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Home Range Area, Overlap, Homing Behavior and Movement Patterns in *Plestiodon reynoldisi*

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Home Range Area, Overlap, Homing Behavior and Movement Patterns in *Plestiodon reynoldisi*

by

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A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science
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Abstract

Home range and home range overlap information are crucial to create management plans for species of conservation concern. It provides information as to how much land a viable population needs to survive. The South Florida Multi-Species Recovery Plan highlights the need for home range and movement information for *Plestiodon reynoldsi* (Florida Sand Skink), a threatened lizard species precinctive to Florida Scrub habitat. We investigated home range sizes, their relationship with SVL and mass, home range overlap, homing behavior, and movement patterns of the Florida Sand Skink (FSS) and over a three-year period in the Lake Wales Ridge National Wildlife Refuge. The average home range, using minimum convex polygon, was 219 square meters. SVL had no relationship to home range size. Mass had a weak negative effect on home range size, but it is questionable if this relationship is biologically significant. Home range overlap was prevalent in the species and ranged from 0-100% overlap. The Rayleigh test, used to test for orientation upon release, showed no homing behavior in the FSS. The longest movement was 144 meters, but the average natural movement was 12.1 meters. This study shows that even small parcels of scrub habitat can support viable populations of the FSS, because of its extensive home range overlap and small home range size.

Chapter 1:

Home Range Area, Overlap, Homing Behavior and Movement Patterns in *Plestiodon reynoldsi*

Introduction

Many of the organisms of south Florida are of conservation concern because of the burgeoning human population. Much of the habitat in the region has been converted to urban sprawl, citrus cultivation, and cattle ranching resulting in fragmentation of the remaining natural areas (Myers, 1990). The South Florida Multi-Species Recovery Plan (SFMSRP, 1999) was designed to facilitate species conservation plans for the plants and animals of southern Florida. The SFMSRP states that the lack of home range information for many species is contributing to the prevention of conservation plans.

The definition of home range has evolved over the past 80 years, but the most widely accepted definitions are the area in which an organism needs to carry out its daily activities (Burt, 1943), and where an organism spends 95% of its time (Worton, 1987). A more modern definition is an organism's mental map of its surroundings (Powell, 2000), but this definition maybe harder to quantify. Home ranges are qualified by time; an organism's home range can expand, contract, and shift over a given period making it important to include time when defining home ranges. Regardless of how it is defined, home range information is a crucial part in forming species management plans. Without it, wildlife managers cannot make proper decisions regarding how much land to set aside for populations to survive. Studying movement

patterns and space use may provide insight on ecological processes such as disease-spread within a population (Trewhella et al., 1988), predator prey interactions (Lewis and Murray, 1993), population regulation (Gautestad and Mysterud, 2005; Wang and Grimm 2007), and habitat selection (Rhodes et al., 2005).

Home range sizes for a given species can be unpredictable and variable, but several aspects of an organism's biology that can aid in hypothesizing home range size. A positive correlation exists between the size of the organism and its home range size (Stan et al, 1986). In many species, males tend to have larger home ranges than females. Juveniles of many species are more transient until they find a suitable area to reside in, effectively meaning they have no home range until they do so (Wang and Grimm, 2007). Individuals vary home range size based on the time of year (Martinsen, 1968). Often, during the breeding season, males and females will enlarge their home range sizes to find mates (Madsen, 1984). Varying the amount of food resources often affects the size of the home range (Hansen and Closs, 2005). For social animals such as ants or wolves, the home range size is affected by the number of individuals in the colony or pack (Peterson, 1984). Finally, for non-territorial animals with a large degree of home range overlap, home ranges must be larger, because individuals are sharing resources (Greenleaf et al, 2007).

Home ranges of lizards in the family Scincidae (skinks) are poorly studied (Rose, 1982). The SFMSRP states that one skink species in need of home range information is *Plestiodon Reynoldsi* (Florida Sand Skink). The species is listed as threatened by the USFWS because of fragmentation and loss of habitat (1999). It is a dietary generalist (McCoy et al., 2010); can live up to 10 years (Ashton, 2005; Meneken et al., 2005); is fossorial; and relatively small (most adults are between 50-60mm (Ashton, 2005). Studying the home ranges of small fossorial

animals comes with many challenges. Researchers cannot rely on modern methods such as GPS trackers or radio telemetry to document home range size because small animals cannot support the necessary instruments, and fossorial animals cannot be sighted directly. Sand swimmers, such as the Florida Sand Skink (FSS), are organisms that move in a sinusoidal motion below the surface (Mushinsky and Gans, 1992) thereby liquefying the sand around them (Maladen et al., 2011).

Since the publication of the SFMRP, no one has attempted to study *P. reynoldsi*'s home range. There have, however, been some studies that attempted to study the long- and short-term movement patterns. Genetic structure analysis suggested they move less than one kilometer during dispersal events (Schrey et al., 2011). Penney (2001) found an average displacement of individuals to be 0.035 km, and Gianopulos (2001) found the largest movement by an individual Florida Sand Skink to be 0.24 km.

The purpose of this study is to establish the home range of the FSS. The importance of gaining information on the home range of this species is paramount in forming a species recovery plan (SFMSRP, 1999). The working definition of 'home range' for this study is the area occupied by the FSS individuals over a three-year period. The goals of this study are to establish the maximum, minimum, and average home range sizes for the FSS, analyze how size classes (both SVL and mass) affect home range size, examine home range overlap, to determine if displaced individuals demonstrated homing behavior, and to look at movement patterns over the three-year study period.

Methods

Study Site

I surveyed multiple sites containing scrub habitat before selecting the site for this research. Among all the sites, the selected site had more Florida Sand Skink (FSS) tracks than any other site. The sigmoidal tracks are left in the sand by the subsurface movement of the FSS. I used the abundance of tracks as an indicator that the site had a large population of FSS. The site also displayed several habitat conditions preferred by the FSS that will be discussed below.

This site represents a parcel of fragmented scrub. It is surrounded by failed housing developments, manicured lawns, cattle farms, and overgrown scrub that can no longer support the FSS. The nearest scrub suitable for the FSS is not within the dispersal limits of the species.

The Florida Sand Skink naturally inhabits upland scrub habitat (Christman, 1992) with a preference for areas with leaf litter and loose, sandy soils that is well drained (Andrews 1994, Telford 1959). They are associated with open areas that facilitate their movement through the sand unimpeded (Pike et al., 2008). The FSS also relies on edge habitat to forage through leaf litter (Moler, 1992). Each small bush and tree with some base layer of leaf litter within the field site represents suitable edge habitat. I conducted field work between April 2017 to April 2020. The study site was part of the Lake Wales National Wildlife Refuge in Polk County, Florida and was dominated by Florida Scrub habitat (Meyers 1990). I divided into two sections: east (approximately 6.4 square kilometers) and west (approximately 11.4 square kilometers), to monitor two subpopulations (Figure 1). These study sites were separated by 219 meters of habitable scrub land. The area was divided to aid in a separate, but related, genetic study.

Much of the field site is covered in open white sand, deposited there by ancient sea levels (Myers, 1990). The sand, which is many meters deep, well drained, and loosely packed allows sand swimming organisms to easily maneuver through it. The open sandy areas are interspersed by sand live oak (*Quercus geminata*), sand pine (*Pinus clausa*), saw palmetto (*Serenoa repens*) and Florida rosemary (*Ceratiola ericoides*) with a few patches of pine stands. Much of the ground is covered in the lichen *Cladina evansii* and low growing plants such as gopher apple (*Licania michauxii*). Other low growing plants include the scrub lupine (*Lupinus aridorum*) (Myers, 1990). The site contained numerous and abundant food sources for the FSS such as harvester ant colonies, larval ant lion pits, termites and soft bodied beetle larvae like carabids which have all been found in gut content analysis studies of the FSS (Myers and Telford, 1965; Smith, 1982; McCoy et al., 2010).

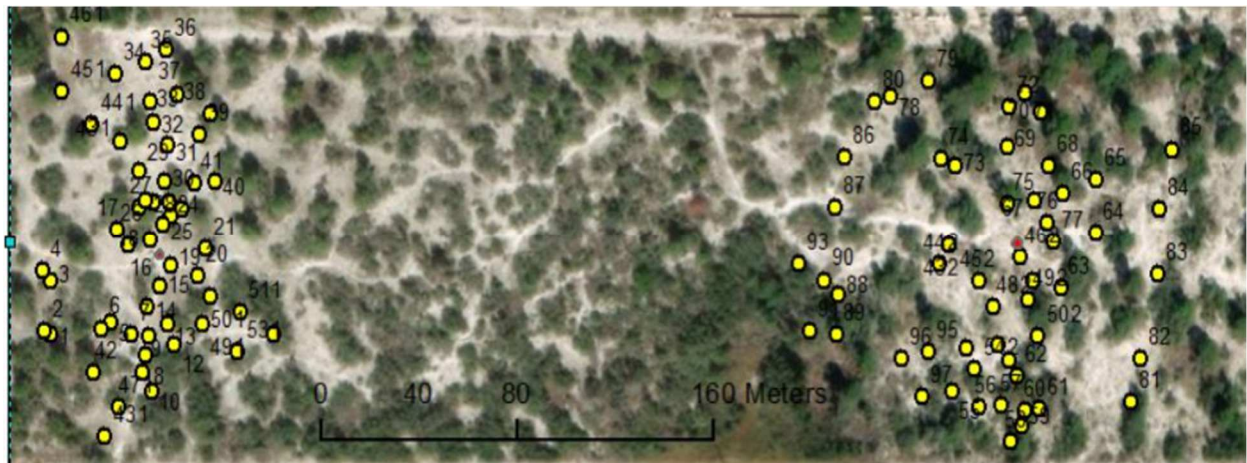


Figure 1. Trap locations showing both the east and west trap arrays. The red points indicate the set release points (see text).

Skink Capture, Marking, and Release

The FSS were captured using pit fall traps which consisted of a drift fence that forces organisms to move along the barrier, and there is a receptacle that organisms fall into at the ends of the barrier. The field site had 106 pitfall traps. These traps consisted of approximately two meters of plastic house siding countersunk 10-15 cm into the sand and flanked by two sets of 3.78-liter buckets at each end (Figure 2). I checked the traps three times a week for two weeks of every month, weather permitting, except for April. I checked April three times every week, because that month is when the FSS is most active. After capture, individuals were taken to the lab for processing.



Figure 2: Image of pitfall trap 43B near saw palmetto. Most traps were placed closely to vegetation as illustrated in this image.

Each individual received four injections, where the appendages meet the body, of a visible implant elastomer (VIE) from Northwest Marine Technology, INC. (Penney, 2001). They each received an individual color code from these injections which allowed for future identification. A total of 947 were tagged throughout the study. Before injections, each needle was wiped with an alcohol pad to prevent infections. All FSS were then measured for SVL and mass to analyze the effect of size on home ranges. Their trap numbers were recorded. The tip of

the tail was removed for the related genetic study. Individuals were held in the lab in individual containers for 48-72 hours to ensure the injection sites and tails healed before being returned to the field.

If an individual was recaptured, I identified it by its individual color code, and recorded its mass, SVL and new trap number. If the elastomers were fading, the recaptured individual would be injected again. This issue was rarely encountered during the study.

While there are more modern techniques to obtain location data, the fossorial nature and small size of the Florida Sand Skink do not allow for radio telemetry, pit tagging or GPS trackers. I attempted to use small PIT tags originally, but they could not be used. The sinusoidal motion that the FSS uses to swim through the sand would push the PIT tags out of the injection site despite being sealed with veterinary tissue adhesive. Implants were also too large for the skinks to survive the implantation (Ferner and Plummer, 2016) Therefore, the only way to track sand skinks is to use pitfall traps. This method reduces the amount of data available for home range estimation, but it was the only way to accurately track the skinks. One issue with using pitfall traps is that they do not provide as much location data as the other methods mentioned above. This limitation has consequences for the methods used to analyze home range size which will be discussed below.

When released to the field site, 50% of individuals were haphazardly chosen to be released at two set release points (SRPs) . Each subpopulation, east and west, had one set release point each (seen in Figure 1 as the red points). This procedure only occurred for individuals captured for the first time and only during the first year of study. The central release points were used to test for the presence of a homing behavior. The SRPs were set in open sand a few meters away from preferred edge habitat. This procedure was discontinued however, when sufficient

data were gathered to test for homing behavior. All other FSS were returned to within a meter of their original traps, and then those traps were temporarily closed for 2-3 days to avoid autocorrelation in the home range data.

Home Range Analysis

Home ranges were determined using 100% minimum convex polygon (MCP) in the program ArcGIS. The program offers tools that snap to trap locations and provides the area between the traps. To assess the relationships between SVL, mass and home range use, I used regression analysis and correlation tests. These were conducted in MS Excel. I also used ArcGIS to obtain maximum concave polygon (MCcP) estimates of home range size when the data were available. I used ArcGIS to determine home range overlap. Individual home ranges were mapped into the program, and the areas of overlap were then recorded and summed up for each individual. These average home range, minimum home range, and maximum home range and average amount of overlap, minimum overlap, and maximum overlap were then used to estimate the total number of FSS that can exist on the property.

