A Methodology for Developing an Economic Impact Assessment of Outdoor Recreation in Colorado

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Table of Contents

Acknowledgments	2
Executive Summary	3
Introduction	4
The Dolores River as a Case Study	5
Section 1: How to Use this Document	6
Section 2: What is an Economic Impact Assessment?	7
Section 3: Geographic Considerations of an Economic Assessment	8
Section 3.1: How to Define an Economic Impact Region	8
Section 3.2: Radius of Impact	9
Section 3.3: Impacted Counties	10
Section 4 : Develop an Economic Profile	11
Section 4.1: Baseline Economic Profile	11
Section 4.2 : Components of an Economic Profile	12
Population	12
Employment	13
Income	14
Businesses	14
Identify lodging by type	14
Local retail sales data	14
Sales Tax	15
Identify events related to specific recreational activity including	15
Section 5: Develop a Recreational Profile	16
Section 5.1: Getting Familiar with the Area	16
Section 5.2: Recreational Data and Spending	17
Section 5.2.1: Recreational Data	17
Intercept Surveys	18
Permits	18
Section 5.2.2: Recreational Spending	19
Section 6: Quantification of Economic Impacts	20
Total effects	20
Section 6.1: Tools for Economic Analysis	21
Section 6.2: Inputs into the Economic Model	21
Section 6.3: Economic Multipliers	22
Section 6.4: Outputs of the Economic Model	22
Section 6.5: Putting Outputs in Context	22
Section 6.6: Assumptions	22
Section 7: Natural Resource Conditions	23
Section 7.1: Boatable Days	25

Section 8: Primary Data Collection	27
Section 8.1: Interview Guidance	27
Federal Agencies relevant to the Dolores Region	27
Bureau of Land Management	27
United States Bureau of Reclamation	27
US Fish and Wildlife Service	
United States Forest Service	
National Park Service	
Colorado Water Conservation Board	
Colorado Parks and Wildlife	
Outdoor Recreation Industry Offices	
Local Stakeholders	
Recreation Advocates	
Local Businesses	
Industry Organizations	
Recreationists	
Water Conservation Districts	
Section 8.2: Survey Distribution and Collection	
Survey Collection	
Survey Distribution	
Section 9: Conclusion and Next Steps	32
References	
Appendices	35
Appendix 1: All Recreation Replicability	35
Appendix 2: Questionnaire and Survey Templates	
Appendix 3: Literature review	
Appendix 4: Glossary	
Appendix 5: Acronyms	
Appendix 6: Methods	
Appendix 7: COVID-19 Limitations	
Appendix 8: Dolores Resources	
Appendix 9: Full url Links	
Appendix 10: Harvey Economics Addendum	



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Executive Summary

Outdoor recreation plays an important role in Colorado's identity and is recognized as an integral part of the economy. In the United States, the outdoor recreation industry is estimated to contribute \$800 million to annual GDP and provides 7.6 million jobs (Outdoor Industry Association, 2017). Assessing the impact that outdoor recreation has at the community level can provide valuable insight into its current contributions to the economy as well as how outdoor recreation opportunities could be diversified and strengthened to support economic development. The framework described in this document, developed by CU Boulder MENV students in partnership with American Whitewater & the Colorado **Outdoor Recreation Industry** (OREC) Office, is intended to be used in communities across Colorado to assist them with developing an economic assessment of outdoor recreation in their region. In creating this framework, we used the Dolores River Basin and river recreation as a case study in order to provide specific examples and further guidance illustrating its use in practice.

The framework is made up of 9 sections. We begin in Section 1 with an overview of how to use the document. Section 2 then defines an economic impact assessment and describes its importance. Section 3 guides users through determining a regional boundary for an economic assessment, which is an important first step in developing an economic impact assessment. Section 4 provides

the resources which will be necessary in order to complete the economic profile of the region in guestion. Next, section 5 goes into depth as to how to develop a recreational profile of a region in order to fully understand the recreation type and users in guestion. Section 6 then details how to quantify the economic impacts of a particular recreation-type on the region. Section 7 outlines the importance of having extensive knowledge of the natural resource in question. Section 8 provides details for effective methods to employ when information gathering to obtain recreation-specific economic information. Last, Section 9 provides suggestions for the next steps and resources.

A completed economic assessment of outdoor recreation impacts will provide a community with baseline information about how recreation contributes to the local economy. This can allow a community to track the growth of the outdoor recreation industry over time. The data from an economic impact assessment of outdoor recreation can be crucial to a community when advocating for recreational opportunities to further enhance a region's outdoor assets.



9 SECTIONS

guide the framework of an economic impact assessment

SECTION 1. OVERVIEW SECTION 2. UNDERSTAND SECTION 3. ESTABLISH SECTION 4. QUANTIFY SECTION 5. DEVELOP SECTION 6. OUTLINE SECTION 7. ASSESS SECTION 8. COLLECT SECTION 9. RESOURCES



Introduction

Countless rural communities in Colorado have historically relied on single industries for their economic livelihood.

Nationwide, the outdoor industry economy is responsible for over \$800 billion in consumer spending and over 7 million jobs (Outdoor Industry Association, 2017). Prior to the COVID-19 outbreak, the outdoor industry was growing at 2.2%, faster than the larger economy as a whole (Bureau of Economic, 2019; Colorado Parks and Wildlife, 2017) but a recent member survey by the Outdoor **Recreation Roundtable estimated** that 75 percent of small businesses in the industry sector are reporting large and negative effects (Outdoor Recreation Roundtable, n.d.). A greater understanding of outdoor recreation's economic impact on rural communities can allow local governments to understand the makeup of their current economy, and how it can be diversified. Additionally, protecting natural resources that are an asset to rural communities can help bring new people into the region and boost their economy. With an increase in tourism traffic, local businesses will see a spike in sales, allowing further improvement of the infrastructure in the community itself. There are many towns in Colorado already enjoying the benefits of economic diversification through outdoor recreation serving as an example of what can be. One such example is the mountain town of Salida.



Walking through Salida, Colorado, visitors are greeted with a diverse array of recreational opportunities. The Sawatch mountain range to the north and west offer opportunities to ski, hike, mountain bike and rock climb, while the Arkansas River offers visitors the opportunity to kayak world-class whitewater right through the city's center. It was not always this way, as the bustling mountain town was once a railway center for the surrounding mining industry. But as industrial mining began to fade in the 70's, so did Salida's economy (Western Mining, n.d.). However, in the early 90's the town began to diversify its economy, catering to a budding outdoor recreation and arts scene (Western Mining, n.d.). Economic diversification has given the town new life as tourists spend their time and money enjoying the town's natural features and vibrant culture (Outdoor Industry Association, 2017).

Salida is not alone. Countless rural communities in Colorado have historically relied on single industries for their economic livelihood. Towns like Fruita and Winter Park have created more resilient and equitable communities by diversifying their local economies through many means, including outdoor recreation. The economic successes of these towns are a part of a much larger trend. In collaboration with American Whitewater and the Colorado Outdoor Recreation Industry Office, Masters of the Environment students at the University of Colorado Boulder have developed this report to equip communities with the steps necessary to create their own regionalized and recreation-specific economic impact analyses. These studies will inform communities on the economic potential of their recreational resources and ultimately provide a holistic understanding necessary to make better informed land management and economic development decisions. An economic assessment of outdoor recreation can provide local governments, advocacy groups, and businesses with the data demonstrating the recreation industry's impact on the regional economy, complementing the current economic structure in the region.





THE DOLORES RIVER AS A CASE STUDY

American Whitewater works closely with the Dolores River Basin community, as well as regional partners and local governments, to advocate for boating access and streamflows for recreation on the Dolores River. Current economic assessments of Dolores River recreation examine long-term trends in commercial use, though presently there is not a methodology to create a holistic economic impact assessment (Colorado River Outfitter Association, 2019). The Dolores River Basin is used in this report as an example of the economic impact assessment process. Though this case study focuses on river recreation on the Dolores River, the overall methodology is designed to be expanded and utilized for other recreation types throughout the state. <u>Appendix 1</u> provides more information on its replicability.

Section 1: How to Use this Document

The methodology of the report is broken up into several areas of focus, each outlining their respective best practices. The following flowchart illustrates how best to use this document.



This document provides the basic information necessary to create an economic assessment of outdoor recreation. An economic analysis of recreation needs to include, but is not limited to, the components presented in this report. The organization of the document itself suggests the order in which to gather the information necessary to include in the assessment. Each section explains in detail the information needed to complete the various components of the report.



Section 2: What is an Economic Impact Assessment?

According to the EBP Economic Development Research Group, an economic impact assessment, or analysis (EIA), is a "methodology for evaluating the impacts of a project, program, or policy on the economy of a specific region" (EBP, 2020). An EIA is an important decision making tool that can provide useful impacts on jobs, income, operating costs, productivity and competitiveness, in addition to their distribution among a particular industry over a period of time (EBP, 2020). EIA's are often useful in providing an in-depth analysis of outcomes or secondary impacts from a particular industry and can be utilized in community planning efforts centered around economic development.

