(MUSIC)

JOAN CARTAN-HANSEN, REPORTER: MARSH CREEK IS A TRIBUTARY OF THE PORTNEUF RIVER IN SOUTH EASTERN IDAHO.

AND THERE IS NO DOUBT ABOUT IT, MARSH CREEK RUNS MUDDY.

CHRIS BANKS, CONSERVATION BASICS OWNER: IN THE LATE 1970S, MARSH CREEK WAS RANKED AS ONE OF THE 22 WORST STREAMS IN IDAHO AS FAR AS SEDIMENT INPUTS TO THE PORTNEUF RIVER.

CARTAN-HANSEN: DIRT AND PARTICLES IN THE RIVER DO MORE THAN JUST CLOUD UP THE WATER.

BEN CROSBY, ASSOCIATE PROFESSOR OF GEOSCIENCE: SEDIMENT ITSELF IS A VECTOR; IT CARRIES ALONG PATHOGENS. IT ALSO DIMINISHES THE ECOSYSTEM HEALTH. SO, THE DIFFERENT ORGANISMS FROM THE PLANTS AND THE INSECTS THAT MIGHT LIVE IN THE RIVER ALL THE WAY UP TO THE FISH AND THE DUCKS ARE AFFECTED BY AN OVERLOADED SYSTEM WHEN THERE’S TOO MUCH SEDIMENT.

CARTAN-HANSEN: FOR DECADES, THE PORTNEUF SOIL AND WATER CONSERVATION DISTRICT HAS BEEN WORKING WITH WILLING LANDOWNERS TO IMPROVE THE MARSH CREEK DRAINAGE.

AND STATE AND FEDERAL AGENCIES HAVE MONITORED THE CREEK’S WATER QUALITY.

BUT NO ONE HAS YET PINNED DOWN THE SOURCE OF THE SEDIMENT.

SO SCIENTISTS FROM IDAHO STATE UNIVERSITY ARE GIVING IT A TRY.

THESE RESEARCHERS ARE PART OF IDAHO’S EPSCOR PROJECT OTHERWISE KNOWN AS MANAGING IDAHO’S LANDSCAPE ECOSYSTEM SERVICES OR MILES.

DAVE RODGERS, ASSOCIATE DEAN OF SCIENCE AND ENGINEERING: WE’RE SENDING A GROUP OF SCIENTISTS TO FIGURE OUT WHY THAT STREAM IS MUDDY. IS IT THE SAME CLARITY AT ALL TIMES DURING THE YEAR, DURING THE DAYS AND NIGHTS AND MONTHS? AND IS IT SOMETHING THAT’S JUST NATURAL TO THAT RIVER SYSTEM OR IS IT SOMETHING THAT PERHAPS CONSERVATION PRACTICES COULD IMPROVE?

RESEARCHER ONE: “YAH, JUST SET, YES, SET THE LOCATIONS AND NOW YOU GUYS…”

RESEARCHER TWO: “YOU’RE GOING TO GO EVERY METER GRAHM.”

RESEARCHER ONE: “GO EVERY METER. “

CROSBY: ONE OF THE THINGS THAT WE’RE DOING THAT’S UNIQUE IS WE ARE MEASURING AT MULTIPLE LOCATIONS ALONG THE RIVER, WHAT THE WATER QUALITY IS AND BY MEASURING AT MANY DIFFERENT LOCATIONS ALONG THE MAIN STEM WE CAN IDENTIFY HOT SPOTS WHERE MORE SEDIMENT MIGHT BE BEING GENERATED THAN OTHER LOCATIONS.

CARTAN-HANSEN: THE RESEARCHERS START WITH THE IDEA THAT SEDIMENT IS COMING FROM THREE POTENTIAL SOURCES.

CROSBY: FIRST, THE LIVESTOCK ACCESS TO THE RIVERBANKS THAT CAN CAUSE EROSION AND A SOURCE OF SEDIMENT. THE SECOND IS THE CONSTRUCTION OF LEVIES WHICH ELIMINATES FLOODPLAINS AND MARSHES FROM EXISTING IN MARSH CREEK. AND THE THIRD IS A LARGE POND THAT’S IN THE UPPER PART OF MARSH CREEK CALLED THE RAT POND, WHERE THERE’S ABILITY FOR SEDIMENT TO BE GENERATED AND MOVED DOWNSTREAM FROM THAT SOURCE.

