The Nipomo Creek Watershed Program

Watershed Characterization Report

Prepared for:

The Guadalupe-Nipomo Dunes
Restoration Subcommittee

By:

The Land Conservancy of
San Luis Obispo County

March 2003

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BACKGROUND

A legal settlement was reached following an oil spill that occurred in the Guadalupe-Nipomo Dunes which resulted in funds being set aside for the purpose of restoring or replacing lost natural resources that were damaged by the spill. The Guadalupe-Nipomo Dunes Restoration Subcommittee, comprised of the Department of Fish and Game, Office of Spill Prevention and Response and the State Coastal Conservancy, was specifically established to facilitate locating and funding projects that would serve the purpose of restoring or replacing lost resources in the Guadalupe-Nipomo Dunes area.

The Land Conservancy of San Luis Obispo County, in partnership with Central Coast Salmon Enhancement, submitted a successful grant application to the Restoration Subcommittee in 2001 for funding to enable the creation of the Nipomo Creek Watershed Program. The purpose of the Nipomo Watershed Program is to establish water quality and biological monitoring programs, and to pursue riparian restoration projects and permanent land protection of areas containing important natural resources through a comprehensive community and landowner outreach program. This report represents the culmination of the first phase of the land protection component of the program, specified as Tasks 1.1 – 1.4 in the approved work plan.

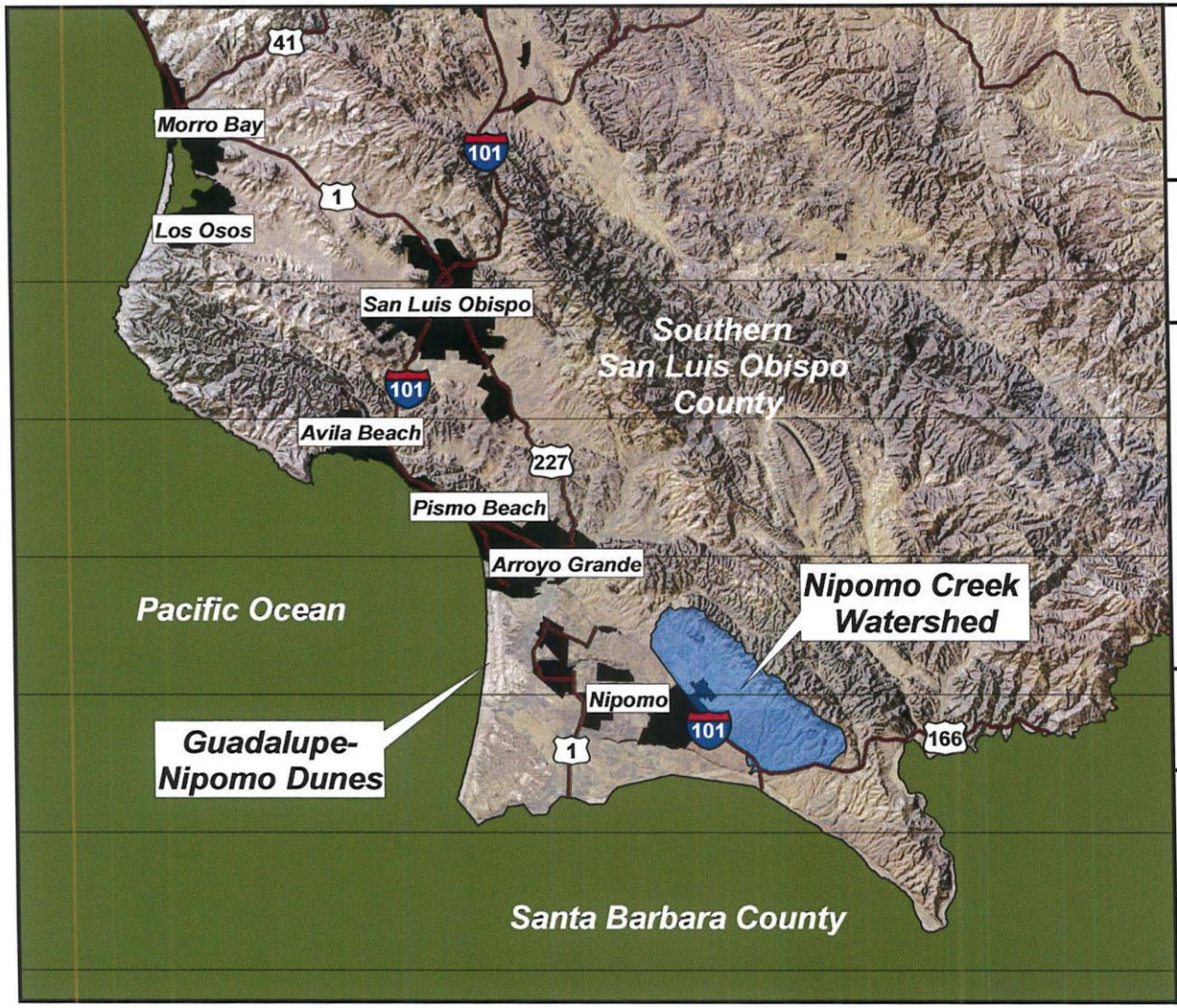
REGIONAL CONTEXT

The Nipomo Creek watershed is located on the seaward side of the Santa Lucia Range. The Santa Lucia Range is one of the outermost ridges of the Coast Ranges of California. The Coast Ranges are a series of northwest trending parallel ridges extending from Santa Barbara County in the south to Humboldt County in the north. Together, the Coast Ranges constitute a nearly continuous ridge system. One of the subsets of the Coast Ranges is Temettate Ridge, which acts as the headwaters for the Nipomo Creek watershed from the east.

To the west of the Nipomo Creek watershed are the Nipomo Mesa and the Guadalupe-Nipomo Dunes. The Nipomo Mesa is a formation of stabilized sand dunes found behind the Guadalupe-Nipomo Dunes, which is the largest coastal dune complex in California.

The maritime climate of the Central Coast area of California is cool and mild and does not display much daily or seasonal temperature variation due to the moderating affect of the Pacific Ocean. The Nipomo Creek watershed is located just inland of the southern coast of San Luis Obispo County. The average maximum daily temperature is about 70 degrees Fahrenheit and the average minimum daily temperature is about 48 degrees Fahrenheit. The annual precipitation ranges between 15 and 28 inches, which normally falls between November and March.

The Central Coast is among the least developed coastal areas in the entire state. It is well known for its magnificent natural and vernacular landscapes and high quality of living.



The Nipomo Creek Watershed Program Regional Context

Map Key:

- Nipomo Watershed
- Urban Reserve Lines
- Major Highways

Geo-rectified Aerial Photograph Base Map with Digitial Elevation Model Hillshade

Scale:

0 2.5 5 7.5 10 Miles

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OVERVIEW OF THE WATERSHED

The Nipomo Creek watershed is part of the larger Santa Maria/Sisquoc River watershed. Its headwaters are found in the Nipomo foothills, also known as Temettate Ridge. The main stem of Nipomo Creek typically runs year-round. The tributaries that drain into Nipomo Creek, such as Deleissigues Creek, Mehlschau Creek, Haystack Creek, and many other unnamed tributaries, run on a seasonal basis. The main stem of Nipomo Creek is approximately 10 miles long and generally runs from the northwest to the southeast in direction. The entire watershed is 16,318 acres[1], or 25.5 square miles. Nipomo Creek is a third-order stream, based on the classification system put forth in Ann Riley's *Restoring Streams in Cities: A Guide for Planners, Policymakers, and Citizens.* "A first-order stream channel has no tributaries; when two first-order streams join, they create a second-order stream. When two second-order streams join, they create a third order stream, and so on" (1998). There are fourteen tributaries which show as blue lines on the United States Geologic Survey (USGS) map that flow into Nipomo Creek. Except for those mentioned above, most of these tributaries are unnamed on the USGS map. However, for the purpose of easy identification, this project has assigned names to those tributaries based on either locally recognized names or on major landowners whose properties contain these tributaries. The watershed, Nipomo Creek, and its associated tributaries are delineated on the map on the following page.