Outdoor recreation provides significant benefits to communities all across the state of Colorado. However, communities often may not understand the true economic impact of recreational activities because currently, there are limited ways to calculate these impacts. This hinders decision making at the regional and local level when it comes to evaluating the economic needs for resources in the recreational industry. An EIA is one way to address this gap in information and provide local governments and advocacy groups with the opportunity to assess basic economic impacts without initial external assistance.

It is important for the users of this report to understand what an EIA does and does not do. EIAs focus largely on impacts and do not consider the potential costs to a region from a recreational activity. For example, road maintenance and construction in a highly trafficked area utilized to access an activity would not be considered an impact in a basic economic assessment (S. Walker, personal communication, September 25, 2020). The following report is used as a tool to address the lack of recreational economic assessments on a regional level.

Section 3: Geographic Considerations of an Economic Assessment

Defining the region is an important first step when beginning an economic assessment, as it will inform the area of impact. The recreational asset itself acts as a "basecamp" and provides a central location to the economic impacts included in the boundary. Identifying a focus region helps to define the project scope and narrow in on specific municipal and county boundaries to include in the assessment.

For this report, we are examining river-based recreation in the Dolores River region and will touch on river-based recreation, but will consider other forms of outdoor recreation in <u>Appendix 1</u>. Oftentimes recreation areas encompass several towns and counties, and can cross state lines making it important to narrow down the scope of an assessment. For this report, examples are provided through the lens of river recreation, though it is developed to address all forms of outdoor recreation. If interested in learning more about how this report could apply to other recreation activities please see <u>Appendix 1</u>.

Section 3.1: How to Define an Economic Impact Region

Understanding the scope of a region can be difficult without being physically there. This project took place throughout the COVID-19 pandemic which forced the team to rely primarily on online information rather than firsthand experience. Online resources like Google Streetview[™] and Google Earth[™] allow the user to see close-up images of an area which provides an alternative mode of viewing a region. The benefit of these tools is that the user can see detailed images from above the region, as well as on the street level. Google™ tools should be used as an additional reference to existing information as images can be outdated. Mapping the assets of recreational amenities to narrow a regional scope can provide a more well-rounded picture when partnered with information from Google™.

QUESTIONS TO ASK WHEN DEFINING A REGION BASED ON RIVER RECREATION

- What river, section, or sections of the river are you focusing on?
- Is there a central location or town(s) in close proximity to the river that act as hub(s) for recreationists?
- Are there specific towns that act as gateways to the recreation area?
- Are there significant municipalities nearby the river?
- Are there any important natural features to the river? Consider regionally or nationally significant attributes with protective designations from the state or federal level.
- Are there popular tourist destinations that are close to or part of the river? Consider public lands, recreation areas, national parks, national monuments, state parks, and others.
- What are the major points of entry and travel routes that people use to access the area and river? Are there major highways or interstates?

Section 3.2: Radius of Impact

The economic impacts of recreation are often centralized around towns, river put-ins and takeouts, trailheads, and other major recreation hubs. Additionally, the radius of impact from recreation on an economy likely extends further away from these centralized locations as recreationists travel to and from the area. Understanding where recreationists spend money will assist in defining a region's boundaries. These terms are defined more explicitly in <u>Section 8</u>, though brief definitions are mentioned here.



QUICK DEFINITIONS

Radius of Impact: the distance from the recreational activity to the furthest point where related economic activity still takes place. See example radius graphic above.

Direct Spending: the expenditures spent by recreationists that directly impact the local economy.

Indirect Effects: the expenditures made by local businesses due to the increase in economic activity from river recreation. Direct and indirect economic effects likely take place in close proximity to the recreation area though indirect effects may occur outside the area too. It is important to identify the spending that occurs within the study area as this is used to quantify the specific economic impacts of recreation. Steps in the following sections will illuminate ways to pinpoint these effects and help to define the region further. Note that as more information is gathered, the geographic boundary may shift in size depending on how much economic activity is taking place in correlation to recreation. Below are some initial ways to calculate geographic boundaries.

CALCULATE BOUNDARIES BY COUNTIES

County boundaries can be used as a means of setting mileage limits, and can be used to identify an appropriate size and scope.

COUNTY BOUNDARIES FOR THE DOLORES RIVER BASIN REGION

The Dolores River runs through five counties, Montezuma, Dolores, San Miguel, Montrose, and Mesa in Colorado, and Grand County in Utah. Since the team was focusing specifically on Colorado economic impacts of recreation, we shifted the scope and eliminated Grand County in Utah. Other users of the report may choose to include the Utah county depending on their scope and purpose.

CALCULATE BOUNDARIES BY MILEAGE FROM NATURAL FEATURES

The study region should define what mileage to consider. Utilizing natural features is another way in which geographic boundaries can be identified. Users can choose specific mileage from each side of a natural feature (for example a riverbed) to identify locations of economic impact. For example, assessing the region in increments of 50 miles, 100 miles, and 250 miles from the activity will allow the user to keep track of economic impacts related to recreation. Mileage increments can be scaled up or scaled down depending on the scope of the assessment.





Section 3.3: Impacted Counties

An important source of data to consider is county-level information. The defined jurisdictional boundaries of counties can make it easier to gather and compare data because metrics in the U.S. Census, and other datasets, already present data on a county level (S. Walker, personal communication, September 25, 2020). Again, geographic boundaries can be sized up or down depending on new information. An initial project scope will point the user in the right direction for specific economic data sources to consider, which is described in <u>Section 4</u>.

Section 4 : Develop an Economic Profile

Developing an economic profile of the region is critical when conducting an economic impact analysis because it will provide the necessary information to calculate the economic benefit that recreation creates in a community. This calculation can help inform discussions about trade-offs and opportunities for investment in recreational infrastructure, which may lead to economic diversification. The economic profile provides key demographic and economic characteristics of community social environments to guide collaboration efforts (Sennett, Duke, Perlstein (2013).

Section 4.1: Baseline Economic Profile

Developing a baseline economic profile is vital when setting the foundation for an economic impact analysis. It consists of current economic, demographic, and social conditions in an area. It can sometimes include historic trends or patterns, but the focus is primarily on current conditions. The development of an economic profile will not only add context to the regional area but also to the economic benefit of a certain recreational activity. Evaluation of study results are provided in <u>Section 6</u>.

P DRY YEAR DIFFERENCES

The comparison of dry and wet years on a river like the Dolores can provide important indications of economic activity as it relates directly to water recreation. The data can be useful in showing how much economic activity changes as a result of a boatable flow year. Comparing the number of boatable opportunity days per season to retail sales, income, and lodging rates are ways to better understand dry year differences. The potential correlation between spill releases and differences in economic activity are one way to support discussions around management from the McPhee Dam to increase downstream flow and thus providing boaters with more opportunities to be on the river. Spill releases will be discussed in more detail in <u>Section 7</u>.



Section 4.2 : Components of an Economic Profile

An economic profile consists of various data sets such as *population, employment, income, businesses, and sales tax data*. The data sources below serve as an initial suggestion though other sources are available through regional or county sites.

POPULATION

Population growth can be attributed to recreational amenities. A USDA study found that the existence of amenity features, such as a moderate climate, varied terrain, and accessibility to water bodies of significant size, can justify the population growth in rural counties in the last portion of the twentieth century (McGranahan, 1999). A multi-year population comparison is essential to understanding population growth or decline.

Here are a few key questions to consider when analyzing population trends:

- What is the current population of the defined region?
- What is the population trend over the past 30 years?
- Has there been a period of growth or decline in the region? If so, what is the major contributor?
- What are the demographic trends? Define regional demographics.
 - Sources for demographic information
 - Headwaters Economics

Click "by geography" Search by county

— <u>Data USA</u>

Search by county

- How does the population compare to the State of Colorado's population? (Since the population of Colorado has been increasing according to the U.S Census, it is beneficial to see the ratio of population in the region compared to the state, to better understand where individuals are relocating to.)
- What does the population of the region look like? Identify age groups, socioeconomic status (poverty levels), and demographics (race/ ethnicity). Analyzing this information will help in understanding your region and the population.
 - Best sources for population data
 - <u>United States Census</u> (select your county)
 - <u>Colorado Department of Local Affairs, State Demographer's Office</u> (select your county)





Components of an Economic Profile: population, employment, income, businesses, and sales tax data

EMPLOYMENT

Employment information is needed for the development of an EIA. This information demonstrates the number of people in a particular workforce within the region. It is important to understand what employment sectors in the region benefit from the recreational activity. For instance ski guides are an example of an employment opportunity that depends on recreation, because without snow fall, that source of employment would be non-existent in that region.



