

PONDS

CONCEPTS FOR POSSIBLE CHANGES 1-26-04

This document includes the initial concepts and the identified responses (see italics) to each concept.

Objective: Study pond issues pursuant to HJR 40, and see if general agreement among stakeholders can be obtained to legislatively define when ponds are beneficial uses of water under Montana law, and to describe the process for obtaining water rights for ponds.

Scott Gillilan, Gillilan Associates, Inc., Bozeman - Exactly what is unbeneficial about a pond that provides any number of functions including recreation, wildlife, agricultural and aesthetic benefits? Have the authors forgotten that under current law that these are beneficial uses of water and therefore you are potentially tampering with every water rights holder's property rights? Are the authors aware that wildlife and recreational pond design and construction is a multi-million dollar industry in this state? Are the authors aware that the dollar value of a recreational or development property is directly related the potential to develop wildlife and recreational ponds and you are therefore also seriously threatening another far larger multi-million dollar real estate industry in addition to those thinking of selling their land with these assets in mind? These are indeed clear beneficial uses of water based on economics alone. Further, given real problems and means to improve the way that we efficiently divert and use water in this state in agricultural settings, I'm appalled that apparently so much DNRC staff time is being spent on the smallest minority of water users by volume, those developing ponds.

Scott Davis, Pond and Stream Consulting, Bozeman - This document does not appear to be the product of a (in any way scientific) study set forth pursuant to HJR 40 and the items it intends to address. HJR 40 specifies that the interim committee seek information and ideas from six distinct parties, including private interests, before making recommendations for legislative action – not from only two employees of the DNRC. The concepts do not provide empirical data or evidence that supports the need for ponds to be made illegal in any or all areas. The bulk of rationale in this document consists of unsubstantiated assertions, where no attempt is illustrated to provide evidence in support of such assertions, or the assertions are grossly inaccurate and can be demonstrated as such. HJR 40, in principle, appears to call for a worthwhile study and investigation, though it is our hope that this document is not the final product of the interim committee as it is severely flawed factually and, we believe, in its intent.

We recognize that many state agency personnel have expressed distaste for ponds for a multitude of reasons. Most of these reasons remain empirically unsubstantiated, and the distaste can be regarded as preference, while some are the product of seeing a few poorly and unconscientiously constructed ponds, which we do not like either. Strict prohibition of pond construction, or most other activities conducted on private land, however, should be avoided. Rather, pond construction should be regulated to allow only activities that can be reasonably demonstrated to incur negligible or no negative effects to public or private resources. Site-specific regulation and enforcement, and even other programs, can be funded with associated permitting fees. We believe that demonstration of (lack of) impact of proposed pond development should be the responsibility of the applicant, and that refutation of such demonstration should be conducted by state agency personnel and backed by real evidence or substantive theory that the activity will have a negative impact. Despite assertions that have been tossed about, all ponds do not negatively affect water resources, and projects should be evaluated on an individual basis. In fact, properly designed ponds can have either zero or positive effects on public resources or other water users. This should be recognized prior to broad based and arbitrary taking of private property rights without discussion of individual project merits and effects.

John Wilson, Trout Unlimited - Overall comments: One of the keys to success here is assuring certain "pond" uses aren't precluded at the same time assuring that no loopholes are created. We learned in HB 505 that exemptions for waste treatment, remediation, qualified mitigation of wetland loss and fire suppression are important and fairly global. This is a place to start. Define these and perhaps others as exempt with tight definitions and qualifications...perhaps written finding of fact that indeed they qualify for exemption as designed before being exempted in writing (includes closed basins).

Possible Legislative Changes:

(1) Amend law to limit *wildlife* beneficial uses to DFWP, USFWS, and DOT by permit, and clarify that wildlife includes migratory waterfowl.

Reason: Wildlife uses are best determined by public agencies with expertise and responsibility in the area of wildlife management, and by DOT for required federal mitigation for federally funded highway projects. Private uses may conflict with public management of wildlife resources. Additionally, wildlife uses for private uses are hard to quantify, and if left open-ended, could claim vast amounts of water and thereby impact existing as well as future uses. As it presently stands, when would a private wildlife use be too large to permit? Further defining wildlife would make clear that wetlands for waterfowl are included in the wildlife definition.

Glasgow DNRC - *This amendment should not be limited to the above named agencies. Other federal agencies, such as the BLM, need to also be included. They play an important role in wildlife management through habitat management. Additionally, the NRCS is working with private landowners through the Wetlands Reserve Program to restore and develop wetlands. It is my understanding that these are*

long-term projects and that the NRCS wants to see that the water use for the wetland is protected with a water right. While the NRCS is not a wildlife management agency, there are still millions of federal dollars that are set aside for wildlife habitat through the Wetland Reserve Program and other wildlife habitat enhancement programs. These programs need to be considered when discussing the pond issue and the NRCS needs to be considered as a stakeholder. Also, for a new wetland development through this program, whose name should the water right be in? Neither the private landowner nor the NRCS directly manage wildlife.

Havre DNRC - *Denise and I talked about these pond concepts at great length and I see from her comments that she addressed a lot of my concerns so I probably don't need to reiterate it. One of my questions was who should file the water right application when other parties have an interest in the developments. This is entirely up to the individuals. DNRC has to be very careful not to suggest one way or the other because of the legal issues that may arise. If the possessory interest criteria are provided, then we process the application. Just to give you an example: I currently have 4 unpermitted waterfowl and wildlife pond applications, yet the ponds are already completed. The current property owner is out of Virginia and doesn't want to be bothered with the details to process the applications. I have been working with the NRCS to get information. The NRCS has some financial interest in these ponds and want to see them finalized. And, as mentioned above, they are already completed. Now, since the applications have objections that cannot be negotiated, they need to go to a hearing. I'm not sure if the owner from Virginia will be willing to take these rights any further. Can and should these applications be in the name of the NRCS? That is up to the NRCS. They would need to have possessory interest in the place of use. These ponds were designed and built for a former owner under a conservation easement by the NRCS. The ponds were not permitted at time of construction and are filing after-the-fact. The land was sold to the man from Virginia who would rather not be involved. I'm thinking he probably has certain obligation to the NRCS, but it is not a problem that DNRC will address. We have recently sent back some applications and ground water 602s where the ownership was in question and we told the individuals that they had to resolve the issue and then come back to DNRC and refile the application. One of the ownership issues will probably end up in court.*

Additional DNRC comments- *why DOT? Corps & USFWS make all wetlands decisions.*

Scott Gillilan, Gillilan Associates, Inc., Bozeman - *This reasoning is absurd. Some of the most highly trained engineers, biologists, scientists and wetland scientists are in the private sector doing far more of this valuable wildlife work than the state or federal government in Montana combined. To willfully exclude private sector funded wildlife or recreational projects impounding water or creating ponds is the height of arrogance. It is none of the authors' business to decide when a wildlife project is "too big." If one has the water rights and can obtain all necessary permitting it's not DNRC's role to play God with biological wisdom.*

Russell Smith, Aquatic Design and Construction - *Why wouldn't other agencies or private sector experts going through the existing process be qualified to determine uses? Isn't wildlife a public resource, which if benefited by a water right administered by the private sector is considered beneficial use? What about DEQ, NRCS, DNRC, EPA, etc use of water in wetlands? Should the wildlife category be refined to individualize wetlands uses and get rid of the rather nebulous "wildlife" use?*

Scott Davis, Pond and Stream Consulting, Bozeman - *The first sentence of this reason is a broad, unsubstantiated assertion, we assume was written by a public agency employee. While public wildlife management officials should have expertise in the field of statewide or regional wildlife management and should support actions that benefit the public resource and its users, a private property owner should have the right to develop wildlife habitat at his discretion so long as it does not negatively affect another party. Yes, this is possible and should not be broadly prohibited. Other parties may include public agencies (representing the public resource), neighboring landowners, permitted downstream water users, and various other groups or individuals. To mandate that ALL wildlife uses by private landowners be prohibited irrespective of wildlife benefit and evidence that the proposed development will not affect other users, in our opinion, is an intrusion on private property rights. If necessary, a permitting process may be implemented by which any proposed project will be evaluated on its own merits and secondary effects, and a permit approved or denied accordingly. While the applicant may be required to demonstrate a project will have no negative effects, regulatory agencies should have to provide substantive scientific argument to refute such demonstration.*

John Wilson, Trout Unlimited - *This idea is generally good and should be incorporated in some way. Probably should be fish and wildlife ...plus maybe waterfowl. The specific agency authority is the crux of the implementation. That implementation should come from legislatively mandated rulemaking in the "ponds" bill. The process of permitting here would be tiered. First the "wildlife is a beneficial use" permit would have to be given out, then DNRC would give the water right if conditions so warrant. The wildlife agencies should be able to deny based upon disease, genetic and pollution parameters in addition to adverse water impacts on other water bodies that support (fish) & wildlife.*

David Schmidt, Water Rights Solution, Helena - *Strongly disagree that only public agencies have exclusive expertise in the areas of wildlife, fisheries and wetland management. Private uses often, but not always, conflict with public management. Wildlife uses for private and public uses are difficult to quantify, but it has been done subject to the criteria set forth in 85-2-311 MCA. It is an unsubstantiated statement that vast amounts of water would be claimed. Any pond construction is specific to the site proposed, and the size of a particular pond should be controlled by the design process. Artificial size limitations do not create a biologically-sound pond. There is no real need to further define wetlands, wildlife and waterfowl, as they are considered a beneficial use of water. The DNRC has been issuing permits and changes for ponds since July 1, 1973 and the current concept document implies ponds are not a beneficial use of water. Does the DNRC intend to revoke all permits previously issued? It should also be noted that very*

few agencies actually file for water rights; occasionally, FWP will file an instream lease, but usually agencies provide grants such as EQIP (NRCS) and Partners for Wildlife (USFWS) to provide funding for habitat. The water right application is customarily filed by the private entity (landowner) receiving the grant or loan.

