

Chris Corbin

how water marketing can
benefit the Clark Fork



Differentiation



A Venn diagram consisting of two overlapping circles. The left circle is labeled 'business acumen' and the right circle is labeled 'water ingenuity'. The circles overlap in the center, creating a shared space.

business acumen

water ingenuity

lotic
WATER MARKETING



Lotic turns
blue into green.



BLUE represents historic water rights



GREEN means
opportunities

action

study

BASIN STREAM CONDITION & TRENDS

Based on MT DEQ Water Quality Assessments

Every other year,
About 10% of the
basin's stream miles
are assessed.
In those streams,
Use support is:

	2000	2004	2008
USE SUPPORT			
IMPAIRED	80%	55%	77%
FULL SUPPORT	7%	14%	22%
INSUF DATA/NA	13%	26%	1%

Most frequently Impaired uses:
Cold water fishery, aquatic life, drinking, swimming

'Causes':

habitat &
flow alteration
silt, metals,
nutrients

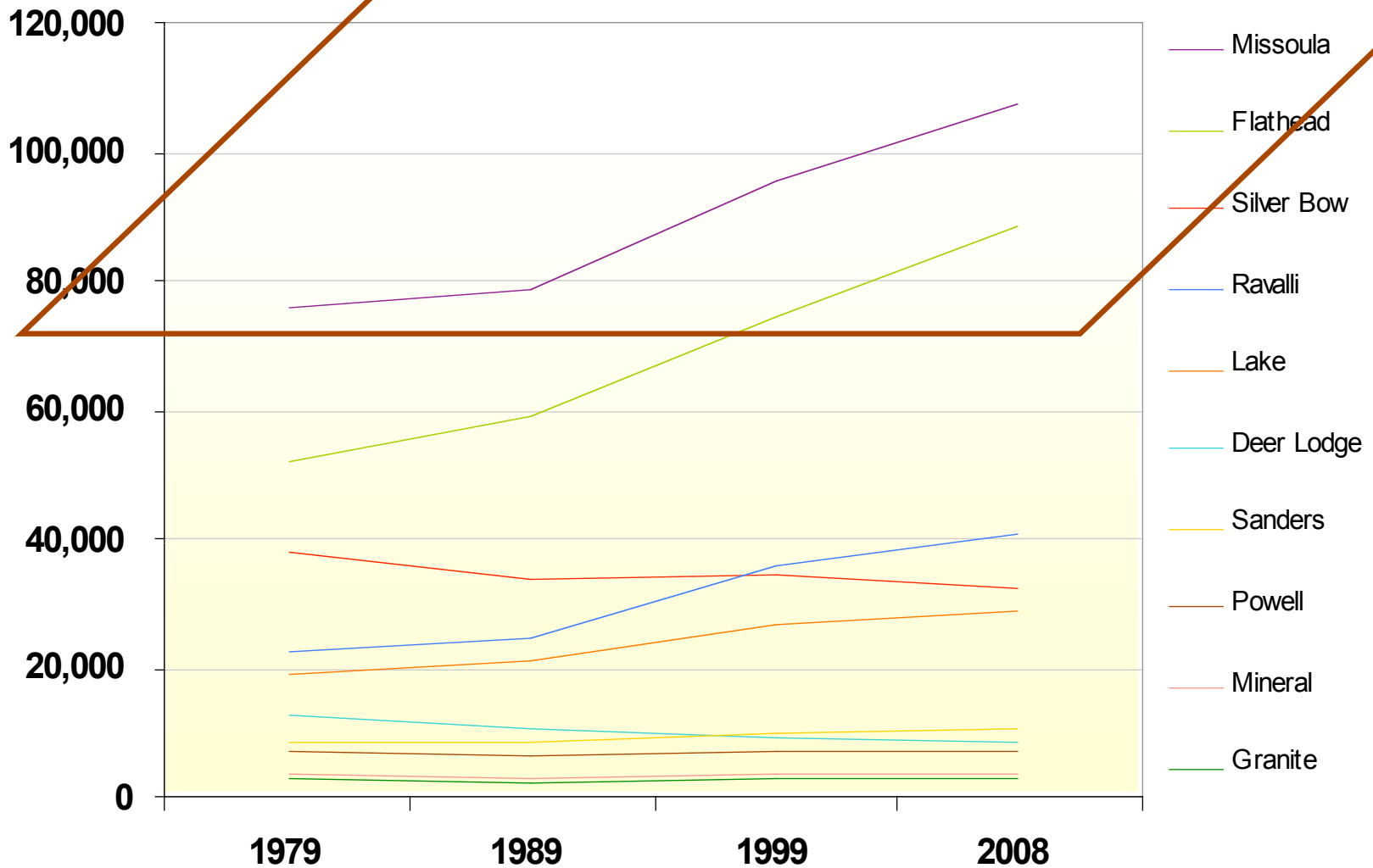
'Sources':

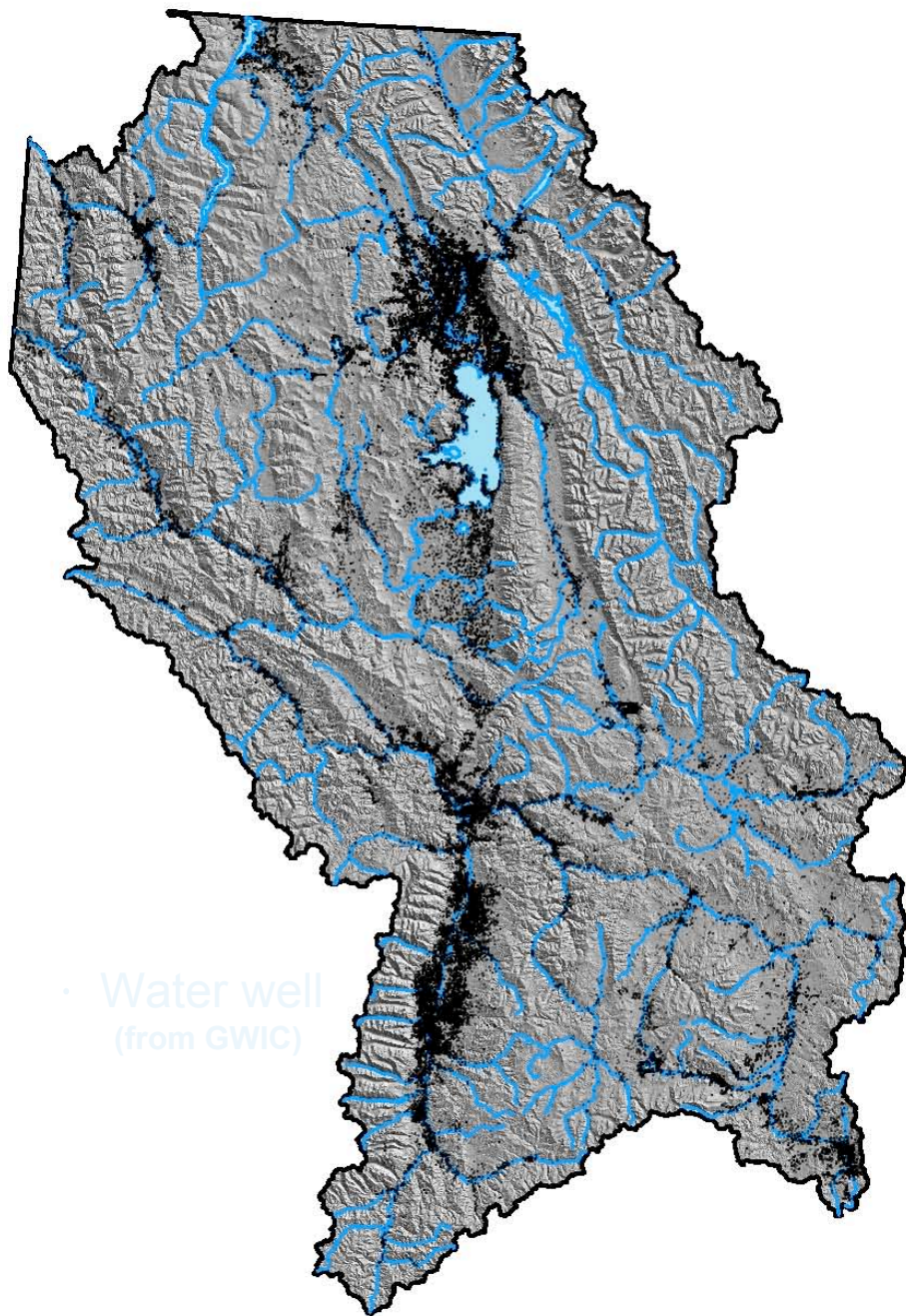
Res extraction
Ag, Silviculture
Hydromodification
Construction

*data: MDEQ
Water Quality
Assessment
Database CWAIC
Compiled by many
UM students*

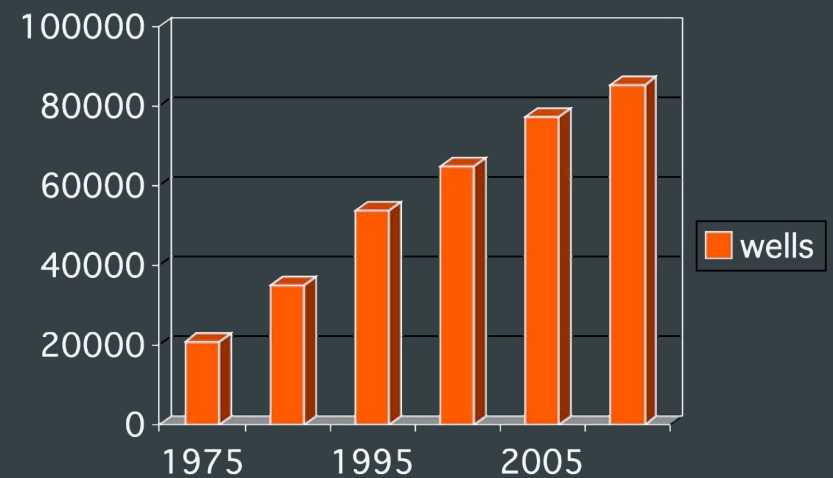
Clark Fork Basin Population

by county 1979-2008

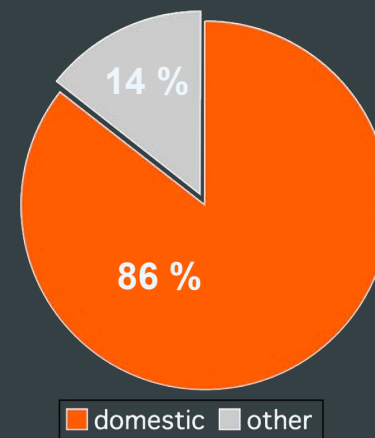




Clark Fork Basin Wells 2010 (n= 85,423)



Reported well use



water marketing



water rights

“He hit him a couple clips with the shovel and a scuffle ensued.”

-Green Fields of Montana



water

*property of the state for the use
of its people . . .*

water right

right to **use** water



Irrigating Crops



quenching thirst

quenching thirst



Hydropower



Industry



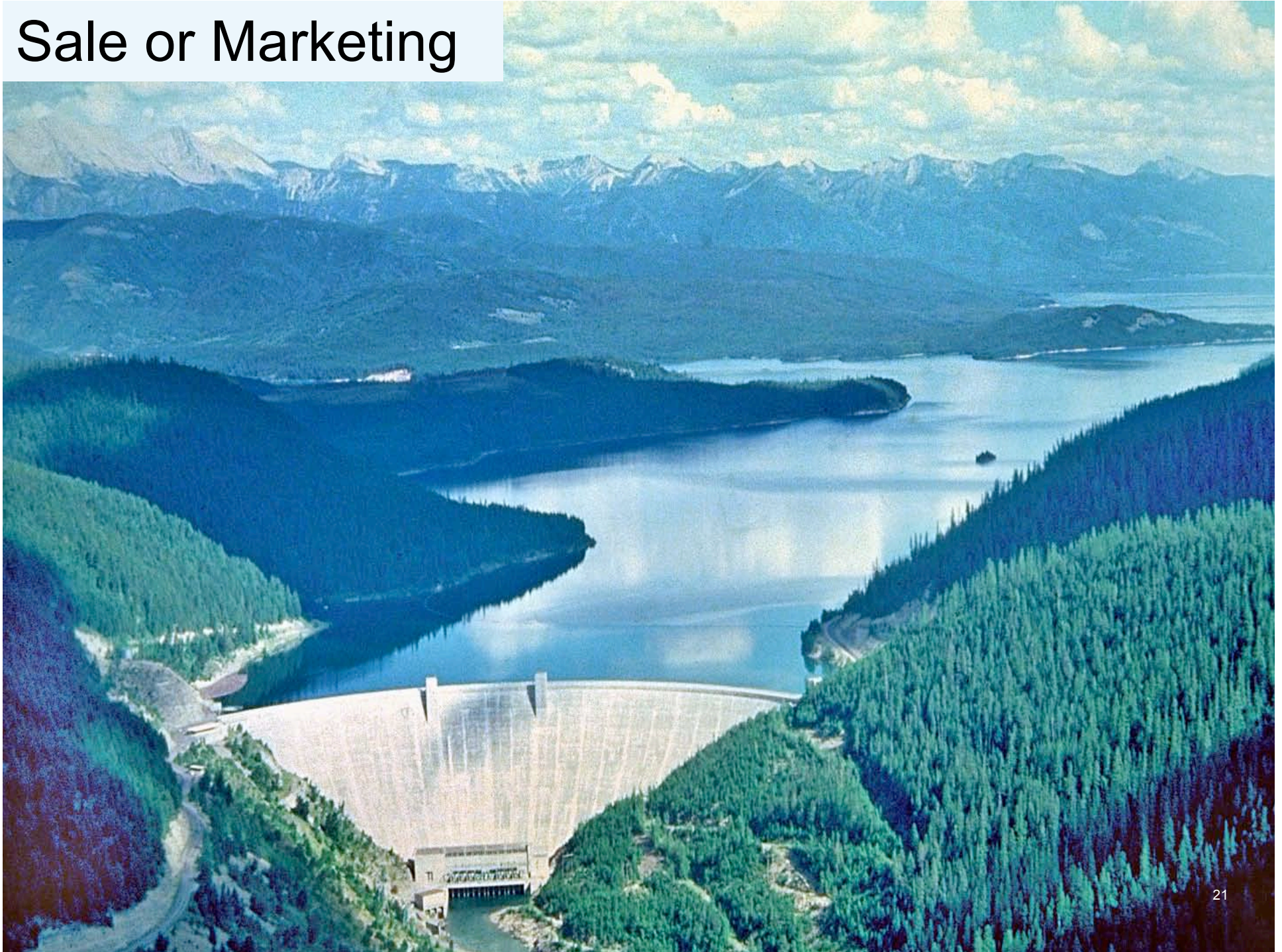
Recreation



Fish and Wildlife



Sale or Marketing



water marketing

buying and selling in a market

Water runs with the land?



