

SAN LUIS VALLEY, COLORADO

TRINIDAD NW, TRINIDAD SW
DURANGO NE, DURANGO SE
MONTROSE SE
PUEBLO SW

PHOTO INTERPRETATION CONVENTIONS

RIVERINE SYSTEM

The U.S.G.S. Water Resource Book Co. 90 along with local information collected while ground truthing will be used to determine the water regime on streams and rivers. If information is unavailable then photo signature will dictate water regime.

- R3UBH - Upper perennial, unconsolidated bottom, permanently flooded. These rivers have a cobble bottom, some velocity, and little or no developed floodplain. San Luis Creek and the Arkansas River enter the work area as upper perennial streams.
- R2UBH/G - Lower perennial, unconsolidated bottom, permanently flooded, intermittently exposed. These rivers are low gradient with meandering scars and usually have a developed floodplain. Signature is open water. The Rio Grande and Conejos Rivers are examples of this classification.
- R3UBF - Upper perennial, unconsolidated bottom, semipermanently flooded. This classification will be used on small streams in the mountains.
- R2UBF - Lower perennial, unconsolidated bottom, semipermanently flooded. These streams will have a smaller channel than those with a R2UBH/G classification but will still have open water flowing throughout. This classification will be used on streams that previously had been classified as R4SBF. The R4SBF label will not be used in this project.
- R2USA - Lower perennial, unconsolidated shore, temporarily flooded. These are sand or mud flats along lower perennial rivers. Signatures will be white.
- R2USC - Lower perennial, unconsolidated shore, seasonally flooded. These are sand or mud flats along lower perennial rivers. Signatures will vary from white to a blue gray mixture.

- R4SBC/A - Intermittent, streambed, seasonally, temporarily flooded. These streambeds will be smaller in size with little or no water present. Signature will dictate water regime.
- Irrigation Canals: These canals are used to move water for irrigating fields. All irrigation canals depicted on the base map, whether named or not, will be delineated providing we have a corresponding signature no matter how weak. The classifications listed below will be used to describe canals in this project.
- Road ditches in the study area do not move the water used for irrigation and many times were seen as upland. These ditches that are vegetated as well as irrigation canals with a vegetated signature will be covered under the PEMCx classification.
- PEMCx - Emergent, seasonally flooded, excavated. This classification will be used on all irrigation canals and road ditches with an emergent signature. This also applies to canals and ditches with aquatic bed signature.
- R2UBFx - Lower perennial, unconsolidated bottom, semipermanently flooded, excavated. The large canals in this work area that are depicted on the base map as a polygon or double linears will carry this label. The signature will be open water. The Empire Canal in Durango NE and Durango SE is an example of this classification.
- R4SBCx - Intermittent, streambed, seasonally flooded, excavated. Canals that have an open water signature, are pen width, and depicted on the base map as a linear will carry this classification.
- R4SBAx - Intermittent, streambed, temporarily flooded, excavated. This classification will be used on canals that are void of water or emergents. Signature will usually be white.

LACUSTRINE SYSTEM

All lacustrine systems will be greater than twenty (20) acres. Emergent vegetation around these lakes will be classified under the palustrine system. Those areas influenced by impoundments will carry the impounded (h) modifier.

- L1UBH - Limnetic, unconsolidated bottom, permanently flooded. This classification will be used on mountain lakes over twenty acres and also on those lakes with any part of the shoreline as bedrock regardless of size.

- L1UBG - Limnetic, unconsolidated bottom, intermittently exposed. Homes Lake was the only lake observed in the field with this classification. This lake has a depth greater than 6 feet and a shoreline void of emergent vegetation.
- L2UBG - Littoral, unconsolidated bottom, intermittently exposed. This classification will be used on San Luis Lake. This is a large natural lake less than 6 feet deep and void of vegetation around the perimeter except where Big Spring Creek enters San Luis Lake.
- L2ABG - Littoral, aquatic bed, intermittently exposed. This classification will be used on shallow lakes. Signatures will be open water with the presence of either aquatic bed or even emergents invading from the shoreline. Trites and Davey Lakes in the Russell Springs area are examples of this classification.
- L2USC - Littoral, unconsolidated shore, seasonally flooded. These basins over twenty (20) acres will have a shallow water signature or have some pockets of water throughout basin. These may also have a white signature with no water present but be associated with emergents along the border.
- L2USJ - Littoral, unconsolidated shore, intermittently flooded. This classification will be used on basins over twenty (20) acres that have a white signature, are absent of water, and not associated with emergents along the border.
- L1UBHx - Limnetic, unconsolidated bottom, permanently flooded, excavated. Use this classification on large mining pits.
- L2USC/Ah - Littoral, unconsolidated shore, seasonally, temporarily flooded, impounded. Signatures will range from a bluish gray for seasonally flooded to a white for temporarily flooded and will be found along reservoirs. The temporarily flooded (A) water regime with the unconsolidated shore (US) class in the lacustrine system will only be used with flats associated with reservoirs and not with natural basins.