(2) Amend law to clarify that beneficial use does not include building ponds for purely aesthetic (e.g., simply to view) purposes.

Reason: Water is too scarce in the West and too badly needed for existing and future beneficial uses to be tied up for purely aesthetic uses. Most western states take this view.

Glasgow DNRC *I agree that purely aesthetic purposes should not be considered a beneficial use. I would also anticipate that applicants would get around this by simply calling their pond use recreation.*

Havre DNRC *- I agree with this 100%. If we're not going to allow aesthetic ponds, why allow recreation ponds? Is it a beneficial use to simply use it for swimming or ice skating? If we allow them, it will be a loophole to just call the use 'recreation.'*

Scott Gillilan, Gillilan Associates, Inc., Bozeman *- This thinking helps keep Montana stuck in the dinosaur age of natural resource economies impeding the much needed economic progress of this State. Water is a commodity. If a water rights holder so deems that the highest and best use of his or her legal water right happens to be for the aesthetic improvement of the landscape to increase the real property value, you have no business declaring this is not beneficial to this landowner.*

Scott Davis, Pond and Stream Consulting, Bozeman *- The maximum size of "aesthetic use only" pond features should be specified in any legislation. Should people build garden ponds (say less than 5,000 square feet) with or without a water right? The statement that most western states may "take this view" is also very ambiguous. While this may be true, I can think of a lot of golf course ponds and fountain features in areas much drier than western Montana (i.e., Las Vegas, Palm Springs). We feel that this point needs to be explained and detailed with specification requirements for aesthetic ponds.*

Russell Smith, Aquatic Design and Construction *- Why is aesthetic enjoyment not considered beneficial? If water was so scarce in the west why aren't we looking at all supposed beneficial uses in these changes? How is the economic benefit of a farmer, rancher, miner's use of water benefiting me? How is this different?*

John Wilson, Trout Unlimited *- I agree totally with this amendment.*

David Schmidt, Water Rights Solution, Helena *- Water is scarce in the West. Approximately 90% of water consumptively used in Montana is for irrigation and can be changed to other uses to meet existing and future demand. Disagree that all western states take this*

view. Most western states recognize fish, wildlife and waterfowl are a beneficial use and make permitting decisions on a case by case basis. Aesthetic purposes are usually a secondary benefit. However, simply sitting by a pond enjoying the view does constitute recreation, which is currently not excluded as a beneficial use. The value of a pond is in the eye of the beholder, as ponds have multiple uses. In discussions with other western state water right agencies, the common theme when told of the pond problem is, "why is this a problem in Montana if existing appropriative doctrine is followed"?

(3) Amend law to define ponds as consumptive uses of water.

Reason: All ponds consumptively use water, even if only for evaporation, which can be significant factor in water short areas. Ponds would clearly and consistently be considered as consumptive uses along with irrigation and other consumptive uses, and this change would eliminate the erroneous impression that ponds cannot have potential adverse impacts on watersheds. What some may consider a small offstream pond with an identified flow rate and a volume that needs 12 fillings a year for turnover, and which is located at the lower end of a stream, can in fact be a very significant water right that could restrict much future upstream development. Ponds can have adverse impacts on watersheds, and should have to prove their beneficial use as much as any other use.

Glasgow DNRC - *I agree that ponds are a consumptive use of water, particularly in the eastern part of the state where the evaporative rates are so high. That said, it must also be noted that almost all of the ponds in the eastern part of the state are onstream ponds on non-perennial sources and do not have a major impact on the watersheds. They typically only fill during spring runoff and strong summer storm events.*

Havre DNRC - *I agree that ponds are consumptive.*

Scott Gillilan, Gillilan Associates, Inc., Bozeman - *The same impacts you describe are the very same ones with agricultural use. Therefore, by your reasoning, irrigation can restrict much future upstream development.*

Russell Smith, Aquatic Design and Construction - *I agree that ponds should be considered consumptive through evaporation. Make sure that all beneficial uses include their evaporation consumptive equally instead of singling out ponds. In terms of restricting future upstream development, doesn't the existing process protect other users? Do other user types consider their actions to future development? Again, why single out pond uses when the vast majority of water rights are for non-pond uses. Why do these proposed changes focus just on ponds? What special interests are behind this?*

Scott Davis, Pond and Stream Consulting, Bozeman - *"All ponds consumptively use water..." constitutes another broad, unsubstantiated assertion. As an example, groundwater ponds can be designed to actually produce surface water and discharge the water into a public surface stream. During periods of critical low streamflow and resulting high temperatures during summer, such pond outflows have the potential to not only increase flow volume downstream, but to benefit public resources (wild trout*

fisheries) by providing a direct cool water inflow. Prudent pond design is critical to ensuring that public resources and other users are not affected. Otherwise, ponds can incur adverse impacts on streamflow in some drainages. Your example of “prohibiting upstream development” via a water right lower in the drainage may be viewed as positive, if habitat value for wildlife, fish or invertebrates is a consideration – a water right low in the drainage would prohibit the channel upstream from being dewatered. While where feasible, we typically recommend a 30-day turnover in ponds, written correspondence from the Montana Department of Fish, Wildlife, and Parks (FWP) indicates that some state fisheries biologist feel that no turnover is necessary in larger ponds. We agree that water rights should be required for pond development in Montana. Our private clients certainly feel that water used in their pond systems for fish and wildlife is a beneficial use. In most cases, the use benefits the landowner – the same as it does for stock and irrigation rights. Trout fisheries certainly constitute a beneficial use of water. Again, we feel that so long as the landowner can demonstrate no or negligible effects to the public or other water users, and that the use benefits them, overall restriction of water use for ponds constitutes a serious intrusion on private property rights. As a side note, we feel that private water users should be able to transfer irrigation rights for use instream – to benefit public wild trout fisheries – while not risking loss of those rights. There is a lot of desire among new riparian landowners to do this, and it will improve stream habitat conditions statewide.

John Wilson, Trout Unlimited - This is realistic and I agree with it. Caution should be used in granting “credits” for pre-pond water use if it was not permitted as a beneficial use tied to a specific water right.

David Schmidt, Water Rights Solution, Helena - All ponds consumptively use water mostly, by evaporation, but the evaporative loss can be mitigated under current law. Turnover rate is specific to a site. The 12 fillings a year mentioned above does not apply to every situation. Cookbook legislation does not lend itself to reasonable management of the public and private resource. Ponds can have adverse affects to watersheds, if not designed properly, and under existing law do have to prove their beneficial use. See 85-2-311 MCA.

(4) Amend law to define stockwater pond to mean the beneficial use of water by storing water in a pond for the watering of a minimum of _____x or more head of stock.

Reason: Stockwater ponds can be used as a loophole by some water users who have one or two horses or a cow to build a pond that is really for no more than aesthetic uses. This (potential) legislation is not intended to interfere in any way with the use of ponds for legitimate agricultural stockwater ponds. The idea is to not let water users who can otherwise provide water for one or two stock animals through existing water rights, or an exempt well and a stock tank, evade the ordinary requirements of law pertaining to obtaining pond permits.

Glasgow DNRC - I understand that the 605 statute has been used as a loophole but where do we draw the line on animal units? All the law says is stockwater, it does not define

“legitimate agricultural stockwater.” There are many people in this part of the state that groundwater is not an option. They have to haul water for their domestic use and that would be an additional burden if it became necessary to also haul water for the stock, even a small number of stock. They depend heavily on their stockwater ponds. Carry over is also very important in this part of the state. Many years the pond will receive no water and the carry over from the previous year is all that waters the stock. It is not clear if this section is referring to the 605 stock ponds or 600 ponds. If we are referring to the 605 ponds, then I do not see a big problem with them as they still have to be located on non-perennial sources and are not continually drawing water from a stream as the offstream ponds do.

