

**Coding Manual for River Claims Data  
Issue Correlates of War (ICOW) Project**  
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The latest version of this codebook, associated documentation, and officially released data may be downloaded from the ICOW web site at <<http://www.icow.org>>.

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## Introductory Notes

### The General ICOW Codebook

General data structure, coding rules, and coding procedures for the ICOW project (most of which are relevant both for this and for other ICOW data sets) are described in the ICOW general coding manual, which is also available on the ICOW web site (<http://www.icow.org>). This codebook focuses on the specific codesheets and variables for the ICOW river claims data set; coders and users of this data set must also read the general codebook to understand all coding rules relevant to this data set. General coding rules are only addressed here when there are important variants or additions beyond the material presented in the general codebook that are unique to river claims.

### International Rivers and River Basins

Much of the literature on international rivers -- along with many river-related data sets, such as the UN Register of Rivers (1978), the 1999 extension of this list by Wolf et al., and the UN FAO list of river-related treaties -- is organized around international river *basins*, rather than around the rivers themselves. A basin (the term is generally used interchangeably with "watershed" or "catchment") typically includes all territory that drains into a single major river or its tributaries; a more technical definition from Wolf et al. (1999: 389) is "the area which contributes hydrologically (including both surface- and groundwater) to a first-order stream, which, in turn is defined by its outlet to the ocean or to a terminal (closed) lake or inland sea." A basin is considered to be international if its area includes territory from at least two nation-states.

This data set focuses on specific international rivers -- or individual rivers that form or cross the border between at least two states -- rather than full river basins. Of the 261 international river basins identified by Wolf et al. (1999), dozens do not include any international rivers (generally because the only portion of the basin that crosses an international border involves shared groundwater resources). On the other hand, many of these basins include multiple rivers; the Amazon basin in South America includes at least 55 distinct rivers of at least 100 miles in length that cross at least one international border, as well as many smaller rivers. In many cases, these different rivers in the same basin vary dramatically in the characteristics measured in this data set (e.g., length, navigability, or usage for irrigation projects), meaning that adequate collection of these variables requires identification of specific rivers.

This coding decision has some benefits and some drawbacks. Many river claims appear to involve a single river, rather than all rivers in a particular basin (e.g., when a dam or irrigation project is constructed on a specific river), in which case a river-based data set is appropriate. Similarly, a focus on individual rivers makes collection of salience indicators more straightforward. Yet many attempts at international cooperation over rivers appear to involve an entire basin rather than an individual river, in which case an exclusively river-based focus would either lose information about the case or create unnecessary duplication (e.g., if a single treaty over an entire basin were coded separately for each river in the basin). For this reason, if a claim or a settlement attempt involves an entire basin (containing more than one river), the basin must be coded as the domain of that claim. This means that the river's code number (RIVNUM) should end with ".0" rather than ".1" or another indicator of the specific river. With regard to salience indicators, the salience of an entire river basin should be coded as the maximum value for any river in that basin (e.g., if at least one river is used for navigation, then the whole basin should be coded as such, and the length of the basin should be coded as the length of the longest river in the basin).

Because of this focus on specific rivers, a given dyad may appear in the data set numerous times. Such dyads as Ecuador and Peru or Colombia and Venezuela share several dozen rivers that could potentially generate river claims. Additionally, any given river may generate multiple claims between the same adversaries, as the downstream state protests different pollution or diversion projects by the upstream state.

### River Claims

A river claim involves explicit contention between two or more states over the usage of an international river. Official representatives of the government of at least one state must make explicit demands over the quality or quantity of river water reaching their state through the territory of another state or over navigation rights on the river. Examples include demands to change policies -- or to enact new policies -- over the quantity of water flowing across the border (typically related to dams, irrigation, or other diversion projects), the quality of this water (typically related to pollution by industrial, agricultural, or human waste, or to excessive salination or sedimentation because of upstream activities), or the right to navigate along the river (typically for purposes of commerce or travel). It should be noted that this conceptualization of river claims excludes cases where countries are only making claims over the specific location of a border; river claims only involve questions over the usage (or misuse/abuse) of a specific river. More details on the linkage between river claims and territorial claims are provided below.

"Official representatives" include such individuals as a country's head of state, foreign minister, and other legitimate political or military officials who are speaking on behalf of the state's government and are authorized to make or state the government's official foreign policy. Claims by individuals or organizations without the authority to speak on behalf of a state government are excluded, unless official state representatives support their claim through explicit statements. Sub-state actors such as state or province governments will sometimes qualify as official representatives, and sometimes not; further details are provided below.

An "explicit claim" must be a public statement by such an official representative, and must be phrased in unambiguous terms. That is, the official state representative making the claim must make clear that his or her government is making explicit demands regarding the quantity or quality of river water flowing from another specific state; vague or ambiguous statements are excluded. It is also important that this claim be made on behalf of the state making the claim, and indicate that this state seeks to influence river water entering its own territory. Claims made on behalf of third parties -- i.e., those in which the state making the claim argues that the target state should manage its river water differently before the water passes into the territory of a third state -- do not qualify. (Of course, if that third party makes a claim over the river on its own behalf, then its claim would qualify). Furthermore, the claim should be opposed by the targeted state, because this is a data set of *contentious* issues; situations where two states work together for mutual economic benefit do not qualify as claims.

As with all other ICOW data sets, it should be noted that this definition does not require any specific form of contention over the river claim. In particular, it does not require that one or both sides resort to militarized force over the claim. Similarly, it does not require that the adversaries negotiate over the claim, submit it to third party arbitration or adjudication, or even take any action whatsoever over the claim. Such actions over a claim are more properly the subject of systematic analysis using complete compilations of all river claims, rather than tools to be used for case selection.

It should also be noted that a given river may give rise to numerous claims over time. Two countries sharing a river may disagree in one year over a hydroelectric dam project by the upstream state, then over pollution of the river a few years later, and over an irrigation project several years after that. Each of these claims should be coded as a separate dyadic claim within the general claim code number assigned to that river (e.g., if the overall river claim code number is 1100, then these three examples would be coded as claim 1100 / dyad 1, claim 1100 / dyad 2, and claim 1100 / dyad 3). This is consistent with the coding of dyadic claims in the territorial claims data, where the overall claim number is assigned to a given piece of territory and temporally or spatially distinct sets of adversaries claiming that territory are assigned separate dyadic claim numbers.

#### *Sub-State Actors and River Claims*

An interesting problem arises for river claims that never really came up for territorial claims, involving sub-state actors such as states or provinces. When such actors are involved in an apparent river claim or in a settlement attempt, the researcher must determine the attitude of the national government. If the national

government supports the claim, negotiations, treaty, or other actions of the sub-state actor, then it is considered to be acting as an official representative authorized to conduct negotiations or to formulate policy on behalf of the national government. If the national government disapproves of the actions of the sub-state actor, though, it can not be considered to be acting on behalf of the national government; its actions should be noted in the chronology and coding notes on a codesheet (or a potential codesheet, if there is no codable activity over the river) but should not be entered into the computerized data set.

For example, the United States and Canada share the Red River in the northern Mississippi River basin. In the late 1990s a variety of negotiations were held over plans to divert water from Devils Lake and from the Missouri River into the Red River, involving various state and federal governments. The U.S. state of Minnesota generally sided with the Canadian province of Manitoba (and apparently the Canadian federal government) in opposing these diversion projects, while the U.S. state of North Dakota generally sought to go ahead with the projects and the U.S. federal government several times supported the projects with public statements and with funding from Congress. In this situation, Manitoba and North Dakota can safely be coded as representing the interests of their respective federal governments, while Minnesota can not.