PALUSTRINE SYSTEM

- PEMA** - Emergent, temporarily flooded. This signature varied depending on setting and situation. Where these areas are surrounded by saltgrass/greasewood flats the signature was a light pink. Hayed and pasture fields displayed more of a variety of signatures. Signatures here varied from pink to deeper more vibrant pinks and reds. Most of the fields in the northern part of San Luis Valley were temporarily flooded.
- PEMC** - Emergent, seasonally flooded. Some hayed and pasture fields were seasonally flooded especially in the southern part of the project area. But for the most part the seasonal emergent areas were pockets and swales within temporary fields. Signatures here were very dark mottled tones of browns to a black signature, also very deep reds. Use setting and situation to distinguish between the black signature of PEMC and that of PEMF. Also the key here between PEMA and PEMC is probably the mottling that is present in these deeper tones. Rings of seasonal emergents were also found bordering shallow basins and surrounding flowing wells. In the northern most part of the study area swales out of the foothills were mainly seen as seasonal.
- PEMF** - Emergent, semipermanently flooded. These areas usually appear as swales and pockets and can also be found in lakes and around the border of shallow basins. Signatures here vary from a dark black red to a green blue. Also some swales of cattail were a mottled mixture of pink. The key here for PEMF is the texture that the cattail and hardstem produce. Also use setting and situation for these areas.
- PEMB** - Emergent, saturated. These areas consisted of greasewood/saltgrass vegetation. Signature was a white/pink mixture. The majority of these saturated areas are found in the vicinity of San Luis Lakes and Russell Springs. Some saturated signatures in the Russell Springs area varied. These included vast areas of a white signature with some stippling throughout. Another signature here was a very light purple. These last two signatures were seen only in the Russell Springs vicinity. Omit the areas where the gray upland signature starts to invade the saturated signatures described above.
- PABF** - Aquatic bed, semipermanently flooded. This classification will be used on basins with a strong water signature or aquatic bed signature. These also occur as pockets, swales, and oxbows with the same signature as mentioned above.

- PABG - Aquatic bed, intermittently exposed. This will be used to describe mountain ponds with the aquatic bed signature present on the photo.

- PABH - Aquatic bed, permanently flooded. This classification will be used strictly on flowing wells. This will be a dot size area usually surrounded by seasonally flooded emergents and in most cases will be indicated on the topographic base map. If well cannot be distinguished among the emergent signature then we will include the well in the seasonal emergent delineation.

- PABFx/h - Aquatic bed, semipermanently flooded, excavated or impounded. The excavated (x) special modifier will be used on manmade ponds with a strong water or aquatic bed signature. The impounded (h) modifier will be used on impounded wetlands with the same signature.

- PABGx - Aquatic bed, intermittently exposed, excavated. This classification will be used for sewage disposal ponds and also on larger excavated ponds close to 20 acres.

- PABGb - Aquatic bed, intermittently exposed, beaver. This label is used strictly for beaver dams. Vegetation directly affected by these dams will have the beaver modifier (b) added to the classification (example: PSSCb).

- PUBH - Unconsolidated bottom, permanently flooded. This classification will be used on mountain lakes located above the tree line with a vegetated shoreline. This label will also be used on the hot springs found in the study area.

