

Cattle Grazing Program

The City currently manages three successful grazing operations for the purpose of Coastal Terrace Prairie and other habitat enhancement in our open space parks and greenbelt areas. This narrative describes the proposed cattle grazing program which is compatible with the multi-use east-west trail route as proposed in the *Arana Gulch Master Plan*.

The proposed grazing area would be approximately 14 acres which is nearly triple the acreage originally proposed. The grazing areas would include 3 separate enclosures as shown on the attached mapping. The grazing area would encompass tarplant population areas A, C and D of Map 2, Appendix 27. Enclosing tarplant population area B within a larger grazing area is not feasible due to environmental and visual impacts as a result of the additional retaining walls, grading and tree removal that would be required.

Benefits of Grazing with Separate Fenced Areas

Rather than one contiguous grazing area, the proposed grazing program features three grazing areas. These separately fenced areas are beneficial because they allow the grazer, guided by botanists, to conduct more controlled and focused cattle grazing. Cattle can easily be moved between the grazing areas as needed. For example, as tarplant individuals emerge within areas A and D, cattle can be moved to the northernmost grazing area C. Moving cattle between grazing areas within Arana Gulch on short notice is far more efficient and feasible than requiring the grazer to remove all of the cattle from the property and transport them to another grazing site.

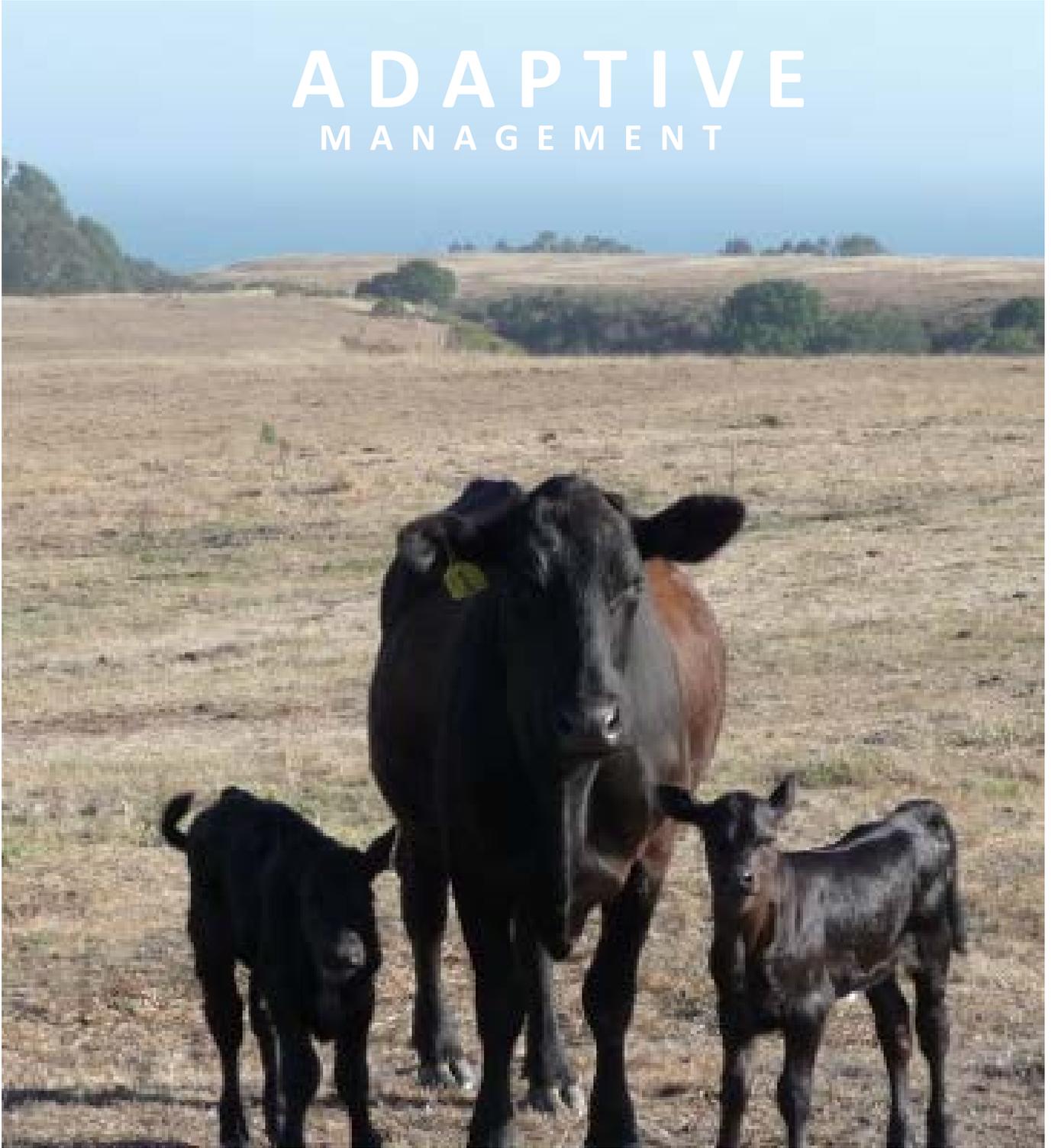
Cattle Grazing for Santa Cruz Tarplant Enhancement

