

BLACK HILLS/BIG HORNS, WYOMING

NEWCASTLE NE, NEWCASTLE SE,  
GILLETTE NE, GILLETTE SE,  
CODY NE, CODY SE,  
THERMOPOLIS NE

PHOTO INTERPRETATION CONVENTIONS

RIVERINE SYSTEM

The U.S.G.S. Water Resource Book Wy 84 will be used to determine the water regime on streams and rivers. If information is unavailable then photo signature will dictate water regime.

- ∫ 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.
- ∫ R3UBH - Upper perennial, unconsolidated bottom, permanently flooded. These rivers have a cobble bottom, some velocity, and no developed floodplain. The only river observed in this work area as upper perennial was the Wind River.
- ∫ 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.
- ∫ R2UBGx - Lower perennial, unconsolidated bottom, intermittently exposed, excavated. This classification will be used on major drainage canals wider than a pen width.
- ∫ R2UBHx - Lower perennial, unconsolidated bottom, permanently flooded, excavated. Hot Spring source running into pools is the only place this classification will be used. (Checksite #19 Thermopolis NE.)
- ∫ R4SBF/C/A - Intermittent, streambed, semipermanent, seasonally, temporarily flooded. Streambeds will be classified on water data or signature. In cases where the channel is evident from rest of streambed channel will be pulled as R4SBF or R4SBC with the remaining streambed as R4SBC or R4SBA. Signatures will vary from water to white streambed.

- ✓ R4SBFx - Intermittent streambed, semipermanently flooded, excavated. Canals with this classification are usually concrete lined with an open water signature the size of a pen with. Some smaller ditches are concrete lined but photo may show an emergent signature. With these we will have to go with the photo and classify these as PEMCx.

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.

- ✓ L1UBHh - Limnetic, unconsolidated bottom, permanently flooded, impounded. This classification will be used on impoundments with an open water signature over twenty (20) acres.
- ✓ L1UBHx - Limnetic, unconsolidated bottom, permanently flooded, excavated. This classification will be used on large mining pits over twenty (20) acres.
- ✓ L2ABGh - Littoral, aquatic bed, intermittently exposed, impounded. Signature may be pink or open water.
- L2ABG - Littoral, aquatic bed, intermittently exposed. This classification will be used on shallow lakes over twenty (20) acres. Signatures will range from some pink to shallow open water signature. Big Horn Lake in Cody NE will fall under this classification. This lake is extremely large, but shallow and is not impounded. Contour information will not be used for lacustrine/riverine break. Photo signature will dictate this.
- ? L2USC/Ah - Littoral, unconsolidated shore, seasonally, temporarily flooded, impounded. Signature will range from a bluish gray mix for seasonally flooded to a white for temporarily flooded.

PALUSTRINE SYSTEM

✓ Linear convention - small feeder tributaries to streams and creeks were mainly seen as upland. Stay with main and/or named drainages where you have a signature to go with. Make hydric sense if signature is sporadic.

Newcastle SE and Newcastle NE

- Linears here with a little red or a smooth brilliant red will be upland. More seasonal drainages here with a deeper mottled red. Again keep with main drainages and stay clear of small feeder tributaries.

Gillette SE

- Drainages observed Northwest of Upton were found to be wet when they were main drainages or they connected to impoundments. Some temporary (PEMA) connections between impoundments were seen (signature weak).

Gillette NE

- Again smaller tributaries to stream and creeks show upland. Even named perennial creeks (example: Elkhorn Creek) showing very small and weak. Stay with main drainages and make hydric sense.

✓ PEMA

- Emergent, temporarily flooded. These can be found along some streams, in fields, and in some drainages usually between impoundments. Signature in drainages are light pink to red and just in channel. Upland drainages had a more bright red signature and not as defined (signature sometimes ran up sides) *grassy*. Also keep temporary delineations to the more major drainages that make hydric *must make hydric sense* sense. P Temporary emergents in fields had some mottling but over all had lighter signatures compared to the darker swales of seasonal emergents. Some fields checked had temporary emergents showing as a snowy white signature.

✓ PEMAh

- Same as above but impounded. Signature will be light reddish color.

✓ PEMC

- Emergent, seasonally flooded. This can be found in fields, along rivers and creeks, oxbows, swales, and drainages. Signatures will range from brown to dark brown, deep pink, red-brown mixture, pink-brown mixture, and a red-pink mottling. Usually all these signatures will have some type of mottling to them and have a deeper tone than that of temporary.