- PUSJ - Unconsolidated shore, intermittently flooded. After consulting field personnel and extensive ground truthing we found that we had two types of basins, those that are inundated on a seasonal basis every year (see PUSC definition) and those basins where weeks, months or even years may intervene between periods of inundation (PUSJ). Based on this finding we will not be applying the temporarily flooded (A) water regime to any of the unconsolidated shore (US) basins in the San Luis Valley. The signature for these basins (PUSJ) will be white and void of emergents around the perimeter of the basin. We also had a smooth blue signature for some basins and drainages surrounded by greasewood north of Hooper. These will also be included in the PUSJ classification. These are also a few areas (example: west of Alamosa) that were white swales positioned between emergent and greasewood areas. We decided to use the PUSJ classification here also but use caution with this signature because very few of these areas were seen, most spread out white signatures are upland.

- PUSC** - Unconsolidated shore, seasonally flooded. This classification will be used for those basins that hold water at some time during the year. The signature for these basins will be a shallow blue water signature, or there may be just a small blue signature in the center of the basin or it may be a white signature and have emergents along the periphery of the basin. The presence of emergents will be the determining factor for those basins with white signatures as to which classification will be used PUSC versus PUSJ.
- PUSAx/h** - Unconsolidated shore, temporarily flooded, excavated or impounded. The temporarily flooded (A) water regime with the unconsolidated shore (US) class in the palustrine system will be used only on artificial wetlands. Signature will be white or may be a grayish dry signature in dugouts or impoundments.
- PSSC** - Scrub shrub, seasonally flooded. While ground truthing we found the majority of shrubs to be seasonally flooded. Therefore the seasonally flooded water regime will be used on all wetland shrubs. These were found in swales, drainages, floodplains, and along ditches. Signature will vary with photo emulsion but shrubs will be compact, fluffy and may have an emergent understory or be associated with emergents.
- PFOA** - Forested, temporarily flooded. All wetland forested areas ground truthed were found to be temporarily flooded. Keep these forested areas to trees that are down in the drainage, in swales or in channels of floodplains along rivers. Signature will vary according to photo emulsion but look for either emergent understory or tight density of trees. Stay away from areas with upland understory or trees that are sparse. Use situation of these forested areas along with signature to determine wetlands. Be careful in the area of the Conejos River. Some forested areas here were found to have a understory of briars which looked similar to a emergent wetland signature. Do not delineate these areas. Study both the situation and signature to determine delineation.

MONTE VISTA REFUGE

The Monte Vista Refuge can be found in Durango NE and Durango SE. Located on the Refuge is an area that is impounded and controlled by dikes, pumps, and siphons. This area can vary depending upon the management adopted by the Refuge manager at the time of their appointment. Using this information along with ground truthing and photo signatures it was decided to use both the artificial water regime (K) along with the appropriate water regime for each wetland. The impounded (h) modifier will be used on all labels in this area. The following is a list of classifications used in the controlled area.

- PEMKAh - Emergent, artificial, temporarily flooded, impounded. This signature ranges from a smooth blue/gray to mixtures of light pink and brown and also light yellow and green tones.
- PEMKCh - Emergent, artificial, seasonally flooded, impounded. Signature is darker, more mottled tones of green, pink, red, and brown.
- PEMKFh - Emergent, artificial, semipermanently flooded, impounded. This signature is similar to the seasonal tones but has more texture and height to the signatures. These will also vary from green, pink, red and brown to sometimes black.
- PABKFh - Aquatic bed, artificial, semipermanently flooded, impounded. This will be used to classify the water backed up by the dikes and levees.
- PUSKCh - Unconsolidated shore, artificial, seasonally flooded, impounded. This label is used to identify the unvegetated draw down areas. Signature will be a bluish white return.
- PUSKAh - Unconsolidated shore, artificial, temporarily flooded, impounded. This label is used to identify the unvegetated draw down areas. Signature will be a white return.

SUMMARY OF HAYED FIELDS

In the northern and central part of the study area hayed fields are more temporarily flooded with seasonal and semipermanently flooded pockets and swales throughout. Temporarily flooded signatures varied from light pink to deeper more vibrant pinks and reds.

In the southern part of the study area we found both temporarily and seasonally flooded hayed fields. Signatures for the seasonally flooded field vary from very dark mottled tones of browns and very deep mottled reds. One key in determining temporarily flooded fields from seasonally flooded ones is the amount of mottling present in the deeper tones of seasonal returns.