Havre DNRC - *I’m not sure what “legitimate agricultural stockwater ponds” means and I think that will be a very controversial issue. Many times groundwater is not available or in many cases, there’s not enough groundwater to fit the needs of their domestic and stock water so people rely on small stock water reservoirs. There was an apparent reason to allow the 605 reservoirs back in the early 80s and I don’t think that has changed, particularly in the eastern part of the state, where water is scarce and unreliable. In addition, many of our compacts have an exception for these small stockwater ponds. The idea here is that 605s must remain an option for some, but not for those who have 1 horse.*

Additional DNRC comments - *define stockwater pond from a perennial source to mean... Why not be consistent and allow stockwater ponds up to .2 A/F and allow a bigger pond if it can be justified with more animals. (ephemeral stockponds < 15 A/F would not come under this amendment).*

Russell Smith, Aquatic Design and Construction - *Why are agricultural uses of water considered legitimate but a private landowners use of water for other uses beside ag considered illegitimate? Again, what is the amount of water in Montana allocated for ponds vs. all other uses?*

Scott Davis, Pond and Stream Consulting, Bozeman - *Stockwater pond owners should obviously be required to own stock. These projects, however, should be evaluated on an individual basis. For example, potential for drought should be considered when evaluating the size of a pond vs. animal units, so that ample water can be stored for stock through a five-year drought. Also, stockwater ponds should be able to carry multiple beneficial uses, such as fisheries, which provide additional benefits to landowners. At this time, the 310 Law and the DNRC basically prohibit stockwater pond development on perennial streams. They must be constructed on ephemeral streams, which generally only receive flow during runoff, and are limited to a volume of 15 acre-feet. Because of the low storage volume required and timing of fill, stockwater pond rights are unlikely in most circumstances to affect downstream water users when surface water supply is low.*

John Wilson, Trout Unlimited - *Assuring that true agricultural operators are exempt is critical to success. Weeding out the hobby ranches and others who might seek to use the ag exemption is difficult. The concept of counting stock works but it is cumbersome for*

enforcement. Perhaps use of an ag revenue figure (such as that use for property tax classification) plus further demonstration that the revenue comes from livestock which need stockwater might be a better front end test of legitimate ag operations. If land use changes and the beneficial use as stockwater is no longer needed then the right should revert and the pond drained.

David Schmidt, Water Rights Solution, Helena - How many head of stock? This is really a meaningless argument as the number of livestock using a pond at any one time varies widely. Is the DNRC going to assign staff to count cows? Count their legs and divide by four? Currently, a stock pond can be completed with out application. As long as the capacity of the pond is not greater than 15 acre-feet and the total appropriation is less than 30 acre-feet, provided the pond is on an ephemeral stream and the landowner has 40 or more contiguous acres. See 85-2-306 (3) MCA . Any pond constructed provides habitat for wildlife, stock, and fish. There is no real need to count birds, bunnies and fish to justify beneficial use as it is recognized under as follows: 85-2-101 MCA (2) "Beneficial use", unless otherwise provided, means:

(a) a use of water for the benefit of the appropriator, other persons, or the public, including but not limited to agricultural (including stock water), domestic, fish and wildlife, industrial, irrigation, mining, municipal, power, and recreational uses;

Surface water

Small ponds

(5) Amend law to:

-allow small offstream fish and recreation ponds through the permit process with a statutory maximum size (e.g., .2 maximum acre surface area, ____ x max. volume, ____ x depth)

-require DFWP to first approve design of fish ponds and use of water as producing a net increase in public benefit in order to be considered a beneficial use.

Glasgow DNRC-The phrase in the above section that troubles me is the "public benefit". I would be interested in knowing how DFWP defines that. I understand that they are the "experts" when it comes to design but I have a bit of a problem when DFWP is making the beneficial use determination.

Additional DNRC comments – (insert) _ "5 A/F" _ max. volume (Strike) _ depth.

-require DFWP to first approve design of fish ponds license.
(Strike) "and use of water" through "beneficial use".

Scott Gillilan, Gillilan Associates, Inc., Bozeman - This is absurd. You can't build a fish pond to those dimensions and further, who says FWP is better at playing God with

biological appropriateness than DNRC. I suppose some day one may want to amend the law when FWP encourages native reintroduction of cutthroat trout via created aquatic ecosystems on private land?

Scott Davis, Pond and Stream Consulting, Bozeman - *Where does the statutory maximum size come from? A 0.2-acre pond is barely large enough to provide adequate depth in most cases to overwinter a population of trout in Montana (while minimizing inflow rate). Profound scientific evidence indicates that larger ponds require proportionally less turnover to accommodate overwinter survival. A beneficial use need not incur "public benefit". Dumping 10 cfs on a hayfield all summer does not incur public benefit either. Again, each pond project should be evaluated on its own merits and proposed benefits. Refutation of proposed benefits leading to denial of any permit should be substantiated with evidence that the proposed pond will negatively impact another resource, public or private.*

John Wilson, Trout Unlimited - *When a water right can be granted for this beneficial use without adverse impact to surface flows and senior water rights it is an acceptable idea.*

David Schmidt, Water Rights Solution, Helena - *No other beneficial use of water is limited to a specific size. Is the DNRC going to limit the number of acres irrigated, stock to be watered, or number of people to be served by a municipal system? This appears to be a radical departure from the doctrine of prior appropriation where no one use is prioritized over another. The 0.2 surface acre figure is an arbitrary and capricious measure, as it is only one factor in a multitude of factors that contribute to the design of a biologically sound pond. The above blanks speak volumes. Does FWP have the fiscal note prepared to fund the design review? A water right is for the benefit of the appropriator, public or private. How do you measure or quantify a net increase in the public benefit? Will this require a private landowner to allow the public to use his/her private property?*

Large ponds

(6) Amend law to:

-allow larger (>.2 acre surface area and > ___x acre feet, but no larger than ___x acre feet and ___x volume) offstream fish and recreation ponds by permit if:

-applicant proves MCA § 85-2-311 criteria by clear and convincing evidence

-DFWP first approves design of pond and use of water as producing a net increase in public benefit in order to be considered a beneficial use

-clarify exempt wells under MCA § 85-2-306 cannot be used to make up for evaporative losses. The applicant must prove lack of adverse impact from that ground water use.

-require an applicant prove aeration is not a feasible alternative to the larger requested water volumes if needed for turnover.

Reason: If ponds are to be allowed for fish and recreation beneficial uses, existing and future uses require a reasonable limit to the sizes of these ponds. The legislature by statute can put a maximum size on ponds much more easily than agencies can through rulemaking. The legislative intent would be to preserve a scarce resource, and it can choose a maximum size. An agency through rulemaking may not be able to justify a maximum size without being subject to attack as being arbitrary and capricious if it cannot scientifically justify a given pond size.

Scott Davis, Pond and Stream Consulting, Bozeman - *Another broad unsubstantiated assertion: "existing and future uses require a reasonable limit to the sizes of these ponds." Where? The legislature may be able to "put" a maximum size on ponds more easily than agencies because agencies may have to back up their rules with science and/or evidence, none of which, for example, is contained in this document. Hopefully, the legislature as a whole respects the rights of private property owners irrespective of their interests. I have never seen an agency employee being "attacked", but they often are compelled to try and substantiate their rulings, which they often can and should do when telling a landowner what he can do. To remove the rights of landowners, setting a maximum pond size needs to be scientifically justified on a site-specific basis. Again, we do not see where "beneficial use" in this state constitutes "public benefit". Stock? Irrigation? Domestic? Commercial? All of these uses benefit the user, because the public consumer pays for the product produced.*

Reasons continued: Small ponds would be easier to permit than large ones, and the hope would be that smaller ponds would therefore be sought. Larger ponds which arguably have a greater impact on the source must be proven by higher standard of proof. The desire is to have smaller ponds with less impact on the resource, but leave the door open for larger ponds for those who want to spend the extra time and money to prove by clear and convincing evidence the need for a larger pond.

Scott Davis, Pond and Stream Consulting, Bozeman - *Regulation needs to be backed with facts. To say that larger ponds have a greater impact than smaller ponds, for example, is not an irrefutable fact – it depends on the situation. For example, limnologists know that deep ponds stay cooler than shallow ponds as their surface area/volume ratio is reduced. Contractors and pond designers know that it's easier to add depth to a large pond than a small pond. Also, limnologists know that smaller water bodies have a greater shoreline development ratio, leading to higher shoreline (wetland fringe) evapotranspiration rates per unit surface area, faster warming, and higher biological productivity. When determining the benefit and utility of a pond, the word "need" should not be used as it does not lead to substantive argument.*

Users of water in Montana generally do so out of desire (i.e., lifestyle, occupation), not need. While it can be reasonably argued that a wealthy landowner does not "need" another fish pond, the landowner should have the right to construct such an amenity if it does not negatively affect others. This can be done.

Reasons continued: Wells directly or immediately connected to the surface water should not be able to make up for pond evaporation without proof that the use of that ground water will not adversely impact other water users.

Scott Davis, Pond and Stream Consulting, Bozeman - Proof? How about “conclusive empirical evidence that the well in question will not affect stream flow or other water users”.

Reasons continued: For fish to thrive, either turnover or aeration is needed. Monthly turnover of a pond’s volume can result in a large yearly volume. If aeration can provide the same benefits to fish and save water, it should be required, and anyone desiring a larger pond and such large volumes without aeration should have to justify it.

Glasgow DNRC – (Proof under the 85-2-311 criteria) Seems a bit extreme for a 2 AF pond.

The phrase in the above section that troubles me is the “public benefit”. I would be interested in knowing how DFWP defines that. I understand that they are the “experts” when it comes to design but I have a bit of a problem when DFWP is making the beneficial use determination.

Aeration is a very good avenue to pursue. I agree that way too much water is used to provide for turnover. I have seen aeration work well even on remote BLM ponds where they use a windmill for power.

Havre DNRC - Why is the sentence (regarding lack of adverse impact) necessary when we’re recommending not to allow exempt wells for evaporative losses? Or, is the 2nd sentence referring to any groundwater use not just exempts?