### *River Claims and Territorial Claims*

Another interesting problem for the river claims data set involves questions of overlap between river claims and territorial claims. As discussed above, a river claim must involve questions over the usage, abuse, or misuse or a specific international river resource. A territorial claim involves questions over the ownership of a specific piece of territory, including questions over the specific location of a border. The distinction between these two types of claims is not always easy to make, though, because of many cases where territorial claims either include territory containing international rivers or involve questions over rivers that form (or that may form) international borders. The following situations do not qualify as river claims:

- Questions over the ownership of islands in a border river are considered to be territorial claims, rather than river claims, because they involve the possession of territory rather than just the usage of a river.
- Questions over which of several nearby rivers forms the international border are considered to be territorial claims, because they involve the location of the border over dry land; whichever river is selected will have an impact on the ownership of some quantity of territory.
- Questions over the shifting of a river's course -- whether through natural causes such as flooding, or through intentional diversion activities by one of the states sharing the river -- are considered to be territorial claims, because they boil down to the ownership of dry land along the river.
- Questions over which part of a river forms the border -- such as the deepest part, the exact middle of the river, or the middle of the most navigable portion of the river -- are also considered to be territorial claims, because they involve the location of the border.

In any of the above cases, though, there may also be an associated river claim. This would be the case whenever the question of island ownership, border river determination, shifts in the course of a river, or the specific location of the border within a river affects the usage of one or more international rivers. For example, a state might use its claim to a mid-river island or its claim that a more distant river forms the border to impede another state's river navigation, or to justify building of dams or river diversion projects in an area that it claims as its own; protests or demands by the downstream state over such actions should qualify as river claims.

### **River Claim Salience**

The salience of a given river is measured through a number of specific indicators. Each of the indicators addresses at least one characteristics of the river that might increase its value to a state, and (where possible) each is collected separately to reflect the usage of the river in both the challenger and target state. Several of these details include the length of the river in each country and the average annual flow of the river, with longer or larger rivers presumably being more salient than short streams. Several details include the water needs of

each state, including both the annual freshwater usage and annual renewable water resources; states that use a larger fraction of their renewable water resources presumably attach greater salience to their existing water supplies. Other details include whether the river is navigable, passes by major population centers, is used for fishing or other resource extraction, and is used for large dams, hydroelectric power generation, and/or irrigation and diversion projects; each of these characteristics presumably increases the value of a river.

Each of these variables can be seen as contributing to the overall value or salience of the river for the claimants, with a river generally being seen as more valuable in the presence of each of these indicators than in their absence. Paul Hensel's March 2001 *International Studies Quarterly* article introduces a twelve-point salience index that draws from similar indicators for the salience of territorial claims, although many other possible indices or measures could also be devised. A 2002 paper by Paul Hensel, Sara McLaughlin Mitchell, and Tom Sowers introduces a comparable index for the river claims data set, drawing from six indicators discussed in this codebook: river location in homeland territory (versus colonial or dependent territory), navigational importance of the river, level of population served by the river, the presence of a fishing or other resource extraction industry on the river, hydroelectric power generation along the river, and irrigational value of the river.

Unlike the territorial claims data, many of these salience indicators for rivers are coded with more than two possible categories. For example, irrigational importance of rivers is coded as a value of zero if there are no irrigation projects, one if there are local irrigation projects, and two if there are major irrigation projects directed by the national government. For consistency with the territorial claims data, each salience indicator contributes a maximum of one point per state to the overall index, so indicators with two non-zero values may contribute zero, one-half (for local projects), or one (for national projects) points to the salience index.

### **River Claim Settlement Attempts**

To be included in the data set, settlement attempts during ongoing river claims must attempt to resolve part or all of the claim itself, or must at least attempt to manage the subject of the claim. As will be seen in the description of the attempted settlement data presented later in this codebook, this allows for four distinct types of settlement attempt: (1) functional, which involves attempts to manage the river in question -- perhaps through the establishment of temporary guarantees of free navigation or the demilitarization of the river -- but not to reach a permanent settlement of the original question; (2) procedural, which involves discussion of future negotiations or procedures to settle the claim -- such as negotiations on submitting the claim to the World Court or to some other actor or body -- but not an attempt to settle the claim directly in the present talks; (3) attempts to settle part but not all of the river claim, such as discussing navigation along a limited stretch of river but not along the most contentious stretches, which if successful would be able to reduce the scope of the claim and perhaps move toward a more final settlement; and (4) attempts to settle the entire claim over river usage, which if successful would presumably be able to end the entire claim.

Each settlement attempt that meets any of these four descriptions is subjected to additional data collection. Variables to be collected cover the dates on which the attempt began and ended, the type of settlement attempt, and the effectiveness of the attempt. Any attempt meeting one of these descriptions should be included in the data set, regardless of whether or not it led to agreement on a final treaty or agreement, or whether or not any resulting agreement is actually ratified or executed by the signatories. Such questions are more properly the subject of systematic analysis using complete compilations of all attempts to settle river claims, rather than tools to be used for case selection.

### *Negotiations or Treaties without a River Claim*

States sharing a river may potentially undertake negotiations or sign treaties over the usage of a river without experiencing an explicit river claim. For example, two states may negotiate a treaty over flood control, cleanup of a border river, or the creation of nature parks or wildlife preserves without either state initiating an explicit river claim; such topics are in their mutual interest and do not require a challenger-target relationship to

be addressed. This is similar to negotiations over the usage of a piece of territory, even when the territory itself is not subject to an explicit claim. When this is found to occur, the negotiations or treaty should be noted in the case's chronology, and a coding note should be added to explain the situation, but it should not be coded as a settlement attempt or entered into the data spreadsheet.

Researchers should be careful not to assume that there is no claim underlying a treaty, though, when the claim is not immediately apparent. Many, if not most, river-related negotiations and treaties result from one state's disagreement with the other's usage of the river, meaning that some type of claim is likely to be involved. Researchers are requested to look for explicit evidence of such a claim at great length, before concluding that no claim exists.

### **Sources and Coding Procedures**

The general coding procedures for the river claims data set are the same as for any other ICOW data set, as described in the general codebook.

The search procedure for news stories is slightly different for river claims than for territorial or maritime claims because of the large number of names by which many rivers are known (not to mention the large number of spellings of the same name), as well as the specific nature of river claims (which are tied to a single river or basin).

### **Revision History**

- 31 December 2013: Clarified the description of Resolved and Endviol.
- 8 February 2013: Updated this coding manual to reflect changes in the upcoming release of version 1.2 of the ICOW data:
  - Clarified the discussion of the river flow and water scarcity variables, which are not currently included in this data set (and thus will not be coded by the research assistant when initially coding the case); these variables will only be added later.
  - Added FloodCl variable and revised coding of Resolved variable (coding ongoing claims as missing and splitting third party resolution into binding and non-binding third party activities), in preparation for release of version 1.2 of the ICOW data.
  - Also made the table of contents clickable, to make this easier to use with iPads and similar devices.
- Prior revisions: Changes in previous versions of this codebook were not recorded.

## Dyadic Claim-Level Data File (RCCLAIM)

### **CLAIM: Code Number of Claim**

**Number:** *ICOW code number assigned to each claim to identify it (no substantive interpretation)*

#### Notes

- Leave this space on the codesheet blank until all candidate cases have been collected for the entire geographic region that you have been assigned.
- When assigning claim numbers, be sure to leave at least one unused number between each two claims, to allow for the addition of future claims if needed.