The upper reaches of the main stem of Nipomo Creek and its tributaries are best characterized as having shallow stream channels with sloping banks at times and as having deep stream channels with steep and eroded banks at other times. Towards the middle of Nipomo Creek's course are some of the major confluence areas where the interface between creek corridors and residential and commercial development near Old Towne Nipomo has been the subject of significant flooding events over the years. The lower reaches of Nipomo Creek are also characterized by deep stream channels with sometimes eroded banks, but there are also several zones where broad, perennial wetlands and pools are located which host excellent wildlife habitat. Just upstream from the confluence area with the Santa Maria River, the creek flows beneath Highway 101 to the west side and is met with an area which historically accommodated more wetlands, but has been significantly tarnished by commercial and industrial development during more recent times. There are several substandard bridges and crossings in this area which are restricting flood flows. This final confluence area might best be described as "the cork at the bottom of the tub" due to its general inability to naturally accommodate and pass significant floodwaters.

The north end of the watershed features 5-15 acre parcels which are part of a rural estate-style subdivision. The Nipomo Urban Reserve is in the middle of the watershed; parcels are typically 60 feet by 100 feet. There are several antiquated subdivisions[2] in the watershed with lots being between 5 and 20 acres. The rest of the watershed primarily consists of larger, agriculturally-oriented holdings.

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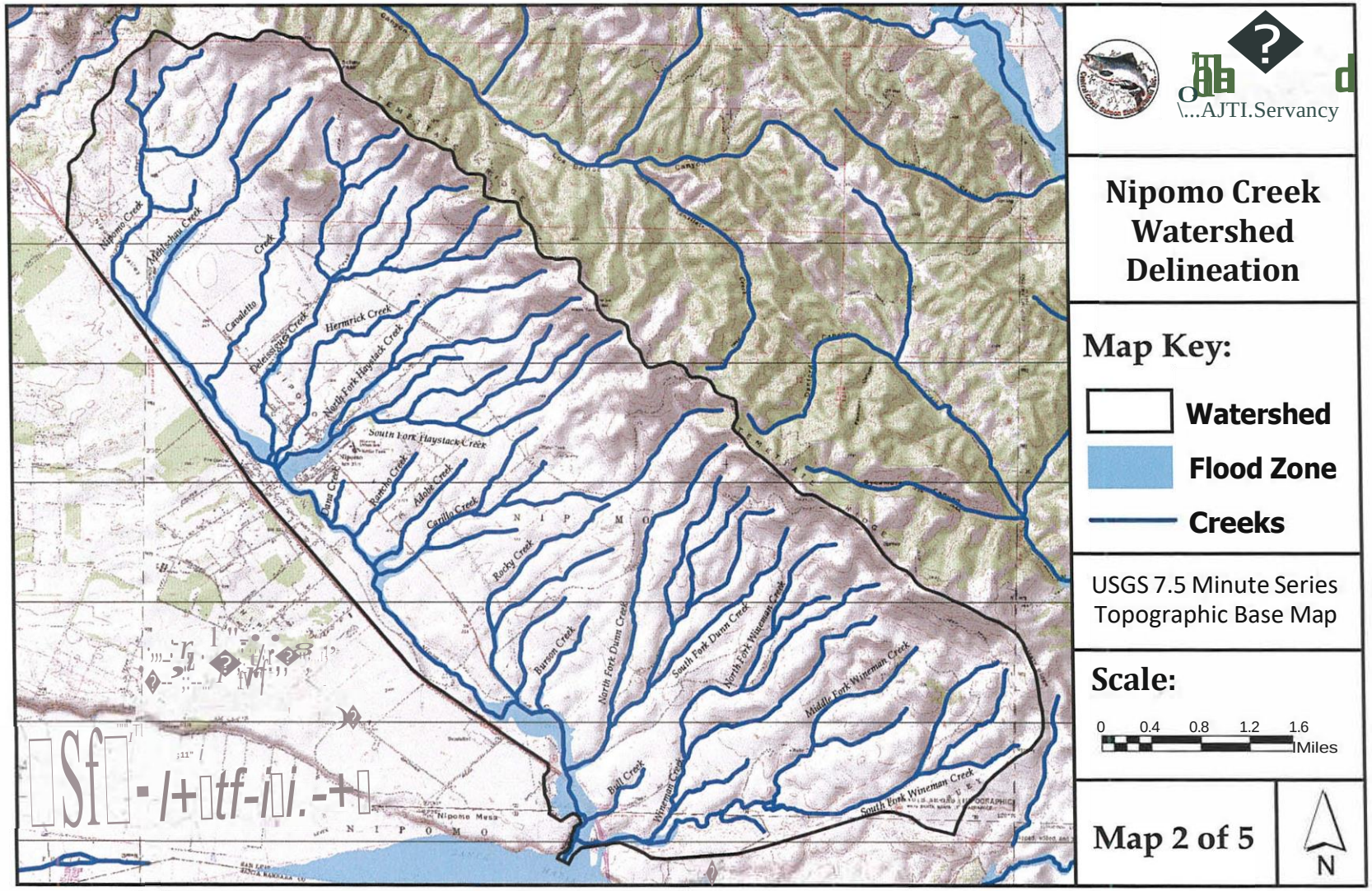
[1] This figure is based on the area of the digitized polygon shape of the watershed created for use in the Nipomo Creek Watershed Program's Geographic Information System.

[2] Antiquated subdivisions were created prior to modern standards which require site improvements.


Nipomo Creek
Mehlschau Creek
Canada
Hermrick Creek
North Fork Haystack Creek
South Fork Haystack Creek
Dana Creek
Adobe Creek
Carrillo Creek
Rocky Creek
Burson Creek
North Fork Dunn Creek
South Fork Dunn Creek
North Fork Wineman Creek
Middle Fork Wineman Creek
Bull Creek
Wineman Creek
South Fork Wineman Creek
Nipomo Mesa
N I P O M O
Nipomo Creek Watershed Delineation
Map Key:
Watershed
Flood Zone
Creeks
USGS 7.5 Minute Series Topographic Base Map
Scale:
0 0.4 0.8 1.2 1.6
Miles
Map 2 of 5
N

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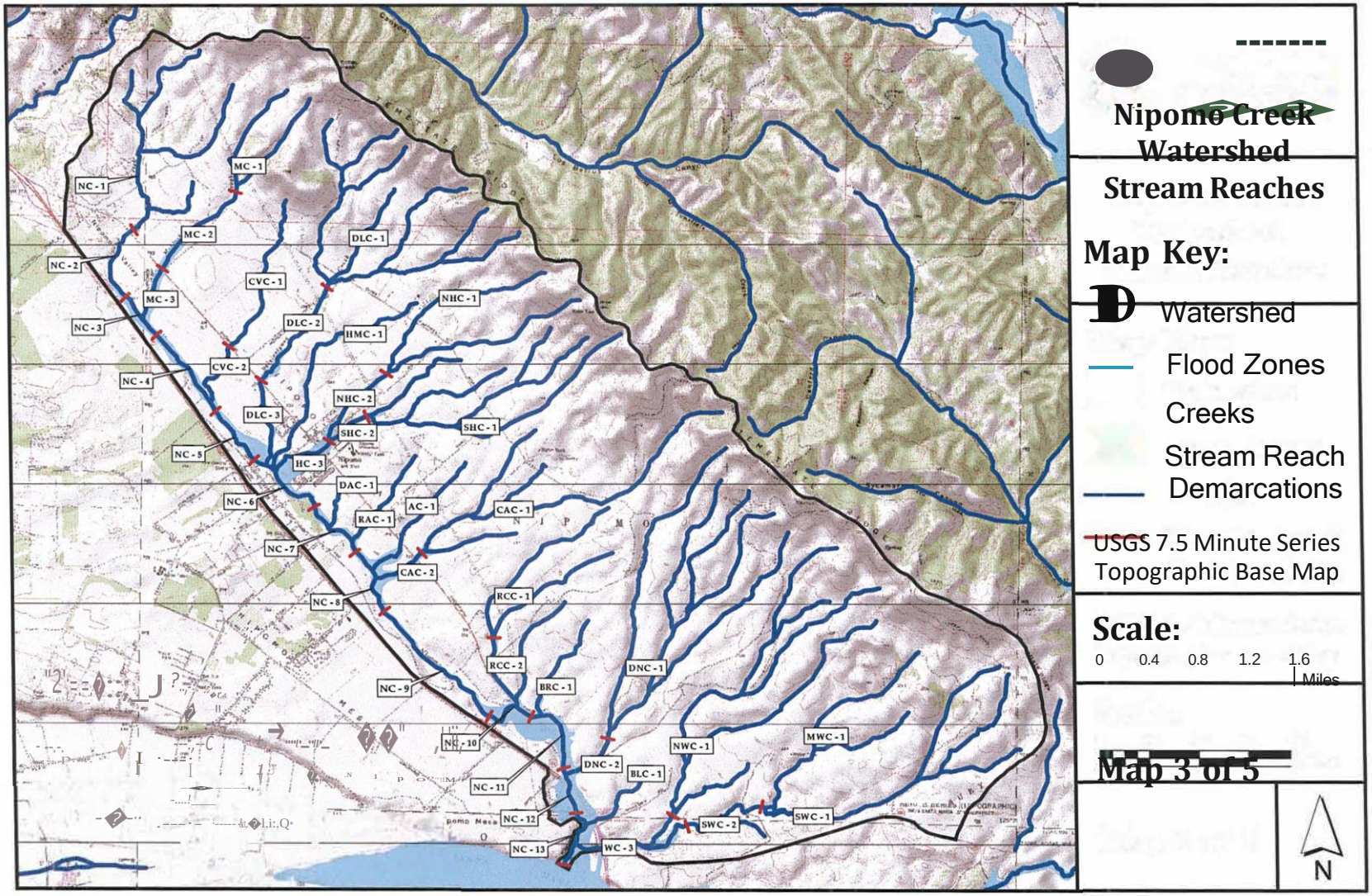
STREAM REACHES

