



Environmental  
Law Centre

**In Water We Trust?**

**Engaging Albertans in Restoration and Maintenance of  
Environmental Flows**



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## The Environmental Law Centre (Alberta) Society

The Environmental Law Centre (Alberta) Society is an Edmonton-based charitable organization established in 1982 to provide Albertans with an objective source of information about environmental and natural resources law and policy.

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## Executive summary

Water management decisions are a source of direct tension between environmental and economic values. We have historically relied on government to weigh the divergent interests when allocating water but many jurisdictions have increasingly deferred to water markets to direct water use. In Alberta, a regulated water market has evolved in conjunction with water allocation transfers under the *Water Act*.

Reliance on markets to guide water use decisions results in concerns about impacts on aquatic ecosystems (along with social and economic concerns). In the same instance, markets offer opportunities for individuals, non-government organizations and governments to invest in maintaining and restoring flows by reallocating water from historic consumptive use to instream uses.

Markets are not a panacea for reaching society's environmental objectives. A decision to engage the market must include an assessment of whether government is willing to maintain and restore environmental flows using both its regulatory power and the power and flexibility of the market. If it appears government is not fully committed to both approaches it is likely best to avoid water markets altogether. Where government commitment exists to maintain environmental flows it is important to ensure the markets are inclusive of those who wish to invest in long term water security for instream uses.

The Environmental Law Centre (ELC) recommends adoption of policies that create conditions favourable to sharing responsibility for environmental flows (see Figure 1). Sharing responsibility for environmental flows will be effective where 1) government decision making is science based and focused on maintaining environmental quality, and 2) maintaining flows is more inclusive of non-government actors.

The ELC recommends pursuing opportunities to expand shared management of flows in Alberta by:

1. Supporting increased inclusivity in environmental flow management through engagement an "environmental flow transfer policy" (EFTP) (as set out in Figure 4, at page 51) which allows water trusts or individuals to promote and facilitate legal protection for environmental flows;
2. Ensuring environmental information and water availability forecasting is sufficient to determine ecological effects of diversions;
3. Engaging a sliding scale assessment of aquatic impairment when making allocation, licence renewals and transfer decisions;
4. Including aquatic health assessments for temporary diversion licences;

5. Removing undefined “significant” harm tests in the “matters and factors” of approved water management plans and establishing empirical ecological benchmarks for decision making;
6. Providing timely reasons for allocation and transfer decisions outlining environmental flow impairments or benefits;
7. Creating a public registry with listed available water and pricing, tracking and reporting of completed transactions, and linkages to environmental information systems used to inform decisions;<sup>1</sup>
8. Enabling flexible and efficient divestment of water allocations under large senior licences;
9. Engaging mechanisms to create substantial private interests instream that trigger legal participatory rights (i.e. setting the stage for recognition of EF nominees as “directly affected” under the *Water Act*);
10. Adopting EF related policy into water management plans for clear Cabinet approval and adoption; and
11. Establishing financial support for environmental flow assessment and acquisition of senior licence allocations.

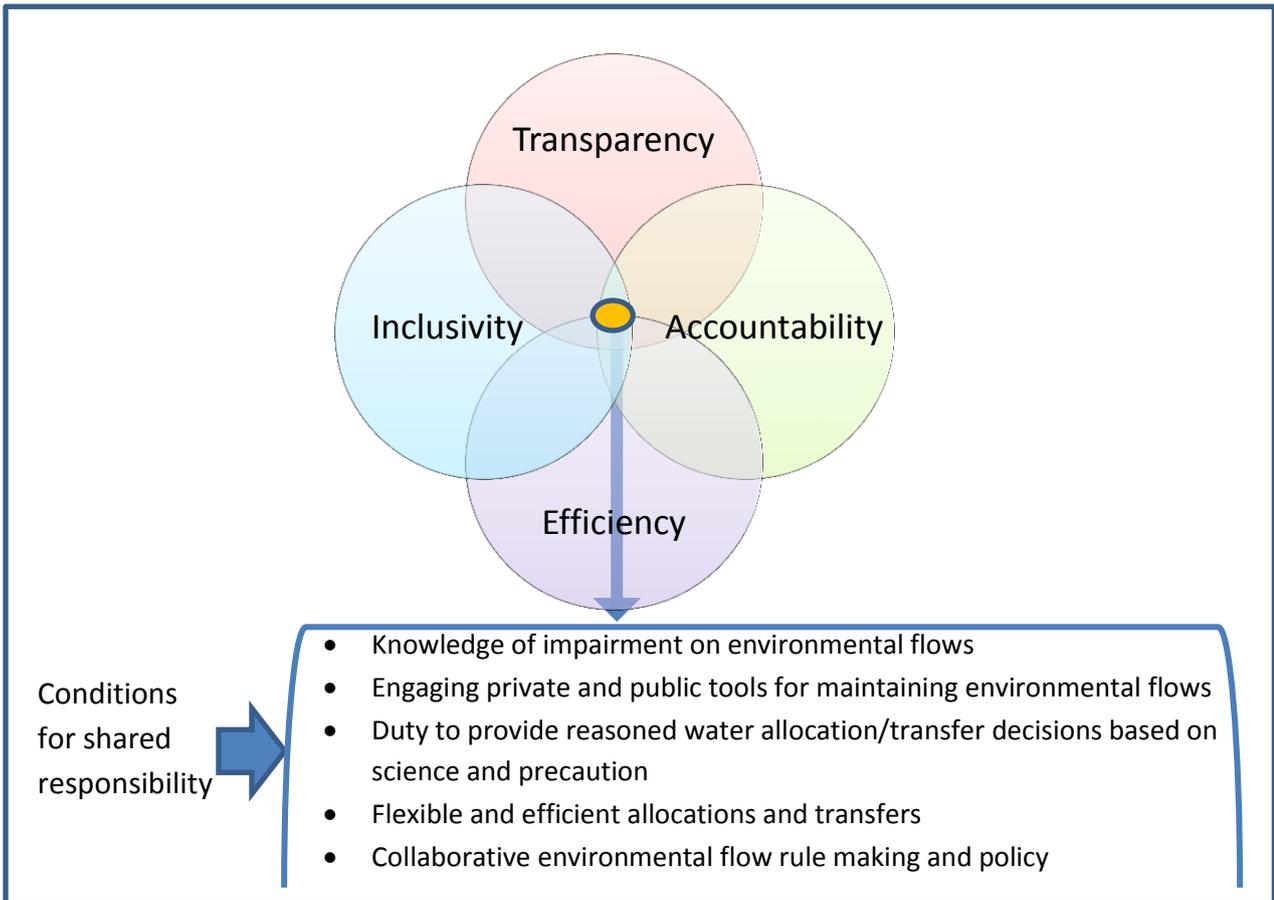
Increasing the inclusivity of water markets will result in increases in secured water licences (either held by non-profits or the government) for instream flows, allow for broader community engagement in monitoring and education (by direct engagement and by fostering capacity in non-government organizations like water trusts) and allow for shared development and implementation of flow policies by way of partnership with government.<sup>2</sup>

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<sup>1</sup> As recommended by in Alberta Water Council *Recommendation for Improving Alberta’s Water Allocation Transfer System* (Edmonton: Alberta Water Council, 2009), online: Alberta Water Council <[http://www.awchome.ca/Portals/0/pdfs/WATSUP\\_web\\_FINAL.pdf](http://www.awchome.ca/Portals/0/pdfs/WATSUP_web_FINAL.pdf)>, the Government of Minister’s Advisory Group *Recommendation for Improving Alberta’s Water Management and Allocation* (Edmonton: Alberta Environment and Sustainable Resource Development, 2009), online: ESRD <<http://esrd.alberta.ca/water/water-conversation/documents/8239.pdf>> and reviewed in Nigel Banks, “Policy Proposals for Reviewing Alberta’s Water (RE) Allocation System” (2010) 20 *JELP* 81.

<sup>2</sup> Water trusts can create opportunities for private action to facilitate instream flow protection through water allocation transfers (see *Water Act*, R.S.A. 2000, c. W-3 at Part 5, Division 2); create opportunities for environmental flow allocations in basins which are still open to new allocations; create opportunities for private monitoring, education and enforcement of environmental flows; provide a mechanism for environmental non-profits to attain standing in water management decisions under the *Water Act*; and aid and facilitate government leadership in environmental flow maintenance and restoration and assisting in EF related policy development. Water trusts are not a panacea for restoration of flows but a tool for engaging a broader non-government community in environmental flow management.

**Figure 1: Realizing shared responsibility for environmental flows**



## I. Introduction

Albertans rely on surface water for their quality of life. It supplies our drinking water, drives our industry, supplies our recreation, feeds our groundwater, and grows our crops. It maintains fisheries and is essential to Alberta's biodiversity.

What role do Albertans have in maintaining or restoring our rivers' flows under current law and policy?<sup>3</sup> If environmental protection is a shared responsibility how can citizens be engaged in managing flows when government manages water allocations?<sup>4</sup> Is it appropriate and worthwhile to engage the private sector to meet instream flow needs?

This report focuses on 1) how environmental flow policies can be more inclusive, and 2) how policy may mitigate environmental risks associated with day to day government decisions regarding water allocations, licence renewals and water allocation transfers.

The opportunity for increased inclusivity focuses on the potential role of non-government entities in seeing specific volumes of water allocated and legally protected "instream" under a *Water Act* licence.<sup>5</sup> The discussion around inclusivity is focused on "water trusts": non-profit organizations typically focused on maintaining or restoring water flows to water bodies. Water trusts can act as an effective conduit between interested citizens and offer the opportunity to formalize instream flow programs and participation in markets. The goal of this report is to present a functional system for the legal protection of environmental flows.

The report presents:

- i. The summary of the state of water flows in Alberta's major river basins;
- ii. A summary of the relevant law and policy for environmental flows in Alberta;
- iii. A review of select jurisdictions where water trusts contribute to management of environmental flows;
- iv. An assessment of whether using private mechanisms to protect a public resources is warranted; and
- v. A recommended policy path forward.

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<sup>3</sup> Albertans may also want contribute to efforts to maintain lake levels as well.

<sup>4</sup> See discussion around law and policy at Part III *infra*.

<sup>5</sup> *Water Act*, R.S.A. 2000, c. W-3.

## What is “environmental flow”?

Discussions around the amount of water needed to sustain the diversity and health of aquatic systems often refer to “instream flow needs” (IFN), “ecological base flows” (EBF), and “environmental flows” (EF). Policy and legislation in Alberta introduce other concepts, such as “water conservation objectives” (WCO) and “protected water”, which describe provincial approaches to managing aquatic environments (in whole or in part). In this report we focus on “environmental flows” or EF, which can be defined as the volume and/or rate of flow considered necessary to maintain environmental quality and biodiversity.

EF is chosen as a focal point as a science based environmental indicator and can be differentiated from existing policy and legislative phrases which may incorporate non-scientific and policy considerations (such as a WCO, discussed further *infra*). This is an important differentiation as a primary benefit of engaging private instream conservation is the ability to focus on scientific based objectives that may exceed specific regulatory and policy goals or requirements. Policy documents regarding IFN, EBF, WCOs and protected water remain relevant insofar as they guide the government’s decision-making process around water allocations and transfers.

It is also important to note that discussions of EF generally relates to lotic (or river) based systems, but there are strong arguments to be made that mechanisms to set aside water for environmental and recreational purposes could be used to support lentic (i.e. lake) systems as well.

## II. State of flows and diversions in Alberta

Surface waters provide significant economic, environmental and social services to the people of Alberta. As we divert this water we risk undermining the aquatic environment, the water’s pollution abatement services, and the social and recreational opportunities the water body offers. Surface water (and the groundwater that sustains it) is, in this way, essential to quality of life.

Surface water flows are highly variable through time resulting in increased complexity in environmental and water management. Concern around the adequacy of surface water flows to maintain aquatic environments may give rise to moratoria on water licences and closure of basins to further water allocations. The South Saskatchewan River Basin (SSRB) was closed to further surface withdrawals in 2006 (excluding the Red Deer River sub-basin) and is the testing ground for Alberta’s foray into a system of water allocation transfers

between water users; in essence a regulated water market.<sup>6</sup> Water allocation transfers are also possible in the Battle River basin.<sup>7</sup> Other basins may face increased risks to aquatic systems in low flow periods and in some tributaries if diversions are mismanaged.

A brief summary of the state of water quantity in Alberta’s major basins and whether water allocation transfers are enabled in the basin is presented in Table 1.

**Table 1: State of water quantity in the major river basins of Alberta**

Basin	State of water quantity	Water allocation transfers enabled
Athabasca River Basin	Diversions from the Athabasca River are cause for concern in low flow periods. <sup>8</sup>  The Athabasca Watershed Council <i>State of the Basin</i> report also indicated some potential issues arising from surface water diversions. <sup>9</sup>	<b>Transfers are not enabled</b> A diversion reduction framework has been adopted for the Lower Athabasca River. <sup>10</sup>
Battle River Basin	The Battle River watershed has a high incidence of agricultural land use and relatively low flow in comparison with other watersheds in Alberta. <sup>11</sup> Water quantity and quality pressures on the watershed are significant. <sup>12</sup>  The Battle River is over allocated. In an average year, the natural flow of the Battle River amounts to about 276,000 cubic decametres per year. In 2010, about 750,000 cubic	<b>Water allocation Transfers enabled</b> Approved Water Management Plan for the Battle River Basin - 2014.  The plan sets

<sup>6</sup> See Alberta Environment, *Approved Water Management Plan for the South Saskatchewan River Basin* (Edmonton, Alberta Environment, 2006), online: Alberta Environment and Sustainable Resource Development <[http://environment.alberta.ca/documents/SSrb\\_Plan\\_Phase2.pdf](http://environment.alberta.ca/documents/SSrb_Plan_Phase2.pdf)>.

<sup>7</sup> See Alberta Environment and Sustainable Resource Development, *Approved Water Management Plan for the Battle River Basin (Alberta)* (Edmonton: Alberta Environment and Sustainable Resource Development 2014), online: AESRD <<http://www.battleriverwatershed.ca/sites/default/files/battle%20river%20water%20management%20plan%20%283%29.pdf>> and Order in Council, O.C. 299/2014, July 23, 1014, online: Queen’s Printer <[http://www.qp.alberta.ca/documents/orders/orders\\_in\\_council/2014/714/2014\\_299.html](http://www.qp.alberta.ca/documents/orders/orders_in_council/2014/714/2014_299.html)>.

<sup>8</sup> Alberta Environment and Sustainable Resource Development & Fisheries and Oceans Canada: *Water Management Framework: Instream Flow Needs and Water Management System for the Lower Athabasca River* (February 2007), online: Alberta Environment and Sustainable Resource Development, <[http://environment.alberta.ca/documents/Athabasca\\_RWMF\\_Technical.pdf](http://environment.alberta.ca/documents/Athabasca_RWMF_Technical.pdf)> and Munk Centre for International Studies and Environmental Research and Studies Centre, *Oil Sands Development and Water Use in the Athabasca River-Watershed: Science and Market based Solutions* (Edmonton: University of Alberta, 2007), online: University of Alberta <<http://www.ualberta.ca/~ersc/water.pdf>>.

<sup>9</sup> Athabasca Watershed Council, *Athabasca State of the Watershed Report: Phase 2*, March 2012, online: Athabasca Watershed Council <[http://www.awc-wpac.ca/sites/default/files/Athabasca\\_State\\_of\\_the\\_Watershed\\_Phase\\_2\\_FINAL-April23-2012.pdf](http://www.awc-wpac.ca/sites/default/files/Athabasca_State_of_the_Watershed_Phase_2_FINAL-April23-2012.pdf)>.

<sup>10</sup> See Government of Alberta, Lower Athabasca Region Surface Water Quantity Management Framework for the Lower Athabasca River (2015), online: Alberta Environment and Sustainable Resource Development <<http://esrd.alberta.ca/focus/cumulative-effects/cumulative-effects-management/frameworks/documents/LARP-SurfaceWaterQuantityMgmt-Feb2015.pdf>>.

<sup>11</sup> See p.14 of Battle River Watershed Alliance, *Our Battle: State of the Battle River and Sounding Cree Watersheds Report 2011*, online: Battle River Watershed Alliance <[http://www.battleriverwatershed.ca/sites/default/files/Battle%20River%20Watershed%20Report.Web\\_.pdf](http://www.battleriverwatershed.ca/sites/default/files/Battle%20River%20Watershed%20Report.Web_.pdf)>.

