



# **The 2001-2008 Wyoming Prevention Needs Assessment: Wind River Reservation Profile Report**

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# The 2001-2008 Wyoming Prevention Needs Assessment: Wind River Reservation Profile Report

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# The 2001-2008 Wyoming Prevention Needs Assessment: Wind River Reservation Profile Report

## 1. Overview

The Prevention Needs Assessment (PNA) is a survey designed to gather information for the planning and evaluation of substance abuse, violence, and delinquent behavior prevention programs, policies, and practices. The Wyoming Survey & Analysis Center (WYSAC) administered the 2008 PNA as a census survey of all enrolled 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students in the state of Wyoming. Researchers have administered the survey in Wyoming in 2001, 2004, 2006 and 2008 for a total of four iterations.

The PNA measures reported substance use and participation in problem behaviors. The PNA also assesses 21 intermediate attitudes, beliefs, and perceptions that influence whether high school and middle school students will participate in substance use, violence, and/or criminal activity. Attitudes, beliefs, and perceptions that studies show increase the likelihood of substance use and problem behavior are called Risk Factors, whereas attitudes, beliefs and perceptions that decrease the likelihood of substance use and problem behaviors are called Protective Factors. Information from this report provides community leaders and prevention specialists with the information to address the unique and important challenges of substance abuse and problem behaviors among middle and high school students. Given the (small number of students taking the survey/the low response rate of the students in the district), this report combines the data from the 2001, 2004, 2006 and 2008 reports to give an average of those four survey years for each indicator. Combining the survey years gives stability to the estimates that otherwise would not be possible. The average of four survey points can form the standard analysis comparison for changes over time in future years. For instance in the future after the 2010 PNA has been given, the four point moving average comprised of 2001 to 2008 PNA surveys can be compared to the average of 2004 to 2010 to observe changes over time.

A total of students in Wind River Reservation participated in the PNA during 2001 to 2008. Data is only from those years when Wind River Reservation participated in the PNA. Based on the survey responses, Wind River Reservation had the results that follow. Please note that for ease of navigation between the graphs and the results tables, the electronic copy of this report contains hyperlinks in the figure and table titles that, when clicked, will jump the reader to the corresponding results table in the appendix, and back again to the results section when the appendix table title is clicked.

### 1.1. Comparisons to Wyoming Averages

Comparisons of Wind River Reservation's overall results from the state provide helpful insights into the local community's strengths and weakness in substance use, problem behaviors, Risk Factors and Protective Factors. In all cases the average from 2001 to 2008 for the state is compared with the average from 2001 to 2008 for Wind River Reservation.

In most sample based surveys, statistical significance would be used to identify important differences between the state and the local results. Instead, because the PNA is a census survey of all 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup> grades students, all changes, no matter how small, are statistically significant.

WYSAC developed and applied an alternative criterion to identify meaningful differences between the state and local prevalence rates. During the development, WYSAC applied various criteria ranging from as little as a 2 percentage point difference to as large as a 20 percentage point difference between state and local results. Based on these different cut points, WYSAC found that using a 7.5 percentage point difference reliably identified 5 to 10 noteworthy results, regardless of community size. Because of this reliability, WYSAC chose this absolute difference as the criterion for meaningful state and local prevalence rate differences.

The tables in this section are color coded to concisely and visually assess when prevalence rates for Wind River Reservation are meaningfully above or below the Wyoming state rates. When Wind River Reservation prevalence rates compare favorably, they are colored gold. When Wind River Reservation prevalence rates compare unfavorably, they are colored red. More specifically, for substance use, problem behaviors, and Risk Factors, when Wind River Reservation prevalence rates are at least 7.5 percentage points above the state average, they are colored red and when the wind river reservation results are at least 7.5 percentage points below the state average, they are colored gold. Wind River Reservation Protective Factors use a reversed pattern which colors cells in gold when rates are at least 7.5 percentage points above the state and red when rates are at least 7.5 percentage points below the state. Whenever rates are above or below these guidelines and therefore colored, the percentage point differences are also provided. Otherwise, no red or gold highlighting is used and the percentage differences are not provided. Appendix D provides a complete listing of all percentage point differences between the local prevalence rates and state prevalence rates for each grade level surveyed.

## 1.2. Substance Use and Problem Behavior State and Local Comparisons

The PNA asks students about their use of 13 different substances varying from alcohol and cigarettes to methamphetamines and heroin. For each of these 13 substances, students can answer questions about their lifetime use and use during the past 30 days. The PNA also asks the students about heavy use of alcohol and cigarettes by further inquiring, whether the students consumed 4 or 5 drinks of alcohol in a row sometime during the past two weeks (binge drinking), or whether they smoked ½ of a pack or more of cigarettes per day (heavy cigarette use). Finally, students were asked about their participation in seven different problem behaviors during the past 12 months.

Table 1 and Table 2 present the meaningful differences between Wind River Reservation prevalence rates and the state prevalence rates. When Wind River Reservation rates are at least 7.5 percentage points lower than the state rates, the differences are highlighted in red. When the local rates are at least 7.5 percentage points above the state rates, the differences are highlighted in gold. Table 1 presents these meaningful differences between the state and local prevalence rates for lifetime, 30-day and heavy substance use. Table 2 presents the meaningful differences for the other problem behaviors using the same color scheme.

Table 1. Substance use prevalence rates between Wind River Reservation’s and Wyoming: Meaningful differences in 2008 PNA

Lifetime Substance Use	Grade Level			
	6th	8th	10th	12th
Alcohol	---	13.4	7.7	10.2
Marijuana	23.5	49.2	40.6	30.9
LSD and Hallucinogens	---	---	---	---
Cocaine	---	---	---	---
Inhalants	---	14.8	8.0	---
Methamphetamines	---	---	9.0	---
Heroin	---	---	---	---
Ecstasy	---	---	---	---
Steroids	---	---	---	---
Chewing Tobacco	11.4	17.7	21.3	13.1
Cigarettes	36.5	43.7	26.6	25.7
Misuse of OTC Meds*	---	---	---	---
Misuse of Rx Meds**	---	---	12.2	---

30-day Substance Use				
Alcohol	---	8.6	---	---
Marijuana	12.0	30.0	27.2	23.9
LSD and Hallucinogens	---	---	---	---
Cocaine	---	---	---	---
Inhalants	---	---	---	---
Methamphetamines	---	---	---	---
Heroin	---	---	---	---
Ecstasy	---	---	---	---
Steroids	---	---	---	---
Chewing Tobacco	---	13.2	12.4	10.3
Cigarettes	14.4	21.1	22.5	20.8
Misuse of OTC Meds*	---	---	---	---
Misuse of Rx Meds**	---	---	---	---

Heavy Substance Use				
Binge Drinking	9.7	13.2	16.9	9.8
Half Pack of Cig./Day	---	---	7.8	9.4

Above Wyoming Average
  Below Wyoming Average
  No Meaningful Difference

\* Students were asked, "On how many occasions ... have you used ... a medication to get high that you can buy at the store?"

\*\* Students were asked, "On how many occasions ... have you used ... a prescription medication to get high?"

Table 2. Problem behavior prevalence rates between Wind River Reservation and Wyoming: Meaningful differences in 2008 PNA

Antisocial Behavior	Grade Level			
	6th	8th	10th	12th
Suspended from School	---	8.0	10.5	8.7
Drunk or High at School	9.2	22.0	17.2	16.7
Sold Drugs	---	---	12.0	7.9
Attempted Vehicle Theft	---	---	---	---
Arrested	---	14.4	13.9	---
Attacked Someone	---	9.3	12.1	7.8
Brought a Gun to School	---	---	---	---

Above Wyoming Average
  Below Wyoming Average
  --- No Meaningful Difference

### 1.3. Risk Factor State and Local Comparisons

The PNA was designed to provide information about attitudes, beliefs and perceptions that are associated with increases in substance use and/or problem behavior(s). Risk Factor are attitudes, beliefs and perceptions that make substance use and problem behaviors more likely.

Based on the answers students provide, subsequent calculations classify students as at-risk or not-at-risk for each Risk Factor. State and local Risk Factor prevalence rates of at-risk students reflect this classification. Table 3 provides the meaningful differences between Wind River Reservation Risk Factor prevalence rates and the state prevalence rates. Specifically, Wind River Reservation Risk Factor prevalence rates that are at least 7.5 percentage points below the state gold rates whereas Risk Factor prevalence rates that are at least 7.5 percentage points above the state colored red.

Table 3. Risk Factor prevalence rates between Wind River Reservation and Wyoming: Meaningful differences in 2008 PNA

Community Risk Factors	Grade Level			
	6th	8th	10th	12th
Community Disorganization	30.6	27.8	32.0	36.9
Laws and Norms Favoring Drug Use	9.0	13.6	12.1	---
Perceived Availability of Drugs	---	9.3	---	-7.7
<b>Family Risk Factors</b>				
Poor Family Management	23.6	10.6	7.9	---
Parents' Favorable Attitude toward Antisocial Behavior	10.1	9.2	---	---
Parents' Favorable Attitude toward Drug Use	---	---	---	---
<b>School Risk Factor</b>				
Low Commitment to School	---	-8.5	-11.9	-23.6
<b>Peer / Individual Risk Factors</b>				
Rebelliousness	---	11.4	---	9.0
Early Initiation of Antisocial Behavior	10.9	18.8	20.2	22.4
Early Initiation of Drug Use	22.3	36.9	28.8	26.8
Favorable Attitude toward Antisocial Behavior	18.2	7.9	---	---
Favorable Attitude toward Drug Use	24.3	17.6	---	---
Intent to Use	13.6	28.3	16.9	---
Perceived Risk and Harm of Drug Use	28.1	23.2	---	-8.9
Interaction with Antisocial Peers	22.3	23.8	16.8	22.3
Friends' Use of Drugs	35.1	35.1	30.0	27.0
Sensation Seeking	-10.3	---	-14.6	---
Rewards for Antisocial Behavior	17.8	17.5	---	---
Depressive Symptoms	8.3	---	---	---

Above Wyoming Average
  Below Wyoming Average
  No Meaningful Difference

#### 1.4. Protective Factors: State and Local Comparisons

To better measure health, the PNA design solicits information about attitudes, beliefs and perceptions that are associated with decreases in substance use and/or problem behavior(s). Protective Factors are attitudes, beliefs and perceptions that make substance use and problem behaviors less likely.

Based on the answers that the students provide, subsequent calculations classify students as at-high-protection or not-at-high-protection for each Protective Factor and prevalence rates reflect this classification. Table 4 provides the meaningful differences between Wind River Reservation Protective Factor prevalence rates and the state prevalence rates. Unlike substance use rates and Risk Factor prevalence, high levels of protection are desirable. Therefore, Protective Factor

prevalence rates that are at least 7.5 percentage points above the state rates whereas rates that are at least 7.5 percentage points below the state rates are c

**Table 4. Protective Factor prevalence rates between Wind River Reservation and Wyoming: Meaningful differences in 2008 PNA**

Protective Factors	Grade Level			
	6th	8th	10th	12th
Religiosity	---	---	-11.5	9.3
Social Skills	-21.6	-22.4	-16.0	-21.9
Belief in Moral Order	-16.6	-12.2	---	---

 Above Wyoming Average
  Below Wyoming Average
  No Meaningful Difference

## 2. Introduction

Survey research experts designed the Prevention Needs Assessment (PNA) to gather information for the planning and evaluation of substance abuse, violence, and delinquent behavior prevention programs. WYSAC administers the PNA as a census survey of all enrolled 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students in Wyoming. Researchers in Wyoming have administered the survey in 2001, 2004, 2006 and 2008, for a total of four iterations.

The survey questionnaire asks students about their lifetime and 30-day use of 13 separate substances including alcohol, cigarettes, spit tobacco, marijuana, and a variety of other drugs. The PNA also asks the students to report their participation in eleven specific problem behaviors including motor vehicle theft, attacking someone with the intent to cause injury, and carrying a handgun to school. For this report WYSAC examines in detail seven of those eleven behaviors.

