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AESO/SE
2-21-01-F-271 August 9, 2001

Mr. Terry Oda
CWA Standards and Permits Office, WTR-5
U. S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA. 94105-3901

Dear Mr. Oda:

This biological opinion responds to your request for consultation with the U.S. Fish and Wildlife Service (Service) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your original request for formal consultation was dated March 30, 2001, and received by us on April 9, 2001. At issue are impacts that may result from the proposed construction of a new Safeway shopping center on a 9.8 ha (24.2 acre) site in Sahuarita, Arizona. In order to proceed with the project, the applicant requires a Clean Water Act (CWA) Section 402 National Pollutant Discharge Permit (NPDES) for storm water discharges associated with construction activities in Arizona from the U. S. Environmental Protection Agency (EPA). Impacts resulting from the project may affect Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*).

This biological opinion was prepared using information contained in the biological assessments (BA) prepared by SWCA, Inc. (February 2001), site visits, office meetings, and our files. Literature cited in this biological opinion is not a complete bibliography of all literature available on the affected species, nor is it a complete review of the effects of development and subsequent habitat fragmentation on the species. A complete administrative record of this consultation is on file in our office.

CONSULTATION HISTORY

The informal consultation process for this project began November 22, 2000, with a site visit. We reviewed the site, saw the one Pima pineapple cactus located on the parcel, and discussed possible ways to minimize the impacts to the site. On January 4, 2001, the Service met with

biologists from SWCA, Inc. to discuss and finalize the amount of suitable Pima pineapple cactus on the site. On March 30, 2001, EPA sent the Service a BA (SWCA, Inc., February 2001) with a request to initiate formal consultation.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The proposed Federal action is the issuance of an NPDES permit from EPA to the applicant, Safeway, Inc. The applicant proposes to develop a 9.8-ha (24.2-acre) parcel for a new shopping center in Sahuarita, Pima County, Arizona. The project is located within the SW 1/4 of Section 35, T17S., R13E. The new development consists of a retail grocery store, shopping center, and related infrastructure such as parking lots, loading docks, and trash collection on the site. These facilities will require removal of all existing vegetation (Fig. 1). Maps and specific details of the proposed action are provided in the February 2001, BA and are included here by reference.

The maximum amount of suitable habitat for Pima pineapple cactus that will be disturbed due to construction of the proposed shopping development is 5.1 ha (12.6 acres). There is one Pima pineapple cactus on the parcel. It will be directly affected by the proposed action.

Proposed Conservation Measures

The applicant, Safeway, Inc., proposes the following measures to minimize potential adverse effects to Pima pineapple cactus and its habitat. These measures are taken from the February 2001, BA, and subsequent phone conversations with Mr. Ken Kingsley of SWCA, Inc. (July 18, 2001) and Mr. Alan Glen with Smith, Robertson, Elliot and Glen (August 6 and 8, 2001).

1. Prior to the initiation of clearing and construction, which is anticipated to be no later than October 15, 2001, the applicant will purchase 12.6 acre credits in a Service-approved conservation bank for Pima pineapple cactus. The amount of credits is based on a 1:1 replacement ratio for the loss of suitable Pima pineapple cactus on the parcel. If the credits cannot be purchased within this time frame, the applicant will, prior to the initiation of clearing and construction, do one of the following: (a) provide to the Service a letter of intent from the owner of the approved or pending conservation bank committing the applicant and the bank to the purchase and sale of credits, and the applicant will provide to the Service evidence that the purchase price for the credits has been placed in a segregated account dedicated for that purpose, or (b) provide alternative Pima pineapple cactus mitigation which may include acquisition (by deed or conservation easement) and permanent preservation of 5.1 ha (12.6 acres) of occupied Pima pineapple cactus habitat at an acceptable location, or (c) provide a contribution of $25,160.00 to a conservation fund or research entity acceptable to the Service for the benefit of Pima pineapple cactus. The Service will receive copies of the documents reflecting the applicable minimization option before clearing and construction begins.

