**Technical/Peer Review of the Pilot Study performed by the U.S. Dept. of Transportation/Office of Pipeline Safety and the American Petroleum Institute using Geographic Information System (GIS) technology to produce maps of Unusually Sensitive Areas (USAs) in California.**

The following comments have been compiled by Judd Muskat, and are provided by Judd Muskat, GIS Specialist, Randy Imai, Environmental Specialist, and Steve Sawyer, Staff Council, all from the California Department of Fish and Game's Office of Spill Prevention and Response.

**Background**

These comments are based on information provided at a workshop on April 27-28, 2000. The purpose of the workshop was to present the results of a three state (CA, TX, LA) GIS based pilot study to a peer review group. The GIS based model that was presented was created to produce maps of areas unusually sensitive (USAs) to environmental damage from hazardous liquid pipeline release. This modeling effort is being done in conjunction with the writing of a new rule for the Pipeline Industry that will identify how pipeline operators are to address and best protect these USAs.

**General Comments**
1. The definition of a USA appears to be very limited in scope. The definition should include cultural, historical, economic, recreational areas and Indian Tribal concerns.
2. The criteria for defining a USA should include State listed species.
3. The current USA definition excludes sensitive or special habitat such as California's vernal pools.
4. Ecological Reserves, Refuges and Preserves are areas of special concern and should be included in the USA definition.
5. All pipelines through USAs should require enhanced spill prevention measures as well as contingency planning.
6. Who will decide what the minimum standard for enhanced spill prevention measures through a USA will be?

**Recommendations**
1. Include the GIS database called "Significant Natural Areas" (available from the Department of Fish and Game) to define USAs in California. This coverage is developed from the California Natural Diversity Database. These significant natural areas are defined using a methodology very similar to that of the USA definition but is wider in scope.
2. Make provision for other pipeline host states to be brought up to California's standards in Natural Heritage data collection and automation rather than "dumbing down" our data so the application of the rule will be consistent.

SIGNIFICANT NATURAL AREAS

SUMMARY

This layer is derived from information in the California Natural
Diversity Database (CNDDB).
Significant Natural Areas (SNA's) are established in Fish and Game Code
Sections 1930 - 1933
and selected from CNDDB by a set of criteria (see below).  The same
geographic features and
buffers are used for both GIS coverages. Where a SNA represents an
ensemble of features whose
buffers overlap, the overlapping arcs are dissolved so there is a
single boundary line for the SNA

FULL METADATA -- ORIGINAL COVERAGE

COVERAGE DESCRIPTION:

The Significant Natural Areas (SNA) Layer is developed from selected
information from the California Natural Diversity Database (CNDDB)
which meets the SNA criteria listed below.  It is based only on areas
known to date and therefore it does not constitute an exhaustive
inventory of all possible SNAs.  Newly identified areas may be added
as new information becomes available.

SNA criteria:
The following is the criteria used to select SNAs from CNDDB:
- Extremely rare species or natural communities (State Rank 1)
- Best examples of species or natural communities
- Ensemble of three or more rare species or natural communities within
  500 meters of each other
The selected elements must also be less than 200,000 acres and must be
observed within the last 20 years.

Intended Use:
The SNA layer is designed to raise awareness among developers,
planners, conservationists and others about the presence of SNAs in
their local area.  Many important natural areas have been lost in the
past more through ignorance than by intentional abuse.  Such sites can
be assured increased protection when concerned individuals become
aware of their location and significance.

The SNA coverage is comprised of 6 region subclasses.  Because some
SNAs span multiple counties, ownership categories, and disturbance
types, using the region data model has allowed for the inclusion of
this information, thus giving the user additional information about
each SNA.

To display the SNA coverage in arcplot please issue the following
commands:
ap: mape sna
ap: resel sna region.cosna inside = 100
ap: regionshade (or regionlines) sna cosna (symbol#)
(This will display the areas that are the SNA.  You can also use
region.sna,

but areas will extend past the coastline.)

To display the SNA site number:
ap: resel sna region.cosna flag = 1
ap: resel sna region.cosna inside ne 1
ap: regiontext sna cosna sitenumb


To display the CNDDB elements that comprise the SNA:
ap: regions sna eo



If you choose to use the SNA coverage as a polygon coverage, you'll
need to select for inside = 100 to obtain the SNA polygons.  Please
remember that the SNA coverage was designed as a region coverage,
allowing information about each SNA to be maintained. This same
information is not available when used as a polygon coverage.