<sup>12</sup> *Ibid.*

	<p>decametres of surface water were allocated in the Battle River watershed (AENV 2010).<sup>13</sup></p> <p>This over-allocation includes a single licence (691 737 dam<sup>3</sup> from the Forestburg Reservoir for ATCO Power) where the water diversion is used for coal-fired power generation.<sup>14</sup> The ATCO operation draws on a reservoir and typically has significant return flows.<sup>15</sup></p>	<p>water conservation objectives for the basin.<sup>16</sup> It also promotes voluntary flow restrictions and voluntary flow restoration measures in times of lower flow.<sup>17</sup></p>
<p>Beaver River Basin</p>	<p>The Beaver River watershed has its surface water sourced in the boreal plains of Alberta, unlike most other basins which have mountain headwaters. This results in a variable annual flow.<sup>18</sup></p> <p>A review in 2013 indicated 346 surface water licences and 4789 registrations allocating 58 158 000 m<sup>3</sup>. In addition, there are 458 groundwater licences and 1092 registrations allocating 17 931 000 m<sup>3</sup> in the watershed.<sup>19</sup></p> <p>Concerns around water flows and levels in the Beaver Basin include declining lake levels, which led to moratoriums for surface water withdrawals in some areas.<sup>20</sup> Water quantity issues and pressures for instream preservation are of concern with regards to spawning fish habitat.<sup>21</sup></p>	<p><b>Transfers are not enabled</b></p>

<sup>13</sup> *Ibid.* at 33.

<sup>14</sup> *Ibid.* See also the Partners for the Saskatchewan River Basin, *State of the Saskatchewan River Basin: Chapter Six*, online: Partners for the Saskatchewan River Basin <<http://www.saskriverbasin.ca/file/SRB%20CH06%20Battle%20River.pdf>> at page 84.

<sup>15</sup> *Ibid.* Alberta water consumptive use for coal fired generation has been reported as 0.1 Bm<sup>3</sup>/year is used contrasted with 1.59 licensed (1.49 returned). See *Water Conservation, Efficiency and Productivity Plan – Electric Power Generation*, August 2012, online: Alberta Water Council <[http://www.albertawatercouncil.ca/LinkClick.aspx?fileticket=TfjIrsLZ\\_nw%3d&tabid=115](http://www.albertawatercouncil.ca/LinkClick.aspx?fileticket=TfjIrsLZ_nw%3d&tabid=115)>.

<sup>16</sup> *Supra* note 7.

<sup>17</sup> *Ibid.* at 58.

<sup>18</sup> Beaver River Watershed Alliance, *State of the Beaver River Watershed: Summary Report, 2013*, online: Beaver River Watershed Alliance <[http://beaverriverwatershed.ca/wp-content/uploads/2014/04/Summary-Report\\_State-of-BRW-2013-Part-1.pdf](http://beaverriverwatershed.ca/wp-content/uploads/2014/04/Summary-Report_State-of-BRW-2013-Part-1.pdf)> at 6.

<sup>19</sup> *Ibid.* at 13.

<sup>20</sup> *Ibid.*

<sup>21</sup> See Alberta Environment, *Cold Lake –Beaver River Surface Water Quantity and Aquatic Resources, State of the Basin Report* (Edmonton: Alberta Environment 2006), online: Alberta Environment and Sustainable Resource Development <[http://esrd.alberta.ca/water/reports-data/documents/SW\\_Quantity\\_and\\_Aqua\\_2006.pdf](http://esrd.alberta.ca/water/reports-data/documents/SW_Quantity_and_Aqua_2006.pdf)>

Milk River Basin	The Milk River watershed is unique insofar as the majority of its flow is from a diversion from the St. Mary River in the United States. <sup>22</sup> Water supplies (on an annual basis) are highly variable and as a result licensed volumes have exceeded the flow required to be passed onto the United States. <sup>23</sup> This has resulted in moratoriums on water licences that have been in place for decades. <sup>24</sup> In low flow years the aquatic systems are under pressure and it is home of three species of fish that are listed as “threatened”. <sup>25</sup>	<b>Transfers are not enabled</b>
North Saskatchewan River Basin	<p>A 2005 study of water use in the basin found approximately 1.99 million dam<sup>3</sup> was allocated in the basin (with 98% being surface water licences).<sup>26</sup> The vast majority of allocations occurred from three sub-basins and it was found that most allocations are under used.<sup>27</sup> There is likely to be significant growth in diversion rates in the region due to ongoing economic growth and significant increase in water diversions for unconventional resource plays in the region.<sup>28</sup></p> <p>A preliminary assessment of instream flow needs in 2014 for the basin identified that regulation of flows may be impacting aquatic ecosystems (using the <i>Desktop Method</i>, described <i>infra</i>) however the significance of these effects required more study.<sup>29</sup></p>	<b>Transfers are not enabled</b>

<sup>22</sup> See Milk River Watershed Council, *Milk River State of the Watershed* (Milk River: Milk River Watershed Council, 2008), online: at Milk River Watershed Council <[http://www.mrwcc.ca/files/4913/9144/2756/MRW\\_SOW\\_2008.pdf](http://www.mrwcc.ca/files/4913/9144/2756/MRW_SOW_2008.pdf)> at 58.

<sup>23</sup> *Ibid.* at 60.

<sup>24</sup> *Ibid.* at 61.

<sup>25</sup> The Western Silvery minnow is also designated as threatened under the federal *Species At Risk Act*.

<sup>26</sup> See North Saskatchewan Watershed Alliance, *Current and Future Water Use in the North Saskatchewan River Basin* (Edmonton, North Saskatchewan Watershed Alliance, 2007), online: North Saskatchewan Watershed Alliance <<http://www.nswa.ab.ca/sites/default/files/documents/Current%20and%20Future%20Water%20Use%20in%20the%20North%20Saskatchewan%20River%20Basin.pdf>>.

<sup>27</sup> *Ibid.* at Figure 15-1 and pg. 15-4-15-5

<sup>28</sup> Specifically, the Duvernay formation of Alberta, underlying the North Saskatchewan and Athabasca basins, is likely to see shale gas and oil development, requiring significant water sources. See National Energy Board, *Tight Oil Developments in the Western Canada Sedimentary Basin – Energy Briefing Notes*, December 2011, online NEB <[http://www.neb-one.gc.ca/clf-nsi/rnrgynfntn/nrgyrprt/l/tghtdvlpmntwscb2011/tghtdvlpmntwscb2011-eng.html#s7\\_6](http://www.neb-one.gc.ca/clf-nsi/rnrgynfntn/nrgyrprt/l/tghtdvlpmntwscb2011/tghtdvlpmntwscb2011-eng.html#s7_6)> or <<http://www.neb-one.gc.ca/clf-nsi/rnrgynfntn/nrgyrprt/l/tghtdvlpmntwscb2011/tghtdvlpmntwscb2011-eng.pdf>>.

<sup>29</sup> North Saskatchewan Watershed Alliance *Preliminary Steps for the Assessment of Instream Flow Needs in the North Saskatchewan River Basin*, (Edmonton: NSWA, 2014), online: NSWA <<https://www.nswa.ab.ca/sites/default/files/documents/IFN%20Consolidated%20Report%20TEXT%20n%20%20APPEND%201.pdf>>.

Peace River Basin	A study by the Mighty Peace Watershed Alliance indicate that water quantity issues are not an immediate threat on the mainstem river but several areas of concern relate to reporting of consumption and data shortages for several upper tributaries. <sup>30</sup> “Allocations of surface water account for about 0.3% of the average annual flow of the Peace River at Peace Point....[a]vailable information suggests that 29,397 dam <sup>3</sup> of surface water was actually used in 2011”. <sup>31</sup> Reach or tributary specific withdrawals to facilitate unconventional resource plays may also result in impacts. <sup>32</sup>	<b>Transfers are not enabled</b>
South Saskatchewan River Basin	<p>The basin as a whole is likely to see increased growth with related pressures on surface and ground water supplies.<sup>33</sup> The 2009 <i>South Saskatchewan River Basin in Alberta Water Supply Study (Supply Study)</i> noted the following wide variability of flow and low flows, reductions in glacial contributions and increases in water use may impact instream health.<sup>34</sup></p> <p>It has also been observed that meeting instream needs is difficult for the Bow and Oldman rivers and that a significant number of main reaches of rivers in the SSRB have seen some impacts .<sup>35</sup></p>	<p><b>Water transfers are enabled</b></p> <p>Approved Water Management Plan -2006</p> <p>Water Conservation Objective is set for the basin.<sup>36</sup></p>

<sup>30</sup> See Mighty Peace Watershed Alliance, *The Peace Watershed Current and Future Water Use and Issues 2011*, online: Mighty Peace Watershed Alliance <<http://www.mightypeacewatershedalliance.org/reports/>> at 19 and 36. Specifically the Montney formation of shale gases (where frac fluid choice and timing of diversions from some upper tributaries should be investigated). See Government of Canada, A Primer for Understanding Canadian Shale Gas (Energy Briefing Note, November 2009)online: Government of Canada <[http://publications.gc.ca/collections/collection\\_2011/one-neb/NE4-2-6-2009-eng.pdf](http://publications.gc.ca/collections/collection_2011/one-neb/NE4-2-6-2009-eng.pdf)> and Government of Alberta, Alberta Oil and Gas Industry Quarterly Update, Winter 2013, online: Alberta Canada <[http://albertacanada.com/files/albertacanada/OilGas\\_QuarterlyUpdate\\_Winter2013.pdf](http://albertacanada.com/files/albertacanada/OilGas_QuarterlyUpdate_Winter2013.pdf)>

<sup>31</sup> *Ibid.* at 2.

<sup>32</sup> *Ibid.*

<sup>33</sup> See Alberta Environment, *South Saskatchewan River Basin Water Management Plan phase Two: Background Studies*, (Edmonton: Alberta Environment, 2003), online: <<http://www.environment.gov.ab.ca/info/library/7884.pdf>>. The report states “[m]anaging the SSRB to meet instream flow needs (IFNs) for the aquatic environment is not possible because of existing allocations. A 20 per cent reduction in water consumption provides a modest increase in instream flows but these are still substantially below the IFN values” at p.22. See also Prairie Adaptation Research Collaborative, *Climate Change and Water SSRB Final Technical Report*, 200, online: Prairie Adaptation Research Collaborative <[http://www.parc.ca/ssrb/SSRB\\_Final\\_Report.pdf](http://www.parc.ca/ssrb/SSRB_Final_Report.pdf)>

<sup>34</sup> The *Supply Study* also found that meeting future demand would require both non-structural and structural adjustments in water management, including increasing efficiency, management of storage and consideration of new storage (Calgary, AMEC Earth and Environmental, 2009), online Alberta Agriculture and Rural Development <[http://www1.agric.gov.ab.ca/\\$Department/deptdocs.nsf/all/irr13053/\\$FILE/ssrb\\_main\\_report.pdf](http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/irr13053/$FILE/ssrb_main_report.pdf)> . The report notes “[c]urrent actual surface water consumed by all sectors in the SSRB in Alberta is estimated to be about 1 981 000 dam<sup>3</sup>, which is approximately 40% of the total volume of water (4 987 700 dam<sup>3</sup>) allocated for use. Irrigation is the highest water-use sector in the SSRB, representing 84% of the total current actual water use.” at p. iv. See also Alberta Environment, *South Saskatchewan River Basin Water Management Plan Phase Two: background studies* (Edmonton, Alberta Environment 2003), online: <<http://environment.gov.ab.ca/info/library/7884.pdf>> . This study notes (at page 3) that meeting instream needs is difficult for the Bow and Oldman rivers, it is believed there is a declining trend in the aquatic environment and that a significant number of main reaches of rivers in the SSRB are “moderately impacted”, “heavily impacted” or “degraded”.

<sup>35</sup> *Ibid.* at vi and vii. See also Alberta Environment, *South Saskatchewan River Basin Water Management Plan Phase Two: background studies* (Edmonton, Alberta Environment 2003), online: <<http://environment.gov.ab.ca/info/library/7884.pdf>> at 3.

<sup>36</sup> *Ibid.* at p. 8. Where there are existing objectives on water bodies in the basin the WCO is 10% 10% above an existing objective at a point in time.

### III. State of environmental flow law and policy in Alberta

Opportunities for restoring EF in over-allocated basins (i.e. where legal rights or authorizations to divert water result in risks of degrading the aquatic environment) are constrained in jurisdictions (such as Alberta) that use a “prior allocation” (or “prior appropriation” in the western US) system to govern water management. In times of water shortage the prior allocation system secures access to water for those who obtained a licence earlier in time (i.e. a senior licence holder) relative to those who come later (i.e. a junior licence holder). Under the prior allocation system aquatic health is at increased risk in an over-allocated basin unless a senior licence was issued by the government to protect EF. The legal entrenchment of diversion rights by date of diversion make clawing back those rights politically unpalatable (to reduce allocations through legislation) or costly (to reduce allocations under the current system or to purchase allocations of water).

A detailed review of opportunities for meeting instream flow needs (IFN) under the *Water Act* and its predecessor *Water Resources Act* was conducted by Wenig, Kwasniak and Quinn in “Water Under the Bridge? The Role of Instream Flow Needs (IFNs) Determinations in Alberta’s River Management” and will not be revisited here.<sup>37</sup> Rather this report presents a summary assessment of EF tools with a particular view of how non-government organizations or individuals may engage in EF restoration.

#### The current law and policy framework for EF

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Section 2 of the *Water Act* recognizes:

the need to manage and conserve water resources to sustain our environment and to ensure a healthy environment and high quality of life in the present and the future;

...[and]

the *shared responsibility of all residents of Alberta* for the conservation and wise use of water and their role in providing advice with respect to water management planning and decision-making.

[emphasis added]

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<sup>37</sup> In *Water: Science and Politics*. Edited by H. Epp and D. Ealey. Proceedings of the Conference held by the Alberta Society of Professional Biologists on March 25-28, 2006, in Calgary, Alberta, Alberta Society of Professional Biologists, Edmonton, Alberta, online: Canadian Institute of Resources Law <<http://www.cirl.ca/files/cirl/ifn-determin.pdf>>. See also Nigel Bankes, “The Legal Framework for Acquiring Water Entitlements from Existing Users” (2006) 44 *Alta. L. Rev.* 323.

In furtherance of these legislative purposes the *Act* includes several drivers and tools to maintain and restore EF. Table 2 summarizes the *Water Act* tools and provides the ELC’s assessment of the relevance of each tool to EF. For a more detailed description of these legislative instruments see **Appendix A**.

Supporting these water laws, Alberta’s water policy, in the form of the *Water for Life Strategy* (in its various iterations) focuses, in part, on engaging partnerships and collaborating to provide water management advice to government (see **Appendix A** for a more detailed description of the relevant policies).<sup>38</sup> Notwithstanding this policy focus the opportunities and expectations for private entities; including licence holders, to contribute to legally protected instream gains is limited.<sup>39</sup>

**Table 2: A summary of *Water Act* drivers and tools for EF purposes**

Legislative Tool	Description	ELC assessment of EF relevance
Strategy for the Protection of the Aquatic Environment	Outlines existing instruments for protection of the aquatic environment.	Limited by a lack of strategic actions and direction toward EF gains.  Relies on existing administrative discretion to balance outcomes and result in “protection”.
Approved Water Management Plans	Planning document that (once approved by Cabinet) must be considered by the Director when making <i>Water Act</i> licence and transfer decision.  May include water conservation objectives (WCO).  May enable water allocation transfers.	Not binding but directional (i.e. “must be considered”).  Allows for water allocation transfers. The Crown may receive donations or purchase senior water allocations.  Sets out matters and factors that must be considered in decisions (e.g., “no significant adverse effect” test).  Fails to address historical senior allocations.
Water Conservation Objectives	WCO is set through water management planning process or by government.	May be used to guide discretion to limit diversions in certain instances (although this will be of limited value for senior

<sup>38</sup> See Government of Alberta, *Water for Life: Alberta’s strategy for sustainability policy* (Edmonton: Government of Alberta 2003), online: Alberta Environment and Sustainable Resource Development <<http://environment.gov.ab.ca/info/library/6190.pdf>>, *Water For Life: A Renewal* (Edmonton: Government of Alberta, 2008), online: Alberta Environment and Sustainable Resource Development <<http://environment.gov.ab.ca/info/library/8035.pdf>> and *Our Water, Our Future: A Plan for Action* (Edmonton: Government of Alberta, 2014), online: Alberta Environment and Sustainable Resource Development <<http://esrd.alberta.ca/water/water-conversation/documents/WaterFuture-PlanAction-Nov2014.pdf>>.

<sup>39</sup> The recently approved management plan for Battle River basin does promote voluntary flow restrictions and voluntary flow restoration measures in times of lower flow, *supra* note 7.

