39.2"	16° 28' 33.0"	3	2	1	1	22	23	0	0	0	0	0	0	10	1
1449	8-19 y	2	62° 10' 39.3"	16° 28' 33.1"	3	2	1	1	38	19	0	0	0	0	0	0	0	1
1450	8-19 y	2	62° 10' 39.4"	16° 28' 33.4"	2	2	1	5	10	53	0	0	0	0	0	0	50	1
1451	8-19 y	2	62° 10' 39.4"	16° 28' 33.4"	3	3	2	1	150	11	4	0	0	0	0	0	0	1
1452	8-19 y	2	62° 10' 39.4"	16° 28' 33.7"	2	2	1	1	14	32	0	0	0	0	0	0	20	1
1453	8-19 y	2	62° 10' 39.4"	16° 28' 33.8"	3	3	1	1	1100	20	12	0	0	0	0	0	5	1
1454	8-19 y	2	62° 10' 39.4"	16° 28' 34.0"	2	2	1	1	27	49	0	0	0	0	0	0	0	1
1455	8-19 y	2	62° 10' 39.4"	16° 28' 34.2"	3	2	1	1	16	17	0	0	0	0	0	0	30	1
1456	8-19 y	2	62° 10' 39.4"	16° 28' 34.2"	2	2	1	1	16	36	0	0	0	0	0	0	70	1
1457	8-19 y	2	62° 10' 39.5"	16° 28' 34.3"	3	2	1	1	24	30	0	0	0	0	0	0	20	1
1458	8-19 y	2	62° 10' 39.5"	16° 28' 34.2"	3	3	1	1	150	15	11	0	0	0	0	0	5	1
1459	8-19 y	2	62° 10' 39.5"	16° 28' 34.2"	3	3	1	1	180	25	25	0	0	0	0	0	30	1
1460	8-19 y	2	62° 10' 39.5"	16° 28' 34.2"	1	3	1	2	60	11	9	0	0	0	0	0	0	1
1461	8-19 y	2	62° 10' 39.5"	16° 28' 34.2"	1	3	1	2	170	15	11	0	0	0	0	0	0	1
1462	8-19 y	2	62° 10' 39.5"	16° 28' 34.5"	1	2	2	2	19	18	0	0	0	0	0	0	0	1
1463	8-19 y	2	62° 10' 39.4"	16° 28' 34.8"	3	2	1	1	12	23	0	0	0	0	0	0	5	1
1464	8-19 y	2	62° 10' 39.6"	16° 28' 34.8"	3	2	1	1	19	21	0	0	0	0	0	0	10	1
1465	8-19 y	2	62° 10' 39.7"	16° 28' 35.0"	2	2	1	1	10	32	0	0	0	0	0	0	100	1
1466	8-19 y	2	62° 10' 39.8"	16° 28' 35.1"	2	3	1	1	150	13	10	0	0	0	0	0	0	1
1467	8-19 y	2	62° 10' 39.9"	16° 28' 34.9"	1	3	2	1	170	24	20	0	0	0	0	0	0	1
1468	8-19 y	2	62° 10' 39.7"	16° 28' 34.8"	3	1	1	1	50	35	0	0	0	0	0	0	30	1
1469	8-19 y	2	62° 10' 39.9"	16° 28' 35.0"	2	3	1	2	200	19	18	0	0	0	0	0	0	1
1470	8-19 y	2	62° 10' 39.9"	16° 28' 35.0"	3	2	1	1	14	23	0	0	0	0	0	0	10	1
1471	8-19 y	2	62° 10' 39.9"	16° 28' 35.3"	2	3	1	1	140	16	10	0	0	0	0	0	20	1
1472	8-19 y	2	62° 10' 39.9"	16° 28' 35.3"	2	3	1	1	100	19	11	0	0	0	0	0	5	1
1473	8-19 y	2	62° 10' 39.9"	16° 28' 35.3"	2	2	1	1	23	33	0	0	0	0	0	0	50	1
1474	8-19 y	2	62° 10' 39.7"	16° 28' 35.5"	3	2	1	1	26	23	0	0	0	0	0	0	1	1
1475	8-19 y	2	62° 10' 39.6"	16° 28' 35.6"	3	2	1	1	36	30	0	0	0	0	0	0	10	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1476	8-19 y	2	62° 10' 39.6"	16° 28' 35.7"	1	3	1	1	200	17	10	0	0	0	0	0	0	1
1477	8-19 y	2	62° 10' 39.8"	16° 28' 36.2"	3	2	1	1	19	14	0	0	0	0	0	0	0	1