2. The known Pima pineapple cactus on the site will be transplanted to a site acceptable to the Service.

STATUS OF THE SPECIES

Pima Pineapple Cactus

Life History

The final rule listing Pima pineapple cactus as endangered was published September 23, 1993 (58 FR 49875). The rule became effective on October 25, 1993; critical habitat was not designated at that time. Factors that contributed to the listing include habitat loss and degradation, habitat modification and fragmentation, limited geographic distribution and plant species rareness, illegal collection and difficulties in protecting areas large enough to maintain functioning populations. The biological information below is summarized from the proposed and final rules, and other sources.

Pima pineapple cactus is a low-growing hemispherical cactus with adults varying in stem diameter from 5.0 cm (2.0 inches) to 21.0 cm (8.3 inches) and height from 4.5 cm (1.8 inches) to 45.7 cm (18.0 inches). Individuals are considered adults when they reproduce sexually. Plants can be either single or multi-stemmed with yellow flowers blooming with the summer rains. Clusters of Pima pineapple cactus stems are formed primarily from vegetative clones produced at the plant base (Benson 1982, Roller 1996). The diagnostic field character of this taxon is the presence of one stout, straw-colored, hooked central spine. Radial spines extend laterally around the central spine and average 10 to 15 spines on large cacti and 6 on small cacti (Benson 1982).

Pima pineapple cactus occurs south of Tucson, in Pima and Santa Cruz counties, Arizona and adjacent northern Sonora, Mexico. It is distributed at very low densities throughout both the Altar and Santa Cruz Valleys, and in low lying areas connecting the two valleys.

Groups of flowers begin to bloom for single day periods following 5 to 7 days after the first monsoon rains. Flowering is triggered by as little precipitation as 3 mm (0.12 inches). Generally flowers begin opening midmorning and close at dusk (Roller 1996). Adult plants bloom one to three days each year; flowering is usually over by the end of August. Cross-pollination produces significantly more viable seeds than self-pollination. Fruits are mature within two weeks following successful pollination. Germination has been observed in the field during the summer monsoon rainy season (Roller 1996). Anecdotal observations indicate the species' flowers are visited by a variety of native bees and European honey bees, which have been observed to leave the flowers with their forehead and hind legs covered in Pima pineapple cactus pollen.

Habitat fragmentation and isolation may be an important factor limiting future seed set of this cactus. Recent data show that the species cannot successfully self pollinate and is reliant on invertebrate pollinators. One hypothesis is that the spatial distribution pattern of individual Pima pineapple cacti within a given area may regulate pollinator visitations, thus resulting in more

successful cross-pollination and subsequent seed set over the population (Roller 1996). If the pollinators are small insects, with limited ability to fly over large distances, habitat fragmentation may contribute to a decrease in pollinator effectiveness with a subsequent decrease in seed set and recruitment.

Population Stability

Extrapolations from recent (1992-1997) surveys of known Pima pineapple cactus locations suggest that the cactus may be more numerous than previously thought. Projections based only on known individuals may underestimate the total number of individuals. This in no way indicates that the cactus is not rare or endangered. Pima pineapple cactus is widely dispersed in very small clusters across land areas well suited for residential, commercial or mining development. As well, field observations suggest a great deal of land area within the range boundaries would not support Pima pineapple cactus today due to historic human impacts. Thus, populations are already considerably isolated from each other in many portions of the range, and population size and apparent recruitment varies significantly across the range. On a more local scale, population variability may relate to habitat development, modification, and/or other environmental factors such as slope, vegetation, pollinators, dispersal mechanisms, etc.