(WCO)	Crown licences may be issued for this purpose to maintain priority.	“deemed” licences under the Act).  Crown licences for WCO maintain priority of the date of issuance of the licence. Seniority in heavily allocated basins is only available via water allocation transfers.
Water allocation transfers and conservation holdbacks	Allows licences to be transferred away from a land parcel and for different purpose.  Regulatory approval required and may include up to 10% holdback of water to be returned to river/stream.  Prevents transfers when regulator is of the opinion that there may be impairment to other users or significant adverse effect on the environment.  Discretionary refusal is possible for cumulative effects or effects on a WCO	Transfers may increase intensity of use and/or allow for use of transfer of dozer/sleeper (i.e., previously unused or underused diversion) rights.  Transfers may be refused where there are adverse environmental effects.  Conservation holdbacks are unlikely to make significant EF gains.  Transfers of instream rights to non-government entities may not be allowed (pending judicial review). This limits the flexibility and equity in the water allocation market.  Discretion exists for having water allocation transfers to be placed in a WCO licence.
Crown Reservation	Allows reservation of water instream for specified uses.	Enables proactive reservation of water but no priority is gained (i.e., it is of minimal value to restore EF in over-allocated basins).
Participation rights	Allows those who might be “directly affected” to issue a statement of concern and appeal allocation decisions of the Director.	Limited standing to those with direct property rights that are likely to be impacted limits the ability to proactively participate in allocation decisions.  Environmental and recreational interests are typically excluded (regardless of potential to add value).  Process rights (not substantive rights) are granted to those deemed directly affected.
Amending licences	Allows the Director to amend volumes in certain instances to accommodate EF (with compensation payable)	Relies on compensation and is likely politically unpalatable. Grandparenting of “deemed” licences minimize opportunities.

		Only be applied where the environmental effect was not reasonably foreseeable at the time of the licence grant.
Renewals	Allows the Director to limit volumes upon renewal of licences issued under the <i>Water Act</i> where a WCO is not met.	Appears to be a politically unpalatable approach to EF gains and senior licence holders are not required to renew.
Halting licence applications	Allows the Director to stop accepting applications for licences for a prescribed time.	Time limited and fails to address fundamental issue of allocation to EF purposes.
Licence purposes under s.11 of the <i>Water (Ministerial) Regulation</i>	Licence purposes outlined in the regulation include: <ul style="list-style-type: none"> <li>• Management of fish;</li> <li>• Management of wildlife;</li> <li>• Implementing a water conservation objective; and</li> <li>• Habitat enhancement</li> </ul>	Under current government interpretation of the <i>Water Act</i> issuance of instream licences for these purposes to non-Crown entities is not feasible. (Judicial review of this interpretation is pending)

## Opportunities and limitations for EF under the *Water Act*

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The issuance of instream (WCO) licences under the *Act* provides the greatest level of certainty and transparency for EF. For closed basins this requires the transfer of a senior licence to achieve EF priority and certainty while in closed basins there is the opportunity to proactively issue licences to the Crown for this purpose. The Alberta Government has not, to date, been acquiring water allocations for EF purposes and has instead favoured discretionary “conservation holdbacks” when a water allocation transfer occurs.

Since the *Water Act* came into effect we have likely made only marginal legally enforceable EF gains. Some key barriers to significant gains include:

### a) Limitations on holding private instream rights

The Government of Alberta has interpreted the *Water Act* as limiting the issuance of instream licences (i.e., licences in support of a WCO) to the Crown.<sup>40</sup> This interpretation all

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<sup>40</sup> This opinion garnered the support of the Alberta Environmental Appeals Board in *Water Conservation Trust of Canada v. Director, Central Region, Operations Division, Albert Environment and Sustainable Resource Development* (8 March 2013),

but nullifies opportunities for non-government actors to acquire instream licences through private investments or donations.

The Water Conservation Trust of Canada applied for a water allocation transfer to hold an instream licence in 2010. The Director refused to grant the transfer indicating that “only the government can hold a licence that provides or maintains a rate of flow or water level requirement and only in support of a Water Conservation Objective”.<sup>41</sup> The Trust appealed that decision to the Alberta Environmental Appeals Board and has subsequently sought judicial review of the interpretation of the *Act* regarding instream licences (the Alberta Court of Queen’s Bench decision is pending).

The decisions and arguments presented by the Trust and the government will not be discussed in detail but it is important to note that diversions of water by private parties for maintaining wildlife appear to be permitted while instream maintenance of flows for wildlife appear to justify more scrutiny and Crown control; this notwithstanding the fact that water diversions out of stream are likely to have greater consequences on other users and the environment than any instream dedication.<sup>42</sup>

One of three outcomes is required for greater inclusivity in EF management to be realized; a supportive judicial interpretation of the *Act*, amending the *Act*, or crafting a proactive EF policy (as set out in Figure 4, with instream licences being held by the Crown).

## **b) Deemed licences limit government options**

The *Water Act* deems water diversion licences issued under previous statutes to be licences under the *Water Act* and the conditions of these licences prevail over the *Act* in case of an inconsistency.<sup>43</sup> The precise impact of this licence grandparenting provision on EF is difficult to evaluate as historically issued licences often contain conditions that would allow the government to demand a change to the timing or volume of diversions. The problem of assessing a given regiment of environmental protection with a diversity of licence conditions

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Appeal NO. 10-056-R (A.E.A.B.), online: Alberta Environmental Appeals Board <<http://www.eab.gov.ab.ca/dec/10-056-R.pdf>>.

<sup>41</sup> *Ibid.* at para 15.

<sup>42</sup> For an earlier article looking at this issue see Arlene Kwasniak “Quenching Instream Thirst: A Role for Water Trusts in the Prairie Provinces” (2006) 16(3) *JELP* 211. The Alberta Environmental Appeals Board decision and the interpretation presented by the Director as part of the appeal raises several issues regarding how the *Water Act* manages instream flows. The Director argues that instream licences can only be issued by the Crown yet the language of the *Act* appears to indicate that it is only a diversion that implements a WCO that is limited to the Government, (something neither party appeared to argue, unsurprisingly). s.51(2)(a) includes a “diversion of water” for the purpose of implementing a water conservation objective and as such the crux of the issue is whether any WCO type purpose is solely the realm of the Crown (and not whether there is a diversion or not). The Director also argued that a variety of “unintended consequences or abuse of process” could result if private entities were able to hold licence (at para 59, *ibid.*). This ignores that other licenced diversions and transfers have the same risk of unintended consequences and that the Director has the ultimate control over assessing and evaluating these consequences.

<sup>43</sup> *Water Act*, *supra* note 5 at s.18(2).

resulted in Wenig, Kwasniak and Quinn recommending that the province “develop a province-wide list of river-specific, flow requirements and indicate the extent to which any such conditions are tied to actual IFN determinations”.<sup>44</sup>

There is also very limited regulatory discretion to re-manage or repurpose this historically granted water for the purpose of EF. The water allocation transfer mechanism of the *Act* is the primary mechanism to augment these grandparented licences. Government must therefore purchase or seek donations of water allocations to make significant gains for instream purposes.

### **c) Licence renewal limitations**

The *Act* gives the Director the discretion to refuse to renew a licence if the “water conservation objective of a natural water body from which the diversion of water will be made is not being met” or where the renewal would cause a “significant adverse effect on the aquatic environment”.<sup>45</sup> The exercise of such discretion would push those water users to the water market (or to leave the basin).

Any attempt to use these provisions to prevent the renewal of a licence would, even if politically palatable, likely attract a court challenge around the interpretation of the renewal provision.<sup>46</sup> The government would need to carefully justify its decision to refuse a renewal for failure to meet a WCO or a significant adverse effect. The author is not aware of any instance where a renewal has not been granted for such a reason.

### **d) Minimal gains from transfer holdbacks**

While the *Water Act* allows for holdbacks of up to 10% of the transferred allocation (a “water conservation holdback”) the amount of flow this represents is unlikely to be sufficient to address shortfalls in EF in many instances. The *Water Supply Study* (2009) for the SSRB noted “the contribution of the transfer and associated environmental holdbacks to reduce basin-wide deficits identified in this study is likely to be small because of the large volume of transfers required to have a significant impact on the issues identified.”<sup>47</sup>

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<sup>44</sup> *Supra* note 37 at p. 26 and Appendix A.

<sup>45</sup> *Water Act*, *supra* note 5 at s.60 (3)(c) and (d)

<sup>46</sup> For example, how would the court respond to a decision where the WCO is not met only once per decade? How much deference is likely to be shown to decision makers regarding the determination of when a “WCO” is “not being met”?

<sup>47</sup> *Supra* note 34 at vi.

## e) Government's focus on growth and not EF gains

There are several discretionary tools for the promotion of EF in Alberta but these tools remain underutilized. While the closure of the SSRB is as a positive step for environmental protection, it can be said to be "too little, too late". The WCOs set and approved in the basin is not reflective of EF. Fisheries and Oceans Canada had reportedly indicated its concern that the WCO was unsupportable from an ecological perspective.<sup>48</sup>

While conditions in licences related to the WCOs often exist, there is a lack of transparency in how these conditions are or may be used. This makes discerning the effectiveness of these licence conditions extremely difficult.

The government has also garnered, but not heeded, advice regarding the need to take proactive EF measures including:

- Immediately setting interim WCOs in all basins;<sup>49</sup>
- Actively participating in the transfer market;<sup>50</sup>
- Allowing private parties to acquire licences for WCOs (or "protected water"); and<sup>51</sup>
- Identifying and prioritizing "protected water".<sup>52</sup>

The Government of Alberta could also devote money to purchase senior rights for EF but appears hesitant to do so. This lack of financial commitment is significant when compared

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<sup>48</sup> See Edmonton Journal, Karen Kleiss, August 31 2011, "Provincial rivers plan slammed. Little protection, potential harm to fisheries: Ottawa", online: Edmonton Journal <<http://www2.canada.com/edmontonjournal/news/story.html?id=ad4bba75-354f-4bf6-8561-16f780c6032b>>.

<sup>49</sup> See Alberta Water Council, *Recommendation for Improving Alberta's Water Allocation Transfer System* (Edmonton: Alberta Water Council, 2009), online: Alberta Water Council <[http://www.awchome.ca/Portals/0/pdfs/WATSUP\\_web\\_FINAL.pdf](http://www.awchome.ca/Portals/0/pdfs/WATSUP_web_FINAL.pdf)>.

<sup>50</sup> See Minister's Advisory Group, *Recommendation for Improving Alberta's Water Management and Allocation* (Edmonton: Alberta Environment and Sustainable Resource Development, 2009), online: ESRD <<http://esrd.alberta.ca/water/water-conversation/documents/8239.pdf>>.

<sup>51</sup> *Ibid.*

<sup>52</sup> *Ibid.* As of November of 2012, 70 of the transfers were accompanied by some level of holdback while 32 were not. See Government of Alberta, *Water Transfers Under the Water Act*, presentation by Randy Poon, January 17, 2013, online: Alberta Sand and Gravel Association <<http://www.asga.ab.ca/ckfinder/userfiles/files/2013%20Sand%20and%20Gravel%20Assoc-%20Water%20Transfers%20-%20Randy%20Poon.pdf>>. One could envisage that for every dollar invested in conservation infrastructure that there is a commitment to transfer an allotment (perhaps 50% -75% of the conserved water) to the Crown. This has been done in the State of Oregon. See Water Resources Department, *Allocation of Conserved Water*, online: Government of Oregon <[http://www.oregon.gov/OWRD/Pages/mgmt\\_conserved\\_water.aspx](http://www.oregon.gov/OWRD/Pages/mgmt_conserved_water.aspx)>. Granted such a program would require the licensee to volunteer for a licence amendment in most instances (unless legislative changes occurred to mandate this).

with other jurisdictions (see Australia for example, *infra*). A different path for government is required to facilitate EF gains.

**f) Barriers to private EF efforts beyond instream licences**

Private efforts to maintain or restore EF need not be limited to the holding of an instream licence however other barriers may limit their use. Table 3 canvasses alternative opportunities for private EF efforts that do not require an “instream” or WCO licence.

**Table 3: Alternative approaches to EF restoration and maintenance**

Approach	Description	Evaluation
Purchase of land with senior water entitlements	Fee simple land title could be acquired to obtain appurtenant senior licence allocation	<ul style="list-style-type: none"> <li>Resources and administrative cost increases in relation to land purchases</li> <li>Risk of licence cancellation with altered purposes or non-use (i.e. legal priority may be lost)</li> <li>Riparian and upland habitat of relevance would be protected.</li> <li>Senior licences may be appurtenant to a large land base (limiting the feasibility of the approach)</li> </ul>
Purchase or donation of conservation easements to limit physical access to water ways	Voluntary conservation easements (purchased or donated) would allow management of access to water ways	<ul style="list-style-type: none"> <li>May be difficult to manage access fully in priority reaches due to need for contiguous conservation easements on parcels.</li> <li>Many priority reaches may adjoin public land (requiring government agreement to restrict access)</li> <li>Cost of administration and monitoring may be excessive compared to purchasing licences</li> </ul>
Purchasing or seeking voluntary reductions from senior licence holders (by altering licence terms)	Private parties may seek to pay for voluntary reductions in licence volumes through licensee initiated amendments	<ul style="list-style-type: none"> <li>Legal priority for reduced volumes is not maintained.</li> <li>Risks are associated with government reallocation and preference for transfers of volumes.</li> </ul>
Entering into private agreements with licence holders to commit volumes to	Private parties could seek to have volumes remain instream through	<ul style="list-style-type: none"> <li>Licences may require changes in purpose to accommodate this new use.</li> <li>May be viewed as unlawful assignment of water</li> </ul>

instream uses	contractual agreements. <sup>53</sup>	volumes (although allowance for multiple purposes appears to be accepted by government).  <ul style="list-style-type: none"> <li>• Limitations exist for irrigation licences.<sup>54</sup></li> </ul>
Creating a “diversion” that maintains water instream	Apply for a technical diversion that maintains full flows instream (e.g. a floating aerator pump)	<ul style="list-style-type: none"> <li>• Government is likely to require significant justification of instream diversions to approve such a licence.</li> <li>• Added financial burden on EF maintenance by requiring maintenance and monitoring of mechanism for diversion.</li> </ul>

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<sup>53</sup> The contracting out of legislation in the water context was discussed by Arlene Kwasniak “Instream Flow and Athabasca Oil Sands Development: Contracting Out/Waiver of Legal Water Rights to Protect Instream Flow- A Legal Analysis” (2010) 48 *Alberta Law Review* 1.

<sup>54</sup> See *Irrigation Districts Act*, R.S.A. 2000, c. I-11.

## Conclusion on *Water Act* mechanisms to protect EF

There are relatively strong tools for Crown based protection of flows already in the *Water Act*, particularly for areas where allocations and other uses have not greatly impacted EF. Missing from these “open” basins is proactive issuance of senior WCO licences to ensure flows are legally protected.

Water management planning also offers opportunities to guide future decisions and enable transfers however only two plans are approved and planning bodies face a variety of financial and technical challenges.<sup>55</sup> The scale of water planning (and identifying related instream objectives) may also be ill-suited to assessing and setting reach or tributary-specific protections.<sup>56</sup>

In over-allocated basins the options are more limited and rely heavily on the Crown seeking transfer of senior water allocations. Were the Crown to issue a licence today for the purpose of meeting a WCO, the relatively low priority of the licence significantly impairs its relevance to EF maintenance and restoration during low flow periods.

Legally enforceable tools for non-government organization led EF efforts are lacking. The primary shared governance tool in the *Water Act* relates to participating in the creation of water management plans to guide future decision making, to enable the use of transfers and to set WCOs. Water management plans direct and advise the Director’s decisions on future allocations, renewals and approvals that have direct impacts on EF. Water management plans fail to provide Albertans with tools to restore EF.

### III. Restoring flows in other jurisdictions using water trusts

There are various jurisdictions around the globe that utilize market based programs to foster increased flexibility in moving water allocations between users including instream uses (i.e. for restoration and maintenance of flows). Water trust organizations can be active in these markets directly or indirectly and provide an avenue for non-government participation in EF efforts. Water trusts typically play one or more of the following roles:

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<sup>55</sup> This does not include the *Lower Athabasca Region: Surface Water Quantity Management Framework for the Lower Athabasca River* which arose in specific circumstances of oil sands water withdrawals (2015), online: Alberta Environment and Sustainable Resource Development <<http://esrd.alberta.ca/focus/cumulative-effects/cumulative-effects-management/management-frameworks/documents/LARP-SurfaceWaterQuantityMgmt-Feb2015.pdf>. While this approach could be transferred to other regions there does not appear to be a move in this direction, nor does the framework deal with some significant issues around senior licence priority and its implications for instream flows.

<sup>56</sup> For example, the approved plans that exist set WCOs at a basin or large sub-basin scale. Reach specific instream objectives, if they have been set, are not readily available to the public nor is it clear how they are maintained.

- direct acquisition of water rights,
- flow monitoring, assessment and prioritization,
- advocacy for EF under state run programs,
- direct facilitation of licence donations (permanent and temporary) to state programs, and
- education and awareness building.

A 2005 review of instream flow programs in the U.S. found that the approaches taken by states to preserving instream flows was highly diverse.<sup>57</sup> Different jurisdictions have different roles for non-government agencies (i.e. water trusts) making it important to understand the legislative and policy framework for flow restoration.