1478	8-19 y	2	62° 10' 39.8"	16° 28' 36.2"	3	2	1	1	14	21	0	0	0	0	0	0	20	1
1479	8-19 y	2	62° 10' 39.8"	16° 28' 36.3"	2	2	1	1	16	34	0	0	0	0	0	0	100	1
1480	8-19 y	2	62° 10' 39.9"	16° 28' 36.4"	2	2	1	1	25	12	0	0	0	0	0	0	40	1
1481	8-19 y	2	62° 10' 40.0"	16° 28' 36.2"	2	2	1	1	10	28	0	0	0	0	0	0	90	1
1482	8-19 y	2	62° 10' 40.0"	16° 28' 36.3"	3	2	1	1	14	25	0	0	0	0	0	0	20	1
1483	8-19 y	2	62° 10' 40.0"	16° 28' 36.2"	3	2	1	1	16	18	0	0	0	0	0	0	70	1
1484	8-19 y	2	62° 10' 39.8"	16° 28' 36.5"	3	1	1	1	50	37	0	0	0	0	0	0	40	1
1485	8-19 y	2	62° 10' 39.8"	16° 28' 36.5"	3	2	1	1	20	18	0	0	0	0	0	0	0	1
1486	8-19 y	2	62° 10' 39.9"	16° 28' 36.7"	3	3	1	1	200	15	14	0	0	0	0	0	0	1
1487	8-19 y	2	62° 10' 39.8"	16° 28' 36.9"	2	2	1	1	17	14	0	0	0	0	0	0	10	1
1488	8-19 y	2	62° 10' 39.9"	16° 28' 37.0"	2	3	1	1	200	16	12	0	0	0	0	0	0	1
1489	8-19 y	2	62° 10' 39.8"	16° 28' 37.0"	2	3	1	1	150	16	13	0	0	0	0	0	0	1
1490	8-19 y	2	62° 10' 39.7"	16° 28' 37.2"	2	2	1	1	17	43	0	0	0	0	0	0	5	1
1491	8-19 y	2	62° 10' 39.7"	16° 28' 37.2"	2	3	1	1	140	15	13	0	0	0	0	0	0	1
1492	8-19 y	2	62° 10' 39.7"	16° 28' 37.4"	2	2	1	1	25	27	0	0	0	0	0	0	100	1
1493	8-19 y	2	62° 10' 39.7"	16° 28' 37.4"	2	2	1	1	36	26	0	0	0	0	0	0	20	1
1494	8-19 y	2	62° 10' 39.7"	16° 28' 37.4"	2	1	1	1	50	12	0	0	0	0	0	0	90	1
1495	8-19 y	2	62° 10' 39.9"	16° 28' 37.4"	2	2	1	1	20	22	0	0	0	0	0	0	50	1
1496	8-19 y	2	62° 10' 40.0"	16° 28' 37.3"	3	2	1	1	35	28	0	0	0	0	0	0	10	1
1497	8-19 y	2	62° 10' 40.3"	16° 28' 38.0"	3	2	1	1	44	32	0	0	0	0	0	0	10	1
1498	8-19 y	2	62° 10' 40.3"	16° 28' 38.1"	3	2	1	1	30	31	0	0	0	0	0	0	40	1
1499	8-19 y	2	62° 10' 40.4"	16° 28' 38.0"	3	2	1	1	17	19	0	0	0	0	0	0	80	1
1500	8-19 y	2	62° 10' 40.2"	16° 28' 38.3"	3	2	1	1	27	26	0	0	0	0	0	0	95	1
1501	8-19 y	2	62° 10' 40.2"	16° 28' 38.3"	3	2	1	1	20	21	0	0	0	0	0	0	90	1
1502	8-19 y	2	62° 10' 40.3"	16° 28' 38.3"	2	3	2	1	180	11	9	0	0	0	0	0	10	1
1503	8-19 y	2	62° 10' 40.3"	16° 28' 38.5"	3	2	2	1	31	15	0	0	0	0	0	0	40	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1504	8-19 y	2	62° 10' 40.3"	16° 28' 38.4"	2	2	2	1	13	23	0	0	0	0	0	0	5	1
1505	8-19 y	2	62° 10' 40.4"	16° 28' 38.5"	2	1	1	1	170	18	0	0	0	0	0	0	5	1
1506	8-19 y	2	62° 10' 40.4"	16° 28' 38.4"	2	2	1	1	20	28	0	0	0	0	0	0	80	1
1507	8-19 y	2	62° 10' 40.4"	16° 28' 38.4"	1	3	2	2	120	13	4	0	0	0	0	0	0	1