Estimates of home range have inherent limitations. Minimum convex polygon and minimum concave polygon can overestimate and underestimate space use, respectively (Kenward et al, 2001). MCP is the most widely used and one of the oldest methods for estimating home range sizes (Powell, 2000), and it is important to include in any study for comparative reasons. While much research asserts that this method is the least affected by sample size, some research suggests this method needs a sample size of 100-300 observations for the data to be asymptotic (Bekoff and Mech, 1984; Laundre and Keller, 1984). One advantage of MCP is that the data do not need to fit any underlying statistical distribution (Powell, 2000).

MCcP, in one study involving the prairie vole, showed individuals to have 50% of the home range than that of MCP (Habvey and Barbour, 1965).

The actual home range size of the *P. reynoldsi* probably likely is between the estimates using MCP and MCcP. These two methods offer the extremes for each. MCP often includes areas that are unused or rarely used by an individual whereas MCcP excludes areas used by an individual. MCP is reported for all individuals, and MCcP was only able to be reported for one individual.

Homing and Orientation Analysis

One half of the captured skinks were haphazardly chosen and released at two SRPs (SRPs) from April 5, 2017, to December 11, 2017; the SRPs were located approximately in the center of the east and west trap arrays. The angle from the original trap to the new trap was recorded with the set release point acting as the vertex of the angle. These values were used in a Rayleigh Test in the Circular Package in R. The Rayleigh Test is often used to determine if displaced organisms orient themselves in the direction of their home ranges.

Movement Patterns

I analyzed movements of individuals over a three-year and one-year period. The one-year period was to compare movements among hatchlings, juveniles, and adults. Hatchlings were considered 35mm or less; juveniles were considered 49.9mm or less. Adults were considered 50mm or more. I analyzed the differences among groups using a one-way ANOVA in MS Excel, and I conducted a power test to see needed sample sizes for a moderate effect size (0.25) and a power of 0.80 using the R-package pwr. Only natural movements, or movements not involving translocating the individual to the SRPs, were considered in this analysis. The 36 months

analysis looked at the trends in the data involving movements that lasted from one moth to 36 months. There was no discernible pattern. Finally, I compared the distances traveled from the SRPs and the distances traveled through natural moves. A natural move was any move that the skinks voluntarily made (any move not involving translocation of the individual by the researcher). A one-way ANOVA was used to compare natural movements and post-translocation movements. All ANOVAs were calculated using MS Excel.

Results

The average home range for the FSS is 219 m² (standard deviation= +/-329.3 and standard error= +/-79.9) using MCP. The smallest home range was 19 m², and the largest was 1,306 m². This variation reflects the large difference among individuals. Only one individual differed in home range size between MCP and MCcP, reflecting the low frequency of recaptures. However, the difference between MCP and MCcP for the one individual was 33 m² with MCP being the larger of the two. As mentioned earlier, it is expected that MCP would be larger (Table 1). When translocated to the SRPs, individuals were often captured one or more times at traps within the 20-meter range. However, 17% of the individuals traveled more than 30 meters from these release points.

Table 1. The basic statistics for the hatchling, juvenile, and adult movements over a one-year period.

	Hatchling	Juvenile	Adult
Average=	18.2	8.3	10.8
Median=	14.4	0	0
Range=	94.7	49.3	78.6

Table 1 (continued).

Mode=	0	0	0
n=	9	14	145

The correlation value for home range size and SVL was -0.07383 , indicating very little correlation at all. The regression analysis for home range size and SVL supported this statement. It found the relationship nonsignificant ($f=0.082$; $p=0.778$) indicating there was no difference between size classes. Figure 3 illustrates the relationship between home range size and SVL. The correlation value for home range size and mass was -0.38615 indicating little to no correlation between the two. The regression test for home range size and mass indicated a non-significant relationship as well ($f= 1.852121$; $p=0.231665$). Figure 4 shows the relationship between home range size and mass.

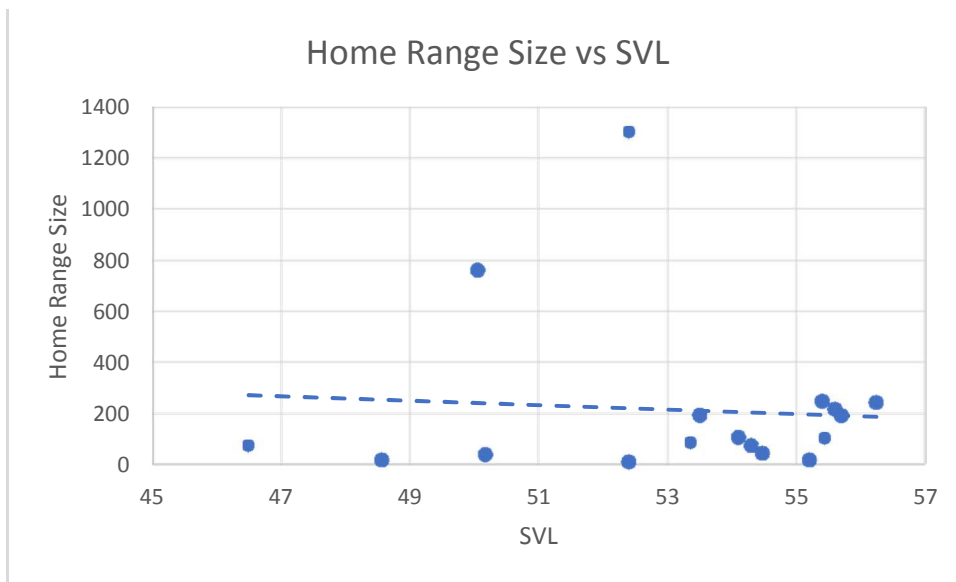


Figure 3. A nonsignificant relationship exists between home range size and SVL.

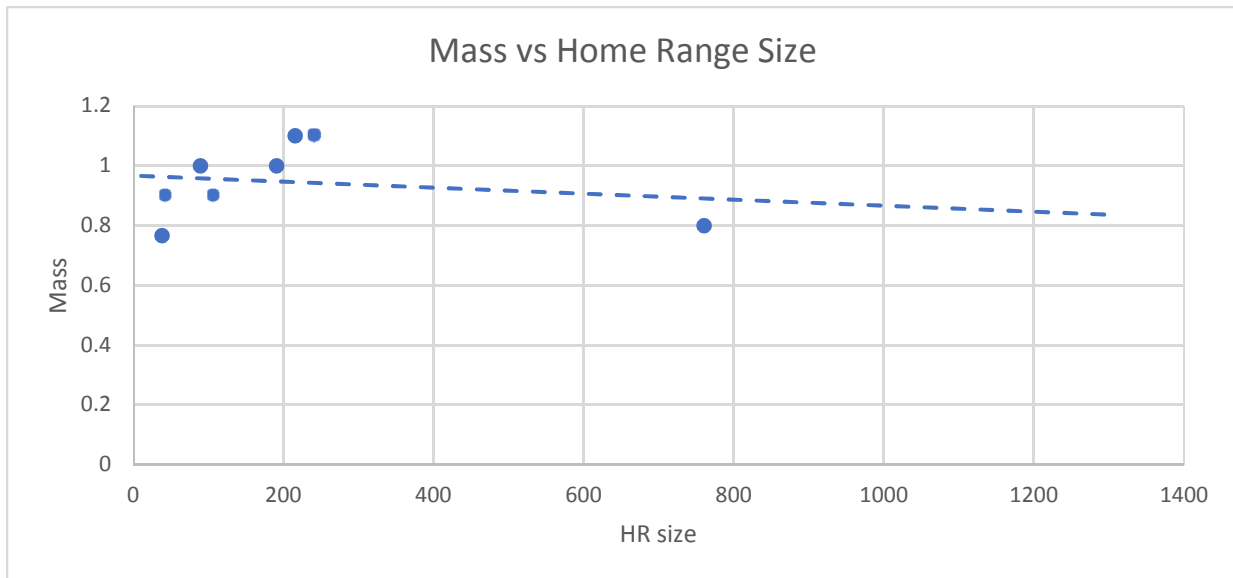


Figure 4. A nonsignificant relationship exists between mass and home range size (m²).

Regarding home range overlap, the average between individuals was approximately 37% (SD= +/-81.6 SE= +/-19.8) with an average of 72 m² being shared between home ranges. The range of overlap was 0% to 100% overlap (Figures 5 and 6). It is important to note that these overlap values only came from individuals that had calculated home range values. The individuals with 0% overlap shared traps with others that did not have home range values. Those individuals that did not have home range values could share anywhere between one or two traps with individuals with home ranges either once or multiple times, suggesting overlap values are underestimated. Only a single trap in quality habitat caught one skink over the three-year period while the other traps caught 2-18 individuals (Figure 7) indicating that home range overlap is much greater than 37%.

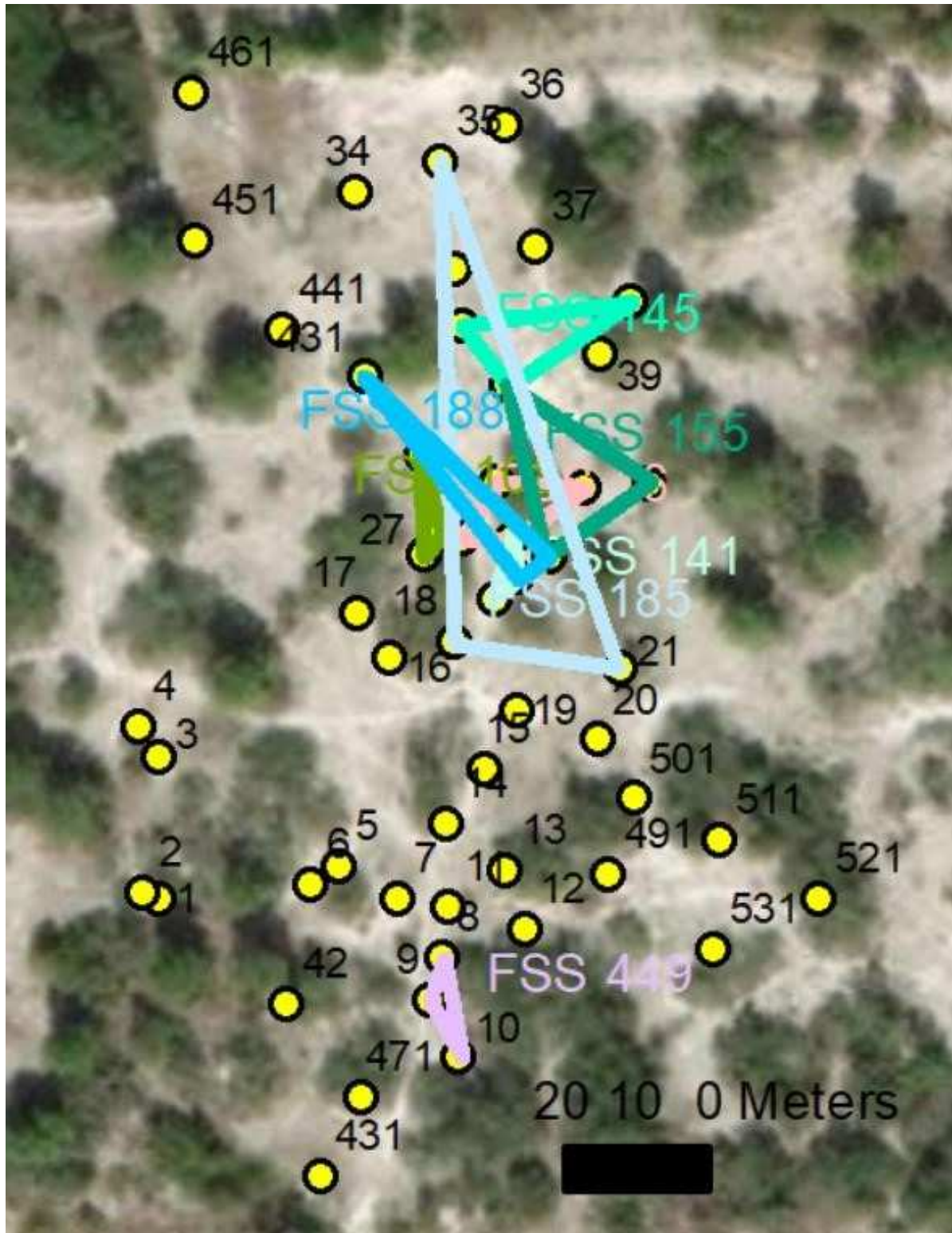


Figure 5. Map of all measured home ranges for the east subpopulation.