There is nothing mentioned about on-stream ponds? I agree that the DFWP should review and approve the design of fish ponds but I wonder if they will be receptive to providing information regarding the ‘net increase in public benefit’ and is it their responsibility? Is any design of a recreation pond considered adequate?

Additional DNRC comments - “5”_ acre feet, but no larger (strike) “than __ acre foot” through “permit if”:

-DFWP (insert) “or DNRC” first approves..

-clarify exempt wells under MCA § 85-2-306 cannot be used to make up for evaporative &(insert) “turnover” losses. The applicant

Scott Gillilan, Gillilan Associates, Inc., Bozeman - Justification of need is one thing – however your language and clear intent is to eliminate recreational and wildlife ponds as private uses of water in Montana. FWP approval of the biology of ponds has nothing to do with DNRCs water rights duties and should remain completely separate. If this ever passed it would be endlessly challenged.

Russell Smith, Aquatic Design and Construction – Aren’t most of these points already covered by current statutes? Shouldn’t all prospective users have to justify all uses?

Scott Davis, Pond and Stream Consulting, Bozeman - Again, FWP biologists have stated in writing that some trout ponds do not need turnover (ironically, in response to surface water right applications). Bass and other warm-water fish ponds (allowed by FWP in much of Montana) rarely, if ever, need any turnover. In some large ponds (those with adequate depth), minimal or no turnover is necessary to ensure trout health and survival. This point is not made to suggest that we do not intend to apply for turnover, as it is almost always beneficial to trout fisheries, but to illustrate yet another unsubstantiated assertion contained in this document. There are many large ponds and lakes in western Montana that have little or no inflow that sustain excellent trout fisheries with prudent fishery management. Depth may be used, where appropriate and feasible, as a substitute for turnover in large ponds. Small ponds (less than 0.5 acres) may need aeration if turnover is minimized. It should be noted that turnover and aeration do not identically affect pond environments as aeration involves bubbling air through standing water, and turnover refers to the rate of water exchange. It can be argued that a high turnover rate slows the eutrophication process of lakes and ponds, while aeration has little or no effect. Aeration may be a more prudent alternative in some instances, where water is scarce and diversion or use may affect other resources. However, aeration systems that function properly require outside energy (windmill and solar aerators are subject to failure with disastrous results to fisheries in some cases), and in many situations, as in a non-consumptive (other than evaporation) pond with ample surface water supply, the more prudent alternative is a higher turnover rate. In short, you cannot reasonably imply that aeration and turnover affect the same results with regard to nutrients, eutrophication, and water temperature.

John Wilson, Trout Unlimited - This is a bit dangerous but with proper boundaries potentially useful. If you can use these ponds only as mitigation for highway projects, reclamation projects etc. perhaps OK. In closed basins and not as mitigation this should not be permitted except as change when historic use is documented and consumption (evaporation) is less than previous use.

David Schmidt, Water Rights Solution, Helena - No other beneficial use of water is limited to a specific size. Is the DNRC going to limit the number of acres irrigated, stock to be watered, or number of people to be served by a municipal system? This appears to be a departure from the doctrine of prior appropriation where no one use is prioritized over another. 0.2 surface acres is an arbitrary and capricious measure, as it is only one factor in the design of a biologically sound pond. Again, the blanks speak volumes. Is the DNRC going to require the higher standard of clear and convincing evidence to other beneficial uses of water? Currently, a preponderance of the evidence is required. Does FWP have the fiscal note prepared to fund the design review? A water right is for the benefit of the appropriator public or private. How do you measure or quantify a net increase in the public benefit? Will this require a private landowner to allow the public to use his/her private property? This, in my opinion, is a taking of private property rights. Mitigation is advocated later in this document. This thought effectively eliminates the ability to off-set for pond evaporation that is currently allowed. Do other exempt water users, for uses other than ponds, have to prove a lack of impact for such a small

appropriation? It would be instructive to look at the current form 602 used by the DNRC, which requires little or no information to file the notice of completion. This appears to be a stealth-like attempt to make all ponds illegal. If water is legally and physically available and the 85-2-311 MCA criteria have been met, why should a private applicant be required to pay for aeration if water is available? This is a design question that should be specific to a particular site. The legislature should not limit the size of a particular appropriation, just because the agency does not want to bother with the rule-making process. Each individual project should be judged on its own merits, and not be limited by an arbitrary and capricious rulebook that the DNRC is unwilling to write. The current process for obtaining a water right is adequate to address DNRC concerns. Fish, wildlife and recreation are currently beneficial uses of water. Will the clear and convincing evidence criteria be applied to other water uses? Each pond project should be judged under existing law without discriminating between beneficial uses. The issue of connectivity between ground and surface waters should be addressed, but not specific to one segregated beneficial use.

Ground water

(7) Amend law:

- to clarify an exemption under MCA § 85-2-306 from the DNRC permit process is allowed for small ponds for fish and recreation if:

- not in a CGWA (controlled ground water area)
- not in basins closed to new appropriations
- if pond is not greater than .2 acres surface area, flow rate is 35 gpm or less, and volume does not exceed 10 A/F year
- if the pond is ____x feet or miles from the high water mark of the stream

- to require larger ponds than above from ground water sources comply with the same permit requirements listed above for surface water ponds (and be subject to the same maximum size limitations, etc.)

Reason: Small ponds from ground water sources may be preferred over ponds from surface water sources because surface waters are often already appropriated, and use of surface water for ponds may immediately impact senior users as well as fish and wildlife and riparian habitat. If the ponds are small enough and do not require turnover, they can fit into the process that exempts some water uses from the DNRC permit process. Such ponds would not be allowed in areas where water is seriously short, such as CGWAs or in closed basins.

The 0.2 acre surface size was chosen because a pond of that size would remain within the <10 acre foot volume limitation of MCA § 85-2-306. A pond of that surface size could be expected to meet the needs of many water users who want ponds for fish and recreational purposes, and that surface size would have surface water evaporative losses of 3 A/F year, and evaporative losses of 3 A/F year for the wetland fringe, all within the < 10 A/F limitation.

Glasgow DNRC- *The pond described in this section is currently allowed in most basin closure areas. I am not sure that we can just say it is no longer allowed based on the type of use. I have always understood that all beneficial uses have equal standing under*

Montana water law. Water use is based on priority, not beneficial use. If that is true, then how could we now say that a person could fill a pond for stock use within a basin closure area but not fill a pond for fish or recreation.

I would specify this (distance from high water mark stream concept) as a perennial stream.

Havre DNRC - Groundwater is an exception in most closures if not hydrologically connected to a surface source. *So, is this saying they won't be able to file on groundwater for fish and recreation ponds regardless? Yes*

Is this also saying that we will not accept a 602 for a groundwater pond requiring less than 35 gpm and 10 AF if within a closure area? Yes

Additional DNRC comments - and (insert) "diverted" volume does not exceed 10 A/F year (strike remainder of sentence).

Revise "Reason" to read... "purposes, and that surface size would have surface water evaporative losses of .6 A/F year [1 acre foot surface size = 3 A/F year, so .2 surface size = .6 A/F], and evaporative losses of 3 A/F per year per acre for the wetland fringe created by the pond, all within the <10 A/F limitation".

Scott Gillilan, Gillilan Associates, Inc., Bozeman - *In many areas where groundwater ponds are possible it is seldom proven that there is a shortage of groundwater for this purpose or that there is a direct link to nearby surface water resources. Justifying that the water is available and a non-adverse impact to other rights holders is an adequate bar and the foundation of our law. Don't fix what isn't broken unless you want to proceed on and restrict uses of water in the irrigation community as well.*

Russell Smith, Aquatic Design and Construction - *There is no scientific basis for 3 A/F of loss in a .2 acre pond through the wetland fringe. It has been shown that evapotranspirative losses are equal to evaporative losses. This should not go to legislation without impartial examination by qualified hydrologists. This has all been examined before.*

Scott Davis, Pond and Stream Consulting, Bozeman - *Wow! Where did those numbers come from? Actually, open water evaporation in Montana (roughly) ranges from 24" to 36" per year. A 1.0-acre pond with an average depth of six feet (suitable for trout) will have a storage volume of six acre-feet. Assuming an evaporation rate of 30" per year, a 1.0 acre pond will lose 2.5 acre-feet per year via evaporation. Therefore, a 1.0-acre groundwater (pit) pond with no outside source of inflow will actually consume 2.5 acre-feet per year. If you consider storage volume as part of the equation (which the DNRC does now, but really is not consumption), the same one-acre pond consumes 8.5 acre feet per year. So, a groundwater pond of up to 1.2 acres, designed to successfully accommodate a year-round trout fishery can be constructed within the 10 acre-foot limitation. As for the 0.2-acre groundwater pit, it will lose between 0.4 and 0.6 acre-feet per year to evaporation and/or evapotranspiration per year – less than 10% of the figure stated above.*

Assuming a 0.2-acre fish pond is large enough to both have a substantial wetland fringe and adequate depth to sustain a trout fishery (which is a stretch) we do not believe that

transpiration rates of wetlands, on an annual basis, exceed open water evaporation rates in most cases – we would check that, but we only had a day's notice prior to the public comment deadline. But to build upon your argument, most groundwater pit excavations leading to trout ponds occur in sub-irrigated pastures or jurisdictional or non-jurisdictional wetlands. Otherwise, groundwater pond construction is simply not cost effective. So, if you use the argument that wetlands or sub-irrigated pasture consume substantially more water via transpiration than open water does via evaporation, then building a groundwater fish pond actually constitutes water conservation. In any case, sub-irrigated pasture consumes water via transpiration. This loss must be subtracted from loss via open water evaporation when calculating actual evaporative loss incurred via groundwater pond construction. Therefore, it is more likely that a typical 0.2-acre pond consumes about 0.2 acre-feet per year more than the pond site prior to pond development – this is a far cry from the 10 acre-feet asserted. So, in reality, a one acre pond at a typical groundwater pond site, in almost all cases, will actually consume less than 2.0 acre feet via evaporative losses on a net basis.