1508	8-19 y	2	62° 10' 40.5"	16° 28' 38.2"	2	3	1	1	500	22	15	0	0	0	0	0	0	1
1509	8-19 y	2	62° 10' 40.4"	16° 28' 38.2"	3	2	1	1	23	25	0	0	0	0	0	0	70	1
1510	8-19 y	2	62° 10' 40.5"	16° 28' 47.8"	1	3	1	5	200	16	12	0	0	0	0	0	0	0
1511	8-19 y	2	62° 10' 40.5"	16° 28' 38.7"	3	2	1	1	40	30	0	0	0	0	0	0	5	1
1512	8-19 y	2	62° 10' 40.4"	16° 28' 38.7"	3	2	1	1	39	28	0	0	0	0	0	0	50	1
1513	8-19 y	2	62° 10' 40.8"	16° 28' 39.9"	2	1	1	1	56	20	0	0	0	0	0	0	60	1
1514	8-19 y	2	62° 10' 40.8"	16° 28' 39.1"	2	2	1	1	29	12	0	0	0	0	0	0	5	1
1515	8-19 y	2	62° 10' 40.8"	16° 28' 39.1"	2	2	1	1	38	20	0	0	0	0	0	0	5	1
1516	8-19 y	2	62° 10' 40.8"	16° 28' 39.0"	2	1	1	2	56	30	0	0	0	0	0	0	30	1
1517	8-19 y	2	62° 10' 40.9"	16° 28' 38.6"	1	2	1	1	40	21	0	0	0	0	0	0	0	1
1518	8-19 y	2	62° 10' 40.9"	16° 28' 38.4"	2	1	1	1	50	18	0	0	0	0	0	0	20	1
1519	8-19 y	2	62° 10' 40.8"	16° 28' 38.5"	1	1	2	1	150	17	0	0	0	0	0	0	0	1
1520	8-19 y	2	62° 10' 40.9"	16° 28' 38.5"	2	2	2	1	23	34	0	0	0	0	0	0	100	1
1521	8-19 y	2	62° 10' 41.0"	16° 28' 39.3"	2	2	1	1	31	37	0	0	0	0	0	0	20	1
1522	8-19 y	2	62° 10' 41.1"	16° 28' 39.0"	2	2	1	1	38	30	0	0	0	0	0	0	60	1
1523	8-19 y	2	62° 10' 41.2"	16° 28' 39.1"	2	2	1	1	27	29	0	0	0	0	0	0	80	1
1524	8-19 y	2	62° 10' 41.1"	16° 28' 39.5"	2	3	1	2	200	20	18	0	0	0	0	0	0	1
1525	8-19 y	2	62° 10' 41.1"	16° 28' 39.6"	3	2	1	1	45	40	0	0	0	0	0	0	20	1
1526	8-19 y	2	62° 10' 41.3"	16° 28' 39.9"	2	2	1	2	24	30	0	0	0	0	0	0	70	1
1527	8-19 y	2	62° 10' 41.0"	16° 28' 40.5"	2	1	1	1	450	20	0	0	0	0	0	0	5	0
1528	8-19 y	2	62° 10' 41.2"	16° 28' 40.1"	1	2	1	1	21	20	0	0	0	0	0	0	0	1
1529	8-19 y	2	62° 10' 41.5"	16° 28' 40.5"	3	2	1	1	49	32	0	0	0	0	0	0	90	1
1530	8-19 y	2	62° 10' 41.5"	16° 28' 40.3"	3	2	1	1	41	25	0	0	0	0	0	0	70	1
1531	8-19 y	2	62° 10' 41.7"	16° 28' 40.6"	2	2	1	2	38	34	0	0	0	0	0	0	10	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1532	8-19 y	2	62° 10' 41.7"	16° 28' 40.5"	2	3	1	1	110	16	10	0	0	0	0	0	30	1
1533	8-19 y	2	62° 10' 41.8"	16° 28' 40.5"	2	1	1	1	61	13	0	0	0	0	0	0	30	1
1534	8-19 y	2	62° 10' 41.8"	16° 28' 40.7"	2	2	1	2	37	29	0	0	0	0	0	0	60	1
1535	> 65 y	5	62° 09' 09.9"	16° 15' 20.9"	1	1	2	1	250	25	0	0	1	0	0	1	0	0
1536	> 65 y	5	62° 09' 09.9"	16° 15' 21.3"	2	2	2	1	16	15	0	0	0	0	0	0	100	0