CARTAN-HANSEN: IN ADDITION TO PINNING DOWN THE SOURCE OF THE SEDIMENT, SOCIAL SCIENTISTS FROM THE MILES PROJECT ARE ALSO SURVEYING AREA LAND OWNERS ABOUT THEIR VIEWS ON WATER QUALITY AND CONSERVATION EFFORTS.

AND THAT’S WHERE CHRIS BANKS COMES IN.

BANKS IS A LOCAL LANDOWNER AND A CONSULTANT FOR THE AREA’S CONSERVATION DISTRICT.

HE’S HELPING RESERACHERS WORK WITH AREA RANCHERS AND FARMERS,

AND HE POINTS TO CONSERVATION EFFORTS ALREADY UNDERWAY.

CHRIS BANKS, OWNER CONSERVATION BASICS, LLC: ONE OF THE MAIN THINGS THAT LANDOWNERS IN THIS AREA HAVE DONE IS TO SET OR IMPLEMENT EXCLUSIONARY FENCING. AND WHAT THAT DOES IS IT REDUCES LIVESTOCK IMPACTS ON THE BANKS, REDUCES SEDIMENT INPUT TO THE STREAM, PROVIDES THE WILLOWS AND OTHER VEGETATIVE COVER, THE SEDGES, THE RUSHES AN OPPORTUNITY TO GROW WITHOUT INTERFERENCE.

CARTAN-HANSEN: OTHER LAND OWNERS ARE ADDING OFF-STREAM WATERING TROUGHS, MOVING CORRALS, INSTALLING WASTE BERMS AND ADDING RIPARIAN PLANTING TO STABLIZE THE STREAM BANK.

BANKS APPRECIATES THE SCIENTISTS INCLUDING AREA’S RANCHERS AND FARMERS IN THEIR RESEARCH.

BANKS: I’VE NEVER MET A LANDOWNER THAT WAKES UP IN THE MORNING AND SAYS, “I WONDER WHAT I CAN DESTROY TODAY?” THEY RELY ON THE GROUND AND THEY RELY ON THE WATER.

CARTAN-HANSEN: SO AFTER TWO YEARS OF RESEARCH, THESE SCIENTISTS THINK THEY MAY HAVE SOLVED THE MARSH CREEK MUD MYSTERY.

MOST OF THE SEDIMENT COMES FROM TALL UNSTABLE STREAM BANKS IN THE LOWER HALF OF THE CREEK.

BUT IMPLIMENTING CONSERVATION EFFORTS ALONG THIS AREA IS TRICKY.

THE LAND IS OWNED BY DOZENS OF DIFFERENT PEOPLE, MAKING A COORDINATED CONSERVATION EFFORT DIFFICULT.

SO THE SCIENTISTS ARE NOW SUGGESTING CREATING A HANDFUL OF CONSTRUCTED WETLANDS TO TRAP SEDIMENT AT KEY POINTS

AND WORKING INCREMENTALLY WITH LANDOWNERS OVER THE NEXT DECADE TO REDUCE SEDIMENT INPUTS.

CROSBY: AS WE IMPROVE WATER QUALITY IN A PLACE LIKE MARSH CREEK, NOT ONLY DO WE REAP ECOSYSTEM BENEFITS, BUT ALSO THE HUMAN SYSTEM BENEFITS FROM THIS AS WELL. PEOPLE FEEL MUCH MORE CONNECTED TO A RIVER AND WANT TO PLAY IN OR INTERACT WITH SOMETHING WHERE THEY CAN SEE THE BED OF THE RIVER, WHERE THEY CAN SEE FISH SWIMMING AROUND IN THE WATER; INSTEAD OF SOMETHING THAT LOOKS LIKE CHOCOLATE MILK FLOWING DOWNSTREAM.

CARTAN-HANSEN: FOR BANKS AND OTHER AREA LANDOWNERS, HAVING CLEAR AND UNDERSTANDABLE RESEARCH MAKES IT EASIER TO MOVE FORWARD.

BANKS: I THINK SCIENCE PLAYS A ROLE IN EVERYTHING WE DO. BUT I THINK IT’S A BALANCE OF SCIENTIFIC PROVEN IDEAS, WAYS TO IMPROVE WATER QUALITY AND THEN THE LANDOWNER ALLOWING, YOU KNOW, TO USE COMMON SENSE PRACTICES IN APPLYING THAT SCIENCE. WORKING TOGETHER IS WHAT’S GOING TO BE THE, THE BIGGEST SUCCESS STORY I THINK.

CARTAN-HANSEN: FOR IDAHO SCIENCE JOURNAL, I’M JOAN CARTAN-HANSEN

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