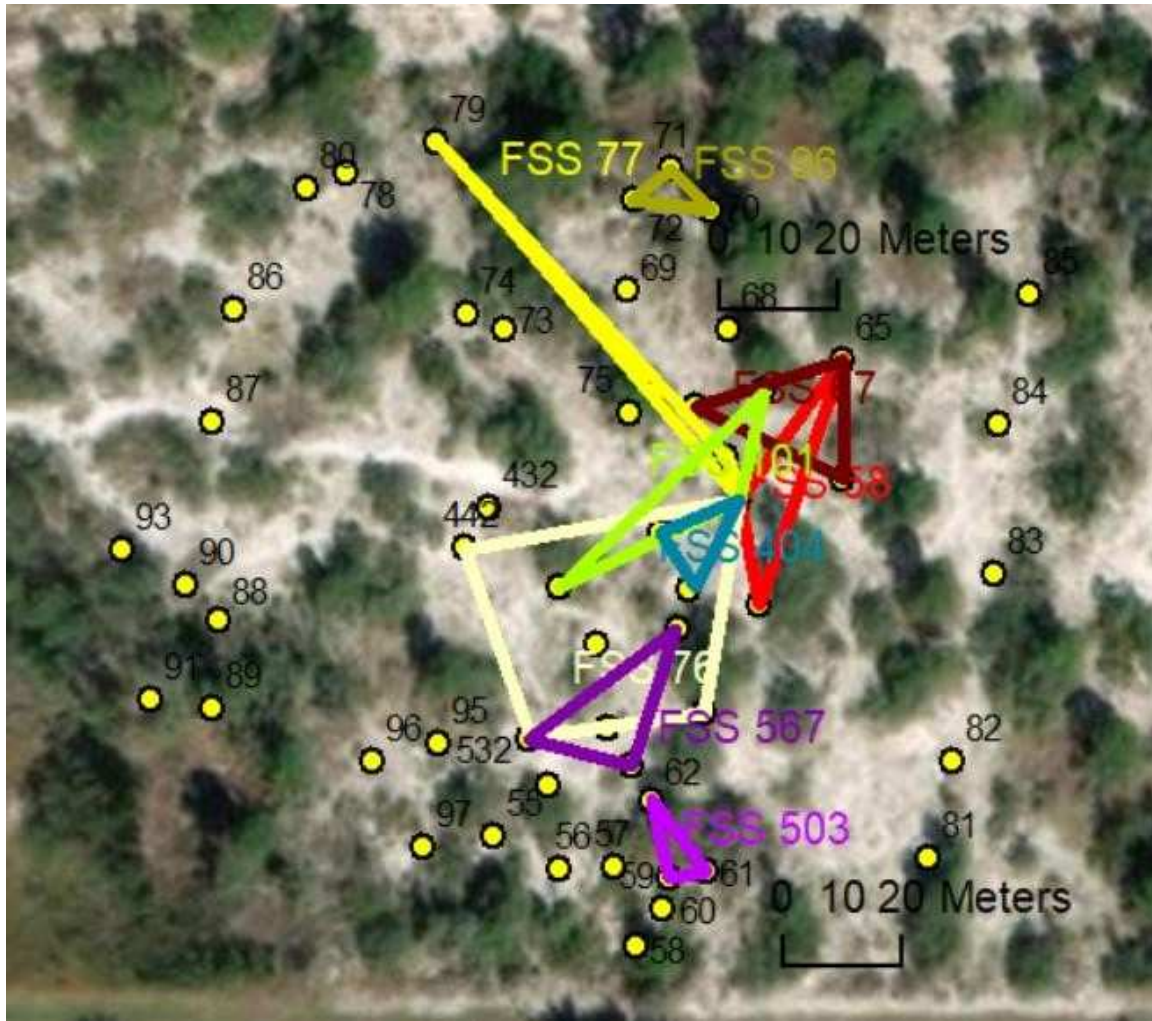


Figure 6. A map showing all home ranges from the west population.

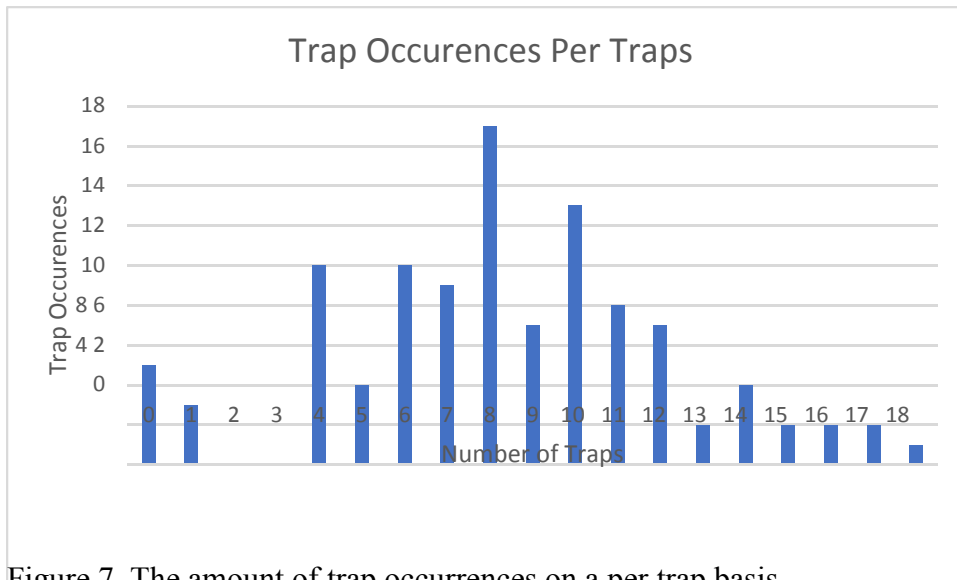


Figure 7. The amount of trap occurrences on a per trap basis.

39% of individuals released at the SRPs traveled in the direction of their initial home range, and 19% were recaptured. The Rayleigh Test provided a test statistic of 0.0642 (p-value= 0.2162), indicating that the *P. reynoldsi* does not orientate toward its home range after displacement.

There was no significant difference between the movements of adults, juveniles, or hatchlings over a year period when the data was analyzed using ANOVA (p=0.3896; f= 3.0507). The sample size for hatchling and juvenile movements was small compared to the adult movements and were not large enough to detect a moderate effect at 0.80 power according to the power test conducted in the R package pwr (need a sample size of n=52). The hatchlings had the highest average distance moved at 18.2 meters and the largest median and range of the groups as well. The mode was zero for all groups.

There was a significant difference among natural movements and movements involving translocations to the SRPs (p= 0.001; f= 10.5). This was expected, because natural movements had a large amount of no movements (caught in the same trap) whereas individuals had to move

away from the SRPs to find suitable microhabitats. The average movement from the SRPs was 20.1 meters, and the average natural distance moved was 12.1 meters. Table 2 shows the basic statistics of these groups. There were no discernible patterns when reviewing the 36-month movement patterns. When all zeros were removed from the natural movements to show when individuals actually moved, the results differed. The natural movements, which then averaged 25.5 meters, were significantly longer than the transplanted individuals' movements ($f=3.64$; $p=0.057$).

Table 2. The basic statistics of the movements from transplanted skinks and natural movements.

	Transplant	Natural
Average=	20.05333	12.08571
Mode=	9.9	0
Range=	77.5	144.6
Median=	17	0
n=	75	265

Discussion

The FSS has an average home range of 219 m². Like many organisms, there was a large variation in individual home range. The smallest home range was 19 m², but this home range was only created from three trap occurrences. It is questionable whether this represents an actual home range, because three traps are the absolute minimum to create a home range using MCP. If the habitat occupied by these small home ranges are of high quality, then it is possible for these individuals to exist in a small area (McNab, 1963; Harestad and Bunnell, 1973).

The largest home range was 1,306 m². This home range was estimated from a single individual within a single breeding season, suggesting individuals move greater distances during the breeding season than other times of the year. This behavior is exhibited mostly by males in other species across a wide variety of taxa (Kerr and Bull, 2006; Cronk and Pillay, 2020; Germano, 2007). Unfortunately, the FSS has no reliable way of separating the sexes phenotypically and attempting to evert the hemipenis in small reptiles such as the FSS can be harmful. Many lizards do not differ in home range size between the sexes (Fitch and von Achen, 1977; Krekorian, 1976; Dubas and Bull, 1992; Osterwalder et al., 2004), but some do (Blair, 1960, Germano, 2007). Nevertheless, this large home range should be considered when making conservation plans. Accommodating these long-distance movements in the breeding season is essential for the survival of the species.

This study was conducted over a three-year period. Home ranges vary throughout the lifetime of individuals in many animals (Christie et al., 2012; Price-Rees, 2013). The home ranges in this study likely do not represent the lifetime home ranges of the FSS, because the FSS can live for 10 years. Therefore, it can be assumed that the home ranges in this study underestimate the lifetime home ranges of the FSS. Managers and regulators should recognize this limitation when determining the amount of land to set aside for FSS populations.

SVL does not affect home range size in the FSS. Osterwalder et al. (2004) found that SVL had no effect on home range size in the skink *Egernia major*. However, in other types of lizards, such as *Varanus bitatawa* (Law et al., 2016) and *Varanus gouldii* (Thompson, 1994), SVL correlated with activity area size. Because the FSS does not have a wide range of body size, it was expected that they would not differ drastically in home range sizes based on SVL. Mass also had a nonsignificant relationship with home range. The regression analysis suggested a

negative relationship (larger mass equates to smaller home range size). An individual in high quality habitat would likely have more mass where food is abundant, and the individual would spend less time foraging for food resources. The individual with the large home range and lesser mass seen in figure 6 was captured multiple times during a single breeding season. It is likely that the individual dedicated more resources to finding mates than finding food during this time and had exhausted some of its fat reserves, reducing its overall mass. While interesting, this would skew the results away from what it is biologically relevant regarding the relationship between mass and home range size. The overall sample size for both the SVL and mass was low. The relationship between both and home range size may be biologically relevant but may not be reflected in the statistics of this study.

Schrey et al. (in review) demonstrated that there was not a genetic component that could predict home range size or dispersal in the FSS. With neither mass, SVL, or genetics influencing home range size, habitat quality and preferred microhabitat available are likely the major factors in determining an individual's home range. This highlights the need to assess habitat quality and microhabitat availability before determining if a site is suitable for a relocation project or determining if a particular site is worth acquiring for FSS conservation.

Members of Scincidae tend to have overlapping home ranges with or without defended territories (Bustard, 1970; Stamps, 1977). Home range overlap was extensive in some individuals and not detected in others in the FSS (range: 0-100% overlap). This level of individual difference in home range overlap is common across lizards (i.e., Kerr and Bull, 2006). The individuals that had no home range overlap all shared traps with other individuals, and they all had small home ranges. The individuals that didn't have observed home ranges could have been "floaters" (Schradin, 2004), but it is unlikely that the large number of individuals were transients,

particularly those captured multiple times in the same traps. Because individuals without observed home ranges were not included, the amount of home range overlap was underestimated. If I based overlap solely on trap occurrences (i.e., the number of times individuals were captured from the same trap) it is likely that the estimate for overlap would be greater, with all individuals experiencing some degree of overlap.

Other than copulation, sociality probably does not exist in this species, suggesting that individuals are tolerant of the presence of others. This tolerance helps make this species a candidate for relocation projects (Christie et al., 2012). The lack of aggression in the FSS would reduce stress after translocation. Many species of lizards have overlapping home ranges, particularly in the “sally” zones, or the area of the home range outside of core areas. These species maintain a core area, or the most used areas of an individual’s home range, that overlaps with few to no other individuals (Kerr and Bull, 2006). When overlap only occurs in the sally zones, it suggests that these species may only be somewhat tolerant of other individuals, and they show aggression towards individuals that enter the core area (Kerr and Bull, 2006). There has not been any documented aggression between individuals of FSS; therefore, it is likely there is overlap in the core areas. During the study, I documented broken tails of the captured individuals. A higher percentage of adults (41%) had broken tails when compared to juveniles (20%) and hatchlings (2%). Given the lack of known aggression in this species, it is more likely that these injuries represent environmentally inflicted injuries or failed predation attempts. Although light to extensive scarring was observed on some individuals, it was not recorded routinely.

Core areas are likely to exist in the FSS based on observed site fidelity. An individual captured ten times, the most in the study, was only captured in trap a single trap. This trap, likely

a core area of use for the individual, was located against a low growing, sand live oak with plenty of leaf litter that adjoined open sand. No home range was inferred for this individual, because MCP and MCcP need at least three points to form a polygon. Many individuals displayed a similar pattern; they were captured multiple times from only one or two traps. These individuals almost always shared these traps with other individuals. Not only do these individuals display site fidelity, but also likely display overlap in core areas. Moreover, many of the home range seem to center around one area in both the east and west subpopulations. These areas likely represent high quality habitat, having a large amount of open sand interspersed with sand live oaks, sand pines, and rosemary bushes with plenty of leaf litter. These observation seems to suggest that core areas overlap extensively. In other species of lizards, individuals were found to share high quality preferred microhabitat (Christie, 2012).

The extensive overlap of home ranges makes even small plots of scrub habitat valuable for conservation. Extensive overlap suggests that suitable habitat could support many individuals with minimal intraspecific competition. While the results found in this study may be applicable to habitat of high quality, sites of lesser quality likely would have larger home range estimates and less overlap.