John Wilson, Trout Unlimited - *This groundwater use has to be site specific because of the nature of alluvial valleys (most of which are closed). A water right should still be required. To head off train wrecks of stock ponds being built before being permitted it might be advisable to have a required provisional permitting process so that inappropriate or questionable ponds don't get built in the first place. The issue of groundwater depletions that deplete surface flows is only partially addressed here. Thus if there is a direct connection between the requested groundwater and surface water then it should be documented in open basins and not permitted in closed basins. Further because of the potential for thermal pollution from pond outflows, applicants should shoulder the burden of proof that no adverse water quality impact will occur as a result of the pond.*

David Schmidt, Water Rights Solution, Helena - *Each controlled groundwater area and basin closure is written differently as to exemptions set forth in each closure or document that establishes a specific controlled groundwater area. These concepts, as proposed, basically would stop the development of all ponds in the upper Missouri Basin and could have unanticipated affects in other basins currently closed. In Gallatin County subdivision regulations, ponds are required for fire protection. Fire protection should be added specifically as a beneficial use of water. Once again, the blanks say it all. Who is going to be the decision maker as to where the high-water mark is? Where will the tape measure start and stop? As stated above, the size limit idea is arbitrary and capricious, as admitted by the drafter. You cannot assume an evaporative loss figure, as it is dependant on the site. Current law provides adequate protection against adverse affect to senior water users.*

Basin closures and controlled ground water areas

(8) Amend law to:

-prohibit ponds in closed basins (except through changes)

-prohibit ponds in controlled ground water areas (except through changes)

Glasgow DNRC -*The above statements are way, way too inclusive. If they are to include all ponds, on and off stream for any purpose, then it will never work. As an example, the Fort Belknap Compact closure covers thousands of square miles and the ranchers in most of that area depend on stock ponds for watering their cattle. This was so important to the drafters of the compact that an exception to the closure was made for stock ponds. To come along now and prohibit those ponds would not be right at all. Maybe these are not the type of ponds that were intended to be prohibited. If not, then we must be very careful in defining what type of pond. Onstream on non-perennial sources and offstream ponds are two very different issues.*

Additional DNRC comments – *prohibit ponds in closed basins (except through changes) or demonstrate no consumptive use increase [you can dig into a bog and not increase consumptive use]*

Scott Gillilan, Gillilan Associates, Inc., Bozeman - *One size does not fit all. Again, each water development will be different and some can be developed with no impact to other right holders and if this can be proven by the applicant, should be sufficient.*

Scott Davis, Pond and Stream Consulting, Bozeman - *Groundwater (pit) ponds do not need surface water (even in basins closed to new surface water appropriation) to function properly and as intended. Ponds fed by surface diversions do not need groundwater to function properly in controlled groundwater areas. Also, controlled groundwater areas (i.e. wells) may or may not have sites conducive to groundwater pit excavation, but excavation at such sites are unlikely, in any situation, to affect well users. Changes in stated beneficial use from "irrigation" to "fish" are useful.*

John Wilson, Trout Unlimited - *See overall comments above.*

Changes

(9) Amend law to clarify that exchanges and augmentation plans are allowed under Montana law.

Reason: Water law needs to be flexible enough for any water user to either change their own water right, or buy someone else's water right, and change it to any beneficial use allowed under Montana law anywhere, even in closed basins and CGWAs. As long as someone can prove pursuant to MCA § 85-2-402 that their change of use will not adversely effect any other water uses, they should be able to implement that change. Water law needs to maintain the flexibility for new uses within the requirement that no change can adversely affect anyone else. Exchanges of water and the use of augmentation plans to mitigate impacts to other water rights should be explicitly provided for in order to provide for that flexibility and cut down on litigation over whether or not exchanges of water and augmentation plans are allowed by law. Exchanges and augmentation plans are commonly provided for in other western states.

Glasgow DNRC - *Not familiar enough with how exchanges and augmentation plans work to comment.*

Russell Smith, Aquatic Design and Construction - *How is this different from current laws? Rehash.*

Scott Davis, Pond and Stream Consulting, Bozeman - *If a new use will not affect other users, should the owner be able to implement and file on the new use? Why not? It would be of great benefit to the world-renowned trout fisheries of Montana (and consequently, our public and potentially local businesses) to allow private landowners to change their irrigation water right to provide instream flow for the benefit of fish and/or wildlife without fear that the right can be taken by junior irrigation users. Why not pursue that? Allowing changes, while prohibiting pond construction without changes, will inflate the value of existing irrigation rights, benefiting the relatively few that have senior rights and wish to sell them. Why are changes, and the freedom to change and sell rights embraced with such fervor in this proposed legislation if water is so scarce?*

John Wilson, Trout Unlimited - *Definitely NO to augmentation. Although we are headed this direction with Montana water law and it is needed, a "ponds" bill is not the place to "break the ice." This is a major water issue that deserves stand-alone treatment, not buried in a ponds bill.*

Changes should be allowed but only when they do not adversely affect other water users. The burden of proof should be on the applicant in this situation.

Exchanges are new to water law and should be handled separately in the legislative setting.

David Schmidt, Water Rights Solution, Helena - *Agree. However, earlier in the document, the drafters do not allow for mitigation using exempt wells, meaning you can mitigate for anything but a pond.*

Account for existing consumptive uses existing prior to building pond

(10) Amend law to clarify that existing consumptive uses at a proposed pond site can be accounted for in a new permit or change proceeding and an applicant can get a credit for that existing consumptive use.

Reason: Before a pond is built, there are often existing consumptive uses at that site. If a pond is to be built where there is already a bog or extensive plant growth, there is already natural consumption of water at that site due to evaporation of the pond and evapotranspiration by the plants. Therefore, in a new permit or change proceeding a pond applicant should be able to subtract that naturally occurring consumption from the amount of water that would be calculated to fill that pond.

Glasgow DNRC - *Makes sense but may be very difficult to quantify.*

Havre DNRC - *So, what if a pond developer calculates that consumptive use due to plant growth over a shallow bog area is equal to or less than the consumptive use of the smaller, deeper pond? Is an application unnecessary?*

Russell Smith, Aquatic Design and Construction - *Good enough.*

Scott Davis, Pond and Stream Consulting, Bozeman - *We agree. But include evapotranspiration rates for irrigated pasture, which are about equal on an annual basis to open water evaporation rates. So, if the pond is constructed in a previously irrigated field, net evaporative loss resulting from pond construction will be about zero.*

John Wilson, Trout Unlimited - *Only if the original consumptive use is a beneficial use as part of a proven, historically used, water right.*

David Schmidt, Water Rights Solution, Helena - *Agree.*

Enforcement

(11) Amend law to mandate payment of attorney fees to water users who successfully enjoin unlawful uses by other water users.

Reason: Illegal pond use is proliferating across the state, and the cumulative effect of illegal ponds in a basin can be deleterious to other water users. The DNRC is not staffed or funded for enforcement, and often does not know of many of illegal uses concealed on private property. Furthermore, most streams do not have court-appointed water commissioners administering water. Local water users are in the best position to know of illegal water uses, and a statute providing for the payment of their attorney fees when they stop illegal uses of water would empower legal water users to police illegal uses on a stream. This builds in an incentive for people to comply with the law before they put water to use in areas where many feel there are few disincentives to illegal water use. Legal water users will not suffer continuing economic damage from repeated court proceedings when a piece of property keeps changing hands and each successive new land owner attempts illegal uses of water. Legal water users are kept whole no matter how many times they stop illegal uses in court, and to a certain extent the enforcement of water rights is privatized.

Glasgow DNRC - *This may be helpful for getting senior water users to come forward and pursue a complaint of an illegal user. Right now they have to consider if the legal expense is really worth it. I am sure that many feel they cannot afford to pursue illegal water users on their own.*

Havre DNRC - *In theory this sounds good but hindsight is 20/20.*

Scott Gillilan, Gillilan Associates, Inc., Bozeman - *Show us the facts and numbers on private pond water rights abuses. This entire argument is based on hearsay and no information has ever been provided by DNRC to support this contention. In fact, the close analysis of the situation I'm aware of in this area shows it as an insignificant issue. By far, the most abuses of water rights, such as over appropriation, are observed on irrigated lands because that is where the huge majority of diverted water goes. It is wondrous how the*

little molehill of water use in created ponds has become such a galvanizing piece of policy need at DNRC. If you want to protect legal water rights and the future right of citizens to develop water rights maybe we ought to be focusing more time and energy on our irrigation practices. Many legal irrigators are harmed by illegal irrigators though we hear very little of this from DNRC. Lets tackle real problems with our scarce resources and try not to throw out the baby with the bath water.