The PNA assesses a wide variety of factors, such as student perceptions of their communities, families, and schools, peer interaction, and individual attitudes, any or all of which are likely to influence whether students use drugs and alcohol or participate in problem behavior(s). Researchers have conceptualized these influences as two types: (1) Risk Factors are attitudes, beliefs, and perceptions which increase the likelihood of substance use and problem behaviors; whereas (2) Protective Factors are attitudes, beliefs, and perceptions that decrease the likelihood of substance use and problem behaviors. The PNA assesses a total of 22 Risk and Protective Factors.

This report will provide a set of profiles to help Wind River Reservation understand how substance use and its related Risk and Protective Factors have changed over time and in relation to all of Wyoming. This information can be used to evaluate whether current prevention activities are having the desired impact and to help the community choose programs, policies, and practices that can best address both the changing and continuing needs of substance use and violence prevention.

### 2.1. The Development of the PNA Questionnaire

Substance abuse prevention efforts in the United States have spanned from the Temperance Movement during the late 1800s and early 1900s to the scare campaigns initiated during the 1950s and the early community action committees in the 1980s (Wilson et al., 2004). In 1992, Hawkins, Catalano, and Miller published a landmark article that applied the public health model of prevention

to substance abuse. They noted that much is known about the root causes of substance abuse across a variety of general domains including community, family, school, and individual/peer influences. Hawkins, Catalano, and Miller (1992) concluded that prevention efforts should concentrate on the factors that both promote and hinder substance abuse.

In response to this measurement concept for the root causes of substance use, Arthur, Hawkins, Pollard, Catalano, and Baglioni (2002) developed the Communities that Care Survey. The PNA has inherited much of its design from this survey. The developers endeavored to create a single survey instrument to gather information about adolescent substance use, participation in problem behaviors, and Risk and Protective Factors. They designed the Risk and Protective Factor portion to provide a broad profile of attitudes, beliefs, and perceptions that can influence whether youth participate in problem behaviors and substance use. The designers endeavored to create an instrument that would be relatively short so that it could be easily administered in a school setting during a 45-minute class period.

The core questions on the PNA were tested and normed on a sample of 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students from seven states. During this process, the survey demonstrated adequate reliability for measuring reported substance use and participation in problem behaviors. The Risk and Protective Factor scales also demonstrated adequate internal reliability within each of the scales. All the Risk Factor scores positively correlated with substance use (i.e., as the Risk Factor scores increased, the substance use also increased). The Protective Factor scores negatively correlated with substance use (i.e., as Protective Factor scores increased, substance use decreased). These findings suggest a valid relationship between the PNA Risk and Protective Factors and youth substance use (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002).

As part of the survey development, researchers determined cutpoints for each of the Risk and Protective Factors (Arthur, et al., 2007). Cutpoints were derived from the median scale scores with a minor adjustment based on the variance around the median for each Risk and Protective Factor. When compared with other methods for creating cutpoints, these median-based cutpoints maximized the ability to identify students who did any of the following:

- Received mostly Ds and Fs in school during the past 12 months.
- Used alcohol or tobacco more than a specified number of times, varying by grade level, during the past 30 days.
- Committed two or more serious delinquent acts in the past 12 months.

These cutpoints have remained constant between survey administrations as a point of comparison across survey years.

## 2.2. The PNA in Wyoming

The Wyoming Department of Health, Substance Abuse Division sponsored the survey for the first time in 2001 in preparation for the 21<sup>st</sup> Century State Incentive Grant Project (21 SIG). Survey administrators designed this initial PNA as a census survey of all 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students in Wyoming. The PNA provided local information about substance use and the associated Risk and Protective Factors for all 48 school districts and 23 counties in Wyoming. As part of the PNA, each community and local coalition received a customized profile report that they used during the 21 SIG Request for Proposals. Communities used the reports to identify the Risk and Protective Factors

with the greatest prevalence of youth who were at-risk or who had low protection. In turn, the communities chose programming which was tailored to reduce the highest priority Risk Factors and increase the lowest priority Protective Factors. The 21 SIG constructed its evaluation around the PNA to foster compatibility between results. Other grants, including the Federal Prevention Block Grant, the Prevention Framework Project and the Safe and Drug Free Communities Grants, have also used PNA data to plan, implement, and evaluate substance abuse prevention efforts in Wyoming.

The PNA moved from an autumn to a spring survey in 2004 to alternate with another complementary survey called the Youth Risk Behavior Survey (YRBS). Again, the PNA was given as a census survey of all 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students in Wyoming. Nearly 20,000 students participated in the survey, and customized local-level reports were produced for 23 counties and 46 school districts. Since this was the second time the survey was administered in Wyoming, the 2004 PNA provided information regarding how the state and communities had changed since the first PNA.

The survey was repeated in 2006. Questionnaire designers streamlined the survey, eliminating questions that were not reported or used in the previous years, but maintaining the core set of questions and scales that were used in previous years. Further improvements included the norming and reporting of one new Risk Factor, Intent to Use Drugs as an Adult, and a revised scale for the Rebelliousness Risk Factor. In response to new concerns about methamphetamine abuse, the PNA gained two questions to measure lifetime and 30-day use of that substance. Designers also enhanced measures for alcohol use and exposure. Several questions regarding use patterns and exposure to alcohol use at community events were also added. These alcohol use results helped inform the needs assessment and planning portion of the newly instituted Wyoming Prevention Framework Project, sponsored by the Wyoming Department of Health, Mental Health and Substance Abuse Services Division. The 2006 PNA also introduced guidelines regarding when a change from year to year, or when a difference between the state prevalence rate and a local prevalence rate, would be considered meaningful. These guidelines helped illuminate areas in which communities were seeing improvement, stability or deterioration in important youth substance use measures.

In preparation for survey administration in 2008, a committee composed of representatives from the Wyoming Department of Health, the Wyoming Department of Education, several Wyoming school districts, and the Prevention Framework State Advisory Council reviewed the survey prior to administration. The committee identified areas for which current substance abuse concerns needed additional data and proposed new questions to accommodate those needs. In addition, WYSAC analyzed the previous year's correlation between each Risk and Protective Factor and substance use. After this analysis WYSAC recommended that Risk and Protective Factors exhibiting poor correlations with substance use be deleted. The committee reviewed the recommendations and made the final decisions regarding which scales to eliminate. Committee members also considered separate vestigial questions for deletion that once formed part of the now-dismantled Risk or Protective Factor scales. The committee removed survey items associated with the deleted scales unless they felt the individual questions had substantial merit in measuring important facets of educational programs not directly related to substance use. For example, the Protective Factor scale called School Rewards for Prosocial Involvement was deleted. Its correlation with substance use was extremely low ( $r = .15$ ,  $t = 2.5$ ,  $p < .01$ ). After individual questions were examined, the committee chose to retain three questions from that scale. Those three questions measured whether the student felt teachers praised and recognized their work and how safe the

student felt at school. The committee felt that the scale had only a minimal relationship to substance use. However the remaining questions provided important information that schools could use in teacher trainings and in pursuit of funding opportunities, and thus these were retained. A complete list of changes to the questionnaire can be found in the Wyoming State PNA Methodology Report (WYSAC, 2008a).

Overall, the 2008 PNA questionnaire remains similar to the 2001, 2004, and 2006 PNAs. It continues to provide local-, county-, and state-level decision makers with information on youth substance use and attitudes, beliefs, and perceptions that influence youth substance use. This information can be used to plan, modify, and evaluate programs, policies, and practices that address substance use and problem behaviors.

## 2.3. Current Report's Purpose and Organization

The current report provides community leaders with essential information to plan and evaluate the community's prevention problem behaviors among adolescents substance

The report is organized into five sections. Sections 1 and 2 provide a results overview and introduction, respectively. Section 3 outlines the methods used to gather and analyze 2008 PNA responses and briefly presents some of the major limitations of the current study. Section 4 presents the survey results and organizes information according to the following topic areas:

- 1) Substance Use and Problem Behavior Prevalence
- 2) Risk Factor Profiles
- 3) Protective Factor Profiles

For each of these topic areas, the results are arranged by grade level. For each grade level, a profile of the average results from 2001 to 2008 is presented. This profile provides a *snapshot* of where Wind River Reservation stands with regard to substance use, Risk Factors, Protective Factors, and problem behaviors. A state-level comparison is also provided in these charts. The profile results are organized so that community members can easily identify their

Appendices A, B, and C present all the results in tabular form, including the number of people who were counted within each scale. In particular, Appendix A provides the substance use and problem behavior results by grade level; Appendix B provides the Risk Factor results; and Appendix C provides the Protective Factor results.

Please note that for ease of navigation between the graphs and the results tables, the electronic copy of this report contains hyperlinks in the figure and table titles that, when clicked, will jump the reader to the corresponding results table in the appendix, and back again to the results section when the appendix table title is clicked.

## 3. Methods

### 3.1. Survey Instrument

The 2008 PNA questionnaire was a paper and pencil based survey that students completed during a regular classroom period. Students responded to each survey question by marking a circle in front of

their preferred response choice using a #2 pencil WYSAC had provided or a pen. The marks could then be recognized by computer software and entered into the dataset for analysis.

The core set of questions from the PNA were reproduced exactly as they were presented in previous years. Based on a correlation analysis of Risk and Protective Factor scales, several scales were removed because they had a poor relationship with substance use. These correlations were examined separately for each grade level. Scales that consistently had absolute point biserial correlation values of  $r < 0.2$  between the substance use indicators and the scale score were considered for deletion. Based on that analysis, WYSAC removed the following 12 Risk and Protective Factor scales from the 2008 PNA:

- Low Neighborhood Attachment
- Transitions and Mobility\*
- Perceived Availability of Handguns
- Family Conflict
- Academic Failure\*
- Community Opportunities for Prosocial Involvement
- Community Rewards for Prosocial Involvement
- Family Attachment
- Family Opportunities for Prosocial Involvement\*
- Family Rewards for Prosocial Involvement\*
- School Opportunities for Prosocial Involvement\*
- School Rewards for Prosocial Involvement\*

Several new questions were added to the questionnaire to address current needs and interests in the state of Wyoming. The additional questions include:

- 1) Seven social norm questions asking how frequently the participant thinks the typical student in their school uses alcohol, cigarettes, chewing tobacco, marijuana, methamphetamines, or illegal drugs.
- 2) A survey item asking what type of alcohol the participants most often consumed.
- 3) Several new items asking about attitudes and beliefs concerning chewing tobacco.
- 4) Lifetime and 30-day misuse of over-the-counter drugs. ~~Over-the-counter drugs~~ term that is unlikely to be familiar to many students. To minimize the confusion, students were asked "how many occasions ... have you used a medication to get high that you can buy at the store?"
- 5) Lifetime and 30-day misuse of prescription drugs. In these questions students were asked "On how many occasions ... have you used a prescription medication to get high?"

A complete list of changes to survey items and a copy of the final survey questionnaire are provided in the State Methodological Report (WYSAC, 2008a).

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\* Though these scales are no longer reported, one or more questions from each scale were retained in the 2008 PNA survey instrument. Results for the retained questions are available at the PNA Interactive Graphing Website at: <http://wysac.uwyo.edu/pnaig/>.



### 3.3. Survey Administration

WYSAC prepared survey packets for all schools and school districts who agreed to participate. Based on information received from the schools, WYSAC staff prepared and shipped to schools or school district coordinators one survey packet for each classroom where the survey would be administered. The survey packet contained an overabundance of questionnaires, pencils, and parental consent letters to distribute to every student who was eligible to take the survey in that classroom. The packets also contained a standardized set of survey administrator instructions, a survey feedback form, and a collection envelope.

School officials sought parental consent at least two weeks prior to the survey administration date in each school. Typically, teachers gave students the consent forms to take home to their parents. Some schools chose to distribute the parental consent forms with school newsletters or with term grades that were mailed directly to the parents. All but one school district chose to use passive parental consent. Passive parental consent allowed parents to withdraw their consent if they did not want their child to participate by simply returning a signed form to the school.