I found no evidence for homing behavior in the FSS. 39% of individuals released at the SRPs traveled in the general direction of their original trap location, and 19% were recaptured in their original traps. The individuals that were recaptured in their original traps had traps close to the SRPs. The central release points were likely in their sally zones or just outside of their home ranges, which would allow them to find their way back to their core areas. The average angle of orientation from an individual's original trap to their new trap with the set release point representing the origin of the angle was 60 degrees (range 0-179 degrees). It is important to note

that given the circular analysis, the maximum angle of orientation is 180 degrees from the original trap. Lack of homing behavior may aid in future translocation projects. If the FSS does not attempt to home-in on its former home range, it could potentially reduce stress levels upon relocation.

The difference between adult, juvenile and hatchling movements were non-significant. However, a hatchling made one of the longest natural moves, 94.7 meters, in the study. This movement occurred in 8 months whereas the adult long-range movements often took multiple years. The hatchlings also had an average travel distance of 18.2 meters, which was 9.9 meters and 7.4 meters more than the average juvenile and adult movements, respectively. When performing a power test for one-way ANOVAs in the R package `pwr`, the suggested sample size for each group given a moderate effect size (0.25) and a power level of 0.80 is $n=52$, suggesting that there was not enough data for the hatchlings and juveniles to significantly differentiate from adults or each other. However, given the differences in the averages, and that the hatchling movements were all done in less than a year after birth, it appears that the hatchlings are the primary dispersers.

There was a significant difference in movements when analyzing transplanted skinks, or the skinks released at SRPs, and the natural movements of other individuals. Because the SRPs were in patches of open sand, individuals had to move from the SRPs to find suitable microhabitats. This effectively eliminated the possibility of no movements (recorded as zeros) from the transplant data whereas the natural movement data allowed for no movement. When the zeros were removed from the data set and an ANOVA was conducted, the natural movements were, on average, farther than the transplanted movements by a difference of 5 meters. However, this devalues the behavior of certain individuals to remain in one spot for long periods of time.

It appears that most individuals that were translocated found a suitable microhabitat relatively close to the release points, but a few individuals traveled relatively far when compared to most. The longest distance traveled from the common release point was 79.6 meters. However, distances over 30 meters were rare, constituting only 17% of the movements from the SRPs. This was more than the natural movements which only had 13% of the movements surpass 30 meters. The largest natural move was 144.6 meters which took place over a 23-month period.

There were 29 movements of 40 meters in the study. These movements were made mostly by adults, but hatchlings and juveniles also made 24% of the longer movements. The hatchling movements all took place under 12 months, and juvenile movements mostly took place in a year or less (2 juvenile movements lasted more than 12 months, but they were still under the adult size limit when captured). The longest movement was made by an adult which was 144.6 meters. These 29 movements constituted 8.5% of the movements in the study. It is important to consider that the FSS is capable of long-range movements when assessing conservation needs. To accommodate the long-range dispersers, larger plots of land may be needed to allow for long-range movements. These individuals that move long distances are likely important to prevent inbreeding depression within populations.

Conclusions

The average home range for the FSS is 219 m². SVL nor mass have a significant effect on home range size. The sample size for both was low, and further study is needed to determine the relationships between body mass, SVL, and home range size. The extent of home range overlap is likely underestimated in this study. The large degree of overlap suggests that even small parcels of quality scrub habitat can support viable populations of the FSS. The study site likely

represents quality habitat that managers should strive to attain for restoration projects and provides a standard when acquiring property for FSS conservation. The mixture of open sand and leaf-litter producing edge habitat provides an excellent habitat model for preserving the FSS. It was evident, based on the number of tracks, that this site contained a large population of skinks in comparison to every other site surveyed. Most transplanted skinks only needed less than 30 meters to find suitable habitat at the study site, and the transplanted skinks moved significantly farther than skinks released at their original locations. While no age group differed significantly from the others in terms of movement distances, the data does suggest that the juveniles are responsible for dispersion. The longer juvenile distances were all recorded in the first year of their life whereas the longer adult movements would occur over a year and mostly between two- and three-year periods.

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Appendix A: Home Range Sizes, Masses, and SVL

This appendix lists the individual Florida Sand Skinks, their home range calculated with minimum convex polygon, minimum concave polygon when available, mass when available, and snout-to-vent length.

Table 1A. Home range sizes of individual FSS along with their mass and SVL when available.

FSS	Min Conv. Poly.	Min. Conc. Poly	Mass	SVL 54.3
16	73.355505			53.5
58	191.384374			55.4
67	246.932477			52.4
76	1,299.47		0.9	55.43
77	106.572749		0.9	50.17
96	37.827341	208.545769	1.1	56.24
101	241.682128			55.2
108	17.503321			52.4
141	9.845728			54.1
145	106.194977		1	55.7
155	190.529442		0.8	50.05
185	760.228879		1.2	53.35
188	89.080296			46.5
404	77.863776			48.56
449	17.524183		0.9	54.47
503	42.654928		1.1	55.6
567	215.104611			

Appendix B: Traps and Dates Released

Appendix B is the raw data for the project. Listed below are the individual skinks under (FSS #) with all their movements, the corresponding trap numbers they were found in, the date they were released at the field site after capture, and where they were released.

Table 2A. All trap occurrences of every skink in the study. Included are where they were caught and when and where they were released.

FSS #	FOUND LAT	FOUND LONG	Date Released (YYYY-MM-DD)	RELEASED LAT	RELEASED LONG
		-			
14	27.96316104	81.7377	4/5/2017	FCRP	FCRP
15	27.96352297	-81.74	4/5/2017	FCRP	FCRP
16	39	39	4/5/2017	FCRP	FCRP
16	26	26	4/21/2017	26 30	26 30
16	30	30	6/2/2017	41 24	41 24
16	41	41	7/7/2017	41 41	41 41
16	24	24	8/16/2017	41	41
16	41	41	10/11/2017	FCRP	FCRP
16	41	41	1/19/2018	FCRP	FCRP
16	41	41	1/26/2018	19	19
17	35	35	4/5/2017	FCRP	FCRP
18	17	17	4/5/2017	FCRP	FCRP
18	19	19	4/28/2017	FCRP	FCRP
19	28	28	4/5/2017	16	16
20	20	20	4/5/2017	FCRP	FCRP
21	38	38	4/7/2017	FCRP	FCRP
21	16	16	5/1/2019	FCRP	FCRP
22	X2	X2	4/7/2017	21	21
23	37	37	4/7/2017	FCRP	FCRP
24	35	35	4/7/2017	18	18
24	21	21	6/30/2017	FCRP	FCRP
25	37	37	4/7/2017		
25	18	18	4/21/2017		
26	40	40	4/7/2017		

Table 2A (continued).

27	10	10	4/7/2017	FCRP	FCRP
27	41	41	2/23/2018	41	41
28	33	33	4/7/2017	FCRP	FCRP
28	18	18	4/24/2017	18	18 18
28	18	18	6/29/2018		18
29	23	23	4/10/2017	FCRP	FCRP
30	5	5	4/7/2017	FCRP	FCRP
31	42	42	4/10/2017	NA	NA
32	32	32	4/7/2017	FCRP	FCRP
33	5	5	4/7/2017	FCRP	FCRP
34	34	34	4/7/2017	FCRP	FCRP
35	28	28	4/7/2017	FCRP	FCRP
36	19	19	4/7/2017	FCRP	FCRP
36	15	15	8/11/2017	15	15 15
36	15	15	4/20/2018		15
37	7	7 -	4/7/2017	FCRP	FCRP
		81.7411			
38	27.96346799	18	4/7/2017	FCRP	FCRP
38	18	27	NA	18	18
39	27	-	4/10/2017	FCRP	FCRP
		81.7379			
40	27.963384	-	4/10/2017	BCRP	BCRP
		81.7378			
41	27.96363998	53B 53B	4/10/2017	BCRP	BCRP
41	53B	38	3/30/2018	53B	53B
41	53B	12	2/25/2020	53B	53B
42	38	20	4/10/2017	FCRP	FCRP
43	12	-	4/10/2017	FCRP	FCRP
43	20	81.7382	4/26/2017	20	20
		-			
44	27.96326397	81.7379	4/10/2017	BCRP	BCRP
		X1			
45	27.963384	14	4/10/2017	BCRP	BCRP
46	X1	14	4/10/2017	FCRP	FCRP
46	14	-	6/30/2017	14	14 14
46	14	81.7379	7/12/2017		14
		38			
47	62	20	4/10/2017	BCRP	BCRP
48	38	13	4/10/2017	FCRP	FCRP
48	20	43F	8/11/2017	20	20
49	13	38 -	4/10/2017	FCRP	FCRP
49	43F	81.7378	6/22/2018	43F	43F
50	38		4/10/2017	FCRP	FCRP
51	27.96363998		4/10/2017	BCRP	BCRP

Table 2A (continued).

52	29	29	4/10/2017	FCRP	FCRP
53	30	30	4/10/2017	FCRP	FCRP
54	33	33	4/10/2017	FCRP	FCRP
54	23	23	NA	NA	NA
		-			
55	27.963384	81.7379	4/10/2017	BCRP	BCRP
		-			
56	27.96297102	81.7381	4/12/2017	BCRP	BCRP
57	42	-81.738	4/12/2017	BCRP	BCRP
		-			
58	27.96345298	81.7376	4/12/2017	BCRP	BCRP
58	77	77	4/19/2017	77	77 65
58	65	65	4/6/2018		65 63
58	63	63	4/11/2018		63
		-			
59	27.96330303	81.7376	4/12/2017	BCRP	BCRP
		-			
60	27.96340303	81.7377	4/12/2017	BCRP	BCRP
60	76	76	3/30/2018	76	76 76
60	76	76	4/4/2018		76 76
60	76	76	4/20/2018		76
		-			
61	27.96340303	81.7377	4/12/2017	BCRP	BCRP
		-			
62	27.96345298	81.7376	4/12/2017	BCRP	BCRP
		-			
63	27.96345298	81.7376	4/12/2017	65	65
63	65	65	4/6/2018	65	65
		-			
64	27.96345298	81.7376	4/12/2017	BCRP	BCRP
64	43B	43B 43B	10/2/2017	43B	43B
64	43B	43B	12/11/2017	43B	43B
64	43B	-	3/21/2018	43B	43B
		81.7381			
65	27.96297102	77	4/12/2017	53B	53B
65	77	55	4/11/2018	77	77
66	55	97	4/12/2017	55	55
66	97	-	4/27/2018	97	97
		81.7376			
67	27.96330303	67	4/12/2017	64	64
67	67	65	4/26/2017	67	67
67	65	-	3/30/2018	65	65
		81.7376			
68	27.96330303	66	4/12/2017	BCRP	BCRP
68	66	75	4/4/2018	66	66 75
68	75		9/11/2018		75

Table 2A (continued).

		-			
69	27.96292501	81.7379	4/12/2017	BCRP	BCRP
69	75	75	4/17/2019	75	75
		-			
70	60	81.7379	4/12/2017	BCRP	BCRP
		-			
71	57	81.7379	4/12/2017	BCRP	BCRP
		-			
72	27.96340303	81.7377	4/12/2017	66	66
72	66	66	10/13/2017	66	66
		-			
73	27.96340303	81.7377	4/12/2017	66	66
		-			
74	27.96341099	81.7378	4/12/2017	BCRP	BCRP
75	31	31	4/12/2017	BCRP	BCRP
		-			
76	27.96326397	81.7378	4/12/2017	BCRP	BCRP
76	44B	44B 53B	7/7/2017	44B	44B
76	53B	77	2/19/2018	53B	53B
76	77	50B	4/11/2018	77	77
76	50B	44B	4/20/2018	50B	50B
76	44B	-	4/27/2018	44B	44B
		81.7378			
77	27.963326	77	4/12/2017	76	76
77	77	79	7/15/2017	77	77
77	79	79	4/6/2018	79	79
77	79	-	5/3/2019	79	79
		81.7378			
78	27.96300304	50B 50B	4/12/2017	50B	50B
78	50B	-	7/7/2017	50B	50B
78	50B	81.7379	5/2/2018	50B	50B
		75			
79	27.963384	75	4/12/2017	75	75
79	75	75		75	75
79	75	75		75	75
79	75	75	10/13/2017	75	75
79	75	75	11/13/2017	75	75
79	75	75	2/19/2018	75	75
79	75	75	4/16/2018	75	75
79	75	75	5/2/2018	75	75
79	75	75	8/24/2018	75	75
79	75	75	11/14/2018	75	75
79	75	75	3/1/2019	75	75
79	75	75	4/17/2019	75	75
79	75		5/5/2019	75	75
79	75		8/21/2019	75	75

Table 2A (continued).