### **NAME: Name of River**

**Text:** *Name of the specific river(s) under dispute*

#### Notes

- If multiple rivers are involved in the same claim, try to create a relatively short name listing each river or indicating which rivers are involved (e.g., "Tigris-Euphrates Rivers" or "Ganges-Brahmaputra-Meghna Rivers"). If too many rivers are involved to list them all, try to create a relatively short name that indicates the most important or best-known rivers in the claim, and be sure to list every single river (or at least every major river on the ICOW river list) on the codesheet.

### **RIVNUM: Code Number of River**

**XXXX:** *ICOW code number for the river or basin under dispute*

#### Notes

- For major rivers of at least 100 miles length, there should already be a code number in the ICOW rivers list. For shorter rivers, a new code number should be created, preferably at the end of the list of numbers for river in the basin.
- Where multiple rivers are involved in the same claim, use the general code number for the basin containing the rivers rather than the code numbers for each river. Whereas individual rivers are assigned a number ending in .01, .02, and so on, the basin code ends in .0 (e.g., 1100.0 is the overall basin code for the Amazon River basin, while 1100.01 - 1100.55 are specific river codes).
- Where multiple basins are involved, code the primary basin of interest to the claimants (or the largest or "most important" basin if it can not be determined which basin interests them the most). A coding note should be added to indicate which additional basins are involved, though.

### **BASIN: Name of Basin**

**Text:** *Name of the specific river basin that includes the rivers involved in this claim*

#### Notes

- Each international river basin should be listed (with a code number) in the ICOW rivers and basins list; the basin name should be copied exactly.

### **DYADNUM: Number of Dyadic Claim**

**Number:** *An ICOW code number assigned to identify each dyad involved in each claim*

#### Notes

- Dyadic claims all have a Dyadnum value of "1"
- Multilateral claims are divided into dyads in approximate order from upstream to downstream state. Where it can be determined, then, the dyad with the first two states along the river should be the first dyadic claim over that river, and the dyad with the final two states should be the last dyadic claim over that river.

### **DYAD: Members of Dyad**



**Number:** *A 6-digit code identifying the dyadic claim participants*

Notes

- This code takes the form AAABBB, where AAA is the smaller COW nation-state number of the two dyad members and BBB is the larger.
- Note that the smaller COW number is used first in the "DYAD" code; unlike "CHAL" and "TGT," described below, this number has no theoretical meaning. This is important because it allows easy merging of data sets (e.g., to combine data on river claims with data on dyadic democracy or relative capabilities).

**CHAL: Challenger state in this dyadic claim**

**Number:** *COW country code of the actor in this dyad making the initial claim*

Notes

- Because of the nature of water resources, whereby the upstream state may use, divert, or pollute the river before it reaches the territory of the downstream state, the challenger state should almost always be the downstream state in a dyad.

**TGT: Target state in this dyadic claim**

**Number:** *COW country code of state in this dyad targeted by the challenger*

Notes

- The target state should almost always be the upstream state in a dyad (see above).

**BEGCLAIM: Start Date of Dyadic Claim**

**Number:** *The month and year that the claim began*

Notes

- This date takes the form YYYYMM, as in 181601, 194508, or 200012.

**ENDCLAIM: End Date of Dyadic Claim**

**Number:** *The month and year that the claim ended*

**-9:** *Claim coded as ongoing past the current end of the data set*

Notes

- This date takes the form YYYYMM, as in 181601, 194508, or 200012.

**RESOLVED: Type of Resolution of Claim**

**-9: Ongoing** *The claim is not resolved (as of the current end of the data set)*

**1: Dropped by Challenger** *The claim is simply dropped (the challenger simply stops pursuing it sometime during this year, and does not pursue it any further)*

**2: Renounced by Challenger** *The claim is renounced through an official statement by the leadership of the challenger (but not through any bilateral agreement with the adversary, or any third-party assistance)*

**3:** *(This value is no longer used; as of version 1.2 of the ICOW data, this value has been split into binding and non-binding third party activities, values 12 and 13 in the revised list)*

**4: Bilateral** *The disputants formally settle the claim in a bilateral treaty or agreement (including any bilateral agreement qualifying for inclusion in RCSETTLE)*

**5: Independence** *This dyadic claim is replaced by a new claim due to the independence of a former dependency (e.g., the dyadic Guatemala-Britain territorial claim over Belize ends with Belize's independence, when it is replaced by a new dyadic claim between Guatemala and Belize)*

**6: Actor Leaves System** *This particular dyadic claim ends when either the challenger or target state leaves the COW interstate system (e.g., the Haiti-U.S. claim over Navassa Island ends when Haiti leaves the COW system in 1915, and a new dyadic claim between the same states begins when Haiti rejoins the*

system in 1934; a number of claims involving Austria-Hungary also end this way when the empire leaves the system in 1918, some of which restart when the relevant successor -- Austria or Hungary -- joins the system in 1918 or 1919). Note that if the actor leaves the system due to military action over this claim (e.g. an invasion to conquer the territory) it should be coded as ending through conquest/occupation.

- 7: Military Occupation** *This dyadic claim ends with the military occupation of the territory around the claimed river by the challenger state, leaving no portion of the claimed river under the control of the former target state*
- 8: Dropped by Target** *The target state simply stops its objections to the challenger's claims, without any formal agreement*
- 9: Renounced by Target** *The target state explicitly renounces its objections to the challenger's claims, without any formal agreement*
- 10: Plebiscite** *The claim ended because of a plebiscite in the disputed area, the results of which were accepted by both sides. (This is probably only relevant to territorial claims, but is included here for complete comparability in values across the different data sets)*
- 11: Claim No Longer Relevant** *The claim is no longer relevant because the river has ceased to exist (probably because it dried up), or because it has lost its status as an international river (probably because the full river basin changed hands in a territorial change, or because the river shifted course in such a way as to leave one or both claimants holding none of the territory in the river basin any more.)*
- 12: Binding Third Party Decision** *The claim ends through a legally binding third party decision (adjudication or arbitration).*
- 13: Non-binding Third Party Activity** *The claim ends with the non-binding assistance of a third party (good offices, inquiry, conciliation, mediation, or multilateral negotiations).*
- 14: Peace Conference** *The claim ends with the non-binding assistance of a multilateral peace conference that follows the end of a regional or global war, involving war participants and perhaps other interested parties attempts to adjust borders, as well as settling other postwar issues such as war guilt or reparations -- an example is the post-World War I Paris Peace Conference and its associated Treaty of Versailles.*

#### Notes

- This variable should be consistent with the "Claimend" variable from RCSETTLE. If the claim is considered settled through bilateral or third party means, then this coding should be reflected in one of the settlement attempts included in RCSETTLE (and if a settlement attempt is coded as ending the claim in RCSETTLE, then this should be reflected in the "Resolved" variable in RCCLAIM).

#### **ENDVIOL: Role of Organized Violence in End of Claim**

- 1: Violence** *This claim ended due to the threat or use of large-scale organized violence between the claimant states over this claim*
- 0: None** *The claim did not end in this way*
- 9: Claim coded as ongoing past the current end of the data set**

#### Notes

- "Violence" refers to the threat or use of large-scale organized violence -- this does not necessarily have to meet the COW definition of interstate war (1000 dead in sustained combat between regular forces.) It may occur through military action or occupation that involved less casualties, or even no casualties if one state backs down because of military threats to carry out large-scale violence or occupation of the claimed territory.
- Note that a value of 1 (violent ending) must be coded for any claim that is coded for the RESOLVED variable as ending through military conquest or occupation.
- A claim will be coded as ending through violence if a peaceful (bilateral or third party) settlement over the claim largely codifies the results of organized violence (e.g., when a subsequent treaty or peace conference confirms possession of the territory by the victor of the earlier fighting).
- Ending through violence also includes cases of unsuccessful violence/war, which are followed by one side

dropping its claim (e.g., the Chincha Islands between Spain and Peru, where Spain's unsuccessful military adventure ended with the dropping of the claim).