In most schools, classroom teachers administered the survey in their classrooms. Teachers informed students via oral instructions that the survey was voluntary and anonymous. Students who chose not to participate or whose parents withdrew their consent received another activity to complete, such as independent reading or studying, while the remainder of the students completed the survey. Depending upon the school, teachers were able to grant students periods of time ranging from as little as 30 minutes to as long as 90 minutes to complete the 115-question survey. To ensure anonymous responses, researchers instructed teachers to ask students to refrain from writing their names or any other identifying marks on the survey questionnaire. Students responded to the survey questions by marking their answers directly on the questionnaire. After completing the questionnaire, students placed their surveys in a common classroom collection envelope, which teachers sealed immediately following the survey administration period and returned to WYSAC for analysis and reporting.

### 3.4. Data Preparation and Analysis

As the completed questionnaires were returned to WYSAC, staff cataloged them, tracked their points of origin, and prepared them for scanning. Each survey was examined during preparation to evaluate suitability for scanning. Mutilated, torn, or otherwise unusable questionnaires were set aside for special handling.

Specially trained WYSAC research aides scanned or, in the case of damaged surveys, entered data manually using Teleform 9.1 software. Each questionnaire was individually verified for problems during data entry. As part of the process, WYSAC conducted quality control checks of nearly 2% of surveys returned. When a questionnaire was randomly selected for a quality control check, quality control specialists checked data on the form against the data that was present in the database for that questionnaire. These quality control checks indicated that better than 99.9% of answers were entered accurately.

After all survey booklets were scanned and/or entered, the data were cleaned using the honesty criteria established in previous PNA administrations. In particular, questionnaires were considered invalid and removed from the dataset if any of the following were true:

- 1) Students answered fewer than 10 survey items.
- 2) Students reported using the fictitious drug.
- 3) Students marked suspiciously and extremely high substance use (see WYSAC, 2008a).
- 4) Students responded on the last survey question honestly at all. "
- 5) Students marked that they were in the 7th, 9th, or 11th grades\*.
- 6) Students had an extremely high number of inconsistent answers. For example, if a participant said that he/she had no lifetime marijuana use but also said he/she had used marijuana in the past 30 days, SPSS scored this occurrence as an inconsistent response. A total of 38 inconsistency checks were performed. If a student accumulated more than 8 inconsistent responses, then their questionnaire was considered invalid and all of its data were removed from further consideration.

For the analysis, scale scoring and reported prevalence rates were based on already established scoring methods and cutpoints. As was done in the 2004 PNA and 2006 PNA, the researchers weighted data to help correct for non-response bias. A full explanation of how the results were scored and weighted is provided in the State Methodological Report (WYSAC, 2008a).

Data analysis identified prevalence rates for the following:

- Lifetime substance use
- 30-day substance use
- Heavy substance use
- Participation in problem behaviors
- Students at-risk
- Students at-high-protection

Within each of these categories, the grade-level profile chart orders the prevalence rates from highest to lowest within the community. State-level comparisons are also provided in these graphs.

### 3.5. Survey Limitations and Considerations

The Prevention Needs Assessment is a paper and pencil based questionnaire which students complete anonymously by themselves. This type of survey administration inherently involves several important limitations and considerations.

#### 3.5.1 Self-Report Limitations

As in all self-report surveys, a variety of factors may affect the accuracy of the survey responses. For instance, dishonesty always has the potential to bias results. In some cases the dishonesty may make the results look better than the truth because the students are attempting to answer in a socially desirable way. In other cases dishonesty may make the results look worse than the truth because students exaggerate their participation in substance use and problem behaviors. To help mitigate both types of dishonesty, the PNA is administered anonymously, which provides the safety necessary to encourage students to feel secure in answering openly and honestly. In addition, the PNA has several honesty checks that help detect when a student may be exaggerating.

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\* The survey was originally developed and normed for 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students. No cutpoints exist for these other grade levels, and thus those surveys that marked the 7<sup>th</sup>, 9<sup>th</sup>, or 11<sup>th</sup> grades were considered invalid.

Other self-report limitations that affect how students answer questions include: (1) the student's ability to remember the events and behaviors that the questionnaire asks about, (2) the student's interpretation of what the question is asking, and (3) how applicable the student feels the question is in his/her life. An example in which each of these limitations may play a part is the question asking, "How old were you when you first had (for more than one example, vodka, whiskey, or gin)?" Memory limitations may play a part because the more time has passed since the student first used alcohol, the more difficult it may be for him/her to recall the exact age of first use. In addition, students who have never used alcohol may not answer the question, even though "never" is applicable to them. Finally, the definition from the 6<sup>th</sup> grade students, who might interpret that phrase much more conservatively than the 12<sup>th</sup> grade students, for whom a sip might be thought of as substantially more.

In addition to the above limitations, students with special needs, reading problems, or for whom a time limit is a problem may have difficulty answering or completing the survey. More specifically, students with special needs may be unable to read the survey questions or be unable to adequately respond to the survey. As a result, these students may not be able to complete the questionnaire or they may not answer consistently because of their needs. Also, students with reading problems may have difficulty understanding some of the PNA questions. To help mitigate these concerns, researchers gave permission to survey administrators to pronounce and define some words the students may have difficulty reading, if asked. Nevertheless, if a student did not feel comfortable reading the questionnaire, then he/she may simply have chosen not to participate.

Researchers instructed schools and survey administrators to allow students at least 45 minutes to complete the survey. Based on previous administrations, most students easily complete the survey within those 45 minutes; however, some students require more time to adequately complete the questionnaire, and therefore some students may not have answered as completely as possible.

Overall, the limitations do not severely threaten the validity of the survey results. Rather, the reader of this report can consider the results to be well correlated, but not wholly accurate, measures of students' attitudes, beliefs, behaviors, and

### 3.5.2 Limitations in Data Collection

In addition to the self-report limitations explained above, the way in which the data were gathered may also impact the results of the PNA. Since its inception, survey researchers have designed the PNA in Wyoming as a complete census survey of all 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students. However, a variety of factors played a role in making the PNA less than a full census survey. These factors included:

- Schools that chose to participate, but failed to return any completed surveys.
- Parents who denied consent for their child's participation.
- Students themselves who chose not to participate or to complete the survey.
- Student who were absent from class on the date of the survey.

Though these factors resulted in a less-than-perfect census for all years of the survey, there is a credible reason to believe that the PNA is still representative of the whole population. In particular, the students who take the PNA survey have similar demographic characteristics when compared to

the complete general student population. Males and females are nearly equally represented. The reported race and ethnicity proportions are similar to those that the US Census collected in Wyoming for this age group. There is scant supporting evidence to suggest that other factors such as socioeconomic class would be different for the participants and nonparticipants. The biggest threat to the representativeness of the PNA occurred in grade levels in which the response rate was generally low or in places where school district policy dictated that active parental consent, rather than passive parental consent, must be used to administer the survey. In both of those cases, it is possible that the students who took the survey were fundamentally and consistently different from the students who did not take the survey, thus potentially introducing unwanted bias into the results.

Achieving higher response rates may be possible if the students are required to take the survey and/or the students' responses are to create a non-anonymous situation where respondents are uncomfortable responding truthfully. A more socially desirable response in that situation would have fewer perceived negative consequences. In other words they would answer in a way that would make their behavior look better than it actually is. The methods used during the survey administration process are in place to maximize the response rate while minimizing these other sources of error and bias.

One issue that should be addressed is whether there should be a confidence interval reported with the results because less than 100% of the students participated. Without a perfect census, there is some level of uncertainty about these estimates. However, because the participation rate is not random, it is difficult to know how to calculate the confidence interval. The error due to non-participation is not statistical error, instead it is something else. Based on consultations with various statisticians, the author and primary analyst for this report decided to present the results without error bars or confidence intervals. The response rate is generally high, well over 40% in most cases, which reduces uncertainty. However, to compensate further, the author took a very conservative approach in determining meaningful change from year to year. For example, Risk and Protective Factors had to change by 15 or more percentage points before being declared meaningfully different from the previous year. Thus it is highly likely that changes that met the criteria for meaningful change are of true interest.

## 4. Results

### 4.1. Using Figures and Tables in this Report

This report contains one basic type of graph, a profile of the community. Graphs are ordered so that the substance use prevalence rates, problem behavior prevalence rates, and Risk Factors having the highest prevalence within the community are listed first, followed by those with lower prevalence. The results are organized in this way because community leaders and program administrators most often choose as priorities for prevention the substance use, problem behaviors, and Risk Factors with the highest prevalence rates. Protective Factors are presented with the lowest prevalence rates listed first, followed by Protective Factors with higher prevalence rates. Conversely, leaders and administrators usually choose as priorities for prevention Protective Factors with the smallest percentage of students considered to be at-high-protection.

The profile graphs also provide information about whether the local prevalence rates are higher or lower than the state averages for each substance, problem behavior, Risk Factor, and Protective Factor. The primary purpose of these profile graphs is to aid in the current planning process for

prevention programs. However, the results within these graphs may be used to revisit established goals and priorities, to evaluate progress, and consider new action.

The actual prevalence rates of the combined 2001- 2008 PNA are presented in Appendices A, B, and C. For ease of navigation between the graphs and the results tables, the electronic copy of this report contains hyperlinks in the figure and table titles that, when clicked, will jump the reader to the corresponding results table in the appendix, and back again to the results section when the appendix table title is clicked.

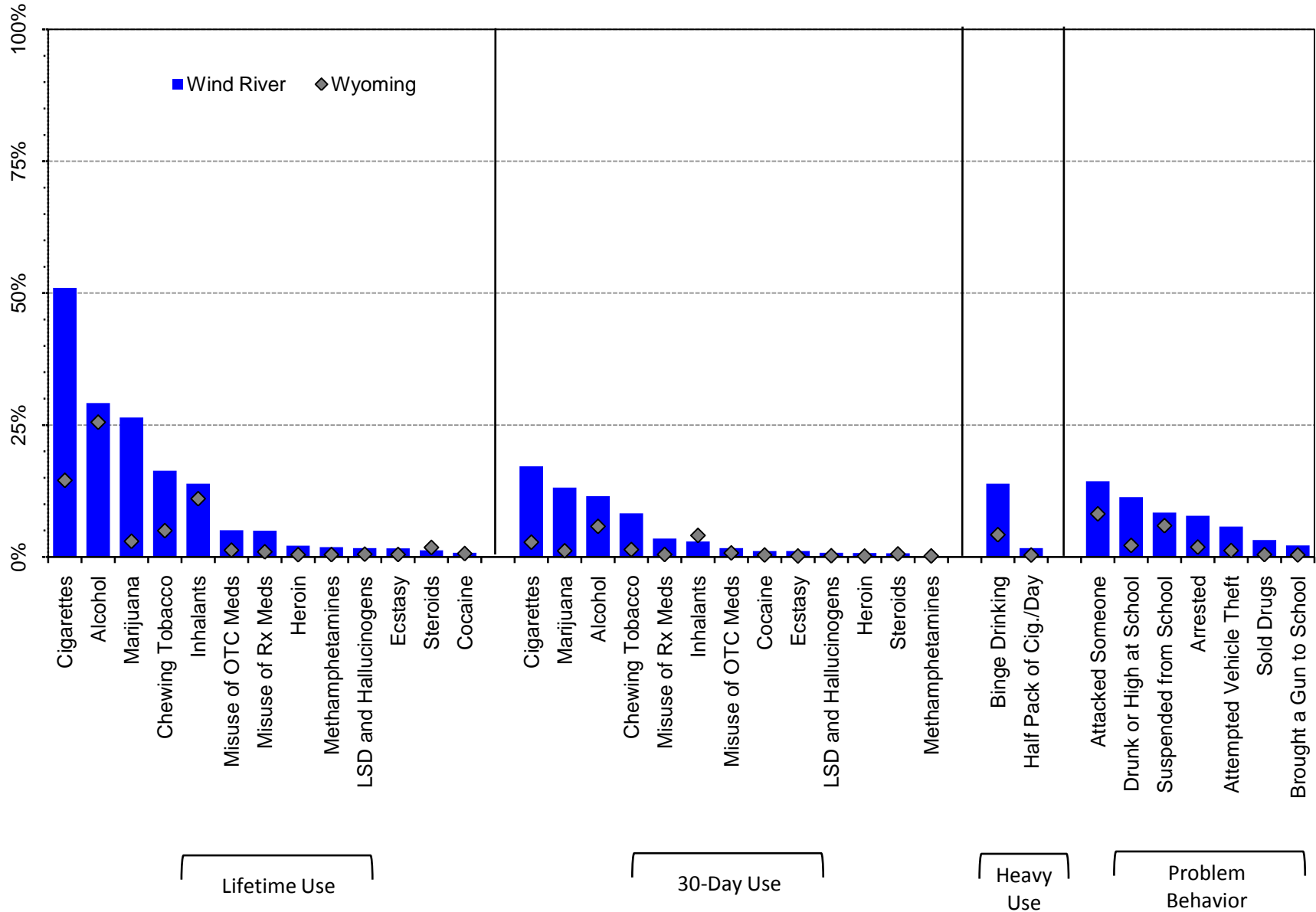
## 4.2. Prevalence of Substance Use and Problem Behaviors

This PNA report measures the self-reported prevalence rates for 13 substances and seven problem behaviors. The students are asked about their substance use both in their lifetimes and during the past 30 days. They are also asked about heavy use of alcohol and tobacco. The problem behaviors assessed by the PNA represent some of the most common problem behaviors that youth engage in during their high school and middle school years, including fighting, selling drugs, and stealing vehicles.