VITAL STATISTICS:
  Datum:                       NAD 27
  Projection:                  Albers
  Units:                       Meters
  1st Std. Parallel:           34 00 00
  2nd Std. Parallel:           40 30 00
  Longitude of Origin:         -120 00 00
  Latitude of Origin:          00 00 00
  False Easting (X shift):     0
  False Northing (Y shift):    -4,000,000
  Sources:                     DFG Natural Heritage Division
  Source Media:                CNDDB
  Source Projection:           n/a
  Source Units:                n/a
  Source Scale:                variable
  Capture Method:              manual digitizing, key data entry
  Conversion Software:         ARC/INFO rev. 7.1.2
  Data Structure:              Vector
  ARC/INFO Coverage Type:      Regions
  ARC/INFO Precision:          Double
  Layer Size:                  82 MB
  Data Updated:                January 1998

DATA DICTIONARY:


Subclass EO - Element Occurrence information.  Same  as the CNDDB.

Items sna.pateo
 COLUMN   ITEM NAME   WIDTH OUTPUT TYPE   Description
   25   PARTS           7      7     I     Number of Components
   32   MAPNDX          5      5     C
   37   EONDX           6      6     I     Element Occurrence ind ex
   43   ELCODE         10     10     C     Element Code
   53   EONUM           3      3     I     Element Occurrence Number
   56   SOURCETYPE      1      1     C     Original digitized feature
   57   ELTYPE_CODE     1      1     I     Element Occurrence  Type
   58   ACC_CLASS       2      2     I     Level of mapping accuracy
   60   EOCOUNT         2      2     I

```
    62  YSNA              2     2     C     Reason element is SNA
```

 Additional item descriptions can be found in the CNDDB metadata
(http://www.dfg.ca.gov/Nddb/meta.html)


The YSNA item hold 3 values, and describes why the element is an SNA:
S1 = State Rank 1 - extremely rare species
BX = Best example of a species
EC = Ensemble Candidate (composing an area of high species richness or
habitat richness)



Subclass UA - Urban/Agriculture disturbance.


Items sna.patua
```
COLUMN    ITEM NAME   WIDTH OUTPUT TYPE  Description
    25  PRIMARY          5     5     I   Species cover in polygon
    30  PCOV             1     1     I   Percent cover of species
    31  INSIDE           4     5     B
    35  SNAID            4     5     B   Unique id for each SNA
```

GAP Data resulting from reselecting for specific primary codes and 90%
coverage.
Primary: Co-dominant species in vegetation type covering the largest
fraction of the polygon (primary type)
      11000 series = disturbed urban
      22000 series = disturbed agricultural
PCOV: Proportion of polygon covered by primary vegetation type



Subclass SNA - Significant Natural Area


Items sna.patsna
```
COLUMN    ITEM NAME   WIDTH OUTPUT  TYPE N.DEC  Description
    25  INSIDE           4     5     B
    29  SNAID            4     5     B           Unique id for each SNA
    33  ACRES            8    18     F     3     SNA Acreage
```



Subclass IDEN - Identity of EOs and SNAs


Items sna.patiden
```
COLUMN    ITEM NAME   WIDTH OUTPUT  TYPE  Description
    25  EONDX            6     6     I   (see previous)
    31  ELCODE          10    10     C
    41  EONUM            3     3     I
    44  YSNA             2     2     C
    46  SNAID            4     5     B
    50  MAPNDX           5     5     C
    55  SITENUMB         8     8     C
```

The identity of the SNA region and the EO region.  Each EO knows to
which SNA it belongs.



Subclass COSNA - County and SNA information

```
Items sna.patcosna
COLUMN    ITEM NAME WIDTH OUTPUT   TYPE   Description
   25   INSIDE          4       5       B
   29   SNAID           4       5       B     Unique id for each SNA
   33   FLAG            1       1       I     Site number display
   34   SITENUMB        8       8       C     SNA site number
```

Flag - used to display the site number only once for a SNA that crosses multiple counties

Subclass OWNER - Ownership information

```
Items sna.patowner
COLUMN    ITEM NAME WIDTH OUTPUT   TYPE   Description
   25   OWNERCODE       5       5       C     Code indicating ownership
   30   GOVT_LEVEL      8       8       C     Level of Gov, None /or Private
   38   AGENCY         20      20       C      Agency of Government
   58   NAME           50      50       C      Specific name
  108   INSIDE          4       5       B
  112   SNAID           4       5       B      Unique id for each SNA
```

GOVTOWNA Data

DATA QUALITY ASSESSMENT:
CNDDB contains full record information pertaining to the quality of the biological observations and interpretations.  All CNDDB data are continuously updated and subject to change.  Please conta ct CNDDB Information Services (916) 324-0563 for additional information.

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