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In Reply Refer To:
AESO/SE
22410-2007-F-0163

August 18, 2008

Ms. Jeanine Derby
Forest Supervisor, Coronado National Forest
300 West Congress, 6th Floor
Tucson, Arizona 85701

RE: Mount (Mt.) Graham Summerhome Special Use Permit Residence Renewals

Dear Ms. Derby:

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request was dated January 17, 2007, and received by us on January 18, 2007. At issue are impacts that may result from the proposed Mt. Graham Summerhome Special Use Permit Renewals located in the Pinaleño Mountains in Graham County, Arizona. The proposed action is likely to adversely affect the Mt. Graham red squirrel (*Tamiasciurus hudsonicus grahamensis*) (MGRS).

In your letter you requested our concurrence that the proposed action may affect, but is not likely to adversely affect, the Mexican spotted owl (*Strix occidentalis lucida*) (MSO) and its critical habitat (CH), and the Apache trout (*Oncorhynchus apache*). Our concurrences are contained in Appendix A.

This biological opinion is based on information provided in the January 17, 2007, biological assessment and evaluation, the project proposal, telephone conversations, meetings among our staffs, field investigations, and other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, special use permits and effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at our Phoenix Field Office.

CONSULTATION HISTORY

- March 10, 2006: Received letter from Coronado National Forest (Forest) asking for comments on the environmental analysis for re-issuance of special use permits for the summerhomes on Mt. Graham.
- November 28, 2006: Received draft biological assessment and evaluation (BAE) from Safford Ranger District. Returned with staff comments. Verbal discussion between our respective staff clarified concerns and ideas.
- January 24, 2007: Received final BAE from Safford Ranger District (dated January 17, 2007).
- March to June 2007: Updated the draft biological opinion after review of the final Nuttall-Gibson Complex biological opinion (#02-21-04-M-0299).
- July 11, 2007: Mutually agreed on a 90-day extension.
- July 24, 2007: Our respective staff met at your Safford office to update and clarify additional information for this consultation and discussed possible meetings with respective legal representatives regarding actions that could be taken under the Arizona-Idaho Conservation Act.
- July 31, 2007: Received an e-mail from Anne Casey of your staff clarifying elements of the proposed action and environmental baseline.
- September 4, 2007: Our respective staff met at your Safford office to discuss conservation measures and future Forest minimization plans for MGRS.
- August 17, 2007: Received maps of cabin locations in each summerhome area.
- December 13, 2007: Our Draft Biological Opinion was sent.
- June 5, 2008: We received your comments on the Draft Biological Opinion and a request to extend the consultation period to August 15, 2008.
- June 24, 2008: We received an electronic mail from Anne Casey of your staff that a new MGRS midden had been found in the upper Turkey Flat Summerhome area.
- August 4, 2008: Additional discussions were held and we received an electronic mail from Anne Casey of your staff that remaining issues had been resolved.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

You propose to re-issue the special use permits for two summerhome areas (Old Columbine and Turkey Flat) located in the Pinaleño Mountains (the Grahams, or Mt. Graham) for the next 20 years (January 1, 2009 through December 31, 2028). The proposed action would permit the continuance of human-use patterns currently in effect in these areas by allowing the current cabins/structures to remain on the landscape and continue to be occupied.

The project area consists of two parts: the approximately 25 acres of mixed-conifer in the Old Columbine area and about 52 acres in the predominately ponderosa pine and pine-oak types in the Turkey Flat area. Both summerhome areas consist of cabins and associated structures scattered through a forested landscape. A total of 14 and 74 summerhomes will be re-permitted in the Old Columbine and Turkey Flat areas, respectively. Associated existing structures (outhouses, water tanks, a community-use building) occur within the Old Columbine and Turkey Flat summerhome areas, with the water tank for Turkey Flats located on the farthest, southwestern edge of the summerhome area boundary. Both summerhome areas are reached by use of State Highway 366 (Swift Trail). Old Columbine is reached via a short access road, and Turkey Flat sits on both sides of the Swift Trail on a relatively gentle slope. The Old Columbine summerhomes are clustered closely together due to the small, level site and the steep surrounding terrain; summerhomes in Turkey Flat occur over a larger area. Four maps of the summerhome areas are provided in Appendix D.

In the Old Columbine summerhome area, resident presence involves light to moderate use in spring and fall and heavier use in the summer, with many people and vehicles present. Winter residential use is not permitted between November 15 and April 15, annually. An occasional, foot-traffic only maintenance visit is allowed for owners to check for leaks at their cabins. This has typically been one daytime visit by a few cabin owners, annually. In the Turkey Flat area, heavy (summer) to moderate and lighter (spring, fall, and winter), year-round use is typical.

Your permitting process ensures that all permittees are in compliance with their permits and that no unauthorized uses are occurring. Prior to a new special use permit being issued, each recreational residence will be inspected by the Forest Service to confirm that occupancy is in compliance with the terms and conditions of the expiring permit. All summerhome residents (and visitors) are made aware of all Forest restrictions and rules, particularly those involving fire activity levels and warnings. Permit terms include, but are not limited to: use of bear-proof garbage containers; pets must be leashed while within Forest boundaries (including summerhome areas); all motorized vehicle travel must occur only on designated roads; no damage (hangings, nails, wires, etc.) will occur to live trees; no birdfeeders of any type will be permitted; and no additional buildings or additions will be built. Permittees are required to remain in compliance with these permits. A process is in place to resolve instances of non-compliance. You note that the primary use observed by summerhome residents is generally contained within the immediate area of the two summerhome sites, Riggs Lake, and travel on Swift Trail between the two, primarily during the summer months (Anne Casey, personal communication 2007).

CONSERVATION MEASURES

The following conservation measures are included in the proposed action and act to reduce or offset adverse effects of the summerhomes on the MGRS and its CH, or to monitor those effects:

1. You will begin planning for conifer seedling plantings in addition to the ones already underway in burned areas of the MGRS Refugium. Additional seedlings within the high-severity areas will remain top priority, as these areas are most in need of revegetation. Future planting efforts may include areas that were burned at moderate severity.
2. Middens found within the two summerhome areas will be assessed twice each year for activity levels and summarized in a yearly report to the FWS.
3. You will meet with your legal representatives regarding the terms of the Arizona-Idaho Conservation Act of 1988 (AICA), particularly regarding your legal obligations and authorities under this congressional act. We agree to meet and discuss our understandings of the AICA at a future time. We believe this to be a conservation measure, as it will assist both agencies in planning future Forest projects that will assist with recovery and continuance of the species with a minimum of adverse effects.

STATUS OF THE SPECIES AND CRITICAL HABITAT

In 1987, we listed the MGRS as endangered (52 FR 20994). The final rule concluded that MGRS was endangered because its range and habitat were reduced, and its habitat was threatened by a number of factors, including the (then) proposed construction of an astrophysical observatory, occurrences of catastrophic wildfires, proposed road construction and improvements, and recreational developments at high elevations on the mountain. The rule noted that MGRS might also suffer due to resource competition with the introduced Abert's (tassel-eared) squirrel (*Sciurus aberti*). In 1990, we designated critical habitat for the MGRS (55 FR 425) (MGRS CH). We finalized the first MGRS Recovery Plan in 1993; it is currently undergoing revision.

On January 5, 1990, we designated MGRS CH (55 FR 425-429). MGRS CH includes three areas: the area above 10,000 feet in elevation surrounding Hawk and Plain View peaks and a portion of the area above 9,800 feet; the north-facing slopes of Heliograph Peak above 9,200 feet; and the east-facing slope of Webb Peak above 9,700 feet. The main attribute of these areas at that time was the existing dense stands of mature (about 300 years) spruce-fir forest. The MGRS Refugium established by the AICA is considered to have the same boundary as the designated MGRS CH boundary (about 2,000 acres). Unfortunately, most of the habitat in the refugium and in CH has been devastated by wildfire and insect damage. There remains a small, unknown amount of habitat in the Refugium (A. Casey, personal communication).

Our biological opinion (BO) pursuant to section 7 of the Act for the proposed astrophysical development and Forest Management Plan was completed on July 14, 1988. The Forest

Management Plan was found not to jeopardize the continued existence of MGRS; but the proposed seven-telescope astrophysical development was found to jeopardize the continued existence of MGRS. Three reasonable and prudent alternatives were described, but before the Forest Service (FS) agreed to any, the AICA was passed by Congress. It mandated the third reasonable and prudent alternative with some modifications. It authorized the construction of three telescopes on Emerald Peak, necessary support facilities, and an access road to the site. The law further required the University of Arizona (UA), with the concurrence of the Secretary of the Interior, to develop a management plan for the MGRS. Construction of additional telescopes will require a new section 7 consultation. The 1988 BO established the MGRS Refugium; the boundary of which became the boundary for MGRS critical habitat.

Reasonable and prudent alternative 3 in the 1988 BO included removal of the summerhomes at Columbine; however, section 605(a) of the AICA allowed continued special use authorizations for the Columbine summerhomes and the Arizona Bible Camp for the duration of the term of the permits in place at that time. The AICA also mandated that prior to the “termination, nonrenewal, or modification” of those authorizations, the Secretary of Agriculture shall, with assistance from the FWS, conduct a biological study to determine the effects of such authorizations upon the MGRS and other threatened or endangered species. The current proposed action does not include termination, nonrenewal, or modification of those special use permits, hence that study is not required prior to implementation. Section 605(a) of the AICA goes on to require the Secretary of Agriculture to initiate consultation with the FWS regarding the “termination, nonrenewal, extension, or modification” of the special use authorizations.