The various creeks which comprise the watershed were divided up into a standardized set ofstream reaches in order to fi.uther evaluate and classify different sections of the watershed. The stream reaches consist of strictly demarcated lengths of the main stem and tributaries that share similar natural resources conditions or separate obvious breaks in the landscape. Each reach has then been qualitatively described in terms of its course, vegetation coverage, tree canopy, channel, bank conditions, and any other special concerns. These descriptions are based on field inspections, helicopter reconnaissance, and review of aerial photography. A map of the stream reach demarcations is on the next page. The qualitative descriptions and a few photos of the reaches are found following the map. While reading the descriptions, it is useful to simultaneously refer to the map.

	Stlblr/Sl..._Binks	Erodl ng/Steep Ba!kl	SWlio-!lko Bina	Ripar1a, v_--on	TrNC.nopy	Wd1l1dArlll	8pedal Conc:ems
N[...aCrtN: Main Stem							
NC-1	NO	NO	YES	SOME	NO	NO	STRAIGHTENED CHANNEL
NC-2	NO	NO	YES	SOME	SOME	NO	NO
NC-3	NO	NO	YES	SOME	SOME	NO	NO
NC-4	YES	SOME	NO	YES	YES	NO	NO
NC-5	YES	SOME	NO	YES·	YES	NO	NO
NC-6	SOME	YES	NO	YES	YES	NO	DEBRIS DAMS
NC-7	YES	SOME	NO	YES	YES	NO	NO
NC-8	YES	SOME	NO	YES	YES	NO	NO
NC-9	YES	SOME	NO	YES	SOME	YES	SEDIMENT FILLING
NC-10	YES	SOME	NO	YES	SOME	YES	SEDIMENT FILLING
NC-11	YES	SOME	NO	YES	SOME	YES	SEDIMENT FILLING
NC-12	SOME	YES	NO	YES	SOME	SOME	INADEQUATE BRIDGE. CROSSING
NC-13	SOME	YES	NO	YES	SOME	NO	INOIJSTRIAL ENCROACHMENT
Mthl1c:hauCrtlk							
MC-1	YES	YES	YES	SOME	SOME	NO	NO
MC-2	YES	NO	NO	NO	NO	NO	CHANNELIZED, CONCRETE FILL
MC-3	NO	NO	YES	NO	SOME	NO	NO
cavallho Cretk							
CVC-1	SOME	YES	NO	SOME	NO	NO	NO
CVC-2	NO	NO	YES	NO	NO	NO	NO
DlllslfiautSCrtlk							
DLC· 1	YES	SOME	NO	SOME	SOME	NO	NO
OLC,2	YES	YES	NO	SOME	SOME	NO	EROSION BLOW OUT AT CROSSING
OLC-3	YES	SOME	NO	YES	YES	NO	HORSESHOE BENDS, DEBRIS DAMS
Htnn11ckCrNk							
HMC-1	SOME	SOME	SOME	SOME	SOME	NO	NEW SUB[]"1SION ,CULVERT ,DAMS
North Fork Havstack Cmk							
NHC-1	YES	SOME	NO	SOME	SOME	NO	NO
NHC-2	SOME	YES	NO	SOME	SOME	NO	RESIDENTIAL AREA
South Fork Havstack CNk							
SHC-1	YES	SOME	SOME	YES	SOME	NO	EROSION SUMP AT CROSSING
SHC-2	SOME	YES	NO	SOME	SOME	NO	RESIDENTIAL AREA
Havstack Crtlk Main Stem							
HC-3	SOME	YES	NO	SOME	SOME	NO	RESIDENTIAL AREA, DEBRIS DAMS
OanaCr.ek							
OC-1	YES	SOME	NO	SOME	SOME	NO	NO
RocINCrNk							
RAC· 1	YES	SOME	NO	SOME	SOME	NO	NO
Adobt ClMk							
AC· 1	YES	SOME	NO	SOME	SOME	NO	NO
CarfiloCrNk							
CAC-1	YES	SOME	NO	YES	YES	NO	NO
CAC-2	SOME	YES	NO	SOME	SOME	NO	NO
RockvCrNk							
RCC-1	YES	SOME	NO	YES	YES	NO	NO
RCC-2	YES	SOME	SOME	SOME	SOME	NO	NO
Burson Crtlk							
BRC-1	YES	SOME	NO	YES	YES	NO	NO
DunnCrNk							
DNC-1	YES	SOME	NO	YES	YES	NO	NO
DNC-2	YES	SOME	NO	YES	YES	NO	NO
Bull Crtlk							
BIC· 1	YES	YES	SOME	SOME	SOME	NO	NO
North Fork 'Nintman Crtlk							
NWC-1	YES	YES	SOME	YES	YES	NO	EROSION GULLY
Middle Fork V.,-nemanCrtlk							
MWC-1	YES	SOME	NO	YES	YES	NO	NO
South Fork WinemanCrNk							
SWC-1	YES	SOME	NO	YES	YES	NO	NO
SWC-2	YES	YES	SOME	SOME	SOME	NO	NO
WinemanCrtlk Main Stm							
WC-1	SOME	SOME	SOME	SOME	SOME	NO	NO

Matrix of the Stream Characteristics by Reach

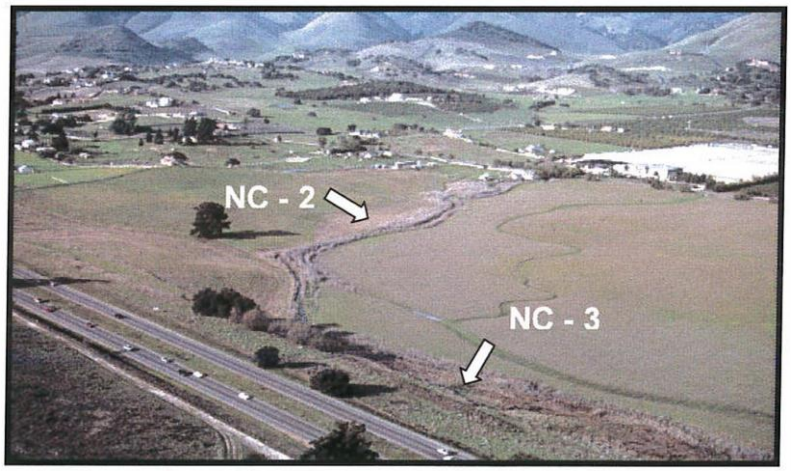

MC - 1
NC - 1
MC - 2
DLC - 1
NC - 2
CVC - 1
MC - 3
NHC - 1
DLC - 2
NC - 3
HMC - 1
CVC - 2
NC - 4
NHC - 2
DLC - 3
SHC - 2
SHC - 1
NC - 5
HC - 3
DAC - 1
NC - 6
AC - 1
CAC - 1
RAC - 1
NC - 7
CAC - 2
NC - 8
RCC - 1
RCC - 2
DNC - 1
NC - 9
BRC - 1
NC - 10
NWC - 1
MWC - 1
DNC - 2
NC - 11
BLC - 1
NC - 12
SWC - 2
SWC - 1
NC - 13
WC - 3
Nipomo Mesa
Nipomo Creek Watershed
Stream Reaches
Map Key:
Watershed
Flood Zones
Creeks
Stream Reach Demarcations
USGS 7.5 Minute Series Topographic Base Map
Scale:
0 0.4 0.8 1.2 1.6
Miles
Map 3 of 5
N

Nipomo Creek Main Stem

NC– 1: This reach is the uppermost section of the main stem. It begins in an area dominated by new, rural-estate subdivisions with lots ranging between 5 and 15 acres.

