Для социальной рекламы, призывающей к здоровому образу жизни, характерно использование образов известных казахстанских спортсменов. Этому способствуют заметные достижения казахстанских спортсменов в последние годы на международных турнирах.

Процент рекламы с использованием образа Назарбаева Н.А., особенно наружной и печатной, очень велик. Это связано с авторитетом и доверием граждан президенту Казахстана и влиянием социальной рекламы, поддерживающей его авторитет: (*Ел Басымен бірге – жаңа жеңістерге. С Лидером Нации – к новым победам!*). Наряду с такими символами заметна тенденция использования в рекламе цитат и высказываний известных людей. *«Арлы адам – ардақты, ар* - *адамның анасы»* – Бауыржан Момышулы. Это призыв к молодым людям быть честными, порядочными.

Обращение к литературным, культурным и историческим традициям является очень «мощным оружием» создателей рекламы. Использование цитат, аллюзий, искаженных идиом, а также иноязычных внесений в рекламе предполагает наличие общих фоновых знаний у создателя текста и его получателя. По нашему мнению, данное требование может быть выполнено именно в Казахстане, так как подавляющее большинство граждан нашей стране двуязычные.

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HYDROELECTRIC POWER PLANTS ENVIRONMENTAL IMPACTS

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Hydropower has traditionally been considered environmentally friendly because it represents a clean and renewable energy source. The term renewable refers to the hydrologic cycle that circulates water back to our rivers, streams, and lakes each year. At hydroelectric projects, this water is used as fuel to generate electricity. In contrast, fossil fuels like coal, natural gas, or oil must be extracted from the earth and burned to produce electricity. The term clean is also used because production of electricity with hydropower does not pollute the air, contribute to acid rain or ozone depletion because of carbon dioxide emissions, or (like nuclear power) leave highly toxic waste that is difficult to dispose of.

As the section Hydropower Facts graphically illustrates, hydropower accounts for 98% of renewable energy in the United States. Wind, solar and other sources account for the other 2%. And while there are many benefits to using hydropower as a renewable source of electricity, there are also environmental impacts. These impacts generally relate to how a hydroelectric project affects a river's ecosystem and habitats.

Because there are over 250 hydroelectric projects in the Northwest, understanding such ecosystem and habitat issues is vitally important. Examining these issues, however, needs to be done in a broad context for three reasons. First, no two hydroelectric projects are exactly alike, and many are very different. Thus, while issues can be examined in general terms, one should not draw conclusions that all or even most projects have similar environmental impacts.

Second, while this discussion focuses on hydroelectric projects, one should not conclude that all dams are used to produce electricity. Nationally, for instance, only three percent of the nation's 80,000 dams are used to produce electricity. Most dams are used for purposes such as irrigation, flood control, and water treatment. Further, many dams support a combination of activities. For example, dams on the main stem of the Columbia River are used for irrigation, flood control, transportation, recreation, and the production of electricity.

Third, this section does not provide detailed information about a host of other activities that can significantly impact a river's ecosystem and the species that rely on it for survival. Examples of other non-hydropower related impacts include grazing, logging, agricultural activities, mining, land development, and the harvesting of fish. Determining the relative impact of these activities versus hydroelectric projects is very complex and the subject of ongoing debate.

For information about the many steps that are being taken to reduce or eliminate ongoing impacts, refer to the Protection, Mitigation, and Enhancement Strategies At Hydroelectric Projects. Reviewing possible changes to a river's ecosystem is a good place to begin considering the environmental impacts that a hydroelectric project may cause. From this understanding, possible changes to fish and wildlife habitat can be explored [1, P. 415].

Specific ecosystem impacts caused by a single hydroelectric project largely depend on the following variables:

1) the size and flow rate of the river or tributary where the project is located,

2) the climatic and habitat conditions that exist,

3) the type, size, design, and operation of the project, and

4) whether cumulative impacts occur because the project is located upstream or downstream of other projects.