MGRS are small, grayish-brown arboreal rodents with a rusty to yellowish tinge along the back (Spicer *et al.* 1985). Their tails are fluffy and the ears are slightly tufted in winter (Spicer *et al.* 1985). In summer, a thin, black lateral line separates the upper parts from the whitish underparts. The cheek teeth number 16 (P1/1, M3/3), are low-crowned and tuberculate (with small knob-like processes), and the skull is rounded, with the postorbital process present (Hoffmeister 1986). The species ranges from 10.8 – 15.4 inches in total length and from 3.7 – 6.3 inches in tail length (Gurnell 1987).

First described in 1894 by J. A. Allen, the MGRS type specimen is from the Pinaleño Mountains, Graham County, Arizona. Allen (1894) designated it as a separate subspecies based on pelage (fur) differences and its isolation for at least 10,000 years from other red squirrel populations. The MGRS is slightly smaller than the Mogollon red squirrel (*T. h. mogollonensis*) of northern Arizona in body measurements including total body, hind foot, and skull length (Hoffmeister 1986). The skull is also narrower postorbitally than that of *T. h. mogollonensis*. Hoffmeister (1986) found no sexual dimorphism in measurements of adult MGRS. Based on measurements from 10 specimens, Hoffmeister (1986) calculated an average total length of 13.3 inches, body length of 7.8 inches, and tail length of 5.4 inches. Average adult weight from nine specimens was 236.4 grams (Froehlich 1990).

Although Hoffmeister (1986) thought the subspecies was not strongly differentiated from the Mogollon red squirrel, he (1986) and Hall (1981) retained the subspecies designation. Research with both protein electrophoresis (Sullivan and Yates 1995) and mitochondrial DNA (Riddle *et*

al. 1992) has provided data that, in conjunction with morphological and ecological considerations, demonstrate that MGRS is a distinct population that deserves subspecific status.

Found in the southernmost portion of the range of the red squirrel, MGRS is found only in the Pinaleño Mountains. MGRS inhabit a narrow selection of habitats in the high-elevation areas that support primarily Engelmann spruce (*Picea engelmannii*) and corkbark fir (*Abies lasiocarpa* var. *arizonica*); in the mixed-conifer stands dominated by Douglas fir (*Pseudotsuga menziesii*), with white fir (*Abies concolor*) and Mexican white pine (*Pinus strobiformis*) sub-dominants; and in the ecotone life zone between these areas. MGRS apparently do not inhabit pure stands of ponderosa pine (*Pinus ponderosa*) (U.S. Fish and Wildlife Service 1992). With the relatively recent loss of almost all the higher-elevation habitat in the spruce-fir zone due to wildfire and insect damage, MGRS now occur primarily in the mixed-conifer zone on the mountain but also in remaining patches of spruce-fir.

MGRS create middens, which are areas that consist of piles of cone scales in which squirrels cache additional live, unopened cones as an over-wintering food source. Placement of these middens tends to be in areas with high canopy closure near food sources (e.g. Douglas fir, corkbark fir, and Engelmann spruce). This type of placement allows specific moisture levels to be maintained within the midden, thereby creating prime storage conditions for cones and other food items, such as mushrooms, acorns, and bones. They also seem to prefer areas with large snags or downed logs that provide cover and safe travel routes, especially in winter, when open travel across snow exposes them to increased predation.

Threats facing MGRS include predation, loss of habitat due to native and exotic insect infestations (Koprowski *et al.* 2005), direct mortality and loss of habitat and middens due to large-scale wildfires (Koprowski *et al.* 2006), loss of habitat due to human factors (e.g., disturbance, conversion to roads, trails, and/or recreation sites, permitted special uses, etc.; U. S. Fish and Wildlife Service 1992), loss or reduction of food sources due to drought, and apparent dietary and territory competition with Abert's squirrel, which were introduced in the 1940s by the Arizona Game and Fish Department (AGFD) (Edelman *et al.* 2005).

MGRS historically resided predominantly in the upper elevation and the ecotone life zones, with some middens located in the mixed-conifer life zone. Most of the habitat was above about 8,000 feet in elevation. That spruce-fir vegetation life zone is now greatly reduced in distribution due to two large, catastrophic wildfires (Clark Peak in 1996 and Nuttall-Gibson Complex in 2004) and a four-insect epidemic that devastated the spruce-fir ecosystem (1996 to present). MGRS are now primarily found at lower elevations, and more middens are found in the mixed-conifer life zone than before. Some drainage bottoms reach well down the mountain into mixed-conifer and ponderosa stands, which is believed to have resulted in closer association and likely more resource competition between MGRS and introduced Abert's squirrel (T. Snow personal communication 2007). As recently as the 1960s, MGRS possibly ranged as far east as the Turkey Flat area and as far west as West Peak, but are now located only as far west as Clark Peak. A local extirpation occurred on West Peak, possibly due to a wildfire in the mid-1970s that isolated the West Peak subpopulation from the rest of the range and destroyed existing red squirrel habitat that has not recovered to date (U.S. Fish and Wildlife Service 1992).

Observations indicate that MGRS eat: (1) conifer seeds from closed cones, (2) above-ground and below-ground macro-fungi and rusts, (3) pollen (pistillate) cones and cone buds, (4) cambium of conifer twigs, (5) bones, and (6) berries and seeds from broadleaf trees and shrubs. Each food is used seasonally; pollen and buds in the spring, bones by females during lactation, fungi in the spring and late summer, and closed cones low in lipids in the early summer. Closed, live-cut cones high in lipids are stored for winter-time use (Smith 1968).

MGRS eat seeds and store live cones from Englemann spruce, white fir, Douglas-fir, corkbark fir, and white pine. Midden surveys indicate that Englemann spruce and Douglas-fir are the most common tree species supplying food to MGRS. Douglas-fir, generally a consistent cone producer (Finely 1969), is important in the Pinaleños, especially in areas where it co-exists with Englemann spruce, which is more prone to cone crop failure. Use of ponderosa pine seeds or caching ponderosa pine cones by MGRS is extremely limited, probably due to microclimate considerations. Cone caching and consumption of cone seeds by red squirrels have been reported in more northerly latitudes (Hatt 1943, Finley 1969, Ferner 1974). The number of mature seed trees per territory needed to supply MGRS food requirements in the Pinaleño Mountains has not been determined. Miller (1991) found that nutritional values of seeds from several conifer species in the Pinaleños vary seasonally and by tree species.

MGRS also frequently eat fungi (Froehlich 1990). Miller (1991) analyzed the nutritional content of the three above-ground species of mushrooms eaten by MGRS. Percent crude protein and percent digestible protein were higher than all conifer seeds except Englemann spruce in summer (Miller 1991). Truffle protein content also was as high as some conifer seeds per unit weight (Smith 1968). Mushrooms and truffles may take less effort to eat than extracting seeds from cones. Combined with information on nutritional values, this may explain in part the relative importance of fungi in the diet.

In other populations studied, red squirrels generally breed from February through early April. Nests can be in a tree hollow, a hollow snag, a downed log, or among understory branches of a sheltered canopy. Nests may be built in natural hollows or abandoned cavities made by other animals, such as woodpeckers, and enlarged by squirrels (U.S. Fish and Wildlife Service 1992). In the Pinaleños, snags are important for cone storage as well as nest location. Both nests and stored cones have been found in the same log or snag. Froehlich (1990) found that MGRS built 60 percent of their nests in snags, 18 percent in hollows or cavities in live trees, and 18 percent in logs or underground. Only four percent of nests were bolus grasses built among branches of trees.

In red squirrel populations studied, trends in age-specific red squirrel survivorship demonstrate a classic mammalian Type III survivorship curve (Steele 1998) in which mortality is greater than 60 percent during the first year of life, about half that rate during the second year of life, followed by relatively high survivorship and constant mortality through the adult years (Kemp and Keith 1970, Davis and Sealander 1971, Rusch and Reeder 1978, Halvorson and Engeman 1983, Erlie and Tester 1984). Juvenile survival during the first three months of age is markedly lower than survival is for adults (Boutin and Larsen 1993, Stuart-Smith and Boutin 1995a), but often approaches adult survival levels by the first winter of life (Stuart-Smith and Boutin 1995a). Survivorship is often higher for females than males (Boutin and Larsen 1993, Halvorson and

Engeman 1983, Erlie and Tester 1984). Recent studies indicate that MGRS differ in survivorship from red squirrels in other parts of their range and that mortality is relatively high during the winter. Koprowski (March 2006 recovery team meeting minutes) determined that up to 50 percent of adults and yearlings perish from December to June. Additional studies by Koprowski (2005a) further indicate that MGRS typically survive less than one year in the Pinaleño Mountains, with no difference in survivorship between males and females. The mean survivorship of MGRS is 251 days, and only 20 percent of them survive to the second year of reproduction. Maximum longevity for the species in the wild is reported to be 10 years (Walton 1903). Studies of radio-collared animals suggest that predation accounts for a large majority of mortality in red squirrels (Kemp and Keith 1970, Rusch and Reeder 1978, Stuart-Smith and Boutin 1995a&b, Kreighbaum and Van Pelt 1996, Wirsing *et al.* 2002); however, the availability of alternative prey for predators (Stuart-Smith 1995a), availability of food for red squirrels (Halvorson and Engeman 1983, Wirsing *et al.* 2002), and variation in vigilance and use of open areas by individual squirrels (Boutin 1995b) has been suggested to predispose some animals to higher susceptibility to predation.