Russell Smith, Aquatic Design and Construction - *Illegal users of water should be held accountable.*

Scott Davis, Pond and Stream Consulting, Bozeman - *Good idea in principle, but who pays mandated attorney fees? The state? What tax will be implemented to pay for this? We've run across at least one individual who objects to every water right application in a basin, irrespective of merit, then usually withdraws. The same type of person may sue others frequently whether or not there is an actual case, just because it's free and they want to see if they can get something for nothing. Then who pays the defendant's legal costs? This is a slippery slope that can and most certainly will be abused.*

How about a prudent, scientifically based pond construction regulations and a stiff penalty for illegal water use and illegally constructed ponds? To use your argument, this method has been successful in many other western states. Would the state be better off with a small staff of water enforcement officers paid at typical state employee rates, or paying lawyers to the tune of \$150 per hour every single time water user wants to sue somebody at his discretion? Illegal pond construction will most likely stop if pond construction is allowed, but reasonably regulated based on merits and effects, and enforced. Then those who pay extra to design and build ponds conscientiously and properly, will have incentive to report those that do not. Responsible landowners, agency personnel, and consultants would all have great incentives to stop illegal pond construction as well.

John Wilson, Trout Unlimited - *This needs work. Pitting neighbors against neighbors is not necessarily the best enforcement route. Having dedicated permit application and fine (violations) funds that go to DNRC for covering enforcement seems a better route.*

David Schmidt, Water Rights Solution, Helena - *The McCarran Amendment waived the United States Sovereign immunity to give the states the right and the duty to administer water use within the State to the State. It is the State's responsibility to enforce the water law. To think that a water user will be made whole by collecting attorney fees is wrong-headed. There are many other costs in a water litigation that are not covered by attorney fees. Do Montanans really want to create more pointless litigation and pit neighbor against neighbor? Will the private water user be made whole for the emotional damage caused by a legal water dispute? I do not think so, as the only beneficiaries would be the attorneys, and not the water users. Privatization of enforcement is tantamount to the State waiving its hard-won McCarran Amendment powers.*

General comments regarding the 1-26-04 concept paper

Scott Gillilan, Gillilan Associates, Inc., Bozeman - *In general I find the logic in these concepts flawed on many fronts and as disturbing as anything I've seen come out of DNRC in over 14 years of practice as a hydrologist in this state. It seems certain to me this proposed legislation is so full of profound gaps in logic and law that nearly every water rights holder in the state, not to mention those contemplating filing for new rights, will mobilize to kill this. I am also highly concerned that the line of reasoning in this document appears to reflect a very narrow view of water resource law within DNRC itself, not to mention in the general public. I object to this use of public resources when DNRC can't even keep up with staff needs in field offices and it takes over a year to process an application. I further object to the burden placed on the public to refute this unmandated attack on private property rights.*

Russell Smith, Aquatic Design and Construction - *General Comments: Look at all uses equally, not just pond uses, using the scientific method. Don't waste my tax money going over something that's already been addressed. Don't forget that there is an economic benefit related to ponds: pond construction, consulting, nurseries, fish hatcheries, fee-fishing, aesthetic (no matter how externalized), hunting, fishing, photography, wildlife-watching, swimming, boating, private property rights, tourism etc.*

Montana Department of Transportation - *You asked for comments regarding your "starter concepts" for ponds legislation. The material you have looks fine - as far as it goes. As you probably know, MDT is not interested in just ponds. MDT needs to make sure it can construct wetlands that fit the Corps of Engineer's requirements. Sometimes that means building ponds, and sometime it doesn't. So, we would like to see something that defines a beneficial use as any water use that the Corps deems necessary to re-establish a wetland. I'm not quite sure how we could do that, but there should be wording we can come up with. As an aside, our wetlands are not simply for fish, or wildlife, or recreation, although those can be very important. The Corps pretty much insists upon wetlands that fulfill all the wetland functions, such as promoting species diversity, helping with water storage and aquifer recharge, etc. Also, in some places we are asked to re-establish such wetlands in areas where there has been closed basins and controlled ground water areas. MDT would hate to see recreation of wetlands prohibited in such areas, but, perhaps, so long as we can accomplish this through changes it might be acceptable. But that would not be our first choice.*

Thanks for the opportunity to comment. Please keep MDT in the loop. Feel free to contact me if you have questions. Lyle Manley

Karl Uhlig, Land and Water - *I received a copy of the concepts via e-mail earlier in February and was a little disturbed at the direction the DNRC is heading. I'll offer some brief comments at that time. I guess we will see where these ideas go during the next legislative session.*

There are only two concepts that warrant some merit. Those are the idea that all ponds consume water to some degree and that the existing consumptive uses at a proposed pond site can be credited forward to the to a new application.

The remainder of the document is, in my opinion only an attempt to outlaw pond development. For example, I don't believe that a private individual or corporation for that matter could get a FWP fisheries biologist to sign a letter stating that constructing a pond will benefit the public resource especially if private fish stocking is one goal of pond development.

Where did the 0.2 surface acre limitation come from, the sky? Quite frankly, if it can be demonstrated that a particular groundwater pond uses less than 10 acre-feet per year what difference does it make how many surface acres it is?

Why is it unacceptable to use a groundwater well to "make up" water and augment a pond?

The DNRC issues Certificates of water right based upon groundwater domestic wells for flows up to 35gpm and 10 acre-feet without any review. Lawn and garden irrigation is often part of these smaller domestic water appropriations, why is this a beneficial use of water when ultimately the lawn is not used for any other purpose than the enjoyment of the property owner and on the other hand recreational ponds are suddenly not a beneficial use. It seems like the DNRC are looking to single out ponds and not applying the existing laws in a fair and proper manner.

In short, it appears that this proposal is not based on any factual data, only emotion and the desire by some to outlaw pond development.

Thanks for the opportunity to comment.

Buddy Drake, Avicom - I think it would be helpful to delineate the differences between a true waterfowl pond, a fish pond, and an aesthetic pond. While waterfowl will land on just about any body of water, a properly designed waterfowl pond should never exceed a depth of four feet. Therefore, the volume of water is not as important, with respect to evaporation, as surface area. In this regard, waterfowl ponds and fish ponds are mutually exclusive. A good fish pond, at this latitude, should exceed eight feet in depth. Because of the natural angle of repose common within this state's soils, a pond eight feet deep with a 2:1 slope, would have to be at least .25 of a surface acre. Volume, or the amount of water withdrawn from a stream, becomes the issue here. Aesthetic ponds should never be allowed. When accounting for existing consumptive use before a pond is built, photos of the pre-construction site should be required.

Good luck, and thanks for the opportunity to comment.

Scott Davis, Pond and Stream Consulting, Bozeman - I'm glad we had a chance to discuss HJR 40 and the resulting report yesterday, and hope that you've had some pertinent comments from others that are concerned as well. As we discussed, we would like to be kept "in the loop" of information that will be presented to the legislature and any committees that will be involved in the pond issue. So please forward pertinent information.

Please find attached our comments on the "Concepts for Possible Changes, 1-26-04". This report appears to have been prepared haphazardly and without much objectivity or scientific basis. It does not back up its broad assertions with any sort of evidence, and actually contains false information. It appears to be a quick attempt to circumvent scientific evidence in influencing legislation. The bulk of the my comments basically focus on the fact that we favor regulation of pond development and associated water use in Montana, but this regulation should be based on science and empirical evidence, and not the personal preference of those who just don't like ponds. We're talking about taking of private property rights and jobs without substantive justification, and this we feel is wrong. Our small business, which consists of myself and Alex Fox, consistently pays substantial costs in subcontractor services and locally purchased materials while providing an environmentally conscious service that is in demand. People that we and our projects provide income (and resulting tax dollars) to include consulting engineers, geologists, rental shops, supply stores, and heavy equipment contractors. Many of these people generate a substantial portion of their income via development of water resources for private landowners. Strong local small businesses, of course, lead to economic development across the board.

Accordingly, rules for pond construction need to address projects on a site-specific or project-specific basis. Prudent and fair regulation should start with detailed investigation, study, and illustration of the real problems with pond construction in Montana (hack jobs that are not well considered) -- not an unsubstantiated assertion that all ponds are bad and should be outlawed. We will be happy to offer comments and arguments in the future as they relate to pond construction in Montana, or otherwise contribute to development of new regulations. We want to see the science behind the recommendations, and starting from the 1-26-04 "concepts" it appears that you have a long way to go.

Thanks for your consideration.