Questions to consider are listed below:

- What is the current total employment?
- What are the rates of unemployment?
 - Compare averages of both to the state averages.
- Are there other employment sectors that benefit from recreational activities in the region?
 - Is your recreational activity seasonal? ie. Snowshoeing's primary season is the winter.
 - Compare employment v. unemployment, making special note of on and off seasons if the economic analysis calls for it.
 - What are the patterns of employment or unemployment over the course of a year?
 - Data on seasonal workers will need to be collected. Seasonal workers often do not collect unemployment as many employees are part-time. Thus it is important to contact local businesses to identify the number of employees.
 - Identify key sectors that rely on that recreational activity.
 - Dolores Businesses that Depend on Recreation: Dolores & Bedrock Shuttle Services, lodging, food, gas, commercial rafting
- Which business sectors employ people in the region? (categorize by sector)
 - Employment by industry (highlighting those industries important to recreation, or the industries with the largest employment numbers)
 - Who are the largest employers in the region?
 - Best source for data on employment
 - ✓ Bureau of Economic Analysis
 - ✓ <u>Bureau of Labor Statistics</u>
 - ✓ Economic Census

Establishing a multi-year analysis of the average income in the region will help in understanding if recreation acts as a contributor to this number.

- What is the income by industry?
- What is the average income per employee in different industries?
- Has there been an increase in tourism and recreation usage and an increase in average income in a region over multiple years?
 - Here are a few resources to examine when researching income
 - Bureau of Economic Analysis
 - United States Bureau of Labor Statistics
 - <u>Census</u>

BUSINESSES

- Identify lodging by type
- Establish a list of all hotels in the region
 - Once a list of all the hotels in the region is established, determine the occupancy rates. The two resources below are good sources for information regarding occupancy rates. If data are not available contact individual hotels for that information.
 - Colorado Chamber of Commerce
 - ✓ Select your region and search for lodging types
 - Rocky Mountain Lodging Report
- Establish a list of all campgrounds in the area
 - Once this list has been established, contact both agencies below to gather information on occupancy rates. If these data sources do not have available information regarding occupancy such as private campsites, you will need to contact the campsite directly. Not all campgrounds will have fees, however it is important to include those in the analysis as those users will still contribute to the economy.
 - Bureau of Land Management
 - <u>US Forest Service</u>
 - National Park Services
 - Colorado Parks & Wildlife
- Local retail sales data
 - Collecting business sales data is necessary when determining the full economic impact recreation has on a region. It is important to examine business sales data for the baseline economic profile because you will be comparing average/baseline business sales to years/seasons with lower and higher amounts of recreation in the region. Data sets should also take into consideration external factors that will affect economic data. External factors including economic recessions and natural disasters can influence economic data.
 - The best source for local sales data is the Colorado Department of Revenue





SALES TAX

- Identify all major businesses in the region (categorize by sector)
 - Service, merchandising, & manufacturing business, etc.
 - This information can be found at the Colorado Department of Revenue (data for researchers)
 - ✓ Tip: Research by month, quarter, county
- Identify local sales tax rates
- State, County, Municipal, & Lodging tax (if applicable).
 - Local chamber of commerce websites publish sales tax revenue on the city's tax page, as well as the <u>Colorado Department of Revenue</u>.
 - Another resource for locating municipal or county certified annual financial reports is the <u>Colorado Department of Local Affairs</u> or the information can also be found on local region websites depending on the region in question.

Sales Tax Data Gathering:

Montezuma County's tax revenue records are not collected at a county level so it is necessary to extend the search to the city level. In the case of Montezuma County, sales tax data from three of the largest cities in the county including Cortez, Dolores, and Mancos, Colorado should be examined. Once the data are collected, a look at the changes in associated spending categories like local restaurant and lodging data from years with boatable flows vs. years with no boatable flows can be compared to help determine differences in recreation spending based on hydrologic conditions. To find more information related to the nuances between boatable vs. non-boatable flows see <u>section 7</u>.

- Identify events related to specific recreational activity including:
 - Are there any local annual events that drive up the amount of visitors? (Examples: Palisade Peach Festival in Palisade or Frozen Dead Guy Days in Nederland)
 - Camping- An annual camping trip for an outdoor group such as the local Boy Scouts of America
 - Endurance Events
 - Festivals (Example: River festivals)



Section 5: Develop a Recreational Profile



In order to develop a better understanding of recreation from a cultural and economic perspective, one must become better acquainted with both the recreation area and user group(s) in

question. This process requires an awareness of not only the recreational activity's features but also how they influence the spending behaviors of its users.



Section 5.1: Getting Familiar with the Area

Where recreationists spend their money largely relies on where a trailhead, crag, or popular putins and take-outs are located. The best place to start researching is a local guidebook available either online or in hardcopy. These guidebooks can usually be found through a simple internet search, by contacting a local outfitter, associated recreation association, or at many local bookshops. If a guidebook is not available or does not exist for the area in question, recreation-specific online resources like <u>American Whitewater's National</u> <u>Whitewater Inventory</u> or <u>Mountain Project</u> will be able to provide information to partner with a Google Map search within the designated region. This method will uncover helpful information including heavily traveled social trails, backcountry roads, and designated recreation sites that lead to popular access points.

RECREATIONAL OPPORTUNITIES AND INFRASTRUCTURE WITHIN THE DOLORES RIVER BASIN



Figure 4.1 highlights the various recreational opportunities and infrastructure of the Dolores River Basin.

Recreation Guide Resources:

Many sports use guidebooks and websites to designate popular starting points. Examples of informational resources include websites like <u>trailrunproject</u>, <u>alltrails</u>, and <u>mountainbikeproject</u> for information on trail-based recreation. Forms of recreation that may include less obvious starting points like rock climbing or backcountry skiing, might require visiting websites like <u>mountainproject</u>, <u>powderproject</u>, or consulting a local outdoor retailer for local guidebooks. Visit websites like <u>americanwhitewater</u>, <u>riverbrain</u> and <u>mountainbuzz</u> for helpful information on water-based recreation.

Section 5.2: Recreational Data and Spending

Visitor data including recreational activities and spending patterns allow for a more nuanced understanding of how and why recreationists spend their time and money in an area. For this reason, the importance of general recreation and spending data are paramount to a comprehensive recreational profile.

Section 5.2.1: Recreational Data

The economic implications of any recreational activity are affected by each visitors' unique reason for recreating. Because of this, acquiring a variety of data points is paramount in order to quantify the recreation's regional economic impact (Whisman, Hollenhorst, & Jones, 1996).

These may include:

- What is the recreational attraction?
- What is the average number of recreationists within each trip?
- How many trips per season?
- How many total recreationists per year?
- What brings people to the area of study?
- What is special or unique about the area or the resource?

Capturing exact numbers can prove difficult due to unreliable compliance percentages among visitors or lack of permits and other government documents. Due to this complication, qualitative and anecdotal assumptions like user accounts may need to be considered. These assumptions can often take the form of projections derived from incomplete data sets. For example, if a particular recreation site has historically seen a consistent average of one hundred visitors per day during the month of July and, due to unforeseen circumstances, the most current July data is incomplete, assumptions that the current July visitor number will be close to one hundred is permissible (S. Walker, personal communication, May, 2020).

Recreation data do not exist within a vacuum and thus are subject to external factors including environmental shifts. Understanding fluctuations in recreation from above, below and average meteorological years (i.e. precipitation, heat and wind) can be gathered from a variety of sources including user surveys and retail sales data amongst others. Regardless of the method of data collection implemented, it is crucial to analyze the data by asking the question "what is the economic impact of an activity in an average year and what would the losses be if that activity were to be reduced or eliminated by non-average conditions?" Keeping that in mind, here are a few data collection options that can help determine the number of recreationists that pass through a given region:

INTERCEPT SURVEYS

• This research method involves an interviewer intercepting a recreating party on their way to a hiking trail, crag or river access point to ask them to respond to a brief survey. Recreationists may often have limited time so it is crucial that the survey is designed so that the simple and important questions like demographics are front loaded. It is important to create web-based versions of surveys in tandem to their hard copy counterparts in order to provide recreationists with the option to complete it at a later time. See figure 1 in appendix 2 for a template of what a boating intercept survey could include.

PERMITS

• Many natural resources on public lands utilize a permitting system that asks recreationists to register through self-reporting forms at high traffic access points, requiring users to record trip information including name, address, group size, and date (S.A. Cooper, personal communication, August 28, 2020). Some areas require permits managed through the <u>recreation.</u> <u>gov website</u>. From this homepage simply type the name of the recreation site in question into the main search bar to find further details on how to acquire a permit. Although recreationists may be required to fill out this information, compliance levels vary by location and not all public lands require permits. It is best to contact the managing land agency in order to obtain this regional information.