1895



supply and demand

A wide-angle photograph of a large, calm reservoir, likely Lake Mead, nestled between towering, rugged mountains. The water is a deep, clear blue, reflecting the sky. The surrounding cliffs are steep and rocky, with a mix of brown and tan hues, indicating a dry, arid environment. In the distance, more mountain ranges are visible under a bright blue sky with a few wispy white clouds. The overall scene conveys a sense of vastness and isolation.

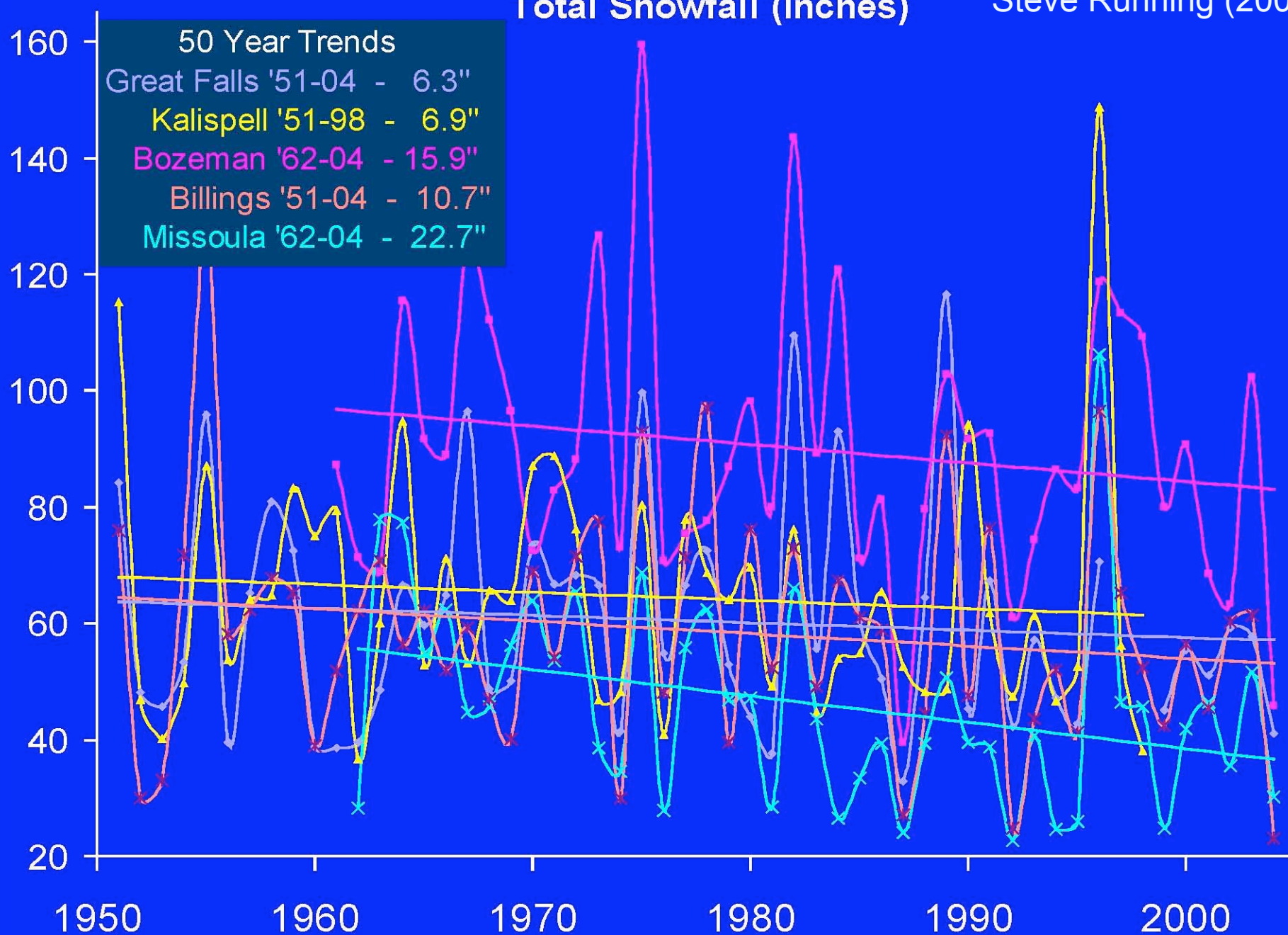
“The West is the fastest growing part of the country.
It is also the driest.”

– National Geographic Magazine

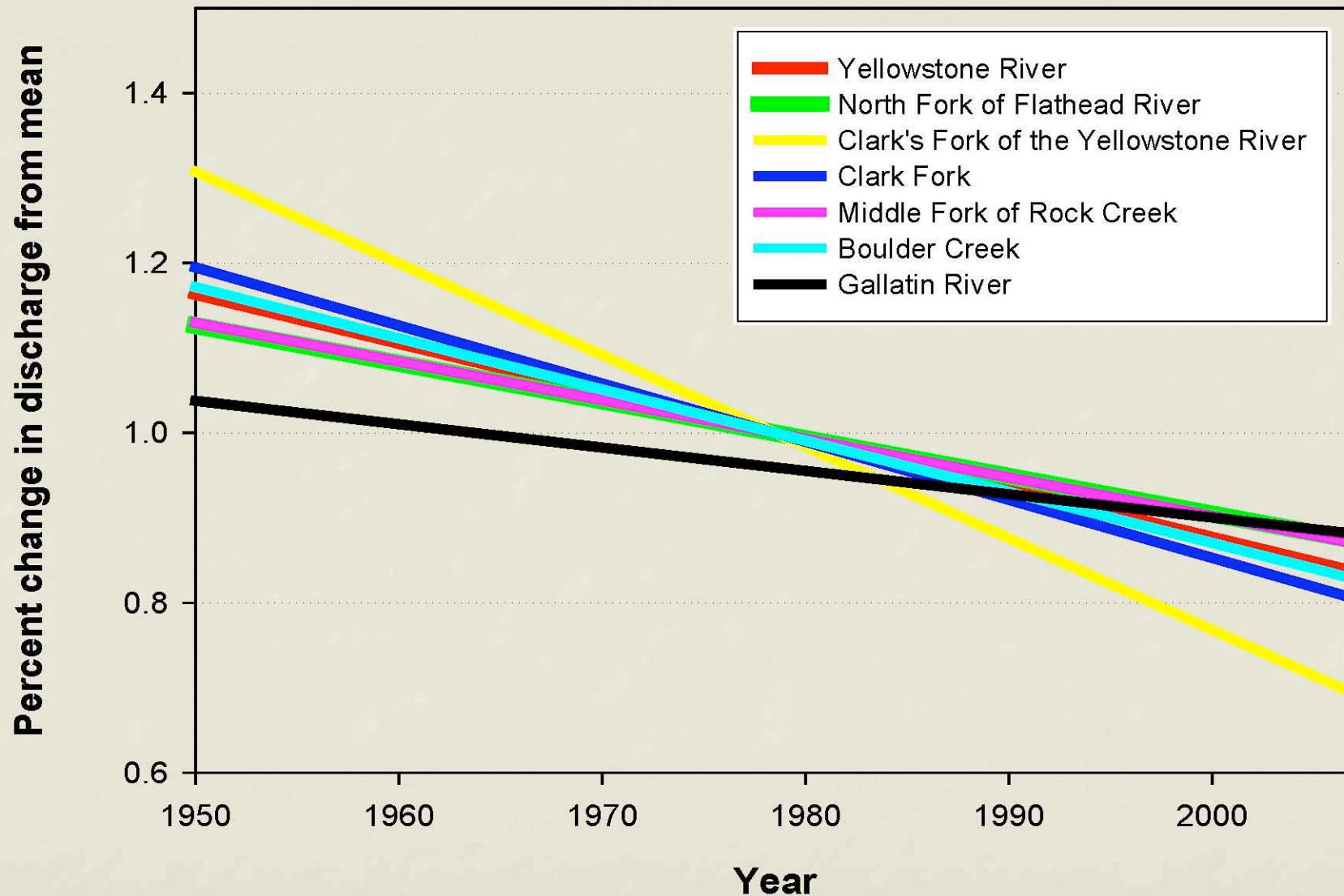
supply: montana

Total Snowfall (Inches)

Steve Running (2009)



Montana Mean August stream Discharge 1950-2007



Steve Running (2009)

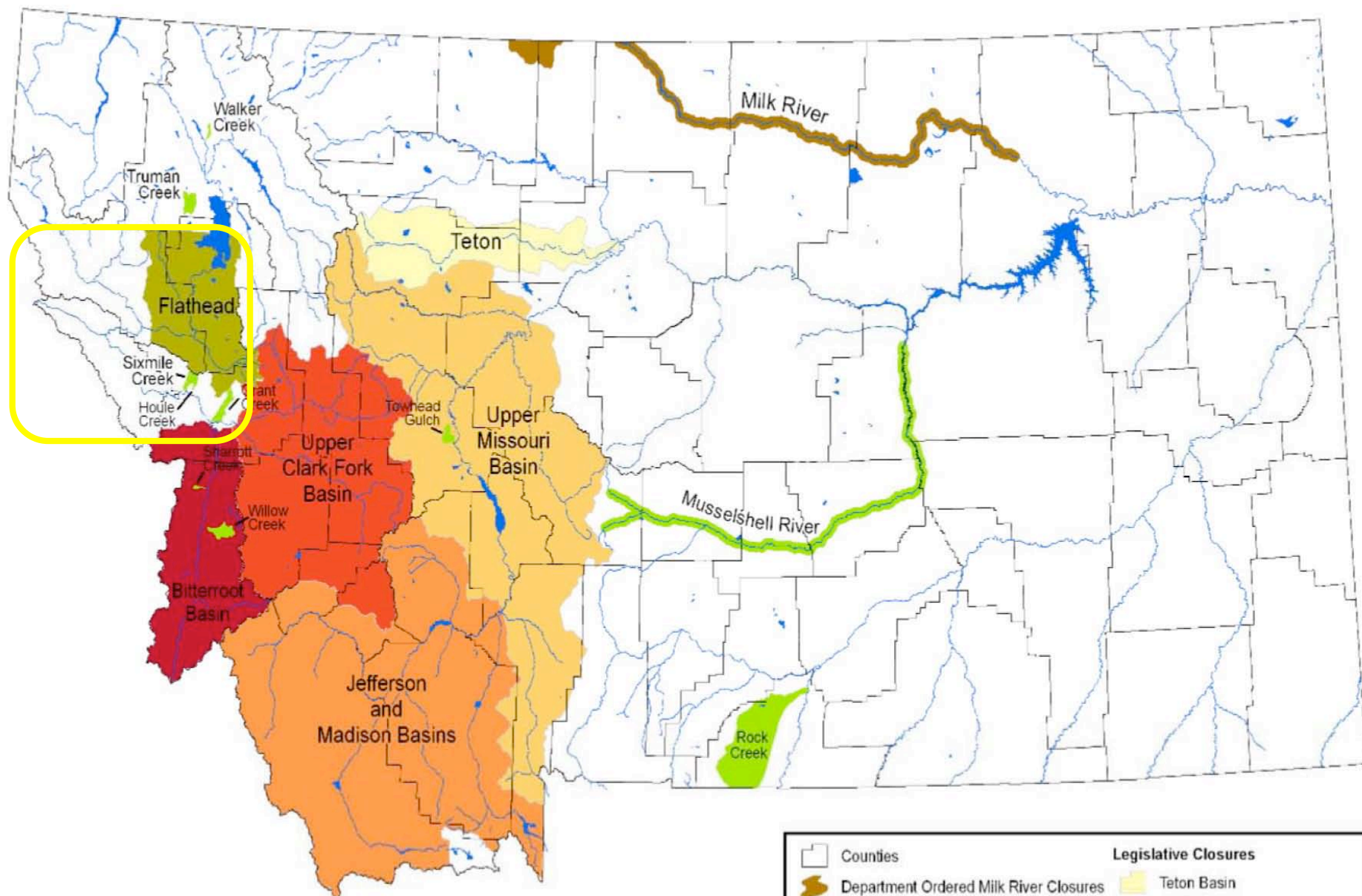
regulatory supply

over appropriated

more valid water right claims than
water is available . . .

Basin closure





mitigation



An applicant who determines the **net depletion** created by a proposed ground water appropriation will result in an **adverse affect** must submit a combined application including a **hydrogeologic assessment**, a **mitigation plan** or **aquifer recharge plan** if required, a permit application, and an application for change if necessary.