The transition zone between the two regions of vegetation described by Brown (1982) as semidesert grassland and Sonoran desert-scrub contains denser populations, better recruitment, and individuals exhibiting greater plant vigor. Vegetation within this transition zone is dominated by mid-sized mesquite trees, half shrubs (snakeweed, burroweed, and desert zinnia) with patches of native grass and scattered succulents. Because populations are healthier in this transition zone, conservation within these areas is very important (Roller and Halvorson 1997). However, this important habitat type is not uniformly distributed throughout the plant's range. Populations of Pima pineapple cacti are patchy, widely dispersed and highly variable in density. The higher population densities have only been documented at three sites. Compared to other surveys, two of these sites are very small in scale and range from 6.3-7.5 plants per ha (1-3 plants per acre). Other densities across the majority of the plant's range vary between one plant per 1.9 ha (4.6 acres) and one plant per 8.5 ha (21 acres) (Mills 1991, Ecosphere 1992, Roller 1996).

Land areas surrounding developed parts of Green Valley and Sahuarita, Arizona (including adjacent areas of the San Xavier District of the Tohono O'odham Nation) may be important for the conservation of this species within its range. Analysis of surveys conducted from 1992 to 1995 with a multivariate statistical analysis established a pattern of greater population densities, higher ranks of cactus vigor and reproduction occurring within the transition vegetation type found in this area of the northern Santa Cruz Valley (Roller and Halvorson 1997). This area could be defined as an ecotone boundary between semidesert grassland and Sonoran desert scrub.

Seedling and sub-adult size classes are uncommon in documented populations across the range. However, this may be a function of the difficulty of finding such small, well-camouflaged plants in a large-scale survey, or because the establishment phase of the seedling may be limited in some unknown way. Research on Pima pineapple cactus reproduction has suggested that the establishment phase of Pima pineapple cactus life history may limit recruitment within populations (Roller 1996). Evidence presented to support this conclusion was the abundance of

flowers, fruits and viable seed, and the rarity of seedling presence at different sites spread through the plant's range (Roller 1996). Other research has confirmed that the establishment phase of other Sonoran cacti species may be critical for survival to reproductive maturity (Steenbergh and Lowe 1977).

Status and Distribution

Generally, the Pima pineapple cactus grows on gentle slopes of less than 10 percent and along the tops (upland areas) of alluvial bajadas nearest to the basins coming down from steep rocky slopes. The plant is found at elevations between 720 m (2,362 ft) and 1,440 m (4,593 ft) (Phillips et al. 1981, Benson 1982, Ecosphere 1992), in vegetation characterized as either or as combination of both the Arizona upland of the Sonoran desert scrub and semidesert grasslands (Brown 1982).

The acquisition of baseline information began with surveys documenting the presence of Pima pineapple cactus as early as 1935. More intensive surveys were initiated in 1991 and other research established in 1993 further investigated the reproductive biology, distribution, fire effects and mortality associated with various threats. Therefore, the best available baseline information is relatively recent and may not represent actual changes in distribution since the decline in the status of the species began.

Widely scattered surveys have been conducted across sites that varied considerably in cacti density. Densities ranged between 0.1-7.5 plants per ha (0.05-3 plants per acre). Pima pineapple cactus occurs in 50 townships within its U.S. range. However, a considerable amount of land area within the range boundaries does not provide habitat for the species due to elevation, topography, hydrology, plant community type, and human degradation. To date, an estimated 22,959 ha (56,730 acres), (10 to 20 percent of the U.S. range) has been surveyed. Not all of this area has been intensively surveyed; some has only been partially surveyed using small land blocks to estimate densities rather than 100 percent ground surveys. A conservative estimate of total cacti located to date would be 3,800 individuals. The majority of those were located after 1991.

It is important to clarify that the above number represents the total number of locations ever found and not the current population size. It would be impossible to estimate densities over the remaining unsurveyed area because of the clumped and widely dispersed pattern of distribution of this species. Of the 3,800 individuals known at this time, 2,203 (58 percent) of them have been removed throughout the range. This quantity includes observed and authorized mortalities and individuals transplanted since the species was listed in 1993 to present. A small portion of these mortalities were caused by natural factors (i.e., drought). Moreover, this figure does not take into account those cacti that are removed from private land or other projects that have no federal nexus.