Results from research conducted since 1993 indicate that female MGRS go into estrus for about six hours on one day each year. MGRS live a shorter life (about 251 days) than other subspecies of red squirrels (four years) and most MGRS only reproduce once in their life. Female MGRS give birth to fewer young (two) compared to other red squirrels (three or more) (Koprowski, unpublished data).

Mammalian predators of MGRS include mountain lions, black bear, bobcat, coyote and gray fox (Hoffmeister 1956, Coronado National Forest 1988). On Mt. Graham, a bobcat was observed stalking a MGRS (Schauffert *et al.* 2002) and a gray fox captured an adult female MGRS (24 Feb 2003, Koprowski, unpublished data). Avian predators of MGRS are likely goshawks, red-tailed hawks, MSOs, great horned owls, and Cooper's hawks (Coronado National Forest 1988, Schauffert *et al.* 2002). On Mt. Graham, Kreighbaum and Van Pelt (1996) reported that four juvenile MGRS were killed by raptors during natal dispersal. Additionally, a MSO was documented killing one juvenile MGRS near the natal nest (Schauffert *et al.* 2002). During Fall-Winter 2002-2003, raptors accounted for more than 75 percent of over 30 mortalities of MGRS. It has been estimated that MGRS mortality is higher (80 percent to predation) than other red squirrels (Koprowski, unpublished data).

The red squirrel is highly territorial (C. Smith 1968), and the concept of one squirrel per midden is widely accepted and used for MGRS management (Vahle 1978). Occasionally, conditions arise where more than one squirrel occupies a midden or a MGRS uses more than one midden (Froehlich 1990), but these are likely exceptional cases and usually seem to occur when food is either extremely abundant or rare.

Rangewide, multi-agency MGRS surveys, based on a sample of middens throughout the range of the MGRS, have been conducted since 1986. In 1998, the surveys were expanded from a single survey per year to two surveys per year, one in fall and one in spring. The numbers in Appendices B and C represent two different estimates (conservative and optimistic). These are derived by simple formulas used by AGFD that use the percent of active middens in each vegetation type found in the random sample and the number of known middens in each

vegetation type. The conservative estimate uses only those middens where activity is certain; the optimistic estimates include uncertain classifications as if they were considered to be active middens. Midden surveys show increasing numbers of MGRS into 1998-2000, with peaks over 500, after which the population declined. Population estimates dropped 42 percent in 2001 as compared to 1998-2000; since that time, population estimates have shown no apparent trend, but have varied from 199 to 346 (Appendices B and C).

The MGRS Monitoring Program at the University of Arizona (UA) was established by the AICA to monitor effects of the Mount Graham International Observatory (MGIO) on the MGRS. As part of that program, Koprowski *et al.* (2005) monitored all middens in 624 acres surrounding the MGIO from 1989-2002. Middens were visited monthly from 1989-1996 and quarterly thereafter. Their study area contained 17.8 percent of all middens known in the mixed conifer forest and 66.9 percent of all middens known in the spruce-fir forest. From 1994-2002, the mixed conifer forest supported 54-83 middens, while the spruce-fir forest contained 120-224 middens. The population trend in the mixed conifer forest was found to be relatively stable from 1994-2002; however, by 2002, only two occupied middens were found in the spruce-fir forest. Population declines in the spruce-fir forest corresponded with a period of insect damage and wildfires that began in 1996 and had devastated that forest type by 2002. Census data collected by the MGRS Monitoring Program indicate a more dramatic decline than do the data of the multi-agency surveys (which have shown no apparent trends since Fall 2001 after a steep decline from 1998-2000). The differences in the results are likely due to differences of scale. The MGRS Monitoring Program has focused on a subset of the mountain in which impacts of fire and insect damage have been pronounced in the spruce-fir forest, whereas the multi-agency surveys sample the population rangewide.

Koprowski *et al.* (2005b) characterized the decline of the MGRS in their study area as catastrophic. They note that in areas of high tree mortality in Alaska and Colorado, red squirrels did not completely disappear but rather persisted in residual stands of trees where conditions remained suitable. The ability of the MGRS to survive the current catastrophic decline is unknown; however, it apparently survived a similar situation in the late 1600s. Grissino-Mayer *et al.* (1995) sampled fire-scarred trees in four areas of the Pinaleño Mountains from Peter's Flat east to Mt. Graham. The oldest trees in the spruce-fir forest were about 300 years old. They found evidence for a widespread, stand-replacing fire in 1685 that probably eliminated much of the forest atop the Pinaleños. Although the MGRS population persisted through that event and may persist through the current catastrophic event, small populations can exhibit genetic or demographic problems that further compromise the ability of the subspecies to survive. Low genetic variability in small populations is a concern because deleterious alleles are expressed more frequently, disease resistance might be compromised, and there is little capacity for evolutionary change in response to environmental change. Koprowski *et al.* (2005b) recommended management actions to increase available habitat and population size in the near and distant future. A captive breeding program was also recommended, the concept of which has been endorsed by the MGRS Recovery Team. Options for initiating that captive program are currently being explored.

In 2003, the Forest began developing the Pinaleño Ecosystem Restoration Project. This project is being designed to restore the higher elevations of the Pinaleño Mountains to conditions prior

to the Federal policy of suppressing all fires; further the needs of native species of plants and wildlife (including threatened and endangered species); and reduce the risk of catastrophic wildfire and its devastating effects on the heavily fuel-loaded mountain range. The project, which targets primarily mixed-conifer communities, will reduce stand stocking and fuel loading and promote the more open and healthy conditions that existed before widespread, long-term (50 years or more) fire-suppression actions lead to unnatural and unhealthy forest conditions. The Pinaleno Ecosystem Restoration Project is designed in such a way as to be sensitive to the needs of MGRS; when complete, it is anticipated to strongly reduce the risk of catastrophic wildfire severely affecting the Forest and the MGRS.

The MGRS and its critical habitat have been the subject of numerous section 7 consultations since its listing in 1987. The July 14, 1988, BO on the astrophysical development and Coronado National Forest Forest Management Plan, described above, is the only jeopardy opinion issued for the species. That BO also anticipated incidental take of five MGRS per year. In a June 8, 2007, BO, we anticipated that incidental take occurred during suppression activities in the Nuttall-Gibson Complex Wildfires.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions that are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

Description of the Action Area

The action area is defined as the area within which effects to the listed species and its critical habitat (if any is designated) are likely to occur and is not limited to the actual footprint of the proposed action. We define the action area to be:

1. The Swift Trail from the Turkey Flat summerhome area to Riggs Lake and Forest-established recreation sites (including the Visitor Center) that occur in the mixed-conifer vegetation association;
2. the two summerhome areas (Old Columbine and Turkey Flat) and a surrounding “ring” of human use around the summerhome footprints out to 200 feet;
3. Forest roads open to the public;
4. short, level portions of hiking trails within and immediately adjacent to the summerhome areas; and
5. Riggs Lake, the picnic area, and the immediate shoreline around the lake.

Most of the action area is within mixed-conifer forest occurring at differing aspects and elevations from above 7,750 feet to over 10,000 feet. The forest in and around Old Columbine summerhome area consists of Douglas-fir, southwestern white pine, and some ponderosa pine (mixed conifer), along with species characteristic of higher elevations (corkbark fir and Engelmann spruce). The Turkey Flat summerhome area is within the edge of the drier, lower elevation conifer and brush association, leading downhill into the pine-oak vegetation type.

The current state of the Old Columbine summerhome area has been influenced by many factors. The understory within the immediate Old Columbine summerhome area is thinned out; large areas (roadways and parking) in front of these summerhomes are bare or covered in short, mowed grass. Fuel reduction efforts continue in the Turkey Flat summerhome area. Hazard trees are removed when they pose a danger to humans; insect infestations throughout the mountain have left many dead and dying trees in this area; and drought and winds have caused additional damage and loss of trees. In addition, the eastern and southern sides of the area have been treated under the Pinaleño Ecosystem Management project (PEM), and the west end received some fire damage during the 2004 Nuttall-Gibson Complex wildfire. This area of forest has been struggling against many factors, and an overall loss of live trees is prevalent. The area in the center of Old Columbine is a meadow, likely pre-existing but broadened during the cabin-building phase. The meadow does not serve as functional squirrel habitat, and the surrounding area is not currently supporting high densities of squirrels due to many natural stresses on the trees. Outside the footprint of the Old Columbine summerhome area is the surrounding, relatively intact mixed-conifer forest. Current fuelwood thinning operations (file #02-12-05-I-0818) in a buffer zone surrounding this summerhome area are designed to reduce fire risk while not causing adverse effects to wildlife.