1537	> 65 y	5	62° 09' 09.7"	16° 15' 22.2"	1	2	2	1	37	35	0	0	0	0	0	1	0	0
1538	> 65 y	5	62° 09' 09.6"	16° 15' 22.6"	1	3	2	1	300	27	20	0	0	0	0	0	0	0
1539	> 65 y	5	62° 09' 09.4"	16° 15' 22.5"	1	1	3	1	155	27	0	1	1	0	0	1	0	0
1540	> 65 y	5	62° 09' 10.5"	16° 15' 23.5"	1	1	2	1	200	44	0	1	1	0	0	1	0	0
1541	> 65 y	5	62° 09' 10.7"	16° 15' 24.0"	1	1	2	1	165	21	0	0	0	0	0	1	0	0
1542	> 65 y	5	62° 09' 09.6"	16° 15' 24.4"	1	3	2	1	100	20	17	0	0	0	0	0	0	0
1543	> 65 y	5	62° 09' 09.6"	16° 15' 25.2"	1	1	2	1	150	27	0	1	1	0	0	1	0	0
1544	> 65 y	5	62° 09' 09.5"	16° 15' 23.8"	1	1	2	1	185	44	0	1	1	0	0	1	0	0
1545	> 65 y	5	62° 09' 09.0"	16° 15' 25.5"	1	3	2	1	400	24	15	0	0	0	0	0	0	0
1546	> 65 y	5	62° 09' 08.8"	16° 15' 26.2"	1	1	2	1	91	20	0	1	1	0	0	1	0	0
1547	> 65 y	5	62° 09' 08.7"	16° 15' 25.6"	1	2	2	1	26	33	0	0	0	0	0	0	0	0
1548	> 65 y	5	62° 09' 08.0"	16° 15' 25.4"	1	3	2	1	400	40	36	0	0	0	0	1	0	0
1549	> 65 y	5	62° 09' 08.1"	16° 15' 25.8"	1	2	2	1	33	51	0	0	0	0	0	1	0	0
1550	> 65 y	5	62° 09' 06.9"	16° 15' 26.2"	1	3	2	1	250	40	38	0	0	0	0	1	0	0
1551	> 65 y	5	62° 09' 07.0"	16° 15' 25.6"	1	1	1	1	350	25	0	1	1	0	0	1	0	0
1552	> 65 y	5	62° 09' 06.6"	16° 15' 26.1"	1	3	2	1	500	38	20	0	0	0	0	0	0	0
1553	> 65 y	5	62° 09' 06.3"	16° 15' 27.2"	1	2	2	1	49	26	0	1	1	0	0	1	0	0
1554	> 65 y	5	62° 09' 05.8"	16° 15' 26.7"	1	3	2	1	1200	42	31	0	0	0	0	0	0	0
1555	> 65 y	5	62° 09' 04.4"	16° 15' 25.7"	1	2	2	1	17	30	0	0	0	0	0	0	0	0
1556	> 65 y	5	62° 09' 03.7"	16° 15' 26.0"	1	2	2	1	49	30	0	0	0	0	0	0	0	0
1557	> 65 y	5	62° 09' 03.5"	16° 15' 26.2"	1	3	2	1	1100	56	30	0	0	0	0	1	0	0
1558	> 65 y	5	62° 09' 03.4"	16° 15' 26.5"	1	2	2	1	37	25	0	0	0	0	0	0	0	0
1559	> 65 y	5	62° 09' 05.3"	16° 15' 25.2"	1	2	2	1	49	19	0	1	1	0	0	1	0	0

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1560	NR & FA	2	62° 10' 23.0"	16° 24' 06.2"	2	3	2	1	300	15	2	0	0	0	0	0	100	1
1561	NR & FA	2	62° 10' 22.8"	16° 24' 06.1"	1	2	2	1	33	30	0	0	0	0	0	1	0	1
1562	NR & FA	2	62° 10' 22.7"	16° 24' 05.5"	1	1	2	1	75	25	0	0	0	0	0	1	0	1
1563	NR & FA	2	62° 10' 21.4"	16° 24' 03.8"	1	2	3	1	49	25	0	0	0	0	0	1	0	1
1564	NR & FA	2	62° 10' 21.1"	16° 24' 04.2"	1	2	2	1	38	51	0	1	0	0	0	1	0	1
1565	NR & FA	2	62° 10' 21.0"	16° 24' 04.2"	1	1	2	1	200	30	0	1	1	0	0	1	0	0
1566	NR & FA	2	62° 10' 21.0"	16° 24' 03.8"	1	2	2	1	38	43	0	0	0	0	0	1	0	1