The primary purpose of cattle grazing at Arana Gulch is to enhance the Santa Cruz tarplant (*Holocarpha macradenia*) population. Recent research, as well as discussions of the Santa Cruz Tarplant Working Group, found that for many tarplant sites supporting a dense growth of non-native grasses, a cattle grazing management strategy is likely the most effective management tool for species recovery.

Cattle grazing occurred within Arana Gulch for over 100 years. Since the late 1880s, the property was used as ranchland. In the 1920s, Arana Gulch became the site of a dairy operation, which continued through the mid-1950s. Although the dairy operation ended, cattle grazing continued through the 1980s. Older photographs reveal cattle grazing on the coastal terrace and within the Arana Gulch Creek floodplain. Within six years of removal of the cattle, the Santa Cruz tar plant population declined from approximately 100,000 to zero.

The cattle grazing proposed as part of this Coastal Development Permit would be of significantly lower intensity than occurred historically, and as recently as the 1980s. It is anticipated that a range of approximately 2 to 6 cow/calf pairs would be grazed from approximately January through June initially, with the potential for longer periods as recommended by botanists. The grazing area would not include any riparian habitat.

ADAPTIVE MANAGEMENT



Cattle will be kept on site until the Santa Cruz tarplant flowers, which is typically mid-June. Removing the cattle at this time would prevent cattle from crushing blooming plants. Should the tarplant population increase in future years, an extended grazing period may be recommended by the botanists. The exact grazing schedule each year would depend on specific weather conditions and the flowering period of the Santa Cruz tarplant. Prior to any grazing activities, the grazer will reconnoiter the grazing area and remove any Milk Thistle found within the enclosure.

Goals and Objectives

The specific goal and objectives for the proposed cattle grazing of the Santa Cruz tarplant population areas has been developed consistent with the Santa Cruz Tarplant Adaptive Management Program. They include the following:

Goal: Protect, restore and enhance the Santa Cruz tarplant population areas, which are considered essential to the recovery of the Santa Cruz tarplant at Arana Gulch

Objective 1: Implement a grazing management program that benefits tarplant growing conditions and stimulates expression of the seed bank.

Objective 2: Document, including mapping, of the yearly population of the Santa Cruz tarplant to provide a comparison to past and future data. Document plant fecundity (reproductive productiveness) by recording the number of flowering heads per plant.

Objective 3: Utilize adaptive management strategies by updating grazing management actions based on population and plant fecundity counts, monitoring results and increased scientific knowledge.

Objective 4: Designate the cattle grazing area with secure fencing. Locate grazing support features (e.g. water trough, salt lick, fence posts) in non-sensitive areas, outside of occupied tarplant habitat and the seasonal wetland. Setback the grazing area from public trails and steep slopes.

Objective 3: Implement Best Management Practices to minimize erosion, avoid impacts to the seasonal wetland, and to avoid impacts to water quality from cattle waste.

Transportation and Installation of Fencing Materials/Cattle

Fencing Materials/Installation

The proposed grazing area will require approximately 5,600 linear feet of livestock fencing. The fencing includes round wood posts and wire designed to minimize visual impacts. Posts will be approximately 5 feet above ground and painted green. Metal livestock gates (green) will be installed as shown on the attached map and designed to integrate visually with the post and wire fencing. The gates will be 12 feet in width to create a 12-foot opening for fire vehicle access during dry season.