Large trees are scattered among the cabins and in the forest surrounding the Turkey Flat summerhome area. They provide a shady ponderosa pine and pine-oak canopy over most of the cabins. Some understory brushy growth remains between cabins and groupings of cabins on both sides of the Swift Trail. The Turkey Flat summerhome area is also located in pine-oak vegetation, with the resulting loss of canopy and increased aridity. Designated Forest roads and trails are bounded by generally intact forested stands, with the exception of those passing through any areas severely burned by the 2004 Nuttall-Gibson Complex wildfire. The forest surrounding Riggs Lake is large and intact, with a denser, more interlocked canopy, several large-sized downed logs per acre, a more diverse and full understory, and the retention of a generally cooler, moister understory regime that favors MGRS reproductive needs.

A. Status of the Species and Critical Habitat Within the Action Area

Based on all known (historical and present) midden locations, only two middens have been found in the vicinity of the Turkey Flat summerhome area. One midden, which is currently active, is about 450 feet away from the nearest structure (a water tank) and more than 700 feet away from any of the summerhomes (see Appendix D). It is over the top of a steep, rugged, northern-aspect slope and in a stand of mixed-conifer, a spot of vegetation cooler and moister than the summerhome area vegetation. This hill is not easily climbed and has no trail, discouraging casual access by people. Because of its specific location and isolation from people, we believe project effects to this midden and its associated MGRS are unlikely to occur (discountable). The second midden, which was discovered in June 2008, is set at the base and

inside an opening in a mature Gambel oak. The midden is currently active and fluffy in texture; there is fresh sign of feeding, with cone scales, cone cobs, and partially-eaten cones in and around the midden site. It is approximately 65 feet from the nearest cabin, 100 feet from Swift Trail (Hwy 366), and three feet from the dirt entrance road into the upper Turkey Flat summerhome area (not illustrated in Appendix D). The midden is located in pine-oak woodland, which is atypical for this species. After the midden was found, a Forest Service biologist surveyed the remainder of the summerhome area for MGRS middens. No additional middens were found.

The mixed-conifer forest surrounding and extending beyond the Old Columbine summerhome area westward across the mountain tops to Riggs Lake is predominately suitable MGRS habitat (with the exception of those portions of the mountain that burned severely in the 2004 Nuttall-Gibson Complex wildfire). Within the Old Columbine summerhome area, two midden locations are known; one located just at the entry point of the road that turns into the summerhome parking area and another located about 15 feet from an outhouse that receives occasional summertime use by people (see Appendix D). A third midden is located outside the summerhome area, on a bench that lies about 100 feet below the steep, rocky hillside just off the edge of the community building that receives occasional summertime use. This midden is not easily seen from the community building; there is no easy or desirable way down to it. The steep and rocky hillside right off the edge of the building has no trail and is discouraging to recreational hikers.

Because these three middens had not been surveyed for at least three or more survey periods, Coronado National Forest district wildlife staff conducted site visits to them in June 2006 and again in September 2007. They determined that one midden had disappeared (there was no cone scale mound, no scales indicating recent feeding, and no signs that the site had been used by a MGRS for more than three survey periods) (T. Snow, personal communication) due to the small island of conifer trees around it that naturally died and fell, exposing the midden site to more intensity and duration of sunlight and heat than when the trees were alive. The dryness and heat on this site (there are no surrounding trees; it was an “island” surrounded by bare, dry soil) will likely preclude its future use by MGRS. This “island” is right next to the dirt road and the parking area is nearby; these open areas will be maintained at current levels of openness, likely preventing the future return of conifers in this small, specific location. FWS staff visited the other two middens in October 2007 and determined them to be active.

In other parts of the action area, data from the fall midden surveys of September 2007 roughly indicate that, where habitat conditions are suitable for MGRS middens in mixed-conifer vegetation types and other cooler areas on the mountain, MGRS continue to survive and use these midden sites located near trails, some Forest roads, and in the forest surrounding Riggs Lake and other public facilities. Midden activity in other suitable portions of the action area appears to typically cycle between active and inactive states, as do middens elsewhere on the mountain as indicated by midden surveys formally conducted since 1986.

Designated MGRS CH does not occur in the two summerhome areas but is included within the action area because it is possible (but not likely) that a summerhome permittee or their visitor(s) may hike up into the Refugium area (which is also MGRS CH).

B. Factors Affecting Species Environment And Critical Habitat Within the Action Area

Both summerhome areas (the key portions of the action area) support significant levels of human presence, accompanied by varying levels and duration of human and mechanical noise disturbance. The 14 Old Columbine summerhomes receive three-season use; residents inhabit the action area from about late May to the first snow in October or November, annually. Residents do not occupy their cabins at any time, per permit, during the winter months (November 15th through April 15th), although an occasional maintenance visit from concerned cabin owners to check for leaks or damage is allowed during winter. Typical use here peaks during the late spring and summer months, tapering off to light use in the fall. Typically two or three of the Old Columbine cabins are occupied on the weekends during MGRS breeding and foraging seasons (Spring and Fall), particularly in good weather. On weekdays, there may be none to four or five people in residence. During a typical Fourth of July holiday (summer), there have been as many as 25 people in the immediate summerhome area. At Turkey Flat, due to year-round access, about 95 percent of the 74 cabins are used at some point in the year. Most cabin owners use their cabins for a week or two during the summer (two to six family members) and for a couple of fall weekends, and occasionally in winter. About 10 cabins are used all summer long by retired cabin owners (two family members) with occasional visits from other family members over one summer weekend. As many as 50 people were noted in the immediate Turkey Flat summerhome area on a typical Fourth of July holiday weekend (D. Bennett, personal communication, 2007).

The forested lands immediately encircling the small sites of relatively flat ground where each summerhome area occurs are very steep and rough terrain. Current information indicates that most residents remain close to their respective summerhome area (S. Wallace, personal communication 2007). Some residents (and likely a few of their visitors) may hike a short distance uphill on designated trails, but the elevation, the steep and rugged terrain, and the general age and abilities of the resident population make it unlikely these people use the trails very much (if at all) or leave the trail for the forest (A. Casey, personal communication 2007). Because no new summerhomes or additions will be permitted, the number of people using these portions of the action area is expected to remain at current levels (S. Wallace, personal communication 2007).

Other portions of the action area, as defined in the Environmental Baseline section above, are posted for speed limits on the roads and types of permitted activities at the sites. Bear-proof garbage containers are provided at public sites (especially picnic areas, camp sites, and Riggs Lake) and are serviced regularly by Forest Service personnel. Surveys for MGRS middens have documented many active (and some inactive) middens in the surrounding forest that supports denser, interlocking canopy and a cooler, moister climate regime deeper into the forest than that found on the edge of roads and trails mountain-wide. A few middens are known to be visible from some portions of some hiking trails, and some are very close to the edges of Forest roads, but we believe they remain relatively inconspicuous to the typical permittee. While roads and trails have a drying effect on the immediate forest edge, middens tend to be far enough away from these edges to remain active over time. No formal study has been conducted on edge effects of trails and roads on midden persistence.

As noted in the Nuttall-Gibson Complex BO conservation measures, you are hand-planting about 9,000 conifer seedlings at appropriate elevations and densities in selected, small areas (burned by the 2004 Nuttall-Gibson Complex wildfire) in former MGRS habitat and MGRS CH deemed best suited for such plantings. This project was consulted on, and we issued our BO (#02-21-04-M-02999) on June 8, 2007. The extent of the project is uncertain but is estimated at 10 acres in 2007. Planting began in July 2007 and will continue for five to seven years (2007-2014). These seedlings are grown from seeds taken from cones collected on Mt. Graham. They remain growing in a tree nursery facility until ready for planting. Tree survival is anticipated to be at least 60 percent and likely higher, but we are aware this will depend on variable and unmanageable factors such as climate, local weather, insects, rainfall, and wildfires (L. Angle, personal communication).

As noted in the Status of the Species section above, insect destruction and catastrophic wildfire remain the biggest factors affecting MGRS CH. As noted in section B of the Environmental Baseline above, you are planting trees in MGRS CH (MGRS Refugium) and other select areas on the mountain. Planting seedlings in these areas will not realize a great short-term habitat gain, but conifer survivors will contribute to long-term cone crop and MGRS habitat formation over time.

EFFECTS OF THE ACTION

Anticipated effects resulting from the re-issuance of these permits for the next 20 years will be continued vehicle and human presence and disturbance occurring at both summerhome areas and on designated Forest roads, some light intermittent human voice noise on relatively gentle trails, and human presence and use of designated recreation sites at current, typical levels and times. This is determined by you to be light to moderate spring and fall use, heavier summer use, and no winter use at Old Columbine and areas at higher elevations due to snow loads and road closure. The Turkey Flat summerhome area will experience similar use levels, but will also experience some light winter use due to its lower elevation and greater accessibility during winter.

The active MGRS midden located about 450 feet from the Turkey Flat water tank, is located over the top of a hill, in a stand of mixed-conifer, and on the northern aspect of a slope that is not conducive to hiking or exploring. As a result, this midden and the MGRS that uses it are unlikely to be affected by activities associated with the Turkey Flat summerhomes. The second midden in the Turkey Flat area, which is also active, is about three feet from the dirt access road into the upper Turkey Flat area and about 100 feet from the nearest cabin. Because the access road at this location is close to the turnoff from Swift Trail, vehicles traveling past the midden are likely to be going fairly slowly. Nonetheless, there is some possibility of the MGRS using this midden to dart into the road and be killed or injured by a passing vehicle associated with summerhome use. The ponderosa pine and pine-oak forests at and in the immediate vicinity of the Turkey Flat summerhome area are generally thought to be unsuitable for MGRS needs. The midden in this area is highly atypical. This MGRS may not be successful at this site because of the habitat, and it is unlikely that additional MGRS will take up residence in the Turkey Flat summerhome area.