- Many BLM field offices store their permit data in a hardcopy that is not readily accessible online. Accessing more detailed historical data including group sizes and usage dates are only available for commercial trips. In order to obtain this information, reach out to the local commercial guides themselves and ask for their records. Because of this challenge, the processes to obtain historical data will differ depending on the area in question.
- Collecting data from permits is more dependable than other qualitative measures because there is a penalty for submitting an improper permit application. This discipline can range from a verbal warning for a small offense to a court appearance and fine for larger infractions, incentivizing recreationists to double check that they are entering accurate data in their applications (Bureau of Land Management, 2018).
- Quantitative data from permits, when combined with the aforementioned qualitative methods, provide valuable insight into recreation that can be especially helpful when evaluating its economic potential.

Permitting Information:

In order to obtain a rafting permit to run the Utah segment of the Dolores River, Gateway to the Colorado River confluence, boaters have to contact the <u>Moab Regional</u> <u>Field Office</u> and follow on-site prompts to contact the local field manager (H. Johnson, personal communication, August 3, 2020). Currently, there is no permit system in place for any of the Colorado segments but the BLM encourages boaters to provide trip information at kiosks at established access points along the river (N. Fey, personal communication, October 14, 2020).







Section 5.2.2: Recreational Spending

Properly estimating visitor spending profiles is a crucial exercise when developing any EIA. This profile equips interested parties with a comprehensive analysis of the target demographic(s) that will provide the best return on their investment, which may take the form of recreation-specific infrastructure like parking lots, visitor centers, or boat put-ins. This activity is typically measured through visitor surveying as well as applicable expenditure studies like the <u>Statewide</u> <u>Comprehensive Outdoor Recreation Plan (SCORP)</u>.

Visitor surveys vary depending on what form of recreation is in question. For example, a typical whitewater rafting visitor spending survey with an emphasis on spending locations will look similar to the template adapted from The National Park Service located in <u>figure 4</u> in appendix 2 (Thomas, Koontz, & Cornachione, 2019) and administered either in a hardcopy or digital format via email or on-site excel document via tablet computer depending on the availabilities of staff.

Section 6: Quantification of Economic Impacts



The purpose of the economic impact assessment is to examine the total economic impact of a demand change on a regional economy. In this study there is an examination of the economic benefits that are a direct result of recreation in a region. Output categories are employment, earnings, economic activity, tax revenues, etc. This section will serve as a guide to quantify the economic impacts of recreation in a region and outline the tools for economic analyses. The <u>addendum from Harvey Economics</u> provides in-depth details for this section. (S. Walker, J. Harvey, personal communication, September 2020).

DIRECT IMPACTS	Direct impacts include all direct effects on the region due to the organization's operations. These include spending by visitors to the organization, organizational spending, employee spending, and direct employees. (Michigan State University, n.d.)
INDIRECT EFFECTS	 Indirect effects are the results of business-to-business transitions that result in changes in income, sales, or jobs in sectors within the area that supply goods and services to recreational sectors. These may include: (Michigan State University, n.d.) Materials purchased by local businesses Expansion of recreational activities Expanded road access
INDUCED EFFECTS	 Induced effects are the increased sales within the region from household spending from the income earned in the tourism and supporting sectors. These may include: (Michigan State University, n.d.) Employee expenditures on regional housing, utilities, groceries, etc.
TOTAL EFFECTS	Total effects are the sum of direct, indirect, and induced effects. These effects can show how much money is being spent annually toward recreation or how much income is a result of direct and indirect earnings in a specific sector. https://msu.edu/user/stynes/mirec/concepts.htm

Section 6.1: Tools for Economic Analysis



In order to quantify economic impact there are a number of tools available. This section will provide information on IMPLAN, RIMS II, and REMI economic modeling tools, however other tools exist that are specific to certain agencies and needs. Choosing an economic modeling tool will depend on what you will use the data for and how detailed the desired outcome is. All models are region

specific (i.e. you purchase the specific model for the desired region (the study area). For a detailed comparison of the following tools please refer to this <u>presentation</u> prepared by AKRF, Inc. in addition to the <u>addendum prepared</u> <u>by Harvey Economics</u>.

IMPLAN

Economic Impact Analysis for Planning (IMPLAN), is a tool that combines a set of comprehensive databases, multipliers, economic factors, and demographic statistics with a highly sophisticated modeling system that is fully customizable. (*Provides detailed outputs*) (*French, 2018*)

IMPLAN Website

RIMS II

The Regional Input-Output Modeling System (RIMS II), Evaluates actions/initiatives that would change market dynamics and consumer behaviors. (Less expensive, user friendly, less detailed outputs)

<u>RIMS II Website</u>

REMI

Regional Economic Models Inc (REMI), Evaluates the total fiscal, economic, and demographic effects of tax policy changes using dynamic fiscal and economic impact modeling. (Expensive, focused on changes in policy initiatives, focus of model is primarily state level policies.) (REMI, n.d.)

<u>REMI Website</u>

Section 6.2: Inputs into the Economic Model

All economic modeling tools require data inputs which can vary depending on the toolkit that is used. Data sets found in <u>section 4</u> as well as throughout the report will provide a starting point for data inputs for those economic tools. (S. Walker, J. Harvey, personal communication, September 2020).





Section 6.3: Economic Multipliers

Multipliers are very specific, and many are often region and industry specific, focusing on employment, earnings and output. They describe the total effects in the region of a dollar of direct spending, including circulation throughout the economy (S. Walker, J. Harvey, personal communication, September 2020).

Section 6.4: Outputs of the Economic Model

Outputs from the economic models will vary in detail depending on the model used, but can include the induced, indirect, total employment, wages, output, value added, and taxes added from recreation to the region. (S. Walker, J. Harvey, personal communication, September 2020).



Section 6.5: Putting Outputs in Context

The direct total employment of wages that are attributable to the activity (i.e. boating) are described in comparison to total regional employment or income. An example would be the percentage of employment that a recreationist contributes to the regional economy. Through this analysis identification of percentages can be identified to help communities quantify the economic impact of recreation. (S. Walker, J. Harvey, personal communication, September 2020).

Section 6.6: Assumptions

Assumptions made throughout the analysis will have to be identified. For instance, if the study did not allow for intercept surveys to identify visitor spending, and an average is taken from another similar study, that assumption must be explained.(S. Walker, J. Harvey, personal communication, September 2020).

Section 7: Natural Resource Conditions

Once a recreational profile is developed, factors affecting that particular recreation type must be examined. While analyzing the river will be important for river-based recreation, this will look different for other types of recreation. Analyzing the condition of the natural resource or area that supports outdoor recreation is important when assessing how recreational use is impacted through a variety of management practices. Below are a few examples of natural resource conditions to consider for certain recreation types. Appendix 1 also contains more information regarding allrecreation replicability.

When quantifying the economic impact of rock climbing in a region, assessing which climbing and bouldering routes bring people to the region and who manages the lands where the routes are located is vital. In many cases, lands are managed by the Bureau of Land Management, US Forest Service, or the National Park Service, which implement an array of different management practices to ensure conservation of the natural resource.

For hiking and camping, indexing the different campsites and hiking trails will be important, as well as gathering further information about their usage. Oftentimes a federal or state agency manages these recreation areas, such as the Bureau of Land Management, US Forest Service, or the local parks and wildlife agency. Recreationists enjoy hiking or camping to visit a particular site. In this case, it can be helpful to know what areas bring people to the region, and for how long the duration of the participants' trips are.

Snowsports rely heavily on the amount of snowfall to a region (The 'Hydrology of the River and Associated Recreation' callout box provides detail to assess what a wet vs. dry year may look like). The National Oceanic and Atmospheric Administration (NOAA) tracks a wide variety of data that impacts all types of outdoor recreation, including snowfall, rainfall, weather, etc. Comparing snowfall year to year is invaluable to snow sports and waterdependent summer activities. Better snow years may bring more snowsport recreationists, which is important to assess. Activities such as backcountry skiing are solely reliant on natural snow conditions, while ski resorts use snowmaking to provide a heightened user experience. Understanding these conditions can help gain a better understanding of what brings people to the region.



Snowsports rely heavily on the amount of snowfall to a region



QUESTIONS TO CONSIDER WHEN ASSESSING NATURAL RESOURCE CONDITIONS

What is the natural resource in question and how is it managed?

What factors surrounding the resource affect the variability of visitation to the region?

HYDROLOGY OF THE RIVER AND ASSOCIATED RECREATION DOLORES CASE STUDY

For our case study of river recreation on the Dolores River, understanding what flows to expect, skill level required, length of the stretch of river, and river rapid character is vital to recreationists. In wet years, the river will have a steady flow for much of the summer, creating a long recreation season. In dry years, there may be no season at all. As described in the "wet" water year call-out box, the focus on summer usage is based on a snow-melt dependent river system, which is common in the interior western United States. While this is true for some rivers, it does not describe the hydrology of all rivers, highlighting the importance of understanding historic hydrologic conditions of the river in question. These variations will affect whether people come to the region, therefore affecting the overall economic impact of recreation and the number of river user days in the region for that year. For the Dolores River, winter snowpack levels affect the filling of McPhee Reservoir and thus any potential for scheduled releases from the McPhee Dam which provides the flow for the Lower Dolores. This type of dam-regulated flow is how water is managed on the Dolores, but is not true for all rivers. Taking into account the context and characteristics of the area in question will provide more accurate data for the economic impacts of recreation.