This report provides an overview of approaches pursued in Australia, Oregon, Washington and Colorado to restore flows.<sup>58</sup> It must be recognized that each jurisdiction has unique EF challenges and pressures.<sup>59</sup> No two jurisdictions are the same climatologically, ecologically or hydraulically so identifying an ideal comparative jurisdiction is difficult. The jurisdictions were chosen due to their significant history with water trusts and flow related programming.

## Australia

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Severe drought has forced Australia to address impacts environmental and economic impacts of past water allocation (and over-allocation) decisions. The result has been significant policy and legislative reform, reliance on markets to reallocate water, and significant allocation of public funds for restoring environmental water.

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<sup>57</sup> Sash Charney, *Decades Down the Road: An analysis of Instream Flow Programs in Colorado and the Western United States* (2005), online: Colorado Water Conservation Board <<http://cwcb.state.co.us/public-information/publications/documents/reportsstudies/isfcompstudyfinalrpt.pdf>> at 49.

<sup>58</sup> Other states such as California, Arizona, Montana and Idaho could have been included and undoubtedly additional insights would be garnered through a full review of states where water trusts are active.

<sup>59</sup> For instance the focus for the Deschutes basin in Oregon is maintaining flow for salmon species of value, whereas for the Murray-Darling basin in Australia the pressures are more related to basic environmental services, water quality and biodiversity. See for example objectives of environmental water holdings under s.86AA of the Australian *Water Act, 2007*, No.137, 2007, online: Australian Government <<http://www.comlaw.gov.au/Details/C2007A00137>>.

A focal point for EF in Australia was the commitment to restore flows by way of \$3.1 billion (AUS) allocation to “enter the water market and buy water entitlements” in the Murray-Darling Basin.<sup>60</sup> This subsequently rose to \$4.6 billion over 12 years.<sup>61</sup>

Key attributes of the Australian system includes:

- A distinction between water access entitlements and water allocation entitlements;
- Water allocation planning which, once adopted, provides the rules for allocation of water to existing and new users;<sup>62</sup> and
- The use of a reduced allocation sharing system in times of drought under “water allocation frameworks”.<sup>63</sup>

Allocations are satisfied in higher flow periods while in lower flow periods allocations are curtailed significantly. This was the case in July and August of 2008-2010 where irrigators received only 2 - 5% of their entitlement.<sup>64</sup> Transfers of water rights may be permanent or temporary in nature and maintain the priority of the original entitlement.<sup>65</sup>

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<sup>60</sup> Australian Government, National Water Commission, *National Summary of Trading Activity* (accessed June 10, 2014), online: Australian Government <<http://www.nwc.gov.au/publications/topic/water-industry/water-markets-11-12/3>>. See also Murray-Darling Basin Authority, *Roles and responsibilities for environmental watering*, online: Murray-Darling Basin Authority <[http://www.mdba.gov.au/what-we-do/environmental-water/ewp/ewp\\_ch4](http://www.mdba.gov.au/what-we-do/environmental-water/ewp/ewp_ch4)>. The Australian Competition and Consumer Commission oversee the water market. See Australian Competition and Consumer Commission “Role in Water”, online <<http://www.accc.gov.au/regulated-infrastructure/water/accc-role-in-water>>. For more information around the role and activities of the Commission see the *ACCC Water Monitoring Report 2012-2013* (Canberra: ACCC, April 2014), <<http://www.accc.gov.au/system/files/Water%20Monitoring%20Report%202012-13.pdf>>. See Australian Competition & Consumer Commission, “Water” online: Australian Competition & Consumer Commission <<https://www.accc.gov.au/regulated-infrastructure/water>>.

<sup>61</sup> *Ibid.* National Water Commission. In addition to the money committed to purchase, \$5.8 billion has been committed to conservation and efficiency improvements over 10 years, with benefits being split between irrigators and the environment. These infrastructure improvements seek to recover 2750 GL for the environment. See Australian Government (Commonwealth Environmental Water Office) *Framework for Determining Commonwealth Environmental Water Use (May 2013)*, online: Australian Government <<http://www.environment.gov.au/system/files/resources/7f9e9c2f-79cd-400e-a6ca-cdcf3cdb7012/files/cewh-framework.pdf>>

<sup>62</sup> Government of South Australia, *Water Allocation Plans*, online: Government of South Australia, <<http://www.environment.sa.gov.au/managing-natural-resources/water-use/water-planning/water-allocation-plans>>.

<sup>63</sup> See the Government of South Australia *Water Allocation Framework for South Australia*, online: Government of South Australia <<http://www.environment.sa.gov.au/managing-natural-resources/river-murray/water-allocation-framework>>. Department for Water, Government of South Australia, *User’s Guide to the 2010-11 River Murray Drought Water Allocation Decision Framework*, (Government of South Australia, 2010), online: Government of South Australia <<http://www.environment.sa.gov.au/files/344ef24e-7f46-4637-aeb5-a20300ec94d7/river-murray-water-allocation-framework-2010-11-users-guide-gen.pdf>>.

<sup>64</sup> Department for Environment, Water and Natural Resources, Government of South Australia, *South Australian River Murray Irrigation Allocations* (Government of South Australia), online: Government of South Australia <<http://www.environment.sa.gov.au/files/d7682f29-b899-43c2-b293-a20300fb288c/river-murray-history-water-allocations-gen.pdf>>. This approach is the region’s response to the relatively recent Murray-Darling Basin Plan. See the *Water Act 2007*, No.137, 2007, online: Australian Government <<http://www.comlaw.gov.au/Details/C2007A00137>>. See Government of South Australia, *Murray-Darling Basin Plan: South Australian Implementation Strategy 2013-2019*, online: Government of South Australia <<http://www.environment.sa.gov.au/files/24c8d4d5-af02-427b-a496-a1e900d8e917/murray-darling-basin-implementation-strategy.pdf>>.

Irrigators have the ability to transform irrigation rights into water access entitlements which can be sold in the water market.<sup>66</sup> This allows for greater flexibility in marketing individual allocations/entitlements. Table 4 sets out environmental water purchases made by the Australian Government from 2007-2012.

**Table 4: Environmental Water purchases in Australia, 2007-08 to 2011-12 (in gegalitres)<sup>67</sup>  
(Australian Government, National Water Commission)**

	2007-08	2008-09	2009-10	2010-11	2011-2012
Purchases secured during the year	22	426	415	189	274
Cumulative volume of secured purchases at the end of year	22	448	863	1052	1327
Registered during year	0	65	659	255	364
Cumulative volume registered at the end of year	0	65	724	979	1343

The initial creation of the water market in Australia had its fair share of controversy. One “perverse effect” of creating the market was:<sup>68</sup>

the activation of so-called ‘sleeper’ and ‘dozer’ licences—licences that conferred rights to take water, but which were not being used, or being used only intermittently. Once trading was permitted, holders of such licences realised that they had an asset that was of value to those who needed additional water. Initially, therefore, water for new developments was largely sourced from unused (sleeper) or underused (dozer) licences, rather than from existing uses, leading to an increase in aggregate water use.

Australia also recognized the need to ensure environmental flows existed outside the market. “Establishing the cap based on the sustainable balance between consumptive and environmental water uses is a key prerequisite for effective water markets, as it establishes the total quantum of the resource that is available for use or trading and increases the security of the underlying entitlements.”<sup>69</sup>

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<sup>65</sup> See *Water Act 2007*, Ibid. at Schedule 3. Also see Water Act Parts 2AA and 6.

<sup>66</sup> See *Water Market Rules 2009* – F2009L02424, online: Australian Government <<http://www.comlaw.gov.au/Details/f2009l02424>>.

<sup>67</sup> Australian Government, National Water Commission National summary of trading activity (accessed June 10, 2014) <<http://www.nwc.gov.au/publications/topic/water-industry/water-markets-11-12/3>>.

<sup>68</sup> National Water Commission, *Water Markets in Australia: a short history* (Canberra: Commonwealth of Australia, 2011) at 43., online: <[http://www.nwc.gov.au/\\_data/assets/pdf\\_file/0004/18958/Water-markets-in-Australia-a-short-history.pdf](http://www.nwc.gov.au/_data/assets/pdf_file/0004/18958/Water-markets-in-Australia-a-short-history.pdf)>. See also Michael Young, *Environmental Effectiveness and Economic Efficiency of Water Use in Agriculture: The Experience of and Lessons from the Australian Water Reform Programme*, (OECD, 2010), online: <[http://www.myoung.net.au/water/publications/OECD\\_Lessons\\_paper.pdf](http://www.myoung.net.au/water/publications/OECD_Lessons_paper.pdf)>.

<sup>69</sup> *Ibid.* at 52. This report also notes that “importantly, existing entitlements were accepted whether or not they had been utilized. It was left to the individual states to decide how they were going to stay within the cap” (at 53). The process of

## The role of water trusts in Australia

There are numerous water trusts in Australia but the government purchases the bulk of environmental water. Donations of environmental water may come through trust organizations. Water trusts act as facilitator, delivery agent, and community organizer focused on water related projects of environmental benefit and have been described as having “the ability to “do a lot with a little”” resulting in important environmental outcomes.<sup>70</sup> The water trust organizations often have significant government support and often act as the managers of environmental water allocations set by government.<sup>71</sup> Figure 2 provides a general review of donations compiled by the Water Trust Alliance.

Water trusts in Australia have played a more focused and facilitative role in seeking environmental gains. In reporting on the success of water trusts it has been observed:<sup>72</sup>

After a decade of operation, water trusts were found to have achieved significant environmental outcomes through delivery of water managed on behalf of government, or through facilitating delivery of water donations to government and community projects.

The significant financial commitment by the federal government to purchase environmental water in the market was undoubtedly a significant driver in how trusts have evolved in the country.

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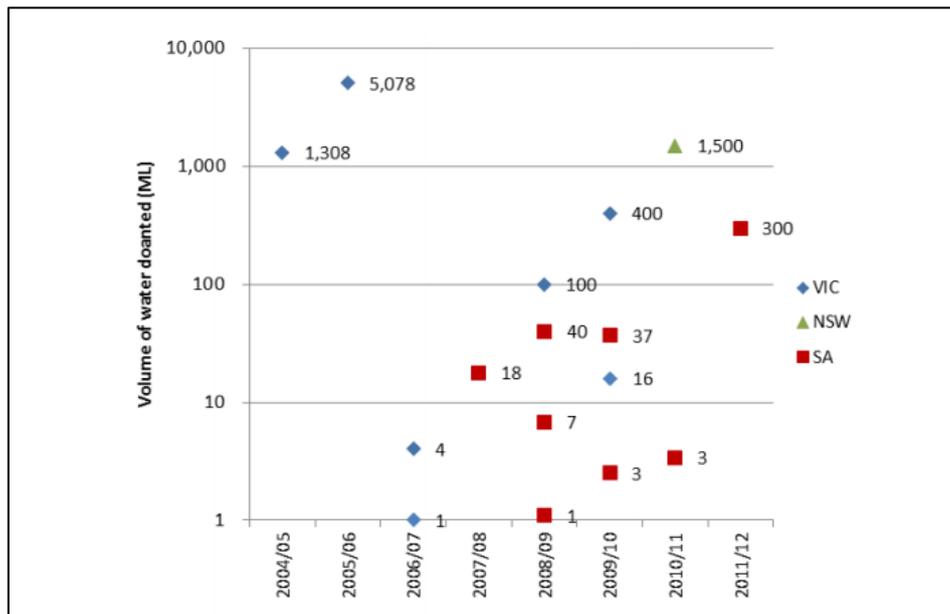
identifying a science based cap for EF itself may undermine the security of entitlements. The recent change in government has seen some refocusing of water purchases and resulted in the closure of the National Water Commission

<sup>70</sup> Mark A. Siebentritt, (Ed.) (2012). *Water trusts: What role can they play in the future of environmental water management in Australia?* (Proceedings of a workshop held on 1, December 2011), online: Murray Darling Wetlands Working Group <[http://www.murraydarlingwetlands.com.au/our-partners/images/The\\_role\\_of\\_water\\_trusts\\_in\\_the\\_future\\_of\\_environmental\\_water\\_management\\_in\\_Australia.pdf](http://www.murraydarlingwetlands.com.au/our-partners/images/The_role_of_water_trusts_in_the_future_of_environmental_water_management_in_Australia.pdf)> at 23.

<sup>71</sup> For the Murray-Darling Basin several water trusts have formed an alliance consisting of several water trusts. See Murray Darling Wetlands Working Group Ltd. “Water Trust Alliance” <<http://www.murraydarlingwetlands.com.au/our-partners/wta.asp>>.

<sup>72</sup> *Supra* note 70 at Executive Summary.

**Figure 2: Summary of donations made to environmental projects (may not represent all donations) (Water Trust Alliance, 2011)<sup>73</sup>**



## Oregon

Oregon passed the *Instream Water Right Act SB 140* in 1987.<sup>74</sup> By 1997 the government program had restored 100cfs permanently and by 2007, 1000 instream leases had been approved.<sup>75</sup>

Oregon defines Instream flows as “the minimum quantity of water necessary to support the public use requested by the agency [requesting the flows]”.<sup>76</sup> The water right for instream flows cannot be held by a private entity (NGO or otherwise) but is “held in trust by the Water Resources Department for the benefit of the people of the State of Oregon to maintain water in-stream for public use.”<sup>77</sup> Public uses include “recreation, conservation...

<sup>73</sup> *Ibid.* at p 23

<sup>74</sup> Oregon Department of Fish and Wildlife, *Background: Instream Water Rights* <<http://www.dfw.state.or.us/fish/water/docs/BKGWaterRights.pdf>>. See Water Resources Department of the State of Oregon Government “20<sup>th</sup> Anniversary of Instream Water Rights Act”, online: Government of Oregon <[http://www.oregon.gov/owrd/pages/mgmt\\_instream\\_milestones.aspx](http://www.oregon.gov/owrd/pages/mgmt_instream_milestones.aspx)>.

<sup>75</sup> See Oregon Government, Water Resources Department, “20<sup>th</sup> Anniversary of Instream Water Rights Act”, online: Water Resources Department, <[http://www.oregon.gov/owrd/pages/mgmt\\_instream\\_milestones.aspx](http://www.oregon.gov/owrd/pages/mgmt_instream_milestones.aspx)>.

<sup>76</sup> Oregon Water Laws, Volume I of II, (compiled under Title 45 of the 2011 edition of the Oregon Revised State) at §537.360, online: Government of Oregon, <[http://www.oregon.gov/owrd/law/docs/Water\\_Vol\\_1\\_2011.pdf](http://www.oregon.gov/owrd/law/docs/Water_Vol_1_2011.pdf)>.

<sup>77</sup> *Ibid.* at §537.360(3). See also Administrative Rule §690-077-0020 and §690-077-0053 which limits the possible applicants for flow allocations to three departments and the issuance of certificates for EF to the Department of Ecology. Oregon Administrative Rules, Chapter 690, Division 077, online: Government of Oregon, <[http://www.oregon.gov/owrd/law/docs/law/oar\\_690\\_077.pdf](http://www.oregon.gov/owrd/law/docs/law/oar_690_077.pdf)>.

pollution abatement and navigation”.<sup>78</sup> These “public uses” are declared to be beneficial uses and diversions are not required.<sup>79</sup>

An instream right cannot impact on senior rights that vested prior to the instream water right nor can they “diminish the public’s right in the ownership and control of the waters of this state or the public trust therein”.<sup>80</sup>

While the legislation provides that any person can purchase, lease or accept as a gift a water right (or portion thereof) “for conversion into an instream right”, the right itself is held by the Water Resources Department.<sup>81</sup> The Commission is mandated to issue a new certificate (with priority preserved) where there is a request to do so.<sup>82</sup> The legal status of the instream right is the same as any other right for which a certificate is issued.<sup>83</sup> The purchased, leased or gifted water is then converted to a water right.<sup>84</sup>

Temporary transfers of rights are also contemplated through the use of instream leases for up to five years.<sup>85</sup> Lessors don’t lose priority date and split uses (with instream uses) are allowed.<sup>86</sup> Leases are assessed for the potential to injure other users and may be conditioned or curtailed where an injury has been brought forth and/or acknowledged.<sup>87</sup>

While requests for instream rights are constrained to government agencies, the public at large (and other agencies) may initiate the request process.<sup>88</sup> Consideration is given to the overall habitat benefits of acquiring rights as well as value to species at risk.<sup>89</sup>

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<sup>78</sup> *Ibid.* at §537.360(5)

<sup>79</sup> *Ibid.* at §537.334

<sup>80</sup> *Ibid.* § Granting and administration of instream water rights are established through the rules of the Water Resources Commission. See §537.348 and §537.332

<sup>81</sup> See §537.348 and §537.332.