There are two MGRS middens within the Old Columbine summerhome area; one at the entry point of the road that turns into the summerhome parking area and another located 15 feet from an outhouse. We believe there have been, and will continue to be, occasional visual observations and/or non-fatal-to-MGRS interactions between individual MGRS and summerhome residents, their visitors, and (leashed) pets that may temporarily disturb or harass a MGRS that might be inhabiting or foraging within the summerhome area. One exception is the single MGRS that actively maintains and defends its midden about 15 feet away from an outhouse that receives occasional summertime (human) use. This squirrel may have become habituated to a certain level of human presence during a certain timeframe. The midden has been active for many years and was again confirmed active in both survey periods of 2007 (spring and fall) (T. Gamberg, personal observation, 2007). As a result, it has likely been occupied by a number of different MGRS, and will likely be occupied by a succession of MGRS into the future. Because of the proximity to the outhouse, MGRS using this midden are especially susceptible to harm or harassment.

Vehicle and human noise, depending on levels and proximity to a midden site, may be disruptive to MGRS, particularly during their breeding season. If noise arouses an animal, it has the potential to affect its metabolic rate by making it more active. Increased activity can, in turn, deplete energy reserves (Bowles 1995). This may be a temporary or occasional disruption. Species that are sensitive to the presence of people may be displaced permanently, which may be more detrimental to wildlife than recreation-induced habitat changes (Hammit and Cole 1987, Gutzwiller 1995, Knight and Cole 1995). If animals are denied access to areas that are essential for reproduction and survival, that population will most likely decline. Likewise, if animals are disturbed while performing behaviors such as foraging or breeding, that population will also likely decline (Knight and Cole 1995).

At least some MGRS in and very near portions of the action area appear to have become relatively habituated to the presence and noise levels of people and machinery that typically occur seasonally on the mountain (A. Casey, T. Gamberg, personal observation, 2007). Mountain-wide, active middens are known to be visible from trails; others are just beyond visual range from Forest roads (depending on cover, from 3 yards out). Other individual MGRS may respond differently and could be adversely affected or excluded from areas of intense human activities such as would occur during the summer months of high use at the Old Columbine summerhome area.

We believe that most of the active MGRS middens, as indicated by more than 20 years of midden surveys, appear to be far enough away from Forest roads, trails, and designated recreational sites (picnic and camp sites and Riggs Lake) to remain active in and around these sites. We note new middens are created in and around these recreational sites and that other middens in these same areas become inactive. Exact causes are unknown at this time, but continued creation of new middens suggests MGRS are continuing to inhabit these areas. Summerhome residents (and their visitors) will travel higher up the mountain on Forest roads and use designated trails and recreational sites, such as Riggs Lake, where MGRS are more common, and where interactions with MGRS are more likely to occur. This activity level has been ongoing since the cabins were built and occupied (in the 1940s) and is believed to be stable in noise levels and times for the last 20 years, at least (A. Casey, personal communication 2007).

Another effect of renewing these permits will be some level of continued difficulty for the Forest to implement the Coronado National Forest Wildfire Use Amendment, which involves using natural-ignition fires (i.e., lightning-caused fires) to burn areas that are typically adapted to certain (non-catastrophic) fire regimes. This difficulty in fuel reduction efforts may indirectly affect MGRS when catastrophic wildfires burn in suitable MGRS habitat surrounding the summerhome areas. In the Old Columbine summerhome area, fuel-reduction thinning operations have recently involved dropping only designated hazard trees near the cabins; the greater thinning/clearing was conducted years ago.

The Turkey Flat summerhomes are located at the high end of a canyon, leaving them very vulnerable to wildfire. Typical fire behavior in this vegetation type, exposure, and dryness suggest that fires that start downhill of the summerhomes will burn up the canyon (especially in the dense fuels that exist now) into the cabins. The Forest is currently conducting fuel-reduction work in this summerhome area and is taking measures to ensure homeowner safety, as far as can be done in this particular circumstance.

The reissuance of these permits for the next 20 years may exclude an unknown but likely small number of individual MGRS from creating new middens in the Old Columbine summerhome area due to human disturbance and the continued need to reduce fuel levels around the cabins. We believe the drier vegetation association and warmer aspect of the Turkey Flat summerhome area is why MGRS rarely create middens or reside in this area. As stated previously, the midden located about 450 feet from the Turkey Flat water tank is in a highly specific site; over a hilltop, on a northern-aspect slope, and the vegetation association is a stand of mixed-conifer and is cooler and moister than the summerhome area of Turkey Flat. The other midden near the access road is in habitat highly atypical for MGRS.

There is an unknown increment of increased likelihood of wildfire and road mortality of MGRS on Forest roads due to the presence of summerhome residents (and their visitors) that might not be there but for the summerhomes. The Arizona Department of Transportation has conducted preliminary traffic counts on the Swift Trail, but no data are available at this time.

Effects to critical habitat would occur primarily from incidental use of trails by summerhome residents and visitors. Such incidental use is unlikely to have adverse effects to constituent elements of MGRS critical habitat. Those constituent elements have largely been lost due to recent fire and insect damage. Neither would incidental trail use likely affect the restoration of constituent elements.

In summary, the proposed action to re-issue the summerhome special use permits for another 20 years will directly affect one MGRS and its midden at Old Columbine, one MGRS and its midden at upper Turkey Flat, and will have indirect effects at both localities and elsewhere in the action area. However, the distribution, reproduction rate, and other demographics of MGRS in the action area are not expected to be significantly affected.

Effects of Conservation Measures

The proposed conservation measures will aid in offsetting the effects of the presence of the two summerhome areas by beginning reforestation of MGRS CH; controlling the number of

summerhomes (and to some extent, the number of people); enforcing permitted occupancy limits and activities; and monitoring middens in the summerhome areas. In accordance with 50 CFR 402.16(b), if the monitoring of the middens in the summerhome areas reveals effects of the action in a manner or to an extent not considered in this opinion, we expect you to reinitiate consultation, at which time the conclusions herein would be reevaluated.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this BO. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The Forest manages lands (except private) of the Pinalaño Mountains and administer projects and permits on those lands; thus, almost all activities that could potentially affect MGRS in the action area are Federal activities subject to section 7 consultation under the Act.

CONCLUSION

After reviewing the current status of the MGRS, the environmental baseline for the action area, the effects of the proposed re-issuance of Special Use Permits for the Mt. Graham summerhomes at Old Columbine and Turkey Flat, and the cumulative effects, it is our biological opinion that the actions, as described, are neither likely to jeopardize the continued existence of MGRS, nor result in destruction or adverse modification of critical habitat. This biological opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the Act to complete our analysis with respect to critical habitat.

Our findings are based on the following:

- MGRS remains a highly endangered species, although MGRS middens (and by extension, MGRS population numbers) in the action area appear to be relatively stable. Declines in MGRS population numbers across the Pinalaño Mountains reflect recent large-scale habitat losses due to wildfires and insect damage (T. Snow personal communication Appendix B).
- MGRS distribution in the action area appears to be stable; surveys note that the same areas support new middens even as old middens are abandoned.
- Human occupancy in the Old Columbine summerhome area is restricted during the winter (November 15th through April 15th) to an occasional maintenance-type visit from concerned cabin owners to check for leaks or damage.
- Although two active middens currently occur in the Turkey Flat summerhome area, one is in an area not expected to be affected by summerhome activities, and the other is in habitat not typical for the species. In general, the forested area in the Turkey Flat

summerhome area is hotter and drier than mixed-conifer sites mountain-wide that support MGRS. The ponderosa pine and pine-oak vegetation types in the Turkey Flat area are not the preferred MGRS habitat.

- All permittees are required to be in compliance with their permits.
- A process is in place and will be followed to correct instances of non-compliance.
- The only anticipated effects to critical habitat would occur through occasional trail use of the Refugium by summerhome residents and visitors. Such use is unlikely to have adverse effects.
- The proposed action includes conservation measures that are intended to minimize or offset adverse effects of reissuing permits for the summerhomes.

In conclusion, we believe the MGRS is critically endangered, and recent insect outbreaks, drought, and catastrophic wildfires have been the major factors that, over time, have pushed this species nearer to extinction. The primary reason why we believe the re-issuance of the special use permits for the Mt. Graham summerhomes does not jeopardize the continued existence of MGRS or result in adverse modification or destruction of critical habitat is that these permitted structures have been occupied, and roads and trails have been used in the action area since at least the 1940s. Despite this use, MGRS have continued to breed, nest, forage, create middens, and rear young apparently in coexistence with these levels and times of summerhome permittee effects. We conclude that continued use of the summerhomes will not appreciably reduce the likelihood of the survival and recovery of the MGRS because MGRS continue to breed and maintain populations in the action area. The continued use will not be expanded; thus, it will not further reduce the distribution of the MGRS, and we are unaware of the proposed action having adverse effects on reproduction of MGRS.