QUESTIONS TO CONSIDER WHEN ADDRESSING THE HYDROLOGY OF A RIVER

- What existing infrastructure may play a role in the hydrology of the river in question? (i.e. dams and reservoirs, transmountain diversions, etc.)
- What is the frequency of wet, dry, and average years in the region?
- What features of the river are unique and help create an economic impact?
- What does a wet year look like vs a dry year, and how does that affect use?
- When is the boating season and what is the historic boating opportunity (boatable days)?
- What is the range of acceptable flow that provides a recreational opportunity?





WHAT CONSTITUTES A "WET" WATER YEAR?

The <u>US Geological Survey</u> defines a water year as a 12-month period from October 1 for any given year through September 30 of the following year (James & Krumland, 2018, 246-267). A water year can generally be labeled as wet, wet typical, dry typical, or dry, based on how that water year compares to other years in a particular area (Stafford, Fey, & Vaske, 2016). The National Oceanic and Atmospheric Administration (<u>NOAA</u>) publishes water year data, including the average precipitation (National Weather Service Corporate Image Web Team, 2020). For the Dolores region, as well as many other sections of the Colorado River, snowpack for the year is the most influential indicator as to whether it will be a wet or dry year.

Section 7.1: Boatable Days



For river recreation, a good way to assess recreation opportunities is to consider the number of boatable days that occur per season. Boatable days are defined as the number of days in which flows meet recreational needs. A 2016 study conducted on the Colorado River through Utah and Arizona defined ranges for acceptable and optimal flows, along with thresholds

for unacceptable flows (Stafford, Fey, & Vaske, 2016). For the stretch of the Colorado River assessed in the 2016 study, the minimum acceptable flow was 4,000 cubic feet per second (cfs) and the optimal range was between 10,000 and 30,000 cfs.

These flow ranges were then used to determine the average number of boatable days that occurred in a particular season by comparing them against historical hydraulic records in different hydrological year types. There are also a host of flow studies that are done on the Colorado River and many other river basins in Colorado which can be applied to the river in question. Finding relevant literature on the flows can be a beneficial source of information. If unavailable, allocating funds to have a flow study conducted should be a priority, because each river will have a unique acceptable and optimal flow range. The purpose of conducting a Flow Study is to identify the relationship between the flow levels and the experience of the recreational users. Defining the acceptable flow ranges for a river is needed to determine the number of boatable days that occur in different year types.

WATER MANAGEMENT ON THE DOLORES RIVER

The flows on the Dolores vary from year to year depending on the previous winter's snowpack, carry over reservoir levels, soil moisture content and project compliance. Only in the event of excess water in McPhee Reservoir is the reservoir allowed to "spill," or release excess water, increasing flow in the lower portion of the river. The Dolores Water Conservancy District (DWCD) is in charge of monitoring lake levels at the McPhee Reservoir, delivering water to its customers, and managing spills from the McPhee Dam into the Lower Dolores. In years with enough water, river managers and stakeholders have weekly discussions to decide if and when water will be released into the Lower Dolores. Because of the agricultural water rights associated with the water in McPhee Reservoir, often there is not enough water to flow past McPhee Dam to facilitate recreational use of the river. Managers also consider the water needs of a downstream fishery when deciding how much water should be released to

the lower portion of the river each year. These differing needs must be taken into account before any spill can occur. The conservancy district, in coordination with the Bureau of Reclamation, decides whether there is enough excess water for a spill to occur or not, and displays spill data on the DWCD website. Variable flows within a single boating season can provide boaters with the chance to experience different flow levels, bringing them back to the region several times a season. When spills occur from the McPhee Reservoir, allowing the Lower Dolores to run, recreationists come to experience that stretch of the river. Economic impact data can provide helpful information in discussions around management of spills.

The Dolores Water Conservancy District has a robust website that keeps boaters informed of spills and lake levels. In 2018, inflows into the McPhee Reservoir were at a historic low (DWCD, 2018). This forced the DWCD to tighten water allocations, and did not allow for any spills to occur that were large enough for whitewater boating. On the other hand, with winter snowpack at 140% of normal in 2019, a 51-day whitewater boating release on the Lower Dolores occurred, from May into July (DWCD, 2019).





Photo Credit: US Bureau of Reclamation

Section 8: Primary Data Collection



One of the major components of economic research is data collection. Accurate data sets provide researchers with the information necessary to gain a more holistic understanding of the subject(s) and activities in question. In the case of outdoor recreation, accurate data on user spending patterns, usage days, and management practices begin to paint a narrative around the economic

role these activities play in their local economy. The following sections detail best practices when working with interviews and surveys to collect recreation-specific information for an economic impact assessment.

<section-header>

FEDERAL AGENCIES RELEVANT TO THE DOLORES REGION

Bureau of Land Management

The BLM (Bureau of Land Management) employs field offices that supervise large sections of open space. Each office oversees pertinent recreation information including group sizes and zip codes of recreationists in the area. Offices have dedicated <u>websites</u> where leadership personnel's contact information is located. These field and district managers will act as the first point of contact and either field queries themselves or provide the contact of someone who is better qualified to answer a recreation-related question.

United States Bureau of Reclamation

The USBOR (United States Bureau of Reclamation) is the largest wholesaler of water in the country, overseeing the diversion, distribution, and storage projects they helped construct as related to water management throughout the western United States. The agency is responsible for developing and maintaining irrigation and hydroelectric power generation in the form of dams and water pipelines throughout the region, bringing water to more than 31 million people and providing water for 10 million acres of farmland (Bureau of Reclamation, 20). The US is divided into multiple zones with Colorado falling into region 7. A map illustrating the different zones can be found on their website at this <u>link</u>. Inquiries relating to any of the aforementioned infrastructure in region 7 should be directed to UCPAO@USBR.GOV.

US Fish and Wildlife Service

The Fish and Wildlife Service is responsible for a variety of different conservation-related roles including managing the National Wildlife Refuge System, protecting migratory birds and endangered species, restoring fisheries that are deemed to have national significance and distributing money to state level fish and wildlife agencies. The agency is divided not by a state-by-state basis but regionally with the state of Colorado and neighboring states like Utah, Kansas, and Wyoming falling within the Mountain-Prairie Region (zone 6). In this <u>regional zone</u>, the Fish and Wildlife Service works to establish and manage conservation areas which may range widely from those found in high alpine areas to lower lying regions where they manage the majority of state hunting and fishing license sales records. The simplest way to contact the office is by accessing the state-specific field office page (here is the <u>link</u> to the Colorado field office). From there, phone and email contact information is readily available.

United States Forest Service

The United States Forest Service (USFS) oversees over eleven million acres of forest within the state of Colorado alone (USFS, 2008). From hiking to whitewater boating to skiing to mountain climbing, USFS lands offer a multitude of recreational opportunities, many of which are tracked by the agency. Similar to BLM permitting information, these efforts allow for data to be collected on usage rates, zip codes and group sizes (USFS, 2006). Because requirements vary from region to region, it is best to begin with the website of the forest or grassland in question. The easiest method to locate the dedicated forest or grassland website is to use the "Find a Forest or Grassland" widget on the right sidebar of the forest service's website. Once at the website, contact the forest supervisor's office as well as specific ranger district offices.

National Park Service

The National Park Service (NPS) covers more than 85 million acres in all 50 states, the District of Columbia, and US territories (NPS, 2020). NPS makes use of nineteen naming designations, commonly referred to as "parks" with their own bureaucracy. The NPS keeps <u>records</u> of recreational data relating to visitor spending sectors including lodging, groceries, gas, transportation amongst others as well as jobs data, labor income, and economic outcome ("Visitor-Spending-Effects", 2018). Due to this decentralized approach, the simplest method to get a hold of relevant agency stakeholders is by accessing a park's designated NPS website and navigating to its "Contact Us" page.

STATE AGENCIES RELEVANT TO THE DOLORES REGION

Colorado Water Conservation Board

The Colorado Water Conservation Board (CWCB) was founded in 1937 for the purpose of conserving, protecting and managing Colorado's water resources (Colorado Water Conservation Board, n.d.). The board's responsibilities are broad and overarching. They range from drought planning to watershed protection and even flood mitigation. Because water in the American West is so interconnected, the CWCB also protects the state's water appropriations in collaboration with multiple other neighboring states and accompanying federal agencies. The agency is particularly relevant to recreationists when it comes to issues surrounding the state's official <u>water plan</u>. This document outlines goals for how Colorado plans to continue its pattern of growth while maintaining enough water resources for all those who depend on it including agriculture, residential, and recreational uses. The best way to field any questions about the plan or any related CWCB recreational ventures is to access the recreational page on the CWCB <u>website</u> and contact Erik Skeie with any related questions.