Transplanted individuals are not considered as functioning within the context of a self-sustaining population. Efforts to transplant individual cacti to other locations have only had limited success and the mortality rate has been high, especially after the first year. Furthermore, once individuals are transplanted from a site it is considered to be extirpated as those individuals functioning in

that habitat are irretrievably lost. The Service hopes that continued experimentation will improve the success rate of transplantation. In the meantime, until information suggests that reintroduction efforts are successful, transplanted individuals will not be counted as operative units of the entire population.
The approach to transplanting Pima pineapple cactus involves three general phases: i) selection of suitable habitat to sustain viable populations, ii) replanting techniques and, iii) salvage operations which include proper removal of the plant and root system. The Service is currently updating the transplant protocol through the recovery planning process. The Service views transplanting cacti as a measure of last resort for conserving the species. Transplanting will be recommended only when on-site and off-site habitat conservation is not possible and the death of cacti is unavoidable.

The area of habitat authorized to be modified or destroyed between 1987 and 2000 (i.e., habitat developed or significantly modified beyond the point where restoration would be a likely alternative) is approximately 9,886 ha (24,429 acres) which represents 43 percent of the total area surveyed to date. In 1998, more than 445.5 ha (1,100 acres) of Pima pineapple cactus were lost including 143 ha (353 acres) from the Las Campanas Housing Development project, and 304.6 ha (752 acres) from the ASARCO, Inc. Mission complex project. In 2000, 237.3 ha (586 acres) of habitat were lost with the expansion of a state prison in Tucson. In 2001, 71.7 ha (177 acres) of habitat were lost through development, but 375.8 ha (888 acres) of occupied and suitable habitat were conserved through conservation easements. The number of acres lost through private actions, not subject to Federal jurisdiction, is not known but given the rate of urban development in Pima County, is expected to be significant.

Most of the documented habitat development has occurred south of Tucson down through the Santa Cruz Valley to the town of Amado. This area is critical for the future recovery of the species. The expansion of urban centers, population and mining activities will continue to eliminate habitat and individuals, and result in habitat fragmentation.

The protection of habitat and individuals is complicated by the varying land ownership within the range of this species. An estimated 10 percent of the potential habitat for Pima pineapple cactus is held in Federal ownership. The remaining 90 percent is on Tribal, State, and private lands. Most of the federally owned land is either at the edge of the species' range or in scattered parcels. The largest contiguous piece of federally owned land is the Buenos Aires National Wildlife Refuge, located at the southwestern edge of the species' range at higher elevations and lower plant densities.

Based on surveys and habitat analysis, land areas south of Tucson through the Santa Cruz Valley to the town of Amado and surrounding developed parts of Green Valley and Sahuarita, and parts of the San Xavier District of the Tohono O'odham Nation, appear to support abundant populations, some recruitment, and units of extensive habitat still remain. However, the primary threat to the status of this species throughout its range is the accelerated rate (i.e., since 1993) at which this prime habitat is being developed, fragmented or modified.

Under section 9 of the Act, the taking of listed animals is specifically prohibited, regardless of landownership status. For listed plants, these prohibitions and the protection they afford do not apply. Listed plant species are protected only from deliberate removal from Federal lands. There is no protection against removal from, or destruction of, plants on any non-Federal lands under the Act by a land owner. The Arizona Native Plant Law may delay vegetation clearing on private property for the salvage of specific plants species within a 30-day period. Although the Arizona State Native Plant Law does prohibit the illegal taking of this species on state and private lands without a permit for educational or research purposes, it does not provide for protection of plants in situ through restrictions on development activities.

Section 7 protection extends to listed plants regardless of landownership if there is a Federal nexus. However, without Federal agency involvement, section 7 does not apply to projects on non-Federal lands. Much of the development likely on State or private lands has a limited exposure to Federal regulatory requirements. Additional Pima pineapple cacti and associated habitat on these lands are almost certain to be lost as development in southern Arizona continues through the Santa Cruz Valley. Efforts to transplant individual cacti to other locations have had limited success, and as development increases, suitable locations will become scarce as habitat is converted.