- This variable is NOT meant to identify cases where the violence was not organized (e.g., riots or other non-official forces) or did not directly involve these two claimants or this territorial claim (e.g., when the U.S. occupied Haiti or the Dominican Republic, leading to the end of their claims against some additional party because the claimant left the international system). The purpose of this variable is to identify cases where the claim was resolved through violence between the claimant states in the dyad.

## ADDITIONAL INFORMATION ON CODESHEET

### Actors

- Be sure to list all nation-state actors involved in the claim, along with their COW code numbers.

### Dyads

- Be sure to list all dyads involved in the claim on the coversheet.
- The "Dyadnum" headings refer to the ICOW code number for each dyad, which will be determined once all claim-level and dyad-year-level information has been collected for the claim.

### Brief Description of Issue

- This should begin with a one-paragraph summary of the issue in question. For the river claims data set, this means a brief summary of which river(s) is/are under contention, including a description of where the river is located (listing specific states/provinces in each country) and a list of major tributaries. If possible, this description should also give some idea about events before (but leading up to) the claim, the circumstances under which the claim was first begun, and the original reasoning behind the claim.
- There should also be a one-paragraph summary of the specific issue involved in the claim over this river. Where multiple dyads exist for a claim over a given river/basin, each dyad should have a separate one-paragraph entry in this section of the codesheet (with an italicized subheading "Dyad #1" and so on). This will allow easy determination of what has changed across the claim's various dyads, whether this means a different set of countries (perhaps due to the independence of a former colony) or the original claimants resolving much but not all of their claim.
- For example, the sample codesheet attached at the end of the territorial claims codebook gives a brief description of the claimed territory (Aves Island), including the distance from the island to Venezuela and to several Caribbean islands (including the Dutch possessions that allowed a Dutch claim to an island so far from Europe), the historical discovery and usage of the island before the claim, and the Venezuelan reasoning in raising the claim when they did. A similar example will be added to this (river claims) codebook once an appropriate case has been coded.

### Brief Chronology of Claim

- This should be a one- or two-paragraph summary of major actions taken during the claim. For example, significant negotiations, third party awards, or major crises or wars should be mentioned here. This section should also briefly mention how, when, and (to the extent this can be determined) why the claim ended.
- When multiple dyads exist for a claim over a given river/basin, each dyad should have a separate one- or two-paragraph entry in this section of the codesheet (with an italicized subheading "Dyad #1" and so on. This will allow easy determination of what happened during each dyadic claim, rather than forcing researchers to read through the entire claim chronology.
- Note that this brief chronology should be brief and should be in complete paragraph form, rather than event-by-event chronology form. The more detailed chronologies belong in the dyadic codesheets, rather than in these larger claim-level coversheets,.

**Coding Notes**

- Details on the coding for the case, where relevant (explanations of why the case was coded as it was, particularly in controversial or unclear situations, with references where possible).

**References**

- List of sources consulted (provide full bibliographic citation for each source).

## Dyad-Year-Level Data File (RCDYADYR)

**CLAIM: Number of Claim** *(See description under RCCLAIM data)*

**DYADNUM: Number of Dyadic Claim** *(See description under RCCLAIM data)*

**DYAD: Members of Dyad** *(See description under RCCLAIM data)*

**CHAL: Challenger State** *(See description under RCCLAIM data)*

**TGT: Target State** *(See description under RCCLAIM data)*

### **YEAR: Year of This Observation**

• Because RCDYADYR is a dyad-year-level data set; this variable only appears in the computerized dyad-year version of the data set, not the hand-written dyad-level codesheet.

### **QUANTCL: River water quantity element in claim?**

**0: No** *Water quantity not mentioned explicitly in claim*

**1: Potential Future Problem** *Water quantity is mentioned explicitly in claim as a potential problem for the future, but not yet a current problem*

**2: Current Problem** *Water quantity is mentioned explicitly in claim as a current problem*

#### Notes

• This indicator refers to any decrease in water quantity that is part of the claim, and may take a variety of different forms: reductions due to damming, irrigation or other diversion projects, or any other source. The key is that the challenger must explicitly raise some water quantity-related issue as part of its river claim.

• A "potential future problem" is one that is expected to occur at some point in the future as the result of actions being considered or implemented now. For example, if upstream state A begins planning or constructing a dam on a cross-border river, downstream state B may begin a claim against state A based on the fear that once this dam is completed, the flow of water to B will be reduced significantly. A "current problem" is one that is already occurring, as when state A's dam goes into operation and does indeed dramatically reduce the flow of water to B.

--note that a claim that begins as a potential water quantity concern may switch in mid-claim to become a current concern. When this happens, make a coding note, indicating what happened and when; the variable will switch values during the claim.

### **QUALCL: River water quality element in claim?**

**0: No** *Pollution/water quality degradation not mentioned explicitly in claim*

**1: Potential Future Problem** *Pollution/water quality degradation is mentioned explicitly in claim as a potential problem for the future, but not yet a current problem*

**2: Current Problem** *Pollution/water quality degradation is mentioned explicitly in claim as a current problem*

#### Notes

• This indicator refers to any degradation in water quality that is part of the claim, and may take a variety of different forms: fertilizer, pesticides, industrial waste, human waste, excessive sedimentation or salination due to the actions of the upstream state, or any similar form. The key is that the challenger must explicitly raise some water quality-related issue as part of its river claim.

• Where possible, list the type and source of pollution on the codesheet, as well as the year that it can be considered to have switched categories (from "no" to "moderate" to "severe").

• A "potential future problem" is one that is expected to occur at some point in the future as the result of actions being considered or implemented now. For example, if upstream state A begins planning or constructing a major agricultural project on a cross-border river, downstream state B may begin a claim against state A based on the fear that once this dam is completed, the flow of water to B will be polluted by fertilizers or pesticides

from the agricultural project. A "current problem" is one that is already occurring, as when state A's project goes into operation and does indeed contaminate the river's water entering B.

--note that a claim that begins as a potential water quality concern may switch in mid-claim to become a current concern. When this happens, make a coding note, indicating what happened and when; the variable will switch values during the claim.

#### **NAVCL: Navigational element in claim?**

**0: No** *River navigation not mentioned explicitly in claim*

**1: Potential Future Problem** *River navigation is mentioned explicitly in claim as a potential problem for the future, but not yet a current problem*

**2: Current Problem** *River navigation is mentioned explicitly in claim as a current problem*

#### Notes

• This indicator refers to any navigational question that is part of the claim, and may take a variety of different forms: usage of the river for commerce, local transportation, transport of military or police forces, or any other purpose. The key is that the challenger must explicitly raise some navigational issue as part of its river claim.

• A "potential future problem" is one that is expected to occur at some point in the future as the result of actions being considered or implemented now. For example, downstream state B may begin a claim against upstream state A based on the fear that a policy being contemplated by A will lead to the restriction of navigation on the river by B's vessels or trading partners. A "current problem" is one that is already occurring, as when state A's policy goes into effect and does indeed impede navigation on the river.

--note that a claim that begins as a potential navigational concern may switch in mid-claim to become a current concern. When this happens, make a coding note, indicating what happened and when; the variable will switch values during the claim.