The topography is gently rolling. There is little to no riparian vegetation along this reach, with small willows representing what does exist. This reach primarily has the appearance of a swale. At the downstream terminus of this reach, the creek has been straightened in order to accommodate a large greenhouse complex. This particular area is significantly degraded and features some rock fill.

NC - 2 to NC-3: These reaches are in the lowlands of Nipomo Valley, which are predominately in agricultural use. These reaches have little riparian vegetation and have the appearance of a minor swale. There are a few nice oaks and some smaller willows.



NC-4 to NC-5: These reaches contain healthy and abundant vegetation comprised of a mature tree canopy and understory associates. Non-native invasive vegetation also exists. Stream channels are shallow with sloped banks at some points and are deep with steep, eroded banks at other points.

NC - 6: This reach continues with the mature tree canopy and understory associates.

Non-native invasive vegetation also exists. This reach is host to three important confluence areas immediately upstream of the Old Towne Nipomo area. Stream channels are shallow with sloped banks at some points and are deep with steep, eroded banks at other points. There are frequent debris dams present due to the proliferation of willows.

NC – 7 to NC - 8: These reaches contain mature tree canopy and understory associates. Non-native invasive vegetation also exists. Stream channels are shallow with sloped banks at some points and are deeply incised with steep, eroded banks at other points. The latter sections contain little riparian vegetation.

NC - 9 to NC - 11: In these reaches the creek widens out and flows into broad perennial wetlands and pools in several locations. These wetlands provide excellent wildlife habitat, but are threatened by sedimentation transfer from upstream locations. Outside of the wetlands areas, there is little riparian vegetation and the channels are often deeply incised.

NC - 12 and NC - 13: These reaches also historically contained wetlands, but they are currently in a somewhat degraded state. There are several substandard bridges and "Arizona" style crossings. The channels are mostly deeply incised with eroding banks.

There is some riparian vegetation in places, but it is primarily absent. NC – 13 passes through various commercial and industrial developments.

Mehlschau Creek

MC— 1: The upper reach ofMehlschau Creek features two forks. The left-hand fork (when looking at the map) is located in a deep gully and offers mature canopy cover and stable streambanks. The right-hand fork is located on the other side ofa small knob from the left-hand fork. It does not have much in the way ofriparian vegetation and is a very minor tributary. The channel has the appearance ofa swale. This reach demarcation ends just after the two forks meet.

MC-2: This reach does not offer much in the way ofnative vegetation. There are some sparse, intermittent willows in the upper halfofthis reach. There is also a retention pond that has been built into creek channel. At the lower halfofthis reach, the creek travels through orchards where there is no vegetation at all. Near the end ofthe reach at Thompson Road, there is a series of concrete steps which stretch across the entire stream channel. It appears that their purpose is for gradient control.

MC—3: This reach has no riparian vegetation, except for a small stand ofmixed trees adjacent to a residence at its beginning. The channel has the appearance ofa swale.

Cavaletto Creek

CVC— 1: This reach offers some sparse riparian vegetation. The channel is primarily incised with steep banks. Towards the end ofthe reach the channel widens and the banks here are more sloped.

CVC—2: The creek is very minor here and has the appearance ofa swale. There is no vegetation at all.

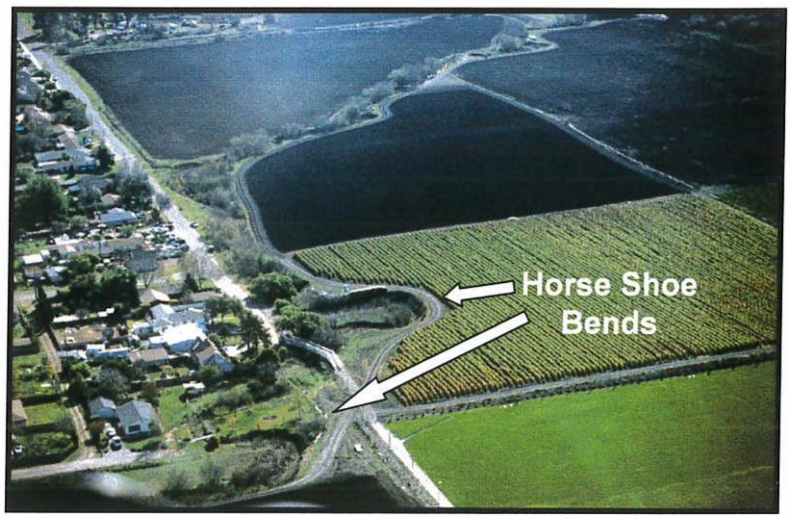
Deleissigues Creek

DLC— 1: This reach represents three smaller forks. The left and right-hand forks (when looking at the map) are further divided into smaller yet sub-forks. The middle fork does not have any sub-forks. The left-hand forks drain the side ofsteep hillsides. Riparian

vegetation is intermittent, but the stream banks are in relatively good condition. The middle fork has very little vegetation. The right-hand fork has some intermittent vegetation in its upper sections before passing through orchards, where all native vegetation is absent. This reach ends at the confluence area of the three main forks where there is abundant riparian vegetation and tree canopy.

DLC-2: Near the beginning of this reach the creek passes underneath Mehlschau Road. Immediately at the downstream side of the bridge the creek is forced to make a ninety degree tum. At this location there is a massive erosion problem with the left bank (when looking downstream) being approximately twenty feet high. The right hand bank is filled with rip-rap. There is no vegetation as the ground cover has been entirely graded for agricultural purposes. After this section, the creek continues through orchards where there is no vegetation. The final section of this reach offer intermittent riparian vegetation and limited tree canopy before its end at Thompson Road.

DLC—3: This reach is one of the more problematic in the entire watershed. Immediately after crossing under Thompson Road, the creek interfaces with residential development. Several inadequate flooding solutions have been tried here. The creek then continues for a short, undisturbed period where some intermittent riparian vegetation is present before it again passes by residential development. There is a sharp bend in the creek which is immediately followed by an even sharper bend that forms a horseshoe shape. This area appears to have been one of the causes of flooding damage suffered by the aforementioned residences in March 2001. The creek continues to flow adjacent to these residences for a stretch before turning right towards the confluence with



Nipomo Creek. There is both native and exotic vegetation present and intermittent tree canopy, including some nice oaks. The confluence zone offers rich vegetation and tree coverage. There are frequent debris dams located here due to the thick willows which are present.