		-			
80	27.96366999	81.7379	4/12/2017	72	72
80	72	72	7/7/2017	72	72
		-			
81	27.96292501	81.7379	4/12/2017	52B	52B
		-			
82	27.963384	81.7379	4/12/2017	72	72
82	72	72	1/16/2018	72	72
82	72	72	4/10/2019	72	72
82	72	72	5/1/2019	72	72
		-			
83	27.96350403	81.7378	4/12/2017	68	68
		-			
84	27.963326	81.7378	4/12/2017	BCRP	BCRP
		-			
85	27.963384	81.7379	4/12/2017	BCRP	BCRP
86	79	79	4/12/2017	BCRP	BCRP
		-			
87	27.963384	81.7379	4/12/2017	BCRP	BCRP
		-			
88	27.96354401	81.7379	4/12/2017	BCRP	BCRP
		-			
89	27.96354401	81.7379	4/12/2017	BCRP	BCRP
		-			
90	27.96354401	81.7379	4/12/2017	69	69
91	38	38	4/12/2017	FCRP	FCRP
92	38	38	4/12/2017	FCRP	FCRP
		-			
93	27.96300304	81.7378	4/12/2017	BCRP	BCRP
93	47B	47B 47B	4/14/2019	47B	47B
93	47B	-	4/24/2019	47B	47B
		81.7378			
94	27.963169	46B	4/12/2017	BCRP	BCRP
94	46B	39	10/16/2017	46B	46B
95	39	70	4/12/2017	39	39 70
96	70	72	4/12/2017		70 72
96	72	71	2/19/2018		72 71
96	71	71	4/27/2018		71 71
96	71	71	11/12/2018		71 71
96	71	71	11/16/2018		71 71
96	71	70	4/10/2019		71 70
96	70	-	5/20/2019		70
		81.7378			
97	27.96350403	63	4/12/2017	BCRP	BCRP
97	63	77	4/28/2017	63	63 77
97	77		6/2/2017		77

Table 2A (continued).

98	38	38	4/12/2017	FCRP	FCRP
98	15	15	9/22/2017	15	15 15
98	15	15	4/8/2019		15
99	27.96296599	-81.738	4/12/2017	51B	51B
100	33	33	4/12/2017	33	33
101	27.96315501	-81.738	4/12/2017	45B	45B
101	77	77	7/12/2017	77	77 76
101	76	76	3/26/2018		76 66
101	66	66	4/27/2018		66 66
101	66	66	6/22/2018		66 66
101	66	66	7/6/2018		66 66
101	66	66	11/16/2018		66 66
101	66	66	4/1/2018		66
102	37	37	4/12/2017	FCRP	FCRP
103	34	34	4/12/2017	34	34
		-			
104	27.96322399	81.7379	4/12/2017	46B	46B
104	46B	46B 46B	4/19/2017	46B	46B
104	46B	7	5/7/2018	46B	46B
105	7	20	4/12/2017	7	7
106	20	20	4/12/2017	FCRP	FCRP
107	20	27	4/12/2017	20	20 27
108	27	28	4/12/2017		27 28
108	28	29	7/7/2017		28 29
108	29	29	10/2/2017		29 29
108	29	-	4/27/2018		29
		81.7378			
109	27.96310999	49B	4/12/2017	BCRP	BCRP
109	49B	27	4/30/2018	49B	49B
110	27	18	4/12/2017	FCRP	FCRP
110	18	-	2/21/2018	18	18
		81.7379			
111	27.96292501	76	4/12/2017	BCRP	BCRP
111	76	76	6/7/2017	76	76 76
111	76	-	2/26/2018		76
		81.7378			
112	27.96310999	-	4/12/2017	49B	49B
		81.7378			
113	27.96350403	-81.738	4/12/2017	68	68
114	27.96308803	48B	4/12/2017	48B	48B
114	48B	-	4/21/2017	48B	48B
		81.7379			
115	27.96322399	46B	4/12/2017	46B	46B
115	46B		3/30/2018	46B	46B

Table 2A (continued).

116	27.96326397	-	81.7382	4/12/2017	43B	43B
		-				
117	27.96292501	81.7379	4/12/2017	52B	52B	52B
117	52B	52B	4/26/2017	52B	52B	52B
118	33	33	4/12/2017	FCRP	FCRP	FCRP
119	46B	46B	4/14/2017	46B	46B	46B
120	44B	44B	4/14/2017	44B	44B	44B
121	44B	44B	4/24/2017	44B	44B	44B
121	44B	44B	5/20/2019	44B	44B	44B
121	43B	43B	4/14/2017	43B	43B	43B
122	53B	53B	4/14/2017	BCRP	BCRP	BCRP
123	60	60	4/14/2017	BCRP	BCRP	BCRP
124	53B	53B	7/7/2017	53B	53B	53B
124	46B	46B	1/26/2018	46B	46B	46B
124	53B	53B	4/14/2017	53B	53B	53B
125	47B	47B	4/14/2017	BCRP	BCRP	BCRP
126	76	76	2/16/2018	76	76	76 76
126	76	76	6/29/2018			76
126	47B	47B	4/14/2017	BCRP	BCRP	BCRP
127	43B	43B	4/14/2017	BCRP	BCRP	BCRP
128	79	79	4/14/2017	79	79	79 71
129	71	71	4/14/2017			71 65
130	65	65	4/14/2017			65 77
131	77	77	4/19/2017			77
131	45B	45B	4/23/2018	45B	45B	45B
131	72	72	4/14/2017	BCRP	BCRP	BCRP
132	46B	46B	4/19/2017	46B	46B	46B
132	54	54	4/14/2017	BCRP	BCRP	BCRP
133	65	65	4/14/2017	BCRP	BCRP	BCRP
134	47B	47B	4/14/2017	BCRP	BCRP	BCRP
135	73	73	4/14/2017	73	73	73
136	45B	45B	7/13/2018	45B	45B	45B
136	72	72	4/14/2017	BCRP	BCRP	BCRP
137	79	79	4/14/2017	79	79	79 77
138	77	77	4/17/2020			77
138	49B	49B	4/14/2017	NA	NA	NA
139	48B	48B	11/17/2017	48B	48B	48B
139	48B	48B	4/23/2018	48B	48B	48B
139	48B	48B	3/6/2020	48B	48B	48B
139	48B	48B	4/14/2017	48B	48B	48B
140	53B	53B	3/30/2018	53B	53B	53B
140	53B	53B	5/7/2018	53B	53B	53B
140	53B	53B	5/1/2019	53B	53B	53B
140	53B	53B	11/22/2019	53B	53B	53B

Table 2A (continued).

140	53B	53B	4/14/2017	53B	53B
141	25	25	11/20/2017	25	25 22
141	22	22	2/26/2018		22 22
141	22	22	4/23/2018		22 24
141	24	24	6/29/2018		24
141	7	7	4/14/2017	FCRP	FCRP
142	2	2	4/14/2017	FCRP	FCRP
143	15	15	11/16/2018	15	15 13
143	13	13	4/10/2020		13
143	12	12	4/14/2017	FCRP	FCRP
144	19	19	2/16/2018	19	19 19
144	19	19	7/6/2018		19
144	40	40	4/14/2017	FCRP	FCRP
145	38	38	3/30/2018	38	38 32
145	32	32	5/29/2017		32 31
145	31	31	4/14/2017		31 37
146	37	37	4/14/2017		37 21
147	21	21	9/11/2019		21 20
147	20	20	4/14/2017		20 14
148	14	14	2/26/2018		14 38
148	38	38	4/14/2017		38
149	43B	43B	9/22/2017	43B	43B
149	37	37	4/14/2017	FCRP	FCRP
150	13	13	3/6/2020	13	13 14
150	14	14	4/14/2017		14
151	14	14	4/17/2017	FCRP	FCRP
152	11	11	4/20/2018	11	11
152	7	7	4/14/2017	FCRP	FCRP
153	39	39	4/20/2018	39	39 39
153	39	39	4/8/2019		39
153	X11	X11	4/14/2017	X11	X11
154	39	39	2/23/2018	39	39 39
154	39	39	4/20/2018		39
154	X11	X11	4/14/2017	X11	X11
155	40	40	4/14/2017	40	40 23
155	23	23	7/15/2017		23 31
155	31	31	2/25/2020		31 23
156	23	23	4/14/2017		23 14
157	14	14	4/14/2017		14 18
158	18	18	5/1/2019		18 19
158	19	19	4/14/2017		19
159	23	23	4/14/2017	FCRP	FCRP
159	18	18	4/21/2017	18	18
160	35	35	4/14/2017	FCRP	FCRP
160	22	22	4/26/2017	22	22

Table 2A (continued).

161	5	5	4/14/2017	FCRP	FCRP
162	3	3	4/14/2017	FCRP	FCRP
162	15	15	7/7/2017	15	15 15
162	15	15	8/11/2017		15 15
162	15	15	12/11/2017		15 14
162	14	14	3/21/2018		14 14
162	14	14	4/4/2018		14 39
163	39	39	4/10/2020		39
163	42	42	4/14/2017	FCRP	FCRP
164	74	74	4/17/2017	74	74
165	46B	46B	8/23/2017	46B	46B
165	54	54	4/17/2017	BCRP	BCRP
166	NA	NA	4/17/2017	BCRP	BCRP
167	54	54	4/17/2017	BCRP	BCRP
168	59	59	4/20/2018	59	59 59
168	59	59	8/29/2018		59 59
168	59	59	4/17/2017		59
169	60	60	4/17/2017	BCRP	BCRP
170	61	61	4/17/2017	61	61 79
171	79	79	3/25/2019		79 79
171	79	79	4/10/2019		79 79
171	79	79	4/17/2017		79 66
172	66	66	2/26/2018		66 67
172	67	67	4/20/2018		67 66
172	66	66	4/27/2018		66 67
172	67	67	5/7/2018		67
172	67	67	4/17/2017	BCRP	BCRP
173	64	64	8/24/2018	64	64 64
173	64	64	11/16/2018		64 64
173	64	64	2/25/2019		64 64
173	64	64	4/17/2017		64 19
174	19	19	4/17/2017		19 41
175	41	41	5/31/2017		41
175	11	11	4/17/2017	FCRP	FCRP
176	11	11	4/17/2017	FCRP	FCRP
177	29	29	4/17/2017	FCRP	FCRP
178	40	40	4/17/2017	40	40 31
179	31	31	4/17/2017		31
180	17	17	4/17/2017	FCRP	FCRP
181	27	27	2/26/2018	27	27
181	41	41	4/17/2017	FCRP	FCRP
182	11	11	7/3/2017	11	11 11
182	11	11	3/30/2018		11 14
182	14	14	4/17/2017		14 11
183	11	11	4/17/2017		11

Table 2A (continued).

184	11	11	4/17/2017	FCRP	FCRP
185	21	21	4/17/2017	21	21
185	21	21	4/26/2017	21	21
185	18	18	10/16/2017	18	18
185	35	35	4/17/2020	35	35
186	60	60	4/19/2017	60	60
186	46B	46B	4/27/2018	46B	46B
187	52B	52B	4/19.2019	52B	52B
188	22	22	NA	FCRP	FCRP
188	22	22	4/23/2018	22	22
188	23	23	12/12/2018	23	23
188	43F	43F	10/25/2019	43F	43F
189	42	42	4/19/2017	NA	NA
190	17	17	4/19/2017	17	17
190	17	17	4/4/2018	17	17
191	24	24	NA	24	24
191	14	14	11/16/2018	14	14
192	77	77	4/19/2017	BCRP	BCRP
192	77	77	5/3/2017	77	77
193		54	4/21/2017	NA	NA
194	18	18	1/22/2018	18	18
194	6	6	NA	6	6
195		69	4/21/2017	NA	NA
196	43B	43B	4/21/2017	43B	43B
197	39	39	4/17/2019	39	39
197	41	41	4/21/2017	FCRP	FCRP
198		51B	4/21/2017	NA	NA
199		46B	4/21/2017	NA	NA
200	51B	51B	5/6/2019	51B	51B
200	51B	51B	4/21/2017	BCRP	BCRP
201		51B	4/21/2017	NA	NA
202	NA	58	4/21/2017	NA	NA
203	NA	62	4/21/2017	NA	NA
204	70	70	4/21/2017	70	70
204	77	77	6/2/2017	77	77
205	77	77	4/21/2017	BCRP	BCRP
205	76	76	7/7/2017	76	76
205	76	76	8/21/2017	76	76
206	53B	53B	4/21/2017	BCRP	BCRP
206	65	65	10/16/2017	65	65
207	5	5	4/24/2017	FCRP	FCRP
207	26	26	4/11/2018	26	26
208	16	16	4/24/2017	16	16
208	16	16	8/18/2017	16	16
208	30	30	8/21/2019	30	30

Table 2A (continued).