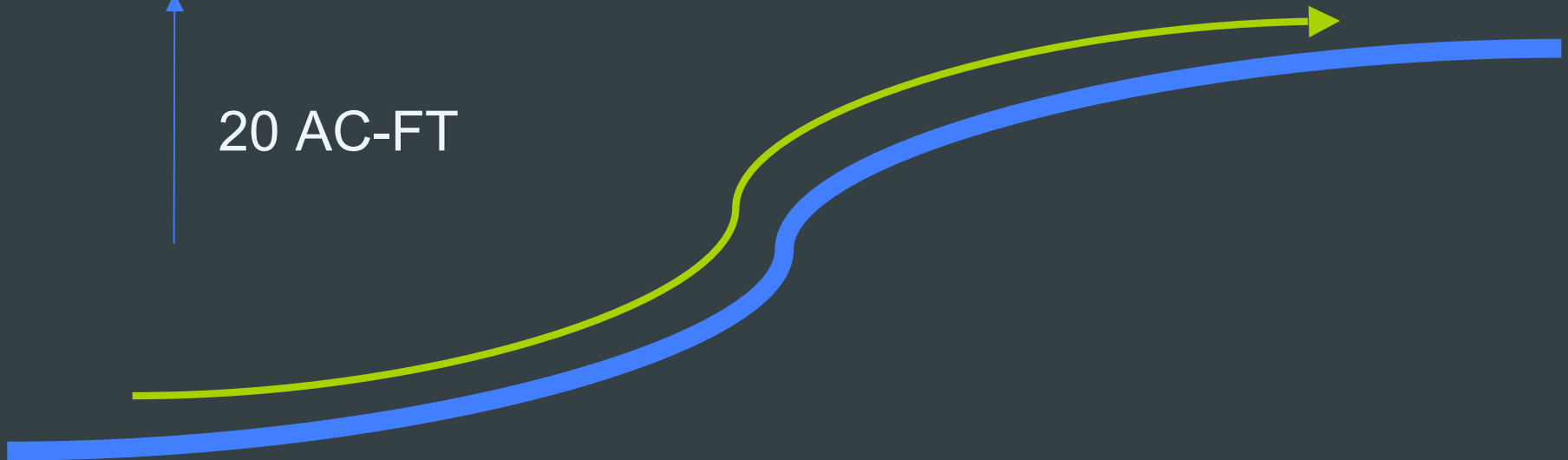
Instream flow mitigation plan



100 AC-FT



20 AC-FT



aquifer recharge



100 AC-FT

Aquifer Recharge

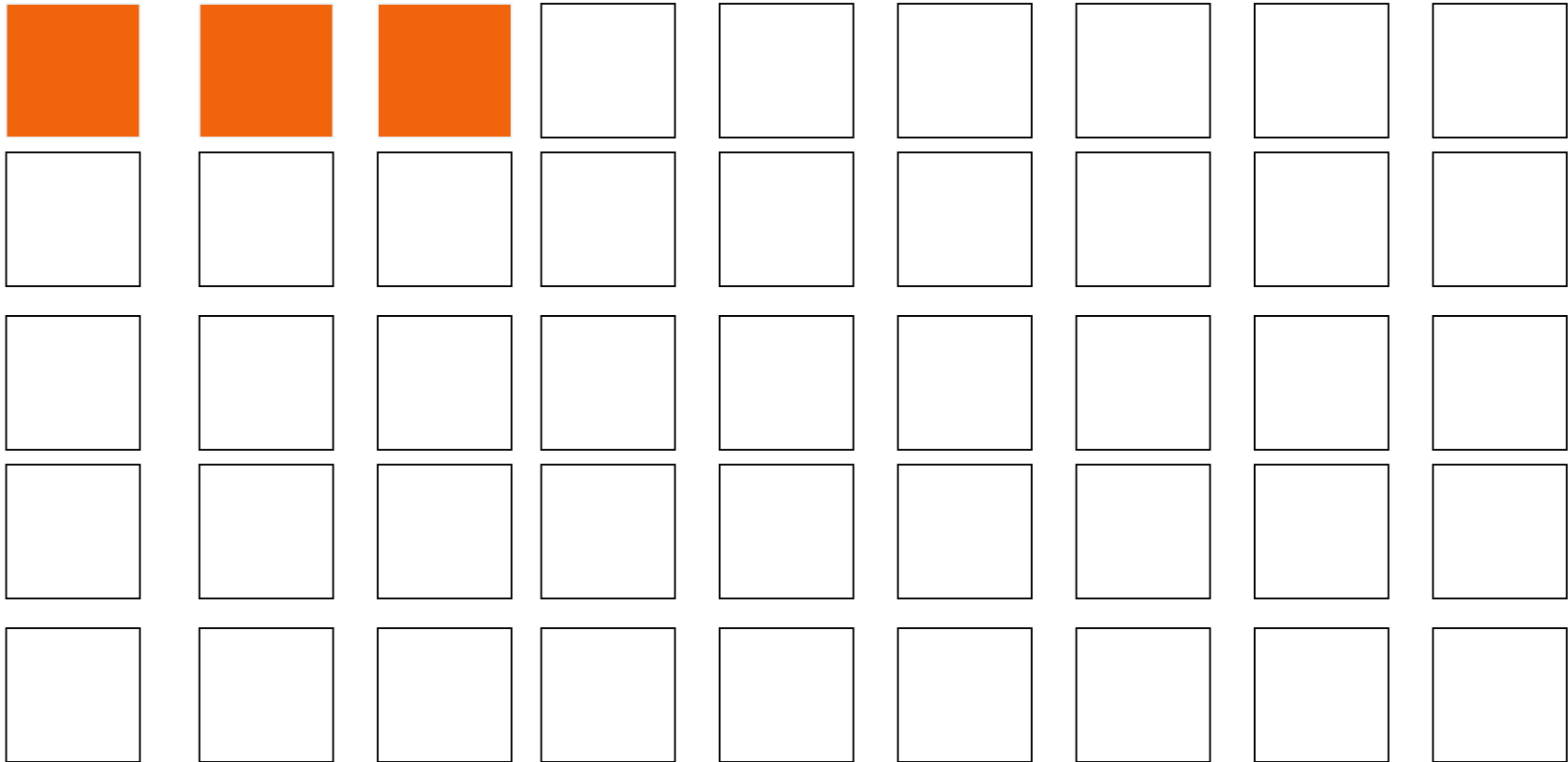


20 AC-FT

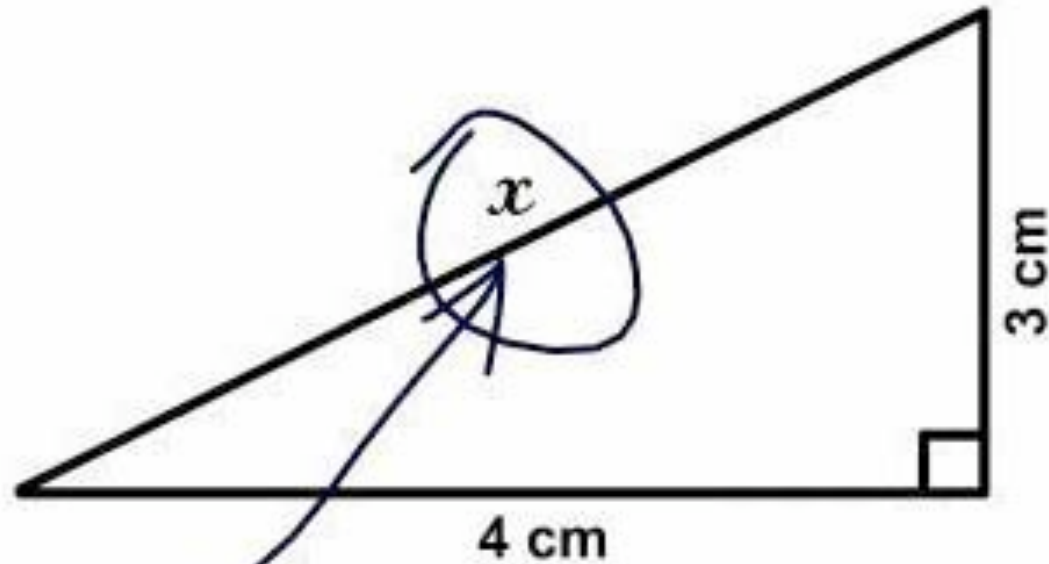


challenges to new appropriations

3 of 45 applications approved



3. Find x .



Here it is

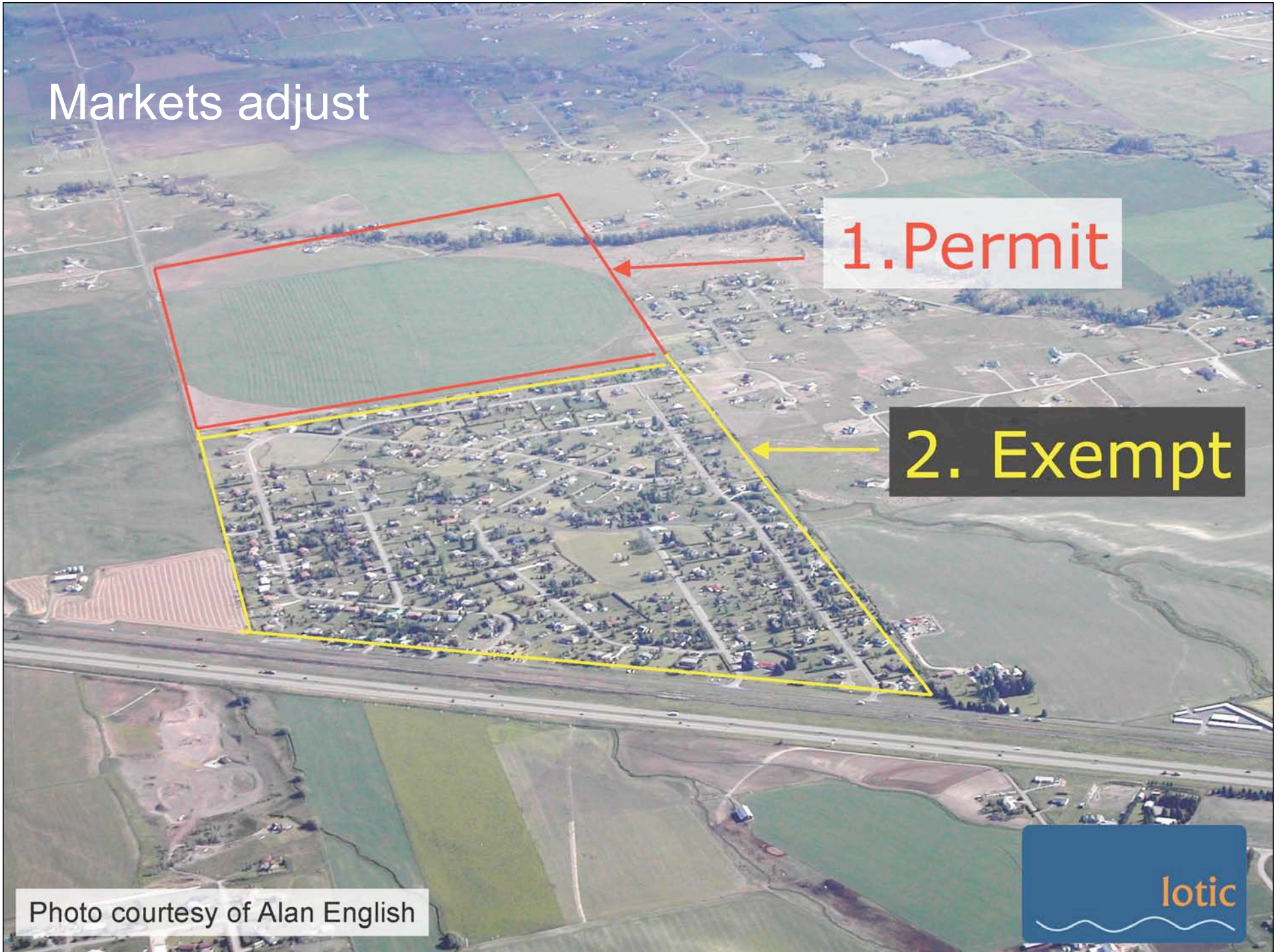
Markets adjust

1. Permit

2. Exempt

Photo courtesy of Alan English

lotic



Future water demand will be met or mitigated by existing water rights.

demand

water market demand

In Montana and other states, competing demands for water are driving water marketing discussions.