<sup>82</sup> *Ibid.*

<sup>83</sup> *Ibid.* at §537.350. Municipal uses for hydroelectric purposes and emergency water shortage provisions may take precedent (see §537.352 and §537.354).

<sup>84</sup> Administrative procedures for water transfers include rights for third party comment on proposed transfers and allows for filing of protests and hearings in instances where a transfer would result in injury. Specific information is required for these instream right transfers with a focus on ensuring there is an understanding of points of diversion, return flows, general hydrological impacts and any impairment on existing rights. The procedures are set out in Administrative Rule §690-380-4010, online: Oregon Secretary of State <[http://arcweb.sos.state.or.us/pages/rules/oars\\_600/oar\\_690/690\\_380.html](http://arcweb.sos.state.or.us/pages/rules/oars_600/oar_690/690_380.html)>.

See §690-077-0075. Also see the Water Resources Department’s *Application for Water Right Instream Transfer*, online: Government of Oregon <[http://www.oregon.gov/owrd/pubs/docs/forms/instream\\_transfer\\_app\\_7\\_1\\_13.pdf](http://www.oregon.gov/owrd/pubs/docs/forms/instream_transfer_app_7_1_13.pdf)>.

<sup>85</sup> See §690-077-0076 to 0079.

<sup>86</sup> *Supra* note 76 at §537.348(2) and (3) respectively. Split uses are contingent on uses not being concurrent and reporting requirements to the department.

<sup>87</sup> Oregon *Administrative Rules*, Chapter 690, online: Oregon Water Resources Department <[http://www.oregon.gov/owrd/law/docs/law/oar\\_690\\_077.pdf](http://www.oregon.gov/owrd/law/docs/law/oar_690_077.pdf) at §690-077-0077>.

<sup>88</sup> *Administrative Rule* §736-060-0030, online: Oregon Secretary of State <[http://arcweb.sos.state.or.us/pages/rules/oars\\_700/oar\\_736/736\\_060.html](http://arcweb.sos.state.or.us/pages/rules/oars_700/oar_736/736_060.html)>.

<sup>89</sup> See §635-400-0020. Values to be considered in prioritizing instream rights include fish reproduction, other aquatic organisms, other wildlife habitat and water quality. The transfer process rights to notice, the ability to protest and discretionary hearings (see §540.520).

Activities aimed at flow restoration have occurred with instream leases and permanent transfers contributing to “2400 cubic feet per second (cfs) of streamflow for fish and wildlife, recreation and pollution abatement”.<sup>90</sup> In addition, the “Department has completed 116 permanent and long-term transfer representing 350 cfs”.<sup>91</sup> Several water trusts have partnered with the department to secure instream leases.<sup>92</sup>

## Water trusts in Oregon

There are a number of water trusts in Oregon that seek to restore flows and habitat to the state’s aquatic systems. These include the Freshwater Trust (formed by the merger of the Oregon Water Trust and Oregon Trout), the Deschutes River Conservancy and the Klamath Basin Rangeland Trust.<sup>93</sup>

The Freshwater Trust uses leasing (both split season and full season) and point of diversion transfers to restore flows.<sup>94</sup> The Trust also has a strong focus on habitat restoration and water quality trading.<sup>95</sup>

The Deschutes River Conservancy has reported its flow restoration efforts between 2002 and 2012, noting that nearly 250 (cfs) has been protected (see Figure 3 below). Other trusts such as the Klamath Basin Rangeland Trust seek opportunities to protect riparian and wetland areas and reduce irrigation water commitments through altered production practices.<sup>96</sup> The Trust also pursues short term leases and permanent transfers for the benefit of instream flows.<sup>97</sup>

Janet Neuman published a review of ten years of operation of the Oregon Water Trust in 2004 (now the Freshwater Trust) and noted “the Water Trust’s initial optimism about how much it could accomplish, and how quickly, has been tempered by the reality of just how difficult it is to buy water for instream flows.”<sup>98</sup> That decade saw the Trust work “with more

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<sup>90</sup> See Oregon Water Resources Department, *2013 Instream Accomplishments* online: <[http://www.oregon.gov/owrd/docs/2013\\_Instream\\_Accomplishments.pdf](http://www.oregon.gov/owrd/docs/2013_Instream_Accomplishments.pdf)>.

<sup>91</sup> *Ibid.*

<sup>92</sup> *Ibid.*

<sup>93</sup> Oregon Water Trust and Oregon Trout merged into the Freshwater Trust in 2008 which administers the Healthy Waters Institute and StreamBank. The Trust had expenses of just over \$6 million in 2012 with \$4.9 million going to conservation programs. The Trust’s work on flows focuses on leasing of water rights and altering transfer points to further environmental gains. See Oregon Water Trust, online: <<http://owt.org/>>.

<sup>94</sup> See Fresh Water Trust, Flow Restoration, online: Freshwater Trust <<http://www.thefreshwatertrust.org/fixing-rivers/flow-restoration/>>. For more information on the leasing process and related forms see the Oregon Water Resources Department, online: Government of Oregon <[http://www.oregon.gov/owrd/pages/mgmt\\_leases.aspx](http://www.oregon.gov/owrd/pages/mgmt_leases.aspx)>.

<sup>95</sup> *Ibid.*

<sup>96</sup> See Klamath Basin Rangeland Trust, “Water” ,online: [http://www.kbrt.org/watershed\\_restoration/water\\_transactions.html](http://www.kbrt.org/watershed_restoration/water_transactions.html)

<sup>97</sup> *Ibid.*

<sup>98</sup> See Janet Neuman, “The Good, the Bad and the Ugly: The First Ten Years of the Oregon Water Trust” (2004) 83 *Nebraska Law Review* 432.

than 143 landowners across the state on 307 deals totaling more than 124 cubic feet per second".<sup>99</sup> She goes on to note the good and bad of using water trusts to restore flows:<sup>100</sup>

Positive impacts (the "good") of using market devices to change water uses include: (1) meeting new water demands voluntarily rather than through litigation or contentious regulation; (2) avoiding economic, environmental and social costs of new water development projects; (3) mitigating the environmental impacts of past water development and consumptive use of water; and (4) producing environmental, economic, and social benefits. Negative impacts (the "bad") may include: (1) potential disruption of existing water management regimes; (2) taking agricultural land out of production; and (3) bringing unwanted scrutiny to water use and management. As for the "ugly", there have been (1) noxious weeds and (2) toxic politics....On balance, I conclude that the "good" significantly outweighs the "bad" and the "ugly".

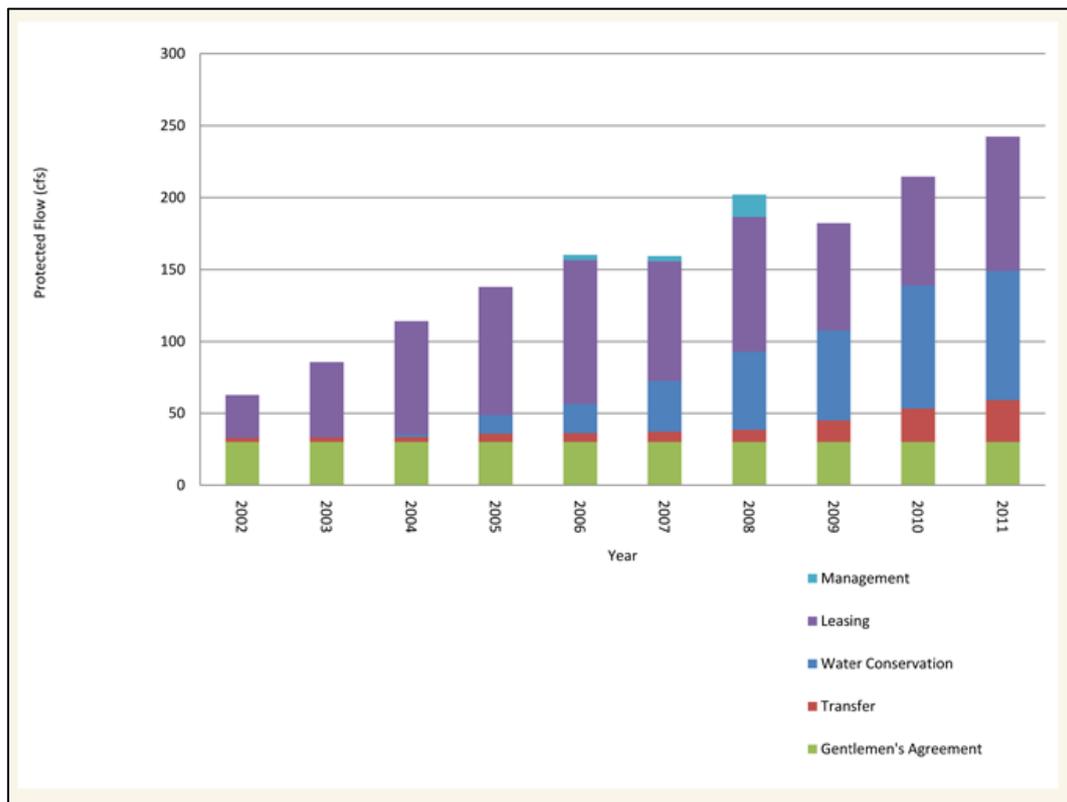
The fact remains that water transfers make a relative small portion of EF gains with leasing and water conservation constituting the majority of flows protected (see for example, Figure 3).

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<sup>99</sup> *Ibid.* at 441.

<sup>100</sup> *Ibid.* at 442-443.

**Figure 3: Flow Restoration Deschutes River Conservancy 2002-2012 (Deschutes River Conservancy)<sup>101</sup>**



## Washington

In Washington the state’s Department of Ecology holds instream rights, as the department alone may acquire rights to help restore water bodies (and set minimum instream flows) with the aim to have “a flow of water sufficient to support game fish and food populations” at all times.<sup>102</sup> The department may limit the issuance of permits that impact these fisheries although existing water rights remain unaffected.<sup>103</sup>

The need to restore flows for vulnerable salmon and trout populations resulted in the state launching “Water Acquisition Program” in 2003.<sup>104</sup> The water rights acquisitions work in

<sup>101</sup> Deschutes River Conservancy “Streamflow Restoration Accomplishments in the Deschutes Basin”, online: Deschutes River Conservancy <<http://www.deschutesriver.org/about-us/accomplishments/>> accessed January 2015.

<sup>102</sup> Revised Code of Washington (RCW) §90.03.247, online: Washington State Legislature <<http://apps.leg.wa.gov/rcw/default.aspx?cite=90.03>>. See also Department of Ecology, State of Washington, Water Resources Program Policy, Pol-1200 *Policy for the Evaluation of Changes or Transfers to Water Rights*, online: Department of Ecology <<http://www.ecy.wa.gov/programs/wr/rules/images/pdf/pol1200.pdf>>. Also see RCW §90.54.191 and RCW§77.57.020.

<sup>103</sup> *Ibid.*

<sup>104</sup> Department of Ecology, State of Washington “Water Resources”, online: Department of Ecology <<http://www.ecy.wa.gov/programs/wr/market/wacq.html>>.

conjunction with the Trust Water Rights Program which promotes the voluntary transfer of water rights (through providing incentives, such as federal income tax deductions<sup>105</sup>, and reducing disincentives) for current and future water needs in the state.<sup>106</sup> The program seeks to acquire permanent and temporary water for specified purposes, including instream flows, irrigation and municipal purposes.<sup>107</sup>

Donors of a water allocation may stipulate that the allocation be retained in trust for instream needs.<sup>108</sup> Donations of water rights for the purposes of instream flow follow a streamlined process (i.e. there is a presumption of non-impairment).<sup>109</sup>

The legislation also creates a water banking system as a measure to ameliorate future risks associated with over-allocation, noting:<sup>110</sup>

Water banking as a function of the trust water [rights] program ... can provide an effective means to facilitate the voluntary transfer of water rights established through conservation, purchase, lease, or donation, to preserve water rights and provide water for presently unmet and future needs; and to achieve a variety of water resource management objectives throughout the state, including drought response, improving stream flows on a voluntary basis, providing water mitigation, or reserving water supply for future uses.

In addition, water allocations find their way into the trust where there are state funded conservation efforts. This water need not be fully committed to trust purposes. The amount contributed is determined through guidelines.<sup>111</sup>

## Water trusts in Washington

There are a number of initiatives and organizations involved in fostering the restoration and preservation of EF in Washington, including the non-profit Washington Water Trust (WWT) and region based water banking and exchange projects. The WWT was started in 1998 and participates in a large range of flow restoration efforts through the Trust Water Rights

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<sup>105</sup> *Ibid.* §90.42 .080(7).

<sup>106</sup> *Supra* note 102 at §90.42 and, specifically, §90.42.010

<sup>107</sup> *Ibid.* at §90.42.040 (1).

<sup>108</sup> See §90.42.080 which notes “A water right acquired by the state that is expressly conditioned to limit its use to instream purposes shall be administered as a trust water right in compliance with that condition.”

<sup>109</sup> *Ibid.* at §90.42.040(8) and (9). The process around designating water rights to become trust water rights includes, notice, an assessment of impairment (of existing rights and the public interest) and third party rights to request a review of an instream transfer grant (to evaluate whether there is impairment. *Ibid.* at §90.42.040(4) &(5).

<sup>110</sup> *Ibid.* at §90.42.005(2)(d) and §90.42.100.

<sup>111</sup> Section 4 (4) of the Water Resources Program Guidance “Guidance for Processing and Management Trust Water Rights”, GUID-1220 (June 2011) states that “typically the net water saving created by the publicly-funded water conservation project is acquired into the Trust Water Rights Program.”

Program. The WWT also facilitates and promotes increased water efficiencies and flow mitigation efforts.<sup>112</sup> The WWT has taken an active role in stream restoration through direct programming and through administering mitigation banks and exchanges, for example, the Dungeness Water Exchange (launched in 2013), the Walla Walla Exchange (passing on management of the exchange in 2011), and Yakima basins.<sup>113</sup> The WWT has received support from the Columbia Basin Water Transaction Program and Washington State's Water Acquisition Program.<sup>114</sup> Once water has been acquired by the trust the water is donated to the State for instream needs.

The net benefit of water trust related activity in Washington in terms of flow recovery is not readily available in summary form, although a listing of past transactions under the Columbia Basin Water Transactions Program can be found online.<sup>115</sup>

By way of example, a 2004 review found that the WWT had undertaken 80 water right transactions, primarily leases, between 1993 and 2003, with 47 of those occurring in 2003.<sup>116</sup> The review of the acquisition program also found that the receptiveness to water acquisition varied by watershed, illustrating the importance of relationship building and the need for willing sellers/donors.<sup>117</sup> Other landowner concerns raised in the water transfer process included:<sup>118</sup>

- Loss of water rights (relinquishment);
- Failure to regain leased water rights;
- Loss of control over water and property;
- Loss of flexibility;
- Threat to agricultural community; and
- Loss of agricultural economy and infrastructure.

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<sup>112</sup> See Washington Water Trust, *What we do*, online: *Washington Water Trust*, <<http://www.washingtonwatertrust.org/what-we>>. (accessed May 14th, 2014)

<sup>113</sup> See Northwest Water Banking, *The Water Report Issue #102*, online: *Washington Water Trust* <[http://www.washingtonwatertrust.org/file\\_viewer.php?id=379](http://www.washingtonwatertrust.org/file_viewer.php?id=379)>.

<sup>114</sup> WWT Trust Water Program, online: *Washington Water Trust* <<http://www.washingtonwatertrust.org/faq-ds>>.

<sup>115</sup> See Columbia Basin Water Transactions Program, *Program Partners, Washington Water Trust*, online: <[http://www.cbwtp.org/jsp/cbwtp/partners/partner.jsp?partner\\_id=14](http://www.cbwtp.org/jsp/cbwtp/partners/partner.jsp?partner_id=14)>.

<sup>116</sup> Nicholas P. Lovrich et al, *Of Water and Trust: A Review of the Washington Water Acquisition Program* (Washington: Washington State University and University of Washington, 2004), online: Department of Ecology, State of Washington <[http://www.ecy.wa.gov/programs/wr/instream-flows/Images/pdfs/waterandtrust\\_report.pdf](http://www.ecy.wa.gov/programs/wr/instream-flows/Images/pdfs/waterandtrust_report.pdf)>.

<sup>117</sup> *Ibid.* at 9.