Colorado Parks and Wildlife

Managing 41 state parks, more than 300 state wildlife areas, and all of Colorado's wildlife resources, Colorado Parks and Wildlife (CPW) plays a significant role managing Colorado's public lands and wildlife (CPW, 2020). Their work also focuses on outdoor recreation, as they are responsible for distributing hunting and fishing licenses as well as many camping and boating permits (CPW, 2020). These licenses are an invaluable resource when gathering information related to the popularity of hunting, camping and boating-related recreation. Their headquarters are located in Denver, with other offices easily identified through their <u>location map</u>. This information can be found on the CPW <u>website</u>, along with contact information for each office.

Outdoor Recreation Industry Offices

The past decade has seen a new trend amongst state governments with the introduction of dedicated outdoor recreation industry offices. In 2015, then-Governor John Hickenlooper founded Colorado's Outdoor Recreation Industry Office (OREC) under the Office of Economic Development and International Trade (OEDIT). OREC provides a central point of contact, support and important resources at the state level for the diverse list of stakeholders, that rely on a healthy outdoor recreation economy. Additionally, it is also a valuable resource when managing projects that span across sectors including economic development, conservation, education and public health. A complete list of state outdoor recreation industry offices and further information can be found on this <u>link</u>.

LOCAL STAKEHOLDERS

Recreation Advocates

Outdoor recreation often fosters a devoted base of supporters that commit their time and resources to protecting what they love. These advocates can often be a wealth of information when searching for information on social trails, transportation logistics, local ethics guidelines, safety information, and typical flow and spill rates.

The easiest way to contact these advocates is through their respective websites. From there you can find their contact information and either leave an email or reach out via phone with any questions.

Dolores Advocacy Groups

In the case of the Dolores River the primary advocacy groups include the <u>Dolores River Boating</u> <u>Advocates (DRBA)</u>, <u>San Juan Citizens Alliance</u>, <u>American Whitewater</u>, and the <u>Montezuma Land</u> <u>Conservancy</u> among others.

Local Businesses

Local businesses are the lifeblood of a local economy and can often provide first-hand accounts of spending patterns and visitor rates within the region. They vary from those directly related to outdoor recreation like river outfitters, campgrounds, gear shops, and guides to others that benefit from expenditures such as gas stations, restaurants, and lodging. Identifying these stakeholders often starts with the local chamber of commerce. From there, lodging, dining and other sales tax information can be located.

Industry Organizations

Many states including Colorado have dedicated industry organizations like the <u>Colorado River Outfitters</u> <u>Association</u> that act as resources for any information related to a commercial recreation sector in the state. For a broader examination of non-river related outfitters and associations, <u>AmericanOutdoors</u> provides a comprehensive list of member organizations.

Recreationists

Recreationists are a dynamic source of information that often have the most up-to-date knowledge on any recent changes to a region. Every area has its own recreational profile, covered in <u>Section 4</u>. In the case of the Dolores River, the primary recreation activity is water-based or OHV. Due to their dispersed nature, contacting boaters usually involves on-the-ground measures that include in-person intercept surveying and remote surveys that are often placed on popular recreation channels including <u>AmericanWhitewater</u>, <u>MountainBuzz</u>, <u>OutdoorAlliance</u> and various Facebook groups as well as river access points. See <u>Appendix 2</u> for examples of what these surveys could look like.

Water Conservation Districts

As their name implies, local water districts manage the water resources of a particular region. Their websites can provide data such as how water is allocated and by whom, where the water comes from, and current reservoir levels. These data further contextualize the resource and how it is managed in a particular area. Since flow rates heavily impact recreation, it is important to know how to gather and analyze these data. A comprehensive list of state water conservation districts can be found by accessing the Colorado Water Congress Water Conservancy and Conservation Districts Colorado <u>website</u>. Specifics on how the Dolores Water Conservancy District manages their water is located in <u>Section 7: Natural Resource Conditions</u>.



Section 8.2: Survey Distribution and Collection



Web-based surveys offer an oftentimes more convenient approach to data collection, one that provides interviewees the ability to provide their responses at a time that may work better for their schedules. They provide quantitative data related to what recreationalists in the region are spending, which can then be used to inform decision makers.

SURVEY COLLECTION

Interviews and surveys are key tools when collecting information from recreationists. This includes figuring out from whom to collect data, and what information to obtain from these interviews. Crafting a succinct list of questions for each interviewee will be important, and we have provided samples of what types of questions should be considered when creating one below. The template in Appendix 2 will provide you with a starting point (if analyzing river recreation). Figure 2 in Appendix 2 provides a template of a boater survey.

Recreation demographics are an important piece to understanding how recreational needs are best met. Demographic data helps to illustrate spending patterns tied to age, zip code or socioeconomic status. These spending patterns could provide local businesses with information on who to market towards and cater to, along with allowing local Chambers of Commerce a greater understanding of the visitors that come to a community. Lastly, identifying these profiles gives local and state tourism entities a more thorough understanding of the recreational priorities of the region.

SURVEY DISTRIBUTION

After developing a survey, the next step is to ensure that as many people as possible have completed it in order to have robust data to analyze. As mentioned in <u>Section 3</u>, one method of distributing surveys that is often utilized in economic studies is through intercept surveys. Person-to-person survey collection can be a valuable asset when available, but often these surveys can be more widely distributed through other means.

Some options for this type of survey data collection include:

- Leaving surveys at distribution points for recreationists to grab on their way out (i.e. put ins and take outs)
- Including a QR code at visitors centers which link to the survey
- Working with local entities to have surveys mailed along with permits
- Utilizing online communities associated with many outdoor recreation activities (i.e. social media and online forums)

Taking advantage of several distribution methods will help the survey to obtain as much exposure as possible. There is no one size fits all for survey response rates; it will vary based on the type of survey being presented, the region



survey being presented, the region in question, and the topic of the survey. Paperbased survey response rates are typically higher than online survey response rates — on average 33% and 56%, respectively (Nulty, 2008). Face-toface administration of surveys also receives higher rates of engagement (Nulty, 2008), such as intercept surveys. Aim to get as many respondents as possible, and supplement that information with interviews and other secondary source research. From the information gathered through these surveys, you can analyze and define the users of the recreation resource or activity in question. An economic assessment provides communities with a snapshot of current impacts from outdoor recreation and establishes a baseline for measuring the growth of an outdoor recreation-based economy over time.

Section 9: Conclusion and Next Steps

This report is the first step in providing communities with the necessary tools to assess the economic impact of recreation and thus utilize the information to make better informed decisions around land and water use. Oftentimes communities know anecdotally how recreation is impacting their local economy, but they are unable to quantify it in planning efforts. Utilizing the steps mentioned above will provide communities with the opportunity to showcase the economic impacts of recreation which will allow them to make informed decisions about recreational assets in the future.

Following the completion of the economic impact assessment, communities will have the ability to identify the direct economic impact of recreation in their communities. An economic assessment provides communities with a snapshot of current impacts from outdoor recreation and establishes a baseline for measuring the growth of an outdoor recreation-based economy over time. This will give communities the opportunity to advocate on behalf of their recreational asset(s). Advocacy can take the form of asking state legislators for more open space, greater protection of those open spaces and even examining the reallocation of water. This could ultimately improve the quality of life in a region and potentially encourage businesses to grow or expand. These are only a few examples of what communities can accomplish through this economic impact assessment.

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APPENDICES

Appendix 1: All Recreation Replicability

The river-specific examples in this report can be adapted to fit other recreation types. For the purpose of keeping this report scope more narrow, we have examined five other human-powered recreation types identified by Outdoor Alliance. Those recreation types are rock climbing, mountain biking, paddling, hiking, and snowsports. This appendix focuses on the transferability of the report from paddling to the other four main recreation types, but know that similar approaches can be used for other recreational activities that are not included here.

QUESTIONS TO ASK WHEN DEFINING A REGION FOR OTHER RECREATION TYPES

- Is there a central location or town(s) in close proximity to the activity that acts as a hub for recreationists? Are there specific towns that act as gateways to the recreation area?
- Are there significant municipalities nearby to the activity?
- Are there any significantly important natural features associated with the recreation area?
- Are there popular tourist destinations that are close to or part of the recreation area? Consider public lands, recreation areas, national parks, national monuments, state parks, and others.
- What are the major points of entry and travel routes that people use to access the area? Are there major highways or interstates?

ROCK CLIMBING	HIKING	
Where are the main climbing areas located? Are they clustered together or spread out?	Where are the main hiking trails located?	
How many climbing areas are there? This can be specific to a municipality or county.	How many miles of hiking trails are there? This can be specific to a municipality or county.	
MOUNTAIN BIKING	SNOWSPORTS	
Where are the main mountain biking trails located?	Where are the main winter trails or slopes located?	
How many miles of mountain biking trails are there? This can be specific to a municipality or county.	How many miles of trails are there? This can be specific to a municipality, county, or mountain resort.	