The fence would be installed during the dry season to avoid rutting/erosion during saturated soil conditions. Installation will require a motorized pick-up truck to haul fencing materials. Hand tools will be used to install posts and footings where required. The above ground tarplant areas and an adequate buffer will be flagged to ensure no motorized vehicle disturbs those areas. The fencing will be installed at the perimeter of the tarplant area; therefore the pick-up truck will not need to be driven within the area with above ground tarplant. The fencing contractor will access the site from the Agnes Street entrance. Once the fencing is installed annual grazing is relatively simple and cost effective for the City to implement and maintain.

Cattle Grazing and Transport

The cattle will be transported to the Agnes Street entrance, then offloaded from the cattle truck and released into a corral located to the west of the park entrance. The cattle would be herded to the northern fenced grazing area. Cattle could then be herded from the northern area to the southern grazing areas with horses, ATVs or a pick-up truck depending on the season. The exact timing of the cattle delivery would depend on weather/soil saturation conditions. The cattle would not be delivered during periods of heavy rainfall/very high soil saturation. Removal of cattle would follow the same route.

Cattle Grazing at Arana Gulch and Coastal Water Quality

The cattle grazing at Arana Gulch will be very low intensity in comparison to grazing operations that historically occurred within the 67.7 acre property. The City will utilize the minimum number of cattle necessary to provide sufficient reduction in non-native grasses and trampling/disturbance beneficial to stimulating tarplant seedbank expression and growth. It is anticipated that a total of 4 to 12 cattle (2 to 6 cow/calf pairs) will be grazed, depending on recommendations from the botanist.

Manure generated by cattle grazing would be allowed to remain on site and naturally decompose. This is consistent with grazing management implemented on other tarplant sites (i.e. High Ground Organics, Elkhorn Slough Foundation lands); no adverse impacts to surrounding areas or the tarplant have been detected from this practice.

The grazing areas are primarily situated on the level coastal terrace. The grazing fencing would be set back from the top of the steep slopes by a minimum of 50 feet, except where above-ground tarplants have been observed. In those areas, the fence line would be adjusted to incorporate these plants/habitat within the grazing area. Fencing would also be installed around the seasonal wetland (with a 50 foot buffer) if required by the Coastal Commission. The seasonal wetland fencing could be installed as temporary to allow grazing within this area during the drier months.

The grazing area would be located on land with gentle slope range from two to nine percent. Grazing would not occur on steeper slopes to prevent erosion.

Much of the grazing area is located on the coastal terrace, over 300 feet from the Arana Gulch Creek. The grazing area encompassing tarplant population D is located approximately 100 feet from Arana Gulch Creek. This area features a gate which allows more controlled grazing and the ability to close off the area from cattle during periods of heavier rainfall. The southern grazing area would be located approximately 150 feet from the Hagemann Gulch drainage.

Given the mostly level topography and soil permeability of the grazing area, setback from steeper slopes, and distance from Arana Gulch Creek, no impacts on coastal water quality are expected from the proposed grazing operation. Nonetheless, water quality protection measures and site monitoring would be conducted to ensure no impacts to coastal water quality occur. Site monitoring and Best Management Practices (BMPs) are presented below.

Specific Best Management Practices (BMPs) and site monitoring requirements will be implemented to ensure there are no impacts on coastal water quality from cattle grazing at Arana Gulch. The BMPs and monitoring will be incorporated in the final grazing plan and implemented in the field and include:

- Install grazing area fencing a minimum distance of 50 feet from the top of the steep slopes. If there are areas where above-ground tarplants have been observed within 50 feet of the top of the terrace slope, the location of the fencing will be adjusted to include these plants/habitat within the fenced grazing area.
- Install temporary fencing, if required by the Coastal Commission, around the seasonal wetland within the southern grazing area to include 50-foot buffer. Allow grazing in the seasonal wetland area during dry conditions as recommended by the botanist.
- Locate water trough and any supplemental feed within grazing areas as far back from the top of the steep slopes as possible. Locate the trough and feed outside of sensitive areas (occupied tarplant areas/seasonal wetland)
- During months of highest rainfall and storm events, keep minimum number of cow/calf pairs on site to avoid erosion and minimize volume of cattle waste.
- Conduct regular visual inspections of fence line to ensure cattle remain within designated grazing area.
- During rainfall events, conduct visual inspections (by foot) to ensure no rilling or other erosion within and from the grazing area. Appropriate erosion control measures, such as straw wattles, will be installed, if necessary, to prevent any accelerated or channelized runoff toward steep slopes.
- Avoid motorized vehicle use during rainy season/soil saturation to maximum extent feasible.