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any Conservation Measures that were incorporated into the project design.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. “Take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. “Harm” is defined (50 CFR 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. “Harass” is defined (50 CFR 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. “Incidental take” is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not

intended as part of the agency action is not considered to be prohibited taking under the Act, provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary and must be undertaken by the FS so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The FS has a continuing duty to regulate the activity covered by this incidental take statement. If the FS (1) fails to assume and implement the terms and conditions or (2) fails to require the (applicant) to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the FS must report the progress of the action and its impact on the species to the FWS as specified in the incidental take statement. [50 CFR §402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

We anticipate that in the action area, one MGRS (associated with the one currently active midden 15 feet from an outhouse in the Old Columbine summerhome area) will be taken as a result of this proposed action. The incidental take is expected to be in the form of harassment due to human presence and vehicle and human noise at a level and duration that currently occurs in the action area. We also anticipate that one MGRS will be taken in the upper Turkey Flat summerhome area (the MGRS associated with the midden next to the access road). This MGRS is likely to be incidentally taken due to road mortality or injury. Once abandoned, this midden is unlikely to be reoccupied due to the marginal suitability of the surrounding habitat.

We believe the one midden and associated MGRS located about 450 feet from the water tank at the Turkey Flat summerhome area will not be affected by the proposed action. Although presence and activities of summerhome residents in recreational areas and on roads elsewhere in MGRS habitat outside of the summerhome areas continues to pose a low level of threat to MGRS, we do not anticipate that incidental take will occur from such activities.

EFFECT OF THE TAKE

In this biological opinion, we determine that this level of anticipated take is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, you must comply with the following terms and conditions, which implement the reasonable and prudent measure described below and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

The following reasonable and prudent measure, with its accompanying terms and conditions, is necessary and appropriate to minimize incidental take of MGRS:

1. You will monitor human activities and MGRS presence and activities in the summerhome areas and work with us to eliminate or minimize any human activities that are likely to result in incidental take.
 - A. You will conduct monitoring of summerhome user presence and general activity levels and types at both summerhome areas once a year, every year, through 2028. These visits will be during a busy summer weekend. The observer will note the total number of summerhomes apparently occupied in each summerhome area; an estimate of the total number of people in each summerhome area; and an estimate of existing noise or other disturbance levels and types likely to affect MGRS. A standardized form may be developed for recording these data.
 - B. You will conduct monitoring of MGRS presence or activity(s) at both summerhome areas at least two times a year, every year through 2028. A monitoring visit for MGRS shall include a thorough ground search for nests, middens, or other obvious signs of MGRS activity. This includes searching a reasonable distance out from the perimeter (as safely as can be done) of the summerhome areas. A standardized form may be developed to record these data.
 - C. If, based on the monitoring in parts A and B, incidental take appears likely to occur (or you know of a circumstance that incidental take has occurred), you shall contact us immediately and we will work together to develop alternatives that can be implemented to minimize incidental take. The results of the monitoring, including the completed survey forms and any interpretation of the data, shall be submitted as a part of the Coronado National Forest Annual Monitoring Report to this office.

Review requirement: The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action, but will also allow assessment of whether anticipated incidental take has been exceeded. If, during the course of the action, the level of incidental take is exceeded, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The FS must immediately provide an explanation of the causes of the taking and review with the Arizona Ecological Service Office the need for possible modification of the reasonable and prudent measures.

Upon locating a dead, injured, or sick listed species, initial notification must be made to the FWS's Law Enforcement Office, (2450 W. Broadway Rd, Suite 113, Mesa, Arizona, 85202, telephone: 480/967-7900) within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and care and in handling dead specimens to preserve the biological material in the best possible state.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that you continue to assist us in the implementation of the MGRS recovery plan and its revisions, including providing funding for carrying out key recovery actions under your authorities.
2. We recommend that you pursue the completion of a Forest-wide consultation on wildland fire use for resource benefit and wildfire suppression activities.
3. The status of the MGRS is dire and its habitat has declined precipitously in recent years. We recommend you take immediate action to minimize or eliminate effects resulting from Forest-authorized activities (e.g. recreation, road use, etc.) in MGRS habitat and begin and continue rehabilitation and restoration of habitats destroyed by wildfire and insect damage.
4. We recommend that you plan the Pinaleño Ecosystem Restoration Project very conservatively, with the ultimate goal of recovering the MGRS while providing protection from catastrophic wildfire.
5. We recommend that you continue to participate with us and the AGFD in the bi-annual MGRS midden surveys, which provide crucial data on population trends and MGRS distribution in the Pinaleño Mountains, including the Old Columbine and Turkey Flat summerhome areas.
6. We recommend that you conduct a study to determine the effects the special-use-permitted summerhomes (and associated people, machinery, and activities) on the MGRS and other threatened or endangered species that may be affected. The study would include likely scenarios of plant and wildlife changes in response to the removal of the permitted summerhome areas, spatially and temporally. The scope of work for the study should be jointly developed by biologists from the FWS and Forest. The Arizona Game and Fish Department (AGFD) should be asked to assist with study design. The study should be consistent with section 605(a) of the Arizona-Idaho Conservation Act of 1988 (P.L. 100-696, November 18, 1988). That study, as prescribed in section 605(a), is necessary for the Forest to terminate, nonrenew, or modify the summerhome special use permits.

In order for us to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on proposed re-issuance of special use permits in two summerhome areas (Old Columbine and Turkey Flat) located in the Pinaleño Mountains. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

We appreciate your efforts to identify and minimize effects to listed species from this project. For further information, please contact Jim Rorabaugh at (520) 670-6150 (x230) or Sherry Barrett (520) 670-6150 (x223) of my staff. Please refer to consultation number 22410-2007-F-0163 in future correspondence concerning this project.

Sincerely,

/s/Denise Baker for

Steven L. Spangle
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ

Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ (Attn: T. Snow)

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APPENDIX A CONCURRENCES

We concur with your determination that the proposed action may affect, but is not likely to adversely affect, the Mexican Spotted Owl (MSO), its critical habitat (CH), and the Apache trout. The rationale for these concurrences are as follows.

Mexican Spotted Owl

- Except for two acres located on the edge of the MSO Turkey Flat Protected Activity Center (PAC) where the Turkey Flat summerhome water tank exists, no summerhome facilities occur within designated MSO PACs. This PAC has been surveyed 12 times since 1990; it has been considered occupied all years but one. At least one MSO core (100 acre-area of highest-quality habitat surrounding a nest site) is known for each PAC. No MSO cores occur in proximity to the summerhome areas; they (inside designated MSO PACs) stretch out over the ridge tops of the mountain range. Based on years of survey information, habitat availability, and forest suitability for MSO, we believe it extremely unlikely that MSO would choose to roost or nest in or very close to either summerhome area. There is a slight possibility that MSO may forage in and near the summerhomes. Since MSO prefer crepuscular and nighttime foraging, we believe that human and mechanical noise disturbance will be at minimum levels during those times. We believe that any potential effects to MSO (such as porch lights left on during nighttime hours; a dog barking) are insignificant.
- We believe that distances between the summerhome areas and known MSO nest/roost sites (one or two are about two miles away; others are much farther away) are far enough and the dense vegetation and steep terrain is discouraging enough to preclude the summerhome residents “bushwhacking” through to, or even seeing, a nest/roost site. The ages and abilities of the summerhome residents (and visitors) is such that few hike any but the most gentle trails, and none is likely at all to leave the trail for the forest interior. The steep terrain and dense understory in these areas also make it unlikely that summerhome residents (and visitors) would leave the trail to walk in the direction of a nest/roost site. We believe that any potential disturbance effects to the species (an occasional hiker, off-trail, and/or passing through the area) will be insignificant.
- The likelihood of any direct or indirect effects of the proposed action on MSO CH primary constituent elements is extremely low; therefore, we believe that any effects to MSO CH will be discountable.