1567	NR & FA	2	62° 10' 20.8"	16° 24' 03.2"	1	1	1	1	200	26	0	1	0	0	0	1	0	1
1568	NR & FA	2	62° 10' 20.8"	16° 24' 02.3"	1	3	2	1	150	32	30	0	0	0	0	0	0	1
1569	NR & FA	2	62° 10' 20.8"	16° 24' 02.5"	1	2	1	1	46	28	0	0	0	0	0	1	0	1
1570	NR & FA	2	62° 10' 20.5"	16° 24' 02.6"	1	1	2	1	170	29	0	0	0	0	0	1	0	1
1571	NR & FA	2	62° 10' 20.2"	16° 24' 02.6"	1	1	2	1	210	23	0	0	1	0	0	1	0	0
1572	NR & FA	2	62° 10' 19.9"	16° 24' 02.9"	1	2	2	1	30	33	0	0	0	0	0	1	0	0
1573	NR & FA	2	62° 10' 19.7"	16° 24' 01.3"	1	3	2	1	200	33	30	0	0	0	0	1	0	1
1574	NR & FA	2	62° 10' 19.6"	16° 24' 00.0"	1	1	2	1	170	29	0	0	1	0	0	1	0	0
1575	NR & FA	2	62° 10' 19.6"	16° 24' 00.0"	3	1	3	1	50	16	0	0	0	0	0	0	80	0
1576	NR & FA	2	62° 10' 19.7"	16° 24' 00.1"	1	2	1	1	48	34	0	1	0	0	0	1	0	0
1577	NR & FA	2	62° 10' 19.5"	16° 24' 01.0"	1	1	2	1	85	40	0	0	0	0	0	0	0	1
1578	NR & FA	2	62° 10' 19.5"	16° 24' 01.7"	1	2	3	1	39	27	0	0	0	0	0	1	0	1
1579	NR & FA	2	62° 10' 19.3"	16° 24' 00.7"	1	1	1	1	101	32	0	0	0	0	0	1	0	1
1580	NR & FA	2	62° 10' 19.2"	16° 24' 00.6"	1	2	3	1	49	25	0	0	0	0	0	1	0	1
1581	NR & FA	2	62° 10' 19.2"	16° 24' 00.6"	1	2	3	1	43	27	0	0	0	0	0	1	0	1
1582	NR & FA	2	62° 10' 19.1"	16° 24' 00.6"	1	2	3	1	19	23	0	0	0	0	0	1	0	1
1583	NR & FA	2	62° 10' 18.8"	16° 24' 00.3"	1	3	3	1	150	25	14	0	0	0	0	0	0	1
1584	NR & FA	2	62° 10' 19.6"	16° 24' 02.8"	1	3	3	1	250	30	12	0	0	0	0	1	0	0
1585	NR & FA	2	62° 10' 18.8"	16° 24' 03.6"	1	1	2	1	79	32	0	0	1	0	0	1	0	0
1586	NR & FA	2	62° 10' 18.6"	16° 24' 03.7"	1	1	2	1	79	42	0	0	0	0	0	1	0	0
1587	NR & FA	2	62° 10' 18.7"	16° 24' 04.5"	1	1	2	1	77	11	0	1	1	0	0	1	0	0

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1588	NR & FA	2	62° 10' 18.7"	16° 24' 05.1"	1	2	2	1	40	44	0	0	1	0	0	1	0	0
1589	NR & FA	2	62° 10' 20.1"	16° 24' 06.1"	2	3	2	1	1000	15	2	0	0	0	0	0	0	0
1590	NR & FA	2	62° 10' 20.1"	16° 24' 07.0"	2	2	2	1	34	21	0	0	0	0	0	0	5	0
1591	NR & FA	2	62° 10' 20.6"	16° 24' 07.4"	1	2	2	1	43	33	0	0	1	0	0	1	0	0
1592	NR FA r	0	62° 08' 27.2"	16° 22' 22.6"	3	1	2	1	1800	24	0	0	0	0	0	0	0	0
1593	NR FA r	0	62° 08' 28.1"	16° 22' 21.4"	3	1	3	1	2300	23	0	0	0	0	0	0	100	0
1594	NR FA r	0	62° 08' 27.9"	16° 22' 21.9"	3	1	3	1	2500	32	0	0	0	0	0	0	100	0
1595	NR FA r	0	62° 08' 28.4"	16° 22' 22.5"	2	1	2	1	1500	20	0	0	0	0	0	0	5	0