- ✓ PEMCh - Same as above but impounded. Signature will be a darker vegetated tone then that of temporarily flooded emergents.
- ✓ PEMCx - Same as above but excavated. This classification will be used on all irrigation and road ditches with a vegetated signature. Very weak irrigation ditches in fields will not be delineated. Also see comments under R4SBFx definition.
- ✓ PEMB - Emergent, saturated. This water regime will be reserved only for those wetlands on a slope. They may also have the same signatures as indicated in the PEMC classification. Only area observed while in the field, was in the Southwest corner of Cody NE.
- ✓ PEMF - Emergent, semipermanently flooded. These can be found in swales, oxbows, fields, and channels. Signatures vary from a dark red almost black tone to a ~~blue-green~~ mottled tone. All these signatures appeared to have a fluffy texture to them. We also field checked some areas as a yellow brown signature but this was rare. Other areas show a deep red with a mixture of light pink and green mottling throughout. Usually the difference between seasonal and semipermanent is the fluffier texture and mixture of mottling tones throughout the semipermanently flooded areas.
- ✓ PEMFh - Same as above but impounded. Signatures include very deep brown/black or red tones or an open water signature with vegetation mixed throughout usually brown or black tones. This also found in drawdown areas of aquatic bed impoundments.
- ✓ PABF - Aquatic bed, semipermanently flooded. These areas include ponds, oxbows, and pockets in swales. Signature is (duckweed) pink or open water.
- ✗ PABFh - Same as above but impounded. Signature same as above.
- PABFx - Same as above but excavated. These include dugouts in fields, clay and gravel mining pits. Signature is usually open water and/or typical pink aquatic bed.

*with the definition around it is*

- PABGb - Aquatic bed, intermittently exposed, beaver. This label is used strictly for beaver dams. These usually seen in drainages in the mountains. Vegetation directly affected by these dams will have the beaver modifier (b) added to the classification (example: PEMCb).
- PUSA - Unconsolidated shore, temporarily flooded. These can be mud flats or alkali flats. Signature is a bright white and usually has a basin shape but can be more swale shaped as those observed West of Thermopolis. *Signature above*
- \ PUSA/Ch - Unconsolidated shore, temporarily, seasonally flooded, impounded. Signature will dictate water regime. Seasonal will have some water present but very shallow and sometimes drawn down. Temporary will be white or more upland signature with impoundment clearly present on both.
- \ PUSA/Cx - Same as above but excavated. Signature will dictate water regime.
- \ PUBFx - Unconsolidated bottom, semipermanently flooded, excavated. These will be oil or gas pits and be full of water.
- \ PUBHx - Unconsolidated bottom, permanently flooded, excavated. This classification will be reserved solely for the hot springs ponds located outside of Thermopolis (Checksite #19 Thermopolis NE).
- PSSA - Shrub-scrub, temporarily flooded. Only temporary shrubs were observed in the field. Shrubs are found down in drainages, sloughs, along rivers, creeks, and ditches. Signature will be a fluffy *to brown* red signature with the exception of a shrub seen in the hills of Gillette SE. These were a different species and had a green textured look (very short in height almost an emergent signature).
- PFOA - Forested, temporarily flooded. Only temporary trees were observed in the field. These were found mostly in main drainages. Forested areas along river floodplains were found to be mostly upland. These areas are wet only when they are down in the channel or right next to the channel. Areas away from the river channel are now upland. Historically these were wetland but today due to the drop in the water table most are now upland. Examples are Graybull River, and Shoshone River in Cody NE.

## OVERVIEW OF HAYED FIELDS

Newcastle NE, Newcastle SE, Gillette NE, Gillette SE

Majority of hayed fields observed were upland. Signature and contour of land support this. Some fields seen Northeast and Southwest of Newcastle are mainly temporary or upland with some seasonal pockets. Temporary signature was a pale pink, not much different from upland signatures, while the seasonal pockets in these fields were a greenish tone. These fields should not be a problem to delineate.

Cody NE, Cody SE, Thermopolis NE

Fields here were different than other Wyoming field trips. A lot of fields were upland and supported crops such as corn and alfalfa. These did not contain any wet areas or basins. Wetlands were found instead as swales in pasture fields or those with some haying taking place. Most areas were seasonal with signatures ranging from dark brown, bluish brown, red/pink mottling and also a few areas of brilliant pink although these were isolated pockets. Subtle faint signatures in pasture fields proved to be upland. Wetland upland breaks were pretty distinct and we did not find the broad expanses of wet meadows found on previous trips. Temporary emergents had a lighter signature than the seasonal but in some areas the difference between the two was subtle. Field conditions were also drier than the photography.

Some fields observed Southeast of Powell (Cody NE) had sloughs of seasonal and temporary emergents but the temporary signature here was a smooth white. In Thermopolis NE this same smooth white signature proved to be alkali flats with sloughs of temporary and seasonal emergents. The surrounding conditions under which the two are found, I believe, are the key to which classification will be applied. The first area (temporary emergents PEMA) are found in pasture fields surrounded by numerous crop fields. The second (alkali flats PUSA) is surrounded by sage brush with some upland haying in the area.

In Cody SE and Thermopolis NE we have some photography from August 26, 1981. This emulsion enhances signatures and many appear wetter than observed. We found seasonal signatures here to be very dark, almost black at times. Temporary signatures here were darker and looked more like seasonal signatures found on other dates of photography. Light staining signatures that on other dates and emulsions we may have questioned as temporary were found to be upland. Study field notes on the emulsion before delineating these fields.

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