### 4.2.1 6<sup>th</sup> Grade Substance Use and Problem Behavior Prevalence

The survey results for the 6<sup>th</sup> grade students in Wind River Reservation are presented in Figure 1, which provides a profile of the currently reported substance use and problem behavior rates for 6<sup>th</sup> grade students in Wind River Reservation. In this figure, the blue bars represent the local level prevalence rates for each substance and problem behavior. The gray diamonds represent the state level prevalence rates.

Figure 1. Substance use and problem behavior prevalence rate profile, 2001-2008 PNA: Wind River Reservation, 6<sup>th</sup> graders

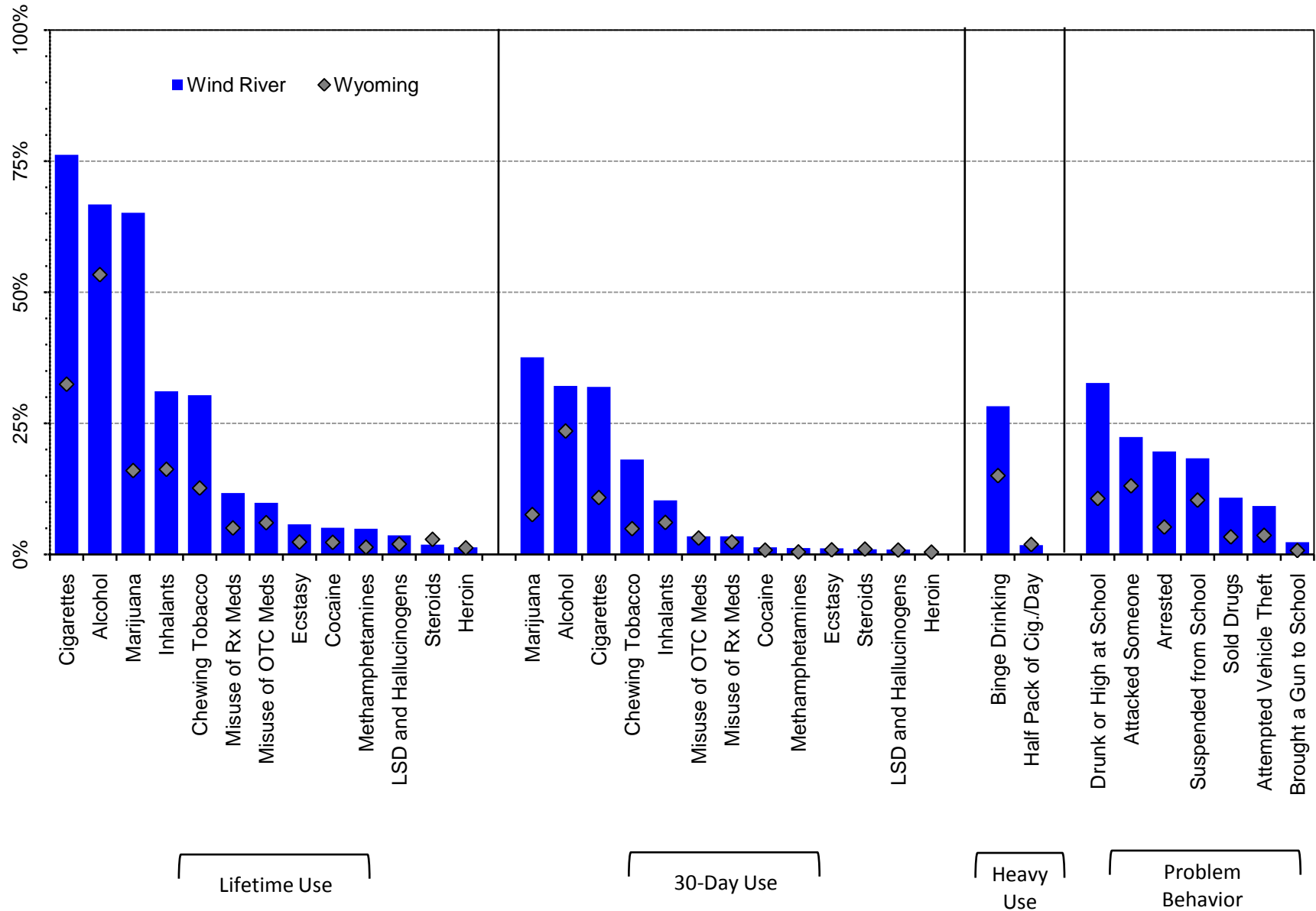


Note: OTC Meds = Over the Counter Medication; Rx Meds = Prescription Medication

#### **4.2.2 8<sup>th</sup> Grade Substance Use and Problem Behavior Prevalence**

The survey results for the 8th grade students in Wind River Reservation are presented in Figure 2, which provides a profile of the currently reported substance use and problem behavior rates for 8<sup>th</sup> grade students in Wind River Reservation. In this figure, the blue bars represent the local level prevalence rates for each substance and problem behavior. The gray diamonds represent the state level prevalence rates.

Figure 2. Substance use and problem behavior prevalence rate profile, 2001-2008 PNA: Wind River Reservation, 8th graders

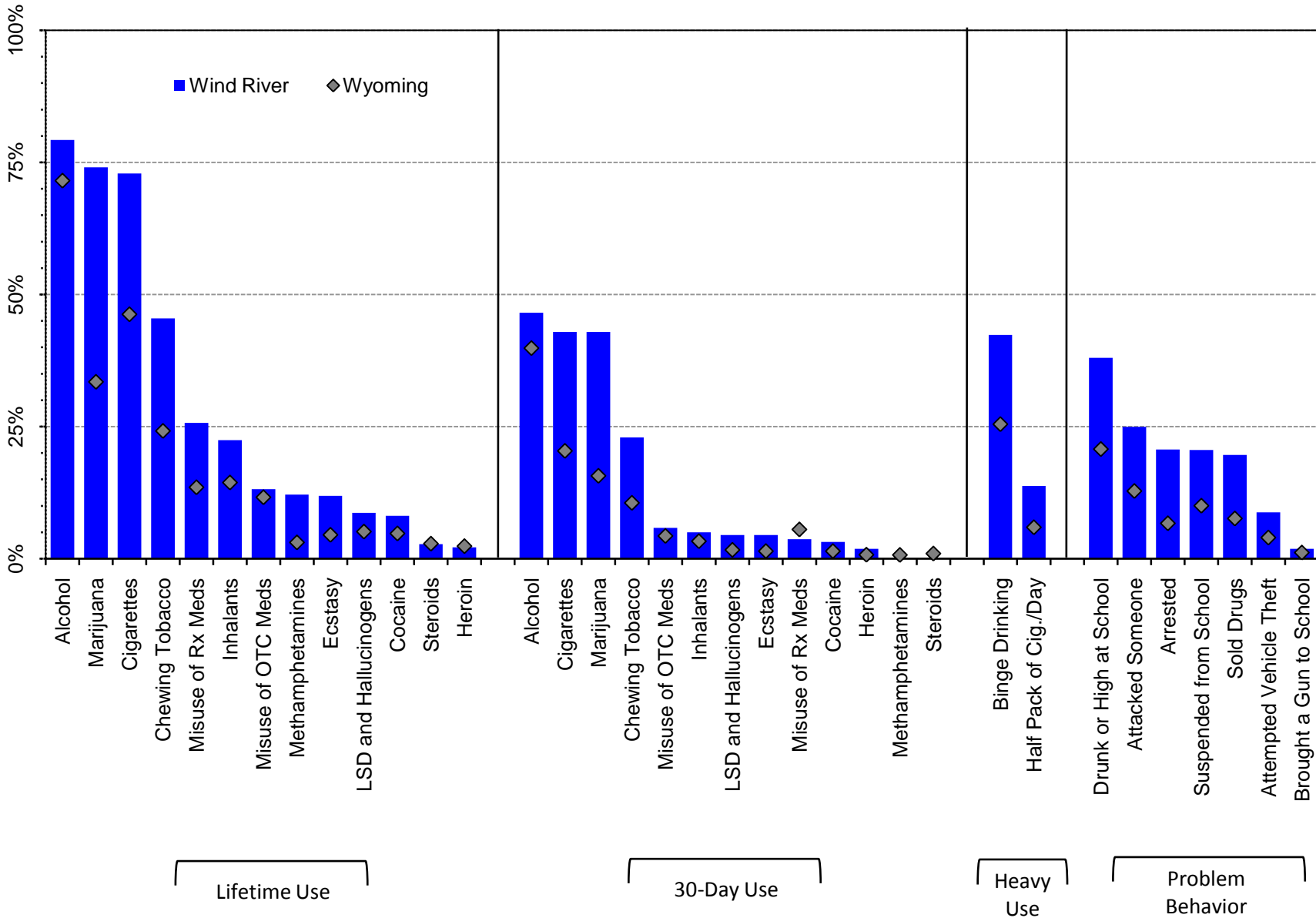


Note: OTC Meds = Over the Counter Medication; Rx Meds = Prescription Medication

### 4.2.3 10<sup>th</sup> Grade Substance Use and Problem Behavior Prevalence

The survey results for the 10<sup>th</sup> grade students in Wind River Reservation are presented in Figure 3, which provides a profile of the currently reported substance use and problem behavior rates for 10<sup>th</sup> grade students in Wind River Reservation. In this figure, the blue bars represent the local level prevalence rates for each substance and problem behavior. The gray diamonds represent the state level prevalence rates.