1596	NR FA r	0	62° 08' 28.8"	16° 22' 21.4"	1	1	3	1	150	33	0	1	0	0	0	1	0	0
1597	NR FA r	0	62° 08' 28.9"	16° 22' 22.0"	3	1	3	1	140	33	0	0	0	0	0	0	10	0
1598	NR FA r	0	62° 08' 29.1"	16° 22' 22.3"	3	1	2	1	2400	38	0	0	0	0	0	0	100	0
1599	NR FA r	0	62° 08' 29.0"	16° 22' 23.0"	3	1	2	1	2500	32	0	0	0	0	0	0	95	0
1600	NR FA r	0	62° 08' 28.9"	16° 22' 22.0"	3	2	3	1	49	35	0	0	0	0	0	0	100	0
1601	NR FA r	0	62° 08' 29.1"	16° 22' 23.4"	3	2	3	1	35	25	0	0	0	0	0	0	100	0
1602	NR FA r	0	62° 08' 30.2"	16° 22' 22.0"	3	2	3	5	49	28	0	0	0	0	0	0	0	0
1603	NR FA r	0	62° 08' 30.4"	16° 22' 21.4"	2	3	3	1	2600	40	2	0	0	0	0	0	100	0
1604	NR FA r	0	62° 08' 30.6"	16° 22' 24.4"	3	2	3	5	40	35	0	0	0	0	0	0	0	0
1605	NR FA r	0	62° 08' 30.2"	16° 22' 24.4"	3	2	3	2	45	35	0	0	0	0	0	0	100	0
1606	NR FA r	0	62° 08' 31.2"	16° 22' 25.1"	3	2	3	1	25	36	0	0	0	0	0	0	100	0
1607	NR FA r	0	62° 08' 31.6"	16° 22' 26.1"	3	2	3	1	44	50	0	0	0	0	0	0	100	0
1608	NR FA r	0	62° 08' 30.2"	16° 22' 29.3"	3	2	3	1	48	29	0	0	0	0	0	0	80	0
1609	NR FA r	0	62° 08' 29.4"	16° 22' 28.8"	3	2	3	1	30	50	0	0	0	0	0	0	100	0
1610	NR FA r	0	62° 08' 28.5"	16° 22' 30.9"	2	3	2	3	500	32	20	0	0	0	0	0	0	0
1611	NR FA r	0	62° 08' 28.6"	16° 22' 32.5"	2	1	3	1	160	15	0	0	0	0	0	0	0	0
1612	NR FA r	0	62° 08' 30.2"	16° 22' 29.3"	2	1	3	1	800	18	0	0	0	0	0	0	0	0
1613	NR FA r	0	62° 08' 30.3"	16° 22' 29.3"	2	3	3	1	400	10	2	0	0	0	0	0	100	0
1614	8-19 y	1	62° 09' 26.0"	16° 25' 28.6"	2	3	1	2	700	24	19	0	0	0	0	0	5	1
1615	8-19 y	1	62° 09' 26.0"	16° 25' 28.8"	2	2	1	1	27	25	0	0	0	0	0	0	10	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1616	8-19 y	1	62° 09' 25.9"	16° 25' 28.9"	2	3	1	2	160	12	11	0	0	0	0	0	0	1
1617	8-19 y	1	62° 09' 25.8"	16° 25' 29.2"	2	2	1	1	28	22	0	0	0	0	0	0	80	1
1618	8-19 y	1	62° 09' 25.8"	16° 25' 29.2"	1	2	1	1	33	41	0	0	0	0	0	0	0	1
1619	8-19 y	1	62° 09' 25.8"	16° 25' 29.2"	2	2	1	1	40	23	0	0	0	0	0	0	5	1
1620	8-19 y	1	62° 09' 25.8"	16° 25' 29.0"	2	2	1	1	33	29	0	0	0	0	0	0	10	1
1621	8-19 y	1	62° 09' 26.0"	16° 25' 28.5"	1	2	1	1	49	21	0	1	1	0	0	1	0	1
1622	8-19 y	1	62° 09' 25.5"	16° 25' 28.8"	1	2	1	1	30	33	0	0	0	0	0	0	0	1
1623	8-19 y	1	62° 09' 25.6"	16° 25' 29.2"	2	2	1	1	28	27	0	0	0	0	0	0	90	1
1624	8-19 y	1	62° 09' 25.5"	16° 25' 29.2"	2	3	1	1	150	24	23	0	0	0	0	0	20	1
1625	8-19 y	1	62° 09' 25.4"	16° 25' 28.9"	2	2	1	1	29	30	0	0	0	0	0	0	5	1