-Water Policy Interim Committee

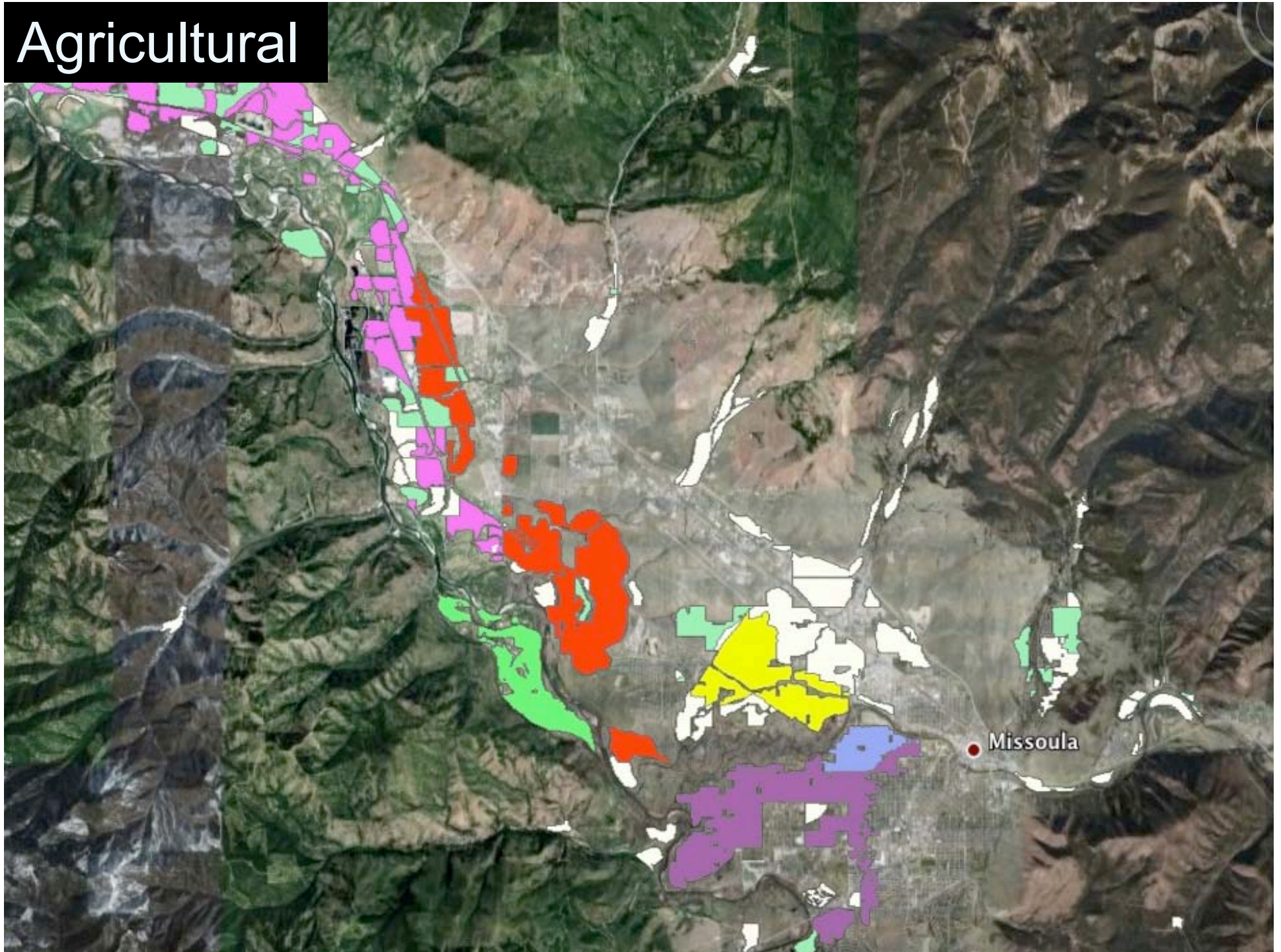


Agricultural

Environmental

Urban & Industrial

Agricultural

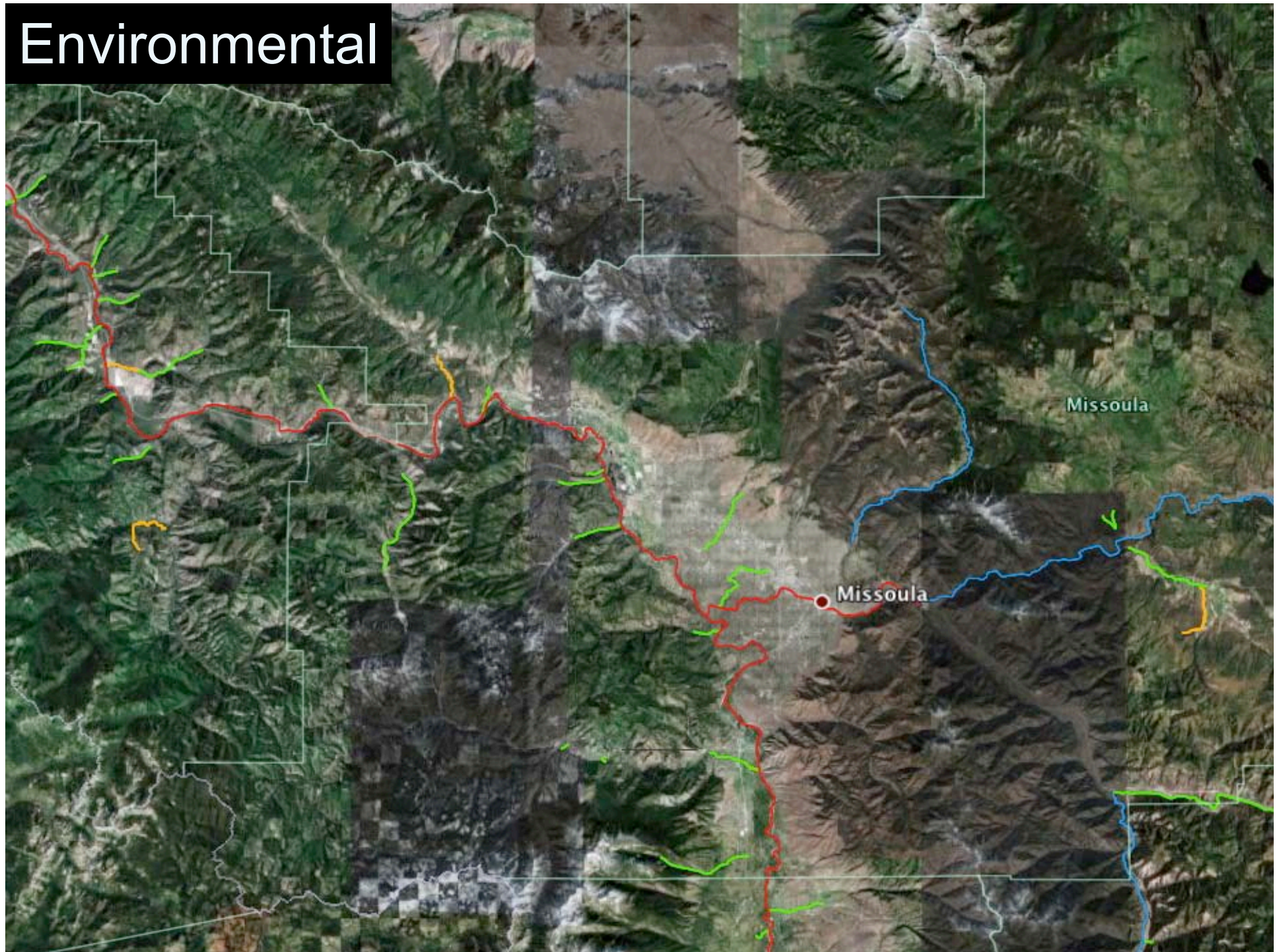


16,000+ irrigated acres



USDA, Economic Research Service (2009)

Environmental



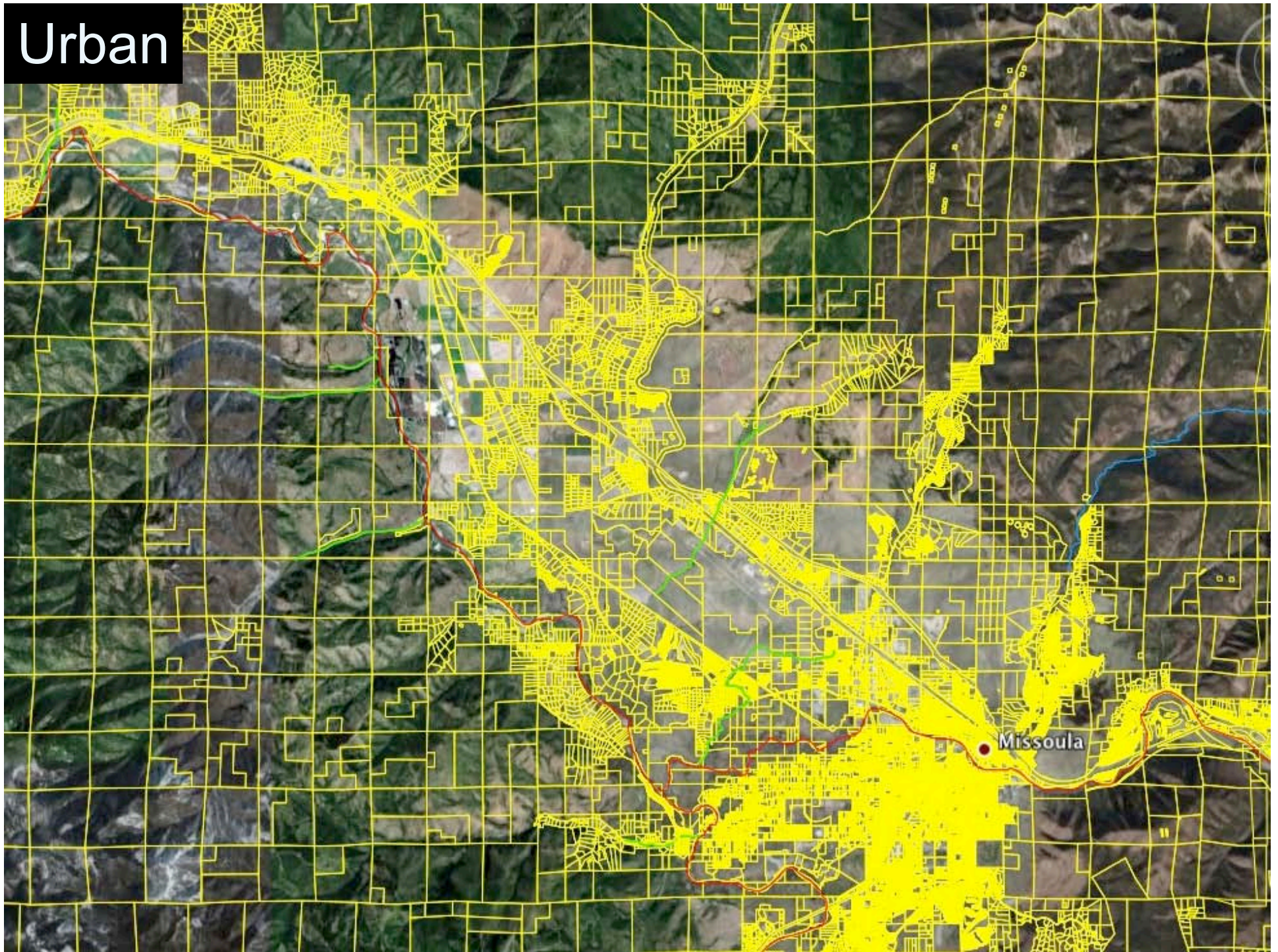
115 miles of blue and red ribbon streams