#### **FLOODCL: Flooding element in claim?**

**0: No** *Flooding issues not mentioned explicitly in claim*

**1: Potential Future Problem** *Flooding is mentioned explicitly in claim as a potential problem for the future, but not yet a current problem*

**2: Current Problem** *Flooding is mentioned explicitly in claim as a current problem*

#### Notes

• This indicator refers to any flooding-related question that is part of the claim, and will typically involve concerns that the target state's actions (or inaction) either are currently contributing to flooding that affects the challenger state, or are likely to contribute to such flooding in the future.

--the key is that the challenger must explicitly raise some flooding-related issue as part of its river claim.

• A "potential future problem" is one that is expected to occur at some point in the future as the result of actions being considered or implemented now. For example, downstream state B may begin a claim against upstream state A based on the fear that a policy being contemplated by A will lead to future flooding. A "current problem" is one that is already occurring, as when state A's policy goes into effect and does indeed seem to contribute to flooding.

--Note that a claim that begins as a potential flooding concern may switch in mid-claim to become a current concern. When this happens, make a coding note, indicating what happened and when; the variable will switch values during the claim.

#### **HOMECHAL: Homeland / Colony Claim Dummy for Challenger State**

#### **HOMETGT: Homeland / Colony Claim Dummy for Target State**

**1: Homeland** *The river runs through homeland territory of the state in question (i.e., it is not located exclusively in a colony or dependency)*

**0: Dependency** *The river only runs through territory that is part of the state's colony, possession, or other*

*dependent territory (i.e., it never runs through any part of the state's homeland territory)*

#### Notes

- The challenger and target may have different values for this variable. For example, a river running through both Brazil and French Guiana would be coded as passing through homeland territory for Brazil, and as passing through dependent territory for France (the COW system member controlling the territory of French Guiana).
- This variable may change in value across dyadic claims. For example, when Belize receives its independence from Great Britain, the Belizean portion of any Guatemala-Belize or Mexico-Belize river claim changes coding from dependent territory (under British rule) to homeland territory.

#### **RIVTYPE: Type of international river**

- 0: Other** *These states are both located on the river, but at least one other state separates them*
- 1: Cross-border river** *The river passes through the territory of the upstream state, then crosses into the territory of the downstream state*
- 2: Along-border river** *The river forms the border between the two states for its entire course in either state's territory (i.e., it does not begin in one state and then form the border, or form the border and then cross in the other state)*
- 3: Mixed (cross- and along-border) river** *The river is both a cross- and along-border river at different points; for now the following sub-codes are employed, although these may eventually be folded into a single code by the time the final data set is released:*
  - 3.1:** *Through upstream state's territory, then along border*
  - 3.2:** *Along border, then through downstream state's territory*
  - 3.3:** *Other (e.g., through upstream state, along border, then through downstream state)*
- 4: Into border river** *The river passes through the territory of the upstream state, then empties into a separate river that forms the border between the two states (while this river technically never enters the territory of the downstream state, the fact that it empties into a border river means that it still affects that state's water supply and that it may still be the subject of a river claim)*
- 5: U-shaped** *The river passes through the territory of the upstream state, enters the territory of the downstream state, and then returns to the territory of the original upstream state (note that these rivers should be coded as multiple upstream-downstream dyads in the final version of the data set)*

#### Notes

- Where possible, add a coding note describing the origins and path of the river, as well as the ending point (whether it joins another river, empties into a lake or the sea, or simply dries up). The use of coding notes allows much greater detail than any possible categorization of river types.

#### **LENGTHC: Length of river within challenger state**

#### **LENGTHT: Length of river within target state**

#### **LENGTHB: Length of river along shared border**

**XXX:** *length (in miles)*

#### Notes

- This figure is almost never available for each state separately, so it will need to be estimated for almost every single case.
- The supplementary data file "Rivers.xls" includes estimates of the total length of each river of at least 100 miles length, which offers a useful starting point for this estimate.
- coders should consult several different atlases (preferably the *Times Atlas of the World* and *National Geographic Atlas of the World*, or perhaps a more detailed road atlas of the involved countries) to estimate the total river length in each country.
- the resulting river length estimates for all riparian states should always add up to the estimated total length reported in "Rivers.xls".

- At least an estimate should be available for every river in our data set -- i.e., there should be no missing data on this variable.

**FLOW: Volume of river flow**

-9: *Missing*

Notes

- An important element of river (or river claim) salience is the volume of water that flows through the river, which can vary substantially from year to year (or from month to month, although this data set is primarily collected by the year). We would like to include a reasonable measure of river flow -- but this is still in the planning stage. For now this is coded as missing for every case.
- Several different annual river flow data sets are being considered, although none covers all of the rivers in this data set, and even rivers that are covered do not always go back to the beginning of the data set in 1816. These include the Global River Discharge data base (RivDis) and data from UNESCO and the World Meteorological Organization (WMO), as well as data from national (often governmental) sources.
- Where several different measuring stations exist along the same river, flow should be estimated from the closest measuring station to the border where the river enters the downstream state.

**SCARCEC: Water scarcity for challenger state?**

**SCARCET: Water scarcity for target state?**

-9: *Missing*

Notes

- An important element of river (or river claim) salience is the extent to which the water is badly needed by the local population, which can be captured by the notion of water scarcity. The data that would be needed to produce continuous, quantitative estimates of water availability and consumption for each year of observation simply do not exist in any reliable or systematic form over a substantial period of time that would be useful for this data set. We would like to include a reasonable measure of water scarcity, whether in some continuous form or at least in a dummy variable indicating the most severe cases of scarcity -- but this is still in the planning stage. For now this is coded as missing for every case.
- We have been considering several different data sources, including the Transboundary Freshwater Dispute Database (TFDD) data that is drawn from detailed GIS work, the World Resource Institute (WRI) biannual *World Resources* reports, the World Bank's annual *World Development Indicators*, and similar sources. This data, in whatever form we end up using, will be added to the dataset later.

**NAVC: River used for navigation within challenger state?**

**NAVT: River used for navigation within target state?**

- 0: *No (river not navigable along this stretch)*
- 1: *Locally (river used for local transport or commerce)*
- 2: *Internationally (river used for international commerce)*

Notes

- Navigational use refers to the usage of the river for either transportation or commerce. This does not include rivers that are limited to navigation by canoes or by small one- or two-person boats -- if any larger craft are unable to use the river, it should be coded appropriately.

**POPC: Population density along river for challenger state**

**POPT: Population density along river for target state**

- 0: *No permanent population along river*
- 1: *Some villages or towns along river, but no major cities*
- 2: *At least one city of at least 100,000 residents*



## Notes

- Any major city (or city that might eventually reach 100,000 inhabitants) should be listed on the codesheet to aid in verification or updating of this variable.
- The basic idea behind this is that a river is more valuable, *ceteris paribus*, when it affects a sizable population that when it flows through largely unpopulated areas.
- "Along the river" refers to cities being located close enough to the river to use it daily, whether for fishing, irrigation, supply of drinking water, or similar sources.

### **RESOURC: River used for resource extraction within challenger state?**

### **RESOURT: River used for resource extraction within target state?**

**0:** *No*

**1:** *Locally (river used for local fishing or other resource extraction)*

**2:** *Yes (river used to support national needs and/or for exporting products)*

## Notes

- This variable indicates the existence (proven or believed) of one or more valuable resources on/in the river -- examples include fishing, oil, or gold.
- Be sure to list the involved resources on the codesheet.