209	NA	16	4/24/2017	NA	NA
210	NA	45B	4/24/2017	NA	NA
211	57	57	4/26/2017	BCRP	BCRP
211	46B	46B	9/19/2017	46B	46B
212	NA	45B	4/26/2017	NA	NA
213	NA	29	4/26/2017	NA	NA
214	49B	49B	4/24/2019	49B	49B
214	58	58	4/26/2017	BCRP	BCRP
215	NA	23	4/26/2017	NA	NA
216	NA	56	4/29/2017	NA	NA
217	NA	62	5/1/2017	NA	NA
218	NA	22	5/3/2017	NA	NA
219	NA	15	5/3/2017	NA	NA
220	NA	19	5/19/2017	NA	NA
221	NA	7	5/19/2017	NA	NA
222	NA	18	5/22/2017	NA	NA
223	18	18	5/22/2017	18	18
223	18	18	5/31/2017	18	18
224	4	4	5/24/2017	4	4
225	37	37	5/24/2017	FCRP	FCRP
225	14	14	4/20/2018	14	14
226	47B	47B	5/24/2017	BCRP	BCRP
227	78	78	5/29/2017	78	78
228	32	32	5/29/2017	FCRP	FCRP
229	60	60	5/29/2017	BCRP	BCRP
229	76	76	8/14/2017	76	76
229	76	76	3/26/2018	76	76
229	76	76	3/28/2018	76	76
230	63	63	5/31/2017	BCRP	BCRP
231	23	23	6/2/2017	FCRP	FCRP
231	19	19	7/15/2017	19	19
231	28	28	3/30/2018	28	28
232	25	25	6/2/2017	25	25
233	63	63	6/2/2017	63	63
233	64	64	3/30/2018	64	64
233	64	64	5/7/2018	64	64
234	11	11	6/2/2017	11	11
235	35	35	6/2/2017	FCRP	FCRP
236	70	70	6/5/2017	70	70
237	66	66	6/5/2017	BCRP	BCRP
237	63	63	10/16/2017	63	63
237	64	64	11/15/2017	64	64
238	40	40	6/5/2017	FCRP	FCRP
239	35	35	6/9/2017	FCRP	FCRP
240	17	17	6/12/2017	FCRP	FCRP

Table 2A (continued).

240	12	12	11/13/2017	12	12
240	7	7	4/10/2020	7	7
241	62	62	6/12/2017	BCRP	BCRP
241	47B	47B	8/22/2017	47B	47B 9
242	9	9	6/14/2017		9
242	9	9	4/24/2020	9	9
243	10	10	6/14/2017	FCRP	FCRP
243	16	16	10/16/2017	16	16 17
243	17	17	3/26/2018		17 17
243	17	17	3/30/2018		17 17
244	17	17	6/14/2017		17 21
245	21	21	6/30/2017		21
246	37	37	6/30/2017	FCRP	FCRP
247	76	76	9/20/2017	76	76 76
247	76	76	7/4/2017		76 19
249	19	19	7/13/2017		19
249	10	10	7/4/2017	FCRP	FCRP
250	47B	47B	7/7/2017	47B	47B
251	43B	43B	7/7/2017	BCRP	BCRP
252	56	56	7/7/2017	56	56
253	78	78	7/7/2017	BCRP	BCRP
254	74	74	7/7/2017	74	74 66
255	66	66	7/7/2017		66
256	60	60	7/7/2017	BCRP	BCRP
257	62	62	7/7/2017	BCRP	BCRP
258	56	56	7/7/2017	BCRP	BCRP
259	75	75	7/7/2017	75	75
260	30	30	7/7/2017	FCRP	FCRP
261	7	7	7/7/2017	FCRP	FCRP
262	37	37	7/7/2017	37	37 37
262	37	37	1/22/2018		37 29
263	29	29	12/11/2017		29 29
263	29	29	3/21/2018		29 29
263	29	29	3/21/2018		29 29
263	29	29	7/12/2017		29
264	13	13	7/12/2017	FCRP	FCRP
265	18	18	7/12/2017	18	18 66
266	66	66	7/12/2017		66
267	67	67	7/12/2017	BCRP	BCRP
268	61	61	7/12/2017	61	61
269	2	2	7/14/2017	2	2
270	24	24	7/14/2017	FCRP	FCRP
270	18	18	1/22/2018	18	18 18
270	18	18	4/20/2018		18
271	16	16	7/14/2017	FCRP	FCRP

Table 2A (continued).

272	2	2	7/14/2017	2	2
273	24	24	7/14/2017	FCRP	FCRP
274	3	3	7/14/2017	3	3
275	19	19	7/14/2017	FCRP	FCRP
276	54	54	7/14/2017	BCRP	BCRP
277	49B	49B	7/14/2017	BCRP	BCRP
278	4	4	7/14/2017	FCRP	FCRP
279	43B	43B	7/14/2017	43B	43B
280	19	19	7/14/2017	19	19
281	10	10	7/14/2017	FCRP	FCRP
282	19	19	6/22/2018	19	19 19
282	19	19	4/17/2019		19 19
282	19	19	7/15/2017		19
283	12	12	7/15/2017	FCRP	FCRP
284	54	54	7/15/2017	BCRP	BCRP
285	43B	43B	7/15/2017	43B	43B
286	73	73	7/15/2017	73	73
287	69	69	7/15/2017	BCRP	BCRP
288	77	77	7/15/2017	BCRP	BCRP
289	53B	53B	7/15/2017	BCRP	BCRP
290	6	6	7/15/2017	6	6
291	10	10	7/15/2017	FCRP	FCRP
291	10	10	4/11/2018	10	10 19
292	19	19	7/15/2017		19
293	55	55	7/15/2017	BCRP	BCRP
294	40	40	7/15/2017	FCRP	FCRP
294	18	18	8/11/2017	18	18 18
294	18	18	8/18/2017		18 59
295	59	59	7/15/2017		59
296	80	80	7/15/2017	BCRP	BCRP
297	26	26	7/15/2017	FCRP	FCRP
298	26	26	7/15/2017	FCRP	FCRP
299	67	67	7/15/2017	67	67 12
300	12	12	7/15/2017		12
301	28	28	8/11/2017		
302	3	3	8/11/2017	3	3
303	12	12	8/11/2017	12	12
303	12	12	8/18/2017	12	12
304	18	18	4/11/2018	18	18
304	10	10	8/11/2017	FCRP	FCRP
305	8	8	8/11/2017		
306	5	5	8/11/2017		
307	43B	43B	8/11/2017	BCRP	BCRP
307	49B	49B	8/23/2017	49B	49B
308	26	26	8/11/2017		

Table 2A (continued).

309	22	22	8/11/2017		
310	36	36	8/11/2017	36	36
311	36	36	8/11/2017	36	36
312	49B	49B	8/11/2017	49B	49B
313	55	55	8/11/2017		
314	49B	49B	8/16/2017	49B	49B
314	74	74	8/11/2017	74	74
315	44B	44B	8/11/2017	44B	44B
316	2	2	8/11/2017	2	2
317	75	75	8/11/2017		
318	77	77	8/14/2017		
319	44B	44B	3/6/2020	44B	44B
319	44B	44B	8/14/2017	44B	44B
320	50B	50B	8/14/2017	50B	50B
321	65	65	8/14/2017	65	65
322	24	24	4/20/2018	24	24
322	24	24	4/22/2019	24	24
322	30	30	8/16/2017	30	30
323	24	24	8/16/2017		
324	60	60	8/16/2017	60	60
325	37	37	8/16/2017		
326	46B	46B	8/23/2017	46B	46B
326	77	77	8/16/2017	77	77 21
327	21	21	8/18/2017		21 18
328	18	18	10/16/2017		18
328	1	1	8/18/2017	FCRP	FCRP
329	7	7	8/18/2017	FCRP	FCRP
330	15	15	8/18/2017	FCRP	FCRP
331	78	78	8/18/2017	BCRP	BCRP
332	18	18	8/18/2017	18	18
333	80	80	8/18/2017	BCRP	BCRP
334	74	74	8/18/2017	BCRP	BCRP
335	68	68	8/18/2017	68	68 55
336	55	55	12/14/2018		55 55
336	55	55	8/18/2017		55 78
337	78	78	8/18/2017		78
338	45B	45B	8/18/2017	BCRP	BCRP
339	74	74	8/18/2017	BCRP	BCRP
340	69	69	8/18/2017	69	69 59
341	59	59	2/16/2018		59 61
341	61	61	8/18/2017		61 36
342	36	36	5/4/2018		36
342	32	32	8/23/2017	FCRP	FCRP
343	18	18	9/22/2017	18	18
343	29	29	8/23/2017	FCRP	FCRP

Table 2A (continued).

344	50B	50B	4/6/2018	50B	50B
344	50B	50B	8/23/2017	50B	50B
345	34	34	8/23/2017	34	34
346	27	27	8/23/2017	FCRP	FCRP
347	34	34	8/23/2017	34	34
348	66	66	5/11/2018	66	66
348	50B	50B	8/23/2017	BCRP	BCRP
349	61	61	8/23/2017		
350	12	12	9/22/2017	FCRP	FCRP
351	28	28	9/22/2017	FCRP	FCRP
352	12	12	9/22/2017	12	12
353	18	18	9/22/2017	FCRP	FCRP
354	24	24	4/17/2020	24	24
354	25	25	9/26/2017	FCRP	FCRP
355	NA	68	8/18/2017	FCRP	FCRP
356	22	22	4/6/2018	22	22
356	12	12	9/26/2017	12	12
357	51B	51B	9/26/2017	NA-D	NA-D
358	50B	50B	9/26/2017	BCRP	BCRP
359	48B	48B	9/26/2017	48B	48B
360	37	37	9/29/2017	37	37
361	24	24	9/29/2017	FCRP	FCRP
362	22	22	9/29/2017	22	22
363	41	41	9/29/2017	FCRP	FCRP
364	40	40	10/2/2017	40	40
365	16	16	10/2/2017	16	16
366	40	40	10/2/2017	FCRP	FCRP
367	9	9	10/2/2017	FCRP	FCRP
368	66	66	10/2/2017	BCRP	BCRP
369	36	36	10/2/2017	36	36
370	18	18	4/6/2018	18	18
370	28	28	4/20/2018	28	28
370	18	18	5/7/2018	18	18
370	29	29	10/2/2017	FCRP	FCRP
371	78	78	1/22/2018	78	78
371	78	78	10/4/2017	78	78
372			10/4/2017	BCRP	BCRP
373	16	16	10/6/2017	16	16
374	41	41	10/13/2017	41	41
374	30	30	10/6/2017	FCRP	FCRP
375	64	64	10/6/2017	BCRP	BCRP
376	69	69	10/13/2017	BCRP	BCRP
377	13	13	3/30/2018	13	13
377	7	7	4/11/2018	7	7
377	7	7	10/13/2017	7	7

Table 2A (continued).

378	23	23	4/20/2018	23	23 24
378	24	24	10/26/2018		24 23
378	23	23	10/13/2017		23 10
379	10	10	10/13/2017		10 66
380	66	66	10/13/2017		66
381	43B	43B	10/16/2017	BCRP	BCRP
382	72	72	10/16/2017	72	72
383	46B	46B	10/18/2017	46B	46B
384	68	68	10/18/2017	BCRP	BCRP
385	40	40	11/10/2017	40	40
386	63	63	11/15/2017	BCRP	BCRP
387	2	2	11/15/2017	FCRP	FCRP
388	66	66	11/17/2017	BCRP	BCRP
388	66	66	3/30/2018	66	66 66
388	66	66	4/13/2018		66 66
388	66	66	4/23/2018		66 64
389	64	64	11/17/2017		64
390	7	7	4/24/2019	7	7
390	11	11	4/17/2020	11	
390	11	11	11/20/2017	11	11
391	4	4	11/20/2017	FCRP	FCRP
391	18	18	12/13/2017	18	18 18
391	18	18	2/23/2018		18 75
392	75	75	5/2/2018		75
392	67	67	11/20/2017	BCRP	BCRP
393	61	61	7/13/2018	61	61
393	55	55	11/22/2017	BCRP	BCRP
394	44B	44B	12/8/2017	BCRP	BCRP
395	69	69	12/8/2017	69	69
396	9	9	12/11/2017	9	9
397	8	8	12/11/2017	FCRP	FCRP
398	80	80	4/15/2019	80	80 78
398	78	78	12/11/2017		78
399	57	57	12/11/2017	BCRP	BCRP
400	41	41	12/11/2017	FCRP	FCRP
401	39	39	1/26/2018	39	39 31
402	31	31	2/16/2018		31 31
402	31	31	2/26/2018		31 31
402	31	31	4/20/2018		31 30
403	30	30	2/16/2018		30 30
403	30	30	11/25/2019		30
404	46B	46B	2/16/2018	46B	46B
404	47B	47B	4/4/2018	47B	47B
404	77	77	5/14/2018	77	77 79
405	79	79	2/16/2018		79

Table 2A (continued).

406	78	78	2/16/2018	78	78
406	78	78	3/30/2018	78	78
407	72	72	2/16/2018	72	72
408	27	27	2/19/2018	27	27
409	71	71	2/19/2018	71	71
409	71	71	4/17/2020	71	71
410	41	41	2/19/2018	41	41
411	38	38	2/19/2018	38	38
412	13	13	2/19/2018	13	13
413	27	27	2/19/2018	27	27
414	31	31	2/23/2018	31	31
414	31	31	7/13/2018	31	31
415	30	30	2/23/2018	30	30
416	37	37	2/26/2018	37	37
417	20	20	2/26/2018	20	20
418	10	10	2/26/2018	10	10
418	6	6	4/24/2018	6	6
419	25	25	2/26/2018	25	25
420	63	63	2/26/2018	63	63
420	67	67	4/13/2018	67	67
421	64	64	2/26/2018	64	64
421	64	64	3/30/2018	64	64
422	22	22	3/23/2018	22	22
422	22	22	4/11/2018	22	22
422	22	22	4/20/2018	22	22
422	22	22	9/11/2018	22	22
423	21	21	3/23/2018	21	21
423	19	19	4/15/2020	19	19
424	61	61	3/23/2018	61	61
424	61	61	3/30/2018	61	61
424	61	61	4/20/2018	61	61
424	61	61	6/29/2018	61	61
424	61	61	10/26/2018	61	61
425	46B	46B	3/23/2018	46B	46B
426	82	82	3/28/2018	82	82
426	82	82	4/23/2018	82	82
426	80	80	2/25/2020	80	80
427	55	55	3/23/2018	55	55
427	55	55	4/20/2018	55	55
428	52F	52F	3/23/2018	52F	52F
428	52F	52F	9/26/2018	52F	52F
429	12	12	3/28/2018	12	12
429	12	12	4/11/2018	12	12
429	23	23	12/12/2018	23	23
430	58	58	3/28/2018	58	58

Table 2A (continued).