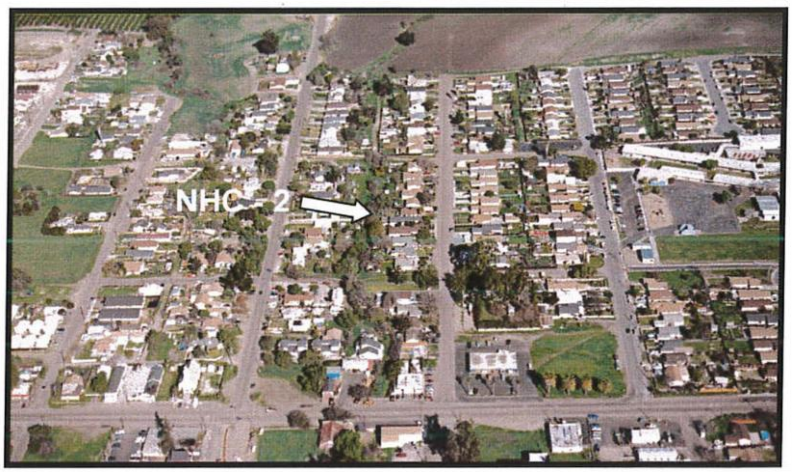
Herrnrick Creek

HMC - 1: This reach starts out either flowing through, or adjacent to, orchards and other agriculture. There is little or no vegetation in this area. After this, the creek flows through a graded agriculture field and features some intermittent vegetation. The channel is incised and often has steep, eroded banks. Following this, the creek travels through a new residential subdivision of approximately 100 homes. Currently, this project has not started construction, but the building pads and roads have been graded. Where the creek flows through, the banks have been fenced off under an Army Corp permit condition to avoid sedimentation filling while construction is under way. The channel has been widened and the banks have been graded back. There is a drainage weir installed at the end of this section right before the creek crosses under Thompson Road. Continuing downstream, the creek flows through an underground culvert beneath residential development for two city blocks. Upon seeing daylight, the final section ofthis reach offers little riparian vegetation until right at the confluence area with Nipomo Creek, where there is dense native and non-native vegetation and tree canopy cover. Debris dams tend to accumulate here due to the proliferation of willows in this area. The streambanks are severely eroded in several locations.

North Fork Haystack Creek

NHC – 1: This reach is comprised of two sub-forks. Both sub-forks drain the steep hillsides of Temettate Ridge. The left-hand fork (when looking at the map) flows through orchards until it reaches Foothill Road. There is no vegetation present in this section. After Foothill Road, there is intermittent vegetation and channel is primarily incised up to the confluence with the right-hand fork. The right-hand fork features much more consistent riparian vegetation and tree canopy coverage than the left-hand fork does, and its channel and banks are in good condition.

NHC—2: After the above described confluence zone, the vegetation and canopy coverage remains dense for a stretch before reaching more orchards where there is little or no vegetation. The streambanks and channels range from good condition to fair condition. Beyond this, the creek flows through residential and commercial development located in the Old Towne Nipomo area. In this stretch the vegetation is intermittent and dominated by non-natives. The banks are often eroded and the channel is incised. Many residents have attempted makeshift erosion and flood control efforts over the years in order to protect their properties. This reach should be considered a problem area.



South Fork Haystack Creek

SHC - 1: This reach is comprised of four sub-forks. Above Foothill Road all four feature intermittent vegetation and occasional tree coverage. At this point the forks could primarily be described as swales. Below Foothill Road the far left-hand and middle left-hand forks (when looking at the map) continue with the same characteristics. The far right-hand and middle right-hand forks contain more frequent vegetation and tree canopy coverage and feature nicely sloped banks. Where the far right-hand fork crosses Rancho Road there is a huge erosion sump on the downstream side which we were told was caused when the culvert had become clogged and the water flowed over the road during a flooding event. The clogged culvert has been cleared, but the erosion sump remains.

SHC—2: This reach is the area between where the above described sub-forks of South Haystack Creek have converged down to where the confluence with North Fork Haystack Creek is located. The reach briefly traverses a farm field where there is intermittent vegetation and tree canopy coverage before entering into the residential Old Towne Nipomo area. The commentary for residential section of NHC - 2 applies to this reach, as well.

Haystack Creek Main Stem

HC-3: As with SHC-2, the commentary for the residential section of NHC-2 also applies to most of this reach. One of the more significant erosion problem areas is located near the comer of Mallagh and Tefft Streets where a culvert exit is misdirected towards the side of the streambank. As the creek approaches the confluence area with Nipomo Creek, the vegetation and tree canopy coverage becomes much thicker. There is

a high percentage of non-native species present. Debris dams tend to accumulate here due to the proliferation of willows.

Dana Creek

DAC—1: This short tributary features consistent riparian vegetation and some willow coverage. There is no other tree canopy coverage to speak of. The channels are moderately incised and the banks are somewhat steep and at times eroded.

Rancho Creek

RAC—1: This reach begins in an orchard where there is no vegetation or tree coverage. After this it features some intermittent riparian vegetation and willow coverage. The channels are moderately incised and the banks are somewhat steep and at times eroded.

Adobe Creek

AC—1: This reach features some intermittent riparian vegetation and willow coverage. There are a few nice oak trees. The channels are moderately incised and the banks are somewhat steep and at times eroded.

Carillo Creek

CAC-1: This reach is comprised of two separate main forks. The left-hand main fork (when looking at the map) features three sub-forks. Of these sub-forks, the right-hand one features very attractive and consistent riparian vegetation and tree canopy coverage all the way from the steep slopes of Temettate Ridge. The middle sub-fork also features consistent riparian vegetation and tree canopy coverage from its start at Foothill Road, The left-hand sub-fork starts with good coverage, but it dwindles further downstream. The main right-hand fork of this reach is deeply incised and offers little riparian vegetation and virtually no tree canopy coverage. It appears from the aerial photos that the banks may be badly eroded, however, an up-close field inspection was not possible.

CAC-2:

This short reach is deeply incised and offers intermittent riparian vegetation and tree canopy coverage. It appears from the aerial photos that the banks may be badly eroded, however, an up-close field inspection was not possible.

Rocky Creek

RCC-1: This reach is comprised of two forks. Both forks feature very attractive and consistent riparian vegetation and tree canopy coverage. The streambanks and channels are primarily in good condition, with one small incised section.

RCC - 2: This reach is also comprised of two forks. The left-hand fork (when looking at the map) continues with characteristics described for RCC - 1. The right-hand fork, however, offers little riparian vegetation and no tree canopy coverage. This fork carries relatively minor flows.

Burson Creek

BRC - 1: This short reach also features very attractive and consistent riparian vegetation and tree canopy coverage before it drains into the wetlands described in NC -11. The streambanks and channels are primarily in good condition.

Dunn Creek

DNC – 1: This reach features a north fork and a south fork. The north fork flows from near the top of Temettate Ridge and is a very attractive creek. It offers consistent riparian vegetation and tree canopy coverage. It has carved out a large gully for itself through most of its run. The stream channels and banks appear to be in good condition. The south fork features three smaller sub-forks. These forks are very similar in their characteristics with the north fork; they offer consistent coverage in a deep gully environment.

DNC - 2: This short reach represents the section of the creek after the confluence of the north and south forks on down to Nipomo Creek. The consistent vegetation and tree canopy coverage continues. The creek passes underneath a dirt road on two occasions during this stretch.

Bull Creek

BLC – 1: Bull Creek is a very minor tributary. It features little in the way of vegetation and offers just a few trees. The stream channels are somewhat incised, however the outer banks slope quite a bit to form a larger gully system.

North Fork Wineman Creek

NWC - 1: As with many of the other tributaries, this reach features multiple sub-forks. The left-hand main fork (when looking at the map) features very consistent riparian vegetation and tree canopy coverage throughout its length. The channels and banks appear to be in good condition. The sub-forks of the left-hand main fork feature intermittent vegetation and canopy coverage and have incised channels at times. The right-hand main fork begins with very attractive tree canopy coverage, but this ceases near the confluence with the left-hand main fork and the channel becomes very deeply incised. There is also another minor fork located lower and to the right of the right-hand main fork. This section is badly eroded and incised in its entirety. The channel is in the neighborhood of 15 to 20 feet deep. There is no vegetation or tree canopy coverage at all here.

Middle Fork Wineman Creek

MWC—1: This reach starts at the base of some very attractive rock outcroppings. It also features two forks. The left-hand fork (when looking at the map) begins with consistent riparian vegetation and tree canopy coverage and a shallow channel with sloped banks. Further down, however, the coverage ceases and the channel becomes more incised. The right-hand fork is similar to this in its entirety.

South Fork Wineman Creek

SWC-1: The South Fork of Wineman Creek is comprised of three sub-forks. Beginning at the side of the base of the same rock outcroppings described with MWC—1, all three sub-forks feature generally good riparian vegetation and tree canopy coverage, with some intermittent blank spots along the way. The conditions of the stream channels and banks range from good to fair.