59 miles of dewatered streams

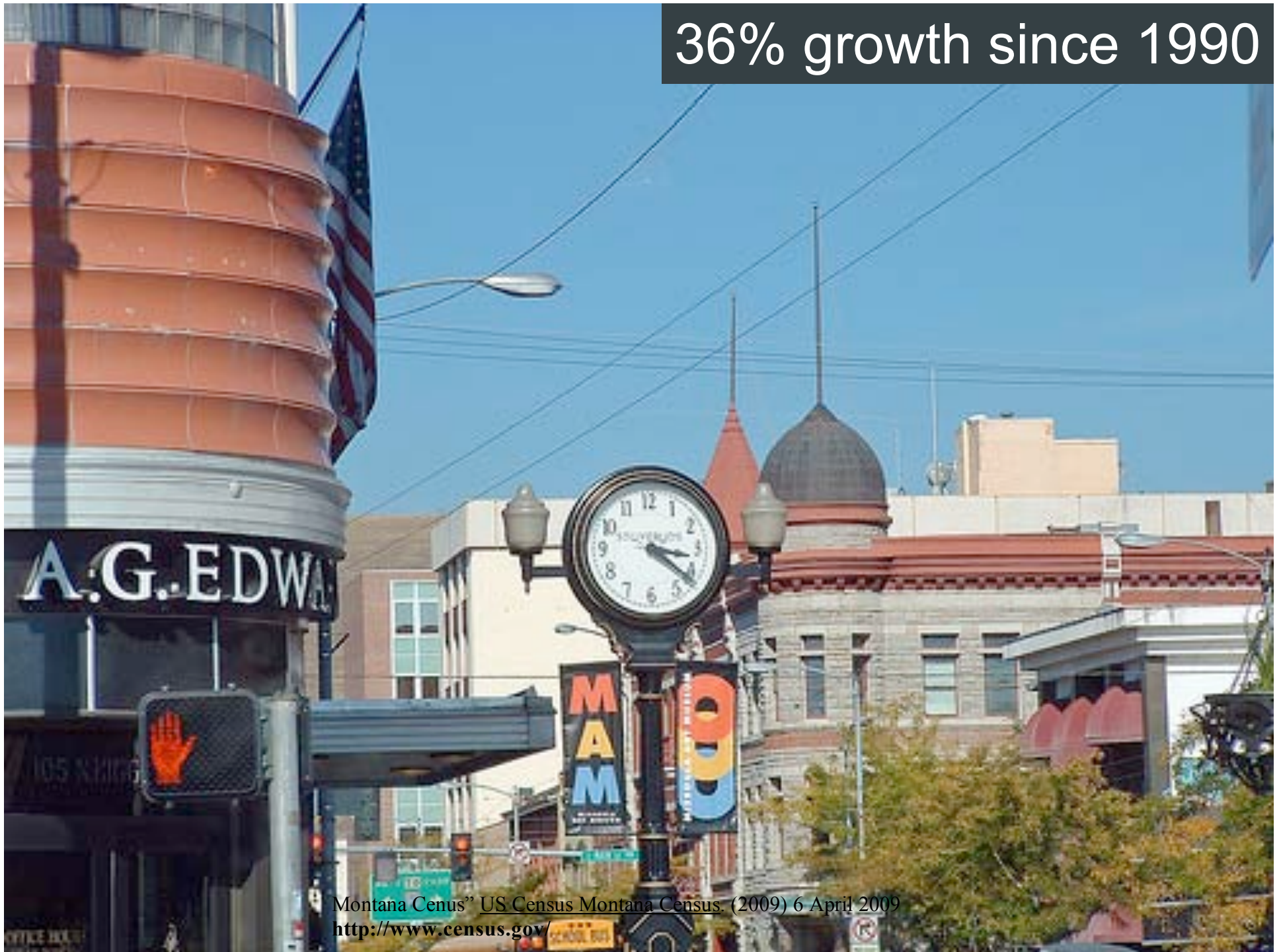


Montana FWP, 2009

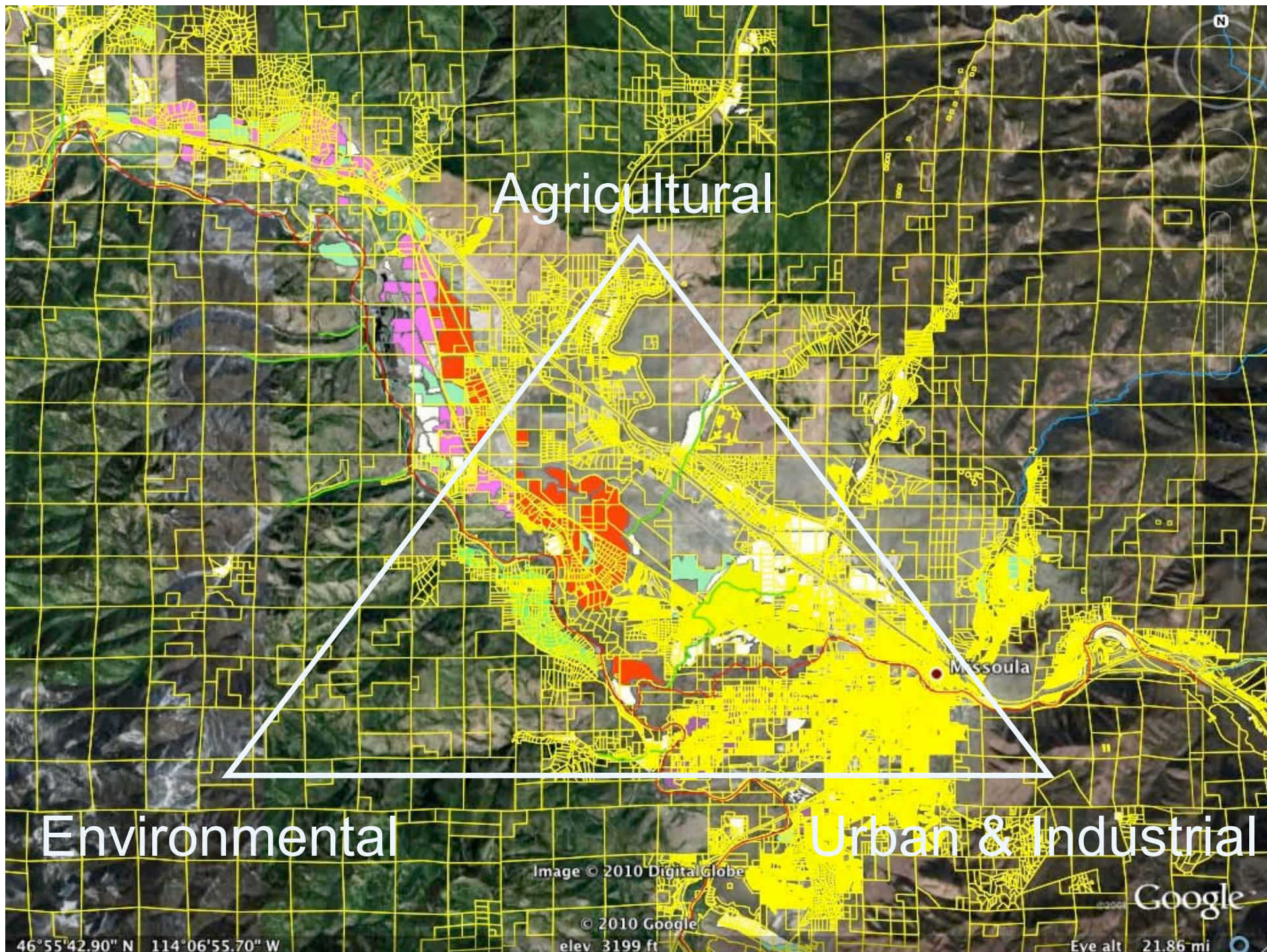
Urban



36% growth since 1990



Montana Census" US Census Montana Census. (2009) 6 April 2009
<http://www.census.gov/>



water market **benefits**



protects private property rights.

Voluntary

efficient allocation of resources





Inexpensive

water market challenges

challenges

dynamic

defined rights

surface and
groundwater

simultaneous

interdependencies

heavy

water market concerns

WEATHER FORECAST.

FOR MONDAY.

Fair in north; rain or snow in south.

The Anaconda Standard.

ANACONDA, MONTANA, MONDAY MORNING, APRIL 10, 1905.

THE FLEET LOOKS WELL ON PAPER

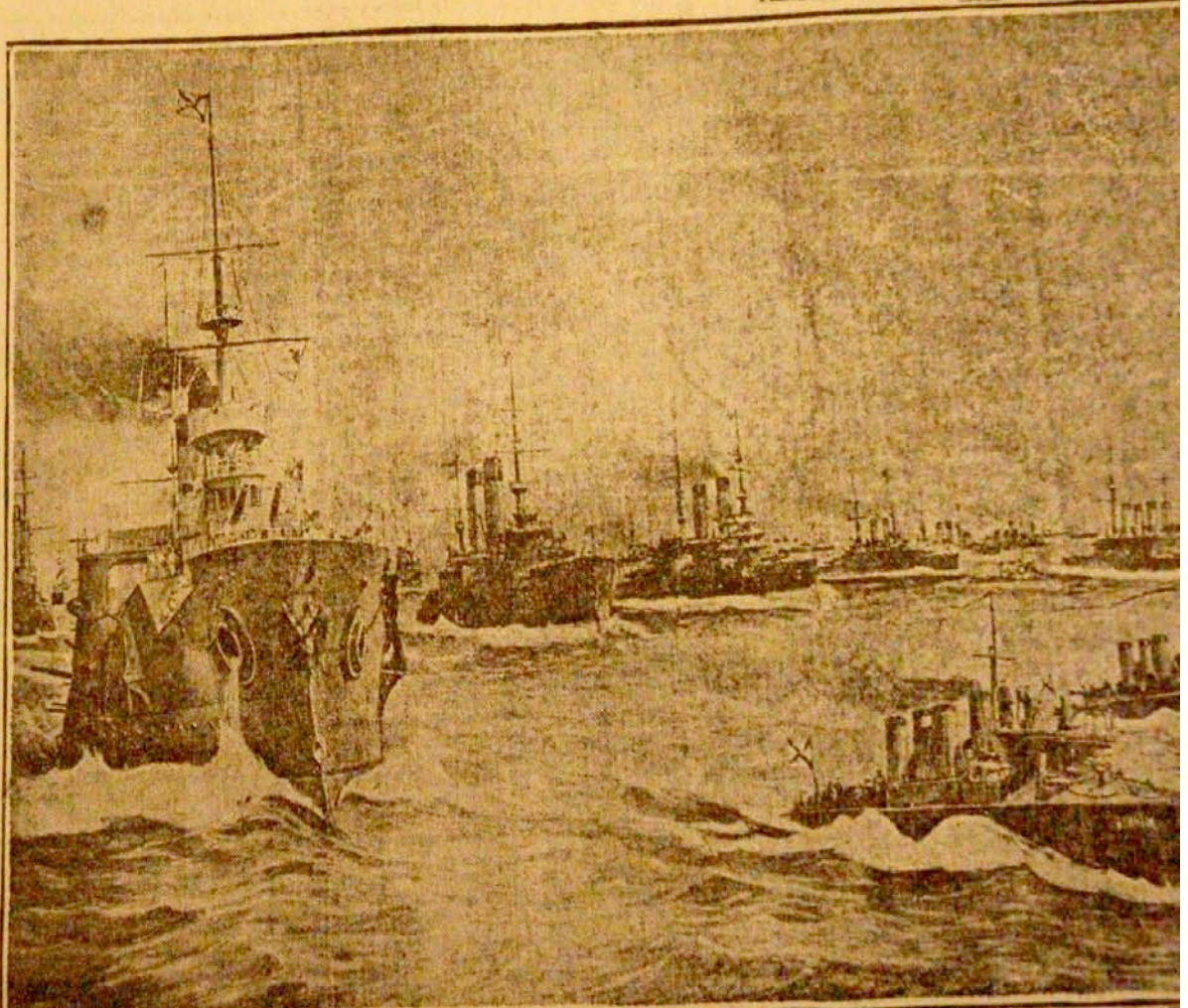
RUSSIA'S CAPITAL SPECULATES REGARDING THE NEXT WAR MOVE

It Is Probable That the Vladivostok Fleet Will Threaten
Togo From the North and the Advocates of Peace
Argue That This Will Furnish a Basis for
Peace Proposals—The War Party Is
Also Elated by the Eastern News.

NOT ALL THE BALTIC FLEET ENTERED THE CHINA SEA.

St. Petersburg, April 10, 12:45 a. m.—
There is reason to believe that Vice
Admiral Rojestvensky's entrance into
the China sea has been followed by or-
ders for the cruisers Gromobol, Rossia
Bogatyr, which have been ready
some time at Vladivostok, to put to
sea. Whether it is the intention to
send them south immediately or to
keep them in the vicinity of Vladivos-
tok is not known. Their appearance
in the roadstead of Vladivostok
constitutes a potential threat
to Admiral Togo's rear, which
may compel the retention in or dispatch
of a number of fighting ships to Japa-

nese vessels which passed Singapore were
the following:
Battleships—Sissoi Veliky and Oleg.
Cruisers—Admiral Nakimoff, Dmitri
Donskoi, Aurora, Izumrud, Jemchug,
Almaz, Russ, Anadyr, Furst Bismarck,
Kaiserin Maria Theresa, Kaiserin Au-
gusta Victoria, Kanzer, Friederich.
Rion and seven torpedo boat destroy-
ers, all sailing under the naval flag.
Under the commercial flag were the
volunteer steamers Voronez, Kleff,
Yaroslav, Tamboff, Vladimir and Orel;
the Russian Navigation company's
steamers Meteor, Jupiter and Mercury;
the Asiatic company's fast steamers
Korea and Kaitai; the North Baltic
company's steamer Kniaz Gorchakoff,
one salvage ship and 16 colliers.
A French steamer arrived here to-
day with a sailor belonging to the Ad-



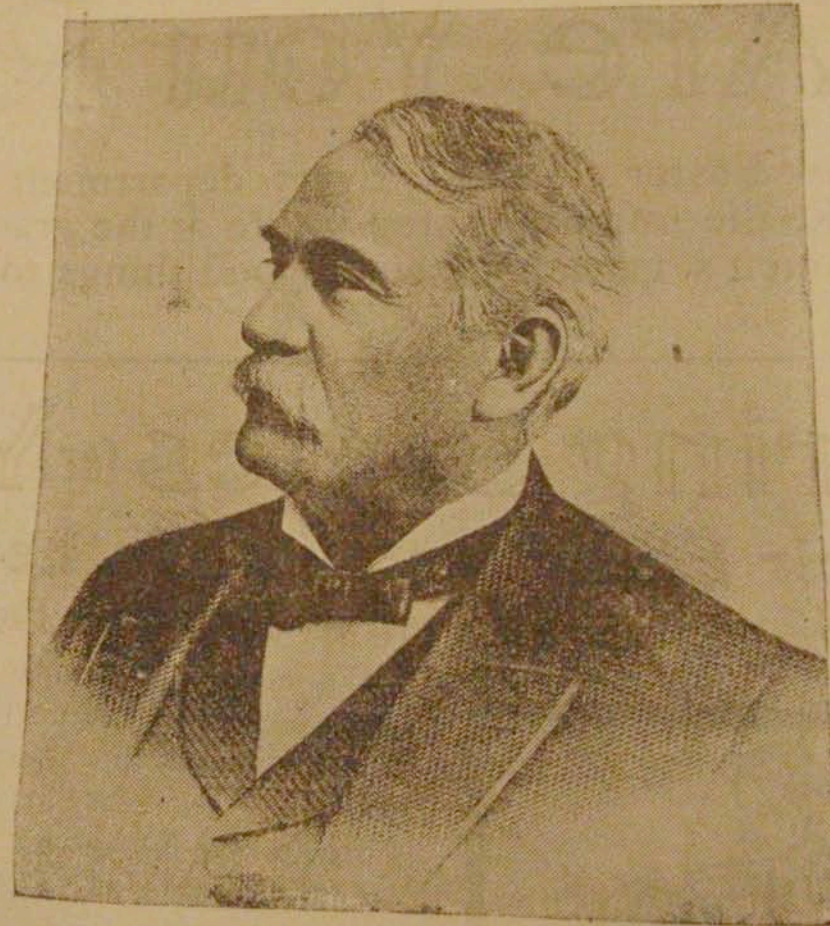
“The grandiose irrigation and land development scheme was fueled by **speculators** from the East and Midwest, who invested big money to build the Big Ditch irrigation system.”

- A Brief History of Hamilton

DEVELOPMENT OF ARID LANDS

(Written for the Sunday Standard.)