431	82	82	3/28/2018	82	82
432	43F	43F	3/28/2018	43F	43F
432	43F	43F	4/20/2018	43F	43F
432	43F	43F	9/26/2018	43F	43F
433	18	18	3/28/2018	18	18
433	18	18	4/20/2018	18	18
434	83	83	3/28/2018	83	83
434	83	83	5/11/2018	83	83
434	83	83	4/17/2020	83	83
435	31	31	3/30/2018	31	31
436	19	19	5/11/2018	19	19
436	19	19	3/30/2018	19	19
437	38	38	3/30/2018	38	38
438	49B	49B	4/11/2018	49B	49B
438	53B	53B	3/30/2018	53B	53B
439	75	75	3/30/2018	75	75
440	63	63	3/30/2018	63	63
441	32	32	3/30/2018	32	32
441	43F	43F	10/19/2018	43F	43F
442	72	72	4/6/2018	72	72
442	71	71	3/30/2018	71	71
443	66	66	10/25/2019	66	66
443	66	66	11/22/2019	66	66
443	52B	52B	3/30/2018	52B	52B
444	83	83	4/16/2018	83	83
444	83	83	7/6/2018	83	83
444	83	83	3/30/2018	83	83
445	11	11	3/30/2018	11	11
446	49B	49B	3/30/2018	49B	49B
447	13	13	4/17/2019	13	13
447	13	13	4/2/2018	13	13
448	53F	53F	5/2/2018	53F	53F
448	53F	53F	4/2/2018	53F	53F
449	8	8	4/20/2018	8	8
449	9	9	10/22/2018	9	9
449	10	10	4/2/2018	10	10
450	16	16	4/11/2018	16	16
450	15	15	4/2/2018	15	15
451	73	73	5/15/2018	73	73
451	73	73	7/13/2018	73	73
451	73	73	4/2/2018	73	73
452	9	9	4/2/2018	9	9
453	43F	43F	4/4/2018	43F	43F
454	68	68	4/20/2018	68	68
454	69	69	4/4/2018	69	69

Table 2A (continued).

455	47B	47B	4/17/2020	47B	47B
455	47B	47B	4/4/2018	47B	47B
456	8	8	4/4/2018	8	8
457	96	96	4/4/2018	96	96
458	51F	51F	4/19/2019	51F	51F
458	48F	48F	4/4/2018	48F	48F
459	33	33	4/4/2018	33	33
460	51F	51F	4/4/2018	51F	51F
461	45F	45F	4/4/2018	45F	45F
462	17	17	4/4/2018	17	17
463	33	33	4/4/2018	33	33
464	25	25	4/9/2018	25	25
465	8	8	4/9/2018	8	8
465	8	8	5/1/2019	8	8
466	43B	43B	4/9/2018	43B	43B
466	43B	43B	9/26/2018	43B	43B
466	44B	44B	10/26/2018	44B	44B
467	95	95	4/9/2018	95	95
468	60	60	4/9/2018	60	60
469	75	75	4/9/2018	75	75
470	68	68	4/9/2018	68	68
471	51B	51B	4/9/2018	51B	51B
472	59	59	4/9/2018	59	59
473	55	55	4/9/2018	55	55
474	25	25	4/9/2018	25	25
475	32	32	4/9/2018	32	32
475	33	33	4/8/2019	33	33
476	60	60	4/9/2018	60	60
476	61	61	4/20/2018	61	61
477	1	1	4/9/2018	1	1
478	8	8	4/9/2018	8	8
479	12	12	4/9/2018	12	12
479	12	12	4/27/2018	12	12
480	4	4	4/9/2018	4	4
481	20	20	4/9/2018	20	20
482	79	79	4/9/2018	79	79
482	79	79	10/26/2018	79	79
483	3	3	4/9/2018	3	3
484	97	97	4/9/2018	97	97
484	97	97	2/25/2019	97	97
485	77	77	4/11/2018	77	77
486	2	2	4/11/2018	2	2
487	10	10	4/11/2018	10	10
488	35	35	4/11/2018	35	35
489	29	29	4/11/2018	29	29

Table 2A (continued).

490	2	2	4/11/2018	2	2
491	19	19	4/11/2018	19	19
492	44F	44F	4/11/2018	44F	44F
492	44F	44F	4/20/2018	44F	44F
492	44F	44F	4/5/2019	44F	44F
493	44F	44F	4/11/2018	44F	44F
494	65	65	4/11/2018	65	65
494	65	65	4/17/2019	65	65
495	74	74	4/11/2018	74	74
495	74	74	5/7/2018	74	74
496	58	58	4/11/2018	58	58
497	73	73	4/11/2018	73	73
497	80	80	3/22/2019	80	80
498	20	20	4/11/2018	20	20
499	73	73	4/11/2018	73	73
500	63	63	4/11/2018	63	63
500	51B	51B	5/9/2018	51B	51B
501	48B	48B	4/11/2018	48B	48B
501	48B	48B	4/20/2018	48B	48B
502	43B	43B	4/11/2018	43B	43B
502	54B	54B	4/17/2019	54B	54B
503	61	61	4/11/2018	61	61
503	62	62	4/30/2018	62	62
503	62	62	6/22/2018	62	62
503	60	60	5/1/2019	60	60
504	45B	45B	4/11/2018	45B	45B
505	35	35	4/11/2018	35	35
506	82	82	4/11/2018	82	82
507	49B	49B	4/11/2018	49B	49B
508	48F	48F	4/11/2018	48F	48F
509	63	63	4/11/2018	63	63
510	7	7	4/11/2018	7	7
510	11	11	5/3/2019	11	11
511	77	77	4/13/2018	77	77
511	44B	44B	4/24/2019	44B	44B
512	62	62	4/13/2018	62	62
512	62	62	4/17/2019	62	62
513	45B	45B	4/13/2018	45B	45B
514	84	84	4/13/2018	84	84
515	29	29	4/13/2018	29	29
515	30	30	4/15/2020	30	30
516	45B	45B	4/13/2018	45B	45B
517	45B	45B	4/13/2018	45B	45B
518	58	58	4/13/2018	58	58
519	45B	45B	4/13/2018	45B	45B

Table 2A (continued).

520	74	74	4/13/2018	74	74
520	74	74	4/27/2018	74	74
520	74	74	4/24/2019	74	74
521	74	74	4/13/2018	74	74
522	7	7	4/13/2018	7	7
522	5	5	5/3/2019	5	5
523	44B	44B	4/13/2018	44B	44B
523	44B	44B	5/6/2019	44B	44B
524	86	86	4/13/2018	86	86
525	80	80	4/13/2018	80	80
526	80	80	4/13/2018	80	80
527	72	72	4/13/2018	72	72
528	62	62	4/13/2018	62	62
529	53F	53F	4/16/2018	53F	53F
530	62	62	4/16/2018	62	62
531	84	84	4/16/2018	84	84
531	84	84	4/30/2018	84	84
532	45F	45F	4/16/2018	45F	45F
533	42	42	4/16/2018	42	42
534	53F	53F	4/16/2018	53F	53F
535	51F	51F	4/16/2018	51F	51F
535	50F	50F	5/6/2019	50F	50F
536	46B	46B	4/16/2018	46B	46B
537	80	80	4/16/2018	80	80
538	42	42	4/16/2018	42	42
539	52B	52B	4/16/2018	52B	52B
540	37	37	4/16/2018	37	37
541	33	33	4/16/2018	33	33
542	43F	43F	4/16/2018	43F	43F
543	78	78	4/20/2018	78	78
544	69	69	4/20/2018	69	69
545	43F	43F	4/20/2018	43F	43F
545	43F	43F	5/6/2019	43F	43F
546	33	33	4/20/2018	33	33
547	79	79	4/20/2018	79	79
547	87	87	4/10/2020	87	87
548	51B	51B	4/20/2018	51B	51B
548	51B	51B	4/19/2019	51B	51B
549	51F	51F	4/20/2018	51F	51F
550	43F	43F	4/20/2018	43F	43F
551	14	14	4/20/2018	14	14
552	28	28	4/20/2018	28	28
552	27	27	4/27/2018	27	27
552	28	28	5/16/2018	28	28
553	64	64	4/20/2018	64	64

Table 2A (continued).

554	76	76	4/20/2018	76	76
555	14	14	4/20/2018	14	14
555	13	13	4/17/2019	13	13
555	13	13	4/10/2020	13	13
555	13	13	4/24/2020	13	13
556	6	6	4/20/2018	6	6
557	30	30	4/20/2018	30	30
558	45F	45F	4/20/2018	45F	45F
559	52F	52F	4/20/2018	52F	52F
560	53F	53F	4/20/2018	53F	53F
561	51F	51F	4/20/2018	51F	51F
562	81	81	4/20/2018	81	81
563	63	63	4/20/2018	63	63
563	63	63	4/10/2019	63	63
564	63	63	4/20/2018	63	63
565	76	76	4/20/2018	76	76
566	71	71	4/20/2018	71	71
567	53B	53B	4/20/2018	53B	53B
567	49B	49B	6/22/2018	49B	49B
567	52B	52B	5/1/2019	52B	52B
568	85	85	4/20/2018	85	85
569	82	82	4/20/2018	82	82
569	82	82	5/7/2018	82	82
570	41	41	4/20/2018	41	41
570	17	17	6/22/2018	17	17
570	17	17	6/29/2018	17	17
571	50B	50B	4/20/2018	50B	50B
572	61	61	4/20/2018	61	61
573	32	32	4/20/2018	32	32
573	35	35	4/5/2019	35	35
574	47F	47F	4/20/2018	47F	47F
575	51	51	4/20/2018	51	51
576	96	96	4/20/2018	96	96
577	51B	51B	4/20/2018	51B	51B
578	83	83	4/20/2018	83	83
579	76	76	4/20/2018	76	76
580	71	71	4/23/2018	71	71
581	19	19	4/23/2018	19	19
581	18	18	4/24/2019	18	18
582	54B	54B	4/23/2018	54B	54B
583	95	95	4/23/2018	95	95
584	36	36	4/23/2018	36	36
585	95	95	4/23/2018	95	95
586	43B	43B	4/23/2018	43B	43B
587	50B	50B	4/23/2018	50B	50B

Table 2A (continued).

587	50B	50B	5/2/2018	50B	50B
588	16	16	4/23/2018	16	16
588	16	16	4/5/2018	16	16
589	16	16	4/23/2018	16	16
590	71	71	4/23/2018	71	71
590	75	75	6/20/2018	75	75
591	52F	52F	4/23/2018	52F	52F
592	16	16	4/23/2018	16	16
592	14	14	4/17/2019	14	14
593	4	4	4/27/2018	4	4
594	61	61	4/27/2018	61	61
595	30	30	4/27/2018	30	30
596	29	29	4/27/2018	29	29
597	74	74	5/1/2019	74	74
597	74	74	4/27/2018	74	74
598	47B	47B	4/27/2018	47B	47B
599	97	97	4/27/2018	97	97
600	97	97	4/27/2018	97	97
601	20	20	4/27/2018	20	20
602	73	73	4/27/2018	73	73
603	29	29	4/27/2018	29	29
604	61	61	4/27/2018	61	61
605	97	97	4/27/2018	97	97
606	68	68	4/27/2018	68	68
607	44B	44B	4/27/2018	44B	44B
608	27	27	4/27/2018	27	27
609	84	84	4/27/2018	84	84
610	47B	47B	4/27/2018	47B	47B
611	57	57	4/27/2018	57	57
612	51B	51B	4/27/2018	51B	51B
613	93	93	4/27/2018	93	93
614	85	85	5/1/2019	85	85
614	85	85	5/2/2018	85	85
615	50F	50F	5/2/2018	50F	50F
616	93	93	5/2/2018	93	93
617	50F	50F	5/7/2018	50F	50F
618	81	81	5/7/2018	81	81
619	52F	52F	6/29/2018	52F	52F
619	52F	52F	5/7/2018	52F	52F
620	96	96	5/7/2018	96	96
621	16	16	5/7/2018	16	16
622	87	87	5/11/2018	87	87
623	75	75	5/11/2018	75	75
624	50F	50F	5/11/2018	50F	50F
625	32	32	9/13/2019	32	32

Table 2A (continued).