Scott Gillilan, Gillilan Associates, Inc., Bozeman - follow-up – *Larry - I took a look at the language for your mandate and agree that your effort is legitimate and am eager to see further drafts. One of my principal reactions reading the draft was that the long simmering discussion on beneficial uses for wildlife, recreation and aesthetics was being unfairly being co-opted by a single voice in this extremely multi-faceted debate. While I trust the process that is taking place will fairly weigh all input, I also think people are underestimating the problems when one starts restricting water rights for one currently legal use and not another. I won't ever understand the thinking that "agriculture" water development is legitimate and wildlife, recreation, and aesthetics uses aren't. It's the law. They both use water on the land for personal and public gain and to separate these strikes me as a counterproductive approach to dealing with ongoing water development issues. However, I realize this is a political process so we'll just have to let the civil democratic process do its magic. I apologize for the tone in my comments -- I was having a bad day and little time to do any research since I was not notified of the comment deadline until the last second. I look forward to being part of the future debate.*

David Schmidt, Water Rights Solution, Helena- *Traditional water law (the doctrine of prior appropriation) is set on its ear by prioritizing uses*

The DNRC does not enforce the conditions on permits and changes that the agency issues. Why make a law if there is no institutional will to enforce current law, much less any new regulations that will not stop illegal pond development, and only stymie or stop legal development?

Economic Impact

We estimate statewide that 100 private professional jobs are directly related to pond construction, along with 400 jobs for construction workers and secondary benefits to equipment suppliers. Private funds are flowing into the State outside of government coffers to enhance the waterfowl, wildlife and wetland resource. The DOT needs credits for wetlands destroyed by highway construction. Could the development of private wetlands be counted toward wetland mitigation? The private sector has created jobs and tax revenue to the State, as well as enhancing the State's wetland, waterfowl and wildlife resource.

Comments of William Gavin, PG Registered Professional Geologist, Yellowstone Resource Associates, Inc.; 211 Grand Street, Bozeman, MT 59715-

The entire thrust of this document seems to be to eliminate or severely restrict the construction of ponds in Montana. Private ponds are a common water feature throughout the United States. Fishing and hunting in private ponds is an American tradition dating back to the colonies. Every American is familiar with Walden Pond and the philosophical and aesthetic pleasures it brought Thoreau. Why has the DNRC decided that ponds are bad for the state and should be eliminated? The State constitution lists the "beneficial uses" of water and they include: recreation, fish, and wildlife. There is nothing in the constitution that says that these uses should only be available to state agencies.

Specific comments on the amendments listed in the memorandum follow.

Limit wildlife beneficial use to government agencies.

This assumes that the only people who understand what is good for wildlife work for the government. There are large numbers of people who are experts on wildlife outside the government. Academics, retired or former government specialists all work in planning projects for private landowners. These people often have more experience and expertise than government agents. The private sector routinely pays more than government agencies can and thus often lure away well-qualified individuals.

Loss of wetlands is a major concern in the US and Montana. Federal wetland laws are a response to this. Private individuals are building and paying for the creation of wetlands on their property. Why would the State want to put an end to this and only allow chronically cash-strapped agencies to build these?

Define ponds as a consumptive use of water.

Currently, applicants must prove that there is no adverse impact on other water right holders. This covers these concerns.

Surface water diversions may actually reduce evaporative loss. Water loss due to evaporation is based on the surface exposed to the air. Bodies of water with high surface area to volume ratios loose more water than those with lower ratios. Streams are shallow and wide and have extensive surface area for evaporation to occur. Ponds have a much lower amount of surface area. For a given volume of water moving from the mountains to the sea, that water moving through a pond will loose less of its total volume to evaporation.

Building of ponds usually involves the removal of surface vegetation. Depending on the type of vegetation removed, the loss from evaporation can be less than the loss due to plant evapo-transpiration.

Stockwater Ponds

The blank in the title to this amendment says it all. What is considered the "proper" number of animals that must be watered to make it a stock water pond? What about the difference between the consumption of various animals? Obviously cattle drink more than goats. This is a real can of worms. Is the number going to be 10 head, 50 head, 1000 head? Do the stock have to water on a daily basis or is once a year enough? Is the DNRC going to have personnel out watching these tanks to make sure that the right number and type of stock show up?

Small Ponds

Smaller ponds require more water to make them viable than a larger pond because they need more frequent turn-over to keep fish healthy.

Due to limits of slope stability, most .2 acre ponds will only be eight to ten feet deep. Most fisheries biologist agree that ponds need to be at least 12 feet for good winter survival in Montana.

DFWP is already stretched thin. Now they are going to be asked to approve the design of every pond that is built? What is the potential liability if a pond design approved by DFWP does not work? Missoula has been sued for approving subdivisions in flood-prone areas that flooded. The implication that a government agency reviewed and approved a plan implies that it was part of the design process.

Why must there be a public benefit to be considered beneficial? Farmers applying for a new water right to irrigate land do not have to do this. Is the fact that the landowner is a member of the "public" irrelevant? The building of ponds creates jobs, and adds to the nations wetlands. Isn't this a public benefit?

Large ponds

Why can wells be used for lawns, gardens and swimming pools, but if the water is used for pond evaporation, the applicant must prove no adverse impact?

Aeration works in many instances but can also be very detrimental. During the winter, aeration can super-cool the water, causing heavy freeze ups to occur which can then kill fish. Aeration during the summer does not allow a thermocline to develop, causing uniform temperature distribution throughout the water column. This can cause elevated temperatures in the deeper water leading to fish kills.

See above about concerns regarding DFWP approval of pond designs.

Comments of Joeseeph Urbani

Amend law to limit wildlife beneficial uses to DFWP, USFWS, and DOT by permit, and clarify that wildlife includes migratory waterfowl.

The beneficial use indicated is "fish and wildlife". The wildlife component is secondary, though not insignificant. Wildlife are attracted to private fish ponds for many reasons: drinking water, forage, nesting and hiding, hunting, etc. We do not understand why it is necessary to quantify this obvious and easily observable benefit. No water right is requested strictly to benefit "wildlife". Fish are completely controlled under the present system, which requires a Private Fish Pond License issued by DFWP to obtain fish, and DFWP requires that the pond includes an adequate fish block to prevent trans-migration of hatchery and wild fish. The distinction between hatchery and wild fish is increasingly fuzzy, and for this reason we have suggested that several of our private trout pond projects be simply left open to the public fishery. This way the pond can serve to enhance the public fishery resource by providing a refuge for stream fish during seasonally adverse conditions, and the pond owner will not incur the added cost and management responsibility for purchasing and containing hatchery fish.

Surface water

Small ponds

Amend law to:

-allow small offstream fish and recreation ponds through the permit process with a statutory maximum size (e.g., .2 maximum acre surface area, ____ x max. volume, ____ x depth)

-require DFWP to first approve design of fish ponds and use of water as producing a net increase in public benefit in order to be considered a beneficial use

This presents a myriad of problems in the design and construction of stable, biologically sound trout ponds. For one, it is very difficult to create a significant volume of cool holding water that will remain within survivable temperature parameters for trout during summer and winter extremes in a pond of this small surface size. One reason this is true is that, for human safety as well as biological reasons, a good pond design includes shallow areas along the shoreline with emergent vegetation and "access points" facilitated by large flat stones or similar structures. This design prevents the event of a person falling suddenly from the dry shore into deep water, on a muddy, slippery slope that might be very difficult or impossible to scramble up to safety. The emergent vegetation also provides important habitat for fishery food base organisms such as aquatic insects, amphibians, crustaceans, mollusks, etc.

A rapid transition from these shallows to deep water is necessary to prevent the proliferation of submergent aquatic vegetation, almost all of which are regarded as nuisance pond weeds.

Another problem with small ponds occurs when it is necessary to line them to prevent water loss by seepage. Generally, the steepest stable slope that we can create for a lined

pond is 3:1. A pond with a surface area of .2 acre, with shallow wetland safety zones transitioning to deep water on a 3:1 slope, will have very little area of 12 ft. or greater depth. We find this depth is usually adequate to provide holding water for trout as described above. However, the pond must be able to hold most or all of its trout population as this depth during seasonal temperature extremes or fish mortality will occur.

We object to the clause that FWP should be required to approve a design for a fish pond. FWP has no expertise in this area, nor does this agency have the time to take on the task of educating, training and fielding personnel to inspect and approve fish pond designs. Additionally, we object to the clause that a water right for a fish pond should have to prove a public benefit. No other private water right for any other beneficial use is required to demonstrate a benefit to the general public. This requirement would clearly be pernicious to the fish pond industry.

Large ponds

Amend law to:

-allow larger (>.2 acre surface area and > ___x acre feet, but no larger than ___x acre feet and ___x volume) offstream fish and recreation ponds by permit if:

-applicant proves MCA § 85-2-311 criteria by clear and convincing evidence

-DFWP first approves design of pond and use of water as producing a net increase in public benefit in order to be considered a beneficial use

-clarify exempt wells under MCA § 85-2-306 cannot be used to make up for evaporative losses. The applicant must prove lack of adverse impact from that ground water use.

-require an applicant prove aeration is not a feasible alternative to the larger requested water volumes if needed for turnover.

In addition to our concerns described above regarding FWP design approval and the unreasonable requirement to prove a public benefit, in this case the suggestion that each applicant is further put to the task of defining feasibility for every citizen in Montana is simply not fair and reasonable.

These objections apply to the case of groundwater ponds as well. The size limitation of .2 acre surface area for a pond that will be permitted for applicants with limited financial resources will result in development of ponds that are too shallow for fisheries, will, in most instances, not stratify as described in our attached fish pond essay (meaning the entire pond volume will warm in summer and stress fish as well as more efficiently evaporate), and will be very difficult to line when necessary.