Figure 3. Substance use and problem behavior prevalence rate profile, 2001-2008 PNA: Wind River Reservation: 10th graders

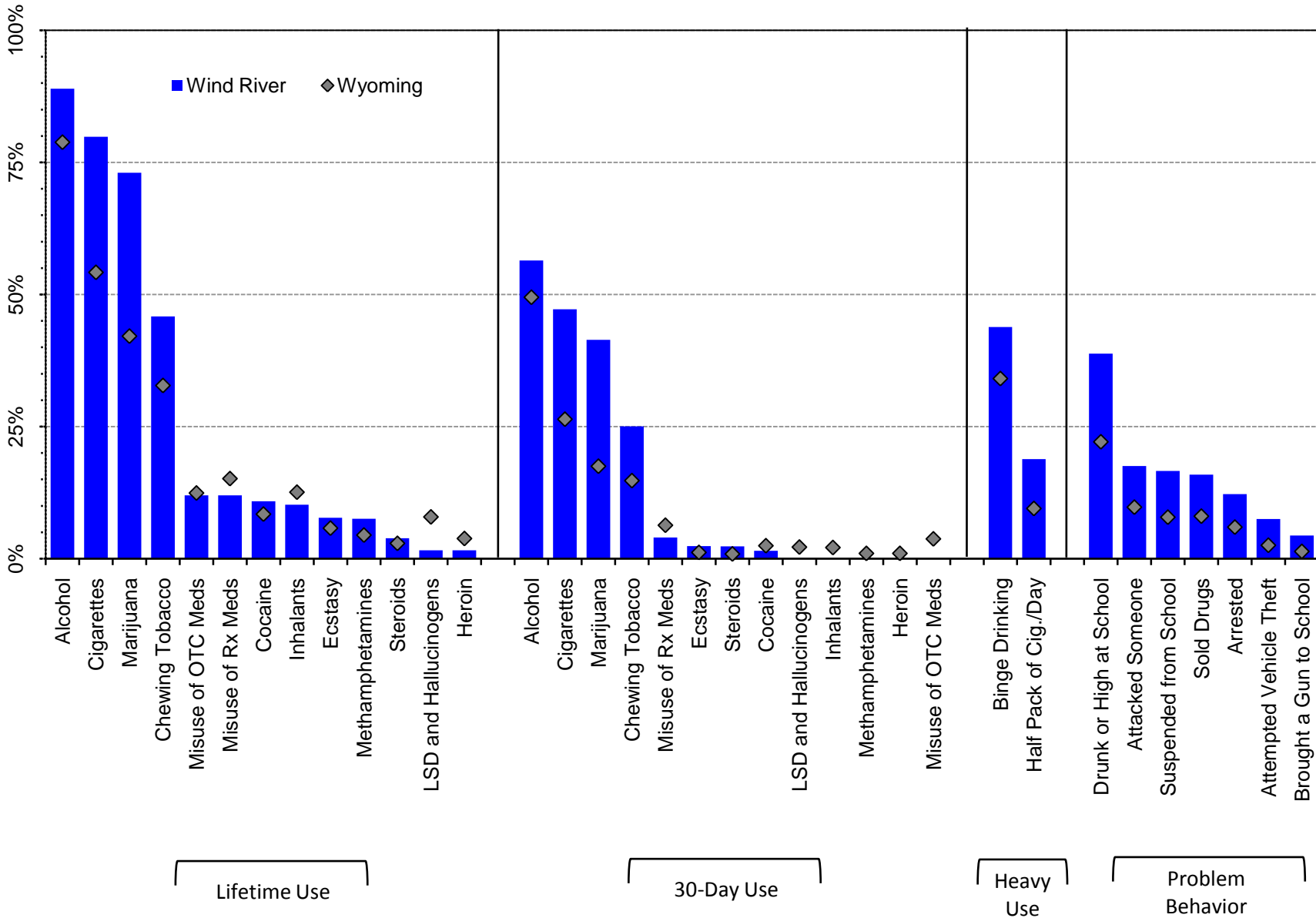


Note: OTC Meds = Over the Counter Medication; Rx Meds = Prescription Medication

#### **4.2.4 12<sup>th</sup> Grade Substance Use and Problem Behavior Prevalence**

The survey results for the 12<sup>th</sup> grade students in Wind River Reservation are presented in Figure 4, which provides a profile of the currently reported substance use and problem behavior rates for 12<sup>th</sup> grade students in Wind River Reservation. In this figure, the blue bars represent the local level prevalence rates for each substance and problem behavior. The gray diamonds represent the state level prevalence rates.

Figure 4. Substance use and problem behavior prevalence rate profile, 2001-2008 PNA: Wind River Reservation, 12th graders



Note: OTC Meds = Over the Counter Medication; Rx Meds = Prescription Medication

### 4.3. Risk Factor Prevalence Rates

Each Risk Factor measured on the PNA is comprised of several survey questions that are combined to produce a scale score for each survey participant. Based on each Risk Factor scale score, students are classified as either being at-risk or not-at-risk for substance use, academic failure, and/or participation in problem behaviors. The Risk Factors measured on the PNA have been classified as belonging to four different domains: (1) Community, (2) Family, (3) School and (4) Peer/Individual.

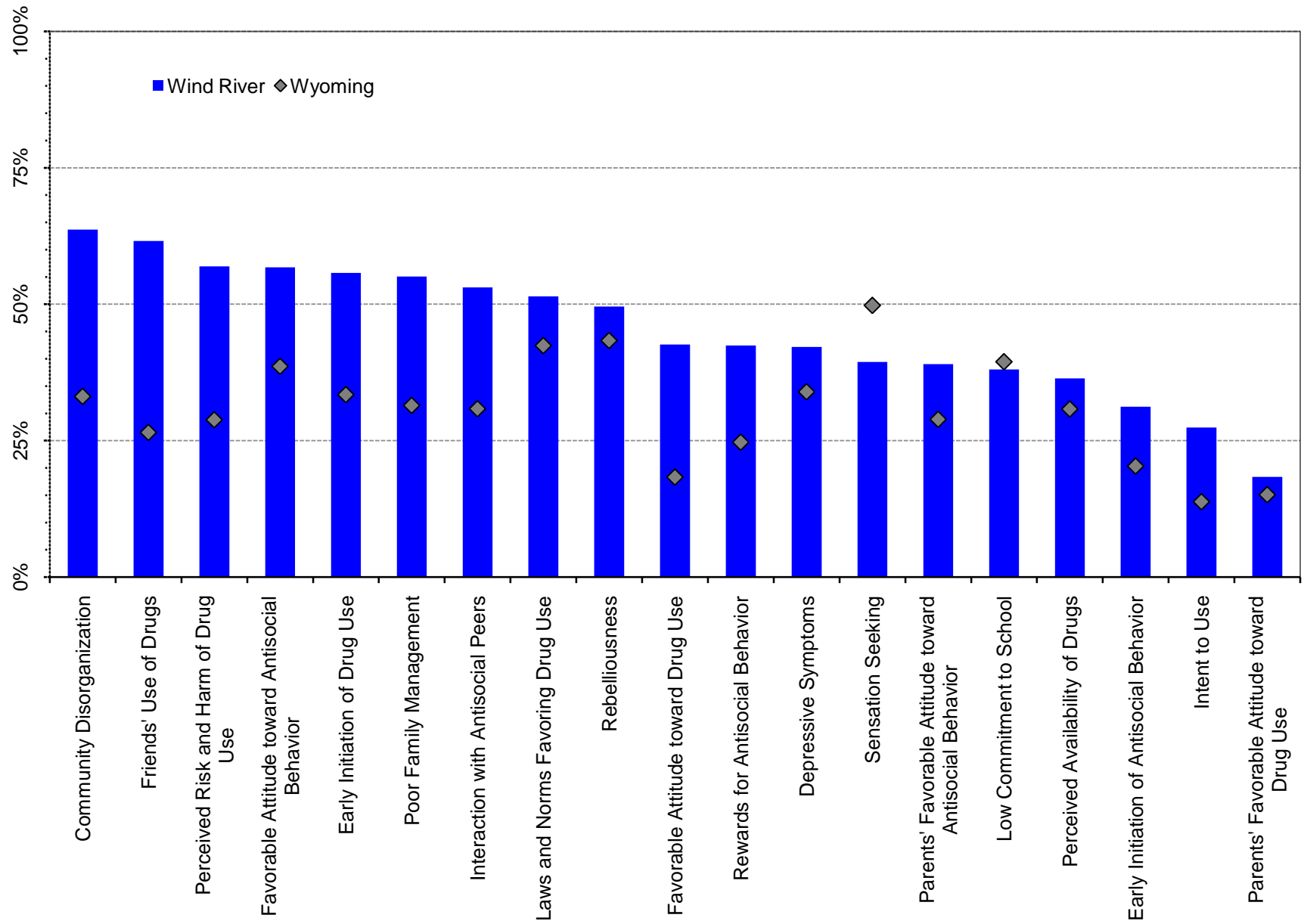
Community leaders and substance prevention program managers often select priority Risk Factors based on the percentage of students who are classified as at-risk for each Risk Factor. The logical basis for this decision is that the prevention efforts should focus on mitigating and changing those Risk Factors that affect the greatest percentage decreases, they, based on theory, should be less likely to engage in substance use, experience academic failure, and/or participate in problem behaviors.

The next sections present the prevalence rates of at-risk students for each Risk Factor measured on the PNA.

#### 4.3.1 Prevalence of Risk Factors for 6<sup>th</sup> Grade Students

The Risk Factor survey results for the 6<sup>th</sup> grade students in Wind River Reservation are presented in Figure 5, which provides a profile of the current Risk Factor prevalence rates for 6<sup>th</sup> grade students in Wind River Reservation. In the figure, Risk Factor prevalence rates are ordered based on the percentage of students who are considered to be at-risk. Risk Factors with the highest prevalence rates of at-risk students are listed first, followed by those Risk Factors with smaller rates. The blue bars represent the local prevalence rates for each Risk Factor and the gray diamonds represent the state level prevalence rates.

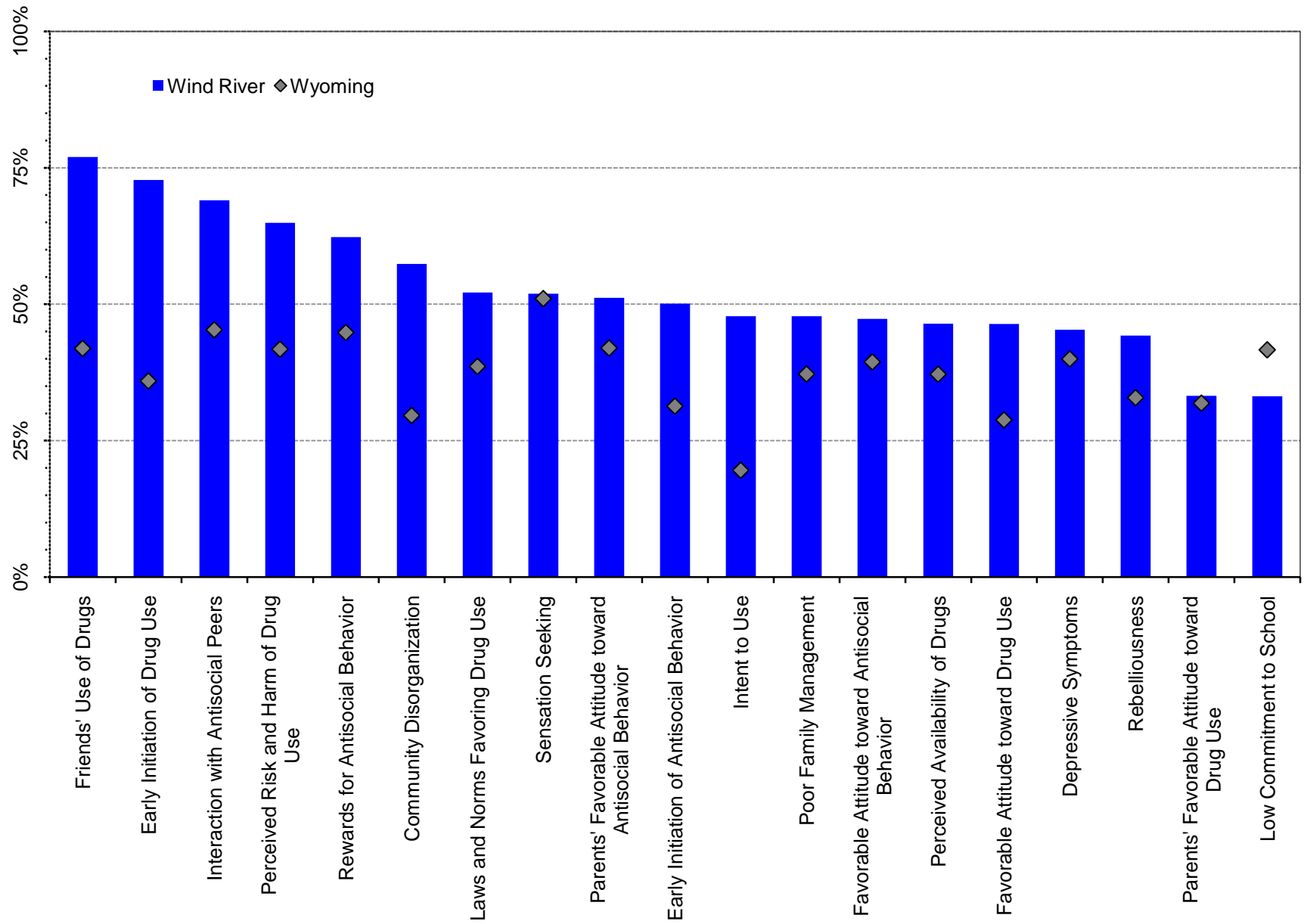
Figure 5. Risk Factor profile, 2001-2008 PNA: Wind River Reservation, 6<sup>th</sup> graders



#### 4.3.2 Prevalence of Risk Factors for 8<sup>th</sup> Grade Students

The Risk Factor survey results for the 8<sup>th</sup> grade students in Wind River Reservation are presented in Figure 6, which provides a profile of the current Risk Factor prevalence rates for 8<sup>th</sup> grade students in Wind River Reservation. In the figure, Risk Factor prevalence rates are ordered based on the percentage of students who are considered to be at-risk. Risk Factors with the highest prevalence rates of at-risk students are listed first, followed by those Risk Factors with smaller rates. The blue bars represent the local prevalence rates for each Risk Factor and the gray diamonds represent the state level prevalence rates.