### **DAMSC: Number of large dams on river within challenger state**

### **DAMST: Number of large dams on river within target state**

**XXX:** *Number of dams*

## Notes

- This variable should be based on the International Commission on Large Dams (ICOLD) *World Register of Large Dams*. The project director has a recent copy of this work in his office, which should be consulted when coding this.
- Note that this variable is limited to "large dams", which are defined (by ICOLD, among others) as dams meeting one of two criteria:
  - (1) a height of at least 15 meters, OR
  - (2) a height of 10-15 meters AND a crest length over 500 meters, a spillway discharge of 2000 cubic meters, or a reservoir volume of 1 million cubic meters.
- Smaller dams do not qualify and need not be noted on the codesheet (and would generally be impossible to count accurately, given the many thousands of smaller dams that exist in the world).
- Be sure to record each dam's name, location, and height/capacity, along with the year it went into operation; this will allow updating of the DamsC and DamsT count variables each year a new dam goes into operation.

### **POWERC: River used to generate hydroelectric power within challenger state?**

### **POWER T: River used to generate hydroelectric power within target state?**

**0:** *No*

**1:** *Locally (at least one hydroelectric power station on river, used only for local power needs)*

**2:** *Yes (at least one hydroelectric power station, used for national needs and/or export)*

## Notes

- The hydroelectric power station(s) in question should be indicated on the codesheet, including the year when each one went into operation (if possible, also indicate the year when it was first proposed and when construction began -- while this information is not currently planned for inclusion in the data set, it will still be important to know).

### **IRRIGC: River used for irrigation or diversion projects within challenger state?**

### **IRRIG T: River used for irrigation or diversion projects within target state?**

**0:** *No*

**1:** *Locally (local farmers use the river to irrigate their fields in relatively small quantities)*

**2:** *Yes (river used for large, national government-directed irrigation or diversion projects)*

#### Notes

• The key distinction between local- and national-level irrigation projects is the source of direction and/or funding for the projects. If the national government is involved in a project, as with Israel's National Water Carrier, it is obviously a large, national government-directed project; initiatives by individual farmers or by local governments should be coded as local projects.

#### **TERRCLM: River located in claimed territory?**

**0:** *No*

**1: Part of river** *(part, but not all, of the river is located within territory that is subject to an active territorial claim between these two states)*

**2: All of river** *(the entire river, at least for this dyad, is located within territory that is subject to an active territorial claim between these two states)*

#### Notes

• The territorial claim referred to in this variable must be included in the ICOW territorial claims data set. The specific claim must be noted on the codesheet, including both the name of the claimed territory and the ICOW code number for that claim (in the next variable).

#### **TERRNUM: ICOW code number for territorial claim affecting this river**

**XXX:** *Number of ICOW territorial claim*

**-9:** *No claim (as coded in TERRCLM)*

#### Notes

• The territorial claim referred to in this variable must be included in the ICOW territorial claims data set.  
• If more than one territorial claim is ongoing in the area of the river, list the one that covers the greatest portion of the river's basin, and add a coding note on the codesheet listing the others.

### **ADDITIONAL INFORMATION ON CODESHEET**

#### **Coding Notes**

• Details on the coding for the case, where relevant (explanations of why the case was coded as it was, particularly in controversial or unclear situations, with references where possible).  
• Note any time that claim characteristics change (e.g., initial discovery of resources, change in population category as a city reaches 100,000 residents, or reversal of the challenger and target states due to a change in possession).

#### **Brief Chronology**

• When and how was the claim first made, and by which actor(s)?  
• What significant events (if any) occurred during (or because of) the claim?  
• Were there any dormant periods in the claim, and if so, how was the claim restarted?  
• When do we consider the claim to have ended, and why?

## Attempted Settlement Data File (RCSETTLE)

**CLAIM: Number of Claim** *(See description under RCCLAIM data)*

**DYADNUM: Number of Dyadic Claim** *(See description under RCCLAIM data)*

**DYAD: Members of Dyad** *(See description under RCCLAIM data)*

**CHAL: Challenger State** *(See description under RCCLAIM data)*

**TGT: Target State** *(See description under RCCLAIM data)*

### **SETTNUM: Number of Attempted Settlement**

**Number:** *An ICOW code number for this settlement attempt*

#### Notes

- These code numbers are chronological, so the first settlement attempt for a given claim should have the number 01.

### **BEGSETT: Start Date of Attempted Settlement**

**Number:** *The month and year that the settlement attempt began*

#### Notes

- This date takes the form YYYYMM, as in 181601, 194508, or 200012.
- This is the date that the actual attempted settlement began, not the date on which it was first suggested; additional details such as the date it was suggested should go in the case's brief chronology (if it can be determined).

### **ENDSETT: End Date of Attempted Settlement**

**Number:** *The month and year that the settlement ended*

**-9:** *attempted settlement remains ongoing*

#### Notes

- This date takes the form YYYYMM, as in 181601, 194508, or 200012.
- For cases ending in successful agreements: use the date of the agreement.
- For other cases: use the date that the settlement attempt stopped (negotiations were broken off, an arbitration decision was handed down but rejected, etc.).

### **TYPESETT: Type of Attempted Settlement**

**1: Bilateral Negotiations** *(between the claimants, without any third-party assistance)*

**2: Good Offices** *(third party attempts to facilitate communication between claimants)*

**3: Inquiry or Conciliation** *(essentially fact-finding mission by third party)*

**4: Mediation** *(third party is allowed to make suggestions toward settlement)*

**5: Arbitration** *(claimants submit claim to ad hoc third party for binding decision)*

**6: Adjudication** *(claimants submit claim to established legal institution for binding decision)*

**7: Other Third-Party Settlement Attempt** *(describe on codesheet)*

**8: Multilateral Negotiations** *(third parties included as equal, interested participants, rather than as neutral parties attempting to facilitate a bilateral settlement between the claimants)*

**9: Peace Conference** *(after the end of a regional or global war, a peace conference of war participants and perhaps other interested parties attempts to adjust borders, as well as settling other postwar issues such as war guilt or reparations -- an example is the post-World War I Paris Peace Conference and its associated Treaty of Versailles. This is somewhat similar to binding settlement attempts such as arbitration, in that the claimants themselves become subject to the decision reached by the peace conference, but the defeated party from the war may not be treated as possessing equal rights during the process, and may not even have the ability to present its own case. This is distinct from, say, mediation)*

*because the conference itself makes the decision regarding the disposition of the issue; if the parties are required to reach their own agreement with outside assistance/pressure, then the settlement attempt involves mediation rather than a peace conference.)*

#### Notes

- See the above discussion of types of settlement attempts for more detail on each type.
- When one actor offers good offices as a way to facilitate arbitration or mediation, code the more involved settlement attempt (in this case, the arbitration or mediation), but make a note of the good offices on the codesheet. Similarly, if a third party becomes involved in the middle of a period of bilateral negotiations by offering good offices to keep the negotiations from ending, code the entire settlement attempt as involving good offices, and make a note on the codesheet.