The "larger than .2 acre" ponds that will be available to applicants who have the commensurate financial means will still be held to account for a public benefit, for a lack of adverse impact due to evaporative loss, and will be required to define feasibility on the question of aeration versus water exchange (or "turnover", as it is described here).

Both groundwater and surface water fed ponds would require design approval from DFWP, which presumes that this agency has higher expertise than consultants such as myself, and I have been designing trout habitat including ponds for nearly thirty years. I would further like to add that my firm, and many others like it, have been employing college students and graduates for good jobs in Montana for many years, and we have been diligent, responsible, co-operative and trustworthy in complying with all rules and regulations applied to our industry. I simply do not understand the current initiative to place additional burdensome, even ruinous, new rules on our business. I don't understand the motivation for these new rules, because I do not see any harm to the public resource in what we do.

Joseph Urbani & Associates, Inc. has been involved in the construction and restoration of lakes and ponds for over 14 years. Throughout this time, we have created our own standards for construction that consistently yield high quality fisheries. Our enhancement techniques are based on the objective of creating biologically productive aquatic habitat systems. These techniques include habitat provisions for wetland plant species, invertebrates, adult and juvenile fish, waterfowl, upland birds, terrestrial wildlife and humans. The lakes/ponds that we construct and restore acknowledge that a healthy aquatic habitat system requires a diverse array of plant and animal species in order to survive. Each of these species provides forage, habitat and biological maintenance for the good of the whole system. This professional statement of principles is intended to provide insight into our design parameters and construction practices, demonstrating how we keep this theory in mind throughout a project.

The first design parameter is always the quantity of water available to maintain the system. A $\frac{3}{4}$ to $1\frac{1}{4}$ acre (surface area) pond typically needs a complete turnover of the water supply every 30 - 40 days in order to maintain satisfactory water chemistry and to maintain ecosystem health. This is a somewhat flexible parameter depending on other factors, but generally this interval will be longer for larger water bodies and shorter for smaller ones. The factors that go into this decision include surface area, species of fish to be managed, calculations that show expected evaporative losses, and possible gains from precipitation and localized run-off. A lake/pond constructed without sufficient water will surely be a biological failure and a danger to the surrounding ecology.

Most lake/ponds also require that deep water is available to prevent stress to fish. Our trout lake/ponds are built with a minimum of 12 to 16 feet depth to provide sufficient holding water for year-round fish survival (see attached drawing "Typical Cross Section..."). We usually construct 15% of the total surface area of the pond to this depth, in order for the water to stratify to distinct temperature zones. These zones allow trout to have a safe haven of cooler water below when surface water temperatures begin to climb. Studies have shown that a direct cause and effect relationship is seen with growth rates of trout and water temperatures. Specifically, temperatures between 58 and 69 degrees have the most influence on trout growth (Dwyer et al. 1981). Stress situations are most often seen when temperatures exceed 60 degrees and oxygen saturation levels begin to

drop. Fish are more susceptible to disease when these stresses are present. The deeper water is also beneficial during winter months when oxygen levels in shallower water begin to drop due to decay of macrophytes.

Trout need substantial foraging areas from water surface to a 6-foot depth. These are the regions of the water body where food base organisms are present at the highest densities where they are also available to the fish. We design at least 30% of the bottom at a 4 – 6 foot depth, and construct diversified subsurface habitat structures (boulders, root masses, etc) to provide cover and fish feeding zones. Additionally, the topography of the lake/pond is constructed to promote habitat for fingerlings, aquatic insects, amphibians, crustaceans, and other organisms in the fishery food base. This is done by adding specific sized gravels and larger rocks, as well as anchored complex habitat features such as branches and limbs.

The edge of the lake/pond is constructed with an extensive wetland perimeter. This shallow wetland habitat occupies at least 25% of the pond's water surface area. Typical plant species placed around a pond will include sedges, rushes, bulrushes, and other native flowering aquatic plants such as iris, mint, and lily. Some of these species are chosen because they survive well in submerged growing habitats, while others are chosen to occupy the area along the upland fringe. This ensures that the entire perimeter maintains a large, diverse wetland population. Specific species of plants are also chosen based on their functional qualities for forage and habitat, as well as their efficiency at absorbing basic nutrients suspended in the water.

Wetland habitat around the lake/pond perimeter provides many vital functions for a healthy pond system. These lush vegetated areas serve as an incubator for many fishery food base organisms, as well as juvenile fish, waterfowl, and terrestrial wildlife. Submerged plant species provide cover and feeding areas for juvenile fish and aquatic insects. Smaller emergent plant species with edible seed heads are chosen to allow small mammals and waterfowl food and nesting areas. Taller species are chosen to provide food and cover for upland birds and wildlife.

Wetlands also act as a great biological filter. These plants consume excess nutrients caused by decomposition of dead plant and animal matter, and they filter incoming sediment from the surrounding uplands. Good water quality is therefore established and maintained. This nutrient consumption also inhibits the excess growth of aquatic weeds, which can literally choke a pond to death. Finally, the wetland fringe provides a shallow water "safety zone" for humans around the depth of the pond. This allows for use and enjoyment of the system without the immediate dangers associated with steep-edged ponds.

Construction of the pond also includes the installation of an outflow pipe and control structure (see attached drawing "Pipe Outflow Structure"). The purpose of this design is to allow control of the depth of the pond and the temperature of the outflowing water. The first step in installation is to outfit the intake pipe with a screened end. This

prohibits pond fish from migrating out of the system. Additionally, the screened intake pipe also prevents objects (sticks and logs) from becoming lodged in the pipe or control structure. This helps keep the system virtually maintenance-free.

The intake pipe is installed to draw pond water from a depth of approximately 4 - 6 feet. This ensures that cool water is released from the pond through the outflow pipe. Whenever feasible, this outflow pipe then releases the water into a live stream. This increases the water available for downstream fisheries. Contributing warm water to natural streams is detrimental to the health and viability of cool water fisheries. By utilizing this construction design, only cool water can be introduced into a live stream system. We have provided an example (see attached tables) of inflow/outflow temperature ratios measured at one of our ponds throughout the seasons in a continuing effort to demonstrate the effectiveness of this design. We have also attached a letter we provided to the US Army Corps of Engineers explaining the equipment and methodology used to obtain these measurements.

The installed outflow control structure is built with a set of adjustable stop gates that can be positioned to change the pond's water surface elevation. By adding stop gates to a control structure, the water surface elevation can be raised. This flexibility is helpful in the propagation of wetland plants around the perimeter of the pond, as certain wetland species require periods of saturation and drying in order to thrive.

A DNRC water right is always required for a new pond. This may be done by transferring an existing (typically irrigation or stockwater) right for use by fish and wildlife. Or, a new right may be applied for to record the water that is produced by the construction of a groundwater pond. Either right requires a site review with the Department of Natural Resources and Conservation. A representative of our firm attends this meeting to explain the water use and to answer any questions or concerns that may arise.

Next, with the water right secured, a Fish Pond License is applied for with the Montana Department of Fish, Wildlife and Parks. This requires a site review with a member of the MTFWP, and again our firm is available to explain construction and to field questions and concerns. If the pond is granted a license after the agency field review, the pond should be allowed some time to establish a solid invertebrate population prior to a fish plant. This may take several seasons to ensure that a resident invertebrate population is large enough to immediately provide food for planted fish, and also sustain itself through successful propagation. The species of fish to be stocked is determined by the MTFWP, and the agency also provides recommendations for fish sources that are state inspected for disease certification. These in-state disease-free hatcheries are the only sources used for planting populations, and hatchery managers often assist our field personnel with proper handling and planting techniques. We have not had a single instance of disease or overall fish health problems in any of our constructed ponds.

The typical fish stocking schedule is determined by the size of the pond and the species allowed by the MTFWP. The first plant is comparatively small, ensuring good survival for the first season. After reviewing the response of these first "canary" fish to the system, additional plants of the same species of fish (preferably from the same source hatchery) may be carried out to supplement the population with younger generations. A solid population will have 3-4 different age classes that can interact (compete, spawn) with each other. Eventually, only fingerlings will be planted as forage for the older generations and to produce larger, more active-feeding fish.

We are confident and eager to show our ponds as living, biologically functional systems. It has taken many years of cumulative research and technique experimentation to establish this confidence. We feel that a standard operating procedure definitely should exist for construction of ponds within our industry. Too frequently we are hired to mend the errors of ill-informed contractors, and the long term damage that these systems can cause is a serious concern. It is our belief that these failing systems are often used as examples of pond construction in general. We agree that if these were the only type of ponds being constructed, we would want to cease their production as well. We are attempting to correct the wrongs of the past with information and by example. After so many years of experience, these successful systems are more than a livelihood, they are a living biological amenity that will endure beyond our lifetime.

Joseph Urbani is a professional fisheries biologist with over 26 years of experience designing and implementing fish habitat improvement and water resource restoration projects in the public and private sectors. His background includes work with the U.S. Forest Service and state fish and wildlife agencies in New Jersey, Colorado, Washington, Montana and Alaska. He holds a bachelor's degree in Fisheries Biology from Colorado State University, and has been heavily involved in lake, pond and stream construction and restoration projects as a private consultant since 1983.