The first two variables depend on a complex set of geologic, geographic, and weather conditions. For the Northwest, the bounty and beauty of these phenomena are described in the sections What Makes The Columbia River Basin Unique, and The Columbia River Basin and Its Ecosystems.

Engineers typically determine the type, size, design, and operation of a project based on these natural dynamics. As described in the section "How The Northwest Hydroelectric System Works," the two most common hydroelectric facilities are storage projects and run-of-the-river projects.

Storage projects hold water in a reservoir or lake to adjust a river's natural flow pattern to release water when the demand for electricity is highest. In addition, more energy can be produced from water falling 100 feet above a turbine than from 10 feet. This height is called "head."

Thus, it is not surprising that the hydroelectric projects producing the most electricity also have the tallest dams and the largest reservoirs.

Run-of-the-river projects allow water to pass at about the same rate that the river is flowing. Generally, the river level upstream of the project is fairly constant, with daily fluctuations limited to only three to five feet at the largest projects.

Although no two storage or run-of-the-river projects are the same, let's take a look at some of the ecosystem changes that may occur because of their presence.

Reservoirs, also called lakes, are created when storage projects are built. Reservoirs can significantly slow the rate at which the water is moving downstream. Surface temperatures tend to become warmer as the slower moving or "slack" water absorbs heat from the sun.

In addition to surface water warming, the colder water sinks toward the bottom because of its higher density. This causes a layering effect called stratification. The bottom layer is the coldest and the top layer the warmest.

When stratification occurs, there is also another ecosystem effect. Specifically, the colder water that sinks toward the bottom contains reduced oxygen levels. Further, at some sites when water is released from the colder, oxygen-depleted depths, downstream habitat conditions change because of the reduced oxygen level in the water.

Supersaturation occurs when air becomes trapped in water spilled over a dam as it hits the pool below, creating turbulence. Because air is comprised of 78% nitrogen, the level of nitrogen dissolved in the water can increase dramatically. The affected water does not lose the excess nitrogen quickly. For fish and other species, supersaturated water can enter tissues. If fish swim from an area supersaturated with nitrogen to a lower pressure area, a condition similar to "the bends" in scuba diving can occur. This effect causes injury and can even cause death to fish [2].

Building a storage project can raise the water level behind a dam from a few feet to several hundred feet. When stream banks and riparian areas become covered by the reservoir's higher water level, the result is called inundation. Habitat conditions change and a new equilibrium emerges. As this occurs, a different set of dynamics begin impacting species that traditionally grow, nest, feed, or spawn in these areas.

Once built, storage projects can also raise and lower the level of water in a reservoir on a daily, weekly or seasonal basis to produce electricity. One term used to describe this process is “power peaking”. This occurs when, for instance, more water is released in the morning because electricity demands increase as people wake up and begins taking hot showers, using kitchen appliances, etc. In a riparian zone, (the area where moist soils and plants exist next to a body of water) this may result in shoreline vegetation not being effectively reestablished.

Sediments, which are fine organic and inorganic materials that are typically suspended in the water, can collect behind a dam because the dam itself is a physical barrier. From the time a project is built, man-made and natural erosion of lands adjacent to a reservoir can lead to sediment build-up behind a dam. This build-up can vary based on the ability of a river to “flush” the sediments past the dam. It can also vary based on the natural conditions specific to the river and its upstream tributaries.

When sediments collect, the ecosystem can be affected in two ways. First, downstream habitat conditions can decline because these sediments no longer provide important organic and inorganic nutrients.

Second, where sediment builds up behind a dam, an effect called “nutrient loading” can cause the supply of oxygen to be depleted. This happens because more nutrients are now available, thus more organisms populate the area to consume the nutrients. As these organisms consume the nutrients, more oxygen is used, depleting the supply of oxygen in the reservoir.

Similarly, gravel can be trapped behind a dam in the same way as sediment. In cases where the movement of gravel downstream is part of establishing spawning areas for fish, important habitat conditions can be affected [3].