<sup>118</sup> *Ibid.*

## Colorado

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Instream rights in Colorado are held by the Colorado Water Conservation Board. The Board may appropriate water rights for the purpose of preserving the natural environment.<sup>119</sup> Appropriations are proposed for specific water bodies through Board prescribed processes.<sup>120</sup> These flows are then reviewed and may be contested through the Water Court.<sup>121</sup>

The Board may acquire water rights by way of “grant, purchase, donation, bequest, devise, lease, exchange, or other contractual agreement”.<sup>122</sup> The state also has an “instream flow incentive tax credit” that may motivate transfers (where budget prerequisites are met).<sup>123</sup> The Board evaluates the appropriateness of the acquisition and this process includes consideration of:<sup>124</sup>

- Hydrological factors regarding diversions and return flow and existing diversions that rely on return flows;
- “Any potential material injury to existing decreed water rights”;<sup>125</sup>
- Historic consumptive use and return flow related to the right;
- The environment that may be benefited by the flow and whether it will be benefited to a “reasonable degree”;
- Interstate issues;
- Use by downstream users;
- Costs of the transaction; and
- The administrability of the right.

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<sup>119</sup> Colorado Water Conservation Board, “Instream Flow Appropriations”, online: Colorado Department of Natural Resources, <<http://cwcb.state.co.us/environment/instream-flow-program/Pages/InstreamFlowAppropriations.aspx>>.

<sup>120</sup> Department of Natural Resources, Colorado Water Conservation Board, *Rules Concerning the Colorado Instream Flow and Natural Lake Level Program*, 2 CCR 408-2, online: online Colorado Department of Natural Resources <<http://cwcb.state.co.us/legal/Documents/Rules/Final%20Adopted%20ISF%20Rules%201-27-2009.pdf>>.

<sup>121</sup> *Ibid.* at s.6d.

<sup>122</sup> *Ibid.* at s.6a.

<sup>123</sup> The tax credit allows the CWCB to approve an instream flow incentive tax credit for the permanent transfer of water rights (acquired through a public review process). See C.R.S. §39-22-533. Some limitations apply. Tax credit may be up to half the value of the water right proposed for donation. This tax incentive only applies where revenue forecasts meet prescribed amounts see s.4.24 of the State of Colorado, *Colorado Tax Profile and Expenditure Report 2012*, online: State of Colorado <<https://www.colorado.gov/pacific/sites/default/files/2012.pdf>>.

<sup>124</sup> *Supra* note 120 at s.6e.

<sup>125</sup> *Ibid.*

A public review process is used when acquiring rights (which exclude temporary loans or leases).<sup>126</sup> This includes notice of the proposed acquisition (with location, water right case number and other relevant information regarding the nature and intent of the acquisition) and the possibility of a hearing.<sup>127</sup>

## Water trusts in Colorado

Instream rights can only be held by the Board; however, private water rights holders can transfer rights to the Board through the instream appropriations and acquisition process. Water trusts can raise funds and facilitate transfers and leases.<sup>128</sup> For instance, water rights have been acquired by the Nature Conservancy and the Colorado Water Trust and transmitted to the Board as an instream right.<sup>129</sup> Water trusts have contributed to EF restoration through both transfers and leases.<sup>130</sup> Completed donations (including water trusts) of permanent rights account for 405.307 cfs and 5,200 acre feet while long term leases and contracts have resulted in 73.5 cfs and 4154.21 acre feet in water being put to EF purposes under the Colorado Instream Flow Program.<sup>131</sup>

## Multi-jurisdictional programs for EF restoration

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State specific programs for EF may be supplemented through regional or basin based funding and restoration program. The Columbia Basin Water Transactions Program is an example of a program that funds and provides technical support to “non-profit water trusts, state water agencies and tribes”.<sup>132</sup> Annual reports from the program report that there was cumulatively 2,959,327 acre-feet (and 819 cubic feet per second of stream flows) protected

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<sup>126</sup> *Ibid.* at s.6m.

<sup>127</sup> *Ibid.*

<sup>128</sup> See Colorado Water Trust, “Our Work”, online: Colorado Land Trust <<http://www.coloradowatertrust.org/our-work/how-we-work/>>.

<sup>129</sup> For example the Nature Conservancy entered into a “specific performance, contingent contract for the purchase of” a water right with the right being changed from irrigation to instream use as by decree of the Water Court in 1978. See Colorado Water Conservation Board, online: <<http://cwcbweblink.state.co.us/WebLink/DocView.aspx?id=62217&page=1&&dbid=0>>.

<sup>130</sup> See Colorado Water Conservation Board, “Completed Transactions”, online: <http://cwcb.state.co.us/environment/instream-flow-program/Pages/CompletedTransactions.aspx> Colorado Department of Natural Resources, “Temporary Loans and Leases of Water Rights for Instream Flows” online: Colorado Water Conservation Board.<http://cwcb.state.co.us/environment/instream-flow-program/Pages/TemporaryLoansWaterRightsInstreamFlows.aspx>

<sup>131</sup> *Ibid.*

<sup>132</sup> Columbia Basin Water Transactions Program, online: <[cbwtp.org](http://cbwtp.org)>.

from 2003-2013.<sup>133</sup> From 2002-2012 \$35 million was spent on transactions “which includes over 50% cost-share from partners”.<sup>134</sup>

A program evaluation in 2007 identified the benefits and challenges of EF acquisitions.<sup>135</sup> The evaluation commended the program for its success and ability to engage landowners while recommending some changes including:<sup>136</sup>

- A focus on habitat metrics and other potential ecologically limiting factors;
- The need to maintain support for both permanent and temporary transactions;
- Recognition of the significant transaction costs in forming relationships with landowners (which cannot easily be minimized); and
- Combining water and land conservation efforts to best meet ecological outcomes.

## The effectiveness of water trusts

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Water trusts, as potential buyers and sellers in water markets, have been the subject of limited evaluation in terms of their ecological or environmental success. For some jurisdictions, such as Australia, the role of water trusts has largely been overshadowed by significant government purchases of environmental water. For jurisdictions in the US there is a sense that water trusts can play an important role in bringing reach-specific benefits. Regardless, the ecological return on investment for private instream purchases is difficult to assess for a multitude of reasons including valuation of water, assessment and valuation of ecological benefits, understanding of hydrological function, and understanding the specific flow impacts in light of highly variable and complex diversions and return flows.

David Katz has observed that due to the nature of water as a public good along with significant barriers to participating in the EF water market (due to high transaction costs) there is a need for government to take the lead role in acquiring water for rivers and

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<sup>133</sup> See the Columbia Basin Water Transactions Program, *2013 Annual Report*, online: Columbia Basin Water Transactions Program <[http://cbwtp.org/jsp/cbwtp/library/documents/NLB\\_CBWTP\\_Annual13\\_R8.pdf](http://cbwtp.org/jsp/cbwtp/library/documents/NLB_CBWTP_Annual13_R8.pdf)>.

<sup>134</sup> See the Columbia Basin Water Transactions Program, *2012 Annual Report*, online: Columbia Basin Water Transactions Program <[http://cbwtp.org/jsp/cbwtp/library/documents/NLB\\_CBWTP\\_Annual12\\_R6.pdf](http://cbwtp.org/jsp/cbwtp/library/documents/NLB_CBWTP_Annual12_R6.pdf)>.

<sup>135</sup> See Hardner & Gullison, *Independent External Evaluation for the Columbia Basin Water Transactions Program (2003-2006)* (Hardner & Gullison, 2007) online: National Fish and Wildlife Federation, <[http://www.nfwf.org/cbwtp/Documents/CBWTP\\_Eval\\_Report\\_10-7\\_FINAL.pdf](http://www.nfwf.org/cbwtp/Documents/CBWTP_Eval_Report_10-7_FINAL.pdf)>.

<sup>136</sup> *Ibid.* at pp.40-44.

streams.<sup>137</sup> He notes that the funding of many water trusts relies heavily on government resources.<sup>138</sup>

Katz has also observed that water trusts, while not a central player in environmental flow purchases, still play an important role, including:<sup>139</sup>

- Finding opportunities in areas where government programs are not active (i.e. EF precision implementation and scoping);
- Being more flexible and efficient in responding to market needs; and
- Facilitating water trades where there is hesitation to deal directly with governments.

Water trusts provide additional capacity, flexibility or agility in market approaches and a level of independence to restoring water quantity in a way that assists government agencies or fills gaps in government programs.<sup>140</sup> This partnership approach between government and trusts brings value in several areas. Mary Ann King has made the following observation regarding government-trust partnerships:<sup>141</sup>

The complementarity is clear in three manifestations of water trust-government partnerships: (1) rule formation and policy interpretation, (2) water right acquisition, and (3) monitoring and enforcement.

Dustin Garrick has argued that institutional innovation is needed to ensure a level of success for markets to facilitate gains in instream flows. Specifically he observes that water trusts and basin organizations can be the catalyst to affect environmental flows:<sup>142</sup>

For water markets to deliver environmental flows in sufficient quantities at the right times and places, institution innovations proved necessary to:

1. Plan and finance environmental water acquisitions at multiple sites integrated at the basin scale.

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<sup>137</sup> See David Katz "Water Markets and Environmental Flows in Theory and in Practice" (ExpoZaraGoza 2008).

<sup>138</sup> *Ibid.*

<sup>139</sup> David Katz "Cash Flows: Market for Environmental Flow Allocations" in *Water Trading and Global Water Scarcity* (Josefina Maestu ed.) (New York, RFF Press 2013) at 244.

<sup>140</sup> See Mary Ann King, "Getting our Feet Wet: An introduction to Water Trusts, (2004) 28 *Harvard Environmental Law Review* 495.

<sup>141</sup> *Ibid.* at 517.

<sup>142</sup> Dustin Garrick, "Water markets and institutional innovations to govern environmental flows in the Western U.S." GWF Discussion Paper 1101 (July 2011) Canberra, Australia, online: global water forum <<http://www.globalwaterforum.org/wp-content/uploads/2012/04/Water-markets-and-institutional-innovations-to-govern-environmental-flows-in-the-Western-U.S.-GWF-1101.pdf>>

2. Develop and coordinate administrative capacity at the state and field levels to implement environmental water transactions.
3. Proactively address the concerns and incentives of existing water users and other stakeholders through adaptive governance, careful monitoring and evaluation processes.

Evaluating and monitoring success of water trusts is no easy task. Reallocation of water volumes to EF are but one aspect of the equation when one considers other habitat requirements such as riparian impacts on water temperature, water quality of runoff and other anthropogenic impacts on habitat (in and out of stream).<sup>143</sup>

### **Notable differences between Alberta and other jurisdictions**

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All jurisdictions have unique legal and policy realities (and histories) that often reflect physical, climatic, economic and cultural realities. This is important to consider when importing policy approaches used in different jurisdictions.

Australia, for its part, allows for non-compensatory protection of environmental flows through a system of separating water allocations from water entitlements. In low flow periods licensee may receive only a portion of their entitlement. This share-based approach for easing the pain across licensees and allowing for maintenance of base flows is not currently feasible under Alberta's prior allocation laws. While some measure of base flow management is possible in Alberta (with related impairment of junior licence holders) no formal approach to determining and manage toward a science based protected flow has been created or implemented.

Australia has also enabled the selling of water volumes by individual irrigators from larger irrigation entitlements. This "transformation" process in Australia allows irrigators to pursue water sales (while paying certain exit fees) which greatly adds to the flexibility and scope of the water market.<sup>144</sup>

U.S. comparisons to Alberta (and much of western Canada) must first recognize a difference between the U.S. prior appropriation system and Alberta's prior allocation system. While these systems are similar in intent and application the "prior appropriation" approach

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<sup>143</sup> See for example the *Monitoring Report – 2008 Scott River Water Trust* online: Scott Water Trust <[http://www.scottwatertrust.org/documents/WT\\_MonitoringReport\\_2008.pdf](http://www.scottwatertrust.org/documents/WT_MonitoringReport_2008.pdf)> and *Monitoring Report – 2012 Scott River Water Trust* online: Scott Water Trust 2012 <<http://www.scottwatertrust.org/documents/SRWT-Monitoring-Report-2012-Final.pdf>>

<sup>144</sup> See *Water Market Rules 2009*, *supra* note 66.

evolved with an evaluation of the water being “beneficially” used and often leads to recognized property related rights (particularly in the western U.S. where water trusts are quite active).<sup>145</sup>

In contrast, Canadian legislatures have broad powers to legislate authorizations schemes for future use that can be applied retroactively. Whether compensation should be paid for reductions in diversion amounts is also clearly within the powers of the legislators. It is the author’s view that the “takings” law in the US, including that related to water rights, is sufficiently different from Canadian law, that legislative remedies (i.e., reform of the prior allocation system) for over-allocation in Canada still merit close consideration. The major barrier to amending laws to reduce allocations in favour of environmental purposes is more political than financial in nature.<sup>146</sup>

The U.S. also has federal statutory and financial drivers for EF restoration flowing from the *Endangered Species Act*.<sup>147</sup> Canada’s *Species at Risk Act* has not resulted in a similar funding regime. Public investments in environmental water acquisitions in the U.S. are in the tens of millions of dollars.<sup>148</sup>

Finally, Alberta (and Canada) does not recognize the U.S. concept of “public trust” in water management. The public trust doctrine provides an additional touch point for public participation in water management decisions, allowing individuals and groups in the U.S. to hold government to account by pursuing additional procedural and substantive rights

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<sup>145</sup> See for instance *Casitas Municipal Water District v. United States*, 708 F.3d 1340 (Fed. Cir. 2013). See Robin Kundis Craig “Does the Endangered Species Act Preempt State Water Law? (2014) *Kansas Law Review* (62: 851) online: *Kansas Law Review*

<[http://www.law.ku.edu/sites/law.drupal.ku.edu/files/docs/law\\_review/v62/1%20KLR%20Site%20Craig\\_Final%20Press.pdf](http://www.law.ku.edu/sites/law.drupal.ku.edu/files/docs/law_review/v62/1%20KLR%20Site%20Craig_Final%20Press.pdf)>. While some specific species in Canada have critical habitat identified under the legislation there have been minimal impacts on existing diversions and a lack of financial commitment to acquire and protect base flows and habitat. See for example Fisheries and Oceans Canada, *Recovery Strategy for the Nooksack Dace (Rhinichthys cataractae) in Canada* (Vancouver: Fisheries and Oceans Canada, 2008), online: SARA Registry <[http://www.registrelep-sararegistry.gc.ca/virtual\\_sara/files/plans/rs\\_nooksack\\_dace\\_0608\\_e.pdf](http://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_nooksack_dace_0608_e.pdf)>

<sup>146</sup> Water rights in Canada are more tenuous when compared to those in the western United States. So long as some use of the land is maintained (by virtue of the ability to divert for household use) restrictions on water diversions could be put in place without compensation with the proper statutory language. In Canada, a *de facto* or implied expropriation of land or related property right typically requires removal of “all reasonable uses” of the property. In this way, there is limited recognition of “regulatory takings” in Canada when compared to the U.S.. See for example *Canadian Pacific Railway Co. v. Vancouver (City)*, [2006] 1 S.C.R. 227, 2006 SCC 5 <<http://scc-csc.lexum.com/scc-csc/scc-csc/en/item/16/index.do>>. Also see *Mariner Real Estate Ltd. v. Nova Scotia (Attorney General)*, 1999 CanLII 7241 (NS CA), <<http://canlii.ca/t/1f0z9>> Nevertheless Canadian courts may still seek redress for harm to economic interests resulting from claw backs of water diversions.

<sup>147</sup> This includes federal financial commitments to relevant basins as well as legal leavers to force restoration efforts. See Craig, *supra* note 145. See also U.S. Department of the Interior, Bureau of Reclamation “Reclamation: managing Water in the West”, online: U.S. Department of the Interior.

<<http://www.usbr.gov/newsroom/presskit/factsheet/factsheetdetail.cfm?recordid=4>>. The federal Department of the Interior has issued orders to restore flows with subsequent (failed) legal challenges. See *Kandra v. U.S.*, 145 F. Supp. 2d 1192 (2001) and The United States Department of Justice “Klamath Project”, online: United States Department of Justice <<http://www.justice.gov/enrd/4709.htm>>.

<sup>148</sup> See Reed D. Benson, “Public Funding Programs for Environmental Water Acquisitions: Origins, Purposes, and Revenue Sources” (2011) *Environmental Law* 42:1.

through the courts.<sup>149</sup> This, in effect, provides another legal tool for oversight of administrative decisions regarding water. Granted, courts and administrative agencies in the U.S. have not necessarily been moved by the public trust doctrine in a direction of substantive environmental protection as was hoped.<sup>150</sup> In the absence of a robust and proactively applied public trust doctrine, the public may have few options if the government of the day has neither the interest nor any drivers to take proactive steps to protect the environment.

## Conclusions regarding the role of water trust

Water trusts have played an important role in restoring flows in some areas. Success has relied on significant government support in terms of finances and policy. Government regulatory programs for restoration and maintenance typically operate concurrently with water trust restoration efforts in an attempt to ensure base flows are protected.

Any comparative evaluation against a purely regulatory approach to EF protection is not possible as in all instances there is both regulatory and water trust activity at play. The ability to evaluate some EF regulatory utopia is also difficult as water trusts are typically located where historic over-allocation of water rights or buyback of flows have created the pressures that necessitate some type of compensatory response.