1626	8-19 y	1	62° 09' 25.4"	16° 25' 28.7"	2	3	1	1	70	13	2	0	0	0	0	0	20	1
1627	8-19 y	1	62° 09' 25.4"	16° 25' 28.6"	2	2	1	1	26	22	0	0	0	0	0	0	80	1
1628	8-19 y	1	62° 09' 25.5"	16° 25' 26.3"	2	2	1	1	24	19	0	0	0	0	0	0	80	1
1629	8-19 y	1	62° 09' 25.3"	16° 25' 28.5"	2	2	1	1	34	21	0	0	0	0	0	0	10	1
1630	8-19 y	1	62° 09' 25.1"	16° 25' 29.1"	2	3	1	1	500	22	22	0	0	0	0	0	0	1
1631	8-19 y	1	62° 09' 25.1"	16° 25' 28.9"	1	2	1	1	43	12	0	0	0	0	0	1	0	1
1632	8-19 y	1	62° 09' 25.0"	16° 25' 29.1"	2	2	1	1	28	32	0	0	0	0	0	0	95	1
1633	8-19 y	1	62° 09' 25.2"	16° 25' 29.0"	2	2	1	1	36	33	0	0	0	0	0	0	10	1
1634	8-19 y	1	62° 09' 25.1"	16° 25' 28.4"	2	2	1	1	20	32	0	0	0	0	0	0	5	1
1635	8-19 y	1	62° 09' 25.2"	16° 25' 28.4"	1	3	1	1	103	47	18	0	0	0	0	1	0	1
1636	8-19 y	1	62° 09' 25.0"	16° 25' 28.4"	2	2	1	1	22	27	0	0	0	0	0	0	50	1
1637	8-19 y	1	62° 09' 24.8"	16° 25' 29.0"	2	1	1	1	50	28	0	0	0	0	0	0	80	1
1638	8-19 y	1	62° 09' 24.8"	16° 25' 28.8"	2	2	1	1	21	20	0	0	0	0	0	0	80	1
1639	8-19 y	1	62° 09' 24.7"	16° 25' 28.3"	2	2	1	1	49	22	0	0	0	0	0	0	10	1
1640	8-19 y	1	62° 09' 24.6"	16° 25' 29.1"	2	2	1	1	33	26	0	0	0	0	0	0	30	1
1641	8-19 y	1	62° 09' 24.5"	16° 25' 29.0"	2	2	1	1	35	22	0	0	0	0	0	0	60	1
1642	8-19 y	1	62° 09' 24.4"	16° 25' 28.6"	2	1	1	1	51	20	0	0	0	0	0	0	5	1
1643	8-19 y	1	62° 09' 24.3"	16° 25' 28.8"	2	2	1	1	27	29	0	0	0	0	0	0	50	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1644	8-19 y	1	62° 09' 24.3"	16° 25' 28.6"	2	2	1	1	27	33	0	0	0	0	0	0	70	1
1645	8-19 y	1	62° 09' 24.3"	16° 25' 28.7"	2	2	1	1	21	22	0	0	0	0	0	0	5	1
1646	8-19 y	1	62° 09' 24.2"	16° 25' 28.5"	1	2	1	1	35	13	0	0	0	0	0	0	0	1
1647	8-19 y	1	62° 09' 24.0"	16° 25' 28.4"	2	2	1	1	35	28	0	0	0	0	0	0	10	1
1648	8-19 y	1	62° 09' 24.1"	16° 25' 29.0"	2	2	1	1	28	26	0	0	0	0	0	0	5	1
1649	8-19 y	1	62° 09' 24.0"	16° 25' 28.8"	2	2	1	1	27	21	0	0	0	0	0	0	70	1
1650	8-19 y	1	62° 09' 23.9"	16° 25' 28.5"	2	2	1	1	27	29	0	0	0	0	0	0	40	1
1651	8-19 y	1	62° 09' 23.9"	16° 25' 29.0"	2	2	1	1	32	20	0	0	0	0	0	0	10	1
1652	8-19 y	1	62° 09' 24.0"	16° 25' 29.4"	1	3	1	1	78	18	15	0	0	0	0	0	0	1
1653	8-19 y	1	62° 09' 24.0"	16° 25' 29.3"	2	2	1	1	37	28	0	0	0	0	0	0	10	1
1654	8-19 y	1	62° 09' 23.7"	16° 25' 29.4"	1	3	1	1	150	21	11	0	0	0	0	0	0	1
1655	8-19 y	1	62° 09' 23.7"	16° 25' 29.3"	2	2	1	1	34	28	0	0	0	0	0	0	20	1