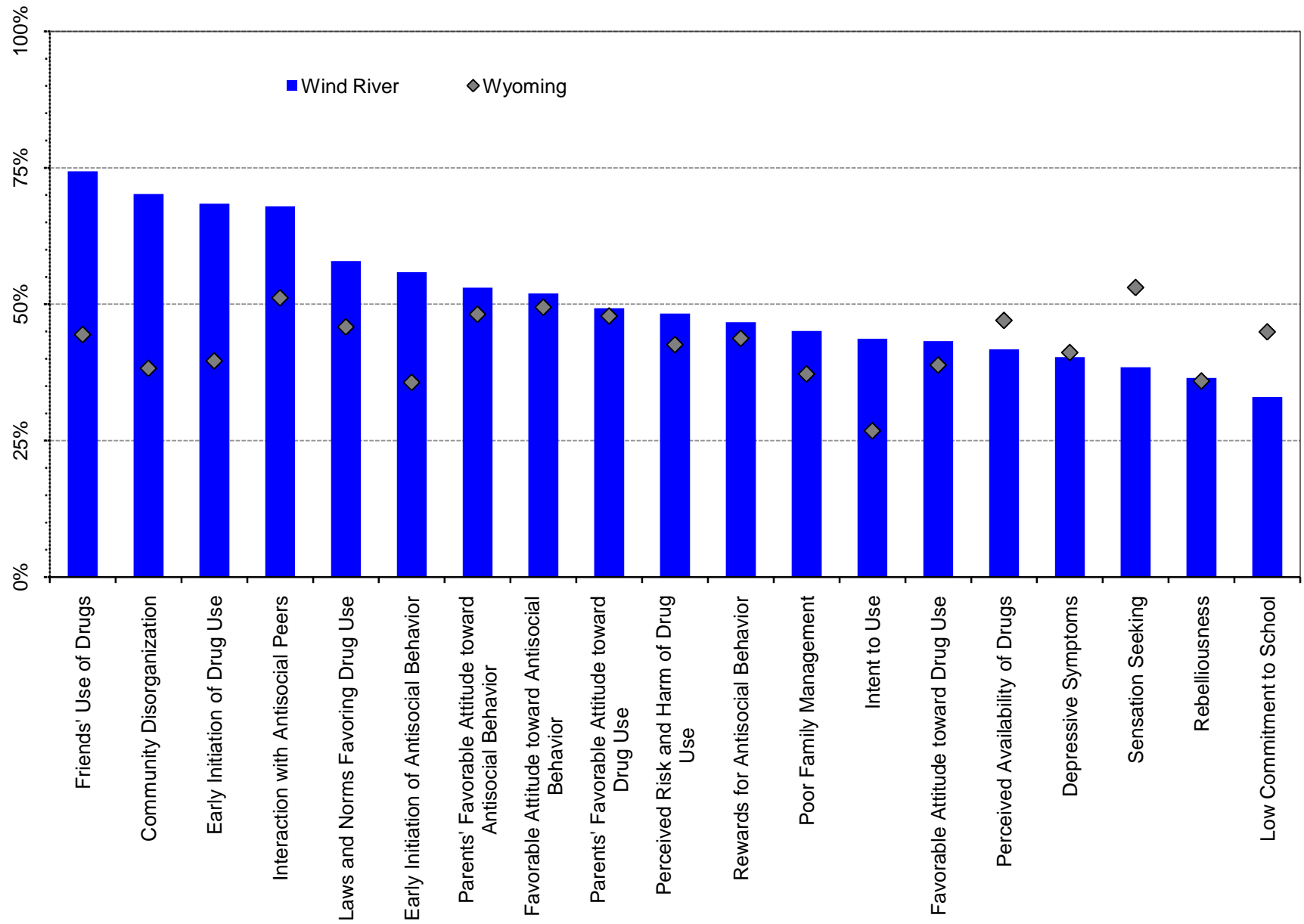
Figure 6. Risk Factor profile, 2001-2008 PNA: Wind River Reservation, 8<sup>th</sup> graders



### 4.3.3 Prevalence of Risk Factors for 10<sup>th</sup> Grade Students

The Risk Factor survey results for the 10<sup>th</sup> grade students in Wind River Reservation are presented in Figure 7, which provides a profile of the current Risk Factor prevalence rates for 10<sup>th</sup> grade students in Wind River Reservation. In the figure, Risk Factor prevalence rates are ordered based on the percentage of students who are considered to be at-risk. Risk Factors with the highest prevalence rates of at-risk students are listed first, followed by those Risk Factors with smaller rates. The blue bars represent the local prevalence rates for each Risk Factor and the gray diamonds represent the state level prevalence rates.

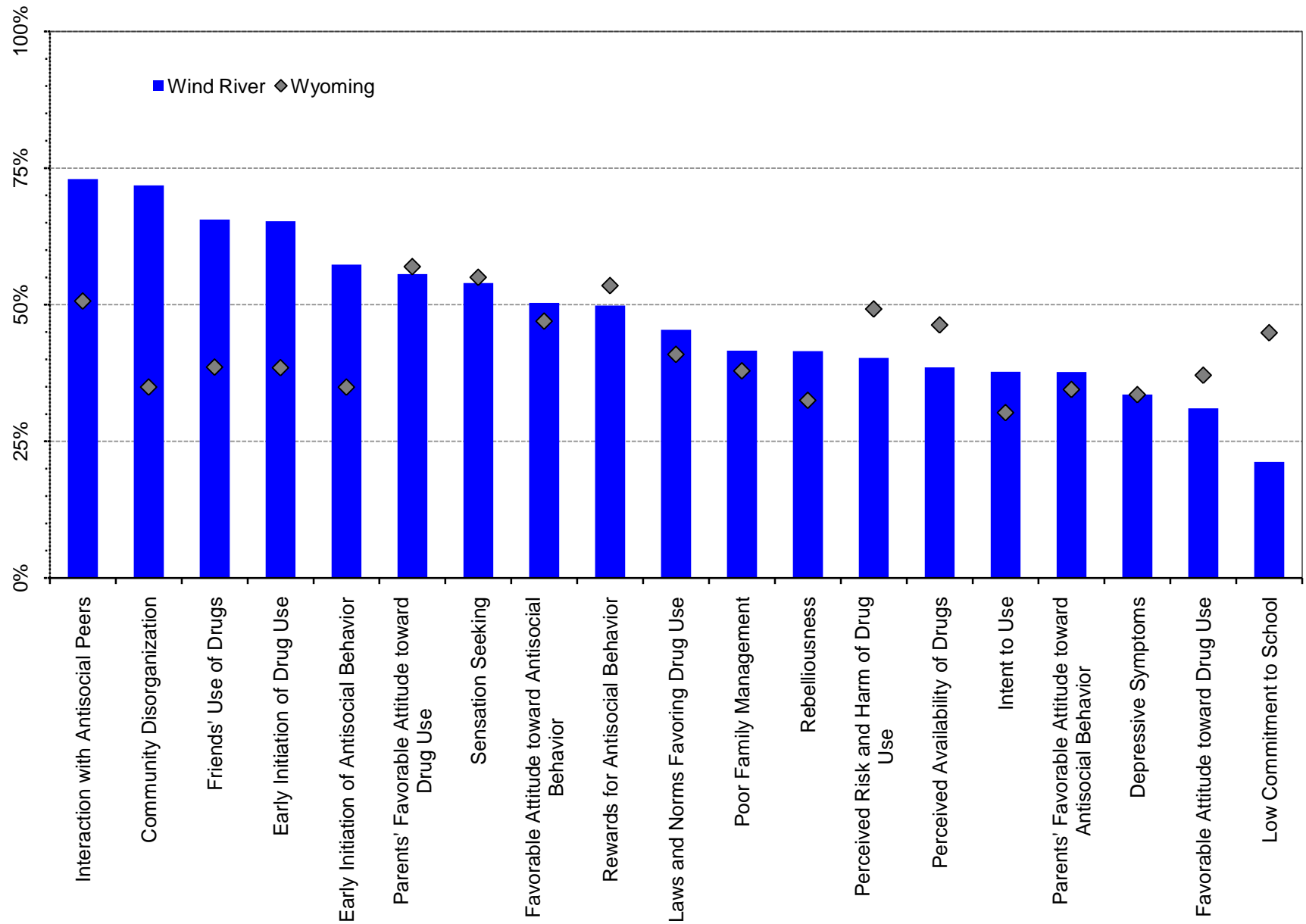
Figure 7. Risk Factor profile, 2001-2008 PNA: Wind River Reservation, 10<sup>th</sup> graders



#### 4.3.4 Prevalence of Risk Factors for 12<sup>th</sup> Grade Students

The Risk Factor survey results for the 12<sup>th</sup> grade students in Wind River Reservation are presented in Figure 8, which provides a profile of the current Risk Factor prevalence rates for 12<sup>th</sup> grade students in Wind River Reservation. In the figure, Risk Factor prevalence rates are ordered based on the percentage of students who are considered to be at-risk. Risk Factors with the highest prevalence rates of at-risk students are listed first, followed by those Risk Factors with smaller rates. The blue bars represent the local prevalence rates for each Risk Factor and the gray diamonds represent the state level prevalence rates.