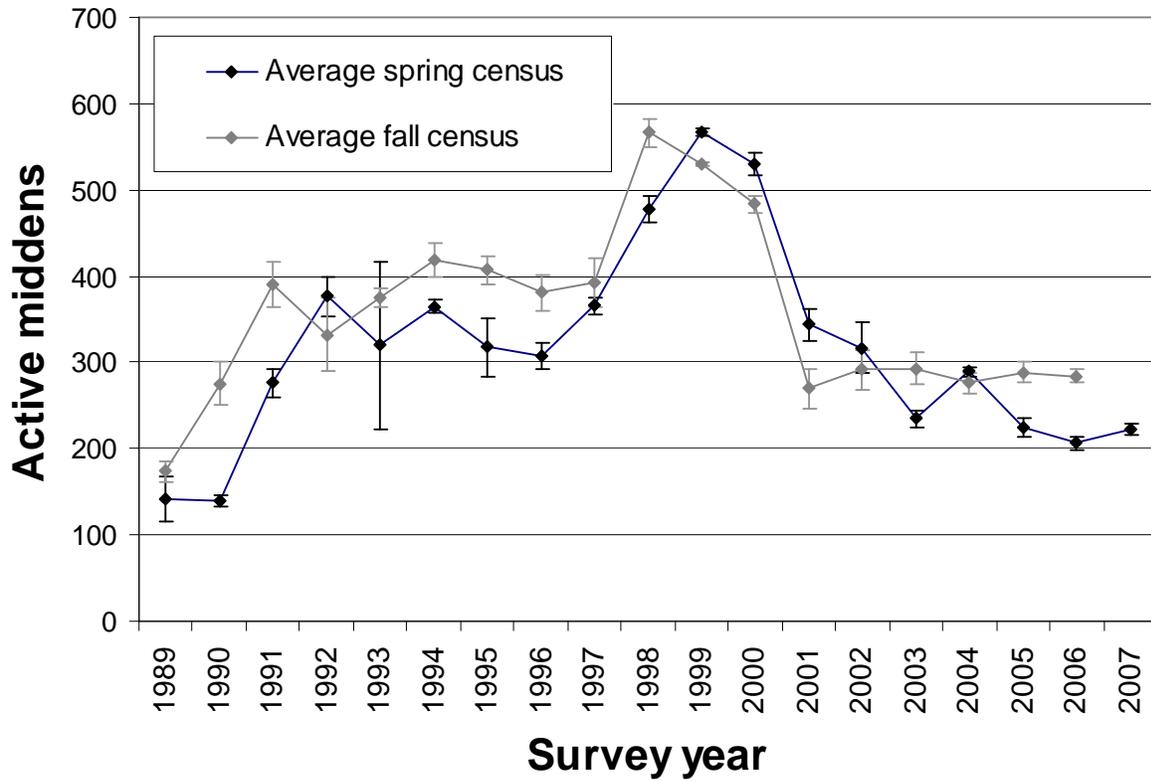
Apache Trout

- Apache trout populations appear unaffected by current permitted summerhome use and activities. The population occurs at least one mile from the Old Columbine summerhome area. There remains professional discussion as to whether or not the Mt. Graham Apache trout population is a hybrid; however, we include it in this consultation.

- Maintaining both summerhome areas at current permitted use and activity levels is not anticipated to create additional runoff or siltation issues for the downstream population of Apache trout in Ash Creek; therefore, we believe any potential effects to the species are insignificant and discountable.

APPENDIX B MGRS MIDDEN SURVEY RESULTS

FIGURE 1: Spring and fall census results 1989-2007. Symbols indicate occurrence of major wildfires and forest insect outbreaks. Error bars represent the conservative and optimistic estimates for each census.



APPENDIX C
MGRS Population Estimates

<u>Month/Year</u>	<u>Population</u>	<u>Estimate</u>
June 1986	323	
October 1987	242	
March 1988	207 (+/- 62)	
October 1988	conservative optimistic average	178 (+/- 62) 226 (+/- 62) 202
January 1989	197 (+/- 63)	
April 1989	conservative optimistic average	99 (+/- 53) 148 (+/- 59) 124
June 1989	conservative optimistic average	116 (+/- 29) 167 (+/- 32) 142
October 1989	conservative optimistic average	162 (+/- 15) 185 (+/- 15) 174
May 1990	conservative optimistic average	132 (+/- 15) 146 (+/- 16) 139
October 1990	conservative optimistic	250 300
June 1991	conservative optimistic	259 293
October 1991	conservative optimistic	364 417
June 1992	conservative optimistic	354 399
October 1992	conservative optimistic	290 374
June 1993	conservative optimistic	223 (+/- 31) 417 (+/- 31)
October 1993	conservative optimistic	365 (+/- 22) 385 (+/- 22)

May 1994	conservative	357 (+/- 18)
	optimistic	372 (+/- 18)
October 1994	conservative	398 (+/- 11)
	optimistic	439 (+/- 11)
June 1995	conservative	283 (+/- 12)
	optimistic	352 (+/- 12)
October 1995	conservative	391 (+/- 12)
	optimistic	423 (+/- 12)
Spring 1996	conservative	292 (+/- 10)
	optimistic	323 (+/- 12)
Fall 1996	conservative	360 (+/- 12)
	optimistic	402 (+/- 12)
Spring 1997	conservative	356 (+/- 12)
	optimistic	376 (+/- 12)
Fall 1997	conservative	364 (+/- 12)
	optimistic	420 (+/- 11)
Spring 1998	conservative	462 (+/- 11)
	optimistic	492 (+/- 11)
Fall 1998	conservative	549 (+/-11)
	optimistic	583 (+/-11)
Spring 1999	conservative	562 (+/-12)
	optimistic	571 (+/-11)
Fall 1999	conservative	528 (+/-11)
	optimistic	531 (+/-11)
Spring 2000	conservative	516 (+/-11)
	optimistic	544 (+/-11)
Fall 2000	conservative	474 (+/-11)
	optimistic	493 (+/-11)
Spring 2001	conservative	326 (+/- 12)
	optimistic	362 (+/- 12)
Fall 2001	conservative	247 (+/- 12)
	optimistic	292 (+/- 11)
Spring 2002	conservative	288 (+/- 12)
	optimistic	346 (+/- 12)
Fall 2002	conservative	269 (+/- 8)
	optimistic	315 (+/- 8)

Spring 2003	conservative	224 (+/- 11)
	optimistic	245 (+/- 11)
Fall 2003	conservative	274 (+/- 13)
	optimistic	311 (+/- 13)
Spring 2004	conservative	284 (+/- 13)
	optimistic	295 (+/- 12)
Fall 2004	conservative	264 (+/- 12)
	optimistic	288 (+/- 12)
Spring 2005	conservative	214 (+/- 12)
	optimistic	235 (+/- 12)
Fall 2005	conservative	276 (+/- 12)
	optimistic	301 (+/- 12)
Spring 2006	conservative	199 (+/- 15)
	optimistic	214 (+/- 15)
Fall 2006	conservative	276 (+/- 12)
	optimistic	293 (+/- 11)
Spring 2007	conservative	216 (+/- 12)
	optimistic	230 (+/- 12)
Fall 2007	conservative	299 (+/- 11)
	optimistic	310 (+/- 11)

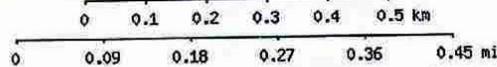
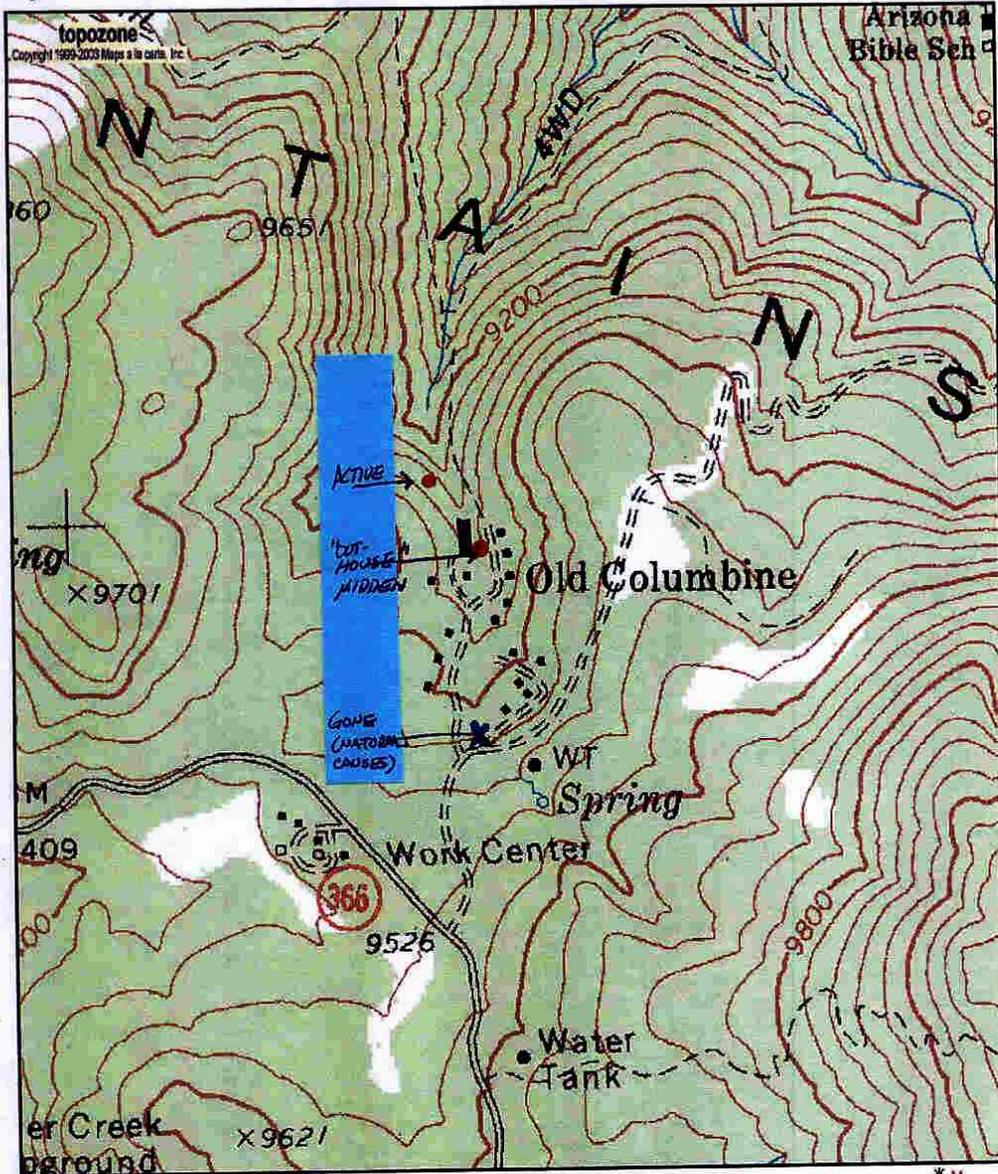
*Note – as of this writing, the Spring 2008 surveys are complete, but population estimates have not yet been calculated.