#### **TYPEACT: Type of Third Party Actor in Attempted Settlement**

- 9: *None (Bilateral settlement attempt)*
- 0: *Claim participants' citizens, or private citizens not acting on behalf of any state government (see note below under ACTOR1)*
- 1: *Minor power(s) only, at least one of which is located in the same region as the claim*
- 2: *Minor power(s) in other region only (i.e., no major power, and no minor power(s) in same region as claim)*
- 3: *COW Major power(s) only, at least one of which is located in the same region as the claim*
- 4: *COW Major power(s) in other region only*
- 5: *Regional IGO (intergovernmental organization) in same region as claim*
- 6: *Regional NGO (non-governmental organization) in same region as claim*
- 7: *Regional IGO in other region*
- 8: *Regional NGO in other region*
- 9: *Global IGO (including the ICJ and similar organizations)*
- 10: *Global NGO (including the Vatican)*
- 11: *Individual (not officially representing any other governments or organizations)*
- 12: *Minor powers, at least one of which is from the same region as the claim; AND Major power(s), at least one of which is from same region as claim*
- 13: *Minor powers, at least one of which is from the same region as the claim; AND Major power(s) from other region(s) only*
- 14: *Minor power(s) from other region(s) but not from the same region as the claim; AND Major power(s), at least one of which is from same region as claim*
- 15: *Minor power(s) from other region(s) but not from the same region as the claim; AND Major power(s) from other region(s) only*

#### Notes

- "Region" refers to the traditional COW conception of regions, as given in the COW interstate system list (actors 1-199 = Americas, 200-399 = Europe, 400-599 = Africa, 600-699 = Middle East, 700-899 = Asia, and 900-999 = Oceania). Note that this means that (for example) North, Central, and South America and the Caribbean are all considered to be part of the same region.
- "Major power" status is taken from the latest version of the COW interstate system list.
- Record any details about the specific individual or organization involved on the codesheet, if possible (was this a foreign king? foreign minister? military or religious leader?).

#### **ACTOR1-ACTOR6: Third Party Actor(s) in Attempted Settlement**

**Number:** *Code number for third party actor involved in settlement attempt*

- 0: *Claim participants (e.g., when the claimants appoint their own citizens to a tribunal to settle the claim. Citizens not acting on behalf of any government should be coded as 999, "private citizens.")*

**-9:** *None (bilateral attempt, no third party involved)*

#### Notes

- Due to the difficulty of rating as many as six or more actors for the prominence or effectiveness of their efforts as third parties, the actors should be recorded in ascending order of COW nation-state code numbers. If there are more than six actors, though, try to determine the six most active third parties in the settlement attempt to determine which six to include; if this is not possible, use the first six COW code numbers, but please leave a coding note indicating the other actors that were involved.
- Nation-state actors: use the COW project's nation-state code number.
- Non-state actors: see the ICOW list (available on the ICOW web site).
- If the specific actor is not listed in either the COW interstate system list or the ICOW non-state actor list, please type in the name or abbreviation of the actor(s) on the codesheet, and we can give them official code numbers later.

#### **EXTENTSA: Extent of claim covered by settlement attempt**

- 1: Procedural** *The settlement attempt doesn't cover the usage of the river in question, but rather covers procedures to be used in settling any (present or future) problems between the claimants (e.g., negotiations over submitting the claim to arbitration or adjudication would be coded as procedural, although the actual arbitral or adjudication process would be a later settlement attempt covering part or all of the claim)*
- 2: Part of Claim** *Part, but not all, of the claim is covered by the settlement attempt (i.e., they are trying to settle a navigational element of the claim but not the larger question of pollution)*
- 3: Entire Claim** *Entire claim is covered (i.e., they are trying to settle everything involved in the river claim)*

#### **S. AGREE: Did attempted settlement lead to an agreement by the claimants?**

- 1: Yes** *The claimants sign a treaty or agreement as a result of the settlement attempt*
- 0: No** *No agreement is signed as a result of the attempt*

#### Notes

- For settlement attempts involving third party decisions, "agreement" refers to the handing down of an arbitral or adjudicated award.

#### **EXTENTAG: Extent of claim covered by agreement, if any**

- 9: No agreement**
- 1: Procedural**
- 2: Part of Claim**
- 3: Entire Claim**

#### Notes

- See the description of the values above (under EXTENTSA).
- Note that the eventual agreement -- if any -- may actually be different from the original goal of the settlement attempt, as expressed in EXTENTSA; for example, a settlement attempt that originally attempts to settle the entire claim may only lead to a procedural treaty as the parties find that they can only agree to meet again or to submit their claim to some third party.

#### **CONCESAG: Which side made more concessions in the agreement?**

- 9: No agreement**
- 1: Major Challenger Concessions** *The agreement involves major concessions by the challenger state, without comparable concessions by the target state. (e.g., challenger gives up its entire claim without receiving concessions from the target)*

- 2: Minor Challenger Concessions** *The agreement involves some concessions by the challenger, although these concessions are not major (or if they are substantial, the target state also makes partially offsetting concessions of its own).*
- 3: Roughly Even Concessions** *The agreement involves roughly equal concessions by both sides in the claim.*
- 4: Minor Target Concessions** *The agreement involves some concessions by the target state, although these concessions are not major (or if they are substantial, the challenger also makes partially offsetting concessions of its own).*
- 5: Major Target Concessions** *The agreement involves major concessions by the target state, without comparable concessions by the challenger. (e.g., target acquiesces to challenger's entire claim, without receiving concessions from the challenger)*

#### Notes

- In the case of third party arbitral or adjudicated awards, treat the award as if it had been negotiated directly between the claimants. An award that grants all of the challenger state's demands would thus be coded as involving major target concessions.

#### **ALLOCAG: Type of water allocation covered by agreement (if any)**

- 9: No agreement**
- 8: No allocation** *Agreement didn't address water resource distribution*
- 1: Absolute sovereignty** *States have the right to use water within their territory in any way they desire*
- 2: Prior appropriation** *Upstream states must respect previously existing rights for downstream states*
- 3: Riparian rights** *All riparian states have the right to expect the river to reach their territory relatively unchanged*
- 4: Equitable utilization** *All riparian states agree to make responsible use of the river (also known as "reasonable and equitable use" or "fair and equitable use"); any state can make use of the river's waters to the extent that this usage does not harm other riparian states*
- 5: Optimum development** *All riparian states agree to do what is best for the development of the entire river basin*

#### **RATCHAL / RATTGT: Did challenger/target ratify the agreement (if any)?**

- 9: No agreement**
- 0: No** *This state did not ratify the agreement*
- 1: Yes** *This state ratified the agreement*

#### Notes

- Ratification must be completed within a reasonable time. If the agreement specifies a specific time frame (e.g., within one year of the treaty's signature), then ratification must be completed within that time frame to be coded. When no time frame is specified, the time frame for ratification should be five year from signature.
- If an agreement does not require formal ratification in one or both states' political systems, and the state in question attempted to comply with or carry out the terms of the agreement, then it should be coded as ratifying the agreement. The main purpose of this variable is to identify cases where ratification was not completed (indicating the failure of the attempted settlement), rather than to identify specific details of each state's political process.

#### **COMPCHAL / COMPTGT: Did challenger/target implement or carry out the terms of the agreement (if any)?**

- 9: No agreement**
- 0: No** *This state did not implement/carry out the agreement*
- 1: Yes** *This state implemented/carried out the agreement*

## Notes

- Note that "compliance," "implementation," or "carrying out" refer to the claimants taking the required actions. If an agreement fails for reasons beyond their control (e.g., both sides submit their cases to a third party but the third party refuses to hear them or dies before rendering an award), the claimants should still be coded as implementing the agreement.
- Compliance must be completed within a reasonable time. If the agreement specifies a specific time frame (e.g., within one year of the treaty's signature), then compliance must be completed within that time frame to be coded. When no time frame is specified, the time frame for compliance should be five year from signature.
- Compliance can always be withdrawn later, so any coding of compliance with a given agreement is necessarily an inexact decision that could be reversed. As a result, compliance should be coded based on a five-year period -- so a state that complies for less than five years should be coded as not complying with the agreement. An agreement that is meant to be carried out once (e.g., an agreement to submit cases to a third party arbitrator) should be coded based on whether or not the required action was carried out within the specified time frame (as described above).