Figure 8. Risk Factor profile, 2001-2008 PNA: Wind River Reservation, 12<sup>th</sup> graders

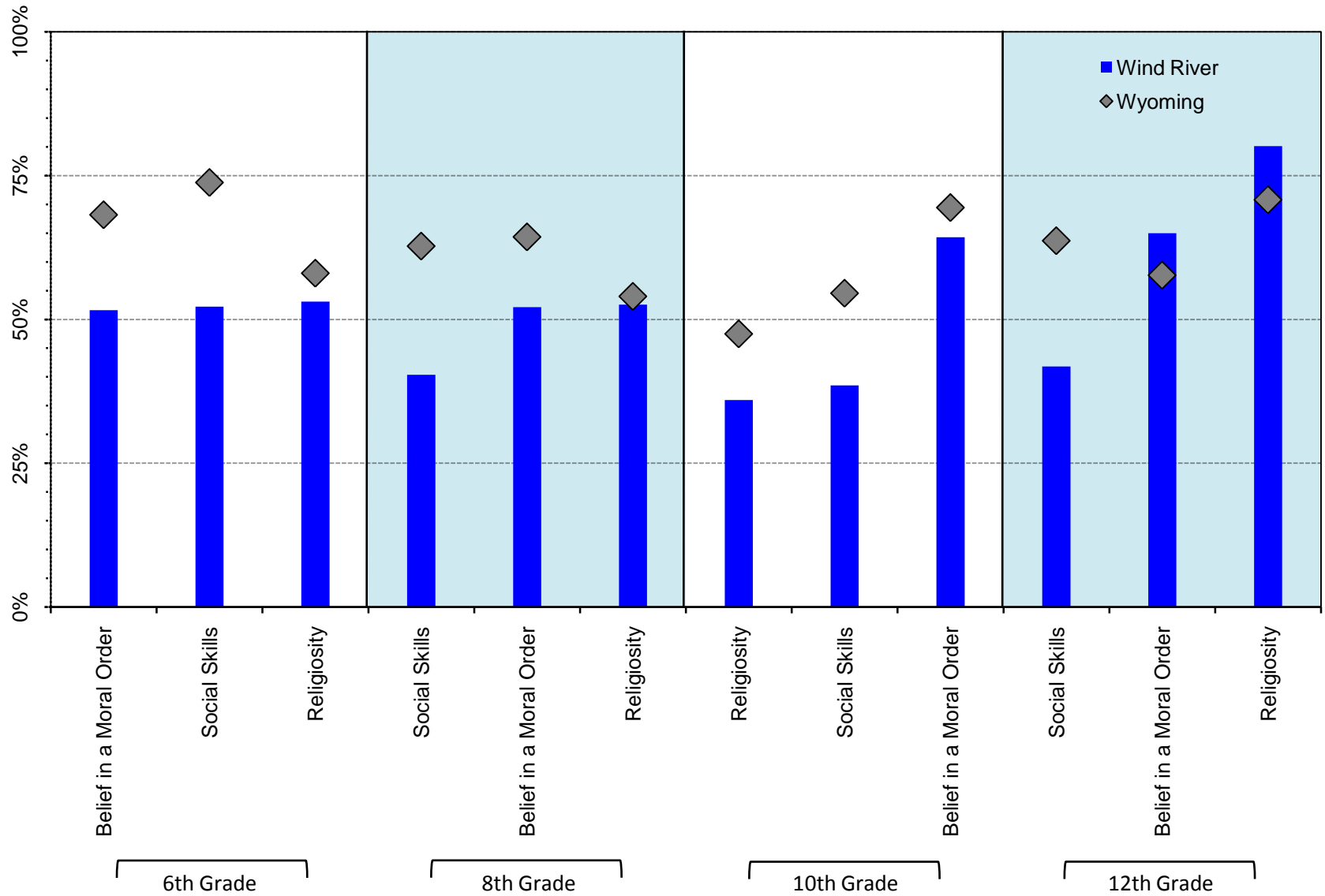


#### 4.4. Protective Factors Prevalence Rates

Each Protective Factor measured on the PNA is comprised of several survey questions that are combined to produce a scale score for each survey participant. Based on each Protective Factor scale score, students are classified as either being at-high-protection or not at-high-protection for substance use, academic failure, and/or participation in problem behavior(s).

Community leaders and substance use prevention program managers usually choose as priorities Protective Factors with the smallest prevalence of at-high-protection students. The next section present the prevalence rates each Protective Factor measured on the PNA. The PNA Protective Factor survey results for the students in Wind River Reservation are presented in Figure 9, which provides a profile of the current Protective Factor prevalence rates for students in Wind River Reservation. Within each grade level, Protective Factor prevalence rates are ordered based on the percentage of students who are considered to be at-high-protection. Protective Factors with the lowest prevalence rates are listed first, followed by those Protective Factors with higher rates.

Figure 9. Protective Factor profile, 2001-2008 PNA: Wind River Reservation, all grade levels



## 5. References

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## 6. Appendices

### Appendix A. Substance Use Prevalence Rate Tables

Table 6. Substance use and problem behavior prevalence rates for Wind River Reservation, 6th grade: 2001-2008 PNA

		Wyoming		Wind River	
		%	n	%	n
Lifetime Use	Alcohol	26%	18890	29%	309
	Marijuana	3%	19512	26%	319
	LSD and Hallucinogens	0%	19440	2%	322
	Cocaine	1%	19493	1%	319
	Inhalants	11%	19456	14%	320
	Methamphetamines	0%	9644	2%	116
	Heroin	0%	19328	2%	314
	Ecstasy	0%	19135	2%	314
	Steroids	2%	19295	1%	311
	Chewing Tobacco	5%	19087	16%	320
	Cigarettes	14%	19064	51%	318
	Misuse of OTC Meds*	1%	4777	5%	66
	Misuse of Rx Meds**	1%	4780	5%	63
Past 30 Day Use	Alcohol	6%	19521	12%	323
	Marijuana	1%	19513	13%	323
	LSD and Hallucinogens	0%	19419	1%	319
	Cocaine	0%	19434	1%	320
	Inhalants	4%	19431	3%	321
	Methamphetamines	0%	9646	0%	115
	Heroin	0%	19290	1%	313
	Ecstasy	0%	19140	1%	310
	Steroids	1%	19234	1%	306
	Chewing Tobacco	1%	19110	8%	319
	Cigarettes	3%	19090	17%	319
	Misuse of OTC Meds*	1%	4785	2%	66
	Misuse of Rx Meds**	0%	4773	3%	64
Heavy Use	Binge Drinking	4%	19096	14%	316
	Half Pack of Cig./Day	0%	19090	2%	319
Problem Behavior	Suspended from School	6%	19884	8%	328
	Drunk or High at School	2%	19802	11%	321
	Sold Drugs	0%	19713	3%	324
	Attempted Vehicle Theft	1%	19842	6%	327
	Arrested	2%	19733	8%	322
	Attacked Someone	8%	19797	14%	327
	Brought a Gun to School	0%	19756	2%	326

\* Students were asked, "On how many occasions ... have you used ... a medication to get high that you can buy at the store?"

\*\* Students were asked, "On how many occasions ... have you used ... a prescription medication to get high?"

Table 7. Substance use and problem behavior prevalence rates for Wind River Reservation, 8th grade: 2001-2008 PNA

		Wyoming		Wind River	
		%	n	%	n
Lifetime Use	Alcohol	53%	19596	67%	285
	Marijuana	16%	20072	65%	296
	LSD and Hallucinogens	2%	20104	4%	297
	Cocaine	2%	20095	5%	299
	Inhalants	16%	20114	31%	297
	Methamphetamines	1%	9637	5%	128
	Heroin	1%	20056	1%	299
	Ecstasy	2%	20026	6%	298
	Steroids	3%	20017	2%	300
	Chewing Tobacco	13%	19888	30%	297
	Cigarettes	32%	19874	76%	295
	Misuse of OTC Meds*	6%	4936	10%	57
	Misuse of Rx Meds**	5%	4940	12%	58
Past 30 Day Use	Alcohol	24%	20068	32%	296
	Marijuana	8%	20085	38%	297
	LSD and Hallucinogens	1%	20098	1%	298
	Cocaine	1%	20051	1%	299
	Inhalants	6%	20082	10%	298
	Methamphetamines	0%	9634	1%	129
	Heroin	0%	20018	0%	298
	Ecstasy	1%	20020	1%	298
	Steroids	1%	19976	1%	300
	Chewing Tobacco	5%	19908	18%	297
	Cigarettes	11%	19878	32%	296
	Misuse of OTC Meds*	3%	4940	3%	58
	Misuse of Rx Meds**	2%	4933	3%	58
Heavy Use	Binge Drinking	15%	19896	28%	300
	Half Pack of Cig./Day	2%	19878	2%	296
Problem Behavior	Suspended from School	10%	20449	18%	303
	Drunk or High at School	11%	20355	33%	300
	Sold Drugs	3%	20319	11%	298
	Attempted Vehicle Theft	4%	20408	9%	300
	Arrested	5%	20325	20%	299
	Attacked Someone	13%	20378	22%	298
	Brought a Gun to School	1%	20324	2%	298

\* Students were asked, "On how many occasions ... have you used ... a medication to get high that you can buy at the store?"

\*\* Students were asked, "On how many occasions ... have you used ... a prescription medication to get high?"

Table 8. Substance use and problem behavior prevalence rates for Wind River Reservation, 10th grade: 2001-2008 PNA

		Wyoming		Wind River	
		%	n	%	n
Lifetime Use	Alcohol	72%	16760	79%	118
	Marijuana	33%	16961	74%	119
	LSD and Hallucinogens	5%	17025	9%	120
	Cocaine	5%	17013	8%	120
	Inhalants	14%	17026	22%	119
	Methamphetamines	3%	7944	12%	65
	Heroin	2%	17005	2%	118
	Ecstasy	5%	16999	12%	117
	Steroids	3%	17000	3%	119
	Chewing Tobacco	24%	16901	45%	118
	Cigarettes	46%	16889	73%	116
	Misuse of OTC Meds*	12%	4189	13%	43
	Misuse of Rx Meds**	14%	4189	26%	43
Past 30 Day Use	Alcohol	40%	16959	47%	120
	Marijuana	16%	16959	43%	119
	LSD and Hallucinogens	2%	17022	4%	119
	Cocaine	1%	16978	3%	119
	Inhalants	3%	17012	5%	118
	Methamphetamines	1%	7937	0%	65
	Heroin	1%	16978	2%	119
	Ecstasy	1%	16990	4%	119
	Steroids	1%	16955	0%	119
	Chewing Tobacco	11%	16904	23%	116
	Cigarettes	20%	16883	43%	116
	Misuse of OTC Meds*	4%	4186	6%	43
	Misuse of Rx Meds**	6%	4190	4%	43
Heavy Use	Binge Drinking	25%	16908	42%	117
	Half Pack of Cig./Day	6%	16883	14%	116
Problem Behavior	Suspended from School	10%	17254	21%	120
	Drunk or High at School	21%	17205	38%	121
	Sold Drugs	8%	17157	20%	120
	Attempted Vehicle Theft	4%	17228	9%	120
	Arrested	7%	17193	21%	121
	Attacked Someone	13%	17205	25%	121
	Brought a Gun to School	1%	17156	2%	120

\* Students were asked, "On how many occasions ... have you used ... a medication to get high that you can buy at the store?"

\*\* Students were asked, "On how many occasions ... have you used ... a prescription medication to get high?"

Table 9. Substance use and problem behavior prevalence rates for Wind River Reservation, 12th grade: 2001-2008 PNA

		Wyoming		Wind River	
		%	n	%	n
Lifetime Use	Alcohol	79%	13008	89%	82
	Marijuana	42%	13075	73%	85
	LSD and Hallucinogens	8%	13122	2%	85
	Cocaine	8%	13114	11%	85
	Inhalants	13%	13123	10%	85
	Methamphetamines	4%	5589	8%	49
	Heroin	4%	13111	2%	85
	Ecstasy	6%	13106	8%	85
	Steroids	3%	13105	4%	85
	Chewing Tobacco	33%	13083	46%	86
	Cigarettes	54%	13090	80%	86
	Misuse of OTC Meds*	12%	2851	12%	21
	Misuse of Rx Meds**	15%	2853	12%	21
Past 30 Day Use	Alcohol	49%	13075	56%	86
	Marijuana	18%	13071	41%	85
	LSD and Hallucinogens	2%	13112	0%	84
	Cocaine	2%	13098	1%	85
	Inhalants	2%	13109	0%	85
	Methamphetamines	1%	5583	0%	49
	Heroin	1%	13080	0%	85
	Ecstasy	1%	13100	2%	85
	Steroids	1%	13086	2%	84
	Chewing Tobacco	15%	13090	25%	85
	Cigarettes	26%	13092	47%	86
	Misuse of OTC Meds*	4%	2851	0%	21
	Misuse of Rx Meds**	6%	2848	4%	21
Heavy Use	Binge Drinking	34%	13085	44%	86
	Half Pack of Cig./Day	10%	13092	19%	86
Problem Behavior	Suspended from School	8%	13308	17%	89
	Drunk or High at School	22%	13272	39%	88
	Sold Drugs	8%	13263	16%	85
	Attempted Vehicle Theft	3%	13292	7%	88
	Arrested	6%	13273	12%	87
	Attacked Someone	10%	13286	18%	89
	Brought a Gun to School	1%	13246	4%	89

\* Students were asked, "On how many occasions ... have you used ... a medication to get high that you can buy at the store?"