625	32	32	5/14/2018	32	32
626	30	30	8/29/2018	30	30
626	30	30	5/14/2018	30	30
627	39	39	5/16/2018	39	39
628	34	34	5/16/2018	34	34
629	83	83	6/22/2018	83	83
630	75	75	6/22/2018	75	75
631	53B	53B	5/1/2019	53B	53B
631	53B	53B	6/25/2018	53B	53B
632	81	81	6/25/2018	81	81
633	46F	46F	6/25/2018	46F	46F
634	50F	50F	6/25/2018	50F	50F
635	37	37	6/25/2018	37	37
636	52F	52F	5/3/2019	52F	52F
636	52F	52F	6/29/2018	52F	52F
637	68	68	6/29/2018	68	68
638	81	81	6/29/2018	81	81
639	45B	45B	6/29/2018	45B	45B
640	45B	45B	7/2/2018	45B	45B
641	45B	45B	7/2/2018	45B	45B
642	6	6	7/6/2018	6	6
643	65	65	7/6/2018	65	65
644	43B	43B	7/6/2018	43B	43B
645	63	63	7/6/2018	63	63
646	70	70	7/6/2018	70	70
647	85	85	11/9/2018	85	85
647	85	85	7/6/2018	85	85
648	45F	45F	7/6/2018	45F	45F
649	38	38	7/6/2018	38	38
650	44F	44F	7/6/2018	44F	44F
651	8	8	7/9/2018	8	8
652	6	6	7/9/2018	6	6
653	13	13	7/9/2018	13	13
654	69	69	7/9/2018	69	69
655	75	75	7/13/2018	75	75
656	31	31	7/13/2018	31	31
657	49F	49F	7/13/2018	49F	49F
658	31	31	7/13/2018	31	31
659	1	1	7/13/2018	1	1
660	18	18	7/13/2018	18	18
661	31	31	7/13/2018	31	31
662	43F	43F	7/13/2018	43F	43F
663	82	82	7/13/2018	82	82
664	64	64	8/24/2018	64	64
664	64	64	7/13/2018	64	64

Table 2A (continued).

665	18	18	1/11/2018	18	18
665	26	26	7/16/2018	26	26
666	46F	46F	7/16/2018	46F	46F
667	26	26	7/16/2018	26	26
668	15	15	7/16/2018	15	15
669	51F	51F	7/16/2018	51F	51F
670	76	76	7/16/2018	76	76
671	2	2	7/16/2018	2	2
672	47F	47F	7/16/2018	47F	47F
673	85	85	11/17/2018	85	85
673	85	85	7/16/2018	85	85
674	83	83	7/16/2018	83	83
675	64	64	7/16/2018	64	64
676	72	72	7/16/2018	72	72
677	12	12	7/16/2018	12	12
678	93	93	7/16/2018	93	93
679	58	58	7/16/2018	58	58
680	83	83	8/24/2018	83	83
681	53F	53F	10/29/2018	53F	53F
681	53F	53F	8/24/2018	53F	53F
682	81	81	8/24/2018	81	81
683	32	32	8/24/2018	32	32
684	9	9	8/24/2018	9	9
685	38	38	8/24/2018	38	38
686	33	33	8/24/2018	33	33
687	44F	44F	4/8/2019	44F	44F
687	9	9	8/28/2018	9	9
688	66	66	5/10/2019	66	66
688	66	66	10/28/2019	66	66
688	66	66	8/28/2018	66	66
689	95	95	11/22/2019	95	95
689	95	95	4/24/2020	95	95
689	95	95	8/28/2018	95	95
690	60	60	10/26/2018	60	60
690	52B	52B	8/28/2018	52B	52B
691	9	9	8/28/2018	9	9
692	72	72	8/28/2018	72	72
693	52F	52F	8/28/2018	52F	52F
694	78	78	8/28/2018	78	78
695	40	40	9/5/2018	40	40
696	87	87	9/5/2018	87	87
697	69	69	9/5/2018	69	69
698	47B	47B	9/5/2018	47B	47B
699	97	97	9/5/2018	97	97
700	7	7	9/17/2018	7	7

Table 2A (continued).

701	47F	47F	9/26/2018	47F	47F
702	52F	52F	9/26/2018	52F	52F
703	44F	44F	9/26/2018	44F	44F
704	63	63	11/16/2018	63	63
704	46B	46B	9/26/2018	46B	46B
705	32	32	5/3/2019	32	32
705	32	32	9/26/2018	32	32
706	44F	44F	9/26/2018	44F	44F
707	14	14	10/26/2018	14	14
707	14	14	9/26/2018	14	14
708	61	61	9/26/2018	61	61
709	55	55	9/26/2018	55	55
710	36	36	9/13/2019	36	36
710	36	36	9/26/2018	36	36
711	53B	53B	9/28/2018	53B	53B
712	53B	53B	9/28/2018	53B	53B
713	17	17	9/28/2018	17	17
714	16	16	10/1/2018	16	16
715	47B	47B	10/22/2018	47B	47B
716	53B	53B	10/22/2018	53B	53B
717	51F	51F	10/22/2018	51F	51F
718	59	59	10/22/2018	59	59
718	59	59	1/9/2019	59	59
719	12	12	10/22/2018	12	12
719	12	12	8/8/2018	12	12
720	44B	44B	10/22/2018	44B	44B
720	44B	44B	10/29/2018	44B	44B
721	63	63	10/22/2018	63	63
722	51B	51B	10/22/2018	51B	51B
723	37	37	10/22/2018	37	37
724	15	15	10/22/2018	15	15
725	51F	51F	10/22/2018	51F	51F
726	17	17	10/24/2018	17	17
727	84	84	4/24/2019	84	84
727	84	84	10/24/2018	84	84
728	32	32	10/29/2018	32	32
729	17	17	4/17/2019	17	17
729	15	15	9/13/2019	15	15
729	17	17	10/29/2018	17	17
730	14	14	10/29/2018	14	14
731	17	17	10/29/2018	17	17
732	53F	53F	10/29/2018	53F	53F
733	25	25	10/29/2018	25	25
733	44F	44F	4/10/2020	44F	44F
734	83	83	4/24/2019	83	83

Table 2A (continued).

734	83	83	10/29/2018	83	83
735	31	31	2/25/2020	31	31
735	35	35	11/17/2018	35	35
736	81	81	11/17/2018	81	81
737	53B	53B	11/17/2018	53B	53B
738	48B	48B	11/17/2018	48B	48B
739	6	6	11/17/2018	6	6
740	84	84	4/15/2020	84	84
740	85	85	11/17/2018	85	85
741	47F	47F	11/17/2018	47F	47F
742	47F	47F	12/12/2018	47F	47F
743	14	14	9/13/2019	14	14
743	9	9	1/11/2019	9	9
744	86	86	1/11/2019	86	86
744	86	86	1/23/2019	86	86
745	89	89	1/13/2019	89	89
746	45F	45F	1/13/2019	45F	45F
747	43B	43B	1/16/2019	43B	43B
747	43B	43B	2/22/2019	43B	43B
748	53B	53B	1/16/2019	53B	53B
749	97	97	1/23/2019	97	97
750	58	58	2/25/2019	58	58
751	96	96	2/25/2019	96	96
752	38	38	2/25/2019	38	38
753	67	67	2/27/2019	67	67
754	80	80	3/22/2019	80	80
755	84	84	4/8/2019	84	84
756	13	13	4/8/2019	13	13
757	61	61	4/8/2019	61	61
758	63	63	4/8/2019	63	63
759	96	96	4/8/2019	96	96
760	75	75	4/8/2019	75	75
761	47F	47F	4/8/2019	47F	47F
762	63	63	4/8/2019	63	63
763	11	11	4/8/2019	11	11
764	31	31	4/8/2019	31	31
764	34	34	9/11/2019	34	34
765	47B	47B	4/17/2020	47B	47B
765	47B	47B	4/8/2019	47B	47B
766	51B	51B	4/17/2019	51B	51B
767	51B	51B	4/17/2019	51B	51B
768	68	68	4/17/2019	68	68
769	90	90	4/17/2019	90	90
770	16	16	4/17/2019	16	16
771	16	16	4/17/2019	16	16

Table 2A (continued).

771	16	16	4/24/2019	16	16
772	35	35	4/17/2019	35	35
773	48F	48F	4/17/2019	48F	48F
774	37	37	4/17/2019	37	37
775	4	4	4/17/2019	4	4
776	57	57	4/24/2019	57	57
777	47F	47F	4/24/2019	47F	47F
778	80	80	5/6/2019	80	80
778	80	80	4/24/2019	80	80
779	44F	44F	4/24/2019	44F	44F
780	50B	50B	4/24/2019	50B	50B
781	45F	45F	5/1/2019	45F	45F
782	49B	49B	5/1/2019	49B	49B
783	63	63	5/1/2019	63	63
784	66	66	5/1/2019	66	66
785	44	44	5/1/2019	44	44
786	81	81	5/1/2019	81	81
787	87	87	5/1/2019	87	87
788	66	66	5/1/2019	66	66
789	63	63	5/1/2019	63	63
790	51F	51F	5/1/2019	51F	51F
791	22	22	5/1/2019	22	22
792	77	77	5/6/2019	77	77
792	77	77	5/1/2019	77	77
793	41	41	5/1/2019	41	41
794	95	95	5/3/2019	95	95
795	68	68	5/3/2019	68	68
796	8	8	5/3/2019	8	8
797	31	31	5/3/2019	31	31
798	15	15	2/25/2020	15	15
798	14	14	5/3/2019	14	14
799	11	11	5/3/2019	11	11
800	91	91	5/3/2019	91	91
801	58	58	5/3/2019	58	58
802	55	55	5/3/2019	55	55
803	46F	46F	5/6/2019	46F	46F
804	6	6	5/6/2019	6	6
805	5	5	5/10/2019	5	5
806	55	55	5/10/2019	55	55
807	58	58	5/20/2019	58	58
807	58	58	5/13/2019	58	58
808	43B	43B	5/17/2019	43B	43B
809	52F	52F	5/18/2019	52F	52F
810	44F	44F	6/24/2019	44F	44F
811	11	11	6/24/2019	11	11

Table 2A (continued).

812	44F	44F	6/28/2019	44F	44F
813	32	32	6/28/2019	32	32
814	42	42	7/15/2019	42	42
815	81	81	7/15/2019	81	81
815	81	81	8/21/2019	81	81
816	84	84	7/15/2019	84	84
817	19	19	7/15/2019	19	19
818	81	81	7/15/2019	81	81
819	81	81	7/15/2019	81	81
820	6	6	7/19/2019	6	6
821	47	47	7/19/2019	47	47
822	6	6	7/19/2019	6	6
823	14	14	7/19/2019	14	14
823	15	15	8/21/2019	15	15
824	1	1	7/19/2019	1	1
825	54B	54B	7/19/2019	54B	54B
826	55	55	7/19/2019	55	55
827	36	36	7/19/2019	36	36
828	34	34	7/21/2019	34	34
829	77	77	7/21/2019	77	77
830	29	29	7/21/2019	29	29
831	26	26	7/21/2019	26	26
832	26	26	7/21/2019	26	26
833	18	18	8/21/2019	18	18
834	44F	44F	8/21/2019	44F	44F
835	46F	46F	8/21/2019	46F	46F
836	46F	46F	8/21/2019	46F	46F
837	52B	52B	8/21/2019	52B	52B
838	38	38	8/23/2019	38	38
839	38	38	8/23/2019	38	38
840	87	87	8/23/2019	87	87
841	93	93	8/26/2019	93	93
842	85	85	8/26/2019	85	85
843	50B	50B	8/26/2019	50B	50B
844	58	58	8/26/2019	58	58
845	47F	47F	8/26/2019	47F	47F
846	48F	48F	8/26/2019	48F	48F
847	53F	53F	8/28/2019	53F	53F
848	75	75	8/28/2019	75	75
849	75	75	8/28/2019	75	75
850	75	75	8/28/2019	75	75
851	27	27	10/25/2019	27	27
852	69	69	10/25/2019	69	69
853	85	85	10/25/2019	85	85
854	56	56	10/28/2019	56	56

Table 2A (continued).

855	7	7	11/26/2019	7	7
856	53B	53B	11/26/2019	53B	53B
857	76	76	2/25/2020	76	76
857	71	71	1/31/2020	71	71
858	67	67	1/31/2020	67	67
859	74	74	2/25/2020	74	74
860	76	76	2/25/2020	76	76
861	35	35	2/21/2020	35	35
862	10	10	2/21/2020	10	10
863	45B	45B	2/21/2020	45B	45B
864	53B	53B	2/21/2020	53B	53B
865	15	15	2/21/2020	15	15
866	68	68	2/21/2020	68	68
867	49B	49B	2/21/2020	49B	49B
868	82	82	2/21/2020	82	82
869	47B	47B	2/21/2020	47B	47B
869	47B	47B	4/17/2020	47B	47B
870	4	4	2/21/2020	4	4
871	51B	51B	3/6/2020	51B	51B
872	45F	45F	3/6/2020	45F	45F
813(B)	39	39	7/15/2019	39	39