Based on current knowledge, the following threats documented with this reduction in habitat alter the landscape in a manner that would be nearly irreversible in terms of supporting Pima pineapple cactus populations: urbanization, farm and crop development, and exotic species invasion. Prescribed fire can have a negative effect if not planned properly.

Other specific threats which have been previously documented (U.S. Fish and Wildlife Service 1993), such as overgrazing and mining, have not yet been analyzed to determine the extent of effects to this species. However, partial information does exist and can be applied. Mining has resulted in the loss of hundreds, if not thousands, of acres of potential habitat throughout the range of the species. Much of the mining activity has been occurring in the Green Valley area, which is the center of the species' distribution and the area known to support the highest densities of individuals. Overgrazing by livestock, illegal plant collection, and fire-related interactions involving exotic Lehmann lovegrass (*Eragrostis lehmanniana*) may also negatively affect Pima pineapple cactus populations (U.S. Fish and Wildlife Service 1993).

Very little is known regarding the effects of low to moderate levels of livestock grazing on Pima pineapple cactus distribution. Currently, a study has been established to observe the effects of grazing on Pima pineapple cactus on the Coronado National Forest. The species is patchy in distribution and widely dispersed and occupies relatively xeric soils (i.e., these plants do not inhabit areas immediately adjacent to or along water tanks or streambanks) (Roller 1996). The grazing use of these sites varies considerably. Some areas have received use above the authorized intensity (Falk, pers. obs.). The monitoring from allotments on the Coronado have not shown significant differences between cacti in the exclosures and those that are not protected. However, the plots have been monitored only for 5 years and the differences may not be seen for

many years to come. Young cacti could be trampled by livestock, or site hydrology may be altered in ways that might affect seedling establishment and recruitment.

Habitat effects of livestock overuse could include erosion, hydrological and micro-climatic changes, invasion or expansion of exotic grasses due to livestock preferences for native grass species over exotics. Some range management practices such as mechanical imprinting, chaining, ripping, and seeding of non-native grasses have contributed to the modification and loss of habitat and individual cacti. Overgrazing in some areas continues today.

It is uncertain the extent to which overgrazing affects the cactus by altering the structure and function of the ecosystem. However, long-term grazing, (particularly overgrazing), fire suppression, and drought in arid grassland ecosystems have all been hypothesized as being the cause, either individually or collectively, of changes in community structure and function (Bahre 1985). Altered edaphic (stability and water infiltration ability) conditions, caused by damage to micro-biotic and biological crusts over soils with grazing, have been documented in arid land systems (Schlesinger et al. 1990, Fleischner 1994).

Vegetation associated with higher Pima pineapple cactus densities, reproduction, and greater levels of cactus vigor is described as a mid-sized mesquite shrub land with an assortment of other succulent species and native bunch grasses. Many of the species dominant in this vegetation type are associated with grazing (i.e., "increasers" under some grazing practices). Less intensively grazed pastures did support greater native grass coverage with more species present. However, even with an increased bunch grass abundance, the fuel structure of the community was not continuous and allowed for substantial open patches along the drip line of shrub species where the cactus often occurs (Roller and Halvorson 1997). Also, specific levels of soil movement are required for seed germination because the seed will not germinate on the surface; it generally germinates at a depth of 0.5-1.5 cm (0.2 - 0.6 inches) (Roller 1996). Few locations throughout the plant's range have documented the presence of seedlings or sub-adults. However, all but one of the known locations had been grazed within three years of the observation. Whether light to moderate grazing practices provide the appropriate level of soil movement to cause seed germination has not been determined. Over-land sheet flow across these areas may also move soil and deposit it over sediments. The study established on the Coronado National Forest should provide some insight on seed germination relative to specific grazing intensities.

Reduced herbaceous biomass within the immediate proximity of individuals may reduce heat intensity with fire. Reduced herbaceous cover and continuity decrease fire frequencies in semidesert grasslands, and over the long-term increase cactus survival following fire (McPherson 1995, Thomas and Goodson 1992, Wright and Bailey 1982).