\*\* Students were asked, "On how many occasions ... have you used ... a prescription medication to get high?"

## Appendix B. Risk Factor Prevalence Rate Tables

Table 10. Percent of students in Wind River Reservation classified as at-risk, 6<sup>th</sup> grade: 2001-2008 PNA

		Wyoming		Wind River	
		%	n	%	n
Community	Community Disorganization	33%	17904	64%	288
	Laws and Norms Favoring Drug Use	42%	18302	51%	307
	Perceived Availability of Drugs	31%	18313	36%	301
Family	Poor Family Management	31%	17528	55%	291
	Parents' Favorable Attitude toward Antisocial Behavior	29%	17615	39%	294
	Parents' Favorable Attitude toward Drug Use	15%	17657	18%	291
School	Low Commitment to School	39%	19968	38%	332
Peer/ Individual	Rebelliousness	43%	9695	50%	121
	Early Initiation of Antisocial Behavior	20%	19879	31%	324
	Early Initiation of Drug Use	33%	19886	56%	329
	Favorable Attitude toward Antisocial Behavior	39%	19910	57%	331
	Favorable Attitude toward Drug Use	18%	19878	43%	328
	Intent to Use	14%	9689	27%	118
	Perceived Risk and Harm of Drug Use	29%	19224	57%	313
	Interaction with Antisocial Peers	31%	19704	53%	323
	Friends' Use of Drugs	26%	19722	62%	324
	Sensation Seeking	50%	19656	39%	327
	Rewards for Antisocial Behavior	25%	19609	42%	314
	Depressive Symptoms	34%	19547	42%	322

Table 11. Percent of students in Wind River Reservation classified as at-risk, 8<sup>th</sup> grade: 2001-2008 PNA

		Wyoming		Wind River	
		%	n	%	n
Community	Community Disorganization	30%	19205	57%	285
	Laws and Norms Favoring Drug Use	39%	19402	52%	291
	Perceived Availability of Drugs	37%	19499	46%	289
Family	Poor Family Management	37%	18976	48%	280
	Parents' Favorable Attitude toward Antisocial Behavior	42%	18990	51%	282
	Parents' Favorable Attitude toward Drug Use	32%	19028	33%	285
School	Low Commitment to School	42%	20547	33%	305
Peer/ Individual	Rebelliousness	33%	9694	44%	128
	Early Initiation of Antisocial Behavior	31%	20446	50%	297
	Early Initiation of Drug Use	36%	20448	73%	301
	Favorable Attitude toward Antisocial Behavior	39%	20469	47%	302
	Favorable Attitude toward Drug Use	29%	20448	46%	301
	Intent to Use	20%	9675	48%	126
	Perceived Risk and Harm of Drug Use	42%	19988	65%	297
	Interaction with Antisocial Peers	45%	20330	69%	303
	Friends' Use of Drugs	42%	20351	77%	302
	Sensation Seeking	51%	20301	52%	303
	Rewards for Antisocial Behavior	45%	20310	62%	300
	Depressive Symptoms	40%	20232	45%	299

Table 12. Percent of students in Wind River Reservation classified as at-risk, 10<sup>th</sup> grade: 2001-2008 PNA

		Wyoming		Wind River	
		%	n	%	n
Community	Community Disorganization	38%	16499	70%	105
	Laws and Norms Favoring Drug Use	46%	16576	58%	107
	Perceived Availability of Drugs	47%	16671	42%	113
Family	Poor Family Management	37%	16433	45%	99
	Parents' Favorable Attitude toward Antisocial Behavior	48%	16403	53%	100
	Parents' Favorable Attitude toward Drug Use	48%	16427	49%	100
School	Low Commitment to School	45%	17362	33%	122
Peer/ Individual	Rebelliousness	36%	7989	37%	65
	Early Initiation of Antisocial Behavior	36%	17278	56%	121
	Early Initiation of Drug Use	40%	17276	68%	122
	Favorable Attitude toward Antisocial Behavior	49%	17283	52%	120
	Favorable Attitude toward Drug Use	39%	17276	43%	120
	Intent to Use	27%	7959	44%	64
	Perceived Risk and Harm of Drug Use	43%	16969	48%	119
	Interaction with Antisocial Peers	51%	17215	68%	123
	Friends' Use of Drugs	44%	17232	74%	123
	Sensation Seeking	53%	17158	38%	121
	Rewards for Antisocial Behavior	44%	17172	47%	121
	Depressive Symptoms	41%	17097	40%	118

Table 13. Percent of students in Wind River Reservation classified as at-risk, 12<sup>th</sup> grade: 2001-2008 PNA

		Wyoming		Wind River	
		%	n	%	n
Community	Community Disorganization	35%	12839	72%	80
	Laws and Norms Favoring Drug Use	41%	12896	45%	82
	Perceived Availability of Drugs	46%	12949	39%	83
Family	Poor Family Management	38%	12832	42%	81
	Parents' Favorable Attitude toward Antisocial Behavior	34%	12807	38%	81
	Parents' Favorable Attitude toward Drug Use	57%	12821	56%	81
School	Low Commitment to School	45%	13357	21%	90
Peer/ Individual	Rebelliousness	32%	5630	42%	49
	Early Initiation of Antisocial Behavior	35%	13294	57%	89
	Early Initiation of Drug Use	38%	13296	65%	89
	Favorable Attitude toward Antisocial Behavior	47%	13317	50%	89
	Favorable Attitude toward Drug Use	37%	13310	31%	88
	Intent to Use	30%	5630	38%	49
	Perceived Risk and Harm of Drug Use	49%	13080	40%	85
	Interaction with Antisocial Peers	51%	13290	73%	90
	Friends' Use of Drugs	39%	13294	66%	90
	Sensation Seeking	55%	13235	54%	88
	Rewards for Antisocial Behavior	53%	13243	50%	90
	Depressive Symptoms	34%	13188	34%	87

## Appendix C. Protective Factor Prevalence Rate Tables

Table 14. Percent of students in Wind River Reservation classified as at-high-protection by grade level: 2001-2008 PNA

		Wyoming		Wind River	
		%	n	%	n
6 <sup>th</sup> Grade	Religiosity	58%	19268	53%	316
	Social Skills	74%	19733	52%	322
	Belief in a Moral Order	68%	19544	52%	322
8 <sup>th</sup> Grade	Religiosity	54%	20214	53%	302
	Social Skills	63%	20332	40%	299
	Belief in a Moral Order	64%	20186	52%	297
10 <sup>th</sup> Grade	Religiosity	47%	17140	36%	118
	Social Skills	55%	17165	39%	119
	Belief in a Moral Order	69%	17088	64%	119
12 <sup>th</sup> Grade	Religiosity	71%	13245	80%	87
	Social Skills	64%	13236	42%	89
	Belief in a Moral Order	58%	13182	65%	87

## Appendix D. Differences between the Wyoming and Local Prevalence Rates

Table 15. Differences between Wind River Reservation and Wyoming substance use prevalence rates: 2001-2008 PNA

Lifetime Substance Use	Grade Level			
	6th	8th	10th	12th
Alcohol	3.7	13.4	7.7	10.2
Marijuana	23.5	49.2	40.6	30.9
LSD and Hallucinogens	1.2	1.6	3.5	-6.3
Cocaine	0.2	2.8	3.3	2.4
Inhalants	2.9	14.8	8.0	-2.4
Methamphetamines	1.4	3.5	9.0	3.1
Heroin	1.8	0.1	-0.3	-2.2
Ecstasy	1.2	3.3	7.3	1.9
Steroids	-0.5	-1.0	-0.1	1.0
Chewing Tobacco	11.4	17.7	21.3	13.1
Cigarettes	36.5	43.7	26.6	25.7
Misuse of OTC Meds*	3.8	3.8	1.5	-0.4
Misuse of Rx Meds**	4.1	6.6	12.2	-3.2
<b>30-day Substance Use</b>				
Alcohol	5.8	8.6	6.7	7.0
Marijuana	12.0	30.0	27.2	23.9
LSD and Hallucinogens	0.6	0.1	2.8	-2.2
Cocaine	0.8	0.5	1.7	-1.0
Inhalants	-1.1	4.2	1.7	-2.1
Methamphetamines	-0.2	0.7	-0.7	-1.0
Heroin	0.6	-0.5	1.1	-1.0
Ecstasy	1.0	0.3	3.0	1.2
Steroids	0.2	-0.1	-1.0	1.4
Chewing Tobacco	6.9	13.2	12.4	10.3
Cigarettes	14.4	21.1	22.5	20.8
Misuse of OTC Meds*	1.0	0.3	1.5	-3.8
Misuse of Rx Meds**	3.0	1.1	-1.9	-2.3
<b>Heavy Substance Use</b>				
Binge Drinking	9.7	13.2	16.9	9.8
Half Pack of Cig./Day	1.3	-0.2	7.8	9.4

\* Students were asked, "On how many occasions ... have you used ... a medication to get high that you can buy at the store?"

\*\* Students were asked, "On how many occasions ... have you used ... a prescription medication to get high?"

Table 16. Differences between Wind River Reservation and Wyoming problem behavior prevalence rates: 2001-2008 PNA

<b>Antisocial Behavior</b>	<b>Grade Level</b>			
	<b>6th</b>	<b>8th</b>	<b>10th</b>	<b>12th</b>
Suspended from School	2.5	8.0	10.5	8.7
Drunk or High at School	9.2	22.0	17.2	16.7
Sold Drugs	2.8	7.5	12.0	7.9
Attempted Vehicle Theft	4.6	5.6	4.8	4.9
Arrested	6.0	14.4	13.9	6.2
Attacked Someone	6.2	9.3	12.1	7.8
Brought a Gun to School	1.9	1.5	0.7	3.0

Table 17. Risk Factor prevalence rates, 2001-2008 PNA: Wind River Reservation and Wyoming differences

<b>Community Risk Factors</b>	<b>Grade Level</b>			
	<b>6th</b>	<b>8th</b>	<b>10th</b>	<b>12th</b>
Community Disorganization	30.6	27.8	32.0	36.9
Laws and Norms Favoring Drug Use	9.0	13.6	12.1	4.5
Perceived Availability of Drugs	5.6	9.3	-5.3	-7.7
<b>Family Risk Factors</b>				
Poor Family Management	23.6	10.6	7.9	3.7
Parents' Favorable Attitude toward Antisocial Behavior	10.1	9.2	4.9	3.2
Parents' Favorable Attitude toward Drug Use	3.3	1.4	1.4	-1.3
<b>School Risk Factor</b>				
Low Commitment to School	-1.4	-8.5	-11.9	-23.6
<b>Peer / Individual Risk Factors</b>				
Rebelliousness	6.2	11.4	0.6	9.0
Early Initiation of Antisocial Behavior	10.9	18.8	20.2	22.4
Early Initiation of Drug Use	22.3	36.9	28.8	26.8
Favorable Attitude toward Antisocial Behavior	18.2	7.9	2.6	3.3
Favorable Attitude toward Drug Use	24.3	17.6	4.4	-6.0
Intent to Use	13.6	28.3	16.9	7.5
Perceived Risk and Harm of Drug Use	28.1	23.2	5.7	-8.9
Interaction with Antisocial Peers	22.3	23.8	16.8	22.3
Friends' Use of Drugs	35.1	35.1	30.0	27.0
Sensation Seeking	-10.3	1.0	-14.6	-1.0
Rewards for Antisocial Behavior	17.8	17.5	3.0	-3.6
Depressive Symptoms	8.3	5.4	-0.8	0.1

Table 18. Protective Factor prevalence rates, 2001-2008 PNA: Wind River Reservation and Wyoming differences

<b>Protective Factors</b>	<b>Grade Level</b>			
	<b>6th</b>	<b>8th</b>	<b>10th</b>	<b>12th</b>
Religiosity	-4.9	-1.4	-11.5	9.3
Social Skills	-21.6	-22.4	-16.0	-21.9
Belief in Moral Order	-16.6	-12.2	-5.2	7.3