### **CLAIMEND: Did attempted settlement lead to the end of the claim?**

#### **-9: No agreement**

**0: No** *The claim continued past the end of this settlement attempt*

**1: Most of Claim** *The agreement produced a settlement of the issue(s) that was followed by the end of explicit contention over most of the claim*

**2: All of Claim** *The agreement produced a settlement of the issue(s) that was followed by the end of explicit contention over all of the claim*

## Notes

- "All" of the claim means the end of contention over the entire content of the claim. When a settlement attempt is coded with this result, the claim should be coded as ending in the claim-level data (RCCLAIM).
- "Most" of the claim means the end of contention over most of the content of the claim, although some of it remains ongoing. Examples include treaties or third party awards that resolve almost all of a claim but leave questions unresolved for one stretch of a river (whether this oversight is intentional, with the goal of postponing the most controversial portion while resolving everything else, or because not enough information was available at the time of the treaty/award). When a settlement attempt is coded with this result, the full claim should not be coded as ending in the claim-level data (RCCLAIM), although the dyadic claim may be coded as ending and being replaced by a different dyadic claim focused on the remaining issue, presumably with a much smaller area at stake and likely with different salience indicators.
- This variable may be complicated by claims that appear to end following a treaty, only to be raised anew within several years (due to new information about the river, new leadership in one or both former claimant states, or other factors). If explicit contention over most/all of the claim does indeed end following a treaty or award, this variable should be coded accordingly, even if a new claim between the same states begins within a year or two.

## **ADDITIONAL INFORMATION ON CODESHEET**

### **Initiator of Settlement Attempt**

- Who proposed the settlement attempt? (this could be one of the participants, or it could be an outside actor) --this isn't being entered into our computerized version data set, but it may prove to be useful to have around for future reference.
- this isn't always easy to determine, especially for older settlement attempts that are covered only briefly in historical sources.

**Brief Chronology of Settlement Attempt**

- Who was involved in the settlement attempt, what they did, when, etc.
- Brief summary of the result of the settlement attempt (how did it end? summarize the agreement that was reached and any details on its ratification or implementation if possible, or explain the impasse that prevented agreement / ratification / implementation).

**Coding Notes**

- Details on the coding for the case, where relevant (explanations of why the case was coded as it was, particularly in controversial or unclear situations, with references where possible).



**Appendix: Sample Codesheets  
ICOW River Claim Coversheet**

**CLAIM** (*Code number of claim*):

**NAME** (*Name of river*):

**RIVNUM** (*Code number of river*):

**BASIN** (*Name of river basin*):

**ACTORS** (*All states sharing this river, ordered from upstream to downstream*):

COW Code    Name of Actor

**DYADS** (*All dyads sharing this river, ordered from upstream to downstream*):

Dyadnum    Chal - Tgt                      BegClaim-EndClaim    Resolved                      EndViol?

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**Brief Description of Issue:**

**Brief Chronology of Claim:**

**Coding Notes:**

**References:**

## ICOW River Claim Data Set • Dyadic Codesheet

**Claim** (*Code number of claim*):

**Name** (*Name of river*):

**Dyadnum** (*Number of dyadic claim*):

**Dyad** (*AAABBB*):

**Chal - Tgt** (*Challenger and target*):

**Begclaim** (*Beginning of dyadic claim*):

**Endclaim** (*End of dyadic claim*):

**Resolved** (*Type of resolution of dyadic claim*):

**Endviol** (*Did claim end through large-scale violence?*):

**QuantCl:**

(*Water quantity element in claim? 0=no, 1=potential future problem, 2=current*)

**QualCl:**

(*Water quality element in claim? 0=no, 1=potential future problem, 2=current*)

Please list all known pollutants, known/suspected origins, and approximate magnitude:

**NavCl:**

(*Navigational element in claim? 0=no, 1=potential future problem, 2=current*)

**FloodCl:**

(*Flooding element in claim? 0=no, 1=potential future problem, 2=current*)

**HomeChal** (*Homeland territory for challenger? 0=dependent, 1=homeland*):

**HomeTgt** (*Homeland territory for target? 0=dependent, 1=homeland*):

**Rivtype:**

(*River type: 1=through border, 2=along border, 3=both, 4=into border river, 5=U-shaped*)

**LengthC** (*river length in challenger state/in miles*):

**LengthT** (*river length in target state/in miles*):

**LengthB** (*river length along common border/in miles*):

Source(s) for length estimates:

**Flow** (*Volume of river flow*)

Record annual data directly in spreadsheet, not on this codesheet.

Please list all sources used for this variable, and years and states for which each was used:

**ScarceC, ScarceT** (*Fresh water scarcity*)

Record annual data directly in spreadsheet, not on this codesheet.

Please list all sources used for this variable, and years and states for which each was used:

**NavC:**

**NavT:**

*(River used for navigation: 0=no, 1=locally, 2=for international commerce)*

**PopC:**

**PopT:**

*(Population density along river course: 0=none, 1=villages/towns, 2=city of 100,000+)*

**ResourceC:**

**ResourceT:**

*(River used for fishing or other resource extraction?: 0=no, 1=for local consumption, 2=for national consumption or export)*

Please list all involved resources, with approximate year of discovery or initial extraction:

**DamsC:**

**DamsT:**

*(Number of large dams on river within territory of challenger/target state?)*

Please list all large dams, including name, location, height/capacity, and year of completion:

**PowerC:**

**PowerT:**

*(River used to generate hydroelectric power by challenger/target state?: 0=no, 1=locally, 2=national or international project)*

Please list all hydroelectric power stations in each state, including location and year of completion:

**IrrigC:**

**IrrigT:**

*(River used for irrigation or other diversion projects by challenger/target state?: 0=no, 1=locally, 2=national project)*

Please list all irrigation/diversion projects in each state, including location and year of completion:

**TerrCln:**

*(River located in claimed territory: 0=no, 1=part of river, 2=all of river in claimed territory)*

**TerrNum:**

*(ICOW code number for territorial claim including this river)*

**Coding Notes:**

**Chronology of Claim:**

## ICOW River Claim Data Set • Attempted Settlement Codesheet

**Claim** (*Code number of claim*):

**Name** (*Name of river/claim*):

**DyadNum** (*Number of dyadic claim*):

**Dyad** (*AAABBB*):

**Chal - Tgt** (*Challenger and target*):

**SettNum** (*Number of attempted settlement*):

**BegSett** (*Beginning date of attempted settlement*):

**EndSett** (*End date of attempted settlement*):

**Typesett** (*Type of attempted settlement; see codebook for values*):

**Actor** (*Third party actor, if any; see codebook for values*):

**Typeact** (*Type of third party actor, if any; see codebook for values*):

**ExtentSA:**

(*Extent of settlement attempt; 1=procedural, 2=part of claim, 1=all of claim*)

**Agree** (*Did attempt produce a treaty / agreement / decision? 0=no, 1=yes*):

**ExtentAg** (*Extent of agreement, if any; see ExtentSA for values*):

**ConcesAg:**

(*Which side made more concessions?; 1=major challenger concessions, 2=minor challenger, 3=no/even concessions, 4=minor target, 5=major target concessions, -9=no agreement*)

**AllocAg:**

(*Which type of water allocation is provided by agreement?; -9=no agreement, -8=no allocation in agreement, 1=absolute sovereignty, 2=prior appropriation, 3=riparian rights, 4=equitable utilization, 5=optimum development*)

**RatChal, RatTgt** (*Did state ratify? 0=no, 1=yes/NA, -9=no agreement*):

**CompChal, CompTgt** (*Did state comply? 0=no, 1=yes, -9=no agreement*):

**ClaimEnd:**

(*Did agreement end claim? 0=no, 1=most of claim, 2=all of claim, -9=no agreement*)

**Brief Chronology of Settlement Attempt:**

**Coding Notes:**