The invasion of Lehmann lovegrass combined with fire is a threat to Pima pineapple cactus populations. Continuous distributions of fuels and greater biomass near the apex of individual plants are believed to increase mortality following fire (Roller and Halvorson 1997). Fire increases Lehmann lovegrass distribution; correspondingly, fire intensity and fire frequency increases with Lehmann lovegrass invasion (McPherson 1995), a positive-feedback cycle.

Even with complete data on historical change related to Pima pineapple cactus distribution and abundance, the Service cannot reliably predict population status due to compounding factors such as climate change, urbanization, legal and political complexities (McPherson 1995). We do not know if the majority of populations of Pima pineapple cactus can be sustainable under current reduced and fragmented conditions. Thus, the need for information on what limits the plant's distribution under current habitat conditions is significant.

Based on monitoring results, the range-wide status of the Pima pineapple cactus appears to have been recently affected by threats that completely alter or considerably modify more than a third of the species' surveyed habitat, and have caused the elimination of nearly 60 percent of documented locations. These values are supplied to serve as an extrapolation of the situation which might be taking place across the rest of the entire population. Current information regarding the status of this species must be supplemented by more precise and thorough spatial analysis through the use of geographical information systems, databases and on the ground surveys.

Dispersed, patchy clusters of individuals are becoming increasingly isolated as urban development, mining, and other commercial activities continue to detrimentally impact the habitat. The remaining habitat also is subject to degradation or modification from current land management practices, increased recreational use when adjacent to urban expansion (i.e., off-road vehicle use and illegal collection), and the continuing aggressive spread of nonnative grasses into its habitat. Habitat fragmentation and degradation will likely continue into the foreseeable future based on historic data and growth projections produced by the Pima County Association of Governments (1995). There is very little Federal oversight on conservation measures that would protect or recover the majority of the potential habitat. Even some areas legally protected under the Act have been modified and may not be able to support viable populations of the Pima pineapple cactus over the long-term.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, and the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation. It also includes the impact of State and private actions which 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 under consultation.

The project area is the 9.8 ha parcel, which is surrounded by developed property. The areas to the east and south are owned by ASARCO, Inc. and are active mine operations. Land to the north is private and land to the west is bissected by the 1-19 corridor.

The vegetation on the site is typical of the Arizona Upland subdivision of Sonoran Desertscrub biome (Brown 1994). The site is dominated by hackberry (*Celtis pallida*), mesquite (*Prosopis*

velutina), cholla (*Opuntia* sp), and grasses (*Bouteloua* ssp., *Eragrostis* spp., and *Aristida* spp.). There are several small ephemeral drainages on the property with xeroriparian vegetation. Drainage on the site has been altered by human activities (tailing piles, drainage ditches) adjacent to the parcel. The parcel has also had a high level of unauthorized off-road vehicle use and supports a high density of the non-native buffle grass (*Pennisetum ciliare*) on the south side of the parcel.

The site supports one Pima pineapple cactus. The site was mapped for suitable cactus habitat and 52% (5.1 ha or 12.6 acres) were determined to be suitable habitat for Pima pineapple cactus. The remaining habitat on the site was considered unsuitable because it occurred in washes, slope was too steep, or it was invaded by buffle grass. All of the property within the 9.8 ha parcel is slated for development.

The surrounding parcels of developed land were most likely similar to this parcel and there were probably Pima pineapple cactus present. The lands that are part of the Mission Mine complex (adjacent to this parcel) did support Pima pineapple cactus, but that habitat has been altered by the mine development.

EFFECTS OF THE PROPOSED ACTION

The proposed action will result in the development of 5.1 ha (12.6 acres) of suitable Pima pineapple cactus habitat and the loss of one cactus. The density of the cactus in the proposed development site is 0.2 per ha (0.04 cactus per acre). This is a relatively low density for the cactus. The possible reasons for this low density may be the high level of physical disturbance on the site, isolation, and habitat fragmentation. The single individual on the site could have been part of a larger population at one time, but it is no longer a functioning member of a population. This loss of this particular individual, given its current status, is minor. Additional loss of habitat and individuals continues a downward trend for the species. The ongoing high rate of habitat loss will continue to impede recovery for this species. The Service does not anticipate any indirect effects in the action area. The proposed development will all occur within the parcel. Access to the site will be on existing roads.