APPENDIX D MAPS OF SUMMERHOMES AND MGRS MIDDENS

TopoZone - Old Columbine, USGS Webb Peak (AZ) Topo Map

TRG

Page 1 of 1



UTM 12 602267E 3619168N (NAD27)
 Old Columbine, USGS Webb Peak (AZ) Quadrangle
 Projection is UTM Zone 12 NAD83 Datum

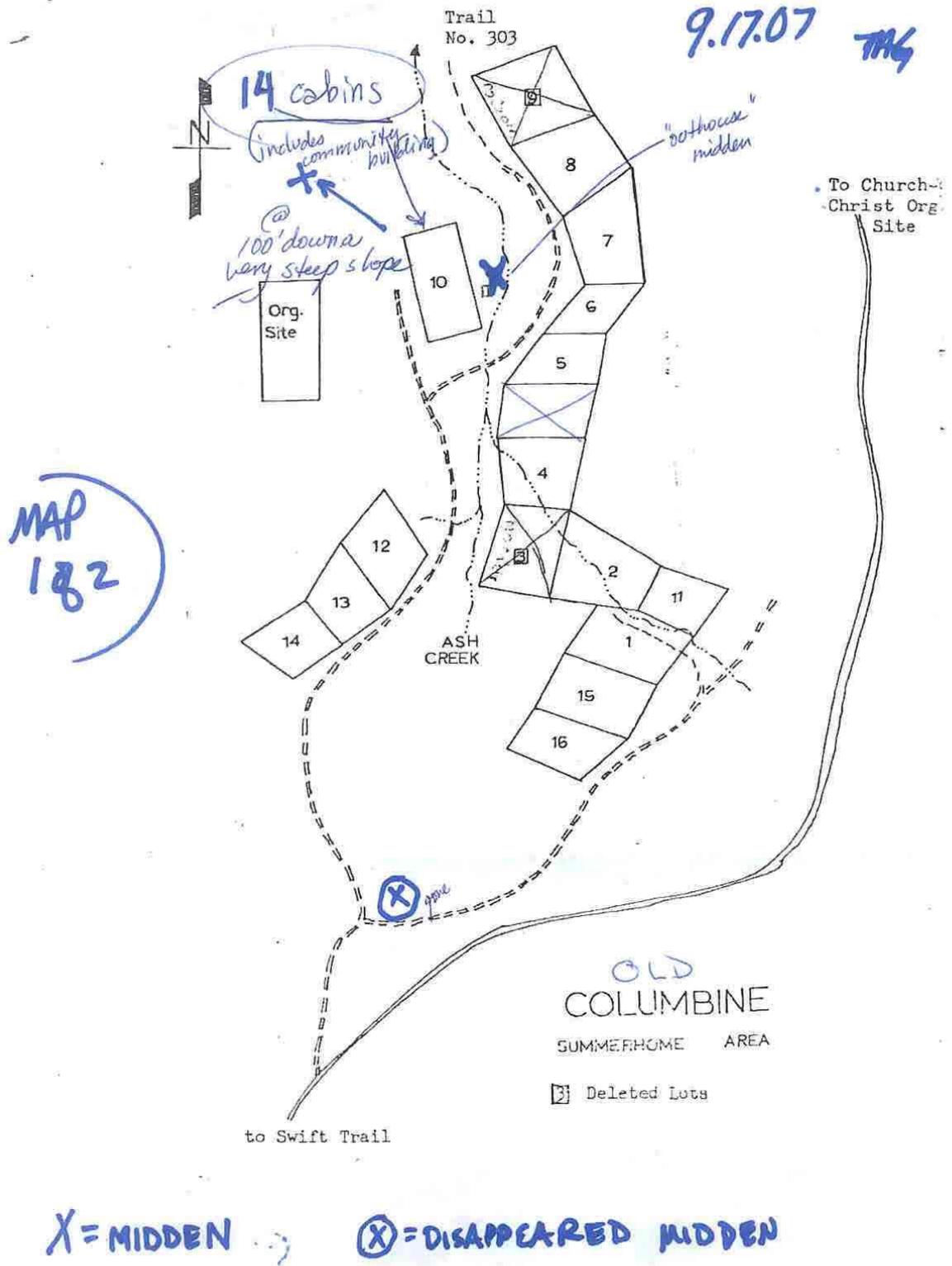
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 G=0.589

● = MIDDEN **x = DISAPPEARED MIDDEN**

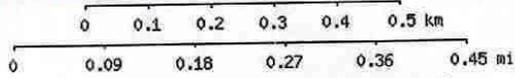
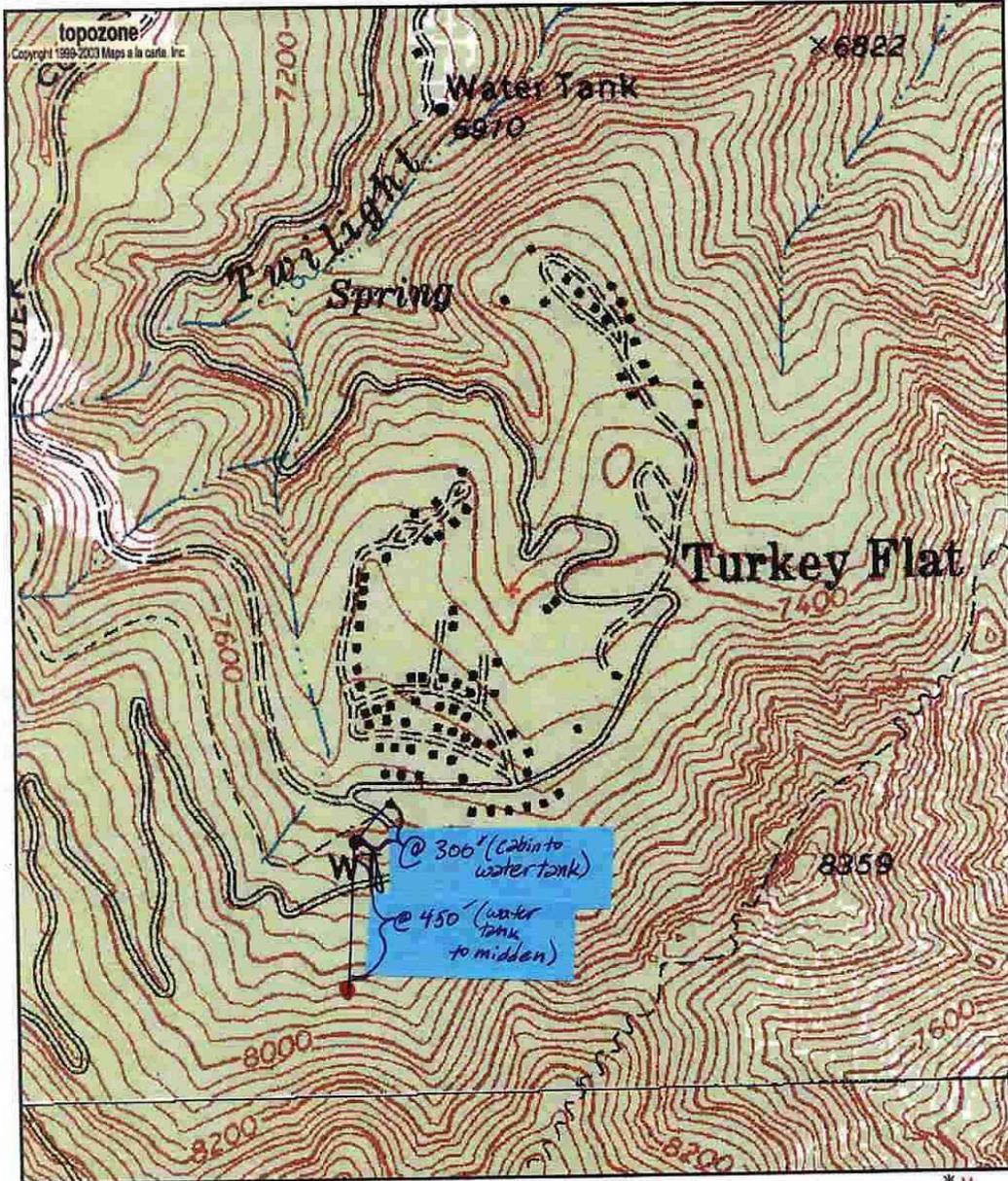
<http://www.topozone.com/print.asp?lat=32.70724&lon=-109.90889&s=24&size=l&symshow=n&...> 9/17/2007

LOCATIONS ARE APPROXIMATE -

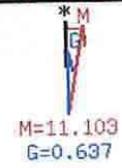
1 Old Columbine summerhomes and middens topo



2 Old Columbine summerhomes and middens



UTM 12 610901E 3610952N (NAD27)
 USGS Mount Graham (AZ) Quadrangle
 Projection is UTM Zone 12 NAD83 Datum



• = MIDDEN

<http://www.topozone.com/print.asp?lat=32.6323&lon=-109.81777&s=24&size=l&u=4&layer=D...> 9/17/2007

LOCATIONS ARE APPROXIMATE—

3 Turkey Flat summerhomes and middens topo



4 Turkey Flat summerhomes and middens