SWC—2: This reach features the primary creek channel, with a smaller swale joining it at about its halfway mark. The primary section has intermittent vegetation and tree coverage. The channel tends to be somewhat incised, leaving steeply sloped banks.

Wineman Creek

WC - 3: This final reach collects the north fork, middle fork, and south fork of Wineman Creek. Surprisingly, it appears as a relatively minor section of creek. There are a few trees and some riparian vegetation present. This reach is primarily incised to a depth of about two feet. The channel is about three feet across and the banks are vertical. There are several dirt roads crossing over the creek.

Rocky Creek, D111111 Creek, a11d Wi1ema11 Creek (from left to right)

LAND OWNERSHIP PATTERNS

The next phase of *this* project was to assess land ownership patterns in the watershed. Assessor's parcel pages for the watershed were purchased from the county assessor's office in order to do this. Although an assessor's parcel page does not represent an exact property boundary survey and assessor's parcels are not necessarily legal lots, these records were deemed to be sufficient enough to get an idea of where property boundaries are located. Each page was carefully digitized into separate polygons for each parcel using Geographic Information Systems software. While doing *this*, each new polygon was also assigned the appropriate Assessor's Parcel Number in the data table. Once this task was complete, we then purchased the assessor's records, which include the owner's name and address, the assessee's name and address, land values, improvement values, and homeowner's exemptions. This data was linked to the APN-based data structure prepared while mapping the parcel boundaries. The end product is that each parcel in the watershed is now in digital format so that they can be overlaid on top of aerial photos or digital topographic maps, and each parcel can also be readily queried for ownership information. Parcels located within the Nipomo Urban Reserve Line were not included in this process. This is because these residential sized parcels are primarily too small to yield any appreciable conservation value.

With the digitized parcel database now available, we were able to quickly determine some of the important land ownership patterns that will help us conduct an efficient and targeted land owner outreach program in the next phase of this program[3]. Examples of relevant land ownership patterns are as follows:

- Total number ofparcels digitized: 402
- Range ofparcel sizes: 0.21 to 718.48 acres
- Mean parcel size: 42.35 acres
- Parcels in private ownership: 99.4%
- 102 owners claim homeowner's exemptions
- 220 parcels have improved values
- 24% ofthe parcels have been owned since before 1960[4]
- 43% ofthe parcels have been owned since before 1980
- 30.6% ofthe watershed is owned by one family
- 72.6% ofthe watershed is owned by fourteen families

Based on this information, one can begin to see a trend which indicates that the majority ofthe watershed is in the private ownership of a few families whom have owned their land for a long period of time. Parcels tend to be fairly large, although there is wide range of sizes. About half the parcels are improved in some way, and a quarter are owner-occupied. From looking at the map, we can also see that there is a large lot, estate-style subdivision in the northern portion of the watershed, and there are several antiquated subdivisions in the middle area.

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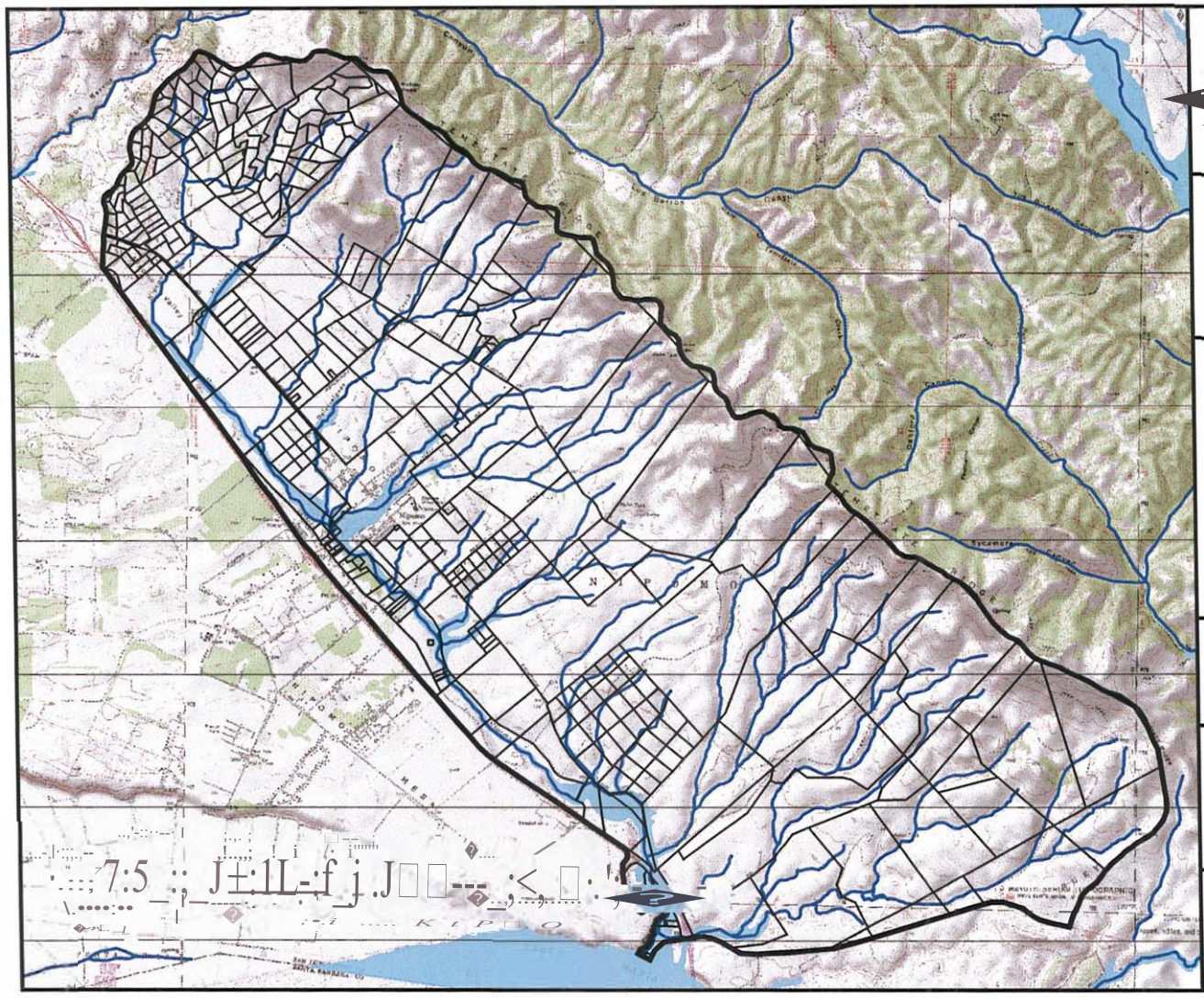
[3] As a matter ofpolicy, the Land Conservancy does not include landowner's names in reports such as this one until they have stepped forward and said that they are willing to pa l iicipate or are interested in participating in the program.

[4] The assessor's records appear to begin in 1953. However, many ofthese ownerships are likely to be older. The original Rancho Nipomo subdivision occurred in the late 1800's.