The question then becomes what is the most pragmatic approach to EF gains in a given instance. Is engagement of private organizations is a useful mechanism to protect the public interest in environmental maintenance and restoration of flows or does it reflect an unnecessary commodification of resources essential to aquatic health.

## IV. The water management debate: water as a public and private resource

A central narrative around water is that it is too different to manage like other natural resources. Its physical characteristics and its fundamental importance to all life on the planet justify this conclusion and leads to turbulent water management discussions. The

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<sup>149</sup> The public trust doctrine has its zenith in the Mono Lake case, whereby the California courts found a duty, fiduciary in nature, to bring not only due process but substantive consideration of the public interest in environmental protection. This proactive approach has not necessarily been picked up in other states nor carried by the California judiciary but it is an interesting consideration when discussing concepts of administrative accountability in water management decisions for Canada. See *National Audubon Society v. Superior Court of Alpine Cnty. (Mono Lake Case)*, 658 P.2d 709 (Cal. 1983). Also see Dave Owen, "The Mono Lake Case, the Public Trust Doctrine and the Administrative State" (2012) 45 *University of California, Davis Law Review* 1099.

<sup>150</sup> *Ibid.*

use of markets to trade and allocate water is most contentious, where the creation of private rights or interests in the resource conflicts with water's public nature.

This section of the report looks briefly at the treatment of water under our laws (which continue to evolve) to illustrate how we currently manage water for a multitude of public and private outcomes.

## A faltering public interest mandate in water management?

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Advocates of public resource management see resource access and distribution as a mechanism to serve all public goods, whether they are social, economic or environmental (while hopefully avoiding the tragedy of the commons). The basis of the government's responsibility to protect water resources (both quantity and quality) is compelling.

Aspects of our laws clearly treat water as a common pool resource.<sup>151</sup> English common law recognized water as central to specific resource rights like navigation and management of fisheries and through the obligations of riparian owners to consider other users.<sup>152</sup> Many of these rights were imported into Canada and have since been augmented by statute.<sup>153</sup>

Recent amendments to the *Fisheries Act*, the *Navigation Protection Act* (formerly the *Navigable Waters Protection Act*), and passing the *Canadian Environmental Assessment Act, 2012* (repealing the old Act) reflect a retreat or narrowing of federal jurisdiction to manage and protect public resources and the environment.<sup>154</sup> Noteworthy among the amendments are the removal of prohibitions on impairing many navigable water ways, decreasing fish habitat protections and limiting the scope and application of federal environmental assessment triggers. In the federal sphere, the government's approach appears to increasingly favour commercialization and privatization of resources rather than championing broader public rights.

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<sup>151</sup> A common-pool resource can be described as a resource that is available to multiple individuals in common where the use or extraction of the resource by one individual is likely to impact on others. See Elinor Ostrom, *Governing the Commons*, (Cambridge: Cambridge University Press, 1990).

<sup>152</sup> Riparian rights have been described as the right of a landowner "to have the water flow down to his land as it has been accustomed to flow, substantially undiminished in quantity and quality, subject to the rights other riparian owners to use the water, and to the public rights of navigation and floating." To undermine the rights of downstream or other users risked civil remedies being sought in court. See G. La Forest, *Water Law in Canada: The Atlantic Provinces* (Ottawa: Information Canada 1973) at page 206.

<sup>153</sup> As noted by Justice La Forest in *Friends of the Oldman River Society v. Canada (Minister of Transport)*, "the rule is that if waters are navigable in fact, whether or not the waters are tidal or non-tidal, the public right of navigation exists." *Friends of the Oldman River Society v. Canada (Minister of Transport)*, 1992 CanLII 110 (SCC), [1992] 1 SCR 3, <<http://canlii.ca/t/1bqn8>> retrieved on 2012-09-05. La Forest goes on to note that the passage of the *Navigable Waters Protection Act* permits interference with the public right of navigation, thereby making a public nuisance lawful. Fisheries have also been treated as a public or "common property resource" resource that "belong to all the people of Canada". 2002 SCC 17 (CanLII), [2002] 1 SCR 569, <<http://canlii.ca/t/51vl>> retrieved on 2012-09-04

<sup>154</sup> R.S.C. 1985, c. F-14, R.S.C. 1985, c. N-22, S.C. 2012, c. 19, s.52. respectively

Provincially, the Alberta *Water Act* maintains the notion of water as a public resource by vesting in the Crown “the property in and the right to the diversion and use of all the water” in the province.<sup>155</sup> The *Water Act* also reflects the public nature of the resource by recognizing the need to manage water to ensure a “healthy environment and high quality of life in the present and the future” and a “shared responsibility” over the resource.<sup>156</sup>

These public aspects of the Act are few when compared with how the legislation protects and recognizes private rights. The *Water Act* focuses on creating certainty around the volume of water a licence holder has a right to divert and use. The Act maintains the priority system of allocation, minimizes options for managing senior licence diversions and mandates compensation for the suspension or cancellation of licences for environmental reasons.<sup>157</sup> Government policy allows senior licence holders to maintain their power by amending the purposes of their licences rather than requiring the transfer of a licenced allocations to accommodate new users.<sup>158</sup> Finally, the government’s and Alberta Environmental Appeal Board’s interpretation of the Act protects private interests and rejects more general environmental and recreational interests through a narrow determination of who is “directly affected” by government decisions, thereby limiting participation of those with genuine environmental protection concerns.<sup>159</sup>

The federal government retreat and the rigid provincial prior allocation system has resulted in a range of reforms being proposed to better reflect the public role in resource management. This includes the need to bring forth a clear articulation of water management as a “common pool resource” to be managed as a public trust and the sharing of water, in which annual water supply is forecast and shares are then allocated, has also been proposed.<sup>160</sup> A water sharing approach, among users and with the environment, would appear to be best placed to meet both public and private objectives and would ameliorate against the need to obtain senior licences for EF purposes.

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<sup>155</sup> *Supra* note 5 at s. 3(2). Crown ownership of water in Alberta began with the passage of the *Northwest Irrigation Act* by the Government of Canada in 1894, prior to Alberta becoming a province. The *North-West Irrigation Act, 1898* (61 Vict. ch. 35), at s.4

<sup>156</sup> *Ibid.* at s.2.

<sup>157</sup> *Water Act*, at s.54(2) and s.55(2).

<sup>158</sup> This has more recently resulted in the practice of those with large allocations altering the purpose of their water licence to essentially become private brokers of water. See for example *Hohloch v. Director, Southern Region, Environmental Management, Alberta Environment and Sustainable Resource Development, re: Eastern Irrigation District* (18 October 2012), Appeal No. 10-043-R (A.E.A.B.).

<sup>159</sup> The *Water Act*, limits public participation in the government’s water allocation to those who are “directly affected” by the decision. This is typically narrowly applied by the government and the Alberta Environmental Appeals Board to mean those with an economic or property interest that may be impacted by the decision. In effect, the “directly affected” test for participating in these decisions relates to the protection of private rights rather than public rights.

<sup>160</sup> Parkland Institute, *Alternative Water Futures in Alberta*, (Edmonton: Parkland Institute 2011), Oliver M Brandes and Randy Christensen “The Public Trust and the Modern BC *Water Act*” Legal Issues Brief 2010-1 POLIS Water Sustainability Project, and Water Matters and Ecojustice, *Share the Water: Building a Secure Water Future for Alberta* (2009), online: Water Matters <<http://www.water-matters.org/docs/share-the-water.pdf>>.

These laudable changes to our water management system are hindered by an expectation among licence holders that their past diversion rights will remain unchanged (and the politics that go along with that expectation). Legislators have therefore turned to markets to foster flexibility in a system that is, on its face, quite rigid. Whether a system which relies on markets and water transfers can meet both private and public environmental goals remains a key concern.

Society relies on the government to implement the *Act* in a way that champions water for both public and private goals for our water (and to define what are “public” and “private” goods). When the government of the day (either provincial or federal) abrogates or eschews the maintenance and protection of public goods it may fall to private actors to help meet environmental outcomes.

Further, there is no affirmative legal duty (in substance or process) on government to protect public resources and public related resource rights. Nor does the attribution of value to a public resource (by virtue of a permit or authorization) undermine the government’s discretion to manage it in the public interest.<sup>161</sup>

## The ebb and flow of water markets

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Water markets have developed in various jurisdictions across the globe, sometimes driven by judicial precedent and sometimes evolving to address inflexibility in historic water allocation. Water markets are typically a response to physical, ecological and political realities resulting from water scarcity. This does not detract from the level of contention in a market approach. A central concern is whether public interest outcomes can be protected while allowing for the market to operate.

Two polarized “thought sets” are especially problematic. One the one hand is the “water is too different to sell” argument, which rejects water trading on the grounds that is socially objectionable and doomed to fail before it even begins. On the other hand is the “water is no different from other commodities” perspective, which steadfastly promotes water trading as the best means to improve economic well-being. This pro-market viewpoint maintains that water trading is the natural solution. Although both sides have defensible origins, debate about water trading continues precisely because it neither fails miserably nor works perfectly. Moreover, fervent

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<sup>161</sup> See *Saulnier v. Royal Bank of Canada*, [2008] 3 SCR 166, 2008 SCC 58 (CanLII), <<http://canlii.ca/t/218cz>> retrieved on 2015-04-08.

application of either of these perspectives tends to be harmful in policy design. Juxtaposing them, however, can help delimit the range of debate and pinpoint issues that need to be confronted.<sup>162</sup>

A review of markets in the Western U.S. illustrates the scope and nature of water trading and its relevance:<sup>163</sup>

In Arizona, California, Colorado, Nevada, and Texas, trades of committed water annually range between 5% and 15% of total state freshwater diversions with over \$4.3 billion (2008 \$) spent or committed by urban buyers between 1987 and 2008.

In Alberta, policy advocates have divergent views of the role for water markets (as reflected in its water allocation transfer system in the South Saskatchewan River Basin (and more recent the Battle River Basin). Some have advocated for more efficient and timely water trading opportunities (a Minister's Advisory Group and the Alberta Water Council, discussed *infra*) whereas others see a need for a more robust system of environmental and social protections prior to engaging markets (see the "Our Water Is Not For Sale" campaign).<sup>164</sup> In almost every case, the failure of markets to consider environmental outcomes is reflected in recommendations to have some water protected outside of the market (sometimes referred to as "protected water", "WCO water" or "environmental water").

## Opportunities markets provide

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Markets provide a mechanism through which interested investors may compensate resource users to divest their interests in furtherance of environmental outcomes. The investor could be the Crown, non-profit organizations, corporations or private individuals.

Market mechanism may assist in maintaining or restoring EF by:

- Enabling private action in support of valued public goods (environmental, recreational, aesthetic, and spiritual);

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<sup>162</sup> Ronald C. Griffin, Dannele E. Peck and Josefina Maestu "Myths, principles and issue in water trading" in *Water Trading and Global Water Scarcity* (Josefina Maestu ed.) (New York: RFF press, 2013) at 2.

<sup>163</sup> Quentin Grafton, *et al.* "A Comparative Assessment of Water Markets: Insights from the Murray-Darling Basin of Australia and the Western US" (2012) 14 *Water Policy* 2: 175.

<sup>164</sup> Our Water Is Not for Sale, online: <<http://ourwaterisnotforsale.com/>>. One must also acknowledge the question of why private funds should be spent on historic over-allocation by the government. Should not the government remedy such a "mistake" in whatever form they are able? By paying for something privately are we giving our past over allocation and use of water a "pass"? A frank assessment may conclude that we adopt markets to restore river flows as it is the most politically palatable approach.

- Facilitating legal protection for EF by obtaining senior water allocations;
- Creating alternatives to government led initiatives (i.e. sidestepping political barriers to water licence claw backs); and
- Creating an environmental alternative for licence holders who do not wish to sell their land or forfeit their licence.

### Barriers and threats of the market path

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Markets can have unintended social and environmental consequences. Further, inefficiencies in markets undermine economic objectives. The barriers and threats in engaging a water market include:

- i. Third party impacts and transaction costs, including:
  - Impacts on the environment;
  - Impacts on rural economies;
  - Impacts on treaty rights.
- ii. Lack of certainty in water rights;
- iii. Sufficient knowledge on which to base value; and
- iv. The fettering of government discretion to manage for social and environmental outcomes.

The consequence of these market problems is that public resource related rights (environmental, economic and social) may be degraded through operation of markets (for a more detailed discussion see Appendix B). Rural economies and ways of life may be impacted and environments may be degraded.<sup>165</sup>

In choosing to use market mechanisms, law and policy must evolve to mitigate the potential harm from an imperfect market. Australia, for example, has recognized the issue of environmental externalities and transaction costs directly in its *Water Act* (although protection of environmental and third party rights remains difficult in practice).<sup>166</sup>

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<sup>165</sup> See Appendix B for a more detailed review.

<sup>166</sup> *Water Act, 2007*, No.137, 2007, online: Australian Government <<http://www.comlaw.gov.au/Details/C2007A00137>> at Schedule 2, s.5 and Schedule 3, s.3.

Some additional reasons to be cautious of using water markets to foster maintenance and restoration of EF in Alberta include:<sup>167</sup>

- Limitations on how senior irrigation licence holders may divest portions of their licenced allocations;<sup>168</sup>
- The inability under current laws to lease or easily transfer water rights on a temporary basis (i.e. transaction costs may make temporary transfers < 3 years unlikely). These temporary transactions constitute a significant portion of EF related trades in some jurisdictions;<sup>169</sup>
- Financial and legal drivers for EF progress based on species of concern or species at risk has yet to be realized (as seen in some US states);<sup>170</sup>
- A lack of government programs, policy and financial commitment to EF acquisitions;
- A lack of tax incentives and clarity around treatment of donations of water allocations and whether they would constitute a gift ; and
- A lack of policy mechanisms to allow for NGO (and individual Albertans) to participate in EF protection, either by direct facilitated of market transactions resulting in legal flow protection or through direct acquisition of instream licences.

As earlier noted, Alberta does have statutory requirements to ensure that transfers do not impair other users or cause in significant adverse effects on the environment.<sup>171</sup> There is also discretion to refuse transfers for more general concerns around cumulative environmental or hydrological effects resulting from the transfer.<sup>172</sup>

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<sup>167</sup> See for example some early analysis of the transfer market conducted in relation to the *Water Supply Study*, *supra* note 11 at pp. 144- 147.

<sup>168</sup> See s.11 of the *Irrigation Districts Act*, R.S.A., 2000, c. I-11.

<sup>169</sup> See Kristiana Hansen, Richard Howitt and Jeffrey Williams, "Water trades in the western United States: Risk, speculation and property rights" in *Water Trading and Global Water Scarcity* (Josefina Maestu ed.) (New York, RFF Press 2013). Temporary or short term water acquisitions form the bulk of water transactions in the U.S. as senior rights holders are hesitant to transfer permanent rights.

<sup>170</sup> The federal *Species at Risk Act*, S.C. 2002, c. 29 could potentially become a driver of flow restoration where habitat protection provisions are applied. Excessive water withdrawals has been identified as destructive of critical habitat for Nooksack Dace in British Columbia though broad programs of enforcement and funding to ward against withdrawals has yet be put in place (see Fisheries and Oceans Canada, *Recovery Strategy for the Nooksack Dace (Rhinichthys cataractae) in Canada* (Revised, March 2008), online: [http://www.registrelep-sararegistry.gc.ca/virtual\\_sara/files/plans/rs\\_nooksack\\_dace\\_0608\\_e.pdf](http://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_nooksack_dace_0608_e.pdf) at 23.

<sup>171</sup> *Water Act*, *supra* note 5 at s.82(3).

<sup>172</sup> *Ibid.* at s 82(5).

With these concerns about Alberta's water market in mind the ELC concludes that, when accompanied by a strong EF policy, private approaches to managing for EF may assist in maintaining and restoring EF. Water trusts may act to mitigate both market and environmental risks, where properly supported by government.

This approach extracts a part of the environmental protection role from government, with the view that our democratic systems and the governments they elect are ill equipped to be responsive to site specific environmental needs.

### **Alberta vs. the rest of Canada: does water trading abrogate public EF management?**

Is engagement of the market in water allocations a slippery slope of deferring public interest decisions to the whim of market forces? Alberta has led the way in Canada in terms of using regulated water market to allow transfers of water allocations. Should others follow?

Where market transactions fail to adequately address environmental or social costs society must rely on regulatory mechanisms and government decisions to protect these "external" values. Engaging the market to protect the environment (either through public or private investments) is politically expedient and therefore more palatable for governments.<sup>173</sup>

Even where senior water allocations are purchased for maintaining environmental quality caution is warranted as EF licences will be likely be the first to be targeted in a time of significant water shortages (regardless of priority). In those jurisdictions that have engaged water markets we see that the environment is consistently the underdog, as it must compete against a history of consumptive water allocations and economic drivers.