The once universal belief that all the lands between the one hundredth degree of longitude and the coast range were unfit for agriculture is being rapidly dispelled and the boundaries of the desert are steadily contracting. In this great country of various altitudes and of diversified climate, known as the semi-arid and arid domain, settlers seeking homes are discovering year by year lands upon which profitable farming can be maintained that hitherto were considered wholly unfit for agriculture. Senator McCumber of North Dakota in a recent speech in the United States senate stated as follows: "There was a time but a few years ago, when I went to the territory of Dakota, when it was asserted that the lands west of the Red River valley could not be used; that there was not sufficient rainfall; that it was too arid and the soil was not of that character from which we could raise crops. Since that time 10,000 people have settled in that land west of the Red River valley and the best crops of any place in the United States have been raised there for the last five years. I have stated that under new systems of agriculture we are raising and rapidly increasing the territory supposed at one time to be that no crops could be raised there, but which to-day is furnishing and supporting many thousand



PARIS GIBSON

we shall be surprised at the extent and the achievements of the farming industry in Montana. For the inf

recently said: "There are no bad acres. We have no useless acres."

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Montana Water Code

price fixing



priced out of market

price is the first
indicator of quality

success story





Photo courtesy of the Montana Water Trust



Photo courtesy of the Montana Water Trust

390 cfs

Grass Valley French Ditch Company

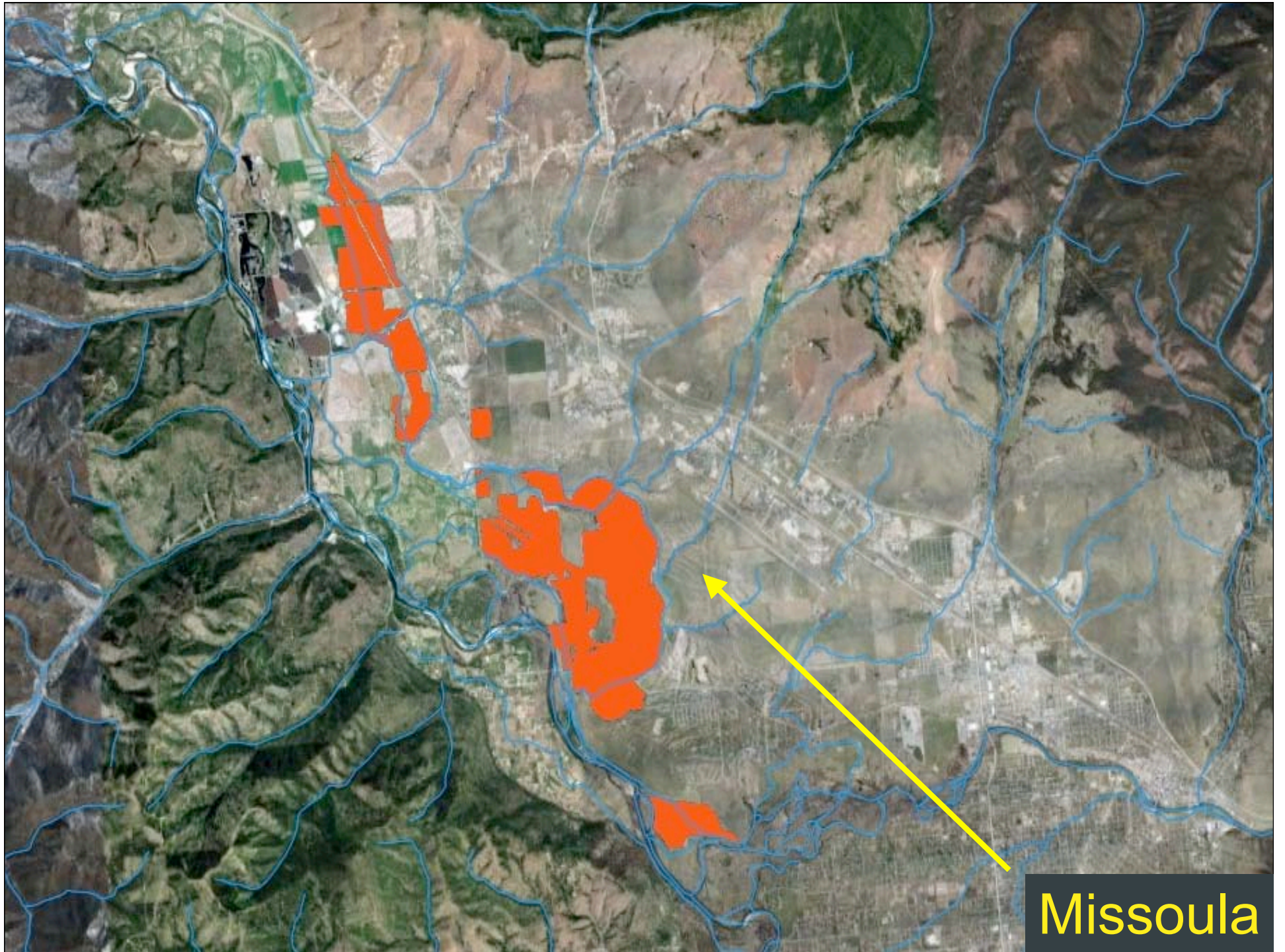


Missoula

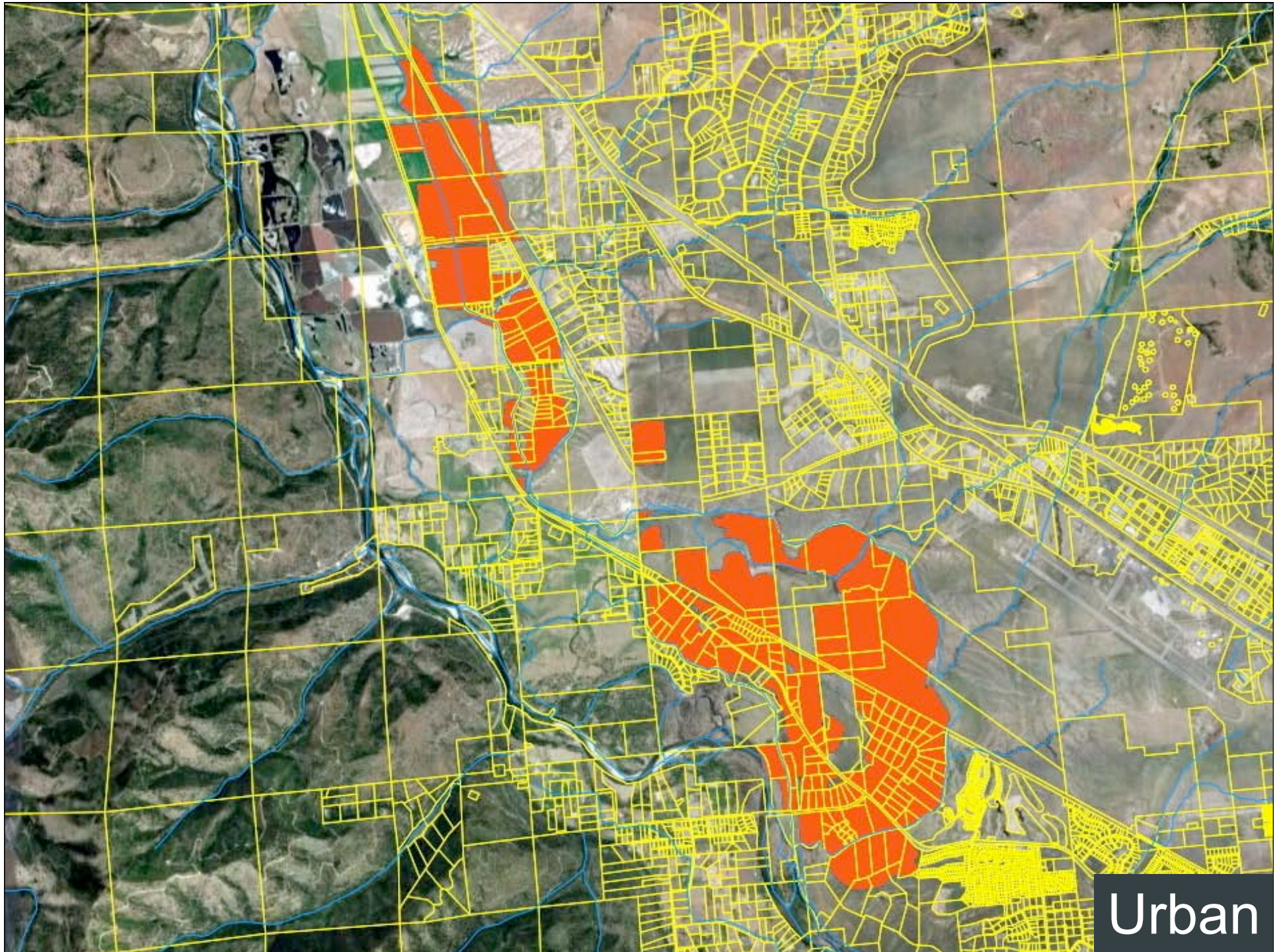


Missoula



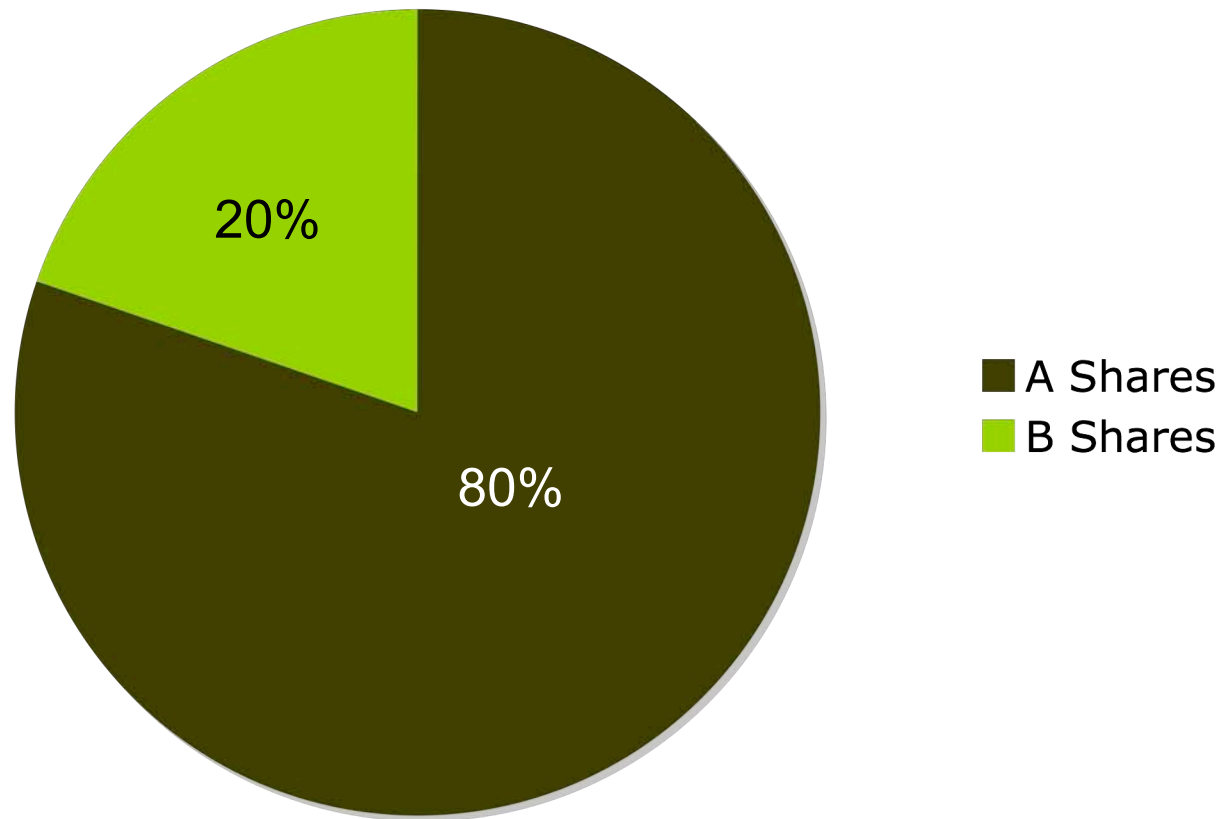


Missoula



Urban

Restructured Shares

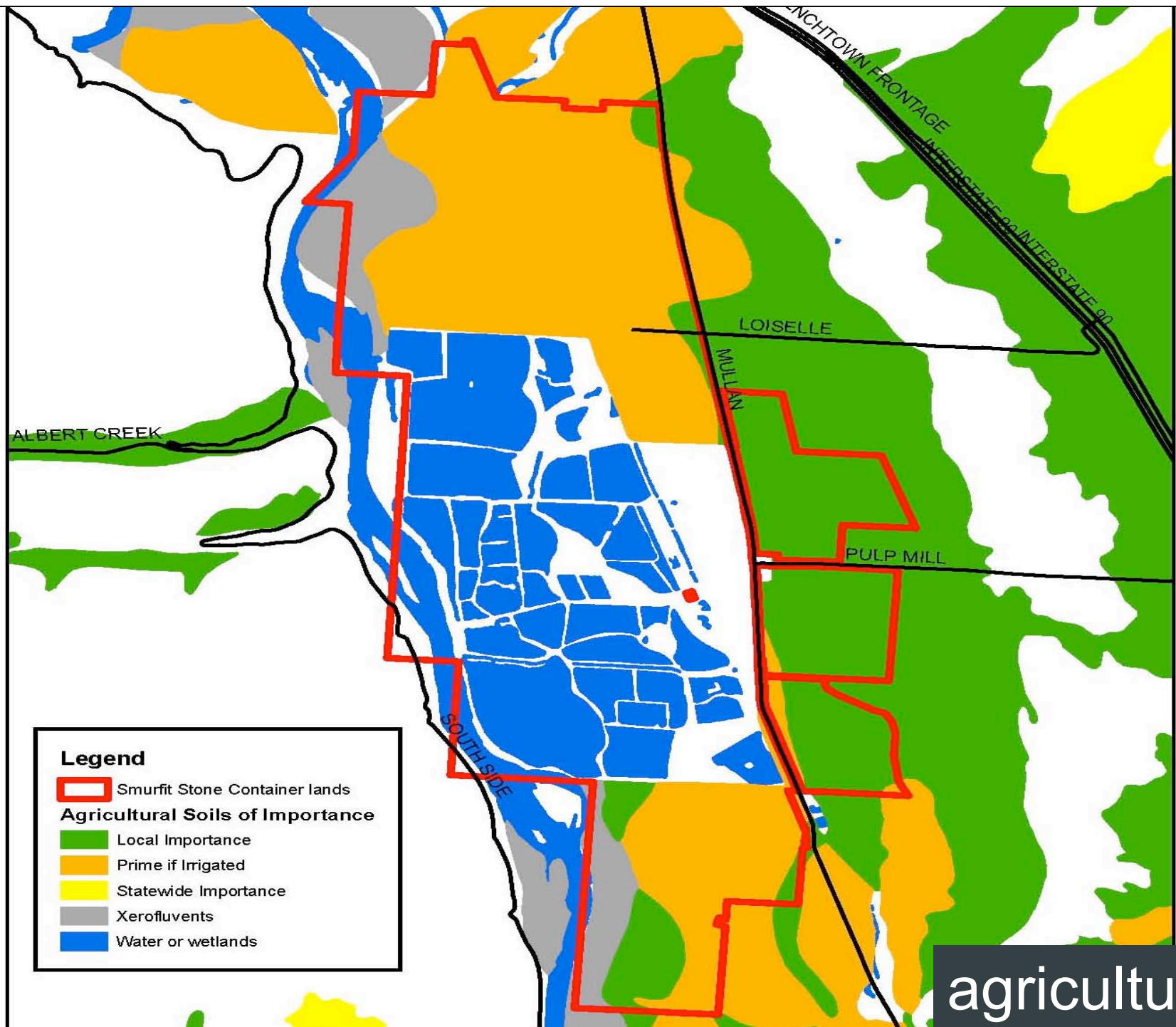


20% reduction in revenue

Agricultural





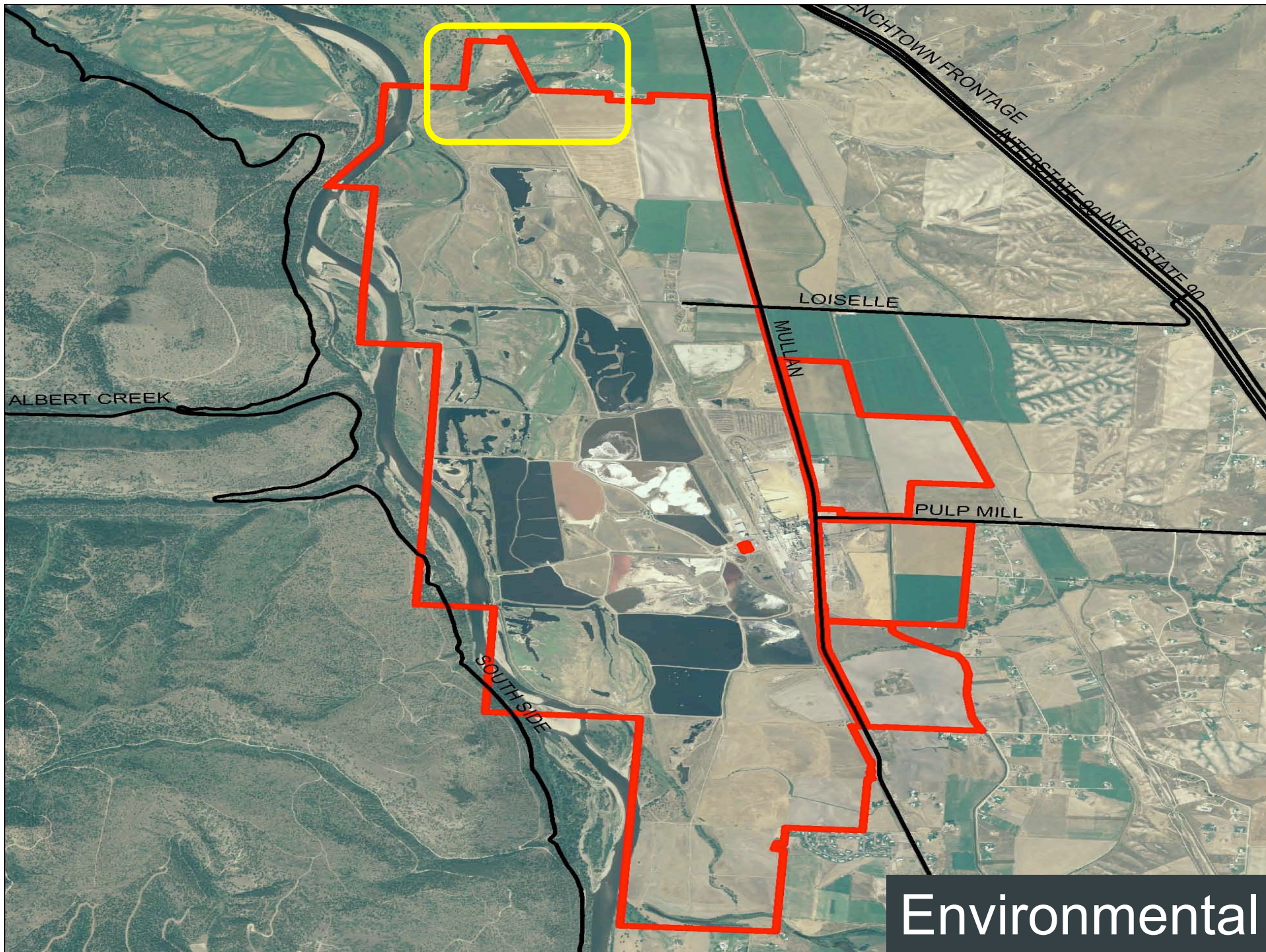


agricultural

Agricultural

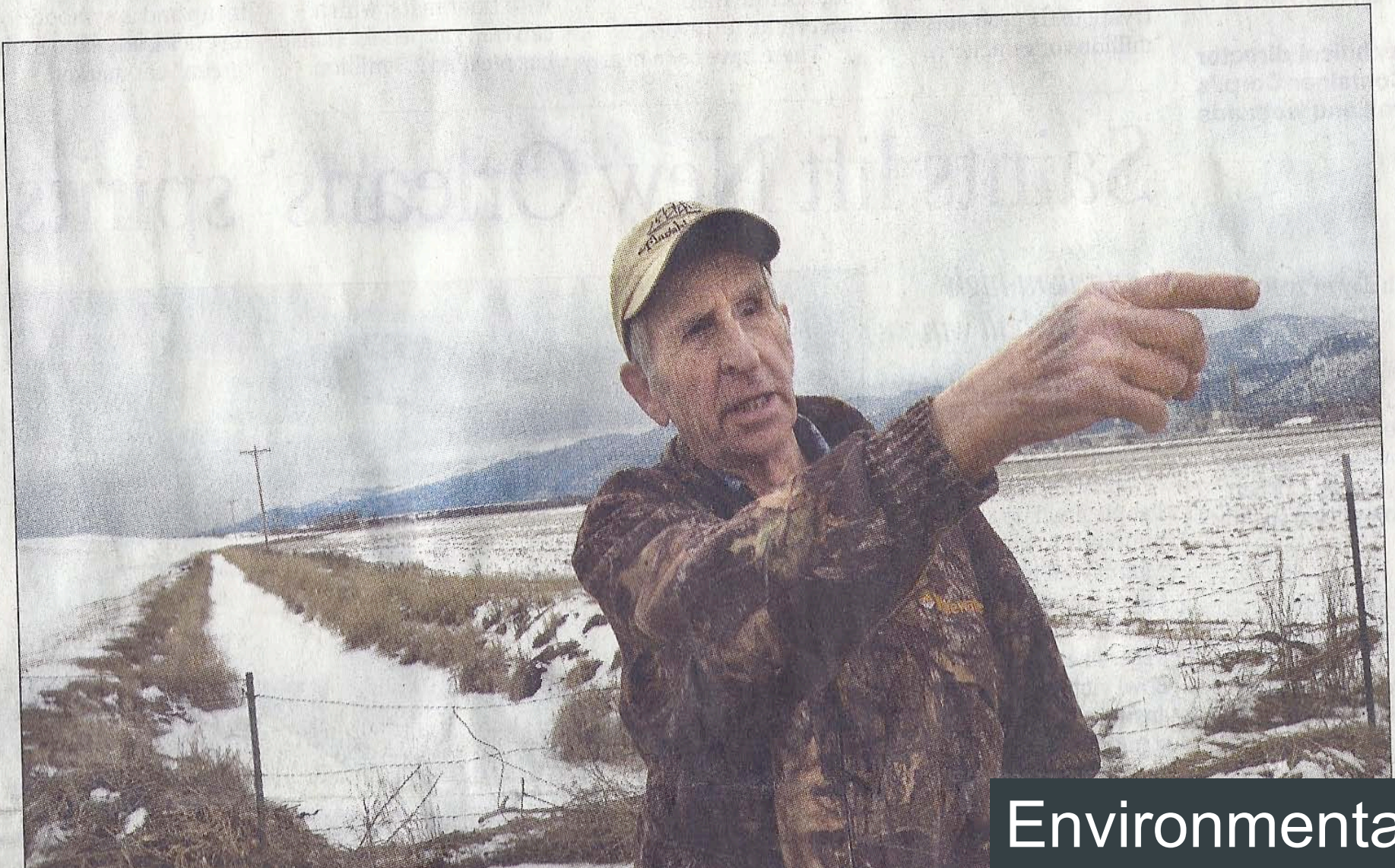
Environmental





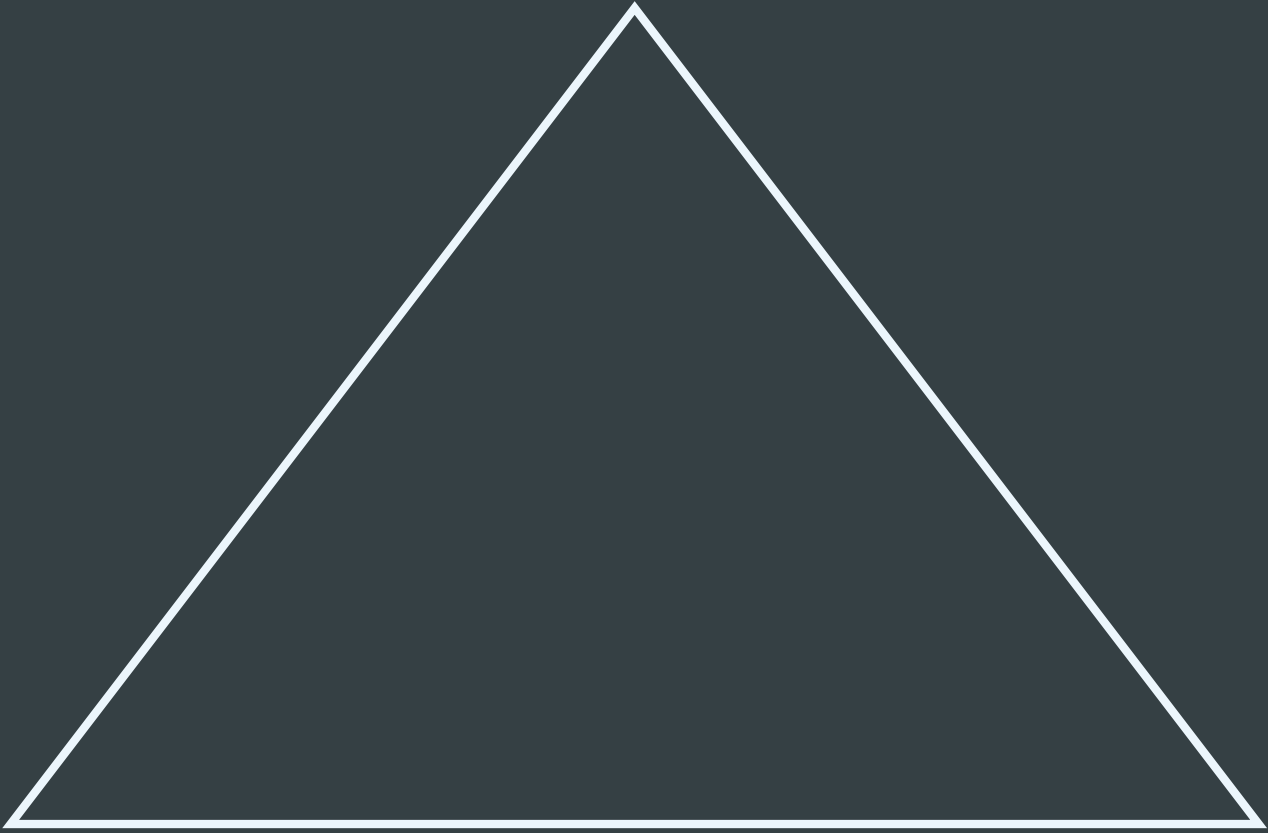
Environmental

Keeping the water on