Nipomo Creek Watershed Land Ownership

Map Key:

- Watershed
- Parcels
- Flood Zone
- Creeks

USGS 7.5 Mirmte Series Topographic Base Map

Scale:

0 0.4 0.8 1.2 1.6
iv1iles

Map4of5

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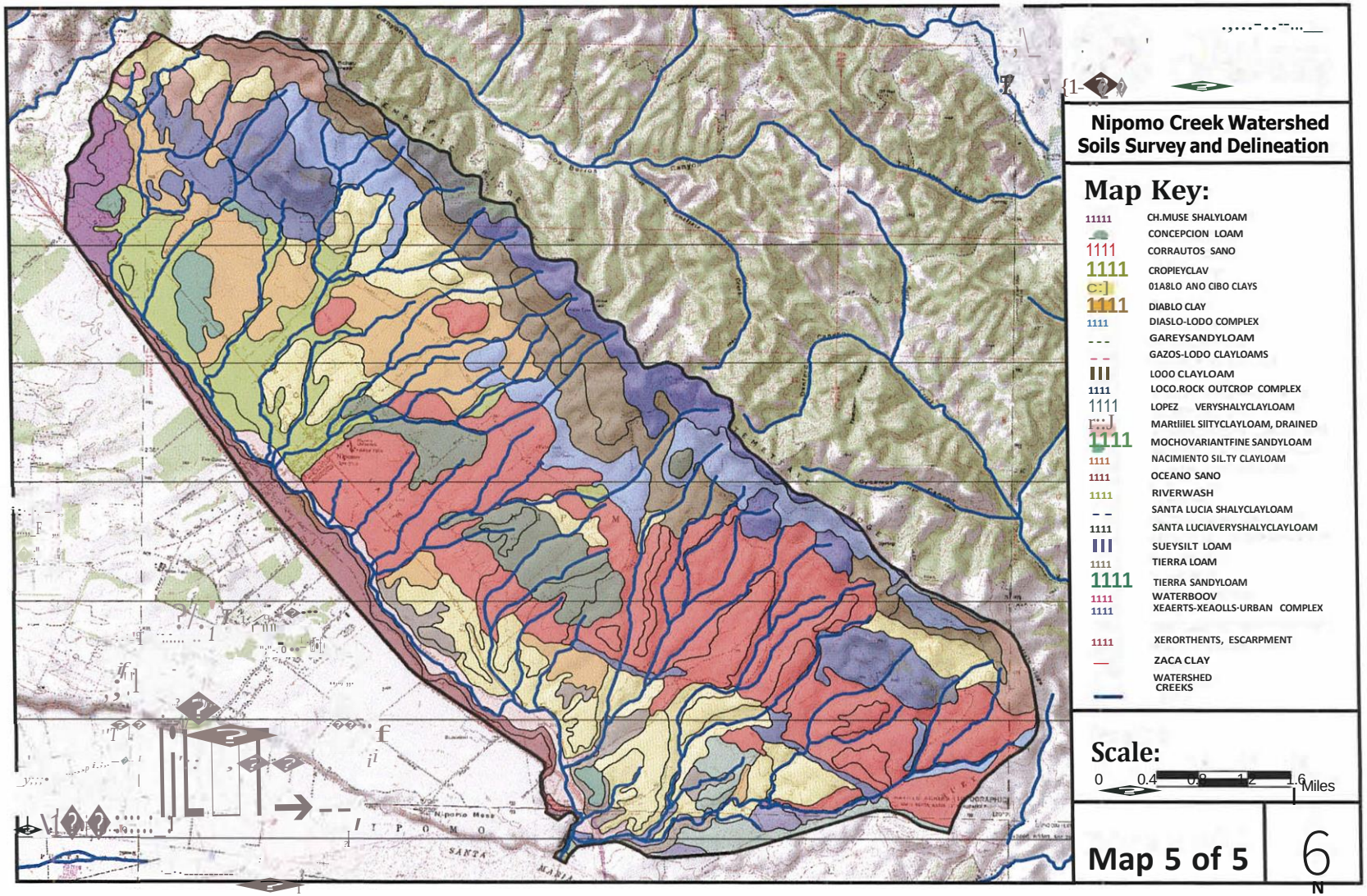
SOILS DESCRIPTION

Looking at the various different soil classifications that comprise the watershed was deemed to be especially important in order to gain a deeper understanding of the entire watershed system. Looking at the local soil conditions is relevant to creeks in terms of bank stability, vegetation coverage, sedimentation transfer, and water absorption ability and its relationship with flooding. For example, in the stream reach demarcation section of this report, upper Nipomo Creek was described as having very little riparian vegetation and tree canopy coverage until a particular point where suddenly there is an abundance of vegetation and trees. When looking at the soils map of the watershed, we can see that there is a soil type conversion which occurs at the same place and may offer some explanation for this phenomenon. As another example, there are a number of different soils in the watershed that are described below as having rapid surface runoff and high susceptibility towards water erosion. However, when looking at where these soils are located, there does not appear to be much of a correlation with where many of the actual erosion problems exist. This suggests that erosion problems in the Nipomo Creek watershed are typically more a function of land management practices than of particular soil characteristics.

There are 24 different soil types found in the Nipomo Creek watershed, according to the United State Department of Agriculture Soil Conservation Service's *Soil Survey ofSan Luis Obispo, Coastal Part* (1984). This text revealed the following characteristics for soils found in the watershed:

- Chamise Shaly Loam - Permeability of this soil is very slow, and the available water capacity is very low or low. Surface runoff is medium, and the hazard of water erosion is moderate.
- Concepcion Loam – Permeability of this soil is very slow, and the available water capacity is moderate to high. Surface runoff is slow, and the hazard of water erosion is slight.
- Corralitos Sand - Permeability of this soil is rapid, and the available water capacity is low. Surface runoff is slow. The hazard of water erosion is slight and the hazard of soil blowing is high.
- Cropley Clay - Permeability of this soil is slow, and the available water capacity is high. Surface runoff is slow or medium, and the hazard of water erosion is slight or moderate.
- Diablo Clay - Permeability is slow, and the available water capacity is moderate to very high. Surface runoff is medium, and the hazard of water erosion is slight to moderate.
- Diablo and Cibo Clay - (See Diablo Clay above) The permeability of Cibo Clay soil is slow, and the available water capacity is very low to moderate. Surface runoff is medium, and the hazard of water erosion is moderate.
- Diablo-Lodo Complex – (See Diablo Clay above) The permeability of Lodo Clay soil is moderate, and the available water capacity is low or very low. Surface runoff is rapid, and the hazard of water erosion is high.

- Garey Sandy Loam—Permeability of this Garey soil is moderately slow, and the available water capacity is moderate. Surface runoff is slow or medium, and the hazard of water erosion is slight or moderate.
- Gazos-Lodo Clay Loam—Permeability of the Gazos soil is moderately slow, and the available water capacity is low or moderate. Surface runoff is rapid, and the hazard of water erosion is high.
- Lodo Rock Outcrop Complex—Permeability of this soil is moderate, and the available water capacity is very low or low. Surface runoff is medium or rapid, and the hazard of water erosion is moderate or high. The rock outcrop itself is hard sandstone, red rock, or shale.
- Lopez Very Shaly Clay Loam—Permeability of this soil is moderate, and the available water capacity is very low. Surface runoff is medium or rapid, and the hazard of water erosion is moderate or high.
- Marimel Silty Clay Loam, Drained—Permeability of this soil is moderately slow, and the available water capacity is high or very high. Surface runoff is slow, and the hazard of water erosion is slight.
- Mocho Variant Fine Sandy Loam—Permeability of this soil is moderately rapid, and the available water capacity is low or moderate. Surface runoff is slow, and the hazard of water erosion is slight.
- Nacimiento Silty Clay Loam—Permeability is moderately slow, and the available water capacity is low or moderate. Surface runoff is rapid, and the hazard of water erosion is high.
- Oceano Sand - Permeability of this soil is rapid, and the available water capacity is low. Surface runoff is medium or rapid, and the hazard of water erosion is moderate or high.
- Santa Lucia Shaly Clay Loam—Permeability of this soil is very slow, and the available water capacity is low or very low. Surface runoff is rapid, and the hazard of water erosion is high.
- Santa Lucia Very Shaly Clay Loam - Permeability of this soil is moderate, and the available water capacity is low or very low. Surface runoff is rapid, and the hazard of water erosion is moderate or high.
- Suey Silt Loam - Permeability of this soil is moderate, and the available water capacity is high. Surface runoff is slow or medium, and the hazard of water erosion is slight or moderate.
- Tierra Sandy Loam— Permeability of this soil is very slow, and the available water capacity is low or moderate. Surface runoff is slow or medium, and the hazard of water erosion is slight or moderate.
- Xererts-Xerolls-Urban Complex—The Xererts of this complex are Cropley or Diablo soils. The Xerolls are mainly Concepcion, Los Osos, Marimel, and Salinas soils.
- Xerorthents, escarpment - When the soil surface is bare, runoff is rapid, and the hazard of water erosion is high. Some areas of deep gullies.
- Zaca Clay—Permeability of this soil is slow, and the available water capacity is high. Surface runoff is medium, and the hazard of water erosion is moderate.