To minimize the effects of the proposed action on habitat loss, the applicant is purchasing credits in a Service approved conservation bank for Pima pineapple cactus. The ratio of 1:1 replacement for the loss of habitat is appropriate for this isolated, low density cactus site. Also, an existing seed bank may be present on the site that has value to the species that should compensated for. Off-site conservation lands, such as the conservation bank, will contribute to the recovery of Pima pineapple cactus. The cactus will not be able to survive in the long-term in small, fragmented areas surrounded by urban development. Large, contiguous blocks of habitat need to be set aside and managed for their natural values. All of the proposed conservation actions included in the biological assessment are critical to offset impacts to Pima pineapple cactus and its habitat.

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 biological opinion. 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.

As described previously, development in this geographic area can be expected to increase. Private lands not presently developed in the action area are quickly becoming urbanized. It is unknown what the plans are for the private lands. Much of this development will have little or no Federal nexus. Without any protection under the Act, the only protection available is through the Arizona Native Plant Law, which provides only for salvage for scientific and educational purposes. Regardless of salvaged cacti transplant success, the habitat would be lost.

Much of the habitat and the individuals of the species are at significant risk of destruction or continued degradation. Without the protection under section 9 that applies on non-Federal lands, there is little regulatory authority to use in reducing those risks.

CONCLUSION

After reviewing the current status of Pima pineapple cactus, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the proposed action is not likely to jeopardize the continued existence of Pima pineapple cactus. No critical habitat has been designated; therefore, none will be affected. The Service bases this conclusion on the following:

1) The action will affect an area of low density Pima pineapple cactus that is already isolated by existing development.

2) The applicant will purchase 12.6 credits in a Service approved conservation bank for Pima pineapple cactus. The bank provides protection in perpetuity for the cactus and its habitat. It contributes to the overall recovery and conservation of the species.

INCIDENTAL TAKE STATEMENT

Sections 7(b)(4) and 7(o)(2) of the Act do not apply to the incidental take of listed plant species. However, protection of listed plants is provided to the extent that the Act requires a Federal permit for removal or reduction to possession of endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law. Neither incidental take nor recovery permits are needed from the Service for implementation of the proposed action.

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. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for this species. Actions proposed as part of the proposed project are not included here. The Service recommends the following actions:

1. The Service recommends that the one Pima pineapple cactus on the proposed site be transplanted on the site after development is complete. An educational sign describing the species with conservation recommendations would be appropriate, as the area will receive high use from the general public.

REINITIATION NOTICE

This concludes formal consultation on the proposed Safeway, Inc, development in Sahuarita, Arizona. 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 maintained (or is authorized by law) and if: (1) new information reveals effects of the agency action that may affect Pima pineapple cactus in a manner or to an extent not considered in this opinion; (2) the agency action is subsequently modified in a manner that causes an effect to the Pima pineapple cactus that was not considered in this opinion; or (3) a new species is listed or critical habitat designated that may be affected by the action.

If we can be of further assistance, please contact Mima Falk (520) 670-4550 or Sherry Barrett (520) 670-4617.

Sincerely,

/s/ David L. Harlow
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Environmental Protection Agency, San Francisco, CA (Attn: Eugene Bromley)

Director, Arizona Game and Fish Department, Tucson, AZ
Arizona Department of Agriculture, Phoenix, AZ (Attn: Jim McGinnis)
Arizona Department of Environmental Quality, Phoenix, AZ
SWCA, Inc., Tucson, AZ (Attn: Ken Kingsley)
Smith, Robertson, Elliot & Glen, Austin, TX (Attn: Alan Glen)

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Figure 1.