1656	8-19 y	1	62° 09' 23.4"	16° 25' 29.1"	2	2	1	1	27	27	0	0	0	0	0	0	20	1
1657	8-19 y	1	62° 09' 23.2"	16° 25' 29.4"	2	2	1	1	16	27	0	0	0	0	0	0	40	1
1658	8-19 y	1	62° 09' 23.2"	16° 25' 28.9"	2	1	1	1	82	30	0	0	0	0	0	0	5	1
1659	8-19 y	1	62° 09' 23.0"	16° 25' 29.3"	2	2	1	1	20	34	0	0	0	0	0	0	80	1
1660	8-19 y	1	62° 09' 23.0"	16° 25' 29.5"	2	2	1	1	33	27	0	0	0	0	0	0	50	1
1661	8-19 y	1	62° 09' 23.0"	16° 25' 29.8"	2	2	1	1	24	31	0	0	0	0	0	0	30	1
1662	8-19 y	1	62° 09' 23.2"	16° 25' 29.8"	1	3	1	1	400	23	11	0	0	0	0	1	0	1
1663	8-19 y	1	62° 09' 23.0"	16° 25' 29.6"	2	2	1	1	20	27	0	0	0	0	0	0	5	1
1664	8-19 y	1	62° 09' 22.8"	16° 25' 29.3"	2	2	1	1	36	33	0	0	0	0	0	0	40	1
1665	8-19 y	1	62° 09' 22.7"	16° 25' 29.5"	2	2	1	1	17	37	0	0	0	0	0	0	30	1
1666	8-19 y	1	62° 09' 22.8"	16° 25' 29.8"	2	2	1	1	17	28	0	0	0	0	0	0	5	1
1667	8-19 y	1	62° 09' 22.6"	16° 25' 29.8"	2	2	1	1	22	25	0	0	0	0	0	0	20	1
1668	8-19 y	1	62° 09' 22.6"	16° 25' 29.9"	2	2	1	1	12	31	0	0	0	0	0	0	5	1
1669	8-19 y	1	62° 09' 22.6"	16° 25' 29.9"	2	3	2	1	60	13	11	0	0	0	0	0	0	1
1670	8-19 y	1	62° 09' 22.4"	16° 25' 30.0"	2	2	2	1	29	30	0	0	0	0	0	0	20	1
1671	8-19 y	1	62° 09' 22.3"	16° 25' 30.2"	3	2	1	1	24	14	0	0	0	0	0	0	1	1

obj	Stand cat	ID	GPS (N)	GPS (E)	w	S	Sha	Hard	l/h	d1	d2	Sp1	Sp2	Apo sp1	Apo sp2	f	ba	tran
1672	8-19 y	1	62° 09' 22.2"	16° 25' 29.9"	2	2	1	1	25	35	0	0	0	0	0	0	40	1
1673	8-19 y	1	62° 09' 22.2"	16° 25' 30.5"	1	3	1	1	200	27	24	0	0	0	0	0	0	1
1674	8-19 y	1	62° 09' 21.6"	16° 25' 30.5"	3	1	1	1	74	24	0	0	0	0	0	0	30	1
1675	8-19 y	1	62° 09' 21.6"	16° 25' 30.7"	2	2	1	1	42	39	0	0	0	0	0	0	50	1
1676	8-19 y	1	62° 09' 21.4"	16° 25' 30.7"	2	2	1	1	41	32	0	0	0	0	0	0	1	1
1677	8-19 y	1	62° 09' 21.1"	16° 25' 30.8"	2	2	1	1	28	31	0	0	0	0	0	0	10	1
1678	8-19 y	1	62° 09' 21.0"	16° 25' 30.8"	2	2	1	1	31	29	0	0	0	0	0	0	5	1
1679	8-19 y	1	62° 09' 20.9"	16° 25' 30.7"	2	1	1	1	57	31	0	0	0	0	0	0	5	1
1680	8-19 y	1	62° 09' 20.7"	16° 25' 30.6"	2	2	1	1	19	32	0	0	0	0	0	0	70	1
1681	8-19 y	1	62° 09' 20.5"	16° 25' 30.6"	2	2	1	1	28	33	0	0	0	0	0	0	60	1
1682	8-19 y	1	62° 09' 20.7"	16° 25' 30.1"	2	2	1	1	10	36	0	0	0	0	0	0	95	1
1683	8-19 y	1	62° 09' 20.4"	16° 25' 30.2"	2	2	1	1	20	36	0	0	0	0	0	0	80	1
1684	8-19 y	1	62° 09' 20.4"	16° 25' 30.2"	1	1	1	1	70	11	0	0	0	0	0	1	0	1