Nipomo Creek Watershed
Soils Survey and Delineation
Map Key:
CH.MUSE SHALYLOAM
CONCEPCION LOAM
CORRAUTOS SANO
CROPIEYCLAV
01A8LO ANO CIBO CLAYS
DIABLO CLAY
DIASLO-LODO COMPLEX
GAREYSANDYLOAM
GAZOS-LODO CLAYLOAMS
LODO CLAYLOAM
LOCO.ROCK OUTCROP COMPLEX
LOPEZ VERYSHALYCLAYLOAM
MARtiilEL SIITYCLAYLOAM, DRAINED
MOCHOVARIANTFINE SANDYLOAM
NACIMIENTO SIL.TY CLAYLOAM
OCEANO SANO
RIVERWASH
SANTA LUCIA SHALYCLAYLOAM
SANTA LUCIAVERYSHALYCLAYLOAM
SUEYSILT LOAM
TIERRA LOAM
TIERRA SANDYLOAM
WATERBOOV
XEAERTS-XEAOLLS·URBAN COMPLEX
XERORTHENTS, ESCARPMENT
ZACA CLAY
WATERSHED CREEKS
Scale:
0 0.4 0.8 1.2 1.6 Miles
Map 5 of 5
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CONCLUSIONS: THE NEED FOR FOCUS AREAS

There are four main areas that stood out as those which will become our primary focus, based on the results of our field and aerial reconnaissance and subsequent stream reach, land ownership, and soils research. Rather than implementing haphazard, fragmented conservation efforts, focusing on particular areas that are especially in need of protection and restoration can help us ensure that positive, tangible benefits will be realized that affect the entire watershed system. In this respect, public conservation dollars that are spent in focused priority areas should also help achieve the rational policy objective of affording the greatest benefit for the greatest number of people and wildlife, both now and in the future.

The Tributaries

The first focus area is the group of tributaries that start in the foothills and run through the urban core of downtown Nipomo before they enter Nipomo Creek. Over the years these creeks have been impacted by the removal of native vegetation and the resulting loss of stream bank stability has contributed excessive sediment loads to the creek system. These creeks have also been artificially straightened in places and thus during the winter months are subject to high velocity flood events, such as the one that caused significant property damage around Old Towne Nipomo. In order to improve water quality and decrease the sediment loads carried in the creek system, it will be necessary to restore as many parts of the upper Nipomo Creek watershed as possible. More residential development is planned for this area and the increase in impermeable surfaces will also increase rapid surface runoff. Restoration work on these tributaries will increase the ability of upstream areas to hold and slow water during flood events, thus decreasing the damage done to downtown Nipomo.

This photo shows the tributaries that converge upstreamfrom Old Towne Nipomo.

Nipomo Creek at Adobe Plaza

The second area the Land Conservancy seeks to protect for the purpose ofriparian restoration is the confluence area along the main stem ofNipomo Creek behind the Adobe Plaza located on the Tefft Street commercial corridor.

One property that has been identified for acquisition and restoration is a 2.5 acre site which acts as a major confluence area for Haystack Creek and the main stem. The property currently exhibits a mix ofhealthy riparian vegetation and exotic weeds and it has been observed to be a highly used site for wildlife, especially birds. As a future bonus, the property's proximity to downtown makes it a wonderful site for a public demonstration ofriparian restoration.

Another important reason for protecting and restoring this area is the vulnerability of the Tefft Street bridge, which restoration efforts could help reduce. The County of San Luis Obispo Public Works Department has expressed concern that excessive sediment loading on the upstream side ofthe bridge could jeopardize its integrity in the event ofa significant flood event. They estimate the replacement value ofthis bridge at $1,200,000.

The Land Conservancy will be looking for other interested or willing land owners in the immediate vicinity where this vital confluence zone can be protected from future development and expansion from the Old Towne Nipomo area.

Adobe Plaza is the b11ildi11g i11 ***the upper, middle left ofthe photo.***

The Wetlands

Downstream ofNipomo the creek flows through a series ofperennial wetlands set in a broad riparian corridor. These wetlands support a diverse array ofwildlife and are important in maintaining water quality as they filter out sediments and pollutants.

The creek and wetlands in this area are currently impacted by a variety offactors, including agricultural grading and cattle grazing, as well as increasing commercial and residential development. Ifprotected, however, these wetland sites represent incredible restoration opportunities. The remedial restoration ofthese sites promises an explosion in biological productivity as habitat could be created for special status species like the California red-legged frog and the southwestern pond turtle.

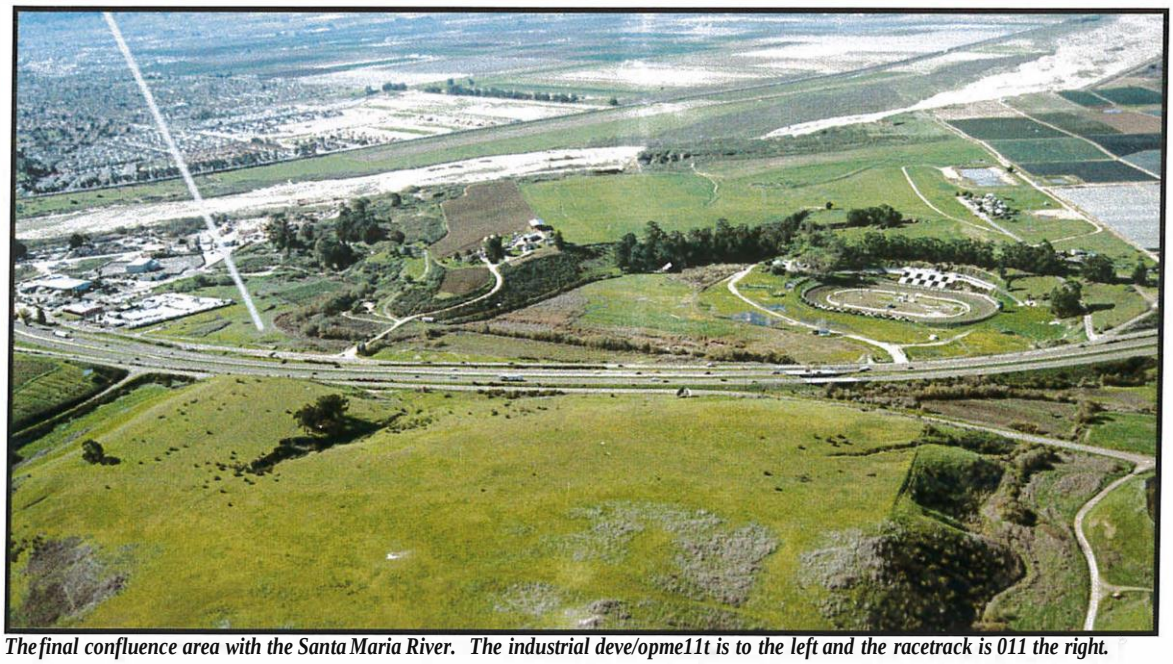
At this time the landowners ofseveral ofthese properties have expressed interest in working with the Land Conservancy to protect and restore their riparian corridors and wetlands.

Represe11tative examples ofthe dow11stream wetla11ds.

The Nipomo Creek and Santa Maria River Confluence Zone

The fourth area that the Land Conservancy will be focusing on for protection is the wetlands complex along the last halfmile ofNipomo Creek, near its confluence with the Santa Maria River. Because ofits position at the mouth ofthe watershed, this portion of the creek and its perennial wetland complex represent possibly the most important restoration opportunity in the Nipomo Creek Watershed. The overall health and functionality ofNipomo Creek will depend upon the success ofrestoration efforts in this area. Currently two flood flow blockages exist in this area, one at the confluence of Nipomo Creek and the Santa Maria River, and the other less than a quarter mile upstream. Additionally, the mixed landownership and zoning pattern in this area are both a current and future threat to the viability of the creek and wetland ecosystem. Agricultural and industrial activities have improperly graded and filled outlying sections ofthe wetland. The possibility of expanded commercial and residential development in this area also threaten to add additional polluted runoff to the creek.

Protection ofseveral key properties in this area will enable the restoration of this riparian resource as well as justify the efforts of numerous agencies and organizations working to restore other parts ofNipomo Creek. Without the protection ofthis area however, restoration efforts throughout the rest ofthe watershed may be a lost cause.



The final confluence area with the Santa Maria River. The industrial deve/opme11t is to the left and the racetrack is 011 the right.