Seasonal Differences:

Similar to river recreation, other sports can have seasonal differences. For example, certain hiking trails may not be open in the winter. Taking these differences into consideration will provide an understanding of economic impact variability in on and off seasons.



OTHER CONSIDERATIONS FOR FRAMEWORK APPLICABILITY IN OTHER RECREATIONAL ACTIVITIES:

Data for the Dolores River Case Study was collected through the use of resources that are mentioned throughout the report. The use of local knowledge was also utilized in order to bolster these existing data. Different recreational industry groups or activity associations might be a source for providing local data or specific insight to expand upon the data that already exists or provide new information that is not readily available. The Dolores River Boating Advocates are an example for river recreation. The organization provided local intelligence on the river itself as well as pre-compiled and river-specific data that allowed the team to immediately understand the broader context of data at the local level without having to sift through additional reports and datasets. Data already exist for many kinds of recreational activities. Looking to organizations that may be local or statewide to help provide necessary information will greatly enhance and contextualize the raw data.

Management of recreation and/or where the recreation takes place can sometimes pose complex concerns or issues for a specific activity. In the case of the Dolores River, the McPhee Dam controls the flow of water, which means boating seasons can vary based on the spill schedule. It is important to consider the role of management in a recreational activity as it can affect where and how often data are collected.



Appendix 2: Questionnaire and Survey Templates

Survey questions should always be developed specifically for the individual study for which they are intended to be used. These questionnaires are to act as foundational documents from which they can be tailored to specific scenarios.

Distribute to gain	a better	understar	nding of w	hat type o	f boaters are and their party size
1. Please identify	yoursel	f			
Name:					
Address:					
City:					
State:			Zip (Code:	
Phone:			E	Email:	
2. How many times a season do you paddle on this river per year? Please circle your answer.					
Response: 1-5	5-10	10-20	20-50	50+	
3. How many yea	rs have y	you been	paddling	? Please ci	ircle your answer.
Response: 1-5	5-10	10-20	20-50	50+	
4. How do wet ye as related to pad5. How do dry ye	ears (abo dling? P ars (belo	ve averag lease write	je precipi e in your a e precipi	tation) im answer in t tation) im	pact your spending patterns the space provided below.
as related to pad	aung: P	lease write	e in your a	inswer in t	ne space provided below.

7. Are you a private or commercial paddler? Please circle your answer. Private Commercial

8. What is your primary reason for visiting this region? Please circle one your answer(s). River Recreation (Please circle):

Rafting, Canoeing, Kayaking, SUPing, Fishing

Other Outdoor Recreation

Other:_____

9. What was your reason for choosing to visit Dolores?

Answer:

10. How long was your stay in the Dolores region? Please circle your answer.

1 day 2 days 3 days 4 days 5 days 5-10 days 10+ days

11. Is there anything else you wanted to add related to your experience on the Dolores River this year?

Answer:

12. Would you be willing to answer additional questions related to your Dolores River experience at a future time? Please circle your answer.

Yes / No



Distributed to gain a bett in question.	ter understanding of the der	mographic makeup of the population			
1. Please identify yours	elf				
Name:					
Address:					
City:					
State:	Zip Code:				
Phone:	Email:				
2. Income level. Please	circle your answer. (Option	nal)			
Response: \$0-10k \$10	<-40k \$40k-80k \$80k-16	0k \$160k-200k \$200k+			
3. Education level					
Some high school I High school graduate diploma or the equivalent (Ev: GEE					
☐ Associate degree	☐ Bachelor's degree	.,			
☐ Master's degree	Doctorate degree				
4. What is your age?					
🗌 Under 18	🗌 18-24 years old	🗌 25-34 years old			
🗌 35-44 years old	🗌 45-54 years old	🔲 55-64 years old			
☐ 64 years or older					
5. How many are in you	r group?				
Answer:					
6. Please specify your ethnicity					
□ White					
Hispanic or Latino					
 □ Black or African American					
Native American or American Indian					
🗌 Asian / Pacific Islande	r				
□ Other					
□ Prefer not to sav					

Spending patterns (fig. 3)

Distributed to gain a better understanding of how much money recreationists are spending while in the region.

1. Please identify yourself

Name:
Address:
City:
State: Zip Code:
Phone: Email:
2. How much money did you spend while visiting (name of town or towns near where recreation takes place), including gas / transportation, food, lodging and other expenses in total? Please circle your answer.
Response: \$10-\$50 \$50-\$100 \$100-\$500 \$500-\$1,000 \$1,000+
3. Estimate the amount spent in each category to the closest \$10.
\$ Gas
\$ Food
\$ Lodging
\$ Recreation—specific examples
\$ Souvenirs
\$ Other (Auto repairs, tips, etc.)
4. On a scale of 1-5, 5 being very likely and 1 being not very likely, please rate how likely you plan to return this year. Please circle your answer:
1 2 3 4 5
5. How many nights are you planning on staying in the region? Answer:
6. Where are you planning on staying during your visit? Please circle your answer(s). Camping Hotel Motel Airbnb Friend/Family N/A
7. How much do you estimate you have / will spend on overnight lodging during the entirety of your stay? Please circle your answer.
\$0-50 \$50k-100 \$100-300 \$300-500 \$500+
8. Please indicate if and how much you have paid in fees during your stay?
Permit fees: \$
Parking fees: \$
Admission fees: \$

9. If applicable, how does your group's spending habits change in good, bad, or average conditions? Please circle your answer and fill out the accompanying information.				
Good conditions: Spend Less (by\$) Spend Same (by\$) Spend More (by\$)				
Bad conditions: Spend Less (by\$) Spend Same (by\$) Spend More (by\$)				
Average conditions: Spend Less (by\$) Spend Same (by\$) Spend More (by\$)				

Spending patterns continued (fig. 4)

Distributed to gain a more nuanced understanding of how much money recreationists are spending while in the region and in this specific example, where.

Spending Category	Dollar amount spent in local area by your party
Lodging:	
Hotels, motels, cabins, B&B	
Food and Beverages	
Grocery Stores	
Restaurants	
Bars	
Liquor Stores	
Dispensaries	
Transportation	
Gas and oil (auto, RV, boat, etc)	
Other auto expenses (repairs, parking, tolls, etc.)	
Airfares, Rail, Bus, Taxi, Car rental	
Other Expenses	
Recreation and Entertainment fees	
Sporting goods	
Clothing	
Other goods (film, books,)	
Other services (hair cuts, etc.)	

Appendix 3: Literature review

Relevant Economic Impact Studies

- Harvey, E., & Walker, S. (2014). *REGIONAL ECONOMIC IMPACTS OF THE GLENWOOD HOT SPRINGS LODGE AND POOL, INC.* (pp. 1-4, Rep.). Denver, CO: Harvey Economics.
- Klotz, A. (2006). *City of Durango, Colorado Economic Impacts of Whitewater Recreation* (pp. 1-30, Rep.). Durango, CO: RPI Consulting.
- Lawson, M. (2019). *Recreation Counties Attracting New Residents and Higher Incomes* (pp. 1-9, Rep.). Bozeman, MT: Headwaters Economics.
- Leones, J., Colby, B., Cory, D., & Ryan, L. (1997). Measuring regional economic impacts of streamflow depletions. *Water Resources Research*, 33(4), 831-838. doi:10.1029/96wr03973
- Maples, J., & Bradley, M. (2018). Economic Impact of Paddling in the Grand Mesa, Uncompany & Gunnison National Forests (pp. 1-12, Rep.). CO: Outdoor Alliance.
- Menard, J., English, B., & Jensen, K. (2013). *Estimated Economic Impacts of Ocoee Whitewater Rafting* on the Local Economy (pp. 1-8, Rep.). Knoxville, TN: University of Tennessee.
- Perlstein, L., Sennett, T., & Duke, G. (2013). *Economic Impact Study, Mountain Biking in Montezuma County, CO* (Rep.). Montezuma, CO: Fort Lewis College.
- Socioeconomic Evaluation of the Proposed Sweetwater Solar Energy Project in Sweetwater County, Wyoming (pp. 1-45, Rep.). (2018). Denver, CO: Harvey Economics.
- Stillmunkes, G. (2018). ECONOMIC BENEFITS OF THE PROPOSED GRANITE CANON PROJECT (pp. 1-15, Rep.). Denver, CO: Harvey Economics.

In order to create a robust report, we used the economic studies listed above to help inform our initial framework. All the citations listed are economic impact studies that were completed in the state of Colorado, many of them are focused on outdoor recreation activities. Several of these studies provide survey templates, which we used to complete Appendix 2. Also examined was the differences in defining the geographic region, which we used to ensure we had the most detailed information for our geographic considerations section (Section 3). These studies are particularly useful if you are interested in more information on what the economic impacts may look like once quantified.