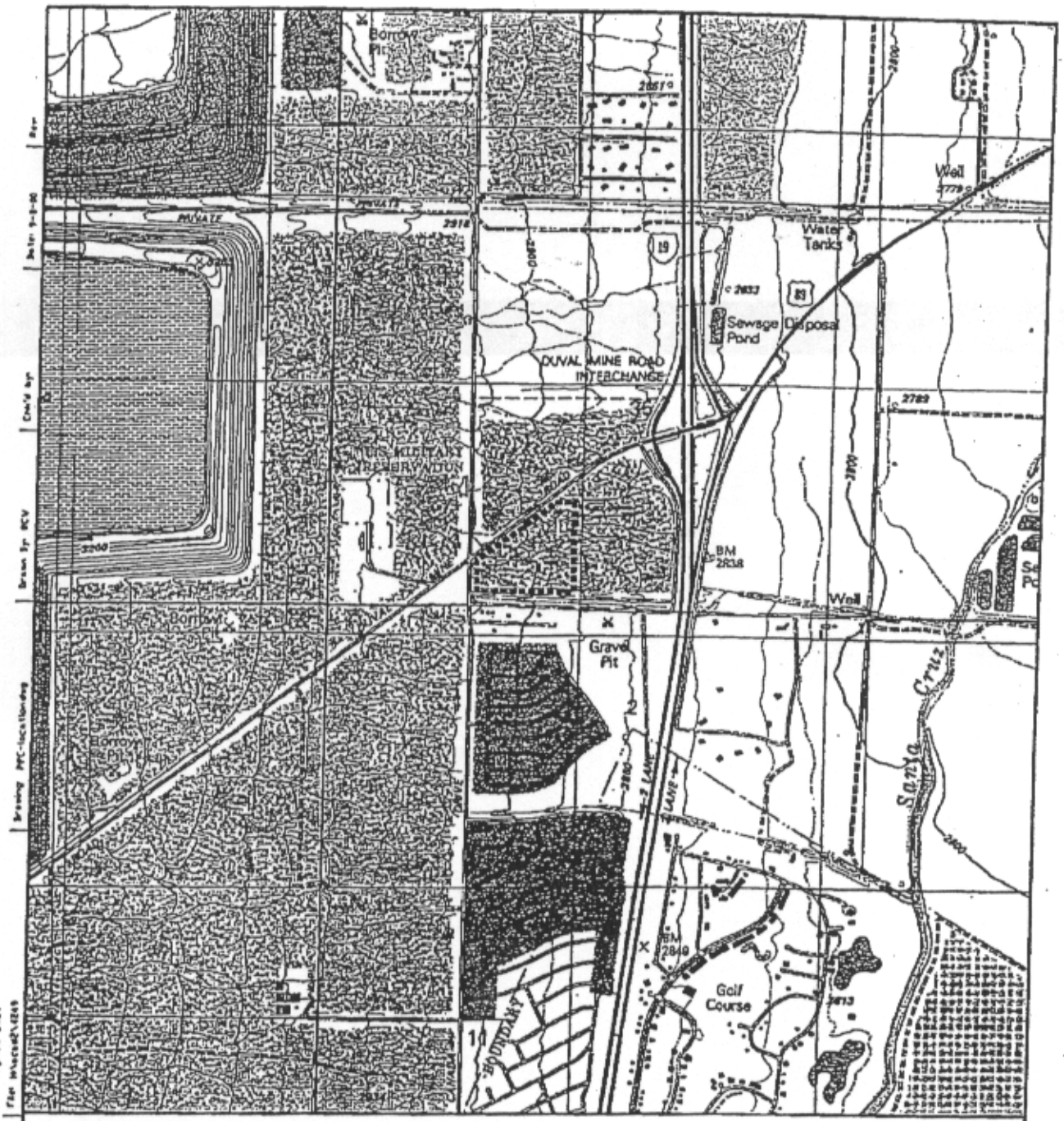

Figure 1. Project location.