In many Canadian jurisdictions we have an opportunity to experiment with an open and fair market in most instances, as supply constraints are localized. In effect, we have a chance to dip our toes rather than jumping from a cliff into the mixed waters of private and public environmental management.

This tentative foray into water markets must be guided by an assessment of whether the government is a champion of maintaining and restoring EF. If it appears government is not committed to both these approaches it is likely best to avoid water markets altogether.

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<sup>173</sup> Reliance on conservation easements for the preservation of ecologically valuable land rather than on regulated land management is one example of deferring conservation outcomes to private choice, land trusts and markets.

British Columbia, for example, recently passed the *Water Sustainability Act* (not yet in force) which allows for regulations that reduce diversions and provides a variety of EF related tools, including the ability to revisit historically granted licences.<sup>174</sup> Will the power to reduce diversions be used? Time will tell.

## VII. A policy framework for environmental flows

An effective policy framework for EF can include both private and public mechanisms to maintain and restore flows. This section explores how EF policy should evolve to become more inclusive of environmental interests and how regulatory decisions that impact flows might become more accountable, transparent and efficient.

### Mitigating risks

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The ELC recommends broad policy amendment to ensure water allocation and EF policy safeguards against risks of relying on markets. Oliver Brandes and Linda Nowlan identified several safeguards in using water markets, including:<sup>175</sup>

- Measures of transparency, monitoring and oversight to ensure protection of public goods;
- Determining and protecting “minimum water levels or instream flows for ecosystem health”;
- Mechanisms and process to discern harm; and
- Clear and enforceable rights with efficient enforcement mechanisms.

Garrick *et al.* identified similar market factors that should be present to ensure EF, including:<sup>176</sup>

- Demand for environmental water through the allocation of public funds or the creation of incentive mechanisms that catalyse private investment;

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<sup>174</sup> See *Water Sustainability Act*, S.B.C. 2014, c. 15, at ss. 23 & s.79.

<sup>175</sup> Oliver Brandes and Linda Nowlan “Wading into Uncertain Waters: Using markets to transfer water rights in Canada-possibilities and pitfalls” (2009) 19(3) *JELP* 267 at 1. See also D., Garrick, M.A. Siebentritt, B. Aylward, C.J. Bauer, A. Purkey “Water markets and freshwater ecosystem services: policy reform and implementation the Columbia and Murray-Darling Basins” (2009) 69 *Ecological Economics* 366.  
at Table 1.

<sup>176</sup> *Ibid.* Garrick *et al.* at 368.

- Administrative procedures and organizational capacity to reallocate water rights, including institutional mechanisms to reduce the transaction costs and maximize the environmental outcomes of water transfers for environmental flows;
- Planning procedures that set aside water for the environment before a consumptive pool is distributed for different entitlement types;
- Governance mechanisms, including collaborative processes and institutions, to prevent or limit negative social and environmental impacts of reallocation; and
- Adequate regulatory capacity to monitor, enforce and adapt to barriers and changing conditions.

The ELC recommendations adopt these safeguards and expand them to include mechanisms to engage water trusts or 3<sup>rd</sup> parties nominating and facilitating water transfers for EF purposes.

### **ELC recommendations for EF policy**

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EF policy outcomes and recommendations must ensure transparency, accountability, inclusivity and to the extent feasible, efficiency. These principles will be met where decisions and policy are guided by:

1. Knowledge of impairment on environmental flows resulting from diversions and activities;
2. A duty to provide reasoned water allocation/transfer decisions based on science and precaution (to minimize impairment risks);
3. Flexible and efficient allocations and transfers (engaging private and public tools for EF preservation);
4. Private and public tools for EF preservation are engaged; and
5. Collaborative environmental flow rule making and policy.

## Knowledge of impairment of environmental flows

Sufficient knowledge exists where:

- A science based assessment of acute, chronic and cumulative environmental impairment of allocation and transfers is feasible;
- Ecological and hydrological information is sufficient to make scientific decisions (with minimal uncertainty); and
- Detailed assessments are triggered when risks to aquatic environments are found to exist.

### **Recommendation #1: Information and water availability forecasting is sufficient to determine ecological effects of proposed diversions**

There is a need to ensure that allocation, renewal and transfer decisions do not result in degradation of the aquatic environment. Sufficient ecological and hydrological knowledge must be integrated in the water allocation decision making process.

Decisions (of the Director or the Alberta Energy Regulator under the *Water Act*) must be informed by:

- up to date monitoring and forecasting to determine water availability for ecological functions;
- a desktop assessment process that enables the identification of potential acute, chronic and cumulative impacts on the ecological components of a water body that may result from a proposed diversion (see Recommendation #2 below); and
- setting of trigger points in potential effects that would require increased site specific information related to a proposed project.

### **Recommendation #2: Assess water availability and impacts on aquatic health**

For water allocation, renewal and transfer applications that come before the government there should be an integrated flow model (with sufficient data support) allowing for aquatic assessments to identify potential impacts arising from a given allocation. This system should include a cumulative and acute effects determination and should determine any impacts on specified aquatic ecological criteria. Key reference materials include:

- a Desk-top Method for Establishing Environmental Flows in Alberta Rivers and Streams<sup>177</sup>
- a quantitative and qualitative assessment of allocations against ecological criteria;<sup>178</sup>
- an assessment protocol of water diversions on water quality;
- an assessment protocol for identification of potential acute, chronic and cumulative effects;
- an assessment of regulated versus natural flows and possible management options and implications; and
- A trigger mechanism which elevates desktop assessments to site specific assessments.

Where deleterious effects on aquatic environments are found through the initial desktop assessment, the proponent of a diversion or transfer should be provided the opportunity to provide further details that establish minimal harm or to allow for the proposal of site specific mitigation. Where the proponent fails to provide sufficient additional information or where mitigation is not appropriate or insufficient, refusal of the application will be justified.

This approach should be applied to significant tributaries of mainstem rivers with sufficient monitoring to inform decision making. Further modelling may be used for assessing impacts of tributaries further upstream.

### **Recommendation #3: Include aquatic health assessments for temporary diversion licences**

The temporary diversion licence (TDL) system should be accompanied by the integrated modelling and assessment of potential harms and risks related to TDL grants to minimize risks at low flow periods and in areas where ecologically valuable habitats are located. Under the current system the knowledge and assessment of impacts based on TDL volumes is insufficient.

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<sup>177</sup> Government of Alberta, *A Desk-top Method for Establishing Environmental Flows in Alberta Rivers and Streams* (Edmonton: Government of Alberta, 2011), online: Alberta Environment and Sustainable Resource Development <<http://www.environment.gov.ab.ca/info/library/8371.pdf>>.

<sup>178</sup> See for instance, Alberta Water Council, *Provincial Ecological Criteria for Healthy Aquatic Ecosystems*, online: Alberta Water Council <[http://www.albertawatercouncil.ca/portals/0/pdfs/peach\\_report\\_final.pdf](http://www.albertawatercouncil.ca/portals/0/pdfs/peach_report_final.pdf)> and Alberta Environment and Sustainable Resource Development *Aquatic Environmentally Significant Areas in Alberta* <http://environment.gov.ab.ca/info/library/8392.pdf>

## Transparent and reasoned water allocation/transfer decisions based on science and precaution

This outcome will be realized when:

- Effective and efficient management of information is married with decision making at the Director level;
- There is a clear articulation of reasons for water allocation, renewal and water transfer decisions; and
- There is a public registry with listed available water and pricing and tracking and reporting of completed transactions and related reasons;<sup>179</sup>

**Recommendation #4: Remove undefined “significant” harm tests in the “matters and factors” of approved water management plans and replace with empirical assessment and ecological benchmarks for decision making.**

Decision making under approved water management plans should be based on quantitative assessments of harm. Reliance on terms like “significant” is not instructive for the decision maker as to what is acceptable versus unacceptable impacts on the aquatic environment. The “significant harm” approach should be abandoned or informed by a quantitative definition of what will be deemed “significant”. A benchmark for when “harm” will be assessed as a barrier to development will provide greater certainty to decision makers and applicants alike.

**Recommendation #5: Provide timely reasons for allocation and transfer decisions outlining EF impairments or benefits.**

**Recommendation #6: Create a public registry with listed available water and pricing, tracking and reporting of completed transactions, linkages to environmental information systems used to inform decisions and related reasons.<sup>180</sup>**

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<sup>179</sup> As recommended by in Alberta Water Council *Recommendation for Improving Alberta’s Water Allocation Transfer System* (Edmonton: Alberta Water Council, 2009), online: Alberta Water Council <[http://www.awchome.ca/Portals/0/pdfs/WATSUP\\_web\\_FINAL.pdf](http://www.awchome.ca/Portals/0/pdfs/WATSUP_web_FINAL.pdf)>, the Government of Minister’s Advisory Group *Recommendation for Improving Alberta’s Water Management and Allocation* (Edmonton: Alberta Environment and Sustainable Resource Development, 2009), online: ESRD <<http://esrd.alberta.ca/water/water-conversation/documents/8239.pdf>> and reviewed in Nigel Bankes, “Policy Proposals for Reviewing Alberta’s Water (RE) Allocation System” (2010) 20 *JELP* 81.

<sup>180</sup> Ibid.

A registry must include not only relevant transaction information but must have, as a central component, linkages to environmental information regarding potential impairment or benefits to aquatic health that informed the decision (see recommendation #2).

### **Flexible and efficient allocations and transfers**

#### **Recommendation 7: Enabling more efficient divestment of water allocations under large multi-user senior licences;**

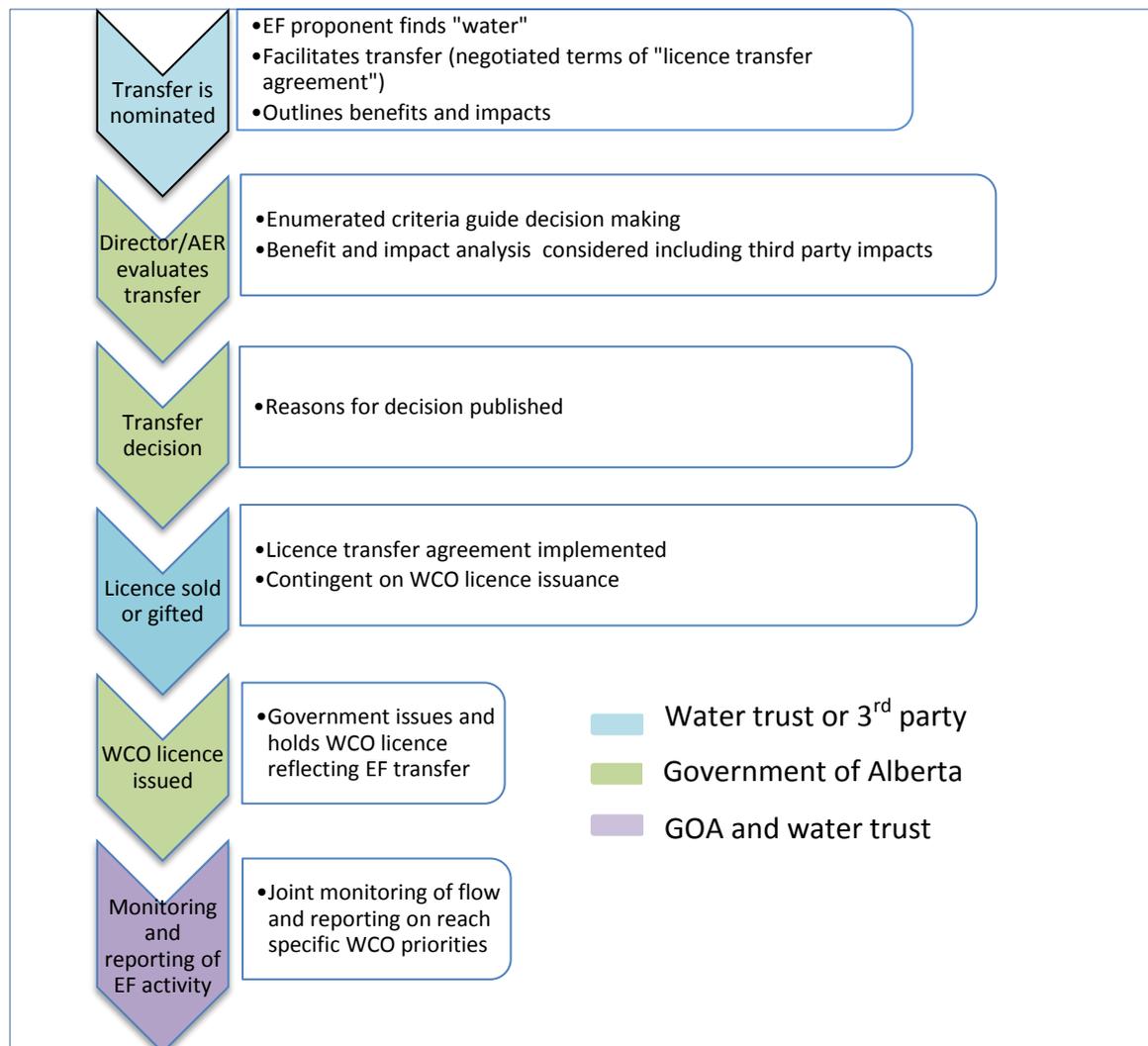
For example, the *Irrigation Act* should be reviewed to allow for divestment of water allocations in senior irrigation licences in a more flexible manner. This review (and resulting legislative amendments) would need to address certainty in individual irrigator entitlements, transfer of water licence limitations, and calculation and payment of exit fees.

### **Private and public tools for EF preservation are engaged**

#### **Recommendation 8: Enable an “environmental flow transfer policy” as set out in figure 4.**

The environmental flow transfer policy creates a process for transferring allocated water instream either by way of licence allocation donation and purchase. Water trusts may seek out donations or purchases of allocation that would then be held instream by the government (as a WCO licence). Approved water management plans should include language to allow for increases in WCOs where environmental flows transfers occur under this policy.

**Figure 4: Environmental Flow Transfer Policy**



**EFTP policy described**

The policy framework should include:

1. GOA policy outlining the process for acceptance of nominated EF water/allocations;
2. Agreement of the licence holder (EF donee & seller);
3. Public notice;
4. Assessment of “harm” to:
  - a. First Nation treaty and other rights;
  - b. Third party diverters;
  - c. The environment;
5. Process for filing objections from potentially directly affected parties;

6. Prescribed process of transfer from licence holder to Crown licence (WCO); and
7. Yearly reporting on environmental licence acquisition (and funding mechanism).

The *Water Act* already deals with water allocation transfer process issues described above leaving only the need to create additional policy clarity around environmental flow nominations and acceptance by the government.

### **EF nominations**

The EFTP recognizes that the government should justify issuing WCO licences by involving a nomination process that promotes purposes under the *Water Act*. The process allows a nominating body (i.e. water trust or other third party) to submit an application with supporting information regarding the allocation or transfer which may include:

- A description of valued species that would benefit from the transfer (may include species of concern, species at risk);
- Hydrological function of value;
- Biodiversity value;
- An assessment of the net impact on upstream and downstream users if any;
- An assessment of the net impact on First Nations and Métis rights if any; and
- Recreational values preserved;
- Educational values associated with the transfer, if any; and
- Written agreement/consent of licence holder for transfer for environmental flows.

The Government of Alberta should provide reasons outlining the social, economic and environmental values for accepting the nomination. Formal acknowledgement of the EF transfer by government will result in a Crown licence under s.51 of the *Water Act*.

Yearly reporting of environmental flow nominations, acceptance and WCO licences would take place as well as any issues relating to the exercise of priority of the WCO licences.

Water trusts that have facilitated the transfer through a purchase would need to ensure that the closing of the transaction was contingent on government approval of the EF transfer.

**Recommendation 9: Commit financial support for environmental flow assessment and acquisition of senior licence allocations, including EF transfer requirements where public funding goes to water conservation initiatives.**

## Collaborative environmental flow decision making and policy formation are enabled

**Recommendation 10: Engage mechanisms to create substantial private interests instream that trigger legal participatory rights (e.g. EFTP and recognition of the role of water trusts).**

By tracking the engagement of water trusts in the EFTP policy the direct interest in instream flows may be recognized by regulators and appeal tribunals, allowing for participation in decision making processes and furtherance of shared responsibility for EF.

**Recommendation 11: Adopt EF related policy into water management plans for clear Cabinet approval and adoption.**

Integrating these recommendations into approved water management plans, to the extent necessary, will engage a broader community of those interested in EF as well as the provincial Cabinet.

Approved water management plans should integrate with the EFTP policy:

- to ensure the receipt of third party applications and granting of licences for environmental flow purposes to implement a water conservation objective under section 51(2) of the *Water Act* is permitted, and
- to allow for ongoing reach specific increase in the water conservation objective (WCO) the increase is the result of an environmental flow transfer under the policy.