Appendix 4: Glossary

Basecamp (as used in section 3): The central location to the economic impacts included in the boundary.

Crag: A rock wall or group of cliffs that are suitable for climbing.

Direct Effects: Employment, earnings and tax receipts directly generated by travel spending, as distinguished from secondary and total impacts (Travel Portland, 2015).

Economic Impact Study: Study that examines the total economic impact of a finaldemand change on a regional economy.

■ Indirect Effects: Change in economic activity resulting from the subsequent rounds of inputs purchased by industries affected by a final-demand change (Bureau of Economic Analysis, n.d.).

■ Induced Effects: Change in economic activity resulting from the changes in spending by workers whose earnings are affected by a final-demand change (Bureau of Economic Analysis, n.d.).

■ Multiplier Effects: When a change in an input, such as changes in visitor spending, causes a larger change in a broader output, such as regional sales tax revenue. This is the circulation of money throughout the local economy. The initial visitor expenditures are circulated several times, creating increases in regional or local employment, wages, etc.

Put-in: A ramp or sloping hill entering a body of water, intended to facilitate in the entrance of boats.

Take-out: A ramp or sloping hill entering a body of water, intended to facilitate in the exit of boats.

Secondary Impacts: The fluctuations in economic activity from subsequent rounds of respending of tourism dollars. There are two types, they include indirect effects and induced effects.

Social Trail: An unofficial trail created as a result of erosion due to foot traffic from both people and animals.

Total Effects: The sum of direct and indirect/induced effects.

Appendix 5: Acronyms

BEA: Bureau of Economic Analysis
BLS: U.S. Bureau of Labor Statistics
BLM: Bureau of Land Management
CFS: Cubic feet per second, in regards to flow rates of a river.
CPW: Colorado Parks and Wildlife
CWCB: Colorado Water Conservation Board
DOLA: Department of Local Affairs

DRBA: Dolores River Boating Advocates
EIA: Economic Impact Assessment
NPS: National Park Service
OHV: Off Highway Vehicle
USBOR: United States Bureau of Reclamation
USFS: United States Forest Service
USFWS: United States Fish and Wildlife Service

Appendix 6: Methods

DEVELOPMENT OF FRAMEWORK

Partner economic firm, Harvey Economics, initially drafted a skeleton framework in which the MENV capstone team built out and expanded into the report you see today. Harvey Economics' reasoning for including specific sections in the framework was based on their experience working on economic assessments and their understanding of what information is necessary to include in a recreation-focused economic impact assessment.

SURVEY DEVELOPMENT

The survey templates included in this report are a combination of existing surveys from previous American Whitewater documents as well as best practices found online. These templates are purposefully designed to be easily adjusted to fit the specific needs of the project they will be used for. Within each hardcopy template is a link to an accompanying Google sheet version that can be copied and adjusted to the specific needs of the project it is used for. This digital version allows for easy access when implementing a tablet in field research.

In the initial stages of the development the project was focused on creating an economic impact analysis of the Dolores River. Through the rescoping of the project it shifted to focus on the Dolores River as a case study.

STAKEHOLDER LIST DEVELOPMENT

In the initial stages of the development the project was focused on creating an economic impact analysis of the Dolores River. Through the rescoping of the project it shifted to focus on the Dolores River as a case study. We met with various stakeholders in the Dolores region and developed a list of stakeholders that would be beneficial to the next group that will specifically focus on the Dolores River. We primarily developed the contact list of stakeholder through our meeting with Dolores River Boating Advocates (DRBA). DRBA promotes responsible recreational use and balanced flow management of the Dolores River, while working to protect the watershed for the health of the natural environment and the livelihood of future generations (DRBA: 2020). The organization is based in Dolores, Colorado and is a great resource for stakeholder list development. They are familiar with the region and the various stakeholders in the region.

STAKEHOLDER INTERVIEW PROCESS

Due to COVID-19 restrictions, in-person interviews were replaced with a combination of video conference calls over the Zoom platform as well as telephone interviews. A series of email communications preceded all video and phone communication in order to ensure all parties were in agreement of the necessity and content of future calls.

Appendix 7: COVID-19 Limitations

COVID-19



The capstone team originally planned five trips to the Dolores River region to conduct stakeholder interviews and investigate the

likely businesses that boaters may engage with throughout their trip. After the COVID-19 pandemic began, these plans were dissolved in order to prioritize the health and safety of the team, as well as to protect the vulnerable communities in the region. This change of plans caused the capstone team to have to rely on creative workarounds to make up for the loss of travel to the region. Though travel-related limitations skewed research towards secondary sources, the use of video enabled technology allowed the team to communicate with partner organizations and stakeholders in a manner that was sufficient to complete the report.

Appendix 8: Dolores Resources

PURPOSE

Provide background information on the Dolores region, through the rescoping of the project, our focus shifted away from the Dolores region however American Whitewater is still pursuing an economic analysis of the region and resources listed below will help them in starting that analysis. This list below is a starting point but does not encompass all information from the Dolores region.

Business List (Hotels/Restaurants) (Sennett, Duke, Perlstein: 2013)



Appendix 9: Full url Links (Listed in chronological order)

SECTION 4

Population

- https://headwaterseconomics.org/tools/economic-profile-system/
- https://datausa.io/
- https://www.census.gov/data/datasets/time-series/demo/popest/2010s-counties-total.html
- https://demography.dola.colorado.gov/apps/demographic_dashboard/

Employment

- https://www.bea.gov/data/employment/employment-county-metro-and-other-areas
- https://www.bls.gov
- https://www.census.gov/programs-surveys/economic-census.html

Income

- https://www.bea.gov/data/income-saving/personal-income-county-metro-and-other-areas
- https://www.bls.gov/
- http://census.gov/topics/employment.html

Businesses

- https://cochamber.com/about-us/local-chambers/
- http://rockymountainlodgingreport.com/
- https://www.blm.gov/visit/search/9/CO/0/1
- https://www.fs.usda.gov/visit/destinations
- https://www.nps.gov/subjects/camping/campground.htm
- https://cpw.state.co.us/buyapply/Pages/Reservations.aspx

Local retail sales data

- https://cdor.colorado.gov/
- https://cdor.colorado.gov/retail-sales-reports
- https://cdola.colorado.gov/

SECTION 5

- https://www.americanwhitewater.org/content/Wiki/help:rivers:database/
- https://www.mountainproject.com/

Recreation Guide Resources

- https://www.trailrunproject.com/
- https://www.alltrails.com/
- https://www.mtbproject.com/
- https://www.mountainproject.com/
- https://www.powderproject.com/
- https://www.americanwhitewater.org/
- http://www.riverbrain.com/
- https://www.mountainbuzz.com/

Permits

- https://www.recreation.gov/
- https://www.blm.gov/office/moab-field-office

Recreational Spending

• https://www.americantrails.org/images/documents/Colorado-2019-2023-SCORP.pdf

SECTION 6

https://www.ilw.com/seminars/JohnNeillCitation.pdf

SECTION 6.1

- https://implan.com
- https://apps.bea.gov/regional/rims/rimsii/
- https://www.remi.com

SECTION 7

- https://water.usgs.gov/nwc/explain_data.html
- https://www.cnrfc.noaa.gov/monthly_precip.php
- http://doloreswater.com/

SECTION 8

Federal Agency Websites

- https://www.blm.gov/office/utah-state-office
- https://www.usbr.gov/main/images/regions-map-large.jpg
- https://www.fws.gov/mountain-prairie/planning/contact/index.html
- https://www.fws.gov/coloradoes/index.php
- https://www.fs.usda.gov/
- https://www.nps.gov/subjects/socialscience/vse.htm
- https://www.nps.gov/aboutus/national-park-system.htm

State Agencies

- https://cwcb.colorado.gov/colorado-water-plan
- https://cwcb.colorado.gov/recreation
- https://cpw.state.co.us/learn/Maps/CPW_Districts.pdf
- https://cpw.state.co.us/aboutus/Pages/ContactUs.aspx
- https://www.doloresriverboating.org/
- https://www.sanjuancitizens.org/
- https://www.americanwhitewater.org/
- https://montezumaland.org/
- https://www.croa.org/
- https://www.americaoutdoors.org/
- https://www.americanwhitewater.org/
- https://www.mountainbuzz.com/
- https://www.outdooralliance.org/
- https://web.cowatercongress.org/Water-Conservancy-and-Conservation-Districts-Colorado

Appendix 10: Harvey Economics Addendum



A completed economic assessment of outdoor recreation impacts will provide a community with baseline information about how recreation contributes to the local economy.



A Methodology for Developing an Economic Impact Assessment of Outdoor Recreation in Colorado

By Mayra Mendez, Lorenzo Muñoz, Megan Paliwoda, Carrie Tanner



oedit.colorado.gov