Changing water levels and a lack of streamside vegetation can also lead to increased erosion. For example, the lack of vegetation along the shoreline means that a river or reservoir can start cutting deeply into its banks. This can result in further changes to a riparian zone and the species which it can support. Increases in erosion can also increase the amount of sedimentation behind a dam.

Just as the changes that occur to ecosystems vary greatly from project to project, so do changes in habitat. Indeed, painting a picture of all or even most hydroelectric projects as having more or less the same impacts is a serious mistake. For a given project, learning what habitat conditions exist and the extent of ongoing impacts requires a good deal of investigation. Likely sources of information include the project owner, information provided to the Federal Energy Regulatory Commission, state and federal fish and wildlife agencies, and local environmental groups.

When ecosystem changes occur at a project, a new pattern of biological activity and equilibrium is likely to emerge. As this happens, a new and dynamic equilibrium takes hold. With this new equilibrium come changes to the plants, fish, and wildlife that populate these areas.

Supersaturation is a danger for fish going over a dam or through its spillway. If too much nitrogen is absorbed in the bloodstream, air bubbles form and create the equivalent of what divers call "the bends." At high nitrogen levels, fish and some other aquatic species die. Also, if supersaturation conditions exist, fish passing through or around a dam will absorb greater nitrogen levels and suffer the effects as they continue downstream.

When adult salmon and other fish migrate upstream, the dam can again present itself as a physical barrier. If a "fishway" does not exist, then passage to spawning grounds is lost.

While fish ladders are the most common fishways, other examples include fish locks, fish elevators and transportation of fish upstream via truck. Where ladders are used as fishways, fish can find it difficult to find them if sufficient attraction flows are not provided at their base. Once up the ladder, they can again become disoriented and be sucked back over a dam or through its spillway. Salmon do not feed during their migratory journey back to their spawning grounds, so loss of energy and time become critical survival issues.

When habitat is lost, animals are forced to move to higher ground or other areas where habitat conditions may be less suitable, predators are more abundant, or the territory is already occupied. As an example, ground birds like pheasant and grouse require cover and cannot successfully move to higher, more open, ground.

In cases where water levels stabilize at a new height, vegetation in riparian zones can re-emerge and species can re-populate an area. With storage projects, the riparian zone that re-emerges has conditions that now reflect that of a reservoir or lake rather than a free-flowing river. When such conditions occur, certain species will begin to decline, others will become more abundant, and some will populate these areas for the first time.

Ducks and geese are examples of waterfowl that are strongly attracted to the habitat conditions found in reservoirs. For some of these species, reservoirs are providing an important alternative to the wetland areas that they formerly occupied. Canada geese are one example of birds that now frequent reservoirs as part of their migration pattern [5].

Hydroelectric projects do affect the ecosystems of rivers and their surrounding areas. The degree, however, to which any one project affects a river, varies widely. As discussed, one of the most important variables is whether a dam is part of a storage or run-of-the-river hydroelectric project. Other variables include the size and flow rate of the river or tributary where the project is located; the existing habitat and climatic conditions; the type, size, and design of a project; and whether a project is located upstream or downstream of other projects.

As changes in habitat occur, observation and time make it increasingly clear which plants, fish, and wildlife are affected. Some species end up doing quite well, others sharply or completely decline and some are minimally affected.

The section Protection, Mitigation and Enhancement Strategies At Hydroelectric Projects reviews measures being taken to address continuing environmental impacts. It is important to remember these measures are part of a much larger and complex whole. As such, their perceived success or failure is often dependent on a number of non-hydroelectric project activities.

For instance, there are natural conditions that can dramatically affect the health of a river’s ecosystem and habitat. As an example, drought years at the beginning of the decade impacted critically important stream flows.

While this section focused on impacts from hydroelectric projects, understanding how to maintain the health of rivers and tributaries throughout the basin requires investigating these much broader impacts as well. Additional sources of information on these impacts and what is being done to mitigate them include federal, state, local, and tribal agencies; public and private organizations that contribute to these impacts; and non-profit groups interested in these environmental issues [6].

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