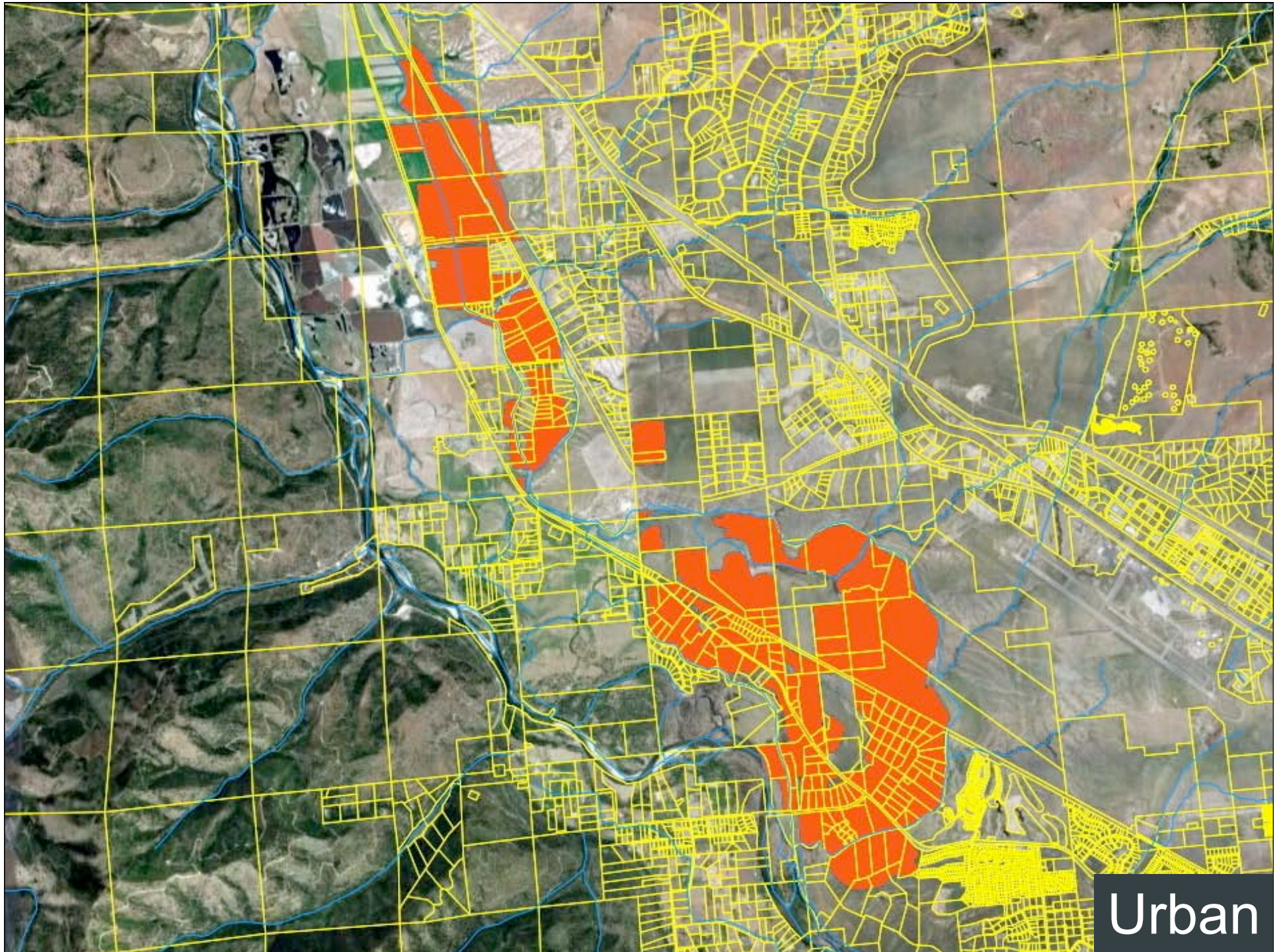
Environmental

Agricultural



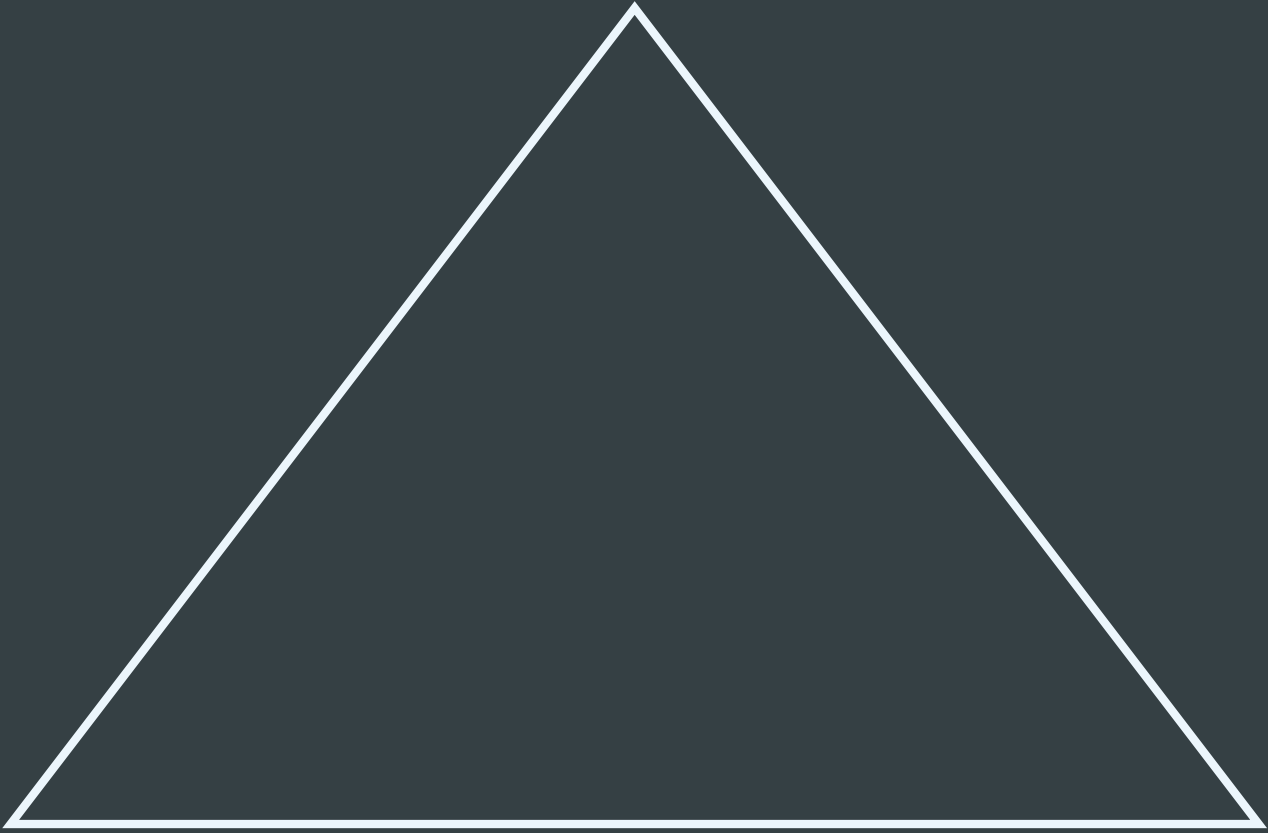
Environmental

Urban & Industrial



Urban

Agricultural



Environmental

Urban & Industrial

CLARK FORK



COALITION



FIVE VALLEYS
AUDUBON SOCIETY

P.O. Box 8425
Missoula, MT 59817
A chapter of the National Audubon Society



*Montana Fish,
Wildlife & Parks*



Yes to Open Space

>> Missoula Open Space Bond 2006

“Water rights can be changed to water marketing. The key to water marketing as a beneficial use is the ability to show that contracts exist for at least some of the water to be marketed.”

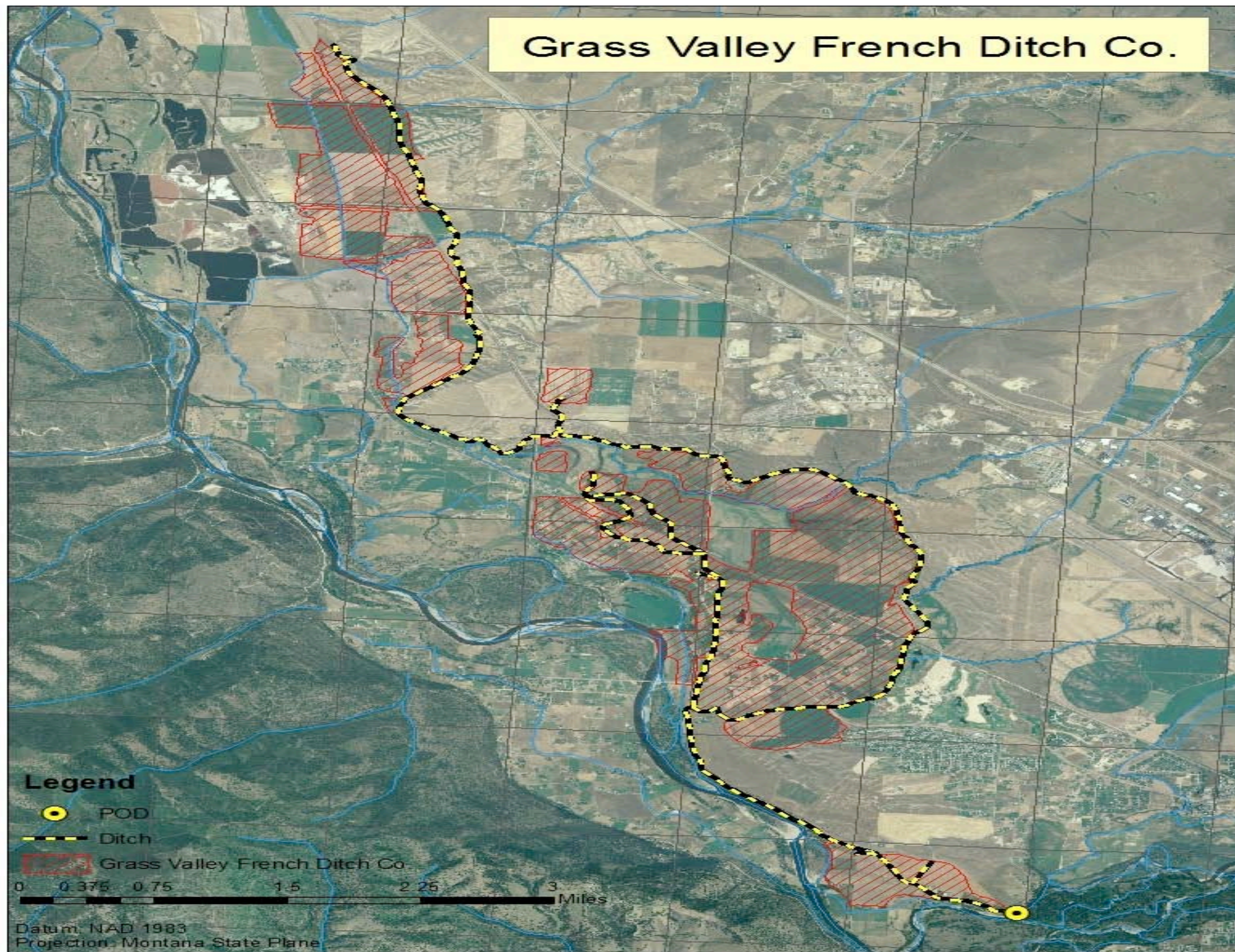
Grass Valley French Ditch Co.

Legend

- POD
- Ditch
- Grass Valley French Ditch Co.

0 0.375 0.75 1.5 2.25 3 Miles

Datum: NAD 1983
Projection: Montana State Plane



water marketing is
good

good for
pocket books

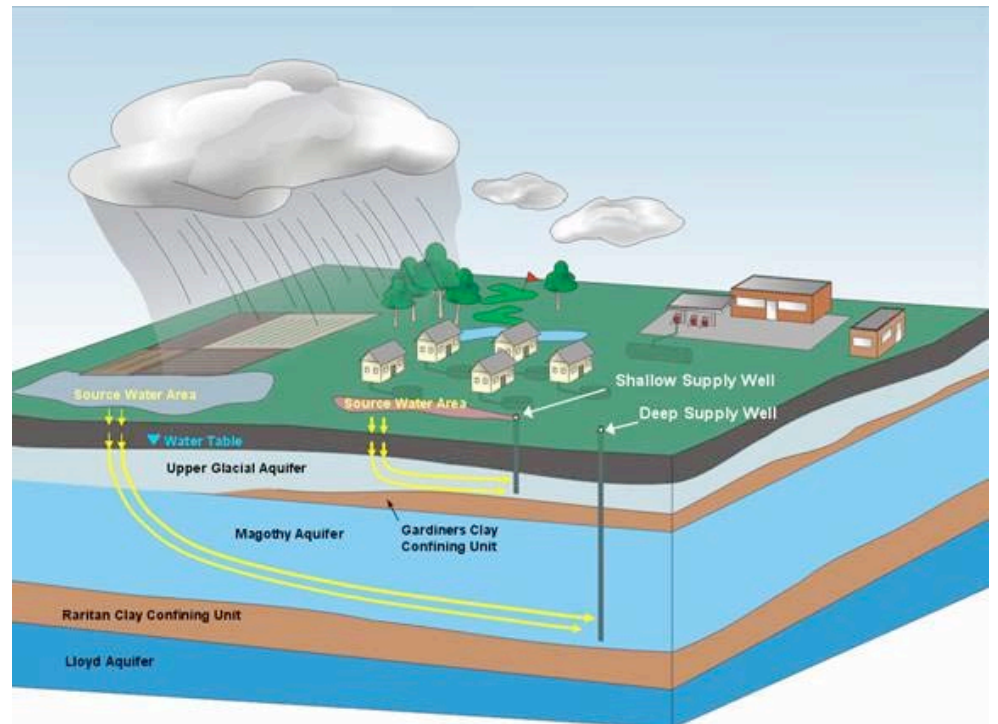


good for
calendars

3

good for
transparency

good for
aquifers



good for land
use planning



good for people



Grass ~~Valley French Ditch Company~~ Roots



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lotic
WATER MARKETING

